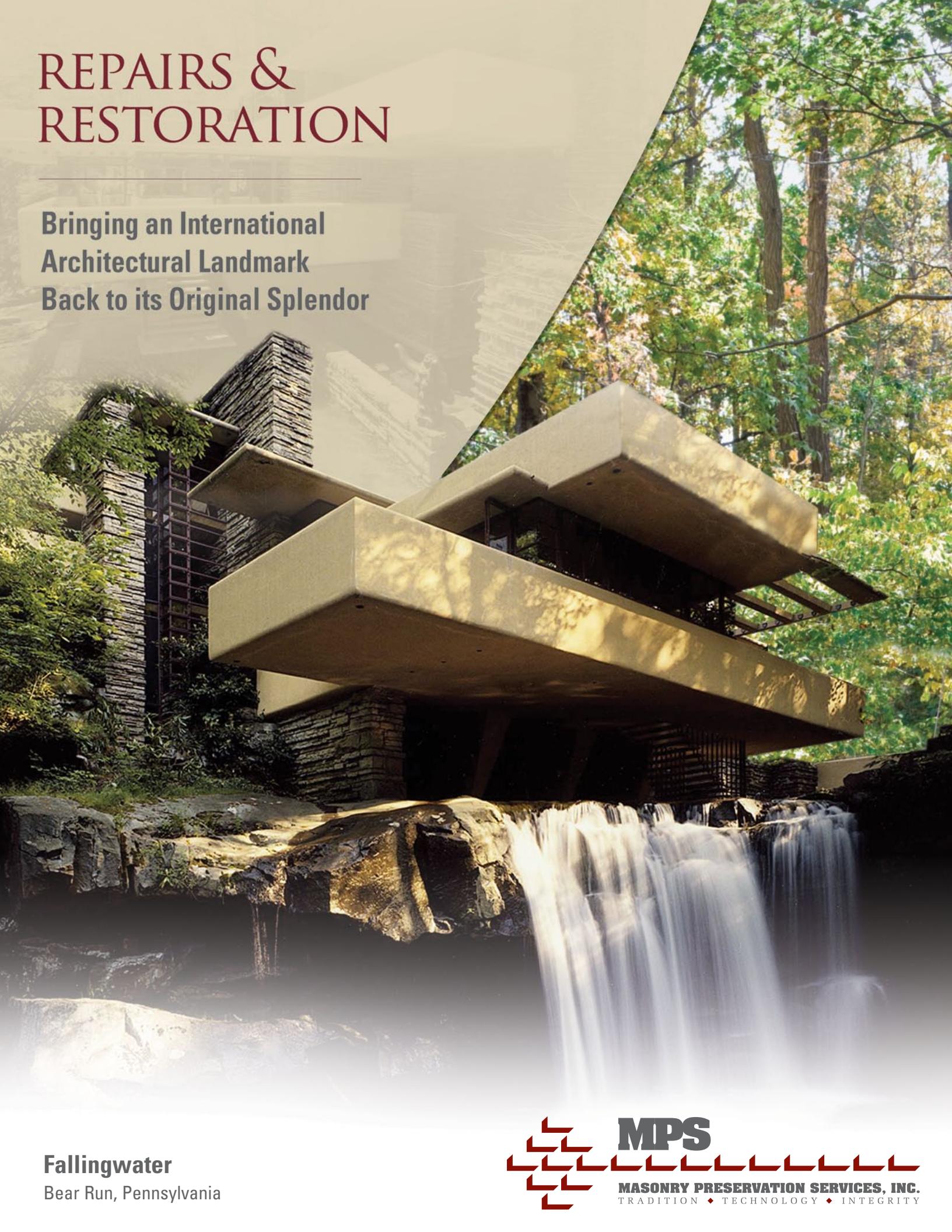


REPAIRS & RESTORATION

Bringing an International
Architectural Landmark
Back to its Original Splendor



Fallingwater
Bear Run, Pennsylvania



Creating a New Future for a Timeless Work of Precision Craftsmanship

Fallingwater

Repairs & Restoration

PROJECT BACKGROUND

- ◆ One of Frank Lloyd Wright's most famous architectural statements, Fallingwater is visited by more than 150,000 people a year
- ◆ Decades of water penetration, freeze-thaw cycles, and moisture migration had caused widespread exterior structural deterioration, including severe cracking in many areas and high concentrations of efflorescence at the concrete
- ◆ Cracks and calcium carbonate staining patterns indicated a water intrusion pattern that jeopardized the structure's stucco and underlying concrete and reinforcing steel within the signature cantilevered terrace areas
- ◆ MPS was contacted by Wank Adams Slavin Associates Architecture to assist in the pilot phase testing, constructability, and implementation of repair procedures

PROJECT CHALLENGES

- ◆ The home's main terraces were in need of comprehensive repair, including the faithful reconstruction of deteriorated stucco and concrete; ultimately the cantilevers were structurally supported by a post-tensioned reinforcing solution
- ◆ Water had caused some concrete sections to deteriorate to a point where they were no longer structurally sound
- ◆ Delicate repair intervention prototypes needed to be implemented with a keen eye toward the historical fabric of the structure, original materials, and Wright's design intent

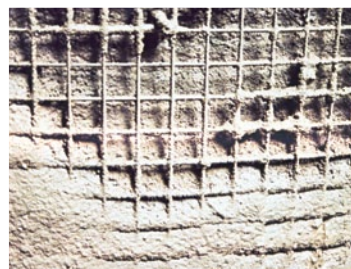
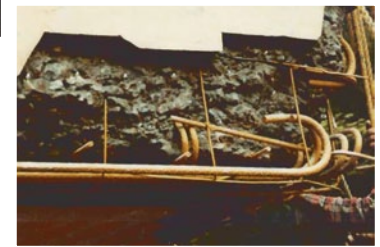
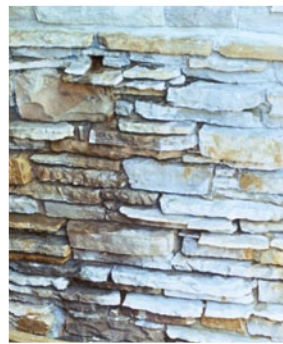
PROJECT APPROACH

- ◆ Deteriorated stucco and wall coatings were carefully stripped off and analyzed, and new stucco and coatings were applied to determine the most effective approach
- ◆ Once deteriorated concrete was removed, reinforcing steel was coated with a protective coating, stainless steel anchors were drilled into the concrete, and slurry coat and repair material were applied to the concrete repair areas to recreate original profiles
- ◆ A system of stainless steel wire was woven through the eyes of the anchors to provide support for the new repair material
- ◆ Plunge pool and adjoining vertical walls and the dramatic driveway concrete beams were repaired using supplemental reinforcing steel and shotcrete application
- ◆ Deeply recessed stone chimney mortar joints were repointed using a delicate cutout procedure and new historically accurate mortar

"The conservation of one of Wright's greatest masterpieces was a daunting task. At the very start, MPS worked directly with the architectural investigation team to do complex probes and mockups. They made possible our detailed understanding of the building and its waterproofing problems, and the development of a focused program of repairs."

Norman R. Weiss, FAPT
Columbia University

Crafting a higher standard for preservation, Masonry Preservation Services is recognized throughout America for our unique approach to masonry preservation and building envelope diagnostics. MPS has been specializing in architectural maintenance and restoration since 1985.



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