

Test Case 04 – Multi-level ceiling

Test Description: Multi-level drop ceiling is common to find in many buildings such as hotels and offices. This test models a multi-level drop ceiling in a space and exam whether a BIM software has the capability of capturing the plenum space correctly in the exported gbXML model.

Spaces / Rooms:

There is just one spaces in this test model. It is located at the first floor, named as “level_1_space_1”.

Special Considerations:

1. The model is 10' x 10' (center line)
2. The drop ceiling has multiple levels.
3. All the walls face to an orientation shall be named as: “[orientation]_wall_[custom index]”
4. All the other surfaces shall be named as their function, such as “interior_wall_[custom index]”
5. The custom index is an index to differentiate the same type surfaces. The tester can decide how to label the custom index.

Description of Test Case:

Figure 1 shows a 3-dimensional isometric view of this test model.

Figure 2 shows a typical floor plan to indicate dimensions and directions of the space, with wall thickness.

Figure 3 shows a typical section view to indicate positions and dimensions of the ceilings.

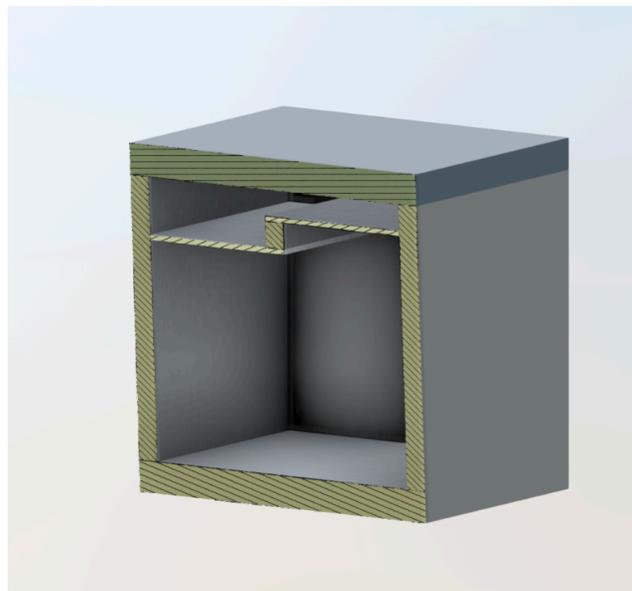


Figure 1. Isometric View

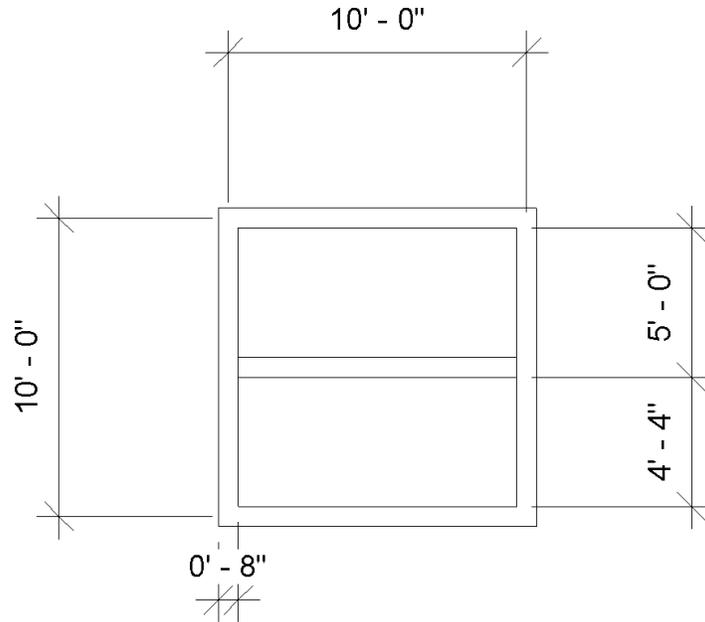


Figure 2. Floor View

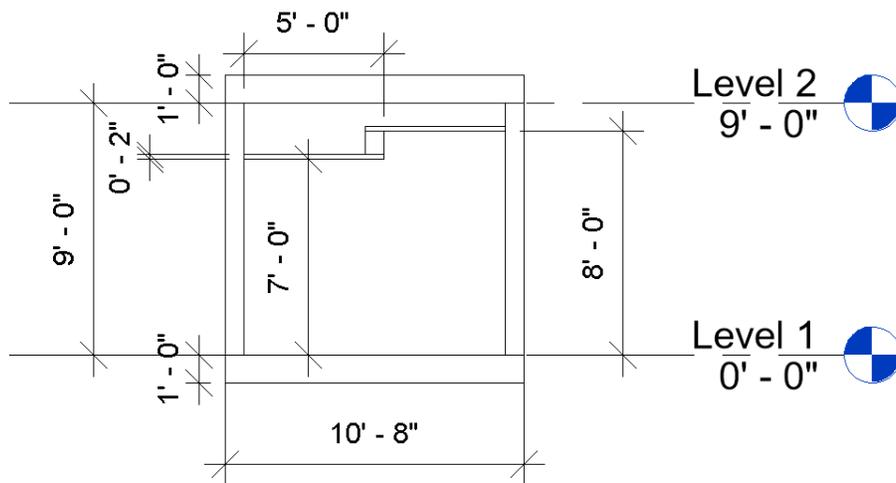


Figure 3. Section View

Expected Outcome:

A sample of expected outcome is demonstrated below in Figure 4. First, all surfaces have to be enclosed with each other to correctly form spaces. For the multi-level plenum, the surfaces shall be correctly identified. It is OK to separate the multi-level plenum space into two sub-spaces with different height level. However, the model must have an air surface to separate these two sub-spaces.

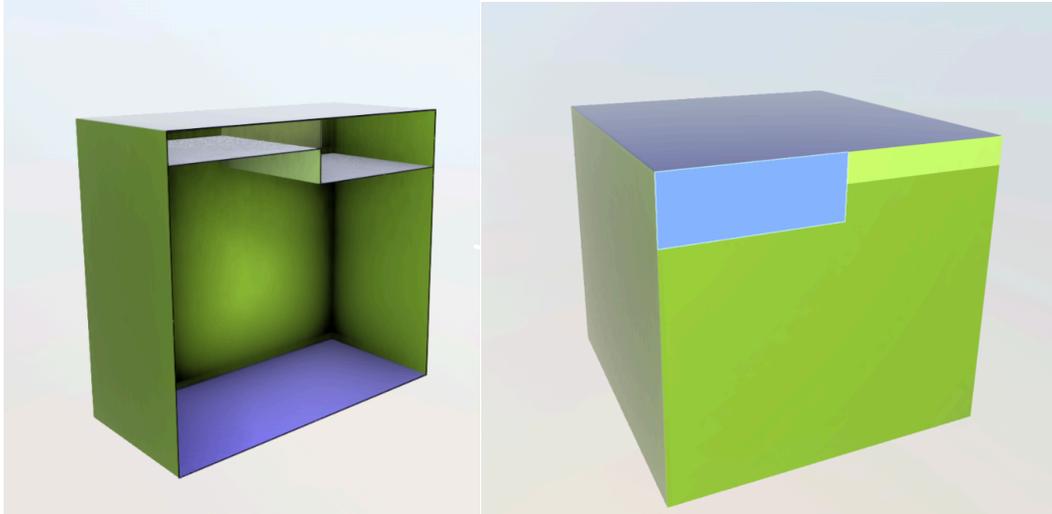


Figure 4. Expected outcome of Test 04

Common Outcomes and Test Results:

Failure to generate the plenum spaces could result in severe errors such as Figure 5. The roof surfaces shrink, and the east and west walls shape is altered. In addition, large gaps appeared between wall surfaces as well as wall surfaces to roofs.

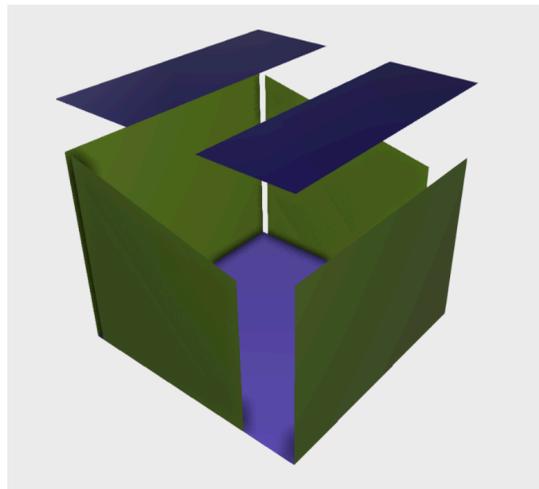


Figure 5. Failure example