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The restoration of historically significant building exteriors that feature precast stone construction

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The restoration of historically significant buildings is an important, highly specialized construction craft that enables the preservation of both the structural and architectural integrity of publicly and privately owned structures.

Background on historic
structures that feature
precast stone architecture
and construction

In New England, numerous historically significant buildings, built in the early 20th century, feature exterior architecture with both structural and architectural elements constructed of precast stone. These building exteriors can typically include such precast stone elements as stairways, rails and entrances, balustrades, cornices, and medillions, while other portions of these buildings exteriors are infilled with brick masonry.

What is precast stone and why is it used? Precast stone is a cementitious product comprised of fine and coarse aggregates - such materials as limestone, marble, calcite, granite, quartz, natural sands, Portland cement, coloring pigments, chemical admixtures, and water. As building construction evolved, technological advancements made it possible to utilize this type of engineered structural element in lieu of natural stone elements that comprise part of the building's exterior architecture.

Precast stone is typically utilized in facility construction for economic,engineering and architectural reasons. Benefits of its use are significant. Precast stone simulates the look of natural stone, and through the introduction of specific types of aggregate, it can provide appropriate color and texture. It is poured and cured so as to give it a hand-cut look of natural stone. It also features a dense finish, resistant to weather and dirt.

The engineered mix is poured with the introduction of steel reinforcement to increase loading capacity and meet structural requirements of the building. The manner in which the elements are mixed and cured is critical in achieving standards that meet stringent engineering and architectural specifications.

The key to the restoration of a historically significant facility that utilized precast stone as an original building material is the skill and experience of the contractor and artisans in their replication of the engineered precast elements and their installation, so as to retain both the structural and architectural integrity of the building.

Recommendations for
long term preservation

Over years, brick masonry, and precast stone details (stairways, balustrades, railing and balustrade systems) withstand long-term exposure to the elements such as rain, snow, ice, and freeze/thaw

cycles. This exposure causes water infiltration and building damage, first to the exterior and then to the interior of the facility. It is recommended that buildings that feature precast stone construction be inspected on a periodic basis by qualified professionals, prior to the onset of significant deterioration. Because of the unique nature of these buildings and the high cost of restoration, it makes economic sense to have buildings inspected on a regular basis, every year or two. As soon as precast deterioration is evident, it is wise to call in a specialty contractor to evaluate the problem and provide a maintenance solution to ensure long-term performance and preservation.

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