Thin Stone Veneer Case Study: Amoco Building and Finlandia Hall

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ABSTRACT

Thin Stone Veneer is widely used as an affordable modern building decorative envelop system. However, it brings much economic burden on restoration works. The most severe problem for marble cladding is thermal hysteresis combined with moisture, leading to bowing issues. Deterioration of the marble panels may result in: Bending of panels, Surface deterioration, Cracking and spalling around fixing points, Inferior appearance, and Safety problems. Furthermore, stone weathering is another problem that needs to be carefully considered, which is associated with four factors: Natural defects in the materials, Workmanship, surface finishes, Design, and Environment. In the first research paper, I focused on the problems created by thin stone veneers and solutions for the bowing problem. I expanded on this topic by reviewing the case study and discussing the application, anchoring system, repair, and monitoring methods for this paper. In most cases, the conservator can only regrettably replace the stone veneer periodically. Moreover, other methodologies will only cause more safety issues and damage building authenticity. My case study for thin stone veneer focuses on Finlandia Hall and Amoco Building in Chicago.

Figure 1. Finlandia Hall. by Mari on 28th September 2019. (Source: Photo Credit: Athenaeum of Philadelphia, Lawrence Williams Inc. Collection, Local ID#:77133-A).

Figure 2(left). Part of the old marble facade at Finlandia Hall in 1999. (Source: Symposium on Dimension Stone Use in Building Construction Tampa, Fla).
Figure 3(right). Measurements of bowing amplitudes with the use of a Bow meter. (Source: Symposium on Dimension Stone Use in Building Construction Tampa, Fla