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February 8, 2016

Ms. Julie Bastin  
Milwaukee County, A&E Section  
633 West Wisconsin Ave, Suite 1000  
Milwaukee, WI 53203

SUBJECT: Mitchell Park Domes

Dear Ms. Bastin:

On Friday, January 29<sup>th</sup>, GRAEF performed a visual assessment of the Desert Dome from the ground and ladders. The purpose of this assessment was to attempt to find the origin of the piece of concrete that was found on the catwalk on Monday, January 25<sup>th</sup>.

We looked on the door overhang at the loading dock and found several other pieces of debris there. These pieces all had moss growing on them, including on some of the fractured surfaces. We looked under the catwalk immediately below the area where the original piece was found and inside the loading dock/storage area.

Using ladders, we also went around the Desert Dome's entire inside perimeter looking at the concrete frame to attempt to locate where the piece had come from. Due to the narrow width of the catwalk, we were only able to reach up about 10 to 12 feet above the catwalk typically. In this height limit, we did not find the location where the piece came from. We also did not see any concrete spalls that had occurred since the last inspections in 2014 and 2015.

All door overhangs and several mechanical units at the outer base of the Desert Dome with flat horizontal surfaces had some debris on them. These surfaces were not specifically cleared of debris at the end of the inspections in 2014.

We looked at the concrete frame from the outside of the dome to attempt to find the original location for the discovered piece. This search was also unsuccessful.

We also looked at one door overhang and a few mechanical units in the Show Dome. These items were specifically cleared of debris at the end of the inspections in 2014. These surfaces did not have debris on them.

Based on the appearance of the piece of concrete, we believe that it has come from the building structure rather than from shotcrete stonework or from mortar between the precast pieces. However, the shape of the piece and the lack of paint on any of the surfaces greatly limits the locations where it could have come from on the Dome's framework. It is possible that the piece came from another portion of the structure such



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as one of the entries, or the base of the building below the windows. However, no specific locations were found that matched the piece in those areas either.

It was suggested that the concrete debris be lab tested to determine whether it came from the structure or another location. We don't feel that this is likely to produce a definitive answer. The structure is comprised of precast pieces of concrete that were cast on site. Each segment of the structure is likely to be slightly different in its make-up and those differences will be detected in the analysis results. While lab testing may be able to tell us that it is not a piece of shotcrete, it is unlikely to be able to tell us for certain that it is or is not a piece from the Desert Dome.

Overall in the areas that we were able to reach from ladders, we did not see any substantial change in the condition of the concrete structure. The Domes are old structures that are showing the effects of their age. They will continue to deteriorate unless major renovations are completed. Until that work is performed, or other long-term steps are taken to address the conditions at the Domes, we feel the most cost-effective way to reduce the possibility of injury from falling debris is to install protective netting in the areas where concrete pieces and chips have been known to originate.

Sincerely,

Eileen McEnroe Hankes, P.E.  
Project Manager

Dewey Hamba, P.E.  
Principal