bimstep

Plugins operation instruction

BS · AR



Finishing

Premises Finishing plugin is not just a plugin as it is a whole bim process, built on algorithmically structured actions, as a result of which you will eventually be able to get a list of room finishes. The algorithm of work is as follows:

1. In our project we create types of walls and slabs, which we will use the plugin to create the finishing directly.

2. Customize all the parameters, and there are a lot of them, so here you should be patient, but the result is worth it!

3. We create the finish, modeling it with walls and slabs (floors and ceilings).

4. Write the room number into the finishing elements with the help of the plugin.

5. Write the sheet of rooms into the finishing elements using the plugin.

6. Write the names of skirting boards to the rooms and run the plugin to calculate the length of the skirting boards.

7. Using the corresponding plugin, we create a schedule of the sheet of room finishes, which is created automatically!

Let's go!

1. In our project we create types of walls and slabs, which we will use the plugin to create the finishing directly.

This is probably the easiest and most straightforward step, as we just need to use standard Revit tools to create wall and floor types that will be used to finish the rooms in the future. That is, we create a type, fill it with certain layers with materials, assign the function of finishing for all layers and set each layer its thickness and material. Please note that the plugin for creating room finishes works for building ceilings with the system family "Overlap", unfortunately, we can't use ceilings here.



You will have many more types, I make a few types for example.

Warning for all types of walls and slabs in the parameter "ADSK_Name short" or in any other that you specify in the next step (see item 2 parameter number - 2) it is necessary to type in its certain values

Example:

- · for reinforced concrete wall enter Reinforced concrete
- for Brick wall brickwork
- for gypsum plasterboard, etc.
- for finishing walls enter "Wall Finishing".
- for finishing walls, with which you want to simulate column finishing, in order to display it in separate columns in the sheet of room finishes type in "Column finishing".

for finishing walls that you want to simulate ceiling finishes with, you can display them in separate columns in the room finishes sheet - type in "Ceiling finishing".

2. Customize parameters in plugins.

It's worth being patient. So, let's go through everything in order:

Go to the plugin settings:



Warning! For sure you will not have all the parameters from the list of those that need to be selected in your project, so for a complete and correct cycle of actions on finishing of premises - add these General parameters to your project, having created them in advance in your file of general parameters or if you have a BIM specialist - ask him for help in customization. If you have a question: what are common parameters and how to create and add them to the project? - we advise you to take a basic course on revit.

Finding Dimensions Skriting Apartment Lintel Insolution S Image: Selecting Parameter for Handy apartments 1 1 Selecting Parameter for Handy apartments 1 1 Selecting Parameter for Handy apartments 1 1 Selecting Parameter for Handy apartments 1 1 1 Selecting Parameter for Handy apartments 1	het of cross finiting Select parameters to record nom number Select parameters to record nom number at walls (BS_Wall premise number Select parameter to record the room number of floos Select parameters to record a head of cross Select parameters to record a head of cross by valls (BS_Shead of noms for loss (BS_Shead of noms for loss (BS_Shead of noms for loss (BS_Shead of noms for cost) Select parameters to record shead of cross by callings (BS_Shead of noms for cost) (BS_Shead of	Legend X • Type parameter ↓ Item parameter • Category "Walls" • Category "Floors" • Category "Premises" • Text parameter • Length parameter • Fill in manually
Choose language		Cancel Done

1. If you are too lazy to do the configuration and there are no requirements on parameters, you can click on the checkbox and the plugin will configure everything by itself. Then you can go to chapter 3. 2. text parameter type for wall and floor categories 3-7 Select the parameter values from step 2.

- 8. Select from which room parameter we are going to take the value of the number
- 9. Text parameter of the instance for walls to record the room number
- 10. Text parameter of the example instance for floors to record the room number in floors
- 11. text parameter of the instance for floors to record the room number in ceilings
- 12. text parameter of the instance for walls to record the sheet of rooms
- 13. Instance text parameter for slabs to write room sheet to floors
- 14. Text parameter of the instance for floors to record the sheet of rooms in ceilings

Customizing AR plug-ins			
Finishing Dimensions Skirtings Apartment Lintels Insolation Sheet of rooms finishing			
Select the skirting board name parameter BS_Name of the baseboard			
Select the skirting board length parameter			
BS_Length of baseboard 16 🗸			
Select the parameter of the room sheet for skirting boards			
BS_Sheet of rooms for baseboards 17			
✓ Include skirting boards in the bill of materials			

15. Instance text parameter for premises to record the name of the baseboard

16. Dimensional parameter of the instance for rooms to record the length of the baseboard. It is counted by the plugin itself

17. Text parameter of the rooms instance for recording the sheet of rooms, it will be filled by the plugin.

Customizing AR plug-ins		
Finishing Dimensions Skirtings Apartment Lintels Insolation	Sheet of rooms finishing	
Select parameter to collect a sheet of rooms BS_Sheet of rooms	Separate finishing of walls into clear and rough 2	Include column finishes
Select parameter to collect wall finish area	Separate ceiling finishing into clear and rough	Select parameter to collect column finish area
BS_Walls area (19) 🗸 💽	Separate floor finishing into clear and rough (29)	BS_Area of finishing of the column (48) V
Select parameter to collect a wall finish description	Select the parameter where the description of the finishing is recorded.	Select parameter to collect a description of column finishes
BS_Description of walls (20) V	BS_Description of fine finishing (30) X (a)	BS_Description of column finishing (49) 🗸 🛑 🎁
Select parameter to collect ceiling finish area	Select the parameter where a description of the rough finish is recorded	Take into account the finish of the ceiling enace
BS_Area of ceilings 21	BS_Description of rough finishing 👔 🦞 🦲 🦲 🎼	
Select parameter to collect a ceiling finish description	Walls Ceilings Floors	Select parameter to collect the ceiling finish area
BS_Description of ceiling 22	Select parameter to collect the finishing area	BS Area of finishing of the basement area at a finishing of the ba
Select the parameter where the description of wall and ceiling and floor finishes is recorded	BS_Area of fine finish	Select parameter to collect a description of the
BS Description of finishing Street Action	Select parameter, to collect a finish description	ceiling space finishes
Include flooring in the bill of quantities	BS_Description of fires BS_Description of fires	BS_Description of ceiling finishing 52
Select parameter n to collect floor finish area (24)	Select parameter, to collect the rough finish area	
BS Room area		Finishing description column width 100 (53)
Select an option to collect uppr finish descentions	BS_Area of rough fin(34) BS_Area of rough finis(39) BS_Area of rough fin(44)	Width of finish area column 30 54
PS Description of floor	Select paremeter to collect a rough finish description	
	BS_Description of routing Display mine Room Finishing Sheet in a separate column	,
	🗸 Finishing 🚽 🖓 Finishing 🚽 🖓 Finishing	I
	Roughing 36 Roughing 41 Roughing 46	
		1
Choose language		
English		Carral
		Cancel Done

18. Instance text parameter for premises instance to record a list of premises. Fills the plugin

19. text parameter of the instance for rooms to record the area of walls. Fills the plugin

