Rebro® 2022

Operation Guide
~Building Section~

NYK SYSTEMS

Chapter 1 Building Section

1.Read the drawings in DXF/DWG

Read the building drawing in DXF/DWG.

How to read the drawings

1 Left-click [Home] tab- [Read file] to select [Read DXF or DWG file].

2 Select "1FGround plan.dwg", and then left-click [Open].

3 In [Reading of DWG format] dialog box, uncheck "Make layout" and "Read layout tab of AutoCAD", and then select "Across all floor plane-view" for the reading view.

4 Left-click [OK].
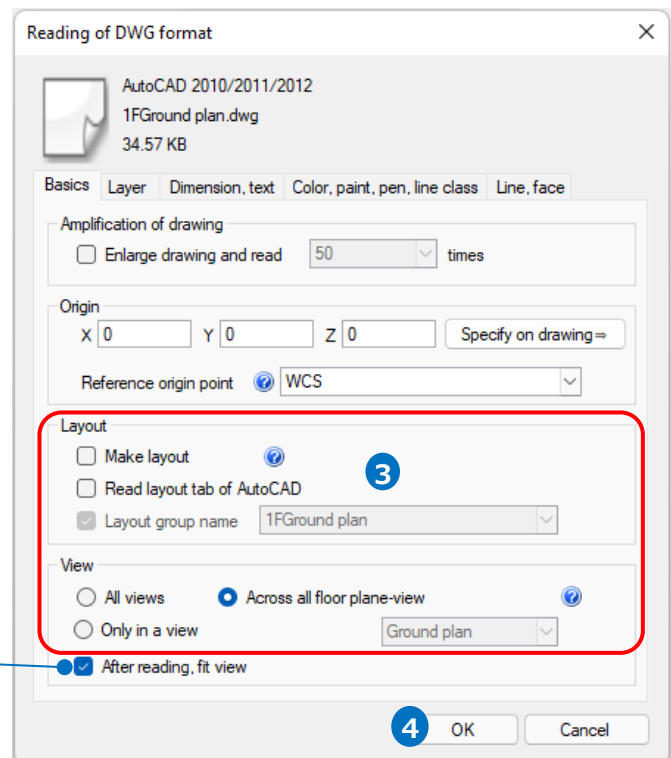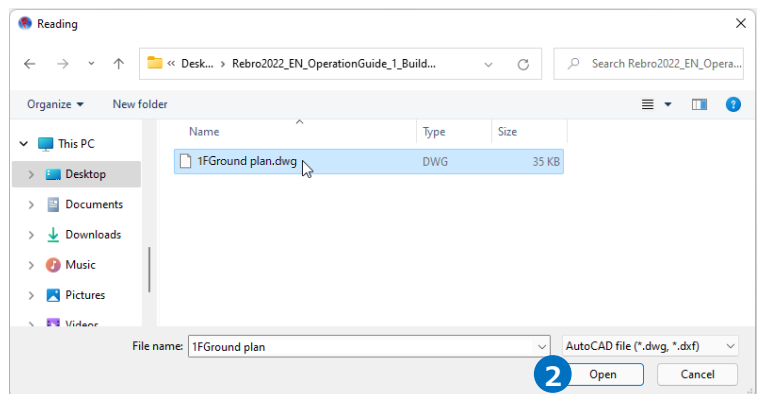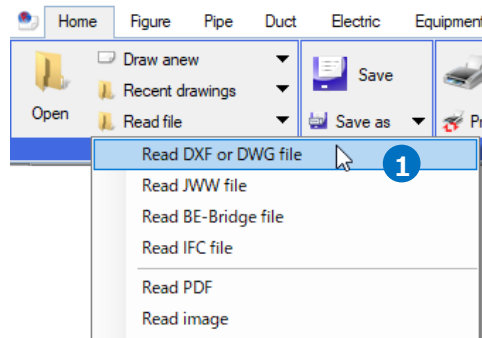
When you checkmark [After reading, fit view], Rebro adjusts the scale and display position to fit the read drawing into the full view on the currently open layout.

→DWG data is shown in a state of fitting to the view.
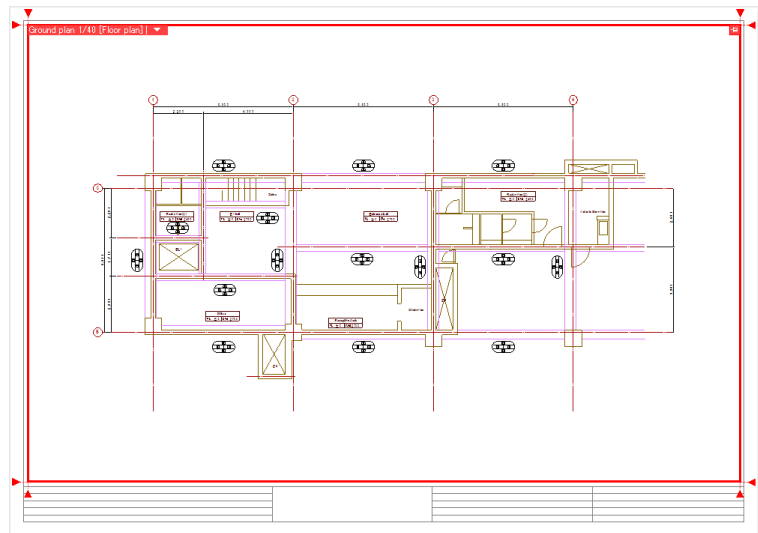
● Supplementary explanation:

As for "Across all floor plane-view"

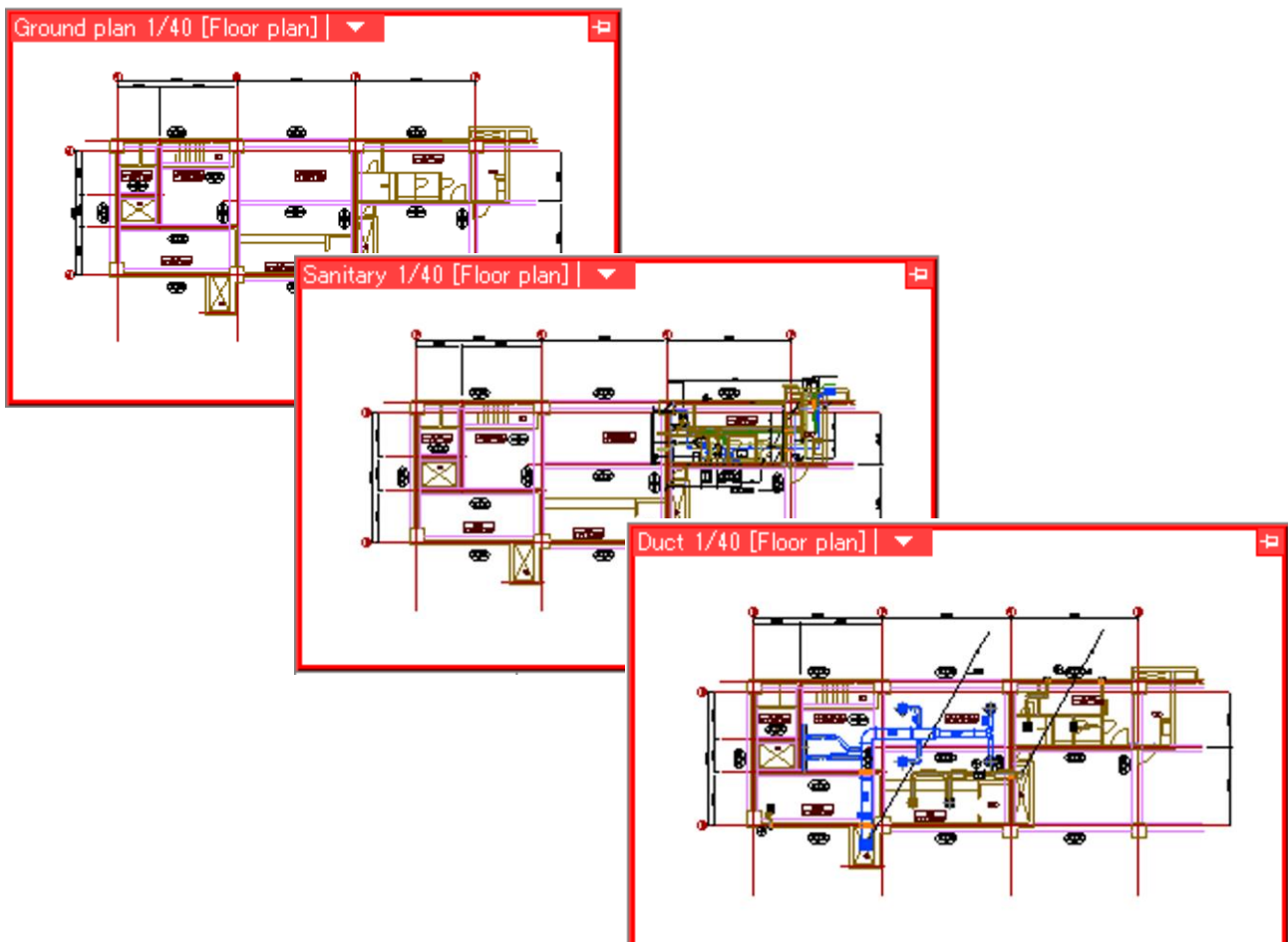If you read the building drawing from other formats such as DXF or DWG, select "Across all floor plane-view" to show the drawing in every view of the plane direction. Even in the view with different view name, Rebro can show the same building drawing.
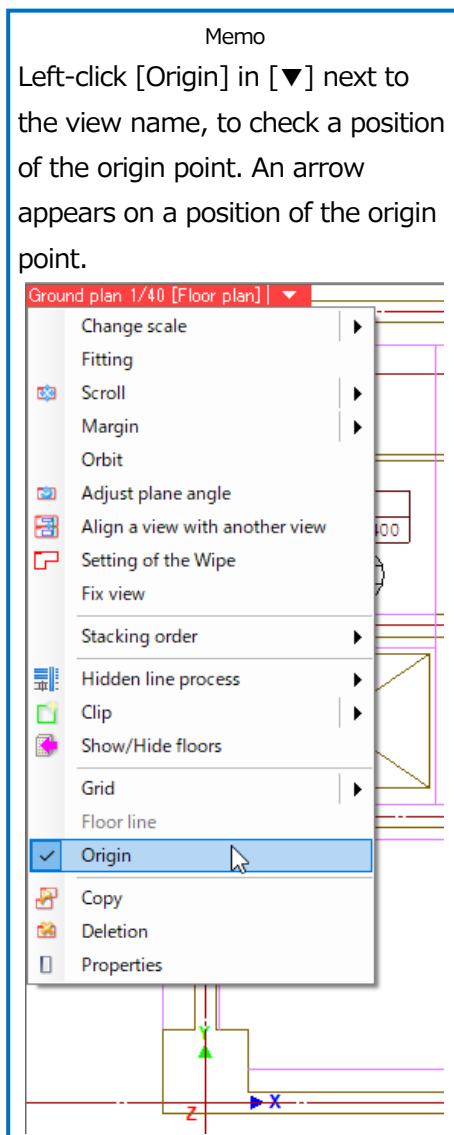
How to set origin points

Rebro reads the 0,0,0 position of DXF/DWG file as an origin point (the center in the view, as default) of Rebro. Now set newly the intersection point of grid lines as an origin point.

