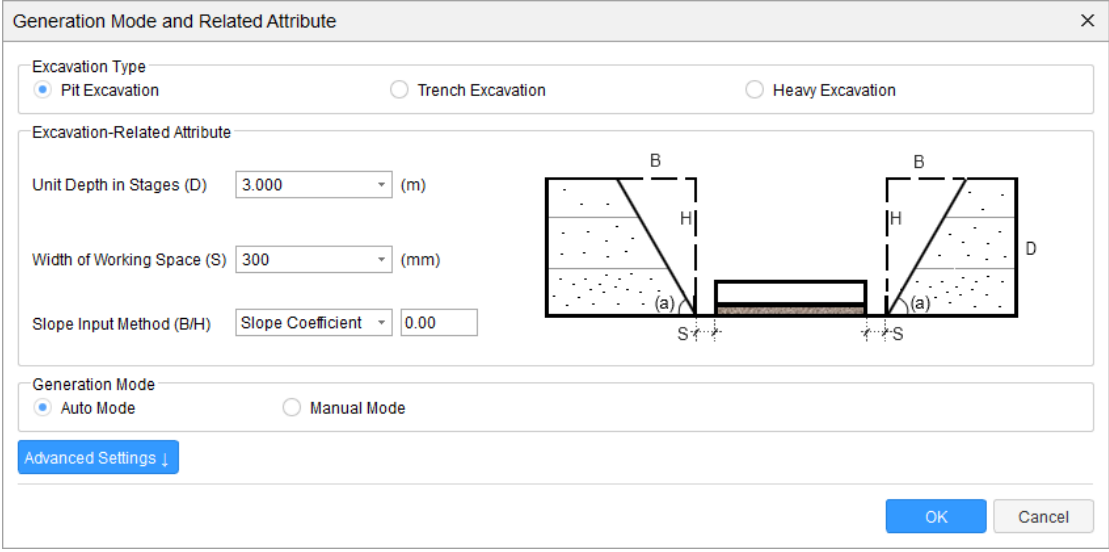


Auto Generate Excavation

To generate excavation entities quickly based on the foundation entities you have already drawn, you can use this function.

1. Go to the elements under **Foundation**, click **Auto Generate Excavation**, and the **Generation Mode and Related Attribute** window appears.



Generation Mode and Related Attribute

Excavation Type

Pit Excavation Trench Excavation Heavy Excavation

Excavation-Related Attribute

Unit Depth in Stages (D) 3.000 (m)

Width of Working Space (S) 300 (mm)