20. Instance text parameter for rooms to record the description of wall finishes. Fills the plugin

21. Instance text parameter for rooms to record ceiling area. Fills the plugin

22. Instance text parameter for rooms to record ceiling finishing description. Fills the plugin

23. Type text parameter for walls and slabs to record finishing description. Filled manually

24. Check the checkbox if we want the list of room finishes to include floors as well

25. Text parameter of the instance for rooms to record the floor area. Fills in the plugin

26. Text parameter of the instance for rooms to record the description of floor finishes. Fills in the plugin

27. If you want the plugin to split the wall finishes into rough and finish, check the checkbox

28. If you want the plugin to split ceiling finishes into rough and clean finishes, check the box 28.

29. If you want the plugin to split the floor finish into rough and finish, check the box 30.

30. Text type parameter for walls and slabs to record the description of finishing. Filled in manually

31. Text parameter of type for walls and floors to record the description of rough finish. To be filled in manually

32. Instance text parameter for rooms to record the area of finishing walls. Filled by plugin

33. Text parameter of the instance for rooms to record the description of wall finishing. Fills in the plugin

34. Text parameter of the instance for premises to record the area of rough wall finishes. Fills n the plugin

35. Instance text parameter for premises to record the description of rough wall finishes. Fills in the plugin

36. Check the checkboxes if we want to output finish/black wall finishes in the statement

37. Text instance parameter for rooms to record the area of ceiling finish. Fills in the plugin

38. Instance text parameter for rooms to record the description of ceiling finishing. Fills in the plugin

39. Instance text parameter for premises to record the area of rough finish ceilings. Fills in the plugin

40. Instance text parameter for premises to record the description of rough finish ceilings. Fills in the plugin

41. Check the checkboxes if we want to output ceiling finish/black ceiling finish in the statement

42. Text instance parameter for rooms to record the area of floor finishing. Fills in the plugin

43. Instance text parameter for rooms to record a description of the floor finishing. Fills in the plugin 44. Text parameter of the instance for premises to record the area of rough floor finishing. Fills in the plugin

45. Instance text parameter for premises to record the description of rough floor finishing. Fills in the plugin

46. Check the checkboxes if we want to output finish/black finishing of floors in the sheet

47. Check the box if we want the list of room finishes to also include column finishes, which have been previously modeled as a separate type of wall, see p.6.

48. Text parameter of the instance for rooms to record the area of columns finishing. Fills the plugin 49. Text parameter of the instance for rooms for recording the description of the column finishes. Fills in the plugin

50. Check the checkbox if we want the list of room finishes to include also the finishing of the ceiling space, which was previously modeled as a separate type of walls, see item 7.

51. Text parameter of the instance for rooms to record the area of the ceiling area. Fills in the plugin

52. Text parameter of the instance for rooms to record the description of the ceiling space finishes. Fills in the plugin

53. Specify in "mm" the width of the column that will contain the description of the finishing 54. Specify in "mm" the width of the column that will contain the area of the finishing

3. Now you can "stretch" the finishing using the "Room Finishing" plugin



Tip: the plugin can work with rooms that were selected before the plugin was started, as well as with rooms that you can select in the window later.

The plugin can process rooms in the actual model or from a linked model.

Algorithm for selecting rooms

Run the plugin and first give an answer to the 2 pop-up windows.



- 1. Select the format of work on selection of rooms.
 - All rooms in the view (for working with rooms from the current model)
 - All rooms in the model
 - All rooms from the level, further it is necessary to select the level.

2. Specify from which model it is necessary to take rooms as input data. There are two options

- Current model
- Linked model. In this case, further you need to specify a certain linked model.

3. Select a certain stage. Since there can be several stages n the model and each stage will have its own set of rooms.

4. After all the actions above - you will see in the window minimized list of rooms by name, which are suitable for the specified conditions. In this window you will need to specify which rooms from this list you want to run the plugin to form the finishing.

5.Click done.

Choice of rooms to be treated	2
Choose a work format Choose a work format All rooms on view All rooms in the model All rooms on level	The placements in the current model Replacements in the linked model Choose a link Snowdon Towers Sample Electrical Choose phace New Construction 3
Choose the names of rooms for fin Corridor Eventor Chevelor Ch	Form1
Choose all	5 Done

So now the next window is opened. In this window we define what type of finishing we will use for the rooms we selected in the previous form.

Here is the step-by-step procedure for filling in the form

1. Specify the option of work: what kind of finish we will build. There is an option to choose: 1 wall or two walls in height. This is necessary in cases where you have, for example, up to 2m is tile, and above whitewash, etc.

2. Specify what kind of finishing should be set for a particular type of wall being finished, i.e. specify what type we will finish reinforced concrete, and what type we will finish brickwork, etc., etc. So, in my case I have 3 types of finishing walls

- 1. Reinforced concrete
- 2. GPB
- 3. Brick masonry

3. Specify the height for the walls. Or check the boxes that we will build walls from the floor to the ceiling or at the height of the premises.

4. In the drop-down list choose exactly what type of flooring we will pull the floors in the rooms 5. Specify the offset of the floor from the level, for example, if we have a clean mark of the floor physically above or below the level at which the room is located

6. In the drop-down list we choose what type of flooring we will stretch the ceilings in the premises.

7. Specify the offset of the ceiling from the level.

8. Specify: the mark that we put in the previous item, will be the bottom or top of the ceiling. A very useful function for suspended ceilings



4. Write the room number into the finishing elements using the plugin.

So we've modeled the finishing itself. Now it's time to fill in the parameters. The first thing we will do is to write the room numbers to the finishing elements. It is labor intensive to do this manually, so we will use the plugin

File Arch	itecture Str	ucture	Steel	Syste	ems In	sert Annotate A	nalyze Massing	& Site Collabo	rate View	Mana	ige A	Add-Ins	BS•AR B	S • General	Modif
*	4	ah J		⊠‡		#			1	÷	Ø		-	Į,	8
Insolatio calculatio	n Apar on calcu	tment l Ilation r	Delete : rooms	Stretch rooms	Room Finishing	Recording the room number	Collecting the sho rooms	eet of Sheet of the finishi	Skirting ng	Room layouts	Lintels	Lintel schedules	Anti connection	Cutti walls and (ng columns
Insolation calc	ulation W	orking	with roo	oms			Room Finishi	ng	-		E	intels			

Click on it and set the settings in the form that is opened

- 1. Choose the work format from which model the finishing element needs to determine the room number:
- By rooms in the current model
- By rooms in the linked model. In this case it is obligatory to specify from which link.
- Select the stage in which you need to look for rooms for finishing elements.
- 3. Select a count option:
- We count for the whole object. In this case all finishing elements in the model will be processed
- By floor. It will work faster, but only the elements of a certain selected level will be considered.
- 4. Indicate by check marks which finishes to go over and record the room number.
- Select the 3D view on which the plugin will search for rooms. Make sure that the selected 3D view is in the model and nothing is hidden on it.
- 6. Click "Done".

But note that the plugin can not always process all walls and floors because of the complex geometry, in this case the plugin will not be able to determine which room the finishing element belongs to.

So if everything is ok - then in the parameter of the finishing element you will see the number of the room by example.

In case the plugin is unable to set the room number - it is necessary to set it manually, otherwise in the end you will not be able to correctly collect the list of rooms finishing.



Writing the number of rooms	x
Work format The placements in the current model 	
Choose a link	
Choose phace 2	
Choose the counting option Calculate for the whole object Calculate by phace Block 37. Parapet Calculate walls Calculate collings Calculate coll	
Choose the 3D view to search for rooms 5 6	
Done	

5.Write the sheet of rooms to the finishing elements using the plugin.

So, we have recorded the room numbers, the next step is to record a comma separated list of room numbers. To do this, we need to run the following plugin "Collect room list".