① Left-click [View] tab- [Origin movement].
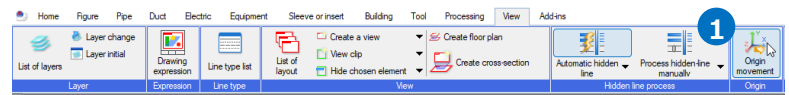
② A guidance message appears saying as follows: "Specify origin position to change. Appearance does not change when origin is changed, but base coordinate of all elements is changed internally." Left-click the intersection point of 1 and B grid lines.

> **Memo**
>
> Left-click [Origin] in [▼] next to the view name, to check a position of the origin point. An arrow appears on a position of the origin point.
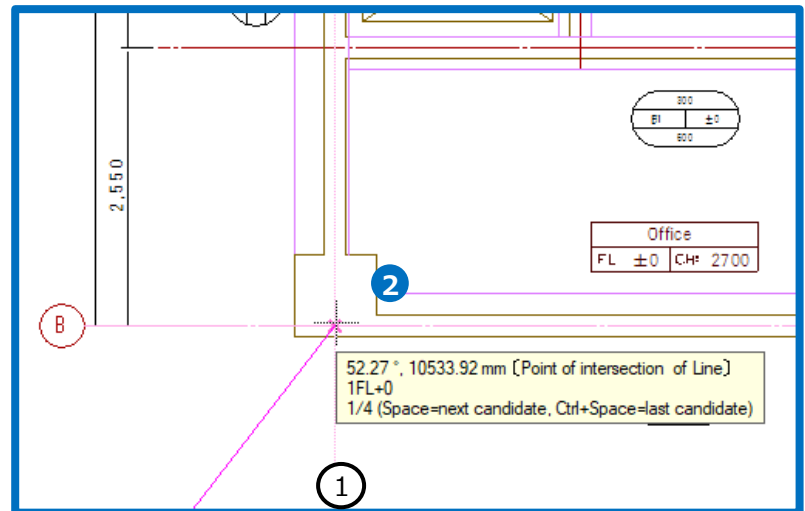
2.Set up reference floors

How to set up floors

Set a floor name and height. You can select the reference floor with the floor name that you set here, when specifying the height in the related commands. The selected floor name becomes the "Reference floor" and is set up for each element. (It appears on the properties or as a tooltip.)

By setting up the floor, you can create a drawing that has multiple overlapped floors on one drawing.
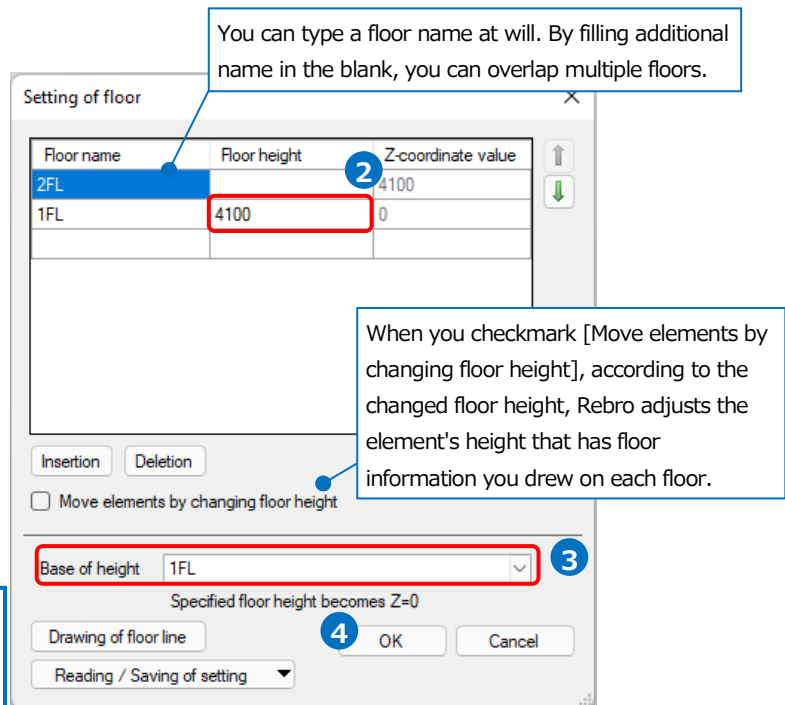
① Left-click [Building] tab- [Setting of floor].
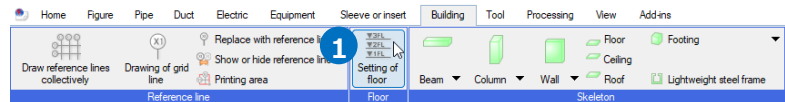
② Type "4100" into the floor height of 1FL in [Setting of floor] dialog box.

③ Select "1FL" for Base of height.

④ Left-click [OK].
→Floor lines appear with the floor height specified in a cross section-view or around-view.
The height of floor selected in "Base of height" becomes Z=0.

You can type a floor name at will. By filling additional name in the blank, you can overlap multiple floors.

When you checkmark [Move elements by changing floor height], according to the changed floor height, Rebro adjusts the element's height that has floor information you drew on each floor.

Memo

The value that are set in [Setting]-[Initial value of drawing]tab-[Initial value of command]-[Architecture]-[Setting of floor] becomes the initial value.
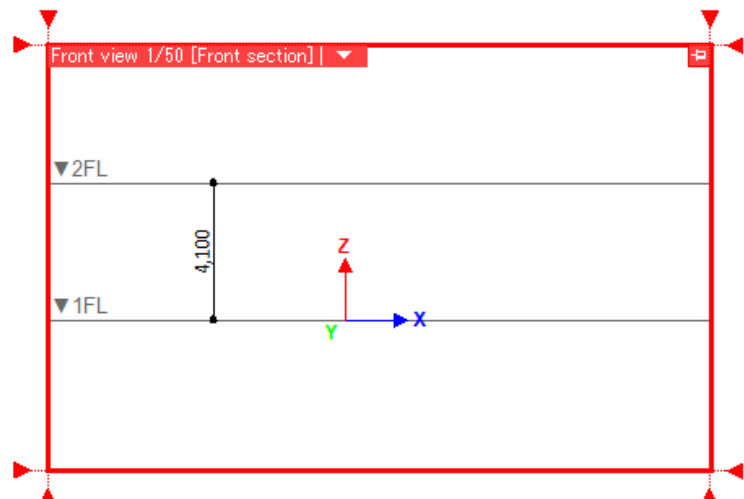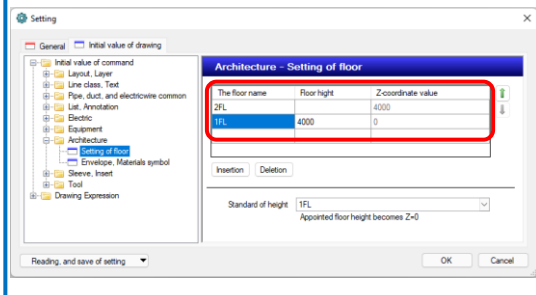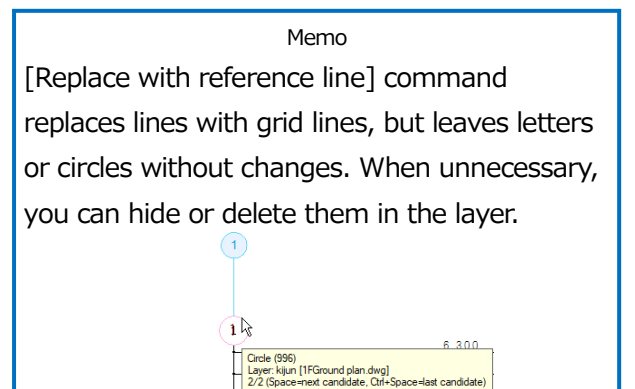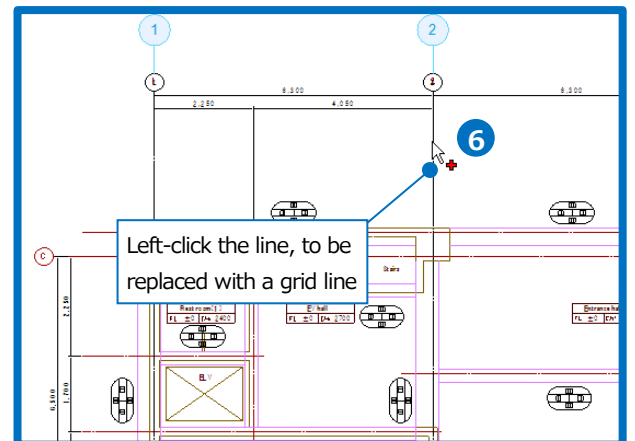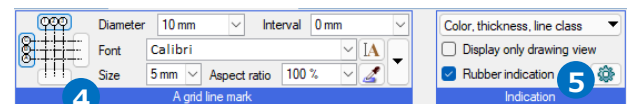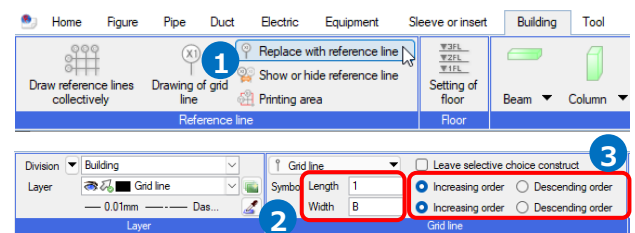
3.Set up grid lines

How to draw grid lines

Now draw grid lines. When "Rubber indication" (i.e., the grid line only for display, not for output) is set together, you can draw while checking the position on the drawing because the grid line symbol always appears regardless of screen enlargement or movement.
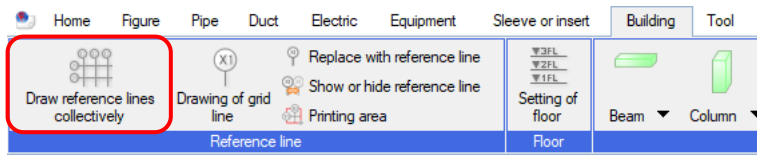
Use [Building] tab- [Draw reference lines collectively] or [Drawing of grid line] to draw grid lines, when no lines exist as a draft on the drawing.

Use [Replace with reference line] to replace the "lines" with "grid lines", when grid lines exist as lines on the building drawing in DWG file.

① Left-click [Building] tab- [Replace with reference line].

② Type in blanks "1" into "Length" and "B" into "Width" for symbol of the grid line.

③ Select "Increasing order" to display the next letter in the symbol in ascending order.

