VISKAR BIM – MODELING

1. MODELING TAB

The ***Modeling tab*** provides various options for creating and editing 3D objects. The modeling options are divided into guides, object, opening, vertex, edge, face and others.
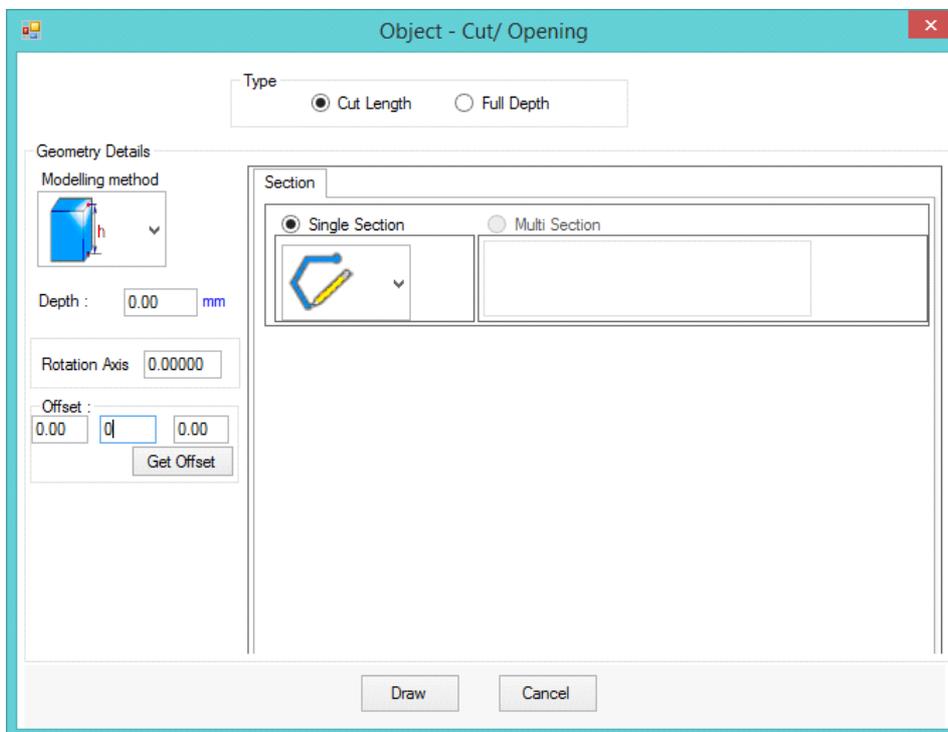

2. OPENING

The ***opening*** option allows the user to create openings in 3 dimensional objects. The openings can be created to full depth of the object or to a fixed depth. An opening can be created using the either the extrusion method or the path method of modeling.. When using the path method, an opening can be provided along a specified path. An opening can be a created using a custom section or a parametric section. Offset and rotation options allows the user to move and rotate the openings.


➢ Select **MODELING** tab → ***Model Opening object***

➢ An object cut/opening dialog box appears.

➢ Click on draw button to draw the desired shape for the opening on the required face of the object.

