gbXML Geometry Benchmark Tests
Test Case #10 - Barrel Vaulted Zone

Introduction

Geometry benchmark tests help to ensure that, as building geometry produced by building designers becomes more complex, the geometry produced for energy and heating and cooling loads analysis maintains the integrity of information that is required for a proper and detailed analysis.

gbXML.org maintains this battery of benchmark tests for vendors and other interested parties to ensure compliance with gbXML.org's standards for geometry accuracy and completeness. These tests are prescriptive and serve as marks of excellence that identify the ability of a technology to translate geometry properly from its native format to gbXML

Test #8 Instructions and Requirements

Space Name	*Your file*
Space_0_0	*not required to be the same*

Table 1

This test (Test Case #10) is a one-zone model with a barrel-vaulted roof, similar to what an old-fashioned air hangar may look like. This test, because it has a curved surface, must be meshed into a series of planar surfaces. Because meshing oftentimes cannot be controlled in uniform ways, this test does not have to undergo the Phase 1 validator tests. However, it will still be put through the Phase 2 validator, to ensure that the meshing produces an enclosed volume.

Figure 2 shows a plan view and the x,y,z coordinates of the lower left hand corner of the volume.

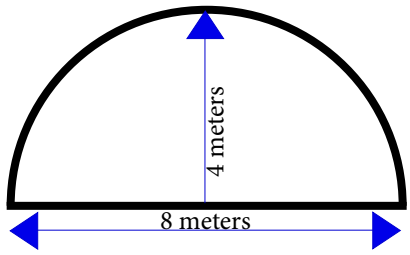


Figure 1: South Elevation View

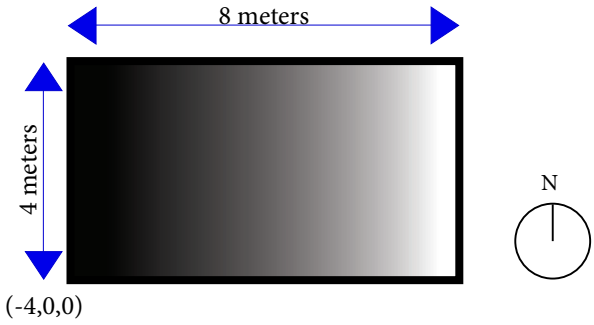
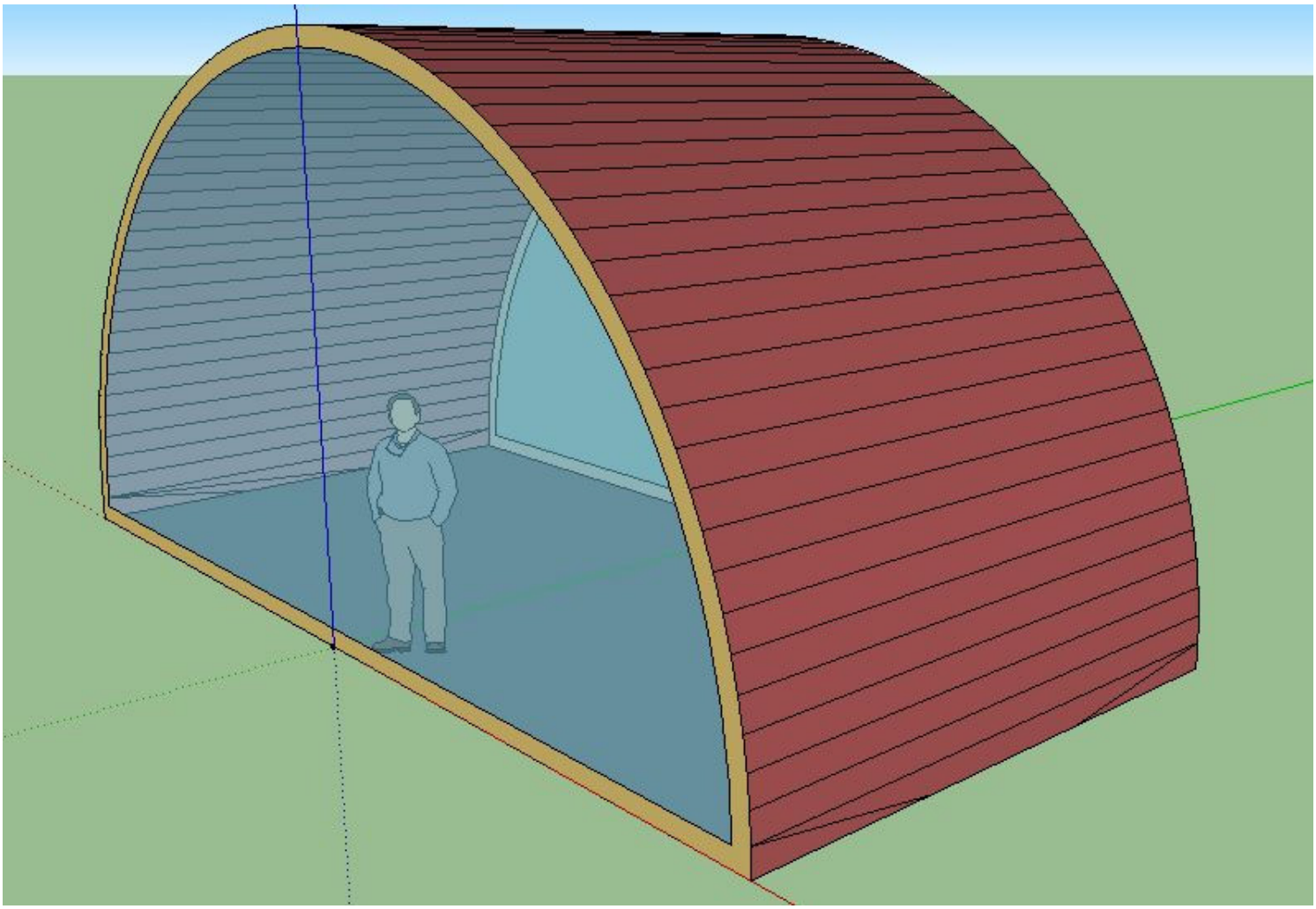


Figure 2: Plan View with Coordinate of Lower Left Hand Corner

3D Representation of a Resulting gbXML File



The resulting gbXML file (shown after imported into Sketchup) may look the following way. The glazing is 90% WWR on the north and south. This particular view is looking at the southern facade of this object.

Test #10 Common Outcomes and Test Results

This test has not been run often in the community and therefore common mishaps are not known at this time.

Resulting common issues will be related to interested parties as different CAD/BIM vendors complete this test.