④ Specify the position where you want to display the symbol.
Select "Upper" and "Left" of the grid lines to show the symbol.

⑤ Checkmark "Rubber indication".

⑥ A guidance message appears saying "Choose a straight line to replace with a grid line". Left-click every line in turn, from the one to be replaced with the first grid line.
→Rebro shows grid lines that are replaced from the lines in the read building drawing.

⑦ Left-click [Decision] on the context menu to end the command.

Left-click the line, to be replaced with a grid line

Memo

[Replace with reference line] command replaces lines with grid lines, but leaves letters or circles without changes. When unnecessary, you can hide or delete them in the layer.
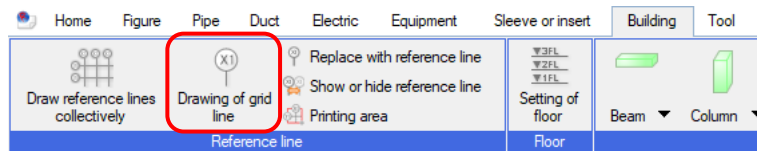
How to draw grid lines collectively

Type the symbols and intervals, to draw grid lines in the X- and Y-axis directions collectively.

Rebro places grid lines based on the lower left intersection point of grid lines.
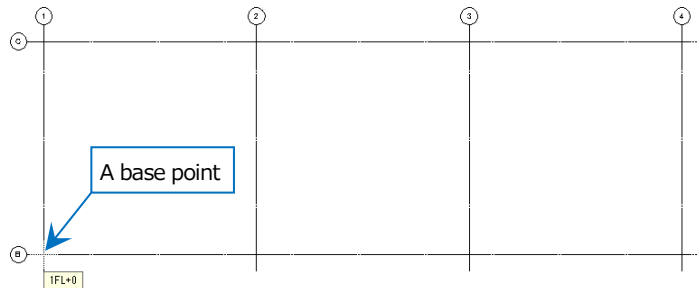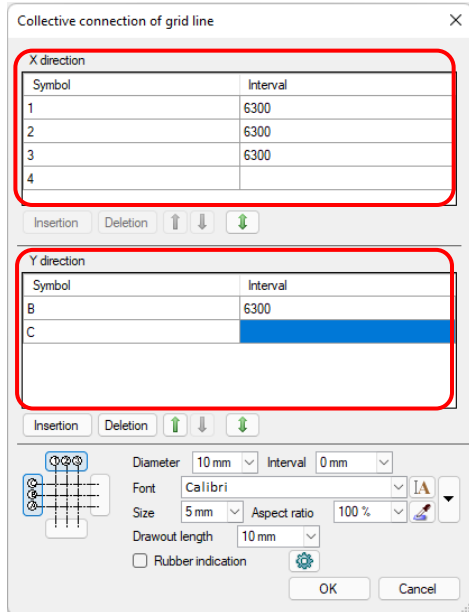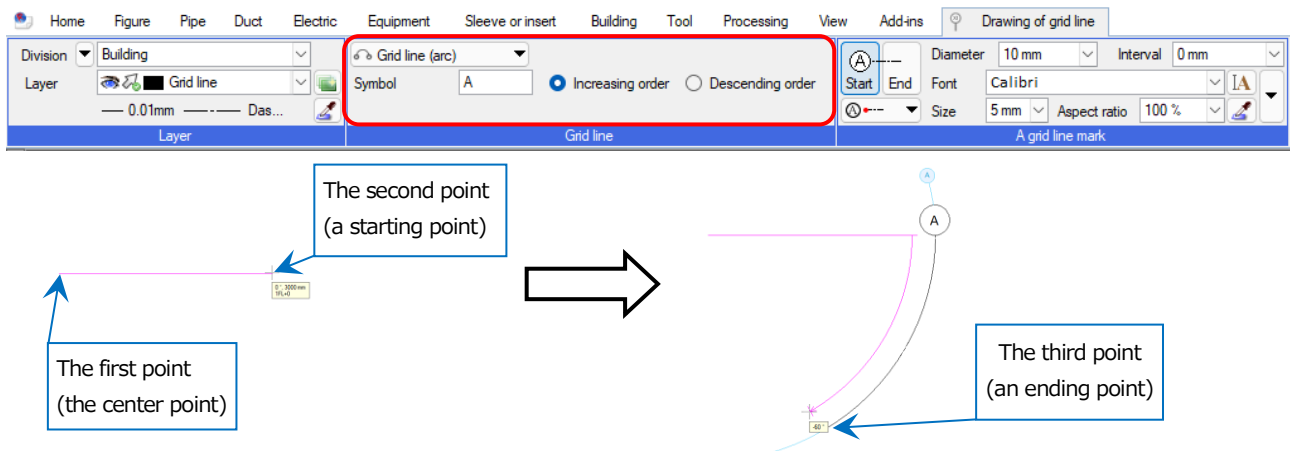

How to draw grid lines

Type the symbol, then specify the starting and ending point of the grid line. If the last letter of the symbol is a numeral or alphabet, Rebro automatically rounds up (or down) the letter. You can draw oblique or arc grid lines.
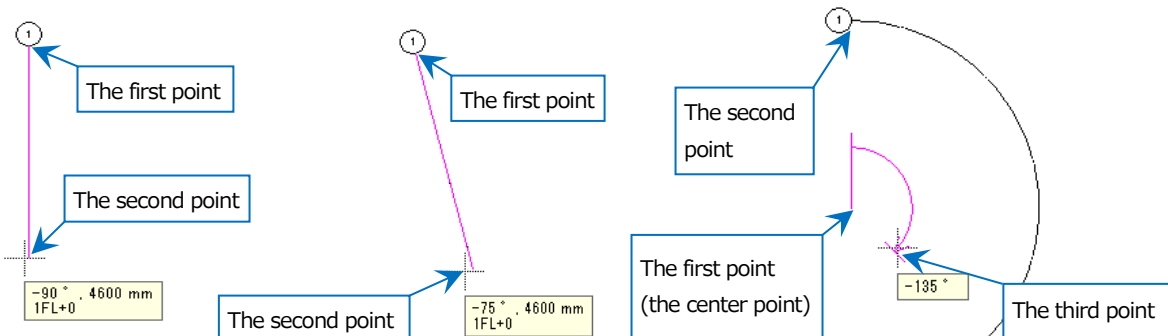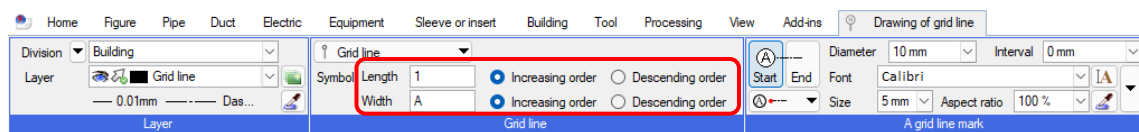
● Supplementary explanation:

Select "Grid line (arc)" on the ribbon to draw an arc grid line.

Specify the center point, starting point, and ending point of the grid line.

The second point
(a starting point)

The first point
(the center point)

The third point
(an ending point)

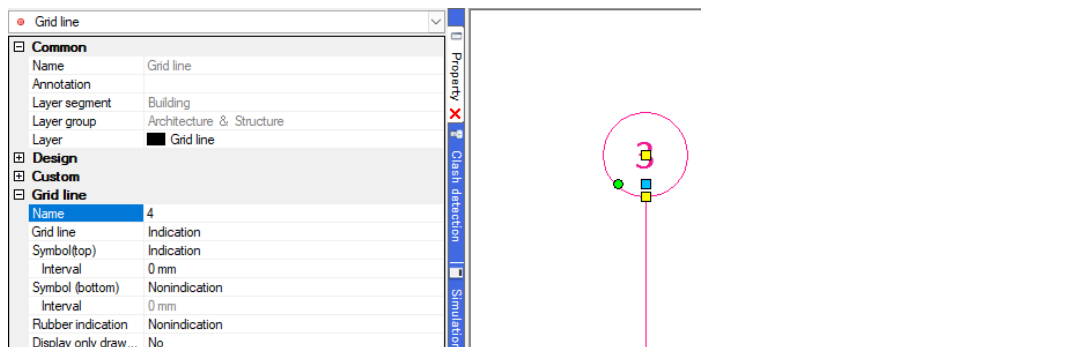## How to add grid lines

If you want to add grid lines after drawing, choose the grid line to left-click [Addition of grid line] on the context menu.

Type the symbol and interval to add a grid line, to specify the direction you want to add with the mouse.

Left-click the direction you want to add a grid line
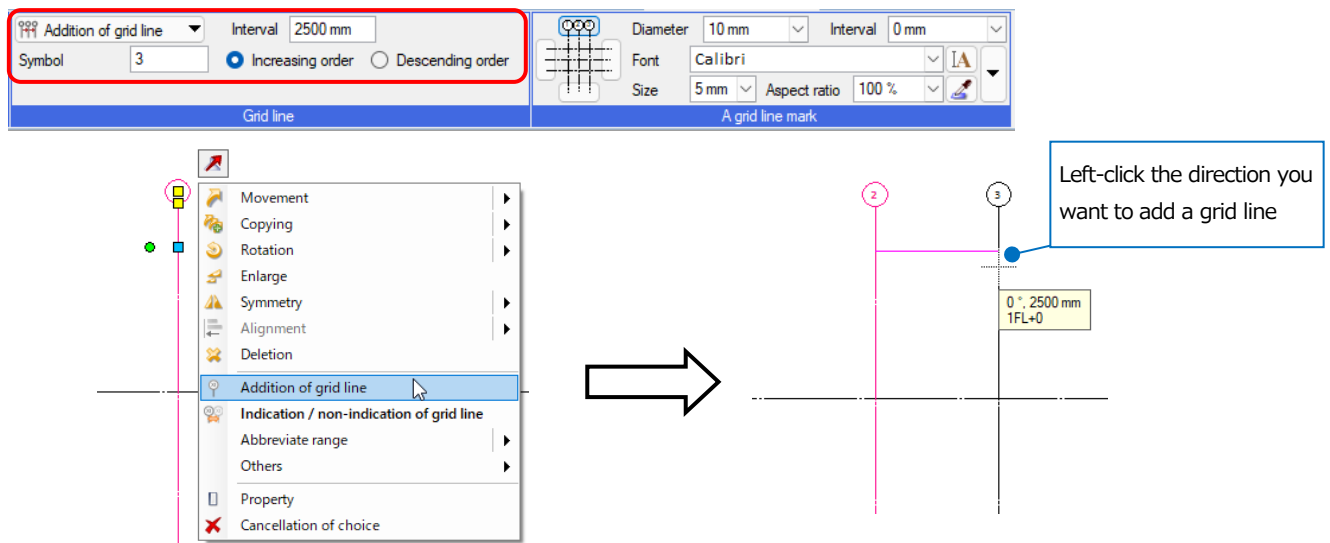
Memo

You can change the grid line name in the property item [Grid line]-[Name].
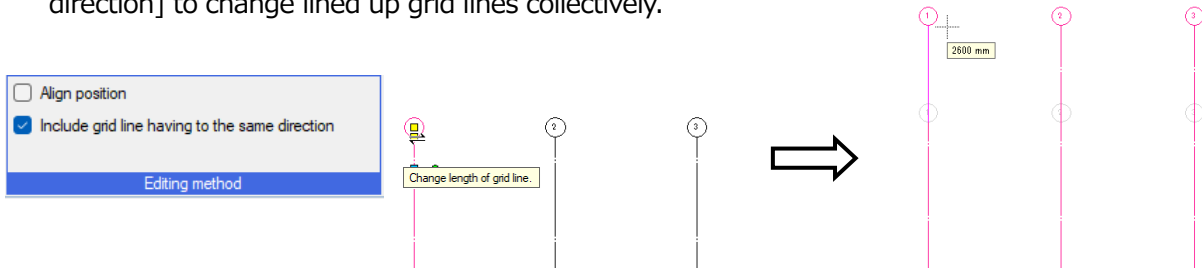

How to edit grid lines

You can edit grid lines in each view.

