

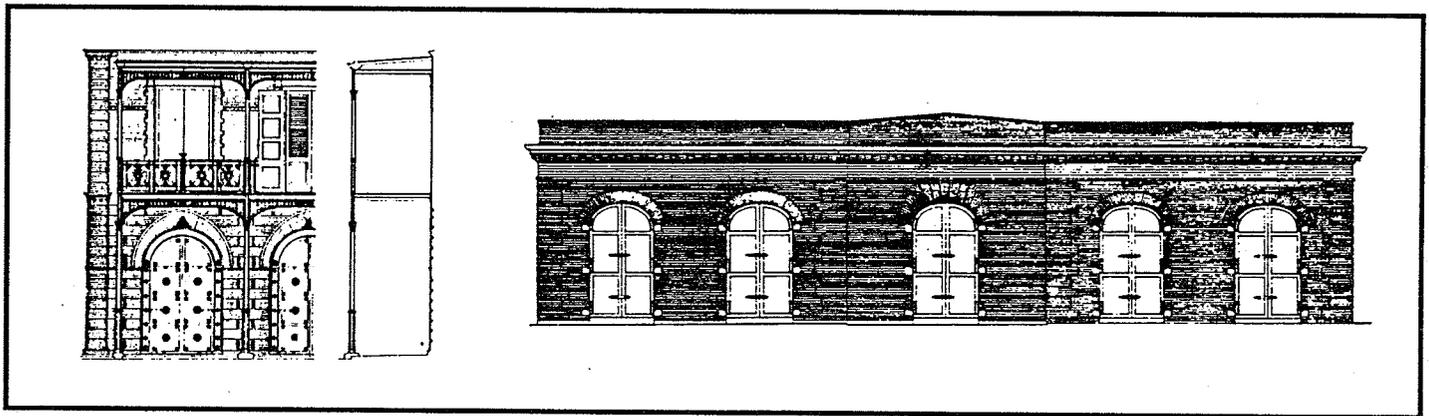
PRESERVATION GUIDELINE 4

Division for Archaeology and Historic Resources
Virgin Islands Department of Planning and Natural Resources

REPAIR, CLEANING, AND REPOINTING OF BRICK WALLS

There are few brick or brick-faced buildings in the Virgin Islands. However, there are a number of outstanding examples of mainly 19th-century brick buildings, mostly located in commercial areas. While problems of treatment come up rarely, greater care than ever must be taken for the preservation of these buildings.

drainage. Badly damaged or deteriorated brick, should be replaced in kind with bricks resembling the original (or in some cases, original bricks can be turned around to expose less deteriorated faces). All mortar joints should be sound and well-maintained.



Although brick buildings are rare in the Virgin Islands, there are several outstanding examples. These are both on Kronprindsensgade, in Charlotte Amalie.

General Problems

Brick buildings often consist of brick veneers over rubble masonry cores. Whether all brick or brick-veneer, however, they share many of the characteristics of rubble walls. Initial concerns are water penetration into walls. Walls should be carefully examined for indications of leaking roofs or gutters or damp foundations. Efforts should then be made to correct such problems either by repairing roof problems or providing better

Mortar and Mortar Mixes

It is important that the mortar for repair of deteriorated brick joints match the original. This usually means a high-lime-content mortar following the following specifications:

Mortar

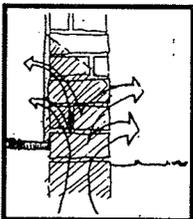
A) Portland cement: ASTM C 150, Type 1, White

B) Lime: ASTM C 207, Type S, high plasticity

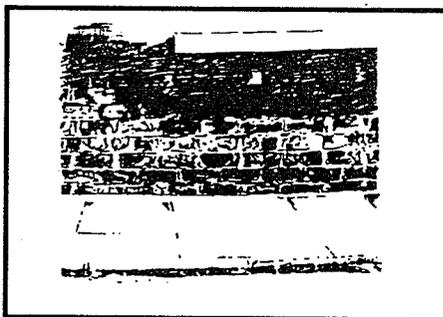
C) Sand: ASTM C 144, fine washed

D) Admixture: Use a water reducing and plasticizing agent to reduce water content and drying shrinkage. "Omicron Mortar proofing," a producer of Master Buildings Company or Equivalent. Follow manufacturer's instructions for use.

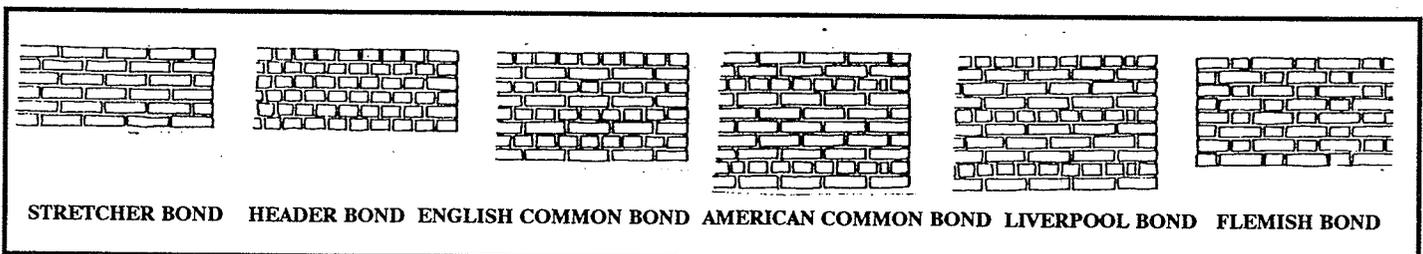
E) Potable water: Free of impurities and organic material.



As with rubble walls, brick walls are subject to moisture problems. A damp-proof course can cut down on rising damp.



