FUJITSU

CADEWA Smart V2.0 English Edition

Revit operation manual

Feb.2021

Introduction

Thank you for using the "Consistency Check Tool" (hereafter referred to as "Revit Add-in" or "Add-in").

This manual describes Autodesk® Revit® (hereinafter referred to as Revit) by inputting and outputting RVT format files of CADEWA Smart, and an integrated operation method centered on drawing transfer.

Please note that the information is subject to change depending on the corresponding version and level.

<Terms of use>
This book is the following software Is the condition of use.

(1) Operation on the CADEWA side
- CADEWA Smart V2.0 (hereinafter referred to as CADEWA or CADEWA Smart)

(2) Revit side operation
- Autodesk ® Revit ® 2020 (hereinafter referred to as Revit)
- Consistency check tool (hereinafter referred to as "Revit add-in" or "add-in")

(3) Other
-Software that can display Microsoft Excel or csv files

The OS and other conditions are in accordance with the above software usage conditions.

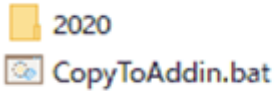
＜ Index ＞

1． Installation of add-in

This document uses a consistency check tool (add-in for Revit) when exchanging data between Revit and CADEWA. Follow the steps below to install the add-in to Revit.

This work is performed on a PC with Revit installed.
Please install the add-in with Revit closed.
Download the add-in installer from the download page in advance, compress and decompress it
Place it in any folder on your work PC.

① Open the folder where the installer is located.
Example:
C:¥Program Files¥CADEWA¥Smart_V2_Eng¥BINEXT¥Addin



② Double-click “CopyToAddin.bat” that exists in the folder to execute it.
(The extension may not be displayed in the Explorer settings)

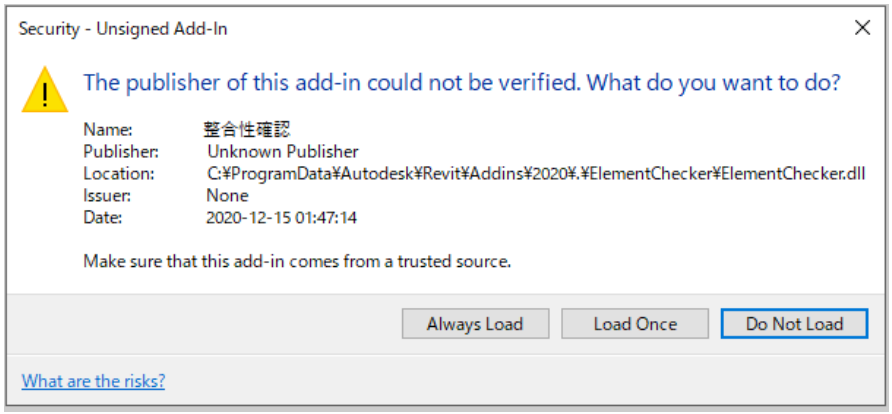
③The processing screen is displayed.
When the process is over, displayed "Please press any key to continue ...”

④ Press any key（Example：Space key）.
Then Installation is finished.

1． Installation of add-in

⑤ Start Revit

⑥ If a security check is displayed ”The publisher of this add-in could not be verified. What do you want to do?” at start for check installed add-in file “ElementChecker.dll” and “ElementLister.dll”) ， select “Always load”

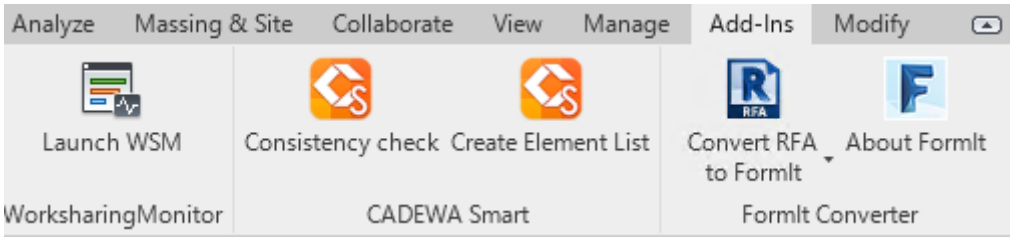


The same message will not be displayed for this add-in from the next time.
If you want to check each time, select "Load once".

⑦ Confirmation for the following add-ins is also displayed, so specify it in the same way.
ElementLister.dll

⑧ After Revit start, select “Add-Ins” tab from ribbon

⑨ Confirm “Consistency check” and “Create Element List” exist in ribbon.