You can skip this step if you want to collect a list of room finishes, not a list of rooms for specific types of finishing elements.

Insolution Apartment Delete Stretch Room Recording the room Collecting the sheet of Sheet Skifting Room Lintels Lintel Anti	
Insolation Apartment Delete Stretch Room Recording the room Collecting the sheet of Sheet Skirting Room Lintels Lintel Anti	U V
	Cutting
calculation calculation rooms rooms Finishing number rooms f the finishing layouts schedules connection walls	and columns
Insolation calculation Working with rooms Room Finishing Lintels	

Click on it and set the settings in the opened form.

1. Specify the assembly format: whether we will record by level or for the whole object. If by level, the parameter for recording the list of rooms will contain all rooms with a certain type of finish within one level, and if for the whole object, then within the whole object, i.e. for all rooms in the model.

2. Specify the stage or select "All stages"

3. If you have several sections in the model and you want the list of rooms to be recorded by section, select this option.

 Specify which parameter the plugin should use to get the section number. Please note that you will need to fill this parameter for the plugin to get it right.

5. Specify the separator character. By default it is a comma.

6. Click done and in case of successful completion of the plugin we can see the filled value in the next parameter.

×
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Edit Type
×
×
×
×
×
×
×
\$



6. Write the names of baseboards in the rooms and run the plugin to calculate the length of the baseboard

So, with the finishing of walls, floors and ceilings we have sorted out, now it remains to count the baseboards. To do this, you need to do the following:

1. In each of the rooms in the parameter responsible for the name of the baseboard, put its name accordingly

B5_Description of fine fi	-
BS_Description of fine fi	-
BS_Description of floors	0
BS_Description of roug	-
BS_Description of roug	-
BS_Description of roug	-
BS_Description of walls	0
BS_Floors area	
RS Length of baseboard	0.0
BS_Name of the basebo	PVH
BS_Sheet of rooms	
BS_Sheet of rooms for b	0
BS_Walls area	
Other	*
Ceiling Height	

2. Running the plugin to calculate the length of the baseboard



Click on it and set the settings in the opened form.

- Specify the format of plugin operation: by level or by the whole object.
- 2. If by level, select a specific level.
- 3. Click the checkbox if you want to subtract the width of doors.
- 4. Click the checkbox if you want to make a list of rooms for each level. In this case, the numbers of rooms with this type of baseboard will be written in the parameter specified in the settings, separated by commas.
- 5. Click the checkbox if you want to specify the value "0" in rooms where there is no baseboard.

As a result of the plugin processing we get the following situation in filling of room parameters.

BS_Description of roug	-
BS_Description of roug	- []
BS_Description of walls	
BS_Floors area	
BS_Length of baseboard	34945.7
BS_Name of the basebo	PVH
BS_Sheet of rooms	
BS_Sheet of rooms for b	204,301,302
BS_Walls area	
Other	\$
Ceiling Height	

Baseboards	×
By all levels By chosen level	0
Level for calculation	
L1 - Block 43 (2)	~
Subtract width of doors 3	
Rooms sheet by level	4)
Put 0 for rooms without baseboard	5
Done	Cancel

7. Making a sheet of rooms finishing.

Here we come to the very last step to get the room finish list Run the plugin



In the opened window select settings.

- Select the format of counting: per whole object or per floor.
- In case of choosing the format of work by level it is necessary to select it.
- If you have a building with several sections and you need to collect a list of room finishes for each section, click on the checkbox, thus specifying this setting.
- 4. If you will eventually collect section by section, then for the plugin to work, select the parameter that will be responsible for the definition of this or that section in the rooms and finishes. Please note that you need to fill in this parameter before starting the plugin, so that the plugin will work correctly.

Sheet of rooms finishing	
sheet of rooms finishing	
Choose the build option Compile to entire object Compile per floor Choose a level	Choose phace Existing v 6 Separator for room sheet
Block 37 - Parapet 2 ~ Compile per section 3	Type in schedule name Sheet of rooms finishing
It is excessing the scores and finishes to have this parameter filed into the section parameter Choose the section parameter of the section parameter of the section parameter value to the section parameter value of th	Type in the number of type 1 9 floors, if any. Otherwise. 1 9 Sheet format © Roraw with the same type of finishing. © Abset with a separate line for each norm
Count finishes from links (12) The order in which finishes	Choose header test typ 1/4" Trebuchet MS
Walk Cellings Roors Skitting Columns Celling space	11
0 0	14 Done

5. As a continuation of point 4. within the running plugin - specify for which section you want to collect the sheet of rooms finishing.

6. Be sure to select the stage, because in Revit in one and the same place, in fact, can be 2 rooms in different stages.

7. Specify the separator for the list of rooms, by default it is a comma.

8. Enter the name of the specification as we want it to be called in the project manager.

9. If you want to collect finishing on all typical floors, but the collection will be conducted only on one floor, you can specify how many you have such typical floors, and the plugin already obtained values multiplied by the number you entered.

10. There are different types of rooms finishing sheets, but we distinguish 2 types in the plugin.1 - when you have in one line in comma numbers of rooms in which all types of finishes are the same, or

2 - when you want to get a list of room finishes for each room on each line.

Since the list of room finishes is a specification, the text in this specification is responsible for a certain type of text that you have in the project. Choose it both for the header and for the columns.
 If it is necessary to take into account the finishing elements from the connection, check the corresponding box.

13. Set the order of finishing when forming the statement.

14. Click Done

Obtaining a bill of materials

	Sheet of rooms finishing										
Name or room number	Walls	Area, m²	Ceiling	Area, m²	Skirting	Length, s.r.	Note				
Α	В	С	D	E	F	G	Н				
301	Finishing reinforced concrete	61,99	Ceiling finish type1	227,37	PVH	79.86					
302	Finishing reinforced concrete	26,52	Ceiling finish type2	61,47	PVH	62.65					
507B	Finishing gypsum	20,53	-	-		8.12					

						Sh	eet of rooms	finishir	ng						
Name or room number	Finishing of walls	Area, m²	Black finishing of walls	Area, m²	Finishing of ceilings	Area, m²	Ceiling roughing	Area, m²	Finishing of floors	Area, m²	Floor roughing	Area, m²	Skirting	Length , s.r.	Note
30 1	Finishing reinforced concrete fine Finishing gypsum fine	61,99 153,2 2	Finishing reinforced concrete rough Finishing gypsum rough	61,99 153,2 2	Ceiling finish type1 fine	227,3 7	Ceiling finish type1 rough	227,3 7	Floor finish type1 fine	227,3 7	Floor finish type1 rough	227,3 7	РVН	79.86	
302	Finishing reinforced concrete fine Finishing gypsum fine	26,52 142,8 3	Finishing reinforced concrete rough Finishing gypsum rough	26,52 142,8 3	Ceiling finish type2 fine	61,47	Ceiling finish type2 rough	61,47	Floor finish type2 fine	61,47	Floor finish type2 rough	61,47	РVН	62.65	

Insolation

Plugin "Insolation Calculation" - allows you to make an approximate calculation of insolation on the points that you designate with a special family of "Insolation Ball" and so you can use the sun, which is embedded in the standard functionality of Revit, to make a calculation of insolation on your object.

