Guastavino turns Modern

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ABSTRACT

"Guastavino vaults" often evokes an image of glazed ceramic tiles arranged in their signature herringbone pattern in ceilings of monumental public palaces. The work of Rafael Guastavino father and son can be seen in hundreds of commissions that include monumental railroad stations, libraries, museum galleries, cathedrals, and auditoriums across the United States. Beginning in 1915, the company patented and produced an innovative sound-absorbing artificial stone that was branded as Akoustolith. It served as a corrective material to the excessive reverberation produced by the concave surfaces of monumental vaults. Its invention responded to a demand to produce quiet soundscapes where speech needed to be intelligible. After the Depression, the R. Guastavino Company continued to provide the aesthetics of traditional masonry construction with modern acoustical soundscape for large public interiors, including swimming pools, railroad stations, and public plazas. However, the decline of traditional masonry construction and the development of thin-shell concrete domes in the inter-war period threatened the Guastavino system. Thin-shell concrete domes, pioneered by German engineers two decades earlier, were increasingly seen as competition to the Catalan cohesive domes that Guastavino Sr. had introduced to the United States in the 1880s. Not being able to compete, the R. Guastavino Company began relying more on their acoustical line to sustain their business well into the mature phases of Modernism. The effectiveness of the stone in addressing modern acoustical problems ensured the company's survival after the Depression. The Akoustolith was divorced from the cohesive tile construction and was applied to modern concrete and steel frame construction: classrooms, office interiors, office lobbies, pedestrian underpasses, industrial flues, and airplane hangars. Scholarship on the Guastavino acoustical tile has centered on its application in Neo-Gothic cathedrals and its associated conservation issues with changing acoustical requirements, where the pores of the Akoustolith stone are being sealed to restore reverberant spaces that enrich organ music. This research paper discusses the utilitarian aesthetics of the company's lesser-known commissions with Akoustolith stone, and their adaptation to different assemblies of construction, from concrete bridges to steel frame buildings.

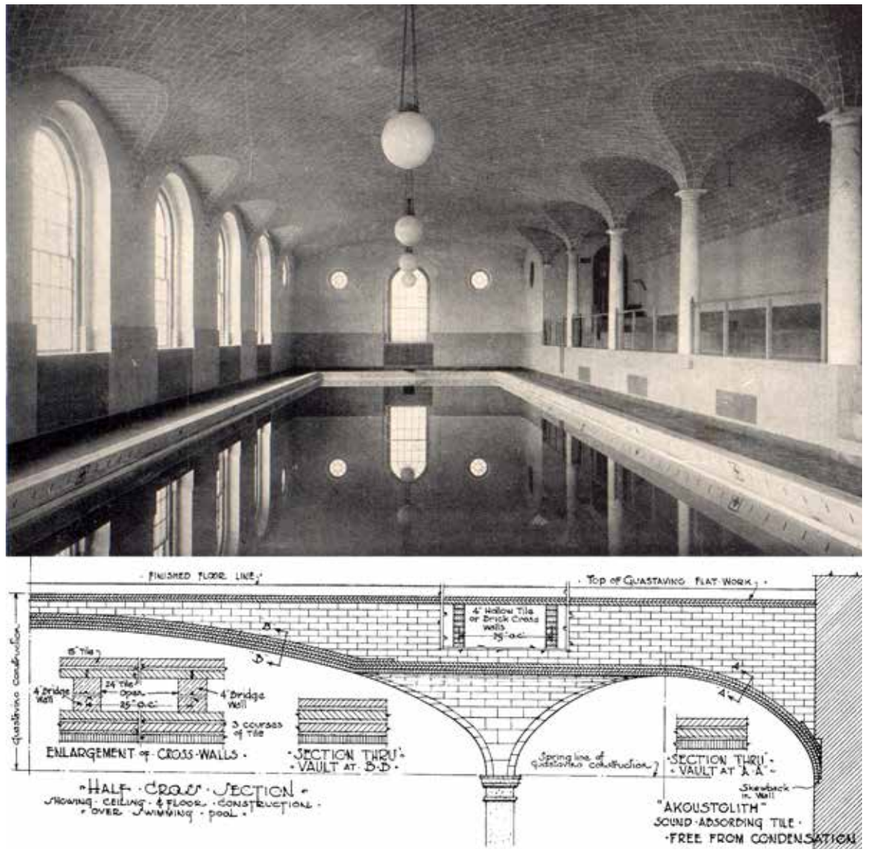

Figure 1. View of the swimming pool (top) and cross-section through ceiling and floor above at the natatorium of Smith College. (Source: Advertisement by the R. Guastavino Company in Sweet's Catalogue(1939))