The Two types of openings are the cut length and the full depth. Cut length allows the user to create an opening to a specific depth of the object. Full depth allows the user to create an opening to the full depth of the object.
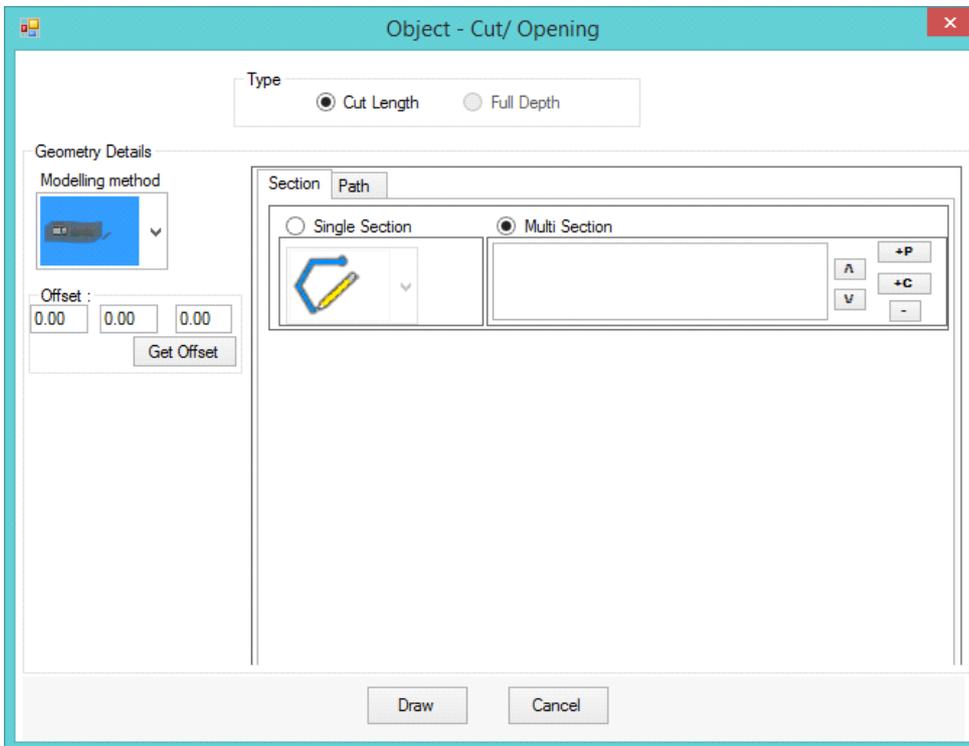

Multi section openings can be provided only under path method options for picking of points for a custom section are same as it is in guides options for placing of a parametric section includes OFF, NOFF, MID, ONL

- OFF- offset, is the method of picking a point from a single first point, pick the first point, and enter the X, Y and Z directions respectively by placing the mouse over the directions

- NOFF - new offset, it is similar to offset with a new first point

- ONL - Online, pick the first and the second from points in a direction and distance , enter the distances in X, Y and Z direction by placing the mouse over the respective directions.

- MID -midpoint, a method of picking a point centered between the first and the second from points

3. VERTEX

The *vertex* options allows the user to edit or delete the vertices in an object.
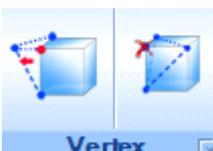
3.1 **VERTEX MOVE**

The ***vertex move*** option allows the user to move the vertices of an object in the desired direction.

➢ Select the ***MODELING*** tab → ***vertex move***
➢ Select the vertex of the object and click on the point the vertex is to be moved.
➢ Now the vertex is moved to the selected point.
➢ Moving of vertex can also be done using the ONL, OFF, NOFF, MID options.

- OFF- offset, is the method of picking a point from a single first point, pick the first point, and enter the X, Y and Z directions respectively by placing the mouse over the directions
- NOFF - new offset, it is similar to offset with a new first point

- ONL - Online, pick the first and the second from points in a direction and distance , enter the distances in X, Y and Z direction by placing the mouse over the respective directions.
- MID -midpoint, a method of picking a point centered between the first and the second from points

Note: In case a clash is likely to occur due to the movement of the vertex then the process gets terminated

3.2 VERTEX DELETE

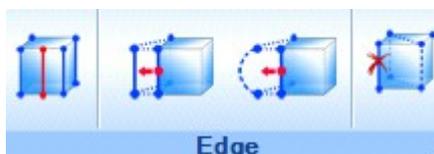The ***vertex delete*** option allows the user to delete the vertices of an object.

➢ Select the ***MODELLING*** tab → ***vertex delete***
➢ Select the vertex that is to be deleted. Now the selected vertex of the object is deleted.
Note: once the object reaches the minimum number of vertices that are required for the object to be a 3 dimensional object, no more vertices can be deleted.

4. EDGE

The ***edge*** options allows the user to modify the edges of an object. The options available to edit edges of an object are the Edge add, Edge move, Edge modify and Edge delete.

4.1 EDGE ADD

The *edge add* option allows the user to create a new edge on the face of an object.