Efflorescence, or surface salt deposits - caused by rising damp.



Some typical brick bond patterns - created by the way in which the brick was laid. It is important to duplicate the original pattern when repairing or rebuilding brick walls.

Proportioning

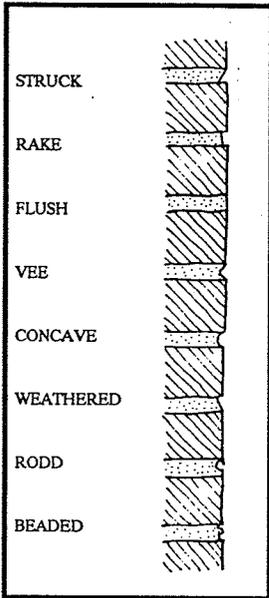
A) 1 part *white Portland cement*; 5 parts *lime*; 9-10 parts *sand*, recommended mix. A higher lime content is also possible and in many cases desirable.

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

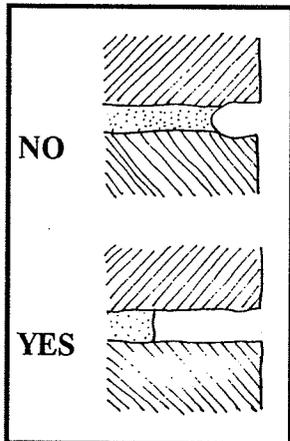
It is recommended always that a test patch be made in areas to be treated. If any doubts exist, the Division for Archaeology and Historic Preservation in the Department of Planning and Natural Resources is available for consultation.

Repointing

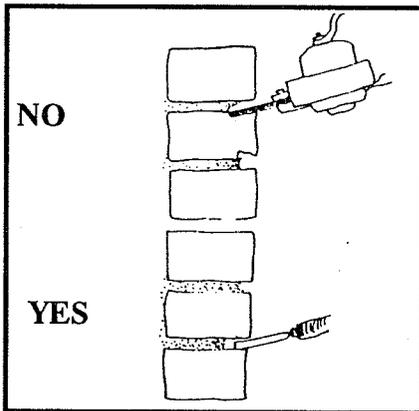
The main concerns for brick wall repairs are repointing and cleaning. Repointing, or replacing the mortar between bricks, should be carried out in a careful way. All joints should be raked by hand and no machines or saws should be used. Using a chisel, loose mortar should be removed to a depth approximately twice the width of the opening. New mortar should be carefully laid in the joints being careful not to feather the joints or spread the mortar onto the surface. All joints should be, in mason's terms, "neatly struck."



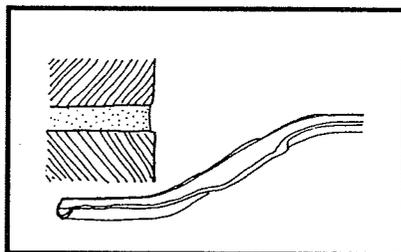
Traditional joint profiles. "Concave" and "Weathered" are probably the most common historic joints in the Virgin Islands. Occasional "Tooled" (either "rodded" or "beaded") are also common historic joints.



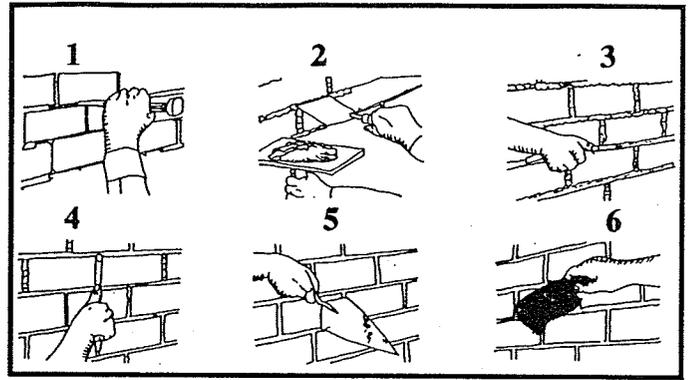
Don't break the surface of the brick. Be sure to rake out to a sufficient depth.



Brick joints should be raked out to 2 1/2 times their width using a chisel. Mechanical means, such as circular masonry saws, can badly damage brick surfaces.



Unless your building had an unusual joint type, a concave joint such as this - obtained with a common jointer - is best.



The six steps for repointing, from top left: 1) remove loose mortar; 2) pack in new mortar following recommended mix; 3) apply jointer to horizontal joints; 4) apply to vertical joints; 5) remove excess mortar; 6) wait 2 hours, then brush and wash clean.

Cleaning

Cleaning should be carried out only when necessary. The recommended cleaning method is simply water or a combination of detergent and water, with water applied under low pressure. High-pressure water cleaning (over 1000 pounds per square inch) can damage brick surfaces. If dirt is resistant, bristle brushes can be used on the surface. Wire brushes should not be used. Particularly dirty surfaces may be cleaned using an extremely weak chemical solution of sulfuric acid. Test patches should be made before full cleaning begins.

Sandblasting of brick is strictly prohibited. Sandblasting mars the brick surface, altering its character altogether. Extremely porous or soft bricks or bricks that have been previously sandblasted can be treated with a coat of lime wash, following the instructions for plaster walls set out in a separate guideline. Painting with a flat acrylic latex, water-based paint is also recommended.

For further information contact:

The Division for Archaeology and Historic
Preservation
Virgin Islands Department of Planning and
Natural Resources
Nisky Center, Suite 231
#45 Estate Nisky
St. Thomas, Virgin Islands 00802
(809)774-3320
or
115 Watergut Homes
Christiansted, St. Croix 00820
(809)773-7081

Prepared by William Chapman
Layout by Jeanne Strong