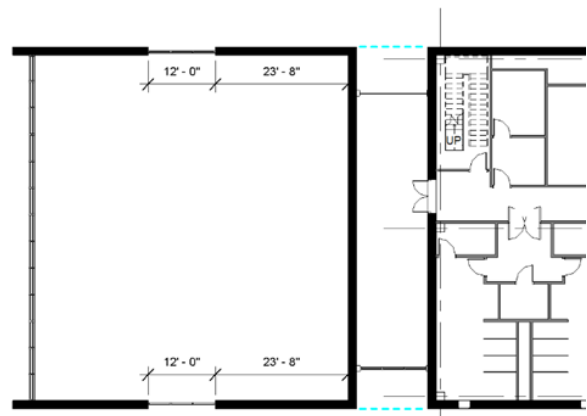
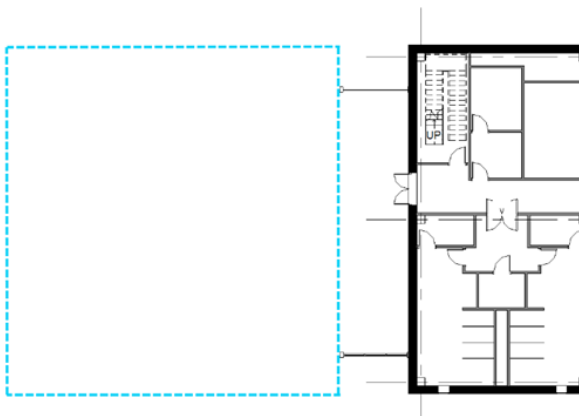


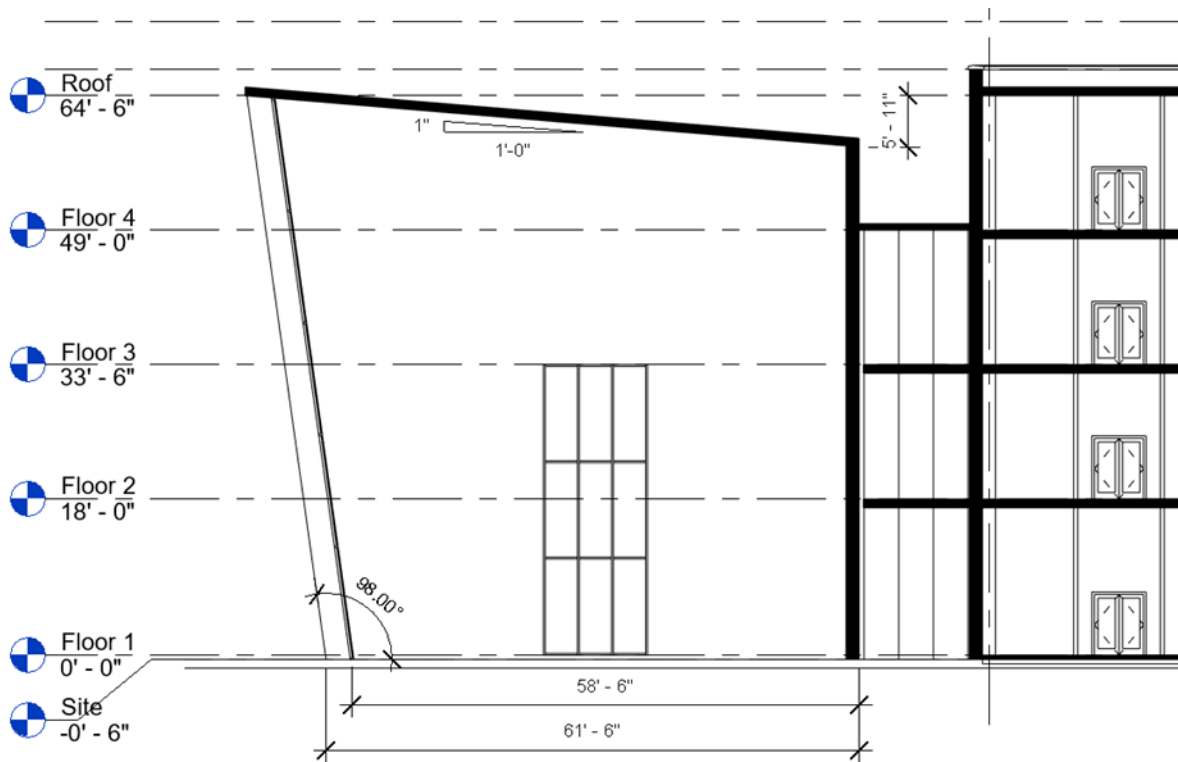
Challenge exercise: Create an atrium

Create an atrium with a slanted curtain wall and sloping roof.

