

March 24, 2015



Site Visit Report:

Assessment of Brick Porch Foundations

## Mr.

It was a pleasure to meet you and tour your historic property yesterday. We appreciate and understand your desire to serve as a responsible steward to this home, which is steeped in the history of the serve as a responsible steward to this home.

We were asked to give our opinions of the two brick porches at the front and rear of the home. These are not original to the house and have been recently completed. Our assessment is as follows:

The first thing that struck us was the type of brick used. The brick is not a close match to that of which the home is built. The color stands out and the texture of the exposed surfaces does not resemble that of the home. There are pits and voids in the brick which are out of character to the original. One of the additional issues that the pits and voids cause is that when the mortar is struck after the brick is set, mortar occupies these spaces and the joints appear to be larger than the original. This is most evident at the corners of the new brick. The new brick corners are not as square as the original corners.



New Brick



Original Brick

The tooling of the brick joints is of poor quality. An effort had been made to try to replicate that of the original house but it does not match. It appears to have been done by someone without experience matching and replicating surrounding work. It is recessed too far back into the joint, it has not been struck cleanly, and appears in many places to have a washed out appearance. Proper tooling takes experience and patience. It is necessary to spend time learning and practicing these strikes prior to actually doing them to finished work.



The joints of the new brick work are wider than that of the original. This is most evident at the head joints, the ends of the bricks where they meet horizontally. The original bricks were pressed tightly together when they were set. This was done both for aesthetics as well as minimizing water infiltration into the wall through the joints. The joints of the new work are totally out of character from the original brick work on the house.





The primary visual features of the foundations are their arches. These photos show the lack of attention to detail in the width of the joint, the strike of the joint, and an apparent lack of effort to properly cut the brick pieces that fit between the courses of brick and the brick comprising the arches. These details are completely out of character and unacceptable in historic masonry replication.

From a structural standpoint the new brick porch foundations are not sound. The building code for Northumberland County specifies that the footings for the porch should extend a minimum of 18 inches below grade. We have confirmed this requirement with Bill Knight of the Northumberland County Building Department. The footings of the new porch foundations extend only 12 inches below grade. Further, their outside dimension does not extend beyond the brick work.

Per our conversation with Doug Harnsberger, AIA of Legacy Architecture, we agree with his assessment that the footings should have been extended 6 inches past each side of the brick foundation for a total footing width of 20 inches. We cannot verify if any rebar was included / installed in the current footings. Per Mr. Harnsberger, any new footing that is installed should have two sections of epoxy coated rebar run continuously through the length of the footing.

Considering a two story porch will be supported by the footings and foundation, the original design and execution is flawed, does not meet code, and could result in a failure of the entire porch system.



This structural issue is enough for us to recommend that the two brick porch foundations be torn down and rebuilt on footings that meet code requirements in a manner that is sympathetic to the original fabric of the home. Greater effort should be given to the selection of brick to be used in the rebuilding of the porches and only qualified craftsmen employed in their rebuilding to ensure that the work meets the high standards of the home.

Respectfully submitted,

Tim Winther Senior Project Manager