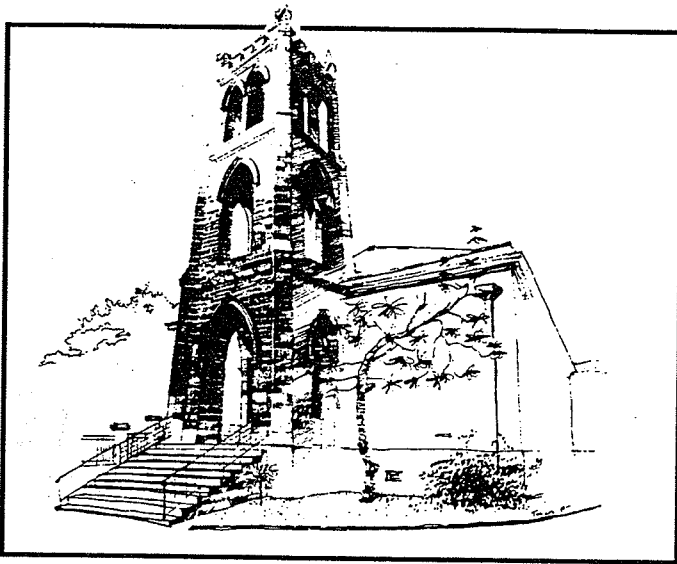


PRESERVATION GUIDELINE 5

Division for Archaeology and Historic Preservation

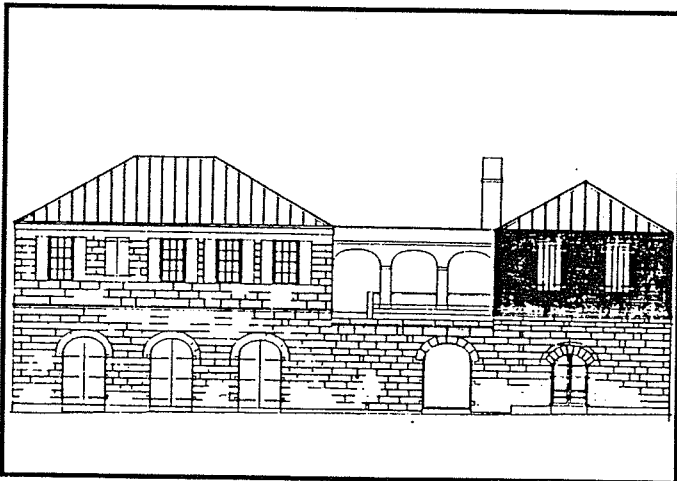
Virgin Islands Department of Planning and Natural Resources

THE REPAIR OF STONE WALLS



St. Paul's Anglican Church, tower c. 1849, built of local limestone.

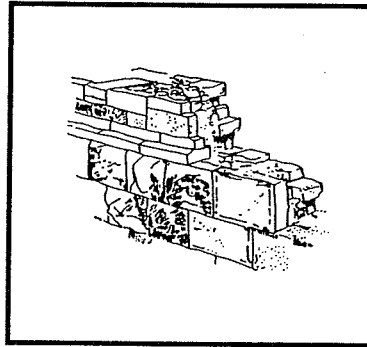
Cut-stone walls -- as distinguished from rubble masonry -- are common throughout the Virgin Islands, but especially in in-town commercial areas. Frederiksted, in particular, has a number of cut-stone walls. Most of the stone for St. Croix buildings especially- nearly all of it limestone - was quarried in the central valley or was taken from the coral beds along the west end. Stone in Charlotte Amalie was mainly imported. As with rubble walls, the cut-stone walls are often rough-coursed (unevenly laid) and are typically coated with lime plaster. The only difference from rubble walls is one of degree: cut-stone walls employ more regular stone blocks and the stones show more clearly on the existing buildings.



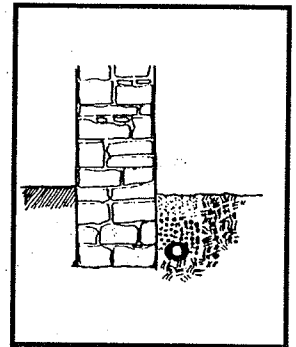
Stone for several St. Thomas buildings was mostly imported.

Moisture

As with rubble walls and brick walls, surfaces should be examined for evidence of water penetration, usually leaks or damp ground. These should be corrected before other work begins. (See guidelines for rubble masonry and brick as well.)



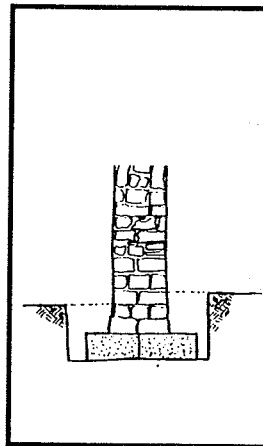
Typical masonry work. Note, even when outer layers are evenly coursed cut stone, much of the interior of the wall is still rubble. Water penetration remains the main problem for preserving such walls.



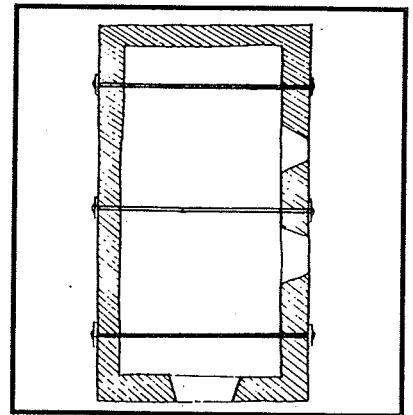
Installation of a perimeter drain can help cut down on moisture problems. Set perforated drain in a bed of gravel and be certain that the ground slopes away from building and that the pipe also drains.

