Washington, DC 20515

March 15, 2010

Mr. Joseph Fiebiger
P.O. Box 1576
El Prado, New Mexico 87529

Dear Mr. Fiebiger:

Thank you for your letter and your telephone call to my Curator which helped clarify your book project and your search for photographs of iron elements your company made for a number of areas of the Capitol. Enclosed you will find some fact sheets that will be of interest and copies of images of cast-iron work in the Old Senate Chamber with the negative numbers we use to identify them in case you want to request high-resolution files in the future.

Your memory about the cast-iron dome oscillating is accurate, although the iron bolts you saw are no longer on display. During the 1959–1960 work on the dome, expansion joints were installed periodically only in the cap rail of the Boilerplate Balcony. The thousands of hairline joints between the iron plates allow for movement during various loading scenarios. Movement in the dome is caused by more than just thermal loading. Gravity forces and wind loads also cause the dome to move. The greatest vertical deformation occurs in the winter, when peak negative thermal loads combined with gravity loads cause a 1-inch downward deflection of the Tholos (i.e., the Capitol is 1 inch shorter on the coldest day in the winter). The greatest normal lateral deflection occurs in the summer under peak unbalanced thermal loads combined with dead loads, which can cause a sideward movement of 1.5 inches.

Best wishes for the completion of your book. I look forward to reading it.

Sincerely,

Stephen T. Ayers, AIA, LEED AP
Acting Architect of the Capitol

Enclosures

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