1. Loading of the insolation ball family into the model

The first thing we will do is load the insolation ball family. To do this, open the plugin settings.

age Add-Ins BS • AR BS • General Modify 🛋 •	
Lintels Lintel Anti Cutting Mirror Cutting out of Split Replacing Paramus schedules connection walls and columns theopenings walls wall-column wall to op	eter Height Room Line Structure Settings BimStep bening markings dimensions dimensions layers
Lintels Modeling	Finishing Settings License
Customizing AR plug-ins	- 덴 Families 는 수 Annotation Symbols 는 수 Cable Trays
Finishing Dimensions Skirtings Apartment Lintels Insolation Sheet of rooms finishing Load insolation balloon family	

As a result, the insolation ball family in the Generalized Model category will be loaded into your project.

2. Creating an environment.

The next step is to create the environment. Since the calculation of insolation is a calculation of the amount of time during which the sun's rays hit a particular point. Accordingly, the barrier to the sun's rays and is the environment, ie the neighboring building blocks the direct hit of these rays. So, the environment we will do with the standard Revit functionality, namely with the help of forms. If you have never worked with this tool, please check out the video on YouTube or Revit Help. There is nothing complicated, the main thing is to "squeeze" cubes of the current building and neighboring buildings.



Suppose we have the following environment.

BS • AR



We're going to calculate the insolation for these buildings.

3. Placement of insolation ball families

We have the environment ready. The next task is to place families of our insolation balls in the project at the points by which we are going to count insolation. In our example, let it be "some" window of "some" apartment #58.

Let's go to the corresponding plan (for example, on the 2nd floor) and put the family of our insolation ball at the location of the window of this apartment. Let's put 2 families for example.



4. Setting coordinates.

Since we will be calculating using the standard Revit functionality, namely the sun, and the sun has a different path in different points of our planet, we first need to set up the correct position of our project in the world.

It is absolutely necessary to correctly locate your site in the world. We do this using the standard Revit functionality, specifically here:

F	ile	Architectur	e Struc	ture	Steel S	ystems	Insert	Annotate	Analyze	Massing & Site	Collabo	orate	View	Manage	Add-Ins	BS • AR	BS • General	Mo
	\sum		æ.			17	(<u>)</u>	Project Paran	neters 🐴	Transfer Project St	andards	😰 Sti	ructura	al Settings 🔻		ß	😪 Location	
	NJ Iodifu	Materiale	Object Sp		Project	Paramete	្ល 👘 🤅	Shared Paran	neters 🕎	Purge Unused		📑 M	EP Set	tings 🔹		6/	🛂 Coordinate	es 🔹
1.1	louny	IVIALCITATS	Styles	Inf	formation	Service	່ 📬 (Global Param	eters 📴	Project Units		📑 Pa	inel Sc	hedule Tem	plates 🔻	Settings	😪 Position 🔹	
Se	lect 🔻								Setti	ngs							Project Locati	ion

7 X

Save Settings

BS • AP

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In the opened window select the city of your site location accordingly.

Now you need to specify the rotation angle of your site. We do this by specifying the angle of rotation in the base point of the project.

In our case we will put 45 degrees.

If you don't know where to find the project base point, go to the 3D view and find it in the override of graphics visibility in the General Plan category.





5. Sun Setting.

There is only 1 step left before we start working with the plugin. All that is left is to set up our sun on the plan on which we are going to work. So, go to the plan on which we placed our insolation balls, and then click on the button for setting the sun.



Settings

Location

Date

Time

Frames :

6

Time Interval:

OK

Ground Plane at Level :

2 26.08.2023

5:08

5 Level 1

Sunrise to sunset

15 minutes 4

Cancel

In the opened window, you need to make all the settings as follows:

Sun Settings

Solar Study

Single Day
 (1)

Single Day Solar Study

O Multi-Day

Presets

Ostil

- 1. Set 1 day
- 2. Set the settlement date.

3. Check the sunrise to sunset box.

4. Set the calculation of 15 minutes.

5. Set the level of the 1st floor for example.

6. Press ok.

Now let's turn on the sun on our open plan.



As a result, this is roughly what your plan should look like.

6. Setting the parameters

Before running the plugin, do one more operation. Specifically: for example, let's set the brand parameter of our insolation balls to indicate whether they belong to a particular apartment or room. I.e. just fill in the "Brand" parameter.

This filling will be useful for us in order to be able to determine its belonging to this or that room by the created hatching. And also, if you need, you can use it to calculate the total amount of insolation for a particular apartment or room with the help of the specification.

We also need to add a couple of project parameters for the category "Node elements".

One parameter should be textual and called, for example, "Room number" and the second one should be numerical and called, for example, "Time". You can add these parameters manually using the standard Add Project Parameters functionality in Revit.

Instructions for adding a text parameter are below, for the numeric parameter we do the same, but specify the data type "Number" and the corresponding parameter name



File Architecture Structure Steel Systems	Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins BS • A	R BS • General Mo
Modify Materials Object Snaps Project Parameter Styles	Image Project Parameters Transfer Project Standards Image Structural Settings • Image Structural Settings • ess Image Structural Settings • Image Structural Settings • Image Structural Settings • ess Image Structural Settings • Image Structural Settings • Image Structural Settings • ess Image Structural Settings • Image Structural Settings • Image Structural Settings • ess Image Structural Settings • Image Structural Settings • Image Structural Settings •	Location Coordinates * R Position *
Select 🔻	Settings	Project Location
	Parameter Properties	×
Project Parameters X Parameter Name Search: Parameters available to elements in the project 2 items Tome Time Coor number Time Coor number Coor context Coor analysis Coor Cancel	Prantic Type Practic Type Con operand in Unicidal de bin not in tops) Breed genander Cache bashed by multiple provide and families, esponted to COEC, and coper in stratistical and tops) Breed to the strategies and families, esponted to COEC, and coper in strategies and tops) Breed to the strategies and families, esponted to COEC, and coper in strategies and tops) Breed to the strategies and tops (Section tops) Breed to the strategies and tops) Breed to the strategies and tops (Section tops) Breed tops (Section top) Breed tops (edi:

7. Plugin operation

Launch the plugin on the BS_AR line

File Architecture	Structure	Steel	Syste	ms Ins	ert Annotate A	nalyze Mas	ing & Site	e Collaborate	e View	Mana	age A	Add-Ins	BS • AR B	S • General	Modif
Ø.*			⊠‡		#	Ē				<►			7	ĵ,	8
Insolation calculation	Apartment calculation	Delete S rooms r	tretch	Room Finishing	Recording the room number	Collecting the room	sheet of	Sheet of the finishing	Skirting	Room layouts	Lintels	Lintel	Anti s connection	Cutt n walls and	ing columns
Insolation calculation	Working	with roo	ms			Room Fin	ishing				L	intels			

In the opened plugin, make the following setting:

1. Select the format of work: By all balls or only by selected ones. If only by selected ones, they should have been selected before launching the plugin.

2. Select our insolation balloon family. If you suddenly use some family of your own, you need to select it.

3. Select the type of hatching. It will be needed to create the insolation petals on the plan.

4. Specify the petal diameter for the hatching that will be built on the plan.

collecting the sheet of Sheet Skirting Room rooms of the finishing layouts	Lintels Lintel Anti Cutting schedules connection walls and columns
Room Finishing	Lintels
Insolation calculation	×
Calculation method	Apartment and room numbers 9
Dy all halls is the arciant	Keep a record by apartments and rooms
Choose a family of insolation beads	Choose the parameter of the ball where the apartment and room numbers are written
Insolation Ball	Mark 10 ~
For graphic representation Hatch Filed region 1 3 V Diameters of hatchings 10 4 , m	Choose the hatch parameter where the apartment and room numbers should be written Room number 11 Choose a numeric hatch parameter to record the
Set the factor in minutes	Time (12)
Draw 3D lines 6	
Length of 3D beams 10 . m 💙	
Record total insolation in the ball	
Choose the parameter for recording the total insolation	
Insolation 8 ~	Done

5. Set the multiplicity in minutes, you can choose 15,5,3 or 1 minute. The less we set, the more accurate the calculation will be, but longer the plugin will work.