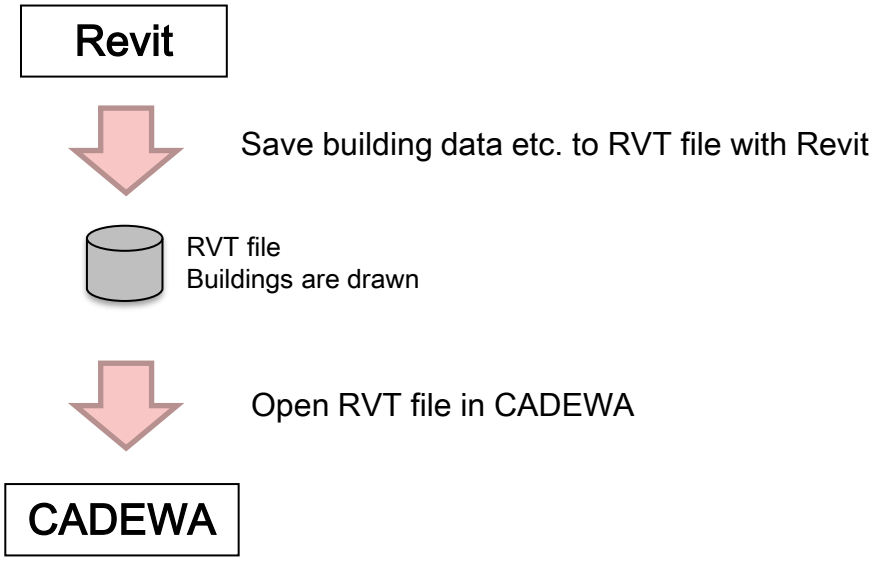
⑩ Exit Revit.

This is the end of the work.

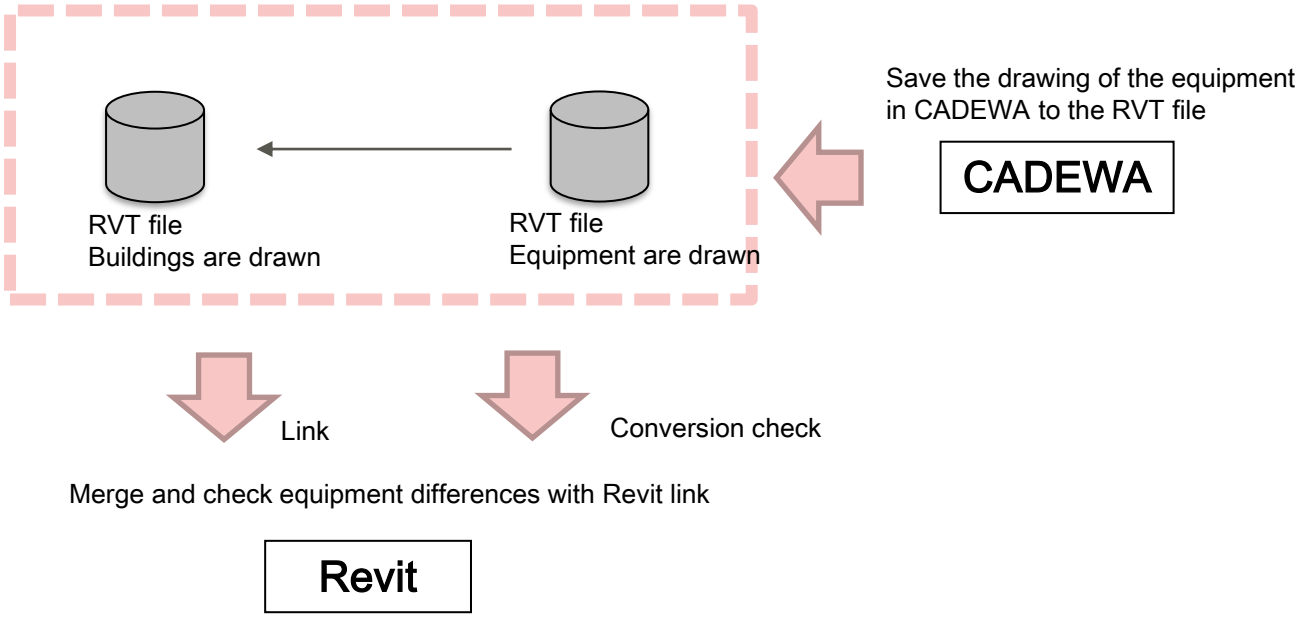
2． Overall flow

The operation in this manual is mainly as follows.

1 ．Revit drawings provide to CADEWA



2 ．CADEWA drawing provide to Revit



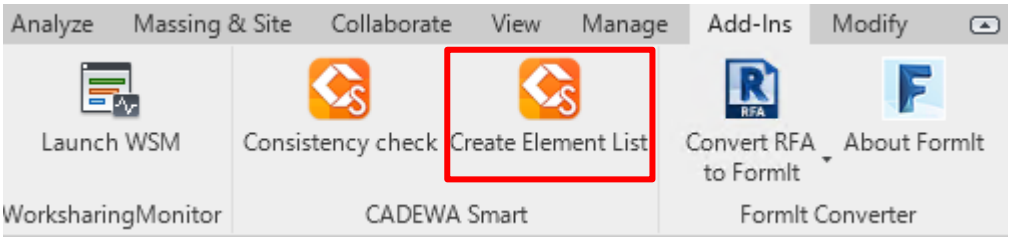
3． How to provide Revit drawings to CADEWA

This section describes each operation method and work when opening an RVT file such as Revit building data with CADEWA.