➢ Select the **MODELLING** tab → *Edge delete*
  ➢ Select a face of the object. Select a start and end point for the new edge to   be added.
➢ Now, the selected face is split into two face.

Selection of the points includes OFF, NOFF, MID, ONL options which are similar as in earlier case

- OFF- offset, is the method of picking a point from a single first point, pick the first point, and enter the X, Y and Z directions respectively by placing the mouse over the directions

- NOFF - new offset, it is similar to offset with a new first point

- ONL - Online, pick the first and the second from points in a direction and distance , enter the distances in X, Y and Z direction by placing the mouse over the respective directions.
- MID -midpoint, a method of picking a point centered between the first and the second from points
- SLOPE- it includes the following methods

- By providing the x,y,z distances which is the distances from the reference point and providing the slope distance which is the distance of the slope from the reference point.

- On providing the slope angle the object moves along the specified slope angle

4.2 EDGE MOVE

The *Edge move* option allows the user to move the edges of a object.

➢ Select the **MODELLING** tab → *Edge move*
➢ Select an edge of an object and choose a point to move the edge of an object.
➢ Now, the selected edge is moved to the new point

Note: In case a clash is likely to occur when the edge collides within the object, The process will be terminated. Edge move can be performed using the options OFF, NOFF, ONL, MID, SLOPE. which are similar as in earlier cases.

- OFF- offset, is the method of picking a point from a single first point, pick the first point,

and enter the X, Y and Z directions respectively by placing the mouse over the directions

- NOFF - new offset, it is similar to offset with a new first point

- ONL - Online, pick the first and the second from points in a direction and distance , enter the distances in X, Y and Z direction by placing the mouse over the respective directions.
- MID -midpoint, a method of picking a point centered between the first and the second from points
- SLOPE- it includes the following methods

- By providing the x,y,z distances which is the distances from the reference point and providing the slope distance which is the distance of the slope from the reference point.
- On providing the slope angle the object moves along the specified slope angle

4.3 EDGE MODIFY

The *Edge modify* option allows the user to modify a straight edge into a radial edge.

➢ Select *MODELLING* tab → *Edge modify* from Edge option.
➢ Select required edge of the object. Enter a radius and an angle for the radial arc.
➢ Now, the selected is edge modified into a radial edge.

4.4 EDGE DELETE

The *Edge delete* option allows the user to delete the edges of an object. Once the object reaches the minimum number of edges required for it, no more edges of the object can be deleted.

➢ Select the *MODELLING* tab → *Edge delete*
➢ Select an edge of an object.
➢ Now, the selected edge is deleted.

5. FACE

The *Face option* allows the user to move the selected face of the object parallel.

➢ Select the *MODELLING* tab → *Face pull/push – By parallel to face*
➢ Select a face of an object. Now, specify a new point and move the face.
The other available options are

EXTRAPOLATE

This option allows to move the selected face along with the edges that are adjacent to the selected face.

PLANE(p)- this option allows the user to push or pull the face along a plane by selecting the points of the plane.

EXTEND FACE

This option extends the selected face of an object to another face

The PLANE option is the same as mentioned in extrapolate.

MOVE ADJACENT FACE

This option allows to move the selected face along with the face that is adjacent to it
EF- Extend face option is similar as above