6. If you want to see on the 3D view of the extreme rays of the petals, which fall from the sun to your family insolation balloon, check this box.

7. If you specified a check mark in step 6, you can specify the length of these edge rays.

8. Specify the parameter where the total insolation by point will be written. I.e. this is the parameter of the insolation ball family.

9. If you want the insolation information to be recorded also in the hatch petals, check this box.

10. Specify the parameter of the insolation balloon where the room number is recorded. In our case, this is the "Brand" parameter.

11. Specify the parameter of the hatch where you want to record the room number from the insolation ball.

12. Specify the hatching parameter where to record the insolation time for one petal.

13. Click Done!

As a result, we get hatching petals in our plan.

BS • AR



Apartmentography

Plugin " Apartmentography " - will allow you to calculate the apartmentography for residential objects where you need to take into account how many square meters in your apartment are living quarters, the total area, as well as the area including balconies and loggias depending on the specified coefficients, as well as the number of living quarters.

1. Setting up the plugin

Since the plugin implies in its work and filling in certain parameters, you need to set them up. Go to the plugin settings



2. text parameter of the compartment by instance to fill in manually the apartment number of the compartment set.

3. Area parameter of a room by instance. In it the plugin will record the rounded area. For example, if the area of the room is 12.578sq.m. then the plugin will write 12.58sq.m or 12.6 to this parameter depending on the rounding according to the plugin settings.

4. The area parameter of the room by instance in which the plugin will record the area rounded and multiplied by the appropriate coefficient, for example, the balcony by 0.3.

5. Room parameter by instance with data type "Integer". This parameter must be filled manually by room by specifying the room type.

What are the types:

1- Residential premises. 2- Non-residential premise. 3- Loggia. 4- Balcony. 5- Terrace.

6. Room area parameter by instance, where the plugin will record the total rounded area for residential rooms only (i.e. only those rooms that have room type 1).

7. Room area parameter by instance, where the plugin will record the total rounded area of residential and non-residential rooms (i.e. only those rooms with room type 1 or 2).

8. Premises area parameter by instance, where the plugin will record the total rounded and multiplied by a coefficient area of all premises of all types.

 Premises parameter by instance with data type "Integer", where the plugin will record the number of dwellings it found within one apartment (i.e. only those rooms with room type 1).
 If you use the recommended BimStep parameters, you can use this button to upload 2 marks to your project: 1 - Mark for the apartment and 2 - Mark for the rounded area of the room.
 So, probably by the settings you already guess what the algorithm of the plugin will be.
 Below is a schematic of the plugin's operation in the form of a tabular diagram of a 2-room apartment.

And also it is displayed, what exactly parameters and how are displayed in the mark of the apartment.

Room name	Roo m type	Area from Revit	Rounded area	Coeffi cient	Area rounded with a coefficient	Area apartment dwelling	⑦ Apartmen t area	Total floor area of the apartme nt
Room1	1	15.688	15.69	1	15.69	15.69	15.69	15.69
Room2	1	20.578	20.58	1	20.58	20.58	20.58	20.58
Kitchen	2	12.588	12.59	1	12.59	0	12.59	12.59
Bathroom	2	6.897	6.90	1	6.90	0	6.90	6.90
Loggia	3	5.477	5.48	0.5	2.47	0	0	2.47
Balcony	4	3.544	3.57	0.3	1.07	0	0	1.07
					Total	36.27	55.76	59.30



2. Filling in the parameters of the premises.

So, we have the parameters set up. Now you can fill in the parameters.

To do this, you need to fill two parameters within all rooms of the apartment:

- Apartment number (by this parameter the plugin will group rooms within one apartment)
- Room type (by this parameter the plugin will determine what type of room it is and which coefficient to apply to this room when calculating).



3. Launching the plugin

So, we have set up all the parameters and filled out the necessary for the plugin to work. Let's launch the plugin!

Insolation calculation Apartment elete Stretch elevel again and Choose the section parameter premises, specify the coefficient. Room Finishing Intels used to reach of the types of premises, specify the coefficient. 4. Select the format of rounding the area: to hundredths or to tenths. Select for formation of the types of premises, specify the coefficient. Intels to tenths. Image of the time specify which one is the specify the coefficient. Image of the time specify the coefficient.
Insolation calculation Working with rooms Room Finishing Lintels Select the settings in the opened window: 1. Choose the format of work: by all levels or by one. Apartmentcalculation Image: Choose the format of work: by all levels or by one. 2. If in item 1 you have chosen by a certain level, here specify which one. By all levels in the model By chosen level Image: Choose a level Image: Choose a level Compile by section Image: Compile by se
Select the settings in the opened window: 1. Choose the format of work: by all levels or by one. 2. If in item 1 you have chosen by a certain level, here specify which one. 3. In this block, for each of the types of premises, specify the coefficient. 4. Select the format of rounding the area: to hundredths or to tenths. (Apartmentcalculation (B) By all levels in the model O By chosen level (Desige 2 (Coefficient for living space) (Coefficient for living space)
 1. Choose the format of work: by all levels or by one. 2. If in item 1 you have chosen by a certain level, here specify which one. 3. In this block, for each of the types of premises, specify the coefficient. 4. Select the format of rounding the area: to hundredths or to tenths.
5. If you have several sections in your model and apartment numbers are repeated within one level, you can additionally choose to filter by level and specify the parameter in which the

6. Click Done.

As a result, we get filled in parameters for each of the rooms of the apartment. And now we can apply the marks that we downloaded from the settings and place them on the rooms.



Remove the rooms

"Remove Premises" plugin allows you to remove unplaced, uncluttered and redundant premises in 2 clicks.

It often happens that the project accumulates a lot of such rooms and with the help of this plugin you will be able to clean up your project faster.

Launch the plugin

File Architecture	Structure	Steel	Systems	Insert	Annotate	Analyze	Massing & Si	te Collaborate	e View	Mana	ge A	dd-Ins	BS • AR	BS • General	Modif
*			3: 🝭	\supset				—	1	4 ↓	Ø		7	l	,
Insolation calculation	Apartmen calculation	Delete tr rooms o	etch Roo oms Finish	m Recor iing	ding the ro number	om Collect	ting the sheet of rooms	Sheet of the finishing	Skirting	Room layouts	Lintels	Lintel schedule	Anti connect	Cut tion walls and	ting I columns
Insolation calculation	Working	with room	IS			Ro	om Finishing				Li	intels			
In the	e opene	d winc	dow yo	u nee	d to se	lect th	e followii	ng	Dele	te pren	nises				×
parar 1. 5 2. 9	netersE Shall we Shall we	будем . e remo e remo	ли уда. ve uns ve redu	лять н urrou undan	неразм nded r nt room	иещен ooms ns	ны поме	ещения	Ch	oose th Delete	e delet unplac	ion optic	n		
3. 1	Press ok	(Delete	unenc	losed (2		
As a remo	result, a	ll roon m vou	ns that r proie	were	classif	ied as	such wei	re		Defete	rodum	2011 (3	, [(Done	4

Stretch out the rooms

Stretch out Rooms plugin allows you to stretch your rooms in height within building structures such as floors, ceilings so that automatically you have stretched rooms regardless of where the floor or ceiling is located.