① Open the RVT file in Revit.

② Double-click the view you want to open in CADEWA from the project browser to activate it.
* In the next element list creation, the list will be created based on this view. Don't forget to do it.

③ Switch the Revit ribbon to "Add–Ins" and click “Create Element List".



④When the process is completed, the element list creation completion message is displayed.

Click “Close”.

⑤ Make sure the element list file exists.
Open the same folder as the RVT file with Explorer etc.
Confirm that the file "(RVT file) + _Revit.csv" was created with the implementation date and time.

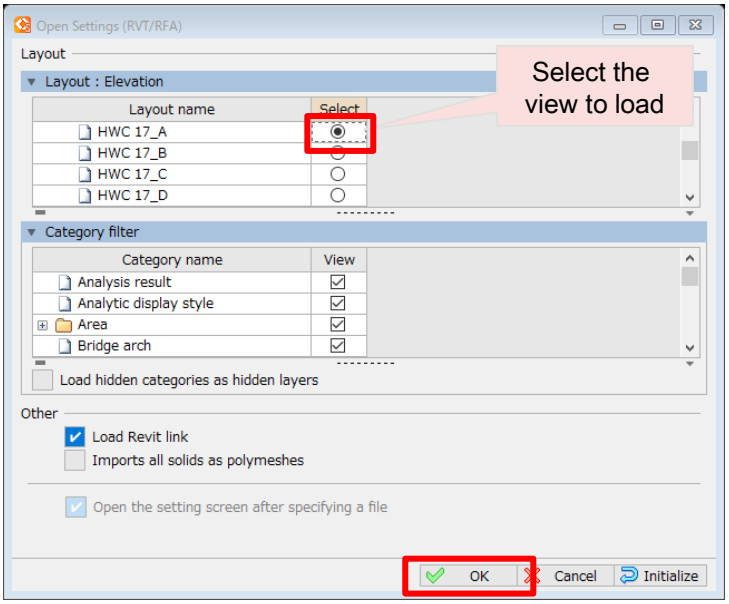
⑥ Exit Revit.

⑦ Start CADEWA.

⑧ Call the open command and select the RVT file from the open dialog.

3． How to provide Revit drawings to CADEWA

⑨ Enter the conditions on the "Open Settings (RVT / RFA)" screen and click "OK".

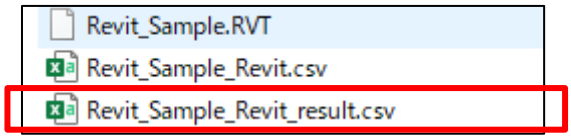


【Note】
Specify the following as necessary(Refer to CADEWA help etc. for details)
-Category filter:
The display can be switched for each category type.
-Load hidden categories as hidden layers :
Those that are hidden in the list are read in the hidden layer state.
-Load Revit link :
Read the link (reference drawing) defined in Revit.
-Imports all solids as polymeshes :
All solid data will be polymesh. Normally check-off, it will be a polymesh if necessary, so turn it on only when there is a problem.

⑩ The RVT file is called on CADEWA.

At this time, if the element list CSV file exists, a read check is performed and the check result is saved in the CSV file.

⑪ Confirm that the check result file has been created.
Open the same folder as the RVT file with Explorer etc.
Confirm that the file "(RVT file name) + _Revit_Result.csv" was created with the implementation date and time.



⑫ Check the contents of the check result file.
Open the CSV file with Excel etc.
(For details, see "5. How to check the check result when reading CADEWA" below.)

⑬ Close the csv file.

⑭ Exit CADEWA.

This is the end of the work.

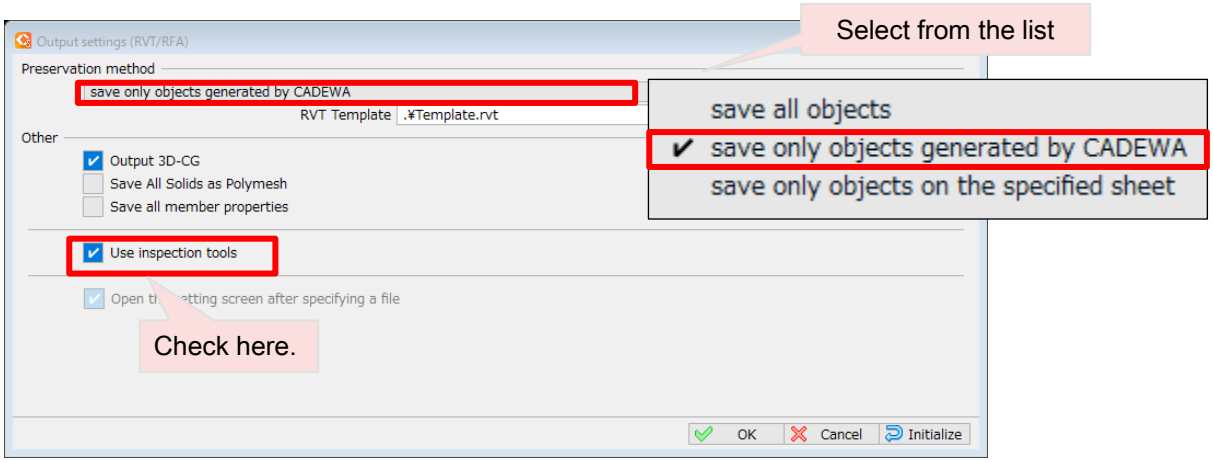
4． How to provide CADEWA drawings to Revit

Output the RVT file in which the equipment data is drawn by CADEWA,
This section describes the work of importing the file in the Revit drawing environment.