Change positions of grid lines

You can adjust the length of drawn grid lines by a position change handle (yellow).

Choose the grid line, left-click the handle, and checkmark [Include grid line having to the same direction] to change lined up grid lines collectively.

Show or hide grid lines

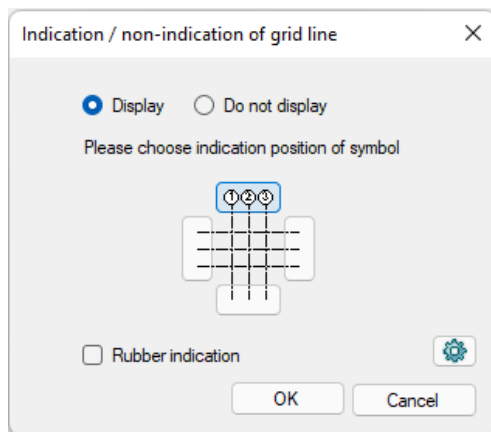Left-click [Building] tab- [Show or hide reference line] and choose the grid line, to change the display of grid lines.
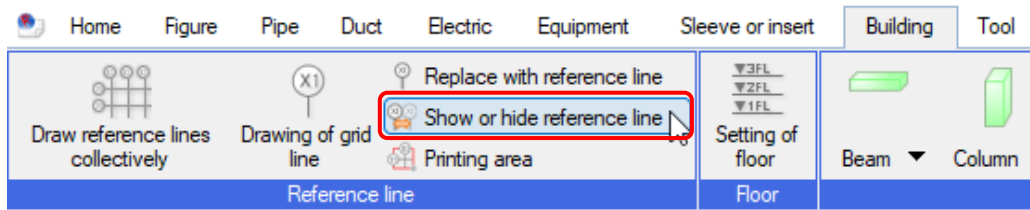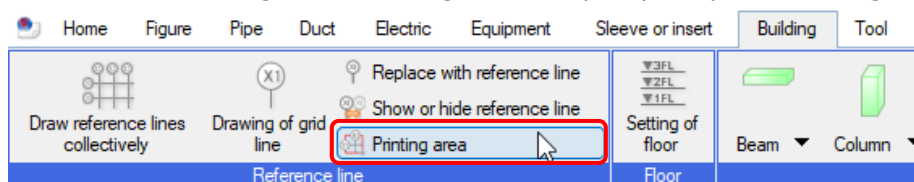

You can set the following in [Indication/non-indication of grid line] dialog box: switch between display and hide, indication position of symbols, and rubber indication.
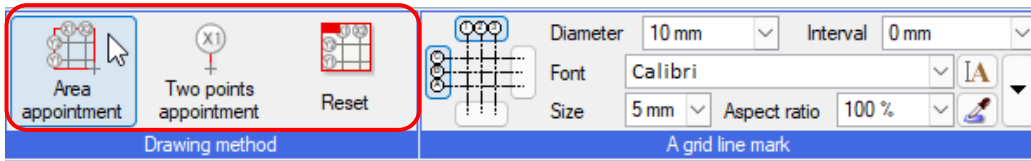

Specify the print area

Left-click [Building] tab- [Printing area] to specify the print area of grid lines.
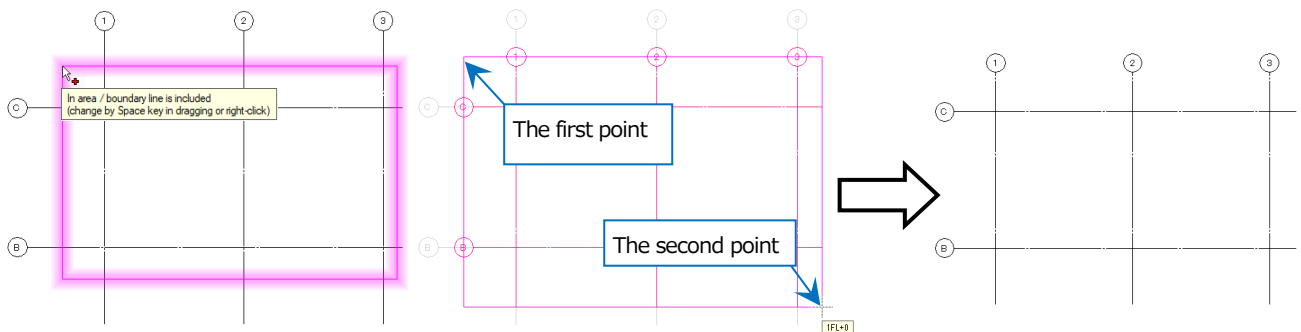
Select the way of drawing.

In the case of "Area appointment"

Choose the grid lines to specify a print area by a temporary rectangle frame made from two points on the opposite corners. The grid lines appear on the positions where the grid lines overlap with the print area.

The first point

The second point

In the case of "Two points appointment"

Choose a reference line to specify its starting and ending point. The reference line shows in length between the two points you specify. You can choose multiple grid lines.

The first point

The second point

Memo

Choose grid lines by "Reset" and specify the view, to draw the grid lines to the full scale in the specified view.

Specify the view
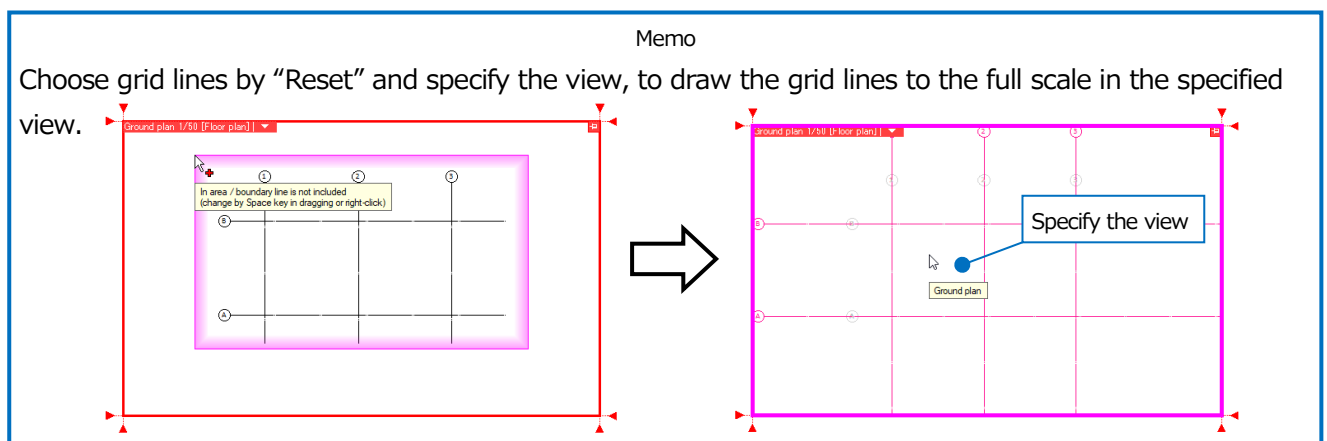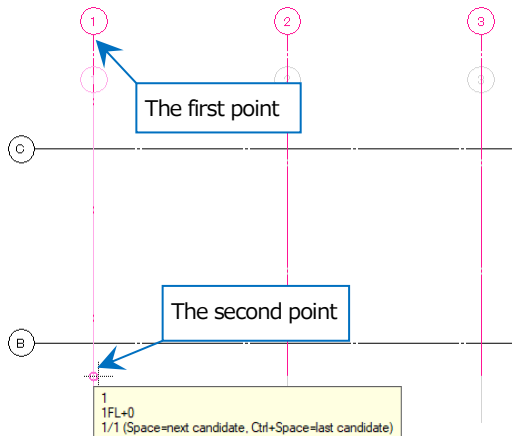
4.Draw skeletons

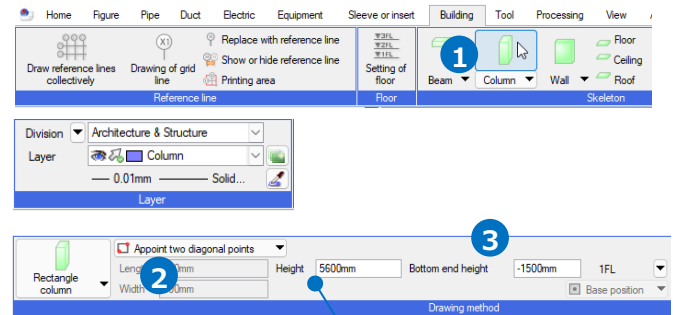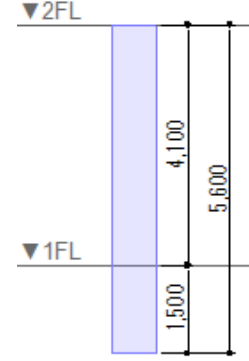The read drawings are two-dimensional drawings that has no information on height. Draw skeletons by various commands in [Building] tab to provide three-dimensional skeletons, for the purpose of section display or a check for clashing points with piping.
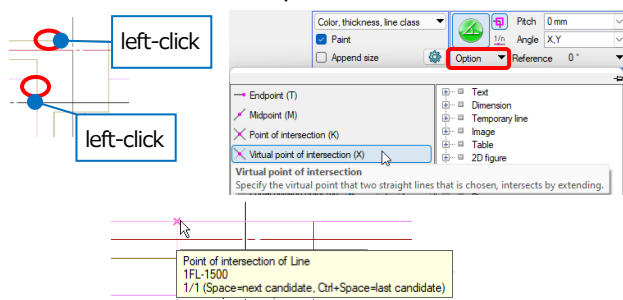
How to draw columns

1 Left-click [Building] tab- [Column].

2 Select "Appoint two diagonal points" for the way of drawing.

3 Type "5600" into the column height and "-1500" into the Bottom end height, then select "1FL" for a reference floor.

4 A guidance message appears saying as follows: "Specify 2 positions becoming opposite angle point of Column. Specify rectangular top viewing from floor plan." Left-click two points on the opposite corners of the column in the read floor plan.