Launch the plugin

File Architecture	Structure	Steel	Systems In	sert Annotate	Analyze	Massing & Si	te Collaborate	View	Manag	je Add	I-Ins E	BS • AR B	5 • General	Modif
* 09			I. 🔘	#				1	↓ ►			7	Į.	8
Insolation calculation	Apartment D calculation ro	elete Stre om roo	tch Room ms inishing	Recording the ro number	om Collect	ing the sheet of rooms	Sheet of the finishing	Skirting	Room layouts	intels l. scł	Lintel hedules	Anti connection	Cutti walls and o	ng columns
Insolation calculation	Working w	ith rooms	5		Ro	om Finishing				Linte	els			
In the	e opened	wind	ow you	need to se	lect th	e followir	ng	Stre	tch out	spaces				×
parar	neters:) By all I	evels in t	the mod	lel		
1. Sel	ect which	n roor	ms you v	vant to wo	ork with	n. There a	are 2) By cho	sen leve		1		
optio	ns - by th	ne wh	ole mod	el or by a	certain	level.			100se a l	evel		· ·		
2. lf ii	n item 1 y	you ha	ave chos	sen the for	mat of	f work on	i the		vel 1	6				
selec	ted level,	then	here yo	u should s	elect it			Con	eta uction	eearch e				

3. Choose 3D view, on which the plugin just and will determine what there are over the room and under the room building structures by firing a phantom beam up and down and it is on this 3d view and look for the nearest building structures from the room.

4. Choose which types of building structures to consider when the plugin is running.

5. If suddenly, you want the plugin to not process some rooms, write in this window with commas their names

6 Click done

As a result, the plugin pulls the rooms within the building structures. You can see it in the section

Linteis
Stretch out spaces x
By all levels in the model By chosen level
Choose a level
Level 1 2
Construction search settings
Choose 3D view to search for slabs
Choose a construction type
Slabs
Ceilings (4)
✓ Roofs
Foundation
The names of the rooms to be 6
5 Done



Before launching the plugin

After launching the plugin

Lintels

The "Lintels" plugin allows you to automatically place metal lintels on selected doors or windows, as well as to make an automatic specification of both the lintels themselves and their parts.

1. Setting up the plugin

Since the plugin implies in its work and filling in certain parameters, you need to set them up. Go to the plugin settings

age Add-Ins BS • AR BS • General Modify 💿 •	
Lintels Lintel Anti Cutting Mirror Cutting out of Split Replation walls and columns Modeling Modeling	ing Parameter Iumm wall to opening markings dimensions layers Finishing Settings License
Legend ✓ Instance parameter ● Generalized Models category ■ Text parameter ■ Parameter with data type "Number" ■ Parameter with data type "Length" Here we go to the "Lintels" tab and select a certain parameter in each block. 1. If you don't know or don't want to fill it in, you can just click on the "Fill in the recommended BimStep parameters" checkbox, and then the plugin will set everything up by itself. 2. Text parameter for the "Generalized Models" category by instance, which will be responsible for the position. 3. Text parameter for the category "Generalized models" by instance, which will	Customizing AR plug-ins Prinshing Dimensions Skirtings Apartment Untels Insolation Sheet of rooms fi Use the recommended BimStep parameters Select a position parameter ADSK_Dostion Select the name parameter ADSK_Signification Select a length parameter ADSK_Dimension_Length Select a short name option ADSK_Short names
be responsible for the name. 4. Text parameter for the category "Generalized the denomination.	d Models" by the instance that will be responsible for

5. A parameter with the data type "Length" for the category "Generalized Models" by instance, which will be responsible for the length of lintels and their components.

6. A parameter with the data type "Number" for the category "Generalized Models" on the instance to which the plugin will record the mass of the jumper and its components.

7. A text parameter for the "Generalized Models" category by instance, which will be responsible for the units of measurement.

8. Text parameter for the "Generalized models" category by instance, which will be responsible for filtering elements by specifications.

2. Plugin algorithm

Below there is a schematic representation of the plugin's algorithm for setting lintels in a project



3. Positioning of metal lintels

Launch the lintel positioning plugin



Then you need to select the door or window opening on which you want to place the lintel. Then you will see a window where you need to make the following settings:

1.Select the type of metal lintel you need (rebar, single angle, two angles with lintels, two angles without lintels, channel) from all the proposed options

 If you have an opening adjoining, for example, to the left or right side of the reinforced concrete and you additionally need a supporting corner, check the box.

3. Further, depending on what type of lintel you have chosen - specify its profile according to the assortment. I.e. if you have chosen channel, then specify what kind of channel the plugin needs to use in the family, in the case of selecting rebar what diameter and how many reinforcing bars should be used in the work, etc.

4. Specify the left and right support lengths for the lintel. I.e. the distance it will go into the wall.

Metal lintel				x	
Choose lintel type	1	Reinforcement	\sim		
Choose optional placement (conditions	2	Corner bracket on the left Base corner on the right			
Choose angle type	ſ	65x50x5	\sim		
Choose channel type		14П	\sim		
Choose support bracket (3)	$\left \right\rangle$	65x50x5	\sim		
Choose diameter of armature		12	~		
Type in number of rebars	U	3			
Basement length to the left	Ş	250			
Basement length to the right	U	250			
Choose the width of the openi	ing				
Width		~)			
Choose the height of the opening parameter					
Height		~)			
Type in the wall thickness (if opening is not a door or wind	the ow),	mm 250 6			
0		7 Done			

5. Since in revit all families can be created differently by each author - not always the parameters Width and Height are responsible for the actual size of the width and height of the opening, so you will need to specify parameters that accurately define in the door family its opening, so that the lintel gets the real size.

6. In case you want your lintel to be a different thickness than the wall thickness, specify this value in the field.

7. Click Done!



This way you can arrange metal lintels around your door and window openings.

4. Creating schedules for lintels

So, we have arranged all the lintels families. Now it's time to make the schedule. Of course, you can make your own schedule or with the help of a BIM specialist, but you can also specify both lintels and parts with the help of a plugin.

On the BS_AR tab, click on the "Lintels Specs" button



In the opened window you can name the new schedule and create it. You have the choice of making a schedule for the lintels or making a schedule for the lintel parts.

Also, if suddenly you have changed your lintel after placing it manually, for example, you have changed the size of the angle or the diameter of the reinforcement, with the help of the button "Recalculate weight" - you can do it.

Lintel-specialized schedules	x
Lintel schedules	
Type in the name of the lintel schedule	
Lintel schedule	Create
Lintel part schedules	
Type in the schedule name of the lintel parts	
Lintel parts schedule	Create
Recalculate weight	

Lintel schedule							
Pos.	Identification	Name	Dime nsion unit.	Num.	Note		
Α	В	С	D	E	F		
*		Steel lintel	р.	1	13.531875		
		Steel lintel	р.	1	3.767962		
		Steel lintel	р.	2	29.4882		

2. Lintels details schedule

	Lintel parts schedule						
Pos.	Pos. Identification Name			Num.	Length	Note	
Α	BC		D	E	F	G	
		BZ8-15-26/80	р.	2	0	0.06	
		Plate 80x6 мм	р.	6	116	2.64	
	Angle 65x50x5		p.	1	156	0.678307	
		Angle 65x50x5		2	1200	10.464	
		Reinforcement D12	р.	3	1414	3.767962	
		Angle 65x50x5	р.	1	1770	7.7172	

Rooms layouts

"Rooms layouts" plugin allows you to create an automated set of facades along the contour of selected rooms, and then place these views immediately on the sheet. This plugin will be useful for architects, as well as specialists in interior solutions.