① Open the drawing of the equipment in CADEWA.
Example: "1F_equipment diagram.ZDW"

② Execute "Save As"
Set the file type to "Revit2020 project (* .RVT)" and
specify the file name and save. (Example: 1-F-equipment.RVT)

③ Specify the conditions on the Output Settings (RVT / RFA) screen and click OK.

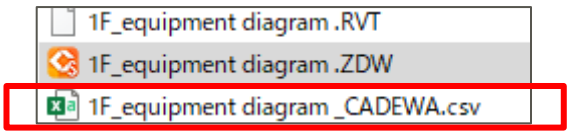


【Note】

- Set the save method to "Save only objects generated by CADEWA".
- Check on "Use inspection tool".
  It will be necessary when inspecting with REVIT later.
- The template is a template of the RVT file to be created.
  A default template for CADEWA is available,
  If you want to create with another template, specify here.
  Please specify other items as needed.
  (Refer to CADEWA help for details)

4． How to provide CADEWA drawings to Revit

④ Confirm that the CSV file is created as a result of the consistency check tool. Display the save destination folder in Explorer and check if the file name "(RVT file name) + _CADEWA.csv" exists at the implementation date and time.



⑤ Exit CADEWA.

⑥ Start Revit.

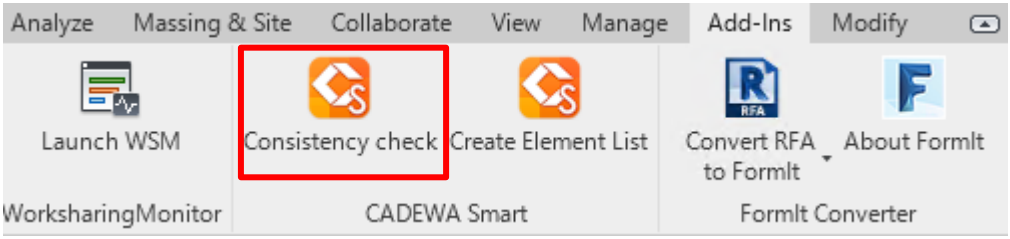
⑦ Select the RVT file saved by CADEWA from the dialog of the open function.

⑧ If alert message is display for the file be saved by autodesk software , at start , select “Open file”.

---(The specified file will be displayed on Revit.)

⑨ Display the view you want to inspect.
Example: {3D}
* The data output from CADEWA follows the template at the time of saving. The template "default" is designed to be created in {3D}.

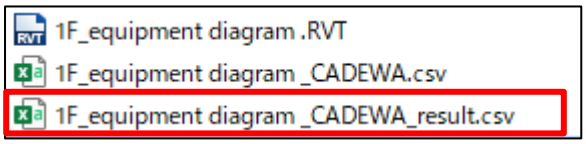
⑩ Switch the ribbon to “Add–Ins” and click “Consistency check”.



⑪ The “Consistency check” screen is displayed. Click “Close”.

4． How to provide CADEWA drawings to Revit

⑫ Check if the CSV file of the consistency check result has been created.
Open the same folder as the RVT file with Explorer etc. and check if the file (RVT file name) "_CADEWA_Result.csv" exists at the implementation date and time.



⑬ Open the CSV file with Excel etc. and check the contents.
(For details, see "6. How to check the check result when reading Revit" below)

⑭ Close the CSV file.

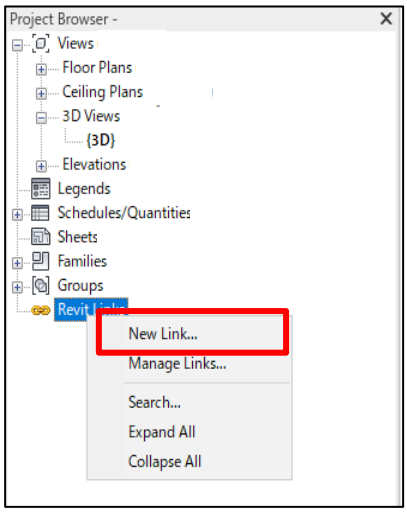
⑮ Close the RVT drawing created in CADEWA in REVIT.

---Next, use the Revit link to overlay the drawing drawn in CADEWA on the drawing drawn in Revit.

⑯ Open the drawing with the architectural drawing etc. in REVIT.

