

An architectural wonder

The Baha'i Temple, listed on the National Register of Historic Places, is regarded as one of the finest examples of architectural concrete in the world. Located near Wilmette Harbor, Illinois, USA this house of worship is a magnet to those visiting the Chicago area. The temple stands 167 feet high, surrounded by gardens on a bluff overlooking Lake Michigan.

The unity of mankind and the belief that men and women are equal in the eyes of God regardless of race or creed are principal tenets of the Baha'i faith, which was first introduced in America in 1894.

Architect Louis Bourgeois was selected via a 1920 architectural competition to create the intricate design. His concept of a temple of light required a vast number of openings in highly carved ornamentation surfaces. When his design was selected, Louis Bourgeois was unsure which material could realize his dream. The architect however sadly passed away just two months after selecting exposed aggregate for his creation and John Earley Studio ultimately executed the design in brilliant white exposed aggregate concrete.



Architects: Louis Bourgeois,
John Joseph Earley,
Washington, DC

Contractor: Earley Studio,
Rosslyn, Virginia

Earley Studios worked from Bourgeois' drawings and produced elaborate plaster moulds for both precast panels and cast-in-place components. The studio decided that no defects could be accepted in the dome panels and of the 387 pieces made, none were rejected.

John Earley developed special methods for the intricate sculptural shapes that allowed concrete with very high water-to-cement ratios to be poured into the moulds but allowed excess water to be removed from the wet concrete to give a lower ratio for hydration. Water was drawn to the surface of the concrete by capillary action through precisely gap-grading large and fine aggregate. Earley was so demanding about the sizing and colour of the aggregate that he high graded railroad carloads of rock at his studio before crushing it there. (1)

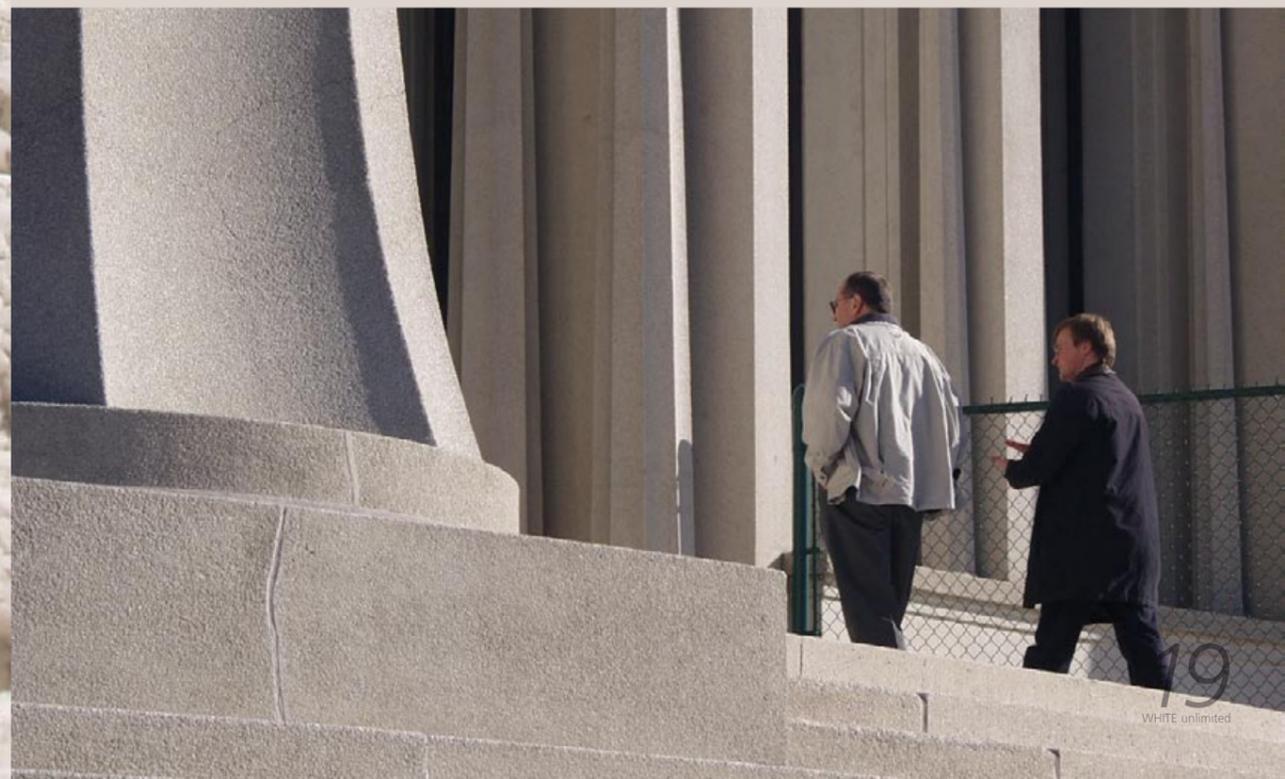
The studio stripped the forms within 18 hours and scratched cement paste off the surface to expose the sparkling quartz aggregate which gives such vitality to the finished material. The craftsmen used one inch long small wire brushes to scrape the temple's surface, every square inch of it. The panels were finally cleaned with an acid and water rinse. All precast components were cured in moisture controlled chambers at the studio. (1)

Preservation of the structure has proven to be challenging. The problems of weathering, pollution, surface erosion, trapped moisture, joint deterioration and efflorescence means restoration must be a continuous and ongoing process.



However, the exceptional workmanship and the materials that gave life to the architectural concrete of the Baha'i Temple have also endowed it with a durability that will preserve this unique house of worship for many generations to come.

(1) 'Weathering of Architectural Concrete on the Baha'i House of Worship', Robert F. Armbruster, 11/ 1993.





MY HEART IS MY

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John Joseph Earley,
Washington, DC*

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