Slope Input Method (B/H) Slope Coefficient 0.00

Generation Mode

Auto Mode Manual Mode

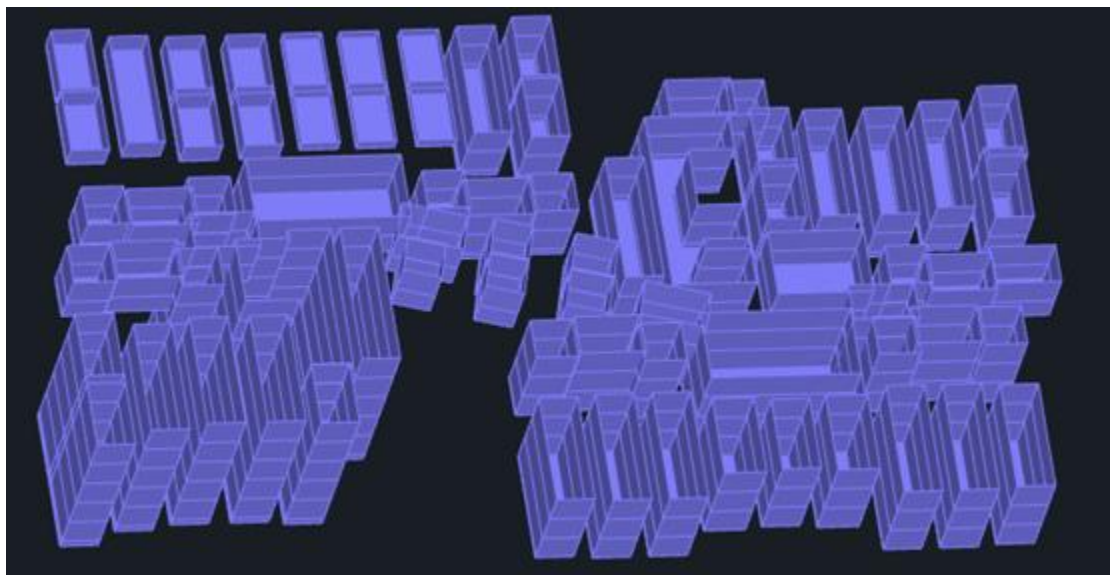
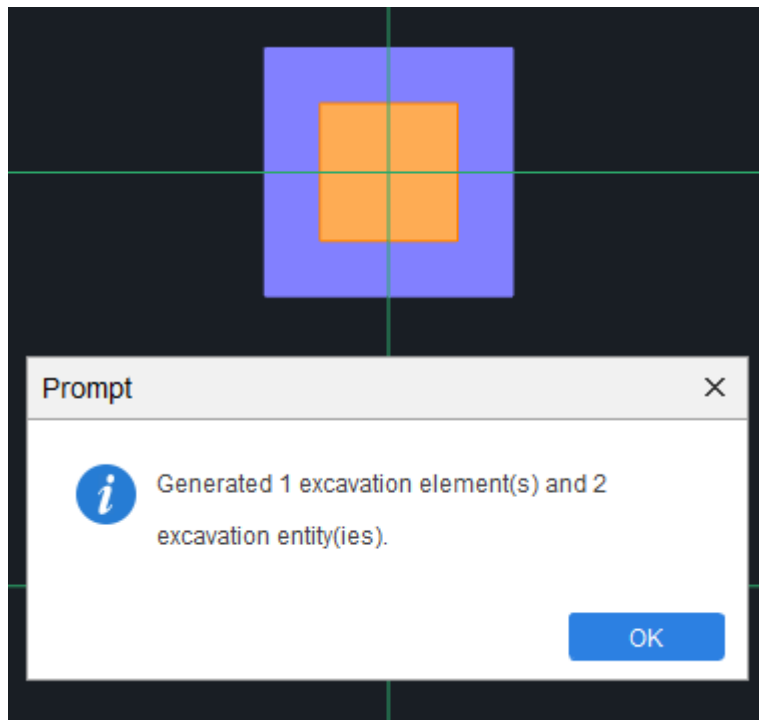
Advanced Settings ↓

OK Cancel

The diagram shows a cross-section of an excavation pit. The width of the pit is labeled 'B', the height is 'H', and the depth is 'D'. The width of the working space is 'S'. The slope is labeled '(a)'. The diagram shows two pits with a central trench between them.

2. Select or enter relevant information as needed, click OK, and then the excavation entities are generated automatically.

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Note

1. For excavation types, you can select Pit Excavation, Trench Excavation or Heavy Excavation as needed.
2. For excavation working space, slope coefficient and unit depth, you can enter values as needed.

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3. Generation Mode: If clicking Auto Mode, the excavations will be generated automatically in the current area based on the foundations that conforms to the conditions; If clicking Manual Mode, you need to select the range for generating excavations manually.

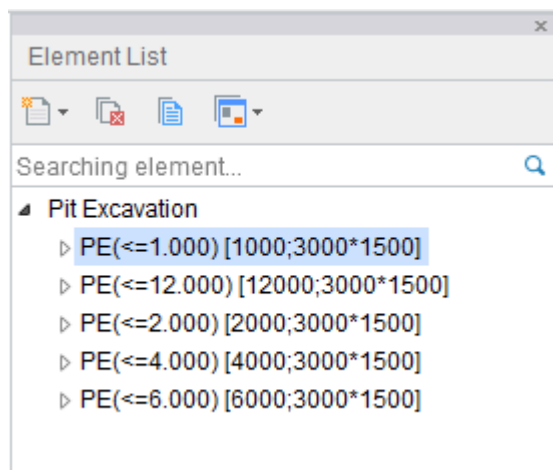
4. Slope Position: You can select to generate excavations at the Blinding Soffit or Blinding Top. If you select Blinding Soffit, a whole excavation entity will be generated from the blinding soffit to the ground elevation, the slope will start from the blinding soffit, and in the Attribute Editor, the Bottom Elevation is Blinding Bottom Elevation, and the Depth is calculated from the blinding soffit to the ground elevation. If you select Blinding Top, two excavation entities will be generated for a blinding and a foundation separately. The excavation entity for the blinding does not slope, its bottom elevation is Blinding Bottom Elevation, and the excavating depth is the thickness of the blinding. The excavation entity for the foundation slopes from the blinding top (foundation soffit), its bottom elevation is Blinding Top Elevation, and the excavating depth is calculated from the blinding top to the ground elevation.

