

gbXML Geometry Benchmark Tests

Test Case #2 - Window with overhang bisecting the window height

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 #1 Instructions and Requirements

Space Name	Your file
sp-1-Space	<i>confirmed</i> <input type="checkbox"/>

Table 1

This test (Test Case #2) consists of a single space. The space name must adhere to the naming convention shown in column 1 of the table to the left (Table 1). These name strings should appear as the value of the Space element's id attribute. If you are rebuilding this test case to submit to gbXML, you can use the table's checkboxes as a form of quality control for your own internal processes. If the spaces are not named appropriately, then the test will not pass.

Test Case Spatial Configuration

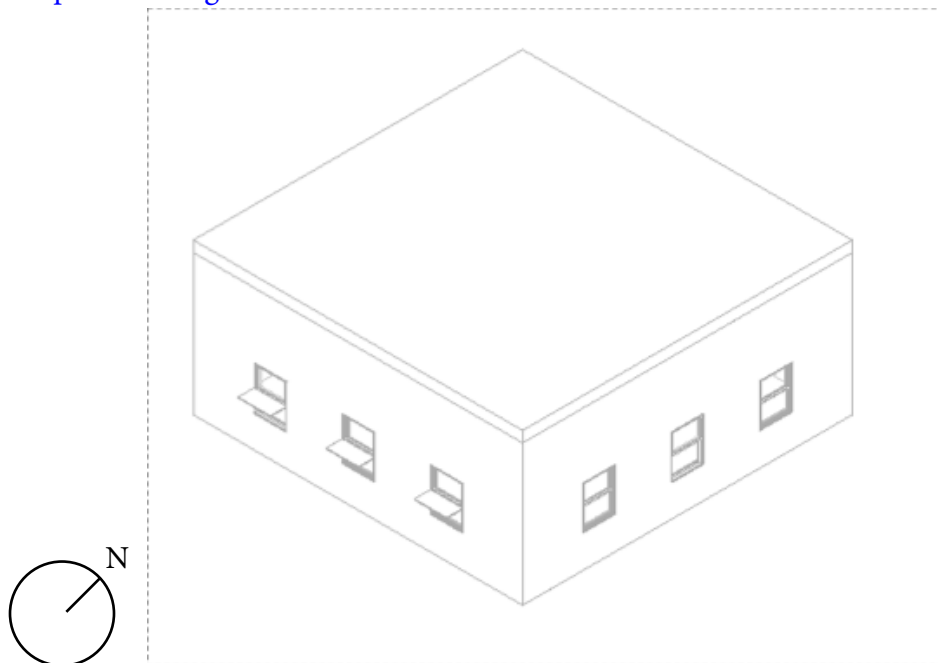


Figure 1

sp-Space 1 Drawing Instructions and Dimensions

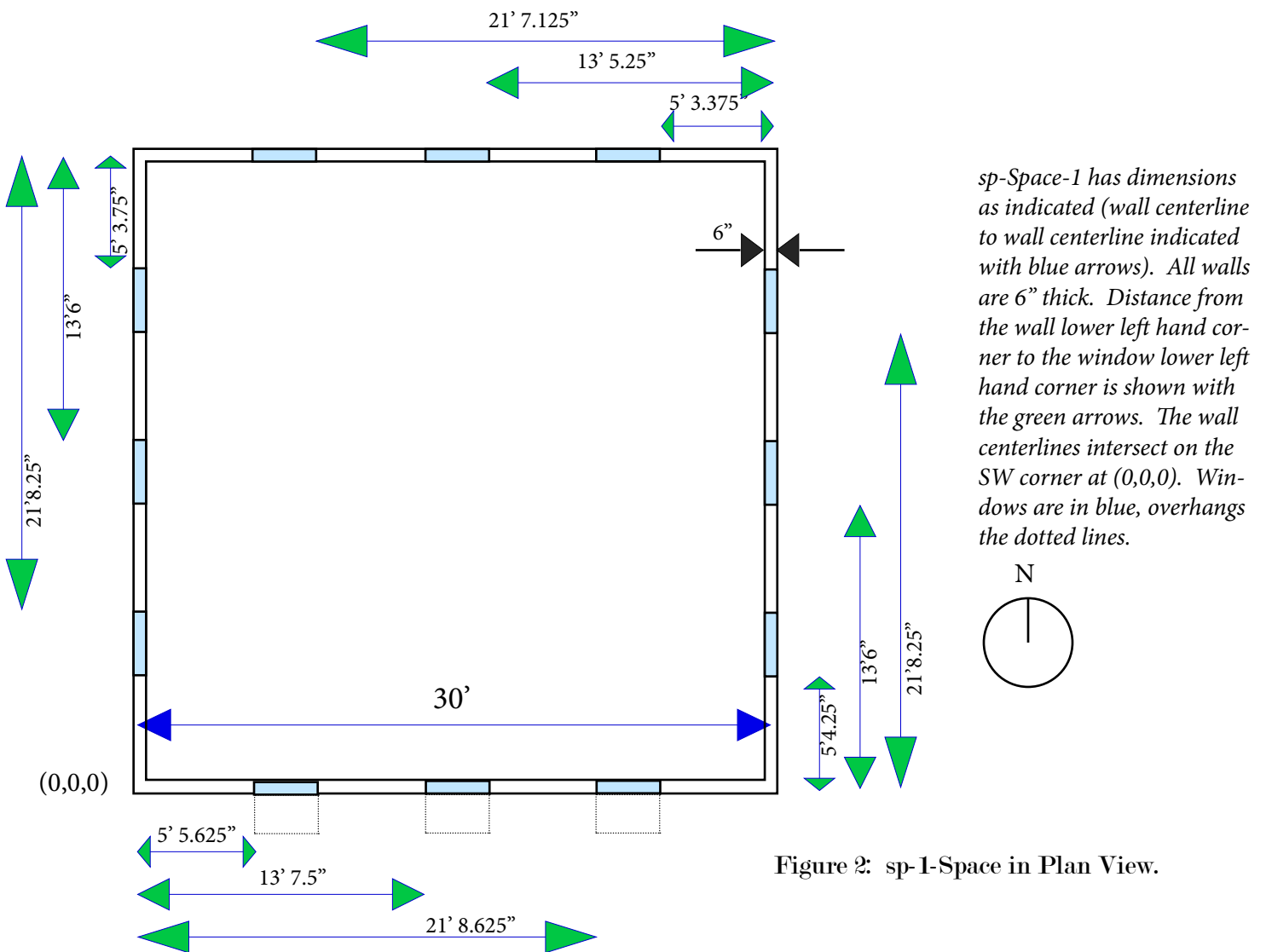


Figure 2: sp-1-Space in Plan View.

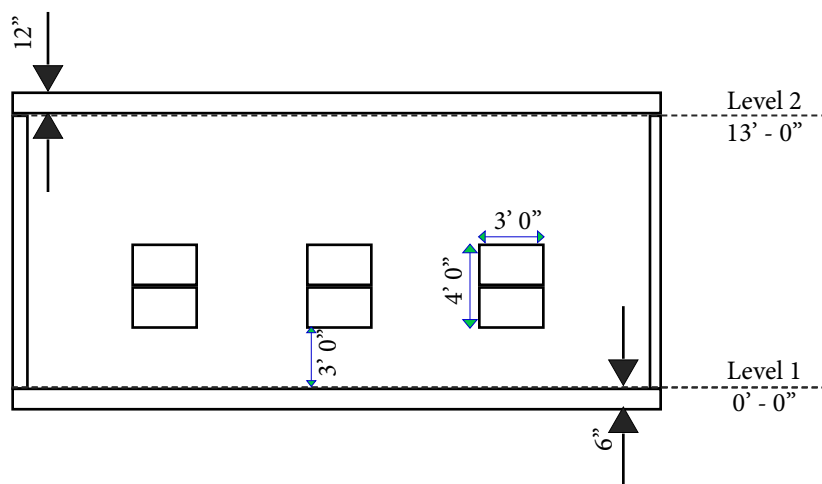


Figure 3: sp-2-Space in Elevation, showing window dimensions

All windows in sp-1-Space have the same dimensions, with the sill being the same distance from the base of Level 1 (3'-0"). Refer to Figure 2 for placement of windows in the X-Y plane.

Shading Devices are only placed on the south side of this model. The shading devices are only placed once, on the centerline of the casement windows shown in Figure 3. The dimensions of the shading devices can be found in the accompanying example test file.