⑰ Display the target view from the project browser.
(Example: Level 1)

⑱ From the ”Project Browser”, Right click on the “Revit Links” and select ”New Link”.



4． How to provide CADEWA drawings to Revit

⑲ Select the RVT file in which the equipment is drawn at the link destination.

If the confirmation window “Open – Foreign files” pops up, select “Open file”

⑳ The architectural drawing and the equipment drawing are displayed overlapping.

㉑ Save the linked drawing by overwriting.

㉒ Exit Revit.

This is the end of the work.

5． How to check the check result when reading CADEWA

How to check the check result when reading CADEWA

・ File name 「(RVT File name) + _Revit_Result.csv」

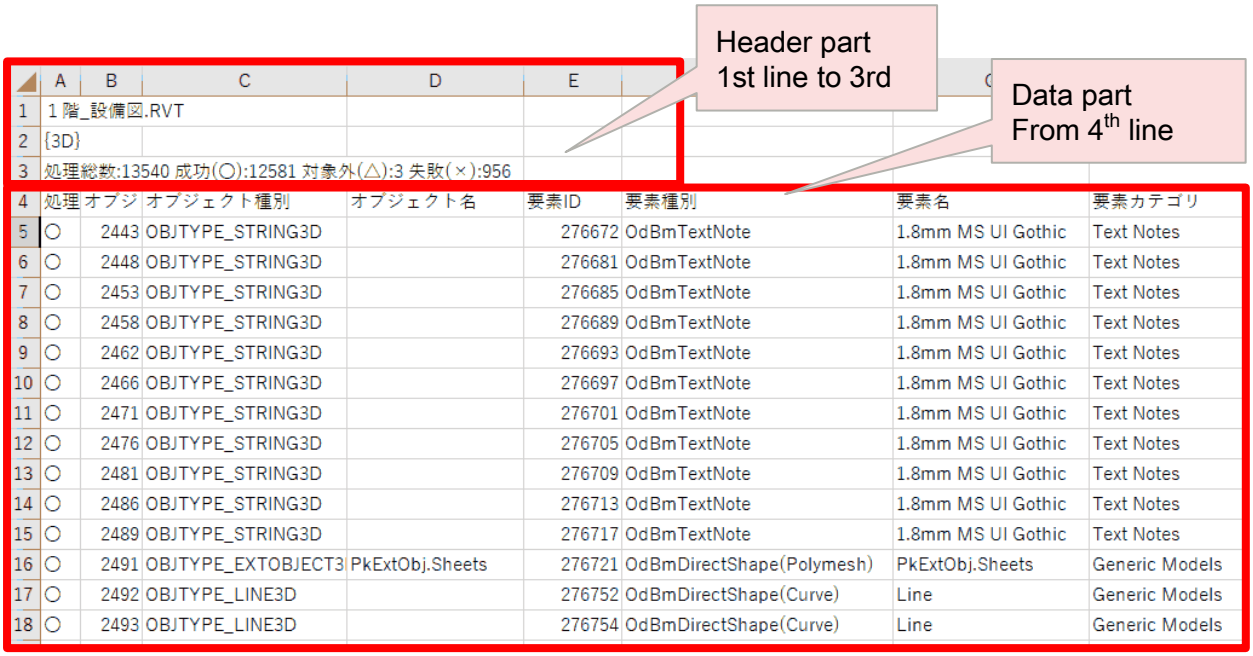
・ File format:

< Header >

1st line: The name of the RVT file to be inspected is output.
2nd line: Prints the view name that was active when the Revit add-in was run.
3rd line: The number of processing results is output in the following format.
"Total number of processes: △△△ Success (○): □□□ Failure (×): ◇◇◇"

< Data >

4th line: The item name from the 5th line is output.
5th line and below: One line is output for each element data.
Each item is explained in the following table.



	A	B	C	D	E			
1	1 階_設備図.RVT							
2	{3D}							
3	処理総数:13540 成功(○):12581 対象外(△):3 失敗(×):956							
4	処理	オブジ	オブジェクト種別	オブジェクト名	要素ID	要素種別	要素名	要素カテゴリ
5	○	2443	OBJTYPE_STRING3D		276672	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
6	○	2448	OBJTYPE_STRING3D		276681	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
7	○	2453	OBJTYPE_STRING3D		276685	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
8	○	2458	OBJTYPE_STRING3D		276689	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
9	○	2462	OBJTYPE_STRING3D		276693	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
10	○	2466	OBJTYPE_STRING3D		276697	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
11	○	2471	OBJTYPE_STRING3D		276701	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
12	○	2476	OBJTYPE_STRING3D		276705	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
13	○	2481	OBJTYPE_STRING3D		276709	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
14	○	2486	OBJTYPE_STRING3D		276713	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
15	○	2489	OBJTYPE_STRING3D		276717	OdBmTextNote	1.8mm MS UI Gothic	Text Notes
16	○	2491	OBJTYPE_EXTOBJECT3	PkExtObj.Sheets	276721	OdBmDirectShape(Polymesh)	PkExtObj.Sheets	Generic Models
17	○	2492	OBJTYPE_LINE3D		276752	OdBmDirectShape(Curve)	Line	Generic Models
18	○	2493	OBJTYPE_LINE3D		276754	OdBmDirectShape(Curve)	Line	Generic Models

