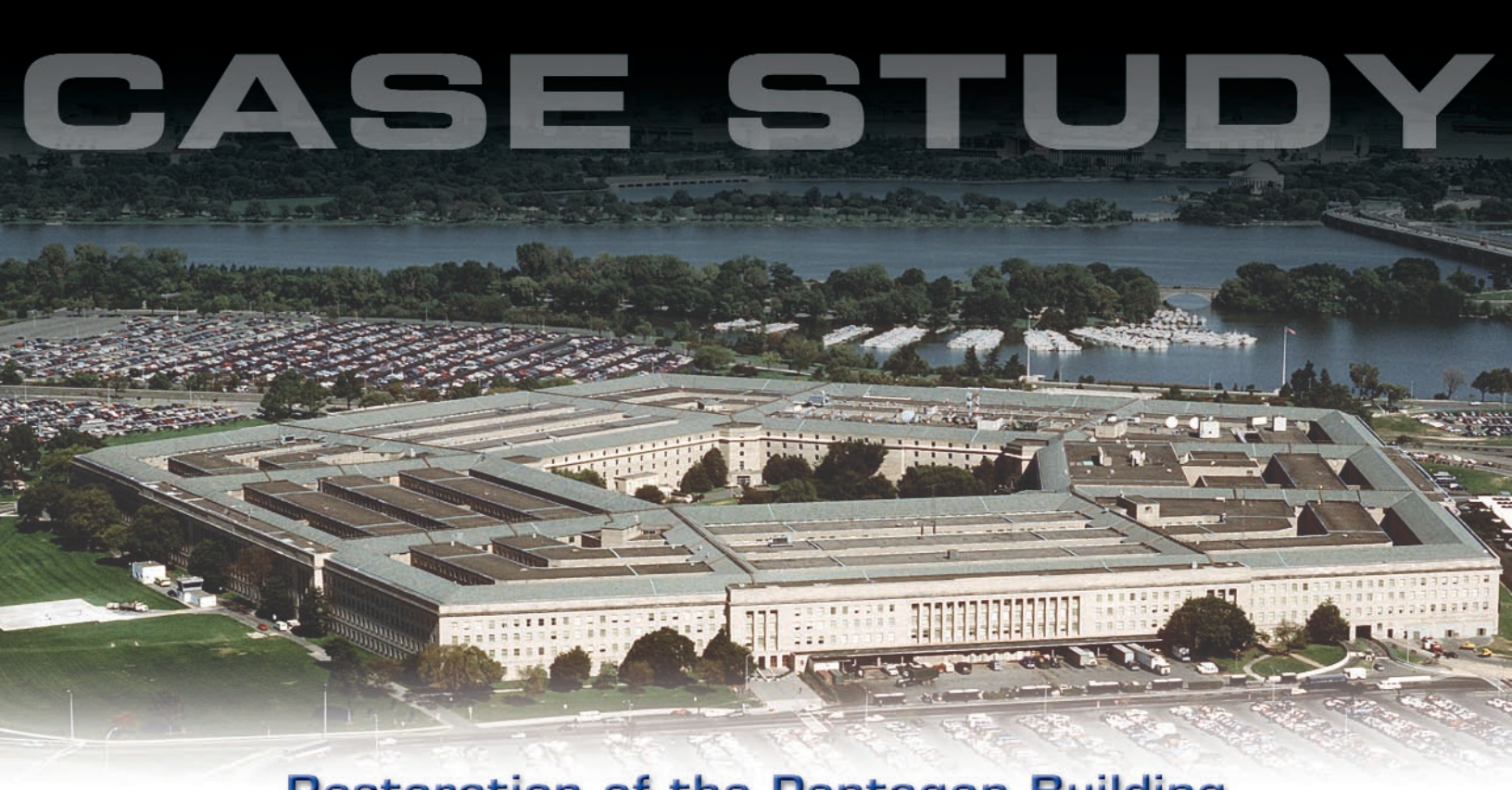
CASE STUDY



Restoration of the Pentagon Building

Arlington, Virginia – The Pentagon is one of the most recognizable buildings in the world and has been inseparably linked with the United States Military since its construction during World War II.

The 5-story structure, with 6,500,000 square feet of gross floor area, has never undergone a major renovation. Today many of its building systems are receiving a complete renewal.

The Pentagon building is composed of 5 concentric pentagonal rings. Each ring has 5 stories The five rings are separated by interior courts which serve as light wells. The rings are connected at each floor level by a series of ten radial corridors extending from the "A" ring (innermost) to the "E" ring (outermost). The total length of the corridors is 17.5 miles.

After 60 years of exposure to the elements, the exterior corridor walls in these areas, which are poured concrete, were severely cracked, leaking and carbonized.

PENREN (Pentagon Renovation Program) developed exacting criteria and an exhaustive product selection program to establish which products and what company would best meet their needs to protect and beautify the walls after patching was completed. Quantitative selection criteria included measurements of past performance, ease of application, technical qualifications, cost/price effectiveness and warranty.

PENREN determined that ChemMasters and the ChemMasters sealing system would best meet all their needs.

Pentagon's Problem:
Even after patching and cleaning, the walls of the light wells were badly discolored with large variations in texture. The walls were also extremely porous.

Pentagon's Need:
A sealer system was required to waterproof the walls and to uniformly stain the surface without affecting the texture of the substrate.

ChemMasters

How ChemMasters Met This Challenge

After patching, the walls are treated with a corrosion inhibitor. Then the ChemMasters system is applied.

First, ***Aquanil Plus 100*** is spray applied to the surface. ***Aquanil Plus 100*** is a clear, 100% solids silane treatment. The silane penetrates deep into the walls and chemically reacts to form a waterproof barrier that will keep the structure watertight for 20 years as long as the building remains structurally sound.

Next, two coats of ***Colorsil*** are applied. ***Colorsil*** is a water-based, single component, breathable silicate surface treatment. ***Colorsil*** is not a coating. ***Colorsil*** colors the surface without forming a film. It penetrates into the surface and chemically reacts with the free lime in the substrate to waterproof. ***Colorsil*** can be pigmented to match any color specification.

Brush, roller or airless spray equipment may be used to apply Colorsil. When dry, all of the texture of the substrate remains. This was a requirement at the Pentagon where the unique surface character of the poured-in-place concrete needed to remain visible on this historical building. Because Colorsil is not a film, it cannot peel from the surface. It is also UV stable so there will be no change in color.

The Pentagon is a proud symbol of our nation's freedom. The ChemMasters' system will beautify and protect the walls of that symbol for years to come.

Sean Fisher, Project Manager for Concrete Protection and Restoration, provides the following comments, *"ChemMasters has given us on-time product delivery, which is imperative on a project of this importance. In addition, whenever we have needed service from ChemMasters to resolve the many issues that always arise in a job of this magnitude, they have been there for us and have promptly and competently handled every challenge"*

ChemMasters

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