

## **Clarification on “Explanation of Major Differences between GRAEF Cost Update and WJE Peer Review” by Milwaukee County Facilities Management Division, dated 22 April 2017**

*Prepared by the National Trust for Historic Preservation in consultation with Wiss, Janney, Elstner Associates, Inc., May 2, 2017*

*Background: On March 22, the National Trust for Historic Preservation released a peer review of the cost estimates set forth by GRAEF in on November 10, 2016, prepared by Wiss, Janney, Elstner Associates (WJE). On April 22, 2017, Milwaukee County Facilities Management Division released a document comparing the GRAEF and WJE reports. This summary provides clarification on some of the statements in that document. For more information, please contact Jennifer Sandy, National Trust for Historic Preservation, [jsandy@savingplaces.org](mailto:jsandy@savingplaces.org).*

**Core Elements:** The County’s report states that WJE’s option did not include cost for removal of the wire mesh, but WJE’s cost estimate did include removal costs for the wire mesh (per additional consultation with WJE). WJE did not include re-installation costs for the wire mesh because they do not believe re-installation will be necessary after repairs are complete.

**Water Infiltration:** The County’s report states that WJE’s rehab approach does not replace all of the window seals, but WJE’s conceptual repair does address repair of all window seals (gaskets) below the pressure caps with the addition of wet sealing (WJE report, page 17, and additional consultation with WJE). Additionally, it is unclear which GRAEF option the County is using for comparison. GRAEF Option 1 does not replace all of the glass, so it is unclear whether it would address all of the window seals.

The County’s report states that WJE’s estimate does not address downtube drainage repairs, but WJE’s repair option does include costs to address all downtube drainage repairs (WJE report, page 18).

**Building Code and Accessibility:** The County’s report states that WJE’s rehab estimate did not include costs for code compliance or ADA accessibility, and included only “minimal” vegetation protection. WJE’s estimate did include the exact same figures for vegetation protection as the GRAEF estimates (WJE report, page 19). WJE did not include costs for code compliance or ADA accessibility. These items would add \$690,000 to the overall cost, according to the GRAEF cost estimates (GRAEF report, page 107).

**Long Term Planning, Fiscal Sustainability, and Financing of Projects for the Conservatory:** The County’s report states that removal of the wire mesh mandates regular inspections that are “very intrusive to the plants and costly.” WJE has clarified that, in their professional opinion, if the Domes were properly repaired, yearly inspections would not be necessary, nor would it be necessary to re-install the mesh. WJE would anticipate visual inspection from grade every 2 to 3 years (causing no disruption to plants). Up-close inspection would only be as-needed, and every 6 to 8 years. This type of regular inspection and maintenance would be expected for either a rehabilitated or a new facility.

**Technical Approach:** The County’s report states that the technical approach WJE outlines could be sound for a shorter-term repair. WJE has clarified that, in their professional opinion, their approach is a long-term repair. If water infiltration is addressed and the concrete coating is maintained, minimal, if any, future concrete repairs are anticipated.

The County's report states that the Domes could continue to leak and that the WJE approach could result in leaks from not replacing all window seals. As noted above, WJE's estimate does address repair of all window seals (gaskets) below the pressure caps. Wet sealing the edges of the new pressure caps would be the primary seal and gaskets would be a secondary line of defense (WJE report, page 17, and additional consultation with WJE).

The County's report states that in both scenarios there is a significant concern related to the ability to repair the existing internal drainage system back to fully operational status in a cost-effective manner. WJE believes that either option (WJE or GRAEF) will address the drainage system issues (WJE report, page 15, and additional consultation with WJE).

The County's report states that "Ideally, any repair strategy is a comprehensive building envelope solution that provides Milwaukee County a facility that does not have water infiltration via the building envelope for an extended period of time." WJE believes that this is an accurate way to describe WJE's proposed rehabilitation approach.

One Point of Clarity: WJE's report accurately stated that "The only cost difference between (GRAEF) Options 1 and 2 is the replacement of all wired glass with coated insulating glass at an additional cost of \$24 million" (WJE report, page 1). WJE was not saying that GRAEF Option 2 included wired glass, as the County indicates.

Ongoing Inspection & Maintenance Issues Associated with the Concrete Frame: The County states that, as long as the concrete frame stays in place, the County will be required to perform routine, recurring inspections of the structure that will likely entail a hands-on component. As noted above, WJE has clarified that if the Domes were properly repaired, yearly inspections would not be necessary, nor would it be necessary to re-install the mesh. WJE would anticipate visual inspection from grade every 2 to 3 years (causing no disruption to plants). Up-close inspection would only be as-needed, and every 6 to 8 years. This type of regular inspection and maintenance would be expected for either a rehabilitated or a new facility.