Learning Objectives:

- Embed walls.
- Attach walls.
- Create curtain walls.





Complete the required activities:

- Starting in the accompanying file **Create Atrium.rvt**, create an atrium with a slanted curtain wall and sloping roof, to align with the existing building.
- The solid walls should be of the same type as the main building. The curtain wall types should be Curtain Wall Panels. They all should have the Site level as their base constraint and the Roof level as their top constraint. The roof should be the Generic- 12" type and have a 1 in. 12 slope from the Roof level down.
- The slanted curtain wall should have four horizontal grid lines and be attached to the underside of the roof.
- The side curtain walls should be embedded into the solid wall and span between the Floor 1 and Floor 3 levels for their base and top constraint. They should have two horizontal grid lines.
- This exercise should be completed in 25 minutes.

Assessment Criteria

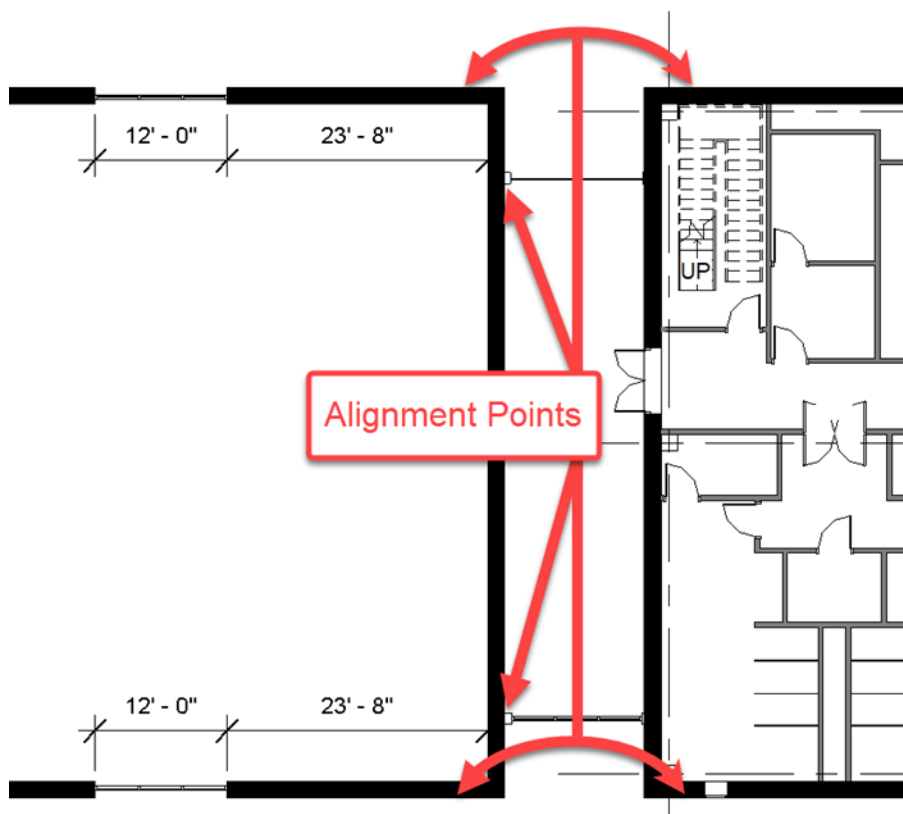
The finished exercise is available for comparison in the file **Create Atrium-Finished.rvt**.

