

RESTORED TO LIFE

How using a dehumidifying mortar in the restoration of a four hundred year old building in Genoa eliminated rising damp.

A phenomenon that is unfortunately a frequent occurrence in many old buildings is the moisture that rises from the foundations to the upper levels through capillary action in the masonry. Rising damp is one of the major causes of deterioration in buildings. This problem is usually treated superficially, using techniques and materials that are suitable

for modern buildings but are deleterious to older ones. High-tech restoration systems are needed to remove the moisture from the masonry. Macroporous mortars allow the moisture in the masonry to evaporate yet have the mechanical strength of the materials once used in the past.

Using dehumidifying mortar for vapor-permeable masonry

The restoration of the façade of the four hundred year old building built by the Spinola family was performed using exactly these hi-tech materials (Photo 1). The damage to the building caused by rising damp in the masonry was extensive.

For this

reason a line of products was selected that has been specifically formulated for the restoration of period buildings. These materials feature mechanical performance characteristics that are similar to the "antique" mortars used in the past, yet they are resistant to chemical and physical attack and have strong dehumidifying properties.

After the old lime putty



PHOTO 1

rendering was removed the stone masonry was scrubbed thoroughly and cleaned with compressed air to remove any residue. The demolition uncovered the anchor rods which were treated as follows (Photo 2): to transfer the load from the anchor rods to the masonry a layer of MAPEGROUT THIXOTROPIC mortar with controlled shrinkage was applied. To protect the anchors from attack by atmospheric agents they were treated with MAPEFER after removing the rust (Photo 3). They were then covered over with MAPEGROUT THIXOTROPIC.

Then the entire façade was covered with MAPE-ANTIQUE MC fiber-reinforced dehumidifying mortar. It was applied in several coats to reach the desired thickness. The façade was then finished with MAPE-ANTIQUE FC fine mortar for period buildings. Using these mortars was recommended because they are vapor-permeable and resistant to chemical and physical aggression. They also have mechanical properties that make them compatible with weak substrates like old masonry, thus preventing the mortar from separating or cracking (Photo 4). Mapei solutions preserve the past for the future.

The Technical Data Sheets for the products mentioned in this article are contained in Mapei Binder No. 3, "Building Specialty Product Line".



PHOTO 3

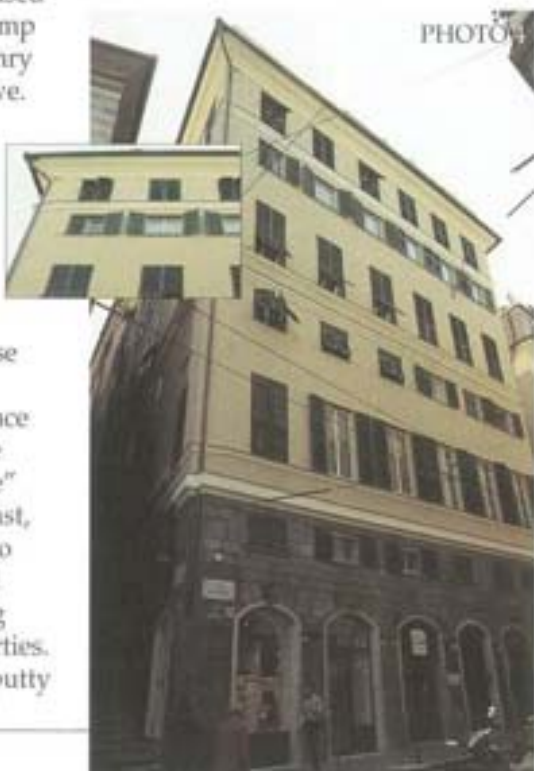


PHOTO 4

TECHNICAL DATA

Project: Building in via XXV Aprile, Genoa, Italy

Built: 1588

Restored: 1997

Contractor: Edil-Franco, Genoa
Project Manager: Geom. Alberto Ranucci
Coordinator: Enrico Grassi, Mapei

Products used for the restoration*:
 MAPEFER
 MAPEGROUT THIXOTROPIC
 MAPE-ANTIQUE MC
 MAPE-ANTIQUE FC

*These materials are part of Mapei's European product lines.