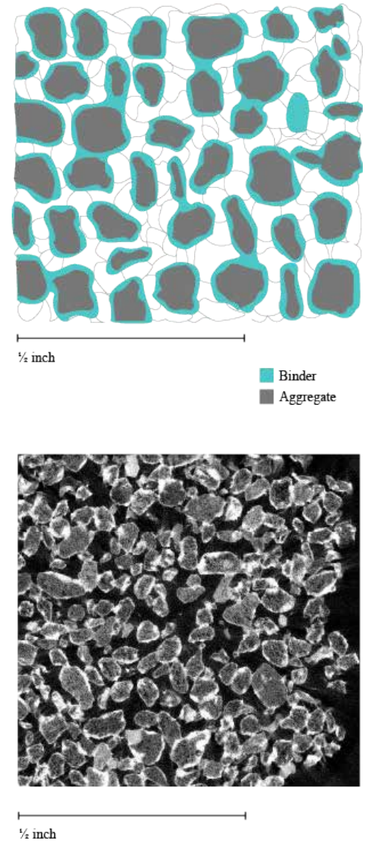

Figure 2. Pumice particles bonded at close points of contact with Portland cement as seen in the patent (top) and in a micro-CT scan on a sample of Akoustolith from the Nebraska State Capitol. (Source: Author)

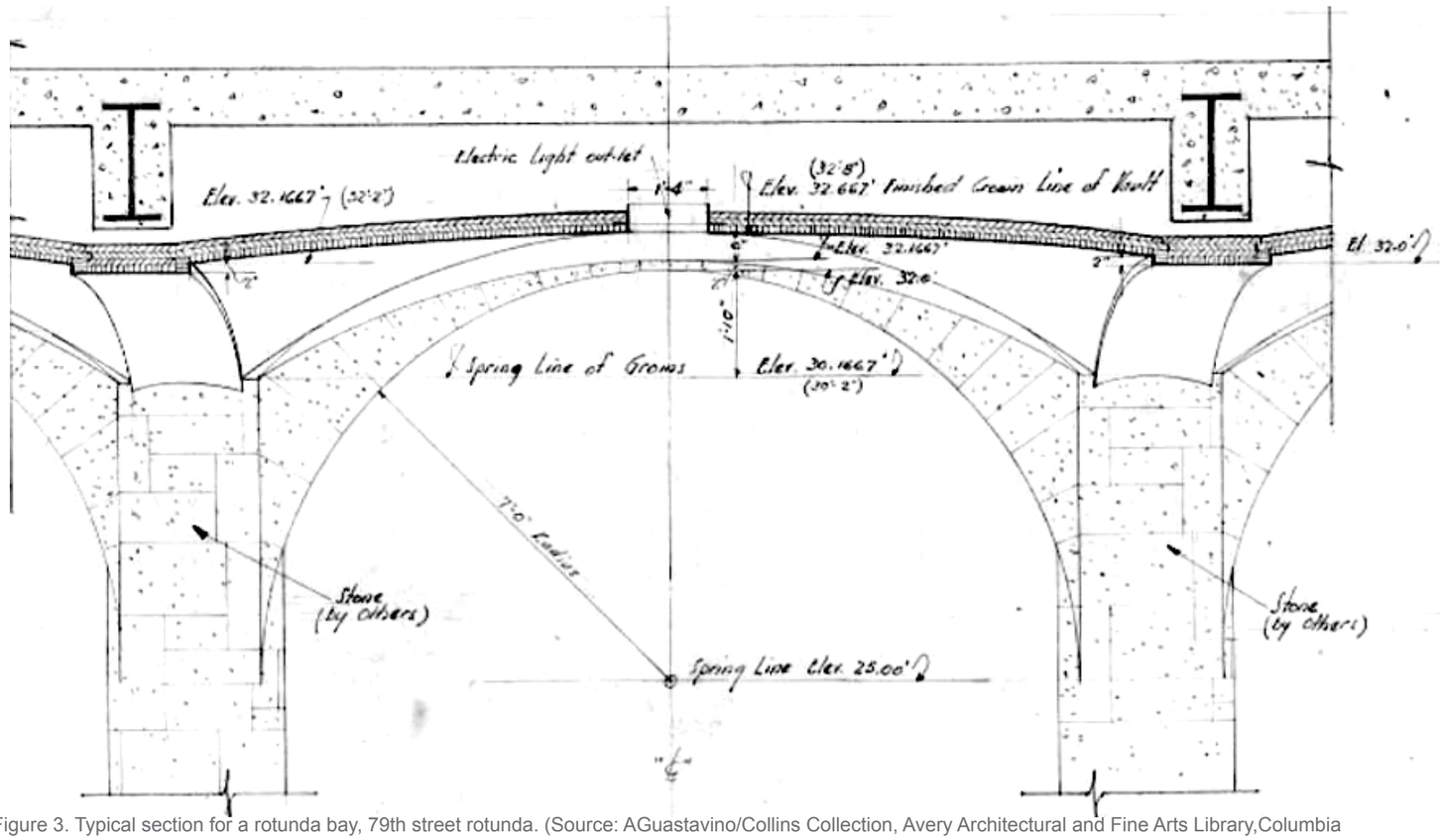

Figure 3. Typical section for a rotunda bay, 79th street rotunda. (Source: AGuastavino/Collins Collection, Avery Architectural and Fine Arts Library,Columbia University.)