Figure 4 below shows the elevation of the shading devices above the origin in the Z-direction.

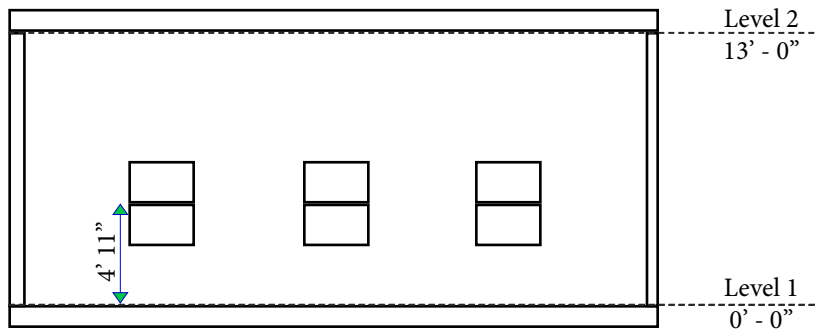


Figure 4: Elevation showing the height of the shading devices above
 $Z = 0$

Test #2 Common Outcomes and Test Results

The most common occurrence in this test is the misalignment of windows relative to the plan view dimensions shown in Figure 2. When the windows are misaligned, the Detailed Window Checks may be unable to find the appropriate window, causing the test to fail.

Typical validator output in this case:

- 1. The Detailed Opening Checks will fail when trying to locate identical windows. There likely be multiple failures here.*

Another common error, is the windows failing to split on the south, into two separate windows where one window is below the shading device, and the other is above it. If the windows fail to split, then the window count test will also fail. In this test, all of the windows are assumed to be operable windows, so be sure to bear this in mind. In addition to the Window Count Tests failing, the Detailed Opening Tests will also be unable to match all windows, resulting in an error and the failure of the test.

Typical validator output in this

- 1. The Window Count Test will fail (all windows in the standard test case are operable)*
- 2. The Detailed Opening Checks will fail when trying to locate identical surfaces. There could likely be multiple failures here, all along windows on the south.*