Object Types – 10% (-3% for each incorrect type)

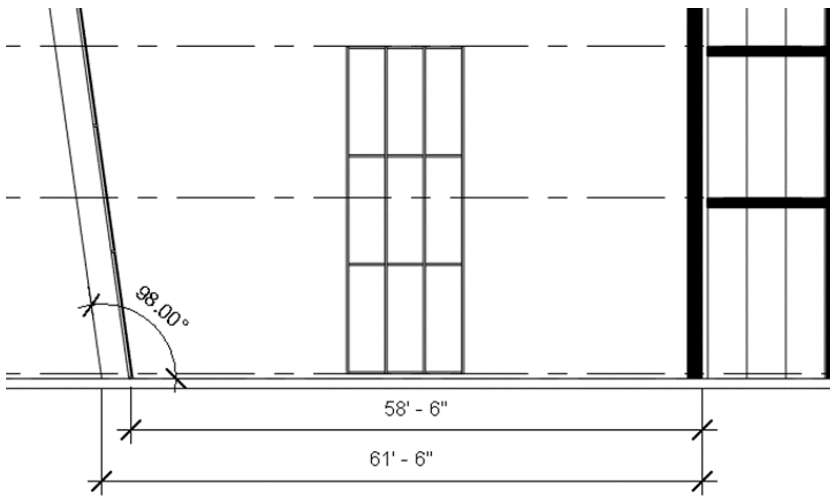
- The external wall type should be Stone on CMU basic wall type.
- The curtain walls should be Curtain Wall Panels curtain wall type.
- The roof type should be Generic – 12" roof type.

Dimensional Accuracy – 50% (10% for each bullet point below)

- The solid walls should be aligned with the walls of the existing building.



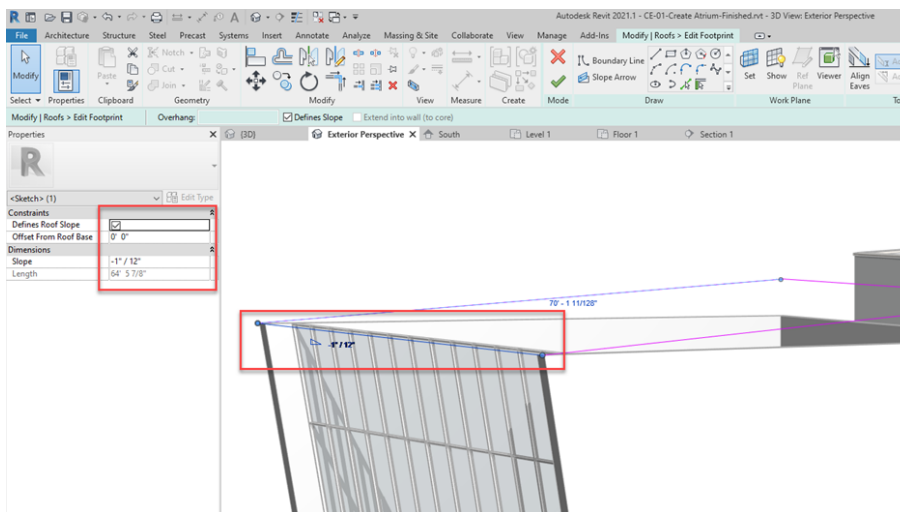
- Their base constraint should be the Site level with the Roof level as the top constraint.
- The length of the flank walls is difficult to measure in plan due to the slant at the wall ends. Therefore, measured in the view Section 1 at the base of the walls, the solid walls should measure 61 ft. 6 in. from the external face of the vertical side wall. The curtain wall base should be 3 ft. less at 58 ft. 6 in., as per the image below.



- The curtain wall should have a slanted cross section set to 8 degrees. This may be -8 degrees depending on the direction the wall was drawn during creation.
- The basic walls should have their profiles edited to be parallel to the slant of the curtain wall, 3 ft. away from it. The profile should also follow the underside of the roof.

Roof Slope – 10% (2% for the host level, 8% for the slope parameters)

- The roof should be hosted by the Roof level.
- The roof should slope at 1 in. 12 down from this level. This can either be achieved by setting the front boundary line to define a slope and setting the slope to -1 in. 12 or by placing a slope arrow in the sketch and setting its values accordingly.



Curtain Walls - 30% (5% for each bullet point below)

- The slanted curtain wall should have four horizontal grid lines set in its instance properties.
- The top of the slanted curtain wall should be attached to the roof.
- The 2 side curtain walls should be 12 ft. wide and positioned 23 ft. 8 in. from the internal face of the side wall.
- Their base constraint should be the Floor 1 level and the top constraint Floor 3 level.
- They should have two horizontal gridlines specified in their instance properties.
- They should both be embedded in the solid walls.