Outward-leaning Walls

If a wall is leaning outward or shows other signs of falling, the wall may be tied using stainless steel ties and anchors. Otherwise, the foundation should be reinforced, often to the point of providing a new concrete footing. In some cases the wall may have to be rebuilt. If this is done, care must be taken to duplicate the original appearance of the wall.



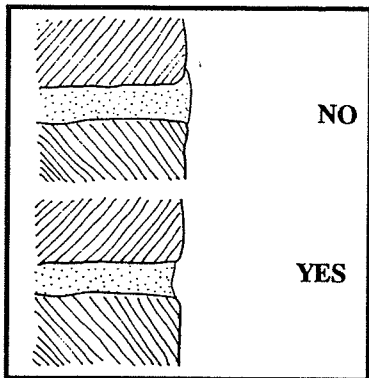
Excavating and providing a proper concrete footing can help correct a failing masonry wall.



Stainless steel tie rods and anchors can help to stabilize outward-leaning rubble walls. Combined with a concrete footing and, in some cases, a concrete rim ring bond band, ties can help reinforce existing walls. Generally do not attempt to straighten leaning walls!

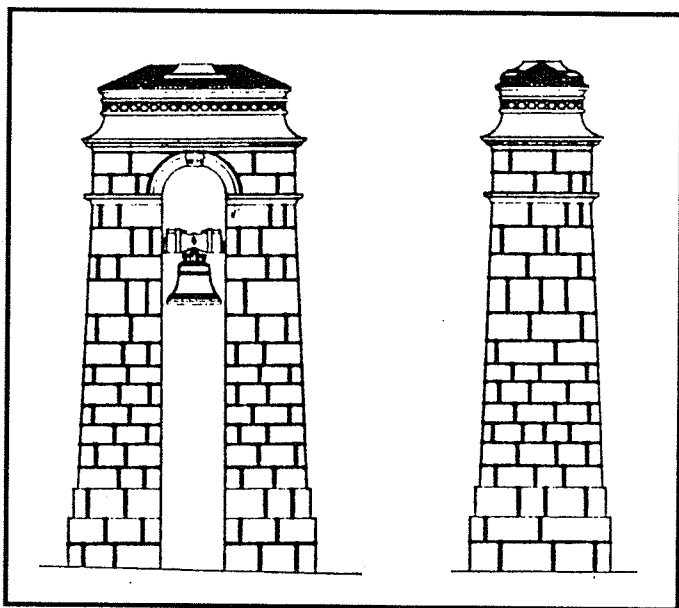
Cleaning and Repointing

Stone walls rarely need to be cleaned, but often need repointing.



If the mortar between the stones is loose, this should be removed with a chisel and fresh mortar put in its place. Modern Portland cement should not be used for this purpose, as it is too hard for the soft limestone around it.

Efforts should be made to duplicate the finish of existing stone walls. As with brick repointing, joints should be raked out to 2-1/2 times their width and packed with an appropriate mortar. Concave joints are usually preferable. Do Not feather edge as in the top example.



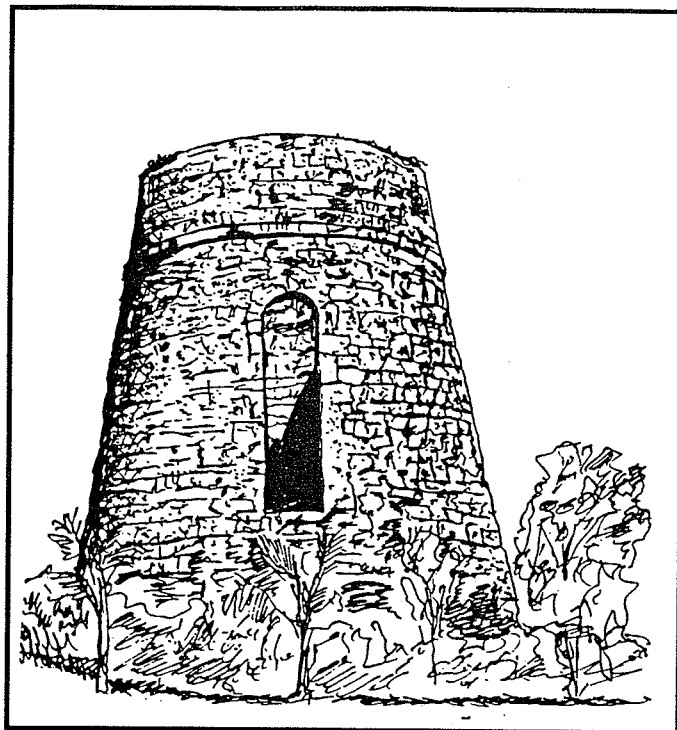
Retain the character and details of original stonework.

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. (See the guideline for brick walls for more complete instructions.)

Following repointing, a thin coat of lime wash is highly recommended. This coat, being composed of the same material as the wall, will not affect its appearance, but will help to protect from rain and pollution.



A coat of lime wash can help to protect the surface of stone structures such as these.

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