*The screen is an example in Japanese

5． How to check the check result when reading CADEWA

＜Information Item＞

Column	Name	Description
A	Result	If it is read and processed normally by CADEWA, it is displayed as ○, and if it is not processed, it is displayed as ×. (If it is not read due to non-display specification etc., it will be 〇. Please refer to the processing status of column I.)
B	Element ID	The element ID of the Revit element.
C	Element type	The element type of the Revit element.
D	Element name	The element name of the Revit element.
E	Element category	The element category of the Revit element.
F	Level	The name of the level that accompanies the Revit element.
G	Geometry	If the Revit element holds geometry information (Yes), it does not (No).
H	Visible	Indicates whether it is visible (Visible) or invisible (Invisible).
I	Status	Shows the detailed processing status in CADEWA. -LOADED (○): Loaded and object registered normally -IGNORED (○): Read processing was not performed because it is an invisible element. -NOT LOADED (×): Cannot be handled as a load target element and was not read. -HIDDEN (○): The object was not registered due to the non-display flag specification, etc. -TRY TO LOAD (×): The reading process was performed, but the object was not registered due to some reason such as an error during the reading process. -EXCLUDED (○): The element was not directly read because there is no object corresponding to CADEWA in the information (font information, material information, etc.) that is not the direct drawing target. -FILTERED OUT (○): It was judged that processing was unnecessary due to the processing of the filter specified in the target view of the RVT file, and the object was not registered. ・ RESTORED (○): Restoration processing of CADEWA parts was performed. -ALREADY RESTORED (○): Restored by another Revit element (derived from the same CADEWA member)
J	Object ID	The object ID of the CADEWA object registered by reading.
K	Object Type	Object type of CADEWA object registered by reading.

Check the result in column A to see if it was read correctly.
For the conversion specifications for each data when reading the RVT file of CADEWA, refer to "7.1. Conversion specifications (reading the RVT file)".
For x, you can check the corresponding data on REVIT by the operation of " When checking the output source data with REVIT" on the next page.
If necessary, please supplement by drawing on the CADEWA side.

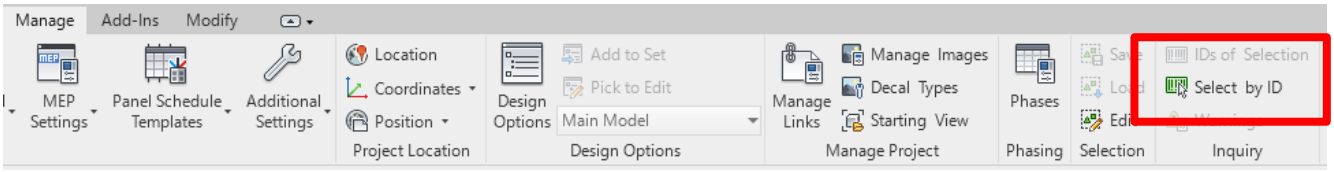
5． How to check the check result when reading CADEWA

When checking the output source data with REVIT

An example of searching data by element ID is explained below.
Please refer to the Revit manual for details.

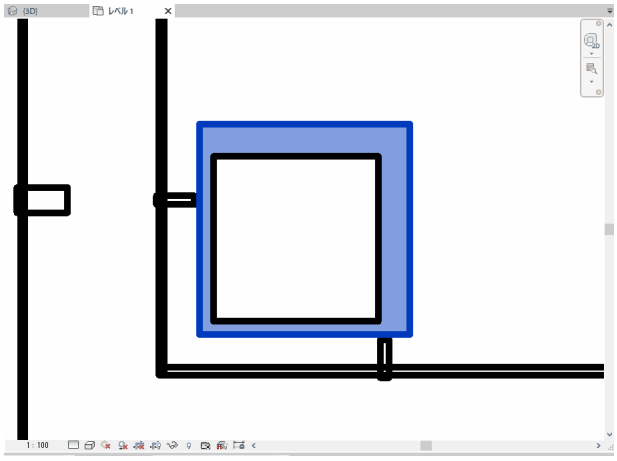
① Display the target view.
Example: Double-click "Level 1" in the project browser.

② Switch to the ribbon "Manage" and click the "Select by ID" icon from the Inquiry panel.



③ Enter the element ID you want to find in the “Select by ID “. window

④ The shape is zoomed in the window with the shape selected.



6． How to check the check result when Revit loading

The following describes how to check the check result file created when the check tool (add-in "consistency check") is executed on the RVT drawing saved by CADEWA on Revit.

(1) File　Name：(RVT File Name) + _CADEWAt_Result.csv

(2) File Format

< Header >

1st line: The name of the RVT file to be inspected is output.

2nd line: The view name that was active when the Revit add-in was executed is output

3rd line: The number of processing results is output in the following format.

