

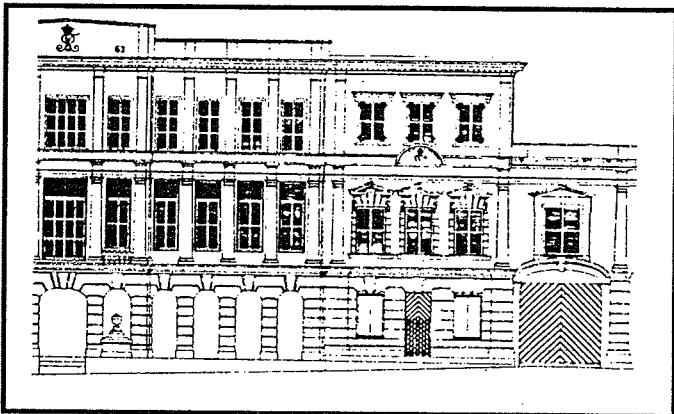
## PLASTER-COVERED RUBBLE WALLS



Holy Cross Roman Catholic Church. One of many plaster-covered buildings in the Virgin Islands.

A large percentage of the historic buildings in the Virgin Islands are constructed of rubble-masonry, covered with lime plaster or "stucco." This is a building technique of age-old origins and the building technique of choice throughout the Mediterranean region (from which, in many ways, Caribbean buildings take the lead) for many thousands of years.

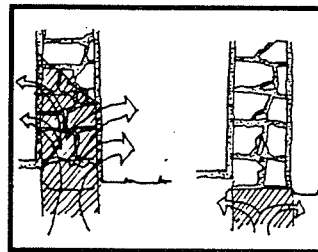
The historic procedure was a simple one: rough-cut or simple fieldstone was built up in uneven courses to form thick supporting walls. Brick or cut-stone was used for corners and to provide a sharper edge for window and door openings. The whole wall was then covered with several coats of lime plaster, then either troweled smooth or scored to resemble the ashlar or (cut-stone) walls that these less-expensive walls clearly imitated.



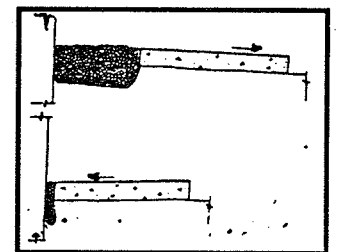
The rich detail of many "high-style" buildings in the Virgin Islands is achieved through molded exterior plaster or stucco.

### Preserving Existing Walls

The key to preserving plaster-covered rubble walls is constant maintenance. The walls themselves are usually strong but are weakened by penetration of water, either from above through leaking walls or through damp ground. If problems exist - as shown through bulging or scaling of the wall - the first step is to look for the source of dampness. Steps should then be taken to keep the walls dry, either by repairing the faulty roof, gutters, or flashing, or by providing for better drainage at the base. A simple bed of loose gravel can often help in the latter instance, new gutters or flashing can help stop problem leaking.

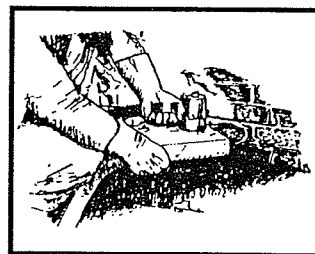


Typical damp conditions. Water is "wicked" through walls, leaving salt deposits and causing surface scaling. The provision of a damp-proof course as shown on the right, can help cut down on moisture problems.

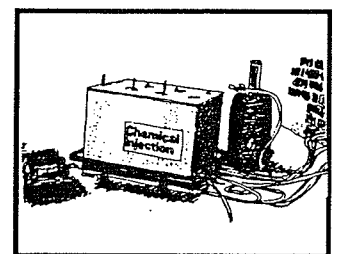


Improved drainage, in the form of gravel-filled trenches can help cut down on moisture problems. Such treatments, however, are often difficult in urban situations.

