SIMPSON GUMPERTZ & HEGER
Engineering of Structures
and Building Enclosures

25 April 2016

John Robitaille, AIA, CSI
Senior Project Manager
University of Connecticut
Planning, Architectural & Engineering Services
31 Ledoyt Road, U-3038
Storrs, CT 06269

Project 141440.06 – Gampel Pavilion Dome Ceiling and Roof Repair
UConn Project No. 901888

Dear Mr. Robitaille:

It is our professional opinion that the safety of occupants and workers at the Gampel Pavilion will not be affected if the above-named project is deferred until 2017.

Construction for the project is scheduled to begin in May 2016; however, we understand that UConn is considering postponing the project until 2017. UConn asked whether the Project includes any structural repairs that should not be deferred until 2017.

The Project includes replacing the existing ceiling panel covering, which is peeling; replacing roof gaskets and battens and re-sealing the roof, which occasionally leaks; and structural repairs to the two lighting catwalks. We have proposed a repair method that allows all three of these repairs to be performed concurrently, which appears to be the most efficient way to conduct the repairs. If the Project is deferred, it is advantageous if all of the repairs associated with the Project can also be deferred.

Each catwalk hangs from the roof structure through a system of wire rope cables. The cables attach to U-bolts at the catwalk and cable hangers at the roof. The calculated design load at the U-bolts and cable hangers exceeds the theoretical design strength of these elements. Our proposed repair includes 1) replacing the U-bolts, cable hangers, and wire rope cables and 2) reconfiguring the location where each cable is hung from the dome structure. Based on our visual observations of the catwalks to-date, the existing U-bolts and cable hangers are free of distortion or other loading-related distress. The catwalk structural repairs cannot easily occur without removal of the exterior roof panels.

In our professional opinion, the catwalk repairs can be deferred until 2017, given that the U-bolts and cable hangers do not exhibit signs of distortion or distress and that the total weight of lights has been reduced. The existing catwalks have been in service for approximately 26 yrs. We are not aware of any modifications to the catwalk structures since their original construction. In 2015, UConn replaced the lights on each catwalk with new lights that weigh less. UConn should not add any lights or equipment to the catwalks and should continue to limit usage of the catwalk to a maximum of two workers at a time, until the repairs are completed.

The roof re-sealing work is preventative maintenance. The roof leakage is generally a nuisance issue. Based on our visual observations from select roof openings near the base of the dome, the roof structure appears to be in good condition. We did not observe signs of structural distortion or distress. At this time, the leakage is not severe enough to cause significant corrosion of existing structural elements, if the project is deferred for a year.

The purpose of the ceiling panel covering repairs is to correct an aesthetic issue, and this work can be performed at any time. The proposed ceiling panel repair method, which we evaluated through recent site mockups, requires removal of the exterior roof panels. For this reason, it is desirable for the ceiling panel repairs to occur concurrently with the roof re-sealing and catwalk work.

The appearance of the ceiling panel covering will continue to worsen until replaced. The rate of degradation appears to have increased in recent years. Similarly, the frequency of roof leaks appears to have increased in recent years. It may be possible to reduce the potential for roof leaks over the next year by inspecting and maintaining the exterior roof seals and battens in problematic areas, similar to the maintenance performed in September 2015.

Sincerely yours,

Dominic J. Kelly, P.E.
Principal
CT License No. PEN.0016712

Michael F. Hughes
Senior Staff II – Structures

cc: Nancy Felts, Fennick McCredie Architecture

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