"Total number of processes: ???, success (OK): ???, Not applicable (Poor): ???, Failure (NG): ???"

< Data >

4th line: The item name is output.

5th and subsequent lines: One line is output for each element data.

Each item is explained in the following table.

Header part
1st line to 3rd

Data part
From 4th line

	A	B	C	D	E	F	G	H	I	J	K
1	総合図.RVT										
2	レベル 1										
3	処理総数:295 成功(○):295 失敗(×):0										
4	処理	要素ID	要素種別	要素名	要素カテゴリ	レベル	ジオメ	表示状態	処理状態	オブジェクトID	オブジェクト種別
5	○	8142	ElevationMarker	立面図 2	立面図	unknown	No	Visible	LOADED	47	OBJTYPE_STRING3D
6	○	8152	Element	北	ビュー	unknown	No	Invisible	HIDDEN	0	
7	○	8174	ElevationMarker	立面図 3	立面図	unknown	No	Visible	LOADED	51	OBJTYPE_STRING3D
8	○	8175	Element	東	ビュー	unknown	No	Invisible	HIDDEN	0	
9	○	8186	ElevationMarker	立面図 4	立面図	unknown	No	Visible	LOADED	55	OBJTYPE_STRING3D
10	○	8194	Element	南	ビュー	unknown	No	Invisible	HIDDEN	0	
11	○	8208	ElevationMarker	立面図 5	立面図	unknown	No	Visible	LOADED	59	OBJTYPE_STRING3D
12	○	8231	Element	西	ビュー	unknown	No	Invisible	HIDDEN	0	
13	○	9481	Element	ExtentElem		unknown	No	Visible	EXCLUDE	0	
14	○	168065	Element	{3D}	カメラ	unknown	Yes	Invisible	HIDDEN	0	
15	○	277170	DirectShape	ArchiColumnS	柱	unknown	Yes	Visible	RESTORE	64	OBJTYPE_EXTOBJECT3D
16	○	277191	DirectShape	ArchiColumnS	柱	unknown	Yes	Visible	RESTORE	65	OBJTYPE_EXTOBJECT3D
17	○	277196	DirectShape	ArchiColumnS	柱	unknown	Yes	Visible	RESTORE	66	OBJTYPE_EXTOBJECT3D
18	○	277201	DirectShape	ArchiColumnS	柱	unknown	Yes	Visible	RESTORE	67	OBJTYPE_EXTOBJECT3D
19	○	277206	DirectShape	ArchiColumnS	柱	unknown	Yes	Visible	RESTORE	68	OBJTYPE_EXTOBJECT3D

*The screen is an example in Japanese

6． How to check the check result when Revit load

＜Information Item＞

Column	Name	Description
A	Result	The results are shown as “OK” for those that were normally read by Revit, “POOR” for those that were judged to be out of scope, and “NG” if they were not processed.
B	Object ID	CADEWA object ID.
C	Object type	CADEWA object type. (“OBJTYPE_XXX”)
D	Object name	CADEWA object name. (Some are blank)
E	Element ID	The element ID of the Revit element.
F	Element type	The element type of the Revit element. When the element type is DirectShape ・ DirectShape (solid) if a solid shape is included, DirectShape (Polymesh) if a polymesh is included, and DirectShape (Curve) if a curve is included. ・ When solid shape and polymesh are mixed, it is written as Direct Shape (Solid / Polymesh).
G	Element name	The element name of the Revit element.
H	Element category	The element category of the Revit element.

Check the result in column A to see if it was read correctly.
For the conversion specifications for each data of CADEWA's RVT file saving, refer to "7.2. Conversion specifications (RVT file saving)".

For Poor and NG, you can check the corresponding data before saving by the operation of "When checking the output source data with CADEWA" on the next page.
If necessary, correct the original data on the CADEWA side.

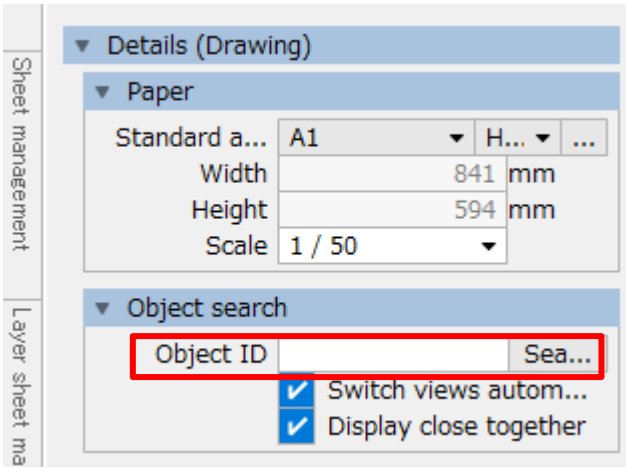
6 . How to check the check result when Revit load

(3) When checking the output source data with CADEWA

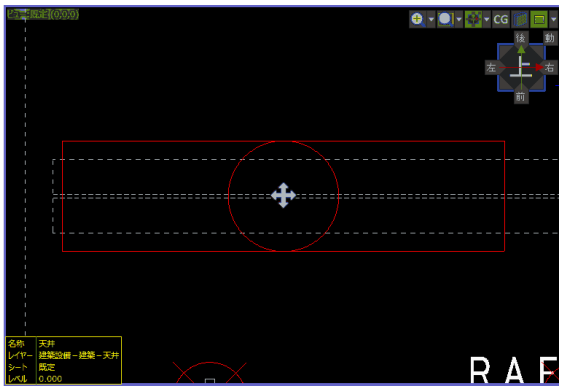
The following is an example of searching data by object ID.