1. Launching the plugin

Since the plugin works specifically with room contours, you need to select these rooms before running the plugin. Then click on the plugin button.

File Architectur	e Structure Steel	Systems Insert	Annotate Analyz	e Massing & Site	Collaborate	View Manag	e Add-Ins	BS • AR	BS • General	Modif
*@		X				iii 💽 🕯	1		ŀ	8
Insolation calculation	Apartment Delete	Stretch Room Re rooms Finishing	cording the room Coll number	ecting the sheet of rooms of	Sheet Si the finishing	kirtin Room L lavouts	intels Lintel. schedule	Anti s connect	Cuttin ion walls and c	ng olumns
Insolation calculation	Working with ro	oms		Room Finishing			Lintels			
ealculation Insolation calculation In the a nur 1. Sin room need dowr 2. If y roum inclue know curve you t creat checl segm	eventuation rooms Working with rooms working with rooms a opened wirr nher of settil ce the layou , and the roo to set the di from the lev ou have sele d walls and y ding on them , Revit can n d lines, so h o make a lay ing segment e the box and ents	reoms Finishing and you ne ngs: t will be built om is on the splay height vel for the cu ected a room rou want to g h, then, as I'n ot build faca ere the plugi out on round s. If this is yo d specify the	ed to make con the level, you up and its. that has tet a layout n sure you des on n offers d walls by ur case, pitch of the	rooms of Recom Finishing Creating reamers Drawing a layout Reamer height fi 4000 Displacement of 0 Advanced settings Advanced settings Advanced settings Sweep viewport se Type of viewport No Title Template view fo Architectural Sec Show border Show border	om level the sweep down for radus wals crular wall (views 500 ttings the 3 or reamers tion 4 cutting	from B() el 2 mm	schedule Lintels Sweep sheet set Facada type (twism if the plan intercriptic B 11x 17 Hots Sheet name New Page number 100 O Place on ex Choose sheet	tings conventiona n) n new sheet contal-B 11 >	I identification of (8) (9) 17 Hortzorital	T the
3. Se	ect the type	of viewport		Offset of the far plane	100 6	mm	Skip segmen less than	ts that are	50	mm
				Offset of the front from the wall (put a negative value)	-100 7	mm	٠	(11)	12 Don	e

Since the plugin will place the views on the sheet after creating them, you need to tell it what type of viewport you want to use.

4. Select a view template for the facade of the layout. Here you will be able to select a preset view template, so that your layouts will be at once with customized graphics.

5. Check the box if you want a clipping border enabled on each of your layouts.

6. Set the far plane offset i.e. the distance the facade will see the elements.

7. Set the offset of the facade from the wall. I.e. if you want the created facades to be not close to the wall, set this offset with a negative value. It will be useful for those who want, for example, on the sweep to see the furniture that stands against the walls.

8. Since the plugin uses facades - then you need to select this type of facade in this item. You can customize it in advance and set a correct and beautiful graphical notation.

Lintels plugin allows you to automatically create a set of facades along the contour of selected rooms, and then place these views immediately on the sheet. This plugin will be useful for architects, as well as specialists in interior solutions.

 9. After the formation of facades plugin will place them on the sheet in order, so if you choose the format of work - Place on a new sheet, then of course you will need to select the family of the main inscription to create a new sheet, as well as set the number and name of the new sheet.
 10. If you choose the work format - Arrange on an existing sheet, then you will need to select that sheet.

11. There may be some small segments in your room that you do not want to layout - for this purpose, specify the segments of what length you would like to skip.

12. Click Done!

As a result, we get formed facades laid out on sheets as a layout of the rooms.





Anticonnection

The plugin " Anticonnection " - allows you to quickly click on the walls to make automatic detachment from both sides of the wall. With this plugin you can do it much faster than with standard Revit functionality.

Plugin operation

The algorithm of the plugin is as follows: You launch the plugin, and then alternately click the walls at which you want to cancel the link. Launch the plugin



And then click on the first, second, etc. walls and we see that immediately we have a detachment of the selected wall from the rest, and from both sides.



Before

After



Cut walls and columns

Plugin "Cut walls and columns" allows you to cut selected walls and columns by specified levels. I.e., if you have a wall made to the height of the whole building, but not broken down by levels, this plugin will just help you to do it.

Plugin operation

The plugin algorithm is as follows:

- 1. Run the plugin.
- 2. Select walls and/or columns, then click done.
- 3. Select the levels you want to cut the selected walls and columns and click done.
- 4. Done. The walls and columns have been cut by levels



Got a level cut



Mirror

The "Mirror" plugin is a small but very useful plugin that will help you easily find mirrored elements in your project and thus make fewer design mistakes.

Plugin operation

Launch the plugin

age Add-Ins BS+AR BS+General Moo	ity 🔹 🕶								
) II	(index)	. <u>*</u>	÷	↔ ••	Ę	ŝ	STEP
Lintels Lintel Anti Cutting schedules connection walls and column	Mirror Lutting out of Sp theopenings wa	alls wall-column	Parameter wall to opening	Height markings o	Room dimensions	Line dimensions	Structure layers	Settings	BimStep license
Lintels	Modeling			_	Finis	hing		Settings	License
In the opened window,	we need to selec	t the follow	ing settin	gs:	N	lirrored eleme	nts		×
1. Select the format of w	work. On the who	ole model o	r on the a	ctive op	en 😋	hoose the chec) Checking on	k option the whole mo	del 1	
View we will search for	innifored element	LS.	n to find t	-h o		Checking on	the active vie	w	
2. Specify what categor	ies the plugin sho	Jula work o	n to find t	ne		hoose categor	ies		
3. Click done!						Communica Conduit Fitti Conduit Run	tion Devices ngs is		
As a result, if the plugin	finds at least on	e mirrored	item, it wi	ill repor	tit,	Conduits	els		
and afterwards it will se	elect items so tha	t it is clear	to you wh	ich item	ıs	Curtain Syst	Mullions		
are mirrored						Data Device	iges 2		
						Doors	oriae		
			~			Duct Fittings	ions		
	X						olders		
						Duct Systen	19		
was round i fi	ne mirror elements. Elem	ents will be cho	sen			Electrical Ar	nalytical Bus nalytical Load	Set	~
Choose all							3		
								D	one

Hole cutting

Plugin "Hole cutting" allows you to cut families from your elements of building structures, which in your model perform the function of holes, but are not physically placed in the walls or floors, ie they are some separate families and with the help of their hollow elements can be cut our building structures

Plugin operation

Launch the plugin



Split multilayer walls

The "Split multilayer walls" plugin will allow you to make a division of one wall that consists of several layers into several other walls.

So, let's take an example, when we need to separate a wall, which includes a reinforced concrete wall and facade, into a separate reinforced concrete wall and a separate wall, which will include all other layers.

I.e. we have an initial wall with a thickness of 370mn Our task is to divide it into 2 walls

The first wall is reinforced concrete 200mm thick. The second wall - everything else is 170mm thick.