5. Advanced Settings - Mode of Reversely-Creating Element.

Set Standard:

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- Reversely create multiple elements by section size and depth of entity.
- Name entities by depth classification, such as PE(<=1), PE(<=2.000), PE(<=4.000), and then for each stage, the depth value will increase by a specific range, such as PE(<=6.000), PE(<=8.000).
- The depth of each unit is generated by unit depth, for example, 2m.
- From bottom to top, the unit names are: Top PE(0.000<=2.000), PE(2.000<=4.000), Bottom PE(4.000<=6.000).
- For each depth stage of the unit, if the excavations have the same section size and different depths, only one element will be generated. For example, in the depth range of 2-4m, if there are two entities, one is 3.5m deep, and the other is 3.7m deep, one element PE(<=4.000) will be generated.

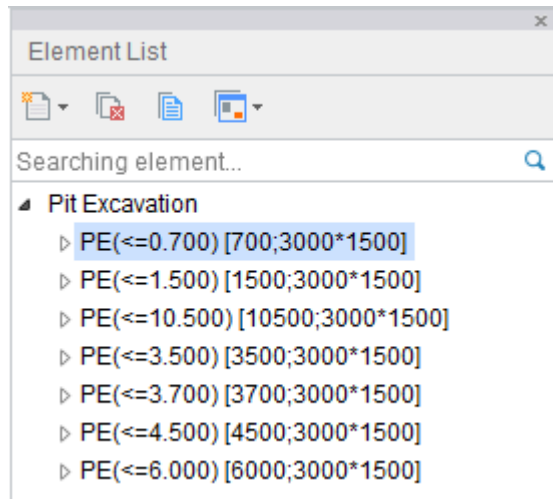


Actual Depth:

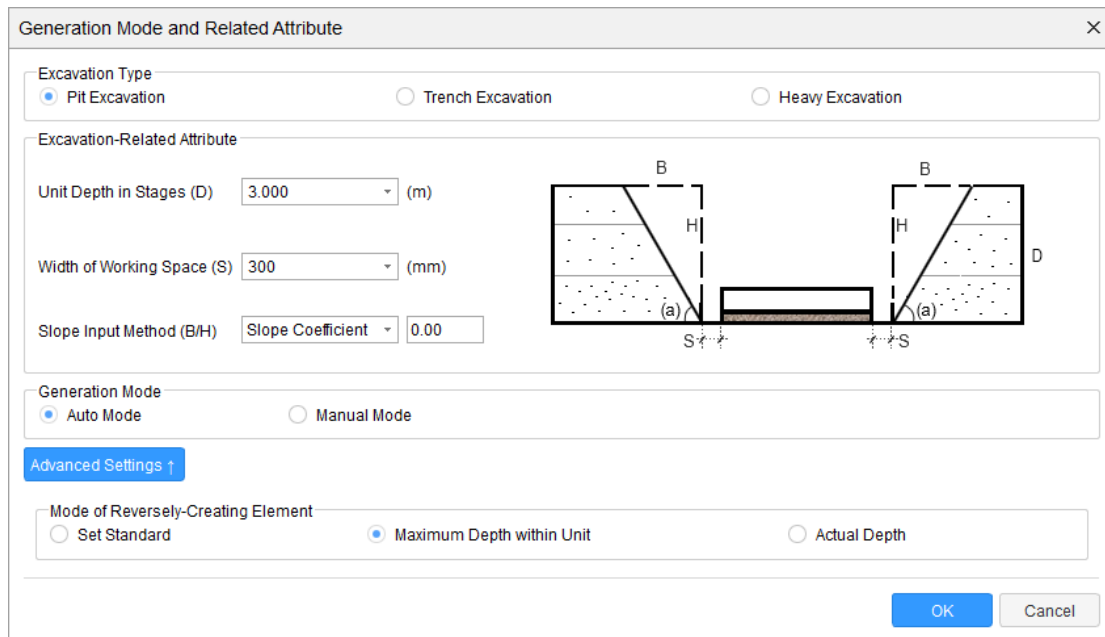
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- Reversely create multiple elements by section size and depth of entity.
- Name entities by total depth, such as PE(≤ 1.5), PE($\leq 3.5.000$), PE($\leq 3.7.000$), PE($\leq 4.5.000$).
- The depth of each unit is generated by unit depth; if the depth of the bottom unit is less than the unit depth, the unit will be generated by the actual remaining depth.
- From bottom to top, the unit names are: Top PE($0.000 < \leq 2.000$), PE($2.000 < \leq 4.000$), Bottom PE($4.000 < \leq 6.000$).
- For each depth stage of the unit, if the excavations have the same section size and different depths, multiple elements will be generated. For example, in the depth range of 2-4m, if there are two entities, one is 3.5m deep, and the other is 3.7m deep, two elements, PE(≤ 3.500) and PE(≤ 3.700) will be generated.
- If there already exist heavy excavations in the projects, the generated excavations will be located at the soffit of the existing heavy excavations. The generated excavations that are not covered by heavy excavations will be located to the ground elevation.