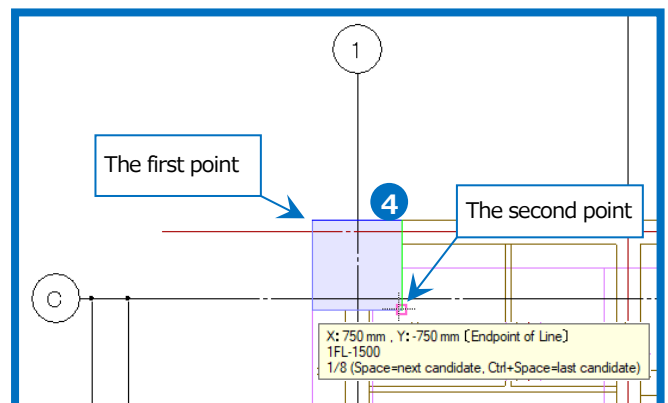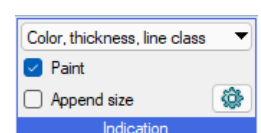**5** Type similarly the figures into other columns.

```
Memo
If you cannot specify an intersection point, left-click
[Coordinates] panel-[Option]-[Virtual point of
intersection] to specify an intersection point where
selected two lines overlap on the extensions.
```

left-click

left-click

Point of intersection of Line
1FL-1500
1/1 (Space=next candidate, Ctrl+Space=last candidate)

6 Left-click [Decision] on the context menu to end the command.

Type the length between the bottom end height and top end height into the column height.

▼2FL

4,100

5,600

▼1FL

1,500

The first point

The second point

X: 750 mm , Y: -750 mm 〔Endpoint of Line〕
1FL-1500
1/8 (Space=next candidate, Ctrl+Space=last candidate)

```
Memo
Checkmark "Paint" to
draw a skeleton with
semi-transparent
```

Color, thickness, line class
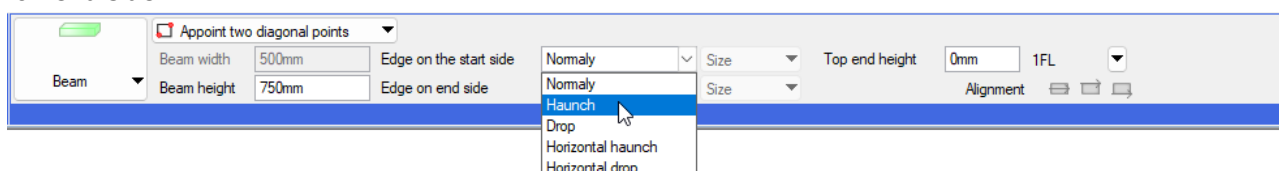☑ Paint
☐ Append size
Indication

How to draw beams

① Left-click [Building] tab- [Beam].

② Select "Appoint two diagonal points" for the way of drawing.

③ Type "750" into the beam height.

④ Type "0" into the top end height and select "1FL" for a reference floor.

⑤ A guidance message appears saying as follows: "Specify 2 positions becoming opposite angle point of Beam. Specify rectangular top viewing from floor plan." Left-click two points on the opposite corners of the beam in the read floor plan.

⑥ Type similarly figures into other beams. Type "600" into the beam height of a joist. Then change the reference floor to "2FL" and type figures into the looking up beam.

⑦ Left-click [Decision] on the context menu to end the command.
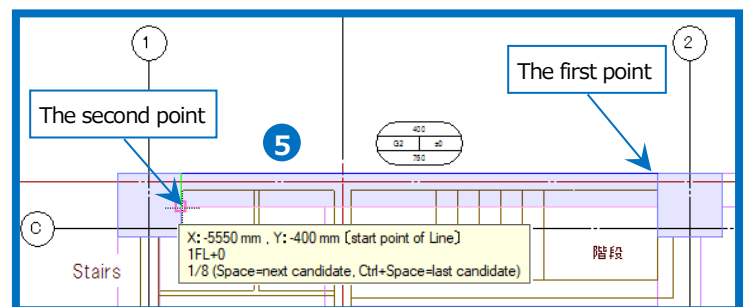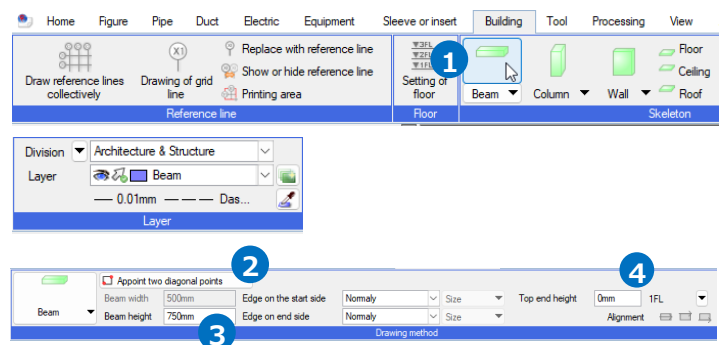
● Supplementary explanation:

You can specify the shape of a beam end portion. Select each for "Edge on the start side" and "Edge on end side".
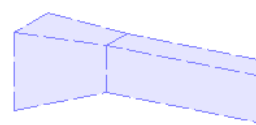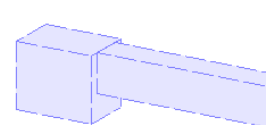
| Haunch	Drop	Horizontal haunch	Horizontal drop

How to draw walls

① Left-click [Building] tab- [Wall].

② Select "Appoint two diagonal points" for the way of drawing.

③ Type "4100" into the wall height.

④ Type "0" into the bottom end height and select "1FL" for a reference floor.

⑤ A guidance message appears saying as follows: "Specify 2 positions becoming opposite angle point of Wall. Specify rectangular top viewing from floor plan." Left-click two points on the opposite corners of the wall in the read floor plan.

⑥ Type similarly figures into other walls.
Type "2400" into the partition wall height of the rest room(1) and (2).

**⑦** Left-click [Decision] on the context menu to end the command.
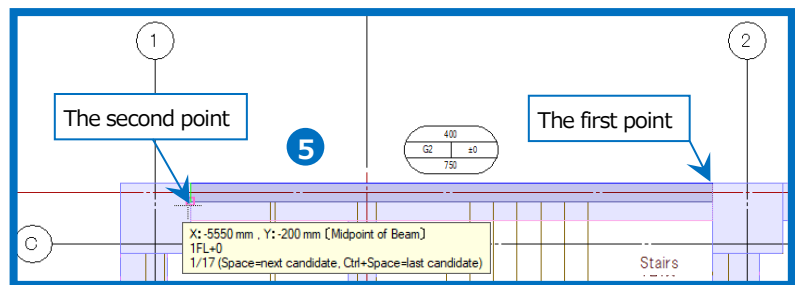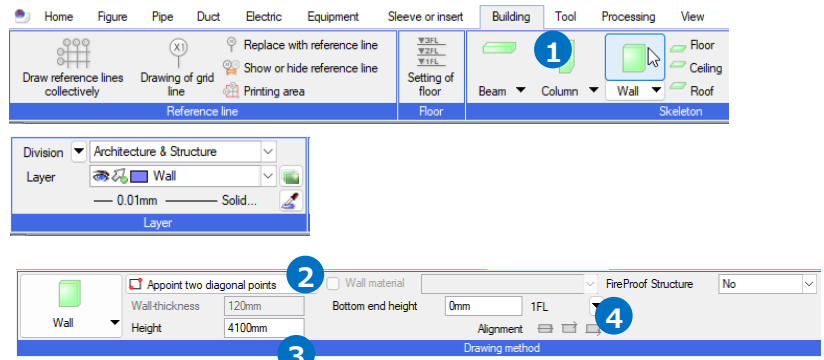
● Supplementary explanation:

You can set up attributes of both material and fire proof structure for walls and floors.
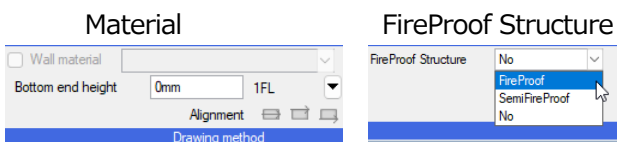
The material can be selected by [Setting]-[General]tab-[Building]-[Wall material] or [Floor material].
When you change the material, the fire proof structure is also changed according to the settings.
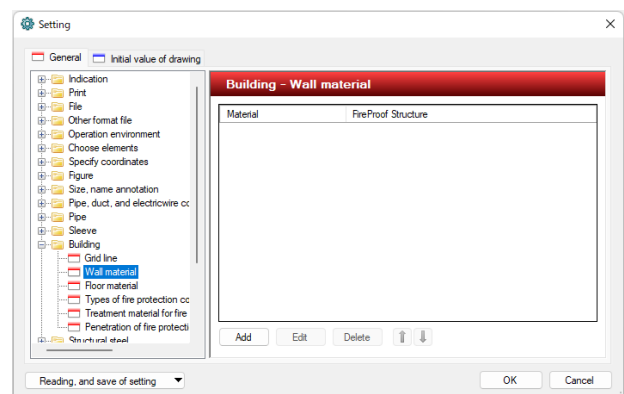
As for an envelope curve of skeletons