	Function	Material	Thickness	Wraps	Structural Material	Variable
1	Core Boundary	Layers Above Wrap	0.0			
2	Structure [1]	Steel, Paint Finish, Dark	20.0			
3	Structure [1]	Insulation / Support Fr	100.0			
4	Structure [1]	Air	50.0			
5	Structure [1]	Concrete, Cast In Situ	200.0		\checkmark	
6	Core Boundary	Layers Below Wrap	0.0			

Consequently, to accomplish this, we need to first prepare these 2 new wall types, i.e. one wall type is "Reinforced Concrete - 200" and the other is "Facade -170". Inside these wall types, don't forget to customize all the layers as we need them.

Reinforced concrete - 200

				/	
	/	/		/	
/	/	1.0	/	/	

	Function	Material	Thickness
1	Core Boundary	Layers Above Wrap	0.0
2	Structure [1]	Concrete, Cast In Situ	200.0
3	Core Boundary	Layers Below Wrap	0.0

Facade - 170.

ļ	

	Function	Material	Thickness	
1	Core Boundary	Layers Above Wrap	0.0	
2	Structure [1]	Steel, Paint Finish, Da	20.0	
3	Structure [1]	Insulation / Support F	100.0	
4	Structure [1]	Air	50.0	
5	Core Boundary	Layers Below Wrap	0.0	

Now everything is ready for the plugin to work!

So, select our layered walls that we want to split and click to launch the plugin!

age .	Add-Ins	BS•AR E	S • General Modif	y (A *		_							
Lintels	Lintel	Anti connectio	Cutting n walls and columns	Mirror	Cutting out c theopenings	Split walls	Replacing vall-column	Parameter wall to opening	Height markings	Room dimensions	Line dimensions	Structure layers	Settings	BimStep license
1	intels				Modeling					Finis	hing		Settings	License

BS • AR			Sp	olit multilayer wal
Separating wall layers				×
Choose which layers you want to highlight	Choose types of walls to replace			
Steel, Paint Finish, Dark Gray, Matte_20 Insulation / Support Frame_100	Layer name	Thickness	Replaceable type	Putting doors/windows
Concrete, Cast In Situ_200	Steel, Paint Finish, Dark Gray, Matte_20;Insulation / Support Frame_100;Air_50	170	Facade 170	×
\mathbf{O}	Concrete, Cast In Situ_200	200	Concrete 200	✓ ✓
			2	3
				(4) Done

In the opened window we need to make the following settings:

1. Specify in this block which layers we want to separate into separate walls.

2. After point 1 we see how our plugin splits the original wall and so we need to select the appropriate replacement wall type for each of the sets of split layers. This is what we created the replacement wall types for earlier.

3. Specify with a check mark, in which of the created walls will need to put an opening, if it was in the original wall.

4. Click done!

As a result, instead of one multilayer wall, we get one single-layer wall as a reinforced concrete wall and one multilayer wall as a facade.



Wall-column replacement

The "Wall-column replacement" plugin will help you easily replace selected walls with column families or vice versa replace selected columns with walls.

Plugin operation

Launch the plugin



Parameter of wall to opening

The plugin " Parameter of wall to opening " will help you to write a value from the wall, in which stands a family of door or window opening actually in some parameter of this family. I.e. with the help of this plugin you will be able to transfer information to the aperture from the element in which it is located.

Plugin operation

Launch the plugin

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	In th	ne win	dow that	opens, we	e need to	sele	ect the fo	llowing		R	ecord of open	ings in the	paramete	r ×
	settings: 1. Select which categories of openings we want to process. There are doors and windows to choose from.													
	2. S	elect t	he wall pa	rameter	from whi	ch th	ne value	should be			Choose a wall	parameter		
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As a result, the parameter value from the wall is overwritten to the specified parameter of the opening.

Height marks

The "Height marks" plugin will allow you to quickly and easily make height marks on your sections and facades on the specified structures both on their bottom and top.

Go to the section or facade and launch the plugin.

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In the opened window we need to select the following settings: 1. Select the plugin work format

- For all elements of the selected categories (see item 2.). I.e. further the plugin will ask you to specify 2 points on your section bottom and top to make a "phantom" line using them and then only those elements that intersect with this line will be processed by the plugin.
- By elements selected manually. Here everything is simple, the plugin will process only those elements that you select.

2. If in item 1 you have chosen the first way of plugin work, then in this window you need to specify the categories on which the plugin will work.

3. Specify in which orientation you want to make a height mark (bottom or top).

4. Consequently, for marking on the bottom and on the top select the corresponding types of height marks from your project.

5. Click Done!

Then the algorithm of the plugin will work as follows:

Finishing	Settings	License				
Height markers placement		×				
How to place height marks By all chosen categories Choose elements manuall	y C	D				
Categories by which to place ma	rks					
Floors Valls Ceilings Structural Framing Vindows Doors Columns Structural Columns						
Height marker orientation] Top] Bottom					
Top Target (Project) Bottom Target (Project)		~				
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Option with phantom line construction



Option with selection of elements



Room dimensions

The "Room dimensions" plugin quickly creates 2 sizes on the plan (vertical and horizontal) and thus will be convenient for architects, when they need to place many sizes on the rooms at once. But before the plugin works, it must be set up, so go to the plugin settings.

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L	intels				Modeling					Finis	hing		Settings	License



Line dimensions

The "Dimensions by line" plugin will allow you to quickly create a linear dimension chain by creating a phantom line by specifying 2 points. All walls and axes that will be orthogonal to this line and intersect it will be processed and the dimension chain will be built on them. But first the plugin must be set up, go to plugin settings

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And in the "Dimensions" tab, check the "Grids" and "Walls" categories, thereby setting the plugin's working format. If, for example, you want the plugin to work only on axes, check only one checkbox.

The plugin is ready for customization. Run the plugin on the ribbon, and then specify 2 points on the plan, marking with them a phantom line for the plugina.

Cu	Customizing AR plug-ins							
Fir	nishing	Dimensions	Skirtings	Apartment	Lintels	Insolation		
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	Select	3D view	Kitchen					
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Structure layers

The plugin "Structure layers" helps you to conveniently put in your project a family of construction checkboxes (roofs, walls or floors) in the form of a notation. The plugin works on the basis of our family, which is downloaded during the first run. So, start the plugin and specify the point where you want to set the family.

age Add-Ins BS+AR BS+General Modify 🖙 -	
Lintels Lintel Lintels Mirror Cutting Mirror Cutting out of Split Replacing Parameter Modeling Mirror Cutting out of Split Replacing Parameter Walls and columns theopenings walls wall-column wall to opening Modeling	Height Room Line markings dimensions dimension Finishing
 In the opened window we need to specify the following settings: 1. Write or select the name of the already created annotation family type. 2. Enter the shelf length for the family. 3. Specify the direction of the arrowhead. 4. Enter the length of the arrow. 5. Write down in tabular form the composition of all layers as you want to see them in your future annotation. 6. Press done. As a result, by the specified point we get the placed family of the checkbox of constructions 	Structure layers Structure layers Name the new checkbox family type Wal Set arrow settings Type in the shell length Type in the shell length Type in the length of the pointer Choose the type to use Wal Uper name Layer thickness Converte. Sound Convert Sourced 15 Index Inducted Panel 15 Intervalution Panel 100
Concrete, Sand/Cemént Screed I - 20 MM Timber Insulated Parel - 15 MM Insulation Panel - 100 MM Timber Insulated Parel I - 15 MM Plasterboard - 12 MM	Plateboard 100 12