① Call the ZDW drawing before saving with CADEWA.
Example: 1st floor　equipment diagram.ZDW

② In the "Object ID" field of "Object Search" in the “drawing and view management panel”
Enter the object ID you want to check and click the "Search" button.



③ The corresponding object is enlarged in the selected state on the drawing window.



7 .1. Conversion specifications (Load RVT file)

The specifications when reading the RVT file of CADEWA are explained below.

Revit Category	Item	Support	Remarks
Room	Room	Support	*1
Stairs / slope	Stairs / slope	Support	*1
handrail	handrail	Support	*1
Structural beam system	Structural beam system	Support	*1
Component family	Component family	Support	*1
System family	System family	Support	*1
Tag	Room	Support	
	Window	Support	
	Door	Support	
Stairs path	Stairs path	Support	
Text	Annotation characters	Support	The characters of the view to which it belongs are displayed.
	Three-dimensional characters	Support	Convert to solid or polymesh.
Line	Line	Support	
	Circle	Support	
	Arc	Support	
	Ellipse	Support	
	Ellipse arc	Support	
	Polyline	Support	
	Spline	Support	
Dimension	Parallel dimensions	Support	The characters of the view to which it belongs are displayed.
	Angle dimension	Support	The characters of the view to which it belongs are displayed.
	Arc length dimension	Support	The characters of the view to which it belongs are displayed.
	Circular dimensions (diameter, radius)	Support	The characters of the view to which it belongs are displayed.
	Specified point height	Support	The characters of the view to which it belongs are displayed.
Axis		Support	
Level Line		Partially supported	It is displayed in elevation. Not visible in 3D view.
border line		Not support	Does not read. (NOT LOADED in the check result file)
Section symbol		Not support	Does not read. (TRY TO LOAD in the check result file)
Reinforcing bar		Not support	Does not read. (TRY TO LOAD in the check result file)

7 .1. Conversion specifications (Load RVT file)

Revit Category	Item	Support	Remarks
Image		Support	
Fill		Partially supported	Images and complex ones cannot be read. Hatching is also not supported.
Color pattern		Support	
RVT Link		Support	Can be read. (Can be selected in the settings) It is imported so that it can be displayed in layers, but it is not converted to the reference drawing of CADWA, and the link information cannot be changed.
Reference file		Not support	Does not read. (It will be EXCLUDED in the check tool)
Element on plane		Partially supported	Some elements such as members may not be displayed correctly in the plan view. * 1 * 2
CADEWA Member		Support	The CADEWA member in the RVT file output after drawing with CADEWA will be converted to the original member when reopening with CADEWA. However, if edited with REVIT, it may not be possible to restore.

* 1 If it cannot be processed due to solid or complicated data, it will be converted to Polymesh.
* 2 The building / equipment family reproduces the shape but does not convert it to CADEWA parts.

7 .2. Conversion specifications (Save RVT file)

The conversion specifications for saving CADEWA RVT files are explained below.

CADEWA type of data	Item	Support	Description
Correspondence	View		not output.
	3 DCG View		not output.
	Floor		not output.
	Sheet		not output.
	Layer		not output.
	Paper size		not output.
	Paper scale	Support	Reflect on Revit's custom scale.
	Paper layout		not output.
	Viewport		not output.
	Section View		not output.
	Extended section definition		not output.
	Reference File	Support	Converts a CADEWA reference drawing to a Revit link. * The Revit link when the RVT file is opened is not saved.
shape (Figure object, etc.)	Point		not output. (It will be △ in the check result file)
	Point Marker		not output. (It will be △ in the check result file)
	Line	Support	
	Circle	Support	
	Arc	Support	
	Ellipse	Support	
	Ellipse Arc	Support	
	Spline	Support	Some may have an approximate shape.
	Polyline	Support	Some may have an approximate shape.
	Polymesh	Support	
	Text	Support	It is saved as a sticker on the face of the Revit view to which it belongs. For example, CADEWA's default template belongs to the {3D} view and is saved, so it looks tilted when viewed in plan view.
	3D Shape	Support	Converted to solid or polymesh.
	CADEWA Member	Support	Converts to solid or polymesh or projected shapes.
	Block	Support	Break the block into elements and save.
	Hatch		not output. (It will be △ in the check result file)
	Print area		not output.
	Raster		not output. (It will be △ in the check result file)