If [Building] tab- [Create shrinkwrap automatically] is turned on during your drawing or editing of skeletons, Rebro makes envelopes on the parts where the following elements overlap: columns and walls, columns and beams, walls and walls, and beams and beams in the plane direction.
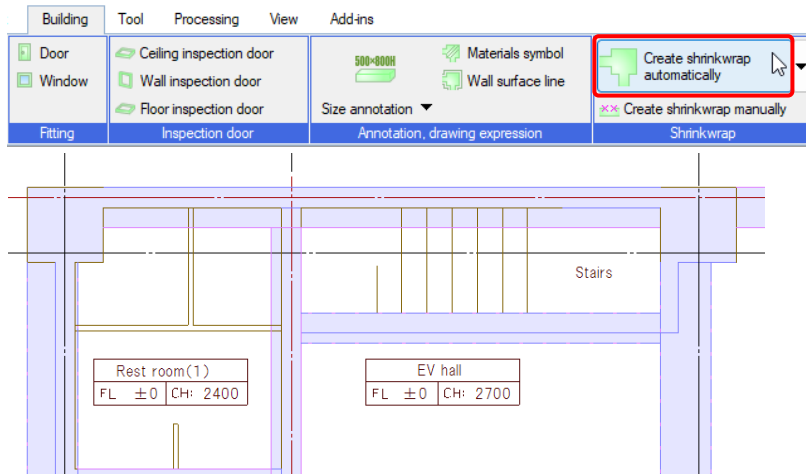
If [Create shrinkwrap automatically] is in the OFF position, you can make an envelope by choosing the skeletons by [Create shrinkwrap automatically (Specify element)].
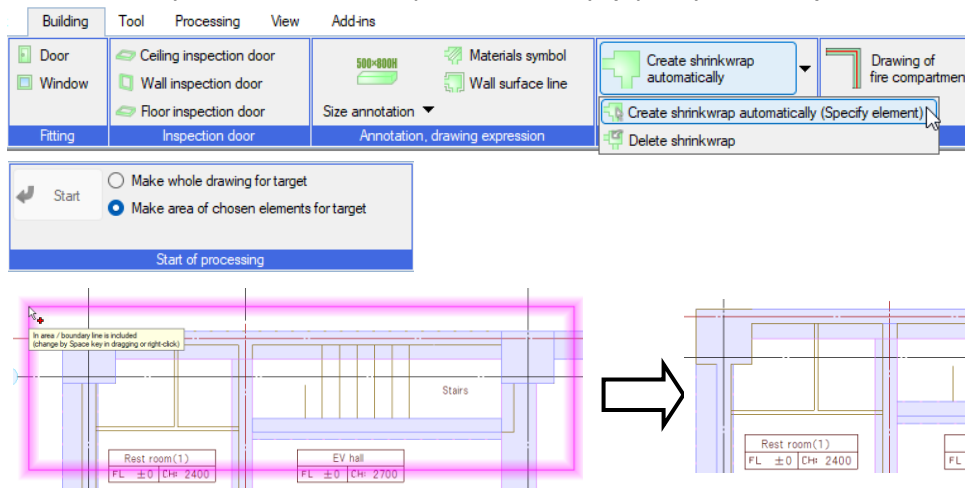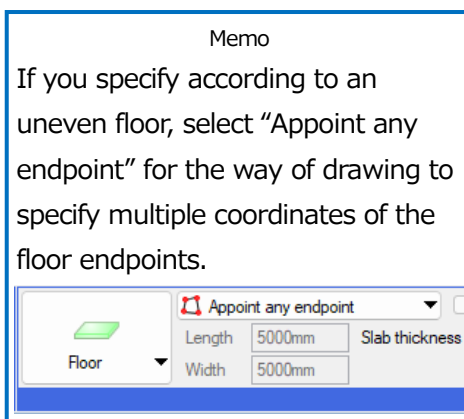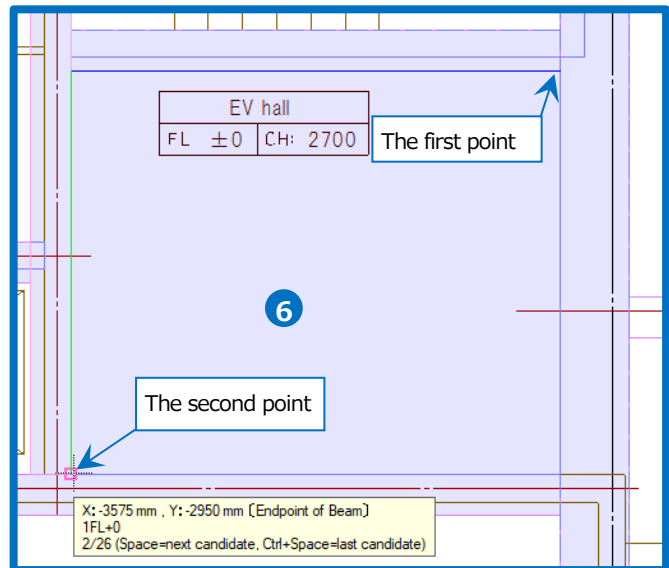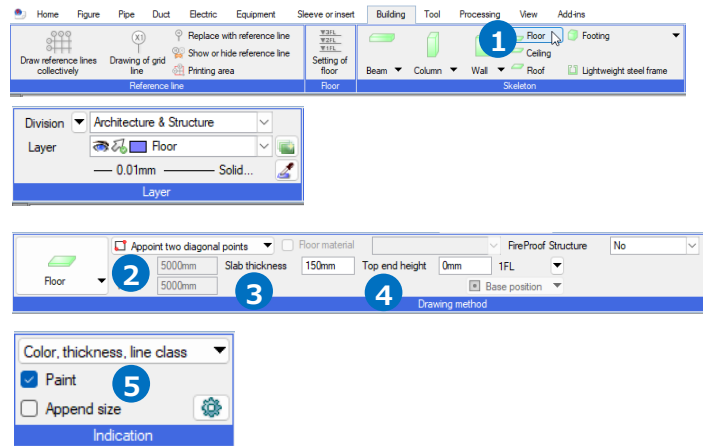

When you checkmark "Perform envelope automatically at time of drawing and editing of beam, column and wall" in [Setting]-[Initial value of drawing]tab-[Initial value of command]-[Architecture]-[Envelope, Materials symbol], [Create shrinkwrap automatically] turns ON at the time of opening of a new drawing.
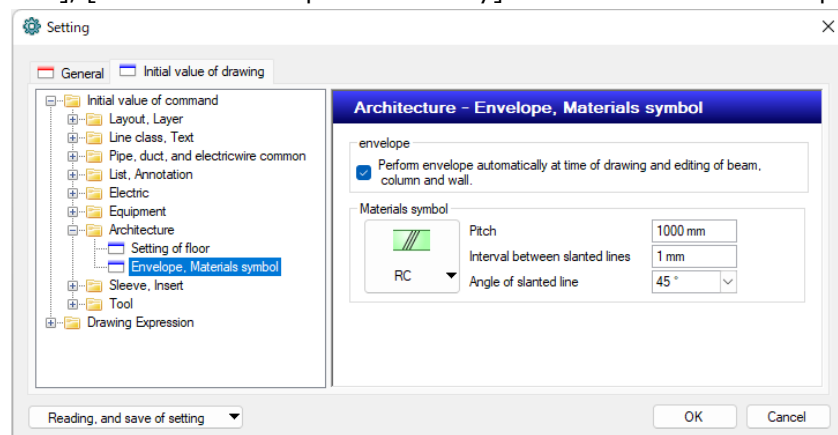
How to draw floors

1 Left-click [Building] tab- [Floor].

2 Select "Appoint two diagonal points" for the way of drawing.

3 Type "150" into the slab thickness.

4 Type "0" into the top end height and select "1FL".

5 Checkmark "Paint".

6 A guidance message appears saying as follows: "Specify 2 positions becoming opposite angle point of Floor. Specify rectangular top viewing from floor plan." Left-click two points on the opposite corners for inside of the beam in the read floor plan.

7 Type similarly figures into other floors. Then change the reference floor to "2FL" and type figures into the second floor.

**8** Left-click [Decision] on the context menu to end the command.

> **Memo**
> If you specify according to an uneven floor, select "Appoint any endpoint" for the way of drawing to specify multiple coordinates of the floor endpoints.
>
>

How to draw ceilings

1 Left-click [Building] tab- [Ceiling].

2 Select "Appoint any endpoint" for the way of drawing.

3 Type "20" into the thickness.

4 Type "2400" into the bottom end height and select "1FL".

5 A guidance message appears saying as follows: "Specify position becoming endpoint of Ceiling". Left-click the following six points in the read floor plan: three intersections between the inside of the walls; two intersections between the column and wall; and a column edge.

6 Type similarly figures into other ceilings.
Type "2400" into the ceiling height of rest room, and "2700" for other rooms.

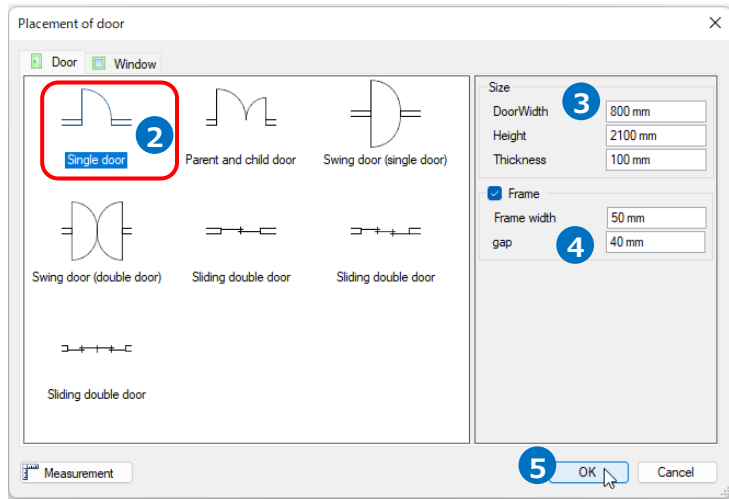**7** Left-click [Decision] on the context menu to end the command.
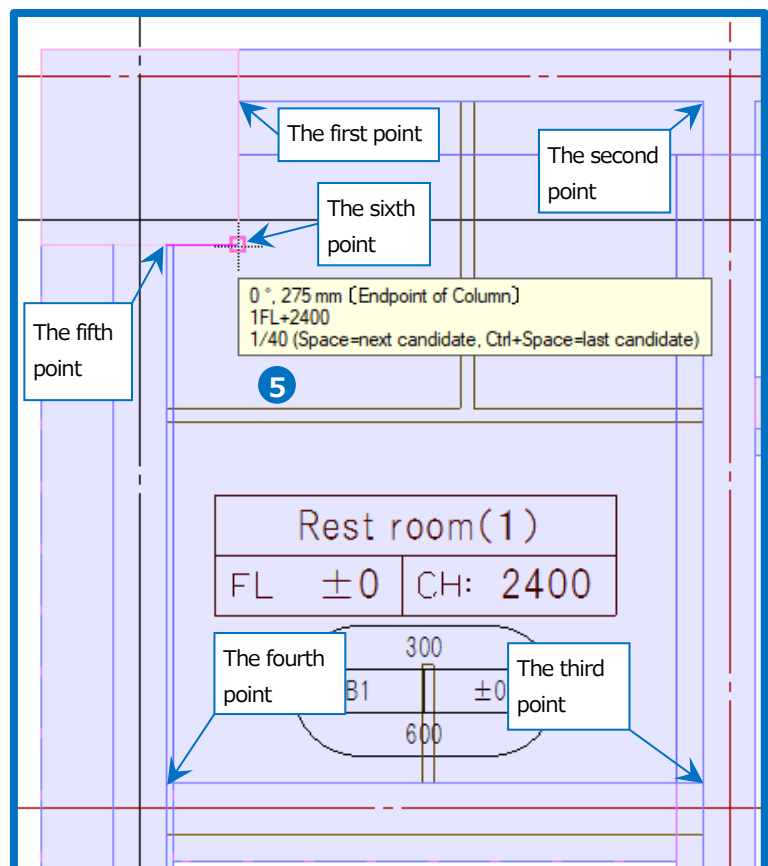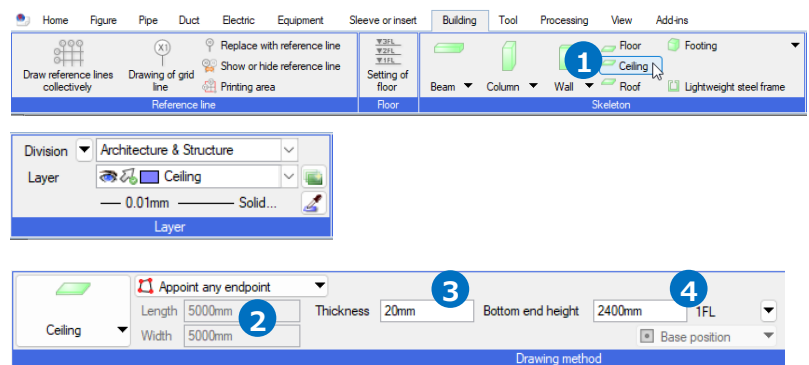
How to draw doors or windows
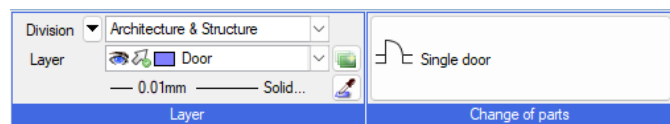
① Left-click [Building] tab- [Door].
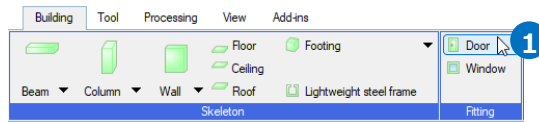
② Select [Single door] in [Placement of door] dialog box.