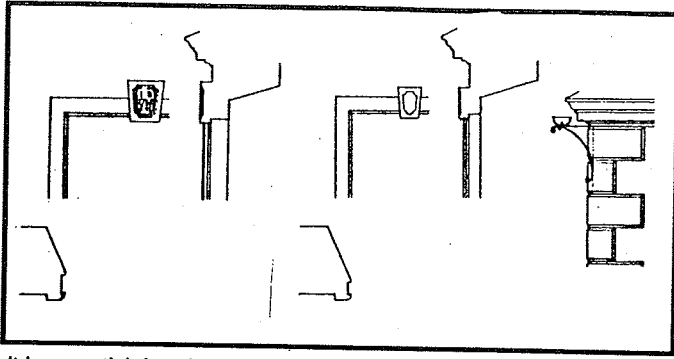
After solving the moisture problems the next step is simply to patch the wall as necessary. If the whole lime-plaster surface is failing, it may be necessary to chip the plaster from the walls and then resurface. Care must be taken to match the appearance, texture, design details, and thickness of the original plaster covering.



Cutting in a damp-proof course with a circular masonry saw. A relatively expensive and difficult procedure.



Chemical injection to provide a damp-proof course. Still largely untested in the Virgin Islands.



It is essential that details such as quoins and molding profiles be duplicated when replacing plaster.

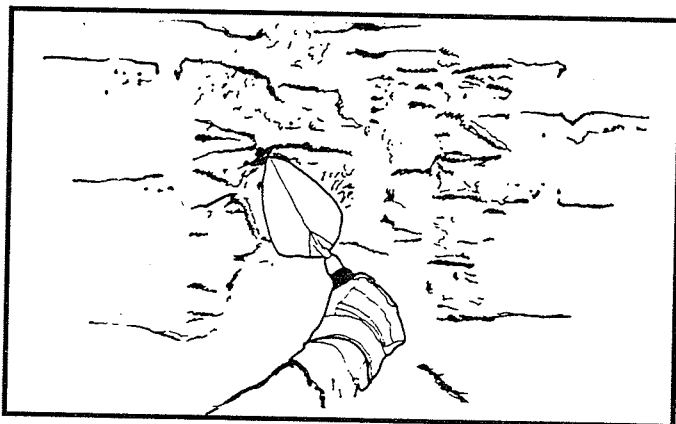
**Do not use Portland or ready-mixed cement:**

Many people choose to replace the plaster or patch it with a Portland cement compound. **This procedure is definitely not recommended.** Portland cement is simply too hard and does not allow for proper evaporation from the walls, resulting in unwanted moisture build-up. A certain amount of white Portland may be added to the lime plaster, but this is not in fact necessary. Ready-mixed cement compounds are not appropriate for historic buildings.

**The following is the recommended mix:**

**MORTAR**

- A) **Portland cement:** *ASTM C 150, Type 1, White*
- B) **Lime:** *ASTM C207, Type S, high plasticity*
- C) **Sand:** *ASTM C144, fine washed*
- D) **Admixture:** Use a water reducing and plasticizing agent to reduce water content and drying shrinkage, "Omicron Mortar proofing," a product of Master Builders Company or equivalent. Follow manufacturer's instructions for use.
- E) **Potable water:** Free of impurities and organic material.



Be sure to match the texture and overall character of the original walls in both repairs and replacement.

**PROPORTIONING**

A) **1 part White Portland cement; 5 parts lime, 9-10 parts sand, recommended mix.** A higher lime content is also possible and in many cases desirable.

B) **Sample areas should be tested and examined by the architect or supervisor prior to settling on the final mix.**

Variations of this specification are allowable, and the staff of the *Division for Archaeology and Historic Preservation* are happy to discuss alternative mortar mixes with owners. The important thing is that the nature of these historic wall surfaces be understood and that steps be taken to encourage their preservation and continued use.

**Wholesale Plaster Removal Not Permitted**

Another concern is the removal of plaster. Rubble-masonry walls were meant to be plastered and protected from the elements. The workmanship of the rubble masonry wall, while picturesque to our eyes, was never meant to be seen. This is true for both interior and exterior walls. Much damage is caused to walls from which plaster is removed. As a result, this treatment is not permitted.

**Waterproofing Not Recommended**

A final concern is waterproof coverings. Such coverings, usually silicones or polyurethanes, are often applied to protect previously plastered rubble walls. They can have both a visual and material impact on walls. The main concern is such coverings often discolor walls and do not allow for the normal evaporation cycle causing, therefore, a build-up of salts within walls. It is highly recommended that such coverings not be applied.

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