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Select Pit Excavation:



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Generation Mode and Related Attribute

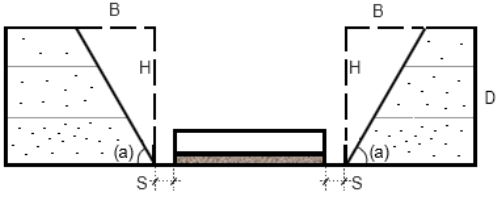
Excavation Type
 Pit Excavation Trench Excavation Heavy Excavation

Excavation-Related Attribute

Unit Depth in Stages (D) (m)

Width of Working Space (S) (mm)

Slope Input Method (B/H)



Slope Position
 Blinding Soffit Blinding Top

Generation Mode
 Auto Mode Manual Mode

[Advanced Settings ↓](#)

Select Trench Excavation:

Generation Mode and Related Attribute

Excavation Type
 Pit Excavation Trench Excavation Heavy Excavation

Excavation-Related Attribute

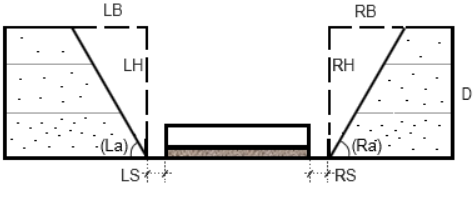
Unit Depth in Stages (D) (m)

Width of Left Working Space (LS) (mm)

Width of Right Working Space (RS) (mm)

Left Slope Input Method (LB/LH)

Right Slope Input Method (RB/RH)



Generation Mode
 Auto Mode Manual Mode

[Advanced Settings ↑](#)

Mode of Reversely-Creating Element
 Set Standard Maximum Depth within Unit Actual Depth

Select Blinding:

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✕
Generation Mode and Related Attribute

Excavation Type
 Pit Excavation Trench Excavation Heavy Excavation

Excavation-Related Attribute

Unit Depth in Stages (D) (m)

Width of Working Space (S) (mm)

Slope Input Method (B/H)

Slope Position
 Blinding Soffit Blinding Top

Generation Mode
 Auto Mode Manual Mode

Advanced Settings ↑

Mode of Reversely-Creating Element
 Set Standard Maximum Depth within Unit Actual Depth

OK
Cancel

✕
Generation Mode and Related Attribute

Excavation Type
 Pit Excavation Trench Excavation Heavy Excavation

Excavation-Related Attribute

Unit Depth in Stages (D) (m)

Width of Left Working Space (LS) (mm)

Width of Right Working Space (RS) (mm)

Left Slope Input Method (LB/LH)

Right Slope Input Method (RB/RH)

Slope Position
 Blinding Soffit Blinding Top

Generation Mode
 Auto Mode Manual Mode

Advanced Settings ↑

Mode of Reversely-Creating Element
 Set Standard Maximum Depth within Unit Actual Depth

OK
Cancel

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Generation Mode and Related Attribute

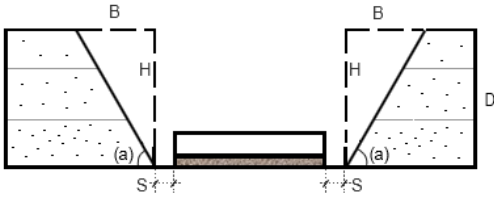
Excavation Type
 Pit Excavation Trench Excavation Heavy Excavation

Excavation-Related Attribute

Unit Depth in Stages (D) (m)

Width of Working Space (S) (mm)

Slope Input Method (B/H)



Slope Position
 Blinding Soffit Blinding Top

Generation Mode
 Auto Mode Manual Mode

Advanced Settings ↑

Mode of Reversely-Creating Element
 Set Standard Maximum Depth within Unit Actual Depth

OK Cancel

Note

Auto Generate Excavation is available for Ground Beam, Raft Foundation, Strip Foundation, Pad Foundation, Pile Cap, Blinding, Pier and Sump Pit.