③ Type the size into the following:
Door Width "800"
Height "2100"

> **Memo**
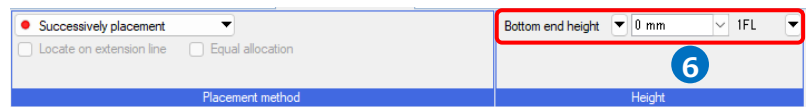> Rebro draws "Thickness" as the wall thickness when it is placed on the wall.
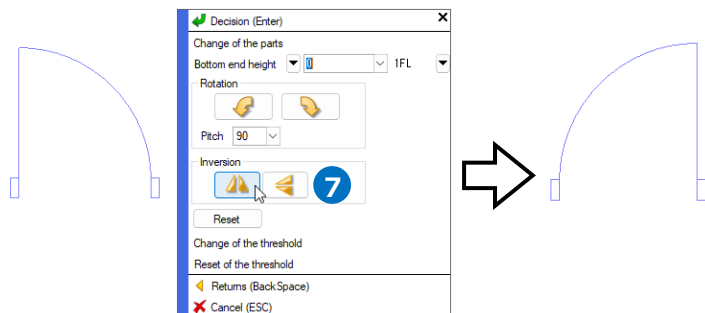
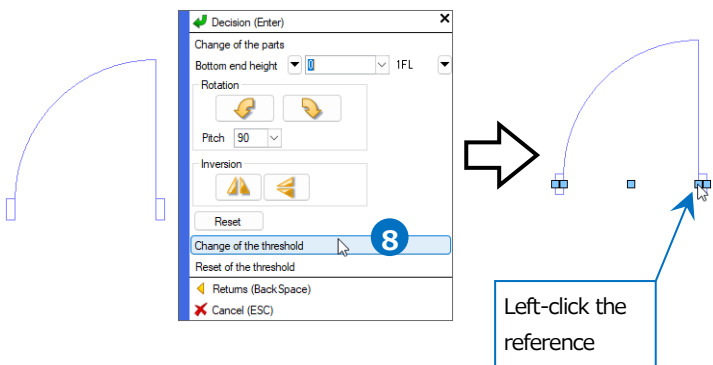④ Checkmark "Frame".
Frame width "50"
gap "40"

⑤ Left-click [OK].

⑥ Type "0" into the bottom end height and select "1FL".

⑦ Left-click [Inversion] button on the context menu to adjust the direction to place.

⑧ Left-click [Change of the threshold] and the right end of the door, to change the reference position.

Left-click the reference

9 A guidance message appears saying as follows: "Specify a position to locate." Specify an intersection point between the door and wall on the drawing.

Specify the position to place the door

10 Left-click [Decision] on the context menu to end the command.
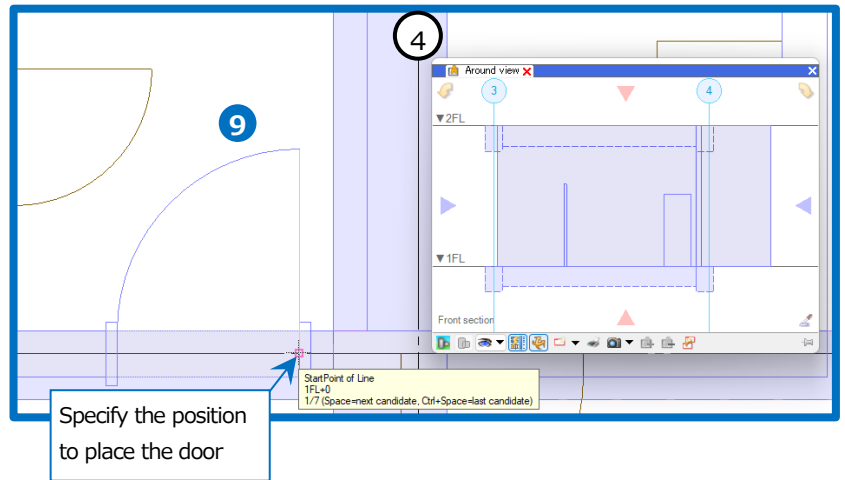
11 Place similarly other doors.

Doors for "Rest room (2)"

A door to "Rest room (2)"

A door to "Water boiler room"

A door to "Water boiler room"
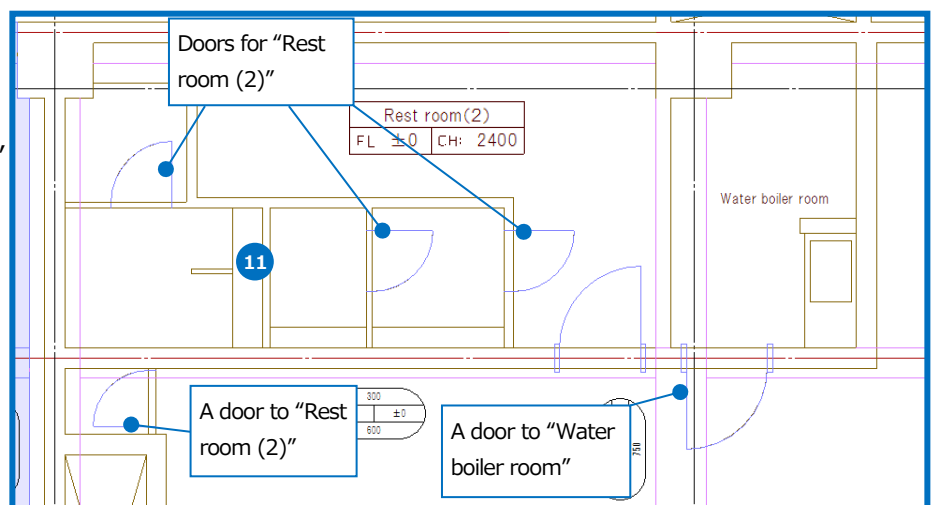"Single door"
    Door width "800"
    Height "2100"
With a frame
    Frame width "50"
    gap "40"

Doors for "Rest room (2)": 3 places
"Single door"
    Door width "600"
    Height "2100"
Without a frame

A door to "Rest room (2)": 1 place
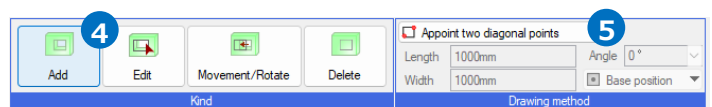"Single door"
    Door width "550"
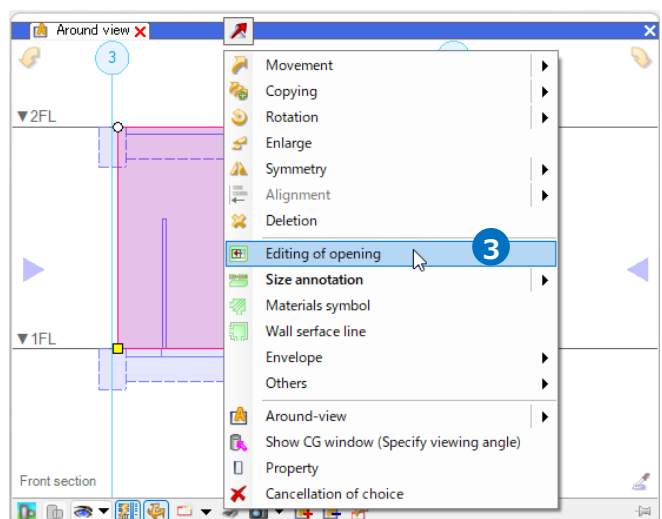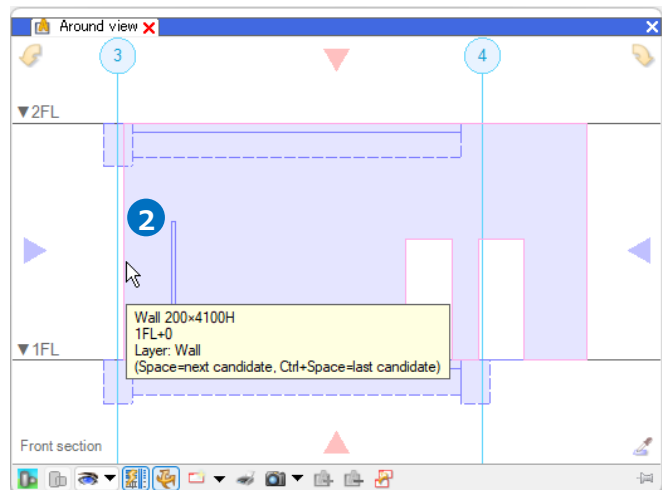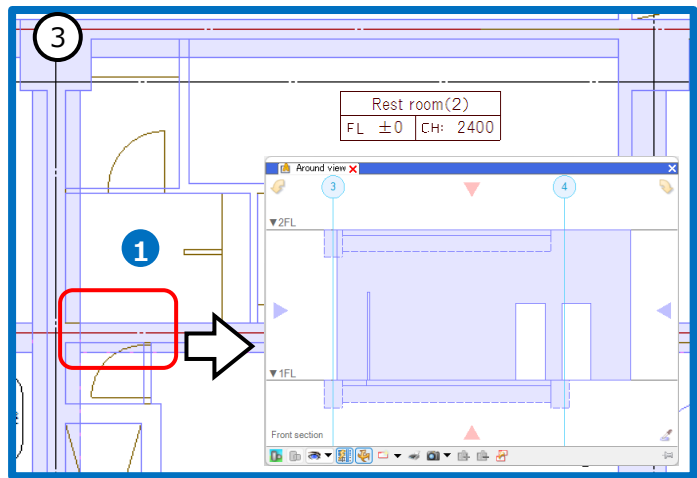   Height "2100"
Without a frame
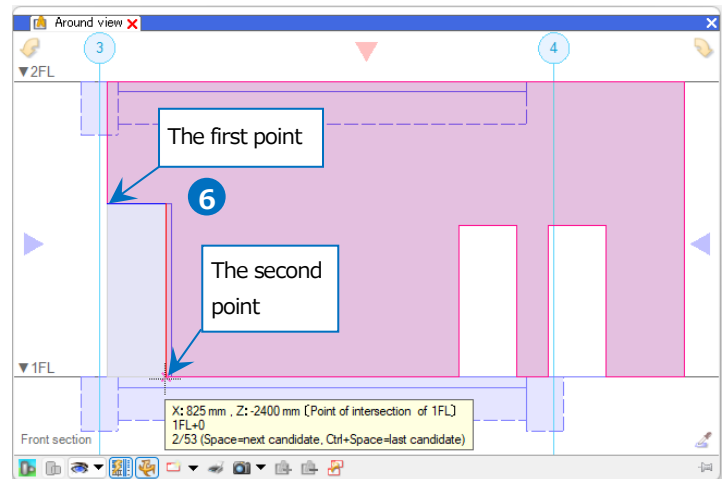
How to draw openings

Create an opening to the "Rest room (2)".