6. OTHERS

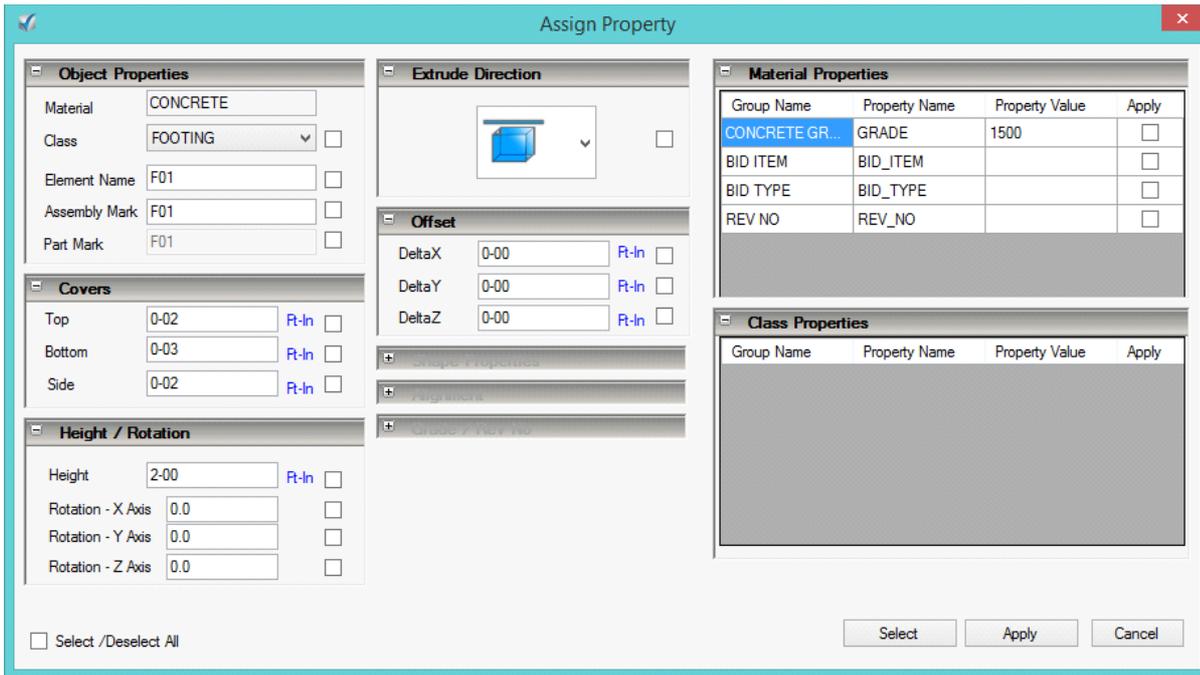The *others* options allows the user to assign the properties of an object to another object.

6.1 ASSIGN PROPERTY

The *Assign property* option allows the user to assign the properties such as the object property, extrude direction, offset, cover, height/rotation, material property, class property, etc.. from a base object to the selected object.

➢ Select the **MODELLING** tab → *Assign property*

➢ Select the base object and check the properties that are to be copied to the target object.

➢ Click on select and select the target object. Press Enter.

➢ Click on apply and click OK.

The selected properties of the base object are now assigned to the target object.

6.2 ASSIGN EDGE PROPERTIES

The *Assign Edge* properties option allows the user to assign the properties of one edge to the another edge. The edge properties can be assigned for the edges of a same object or from one object to another.

> ➢ Select the *MODELLING* tab → *Assign edge properties*
> ➢ Select the edge.
> ➢ Now, Select the target edge where the properties of base edge is to be applied.

6.3 ASSIGN ASSEMBLY/PART MARK

The *assign assembly / part mark* allows the user to reassign the assembly and part mark of the elements on the work space.

> ➢ Select the *MODELLING* tab → *Assign assembly / part mark*
> ➢ Click OK.
> ➢ Now the assembly / part mark are reassigned to the objects.

EXERCISE

1.Model a circular footing of radius 3'-0 & depth 5'-0 and create a square full depth opening of size 2'-0 X 2'-0 on the top mid face.

2.Model a square footing and move the vertex of the footing using OFF, NOFF, ONL, MID options.

4.Model a trapezoidal footing and delete the vertex points until the object retains as a 3d model.

5.Model a rectangular footing and add edges at the mid of all the faces.

6.Model an L- footing and extend the faces using extend face option.

7.Model a rectangular footing of size 5'-0 X 4'-0 X 1'-6"and modify the vertical edge using the edge modify option with 3" radius on the y axis. Assign the properties of the edited edge to the remaining edges.

8.Model a footing with column. Using assign property, match properties of the column to the footing.

9.Model a rectangular footing of size 6'-0 X 4'-0 X 1'-6" and using edge move option change into square footing of size 4'-0 X 4'-0 X 1'-6".

10.Model a square footing of size 4'-0 X 4'-0 X 2'-0 and using the add edge option, add an edge each side face of the footing. By using the move edge option, move the edges by 1'-0 on the corresponding axis.