



# The First Century of the Harrison Rotunda

**T**he Harrison Rotunda, consisting of the Hall and the Auditorium, turns 100 this year. The iconic dome of the Penn Museum is an architectural wonder of monumental yet exquisite proportions.

Ancient Roman construction methods reinterpreted by the Guastavino engineering firm were employed to achieve the all-masonry Rotunda, with upper and lower chambers, each surmounted by a monumental self-supporting dome. On the upper level, the interlocking tile dome is topped by a glass lantern. This domed space is geometrically pure, with both a 90-foot diameter and 90-foot height, making for harmonious proportions.

The lower chamber of the Rotunda consists of an auditorium seating 800 people. A monumental domed ceiling with a bronze sunburst at its center illu-

minates the Harrison Auditorium. Two features made it the talk of the town in 1915: it had a system to purify and circulate air, and the masonry construction techniques permitted a pillar-free space, offering unobstructed views anywhere within the auditorium.

The Penn Museum opened in 1889 as the Museum of Archaeology and Paleontology, in a large room on the 3rd floor of College Hall. By 1890, the University Library building designed by Frank Furness (now the Fine Arts Library) was completed,

and the Museum moved into it, where it occupied more rooms than the library itself, and very soon outgrew its space. Sara Yorke Stevenson convinced William Pepper of the necessity of the Museum having its own building.

In 1894, William Pepper stepped down as Provost, and immediately set himself to the task. By 1896, the plans for an enormous public building were developed by the associated architects, a team consisting of the firms Cope and Stewardson and Frank Miles Day and Brother, headed by Wilson Eyre, Jr. All architects had Penn connections or had already designed buildings for the campus. The Museum, by now renamed the Free Museum of Science and Art, was to be their masterpiece.

The design included three domes, the largest in the center, and wings and courtyards extending in all directions. It was to be built in sections, as funds became available. The first portion to be erected was to include the wings around the upper courtyard, now the Warden Garden, as well as the westernmost dome.

ABOVE: "Revised Sketch of the University Museum, University of Pennsylvania" by Wilson Eyre, 1911. The Harrison Rotunda is on the right. UPM image #253515



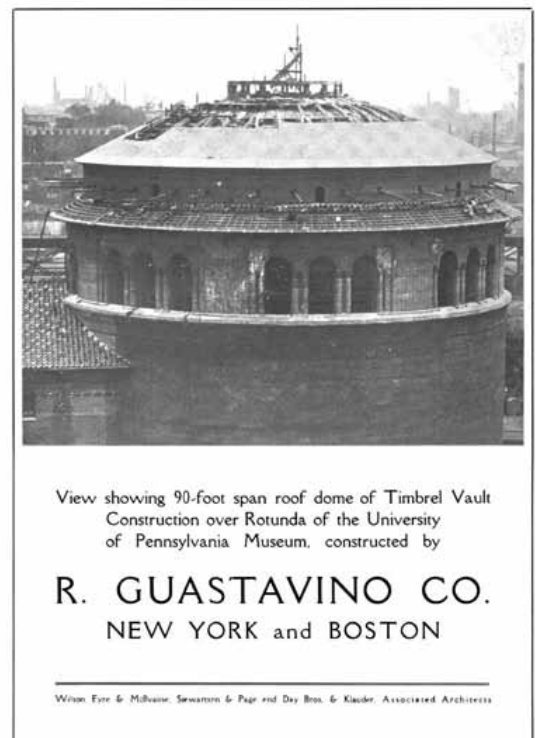
CLOCKWISE, FROM TOP LEFT: The Penn Museum building and Pepper Garden, ca. 1924. The garden was demolished in 1959 to make way for 33rd Street. UPM image #180946. R. Guastavino Company advertisement showing the Harrison Rotunda under construction. From *Yearbook of the 21st Annual Architectural Exhibition Held by the Philadelphia Chapter of the American Institute of Architects and the T Square Club* (1915). UPM image #162547. Charles Custis Harrison (1844–1929) in a drawing by Chas. Haseler.

However, Pepper's health had been deteriorating for some time. Though the foundations for the Rotunda were laid, the Board decided to leave it unfinished, to the consternation of the architects. Pepper died in 1898, and could not be present at the opening on December 20, 1899. The Board reported that:

*It is a cause of sincere regret...that the dome, without which the edifice now stands architecturally defective, remains unfinished. The foundations were laid, but in view of his fast failing health Dr. Pepper deemed it wise to complete the portion of the building now open, and to trust to the future for its crowning feature.*

Not until 1910, with the reorganization of the Museum under a new

Director, George B. Gordon, did the Museum revisit the enlargement of the building. With Eckley Brinton Coxe, Jr., and Charles Custis Harrison as President and Vice President of the Board of Managers, respectively, the Museum was entering a new era. Harrison pushed to build both the Rotunda and what later became the Egyptian (Coxe) Wing at the same time; however, a portion of the land for the latter was litigated by the Commercial Museum (later the Civic Center Museum), and the Egyptian Wing had to be postponed. The three architectural firms were reconvened (under slightly different names: Stewardson and Page, Day and Klauder, and Wilson Eyre and McIlvaine). Construction of the Rotunda began in February 1913.



The 1896 building plans had placed the Museum's auditorium under the central dome. By 1912, the need for a large lecture hall was so great that it was incorporated into the western Rotunda. In order to eliminate pillars in the auditorium, which would have supported the dome, the architects had to re-engineer the



building. A December 1915 article in *The Museum Journal* elaborates:

*A new and modern method, which is in reality a revival of an ancient method was adopted for the building of the dome itself and helped greatly in the solution of the problem. This method is what is known as the Guastavino construction. The units of this construction are tiles about an inch in thickness, laid flat in concentric circles and overlapping layers from the spring of the dome to its apex. The roof rests directly on this tile construction. There is no steel and no supporting trusses in any part of the dome or the roof. The ceiling of the auditorium, the diameter of which corresponds to that of the hall above, is constructed in entirely the same way as the dome above the great hall. The only difference between the two is that the top of the hall is a dome, the surface of which is a hemisphere, and the ceiling of*

*the auditorium is a dome, of which the surface is a sector of a sphere, the center of which is many feet underground.*

The engineering achievement was the tremendous 90-foot span of the floor, providing a column-less auditorium of near-perfect acoustics. As the Guastavino Company remarked to Director Gordon: *it is a dome structure, entirely of masonry construction, and it is as far as I know, the largest floor dome in the world. All the other larger domes which are well known to architects are roof domes, carrying practically no loads except themselves.*

The wing was to have been named for Eckley B. Coxe, Jr., who provided most of the funds. Coxe modestly refused, insisting instead that it be named for Charles Custis Harrison, the former Provost, and the Museum's major fundraiser.



LEFT: The Harrison Auditorium. UPM image # 174869. ABOVE: View into Harrison Hall. UPM image # 174868. Photographs by Charles Sheeler, 1916.

The Rotunda was the tallest building on campus when it was built. The auditorium opened on December 4, 1915 with a lecture by James Barnes, who illustrated his travels through Africa with motion picture films. The hall opened on February 12, 1916 with an exhibition of Chinese ceramics, European tapestries, and Oriental rugs. When the building was planned, the three domes were to display the collections from Egypt, Mesopotamia, and the Classical world. By 1916, Gordon had been developing the Chinese holdings of the Museum, and he thus chose to display them in the new hall; ever since, it has been nicknamed the “Chinese Rotunda.” ●

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The author is indebted to previous writings on the Penn Museum building by Douglas M. Haller and Shawn Evans.