1 Choose the wall to the rest room (2) to show the front in around-view.

2 Specify the wall in around-view.

3 Left-click [Editing of opening] on the context menu.

4 Select "Add".

5 Select "Appoint two diagonal points" for the way of drawing.

6 A guidance message appears saying as follows: "Specify an top pf opening". Use a temporary rectangle made from 2 points on the opposite corners to specify the opening area in around-view.
Specify an intersection point between the wall face and ceiling as the first point, and another intersection point between the wall face and floor as the second point.

7 An opening is created within the specified area on the wall.
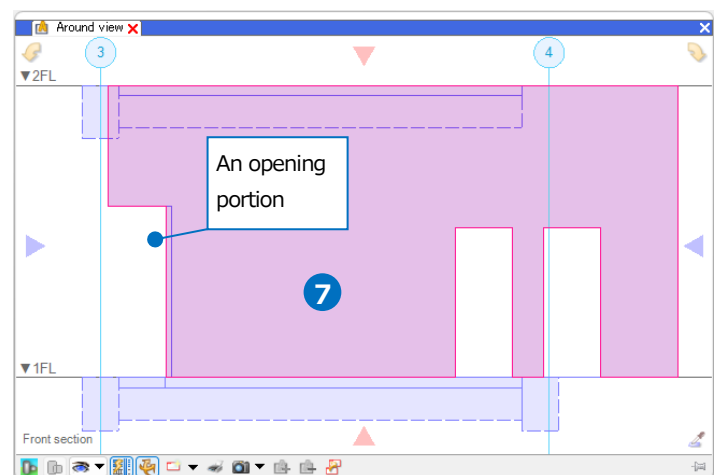
How to draw finish lines

1 Left-click [Building] tab- [Wall surface line].

2 Type "30" into the finish thickness.

3 Select "Across all floor plane-view" if you want to show finish lines in a different view name.

4 A guidance message appears saying "Choose wall, column to make wall surface line". Choose columns and walls of rest room(2) by Specify area (In area/boundary line is included).
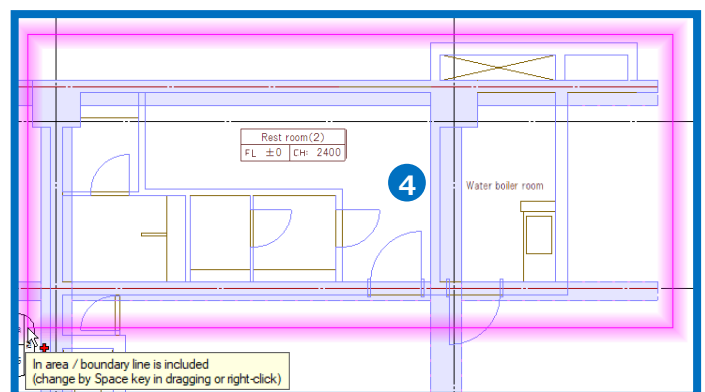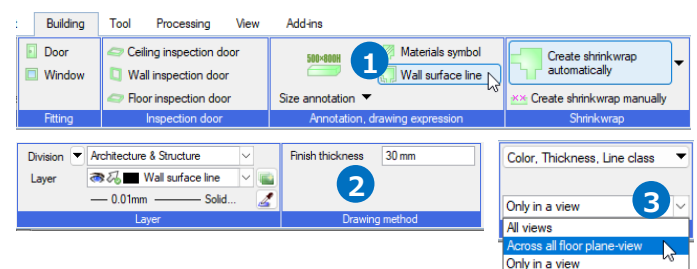
5 Deselect the partition walls where no finish lines will be drawn. Choose the partition wall by Specify area (In area/boundary line is included) while pressing Shift key, to deselect the wall.

Shift + Specify area

FL ±0   CH 2400

5

In area / boundary line is included
(change by Space key in dragging or right-click)

6 Left-click [Decision] on the context menu.

7 A guidance message appears saying as follows: "Specify position to make wall surface line by coordinate".
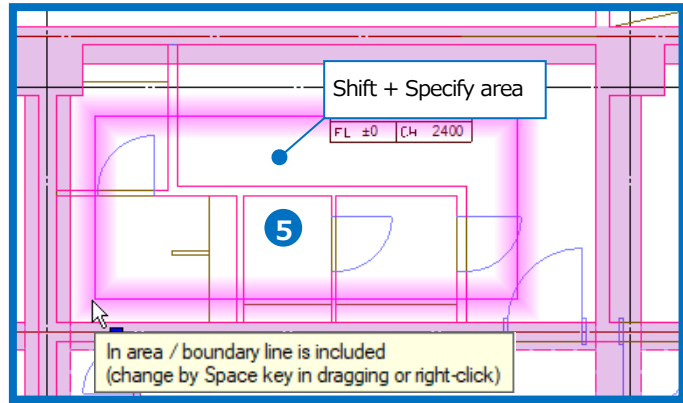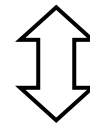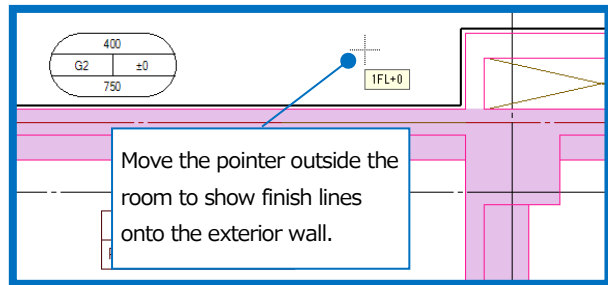Move the pointer to switch the drawing direction of finish lines.
Now place the pointer inside the room and left-click there.

400
G2   ±0
750

1FL+0

Move the pointer outside the room to show finish lines onto the exterior wall.

400
G2   ±0
750

Rest room(2)
FL ±0   CH: 2400

1FL+0

Move the pointer inside the room to show finish lines in the room. Left-click here.

7

8 Left-click inside the next room to draw finish lines for Rest room (2).

9 Left-click [Decision] on the context menu to end the command.

400
G2   ±0
750

Left-click

Rest room(2)
FL ±0   CH: 2400

8
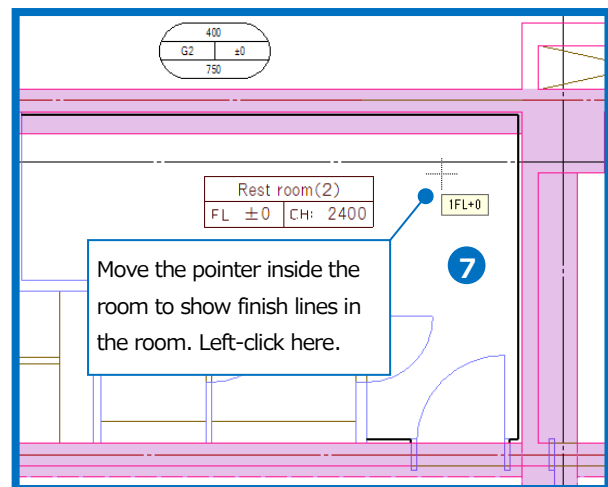
Left-click

Left-click
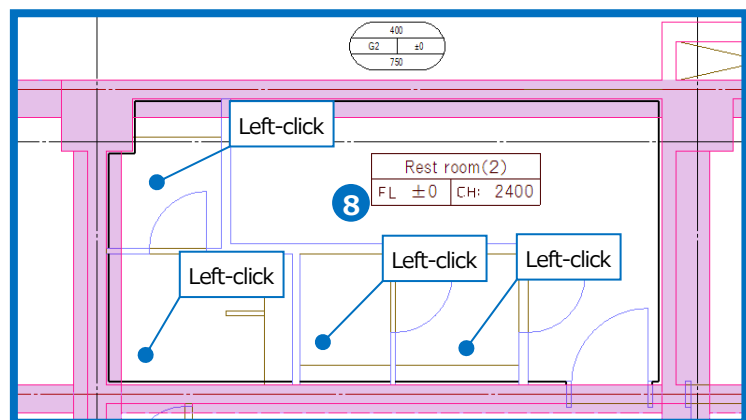
Left-click

How to draw material symbols

1 Left-click [Building] tab- [Materials symbol].

2 Select "RC" for a material symbol to draw.

> **Memo**
>
> If you select "RC" for a material symbol, you can specify a target element.

☑ Wall ☑ Beam
☑ Column ☑ Floor
☑ Machine foundation
Target
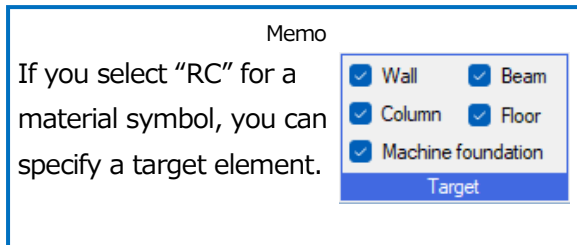
3 Type the size to draw material symbols into the following:
Pitch "4000"
Interval between slanted lines "1"
Angle of slanted line "45-degrees"
Checkmark "Wall" and "Column".

4 Choose a skeleton to draw material symbols.
Choose the wall and column.
※Do not choose partition walls in rest rooms.

5 Left-click [Decision] on the context menu.

6 Material symbols appear on the chosen skeleton. Specify the reference position to draw.

Specify the reference position

Center of Column
1FL-1500
1/4 (Space=next candidate, Ctrl+Space=last candidate)

7 Left-click [Decision] on the context menu to end the command.

Memo

Checkmark "Simple substance placement", you can specify one by one the position to place material symbols.

Specify the skeleton

Specify the position to place material symbols

Center of Column
1FL-1500
1/4 (Space=next candidate, Ctrl+Space=last candidate)