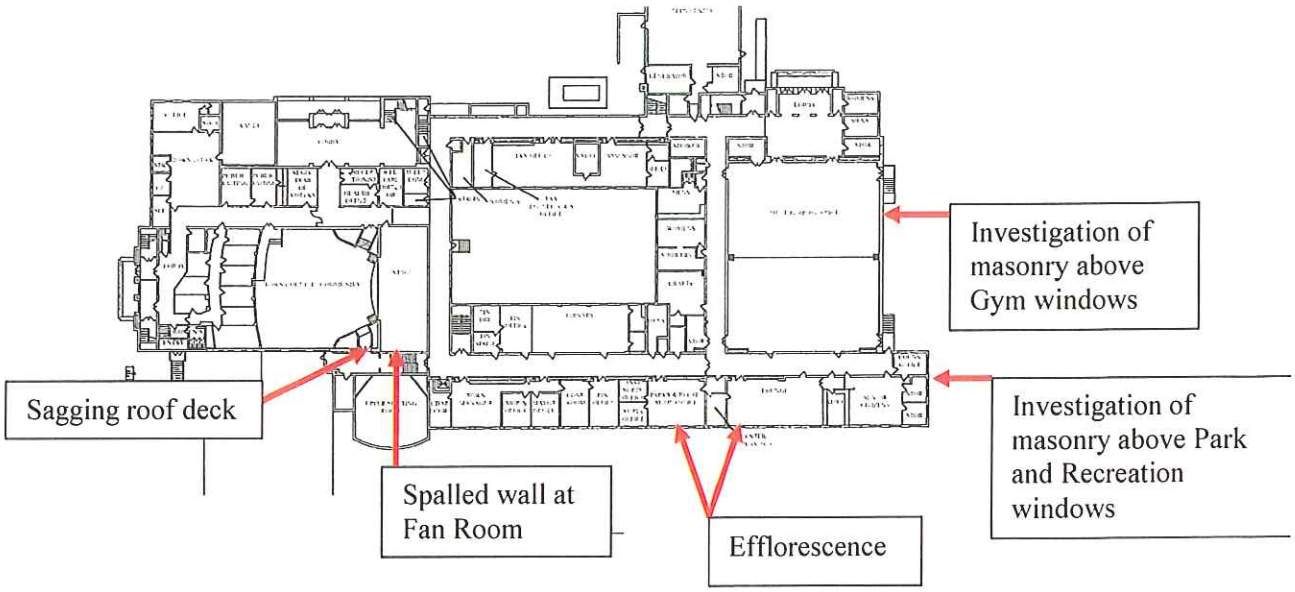
Original Building



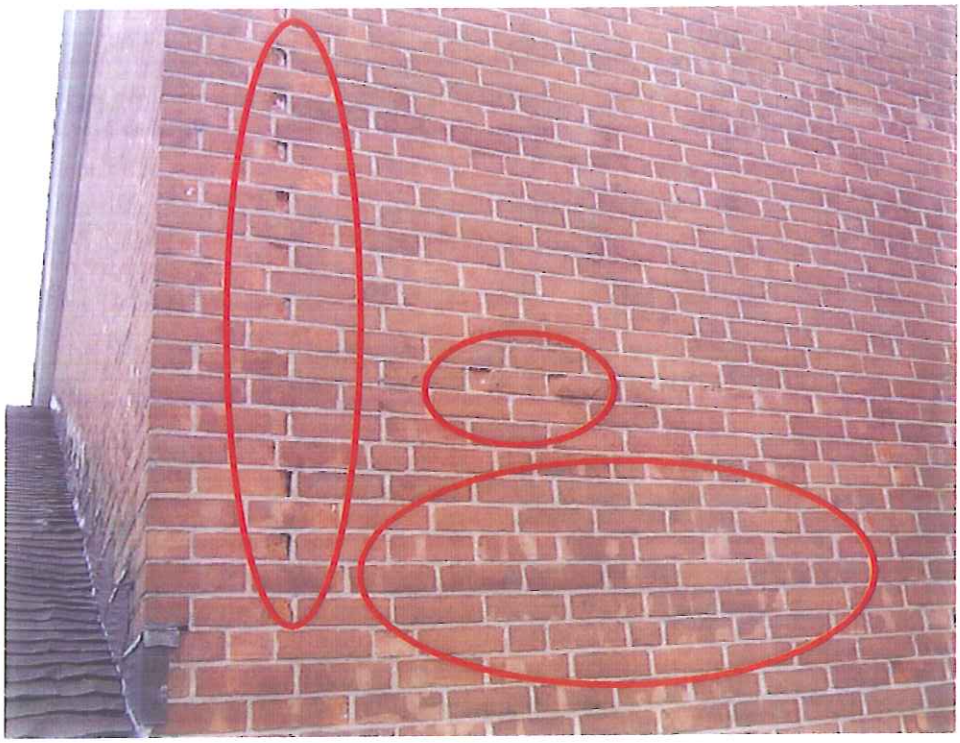
Description

A mason from Connecticut Masons performed a masonry investigation on April 20, 2015 of three areas on the exterior walls that were noted in Kaestle Boos Associates 2008 report to be further investigated. These areas are located at the Auditorium Fan Room, the Park and Recreation Department and the Gymnasium. The wing with the Park and Recreation Department and Gymnasium are part of the original building construction. The Fan Room was constructed in 1955.

- The first area to be investigated was the exterior wall of the Auditorium Fan Room. The exterior brick wythe of the west wall was observed to be exhibiting considerable spalling in the 2008 report. I observed during the April 20th investigation that the quantity and depth of spalling continued since 2008 with additional damage. The spalled brick which has a course surface in comparison to the fired brick finished surface allows an increased absorption rate. As the brick absorbs more water and is subjected to freeze/thaw cycles, an increase of damage to the brick occurs.

  At the time of masonry investigation, the mason removed 3 spalled bricks. The wall was constructed with an outer brick wythe without a drainage cavity or flashing and concrete block inner wythe. The water currently infiltrating the brick can easily be absorbed by the interior block walls as the bricks become saturated. This condition allows moisture into the interior walls which may have possible implications for mold and mildew growth.

  Another condition which is also exacerbating the water damage involves the lack of weep holes above the copper flashing at the intersection of the low roof and the wall. Any water entering into the limited space between the inner and outer wythes cannot drain out of the wall and becomes trapped.



Spalled brick and water infiltration damage on west face of Fan Room wall

Spalled brick adjacent to sloping roof and Fan Room

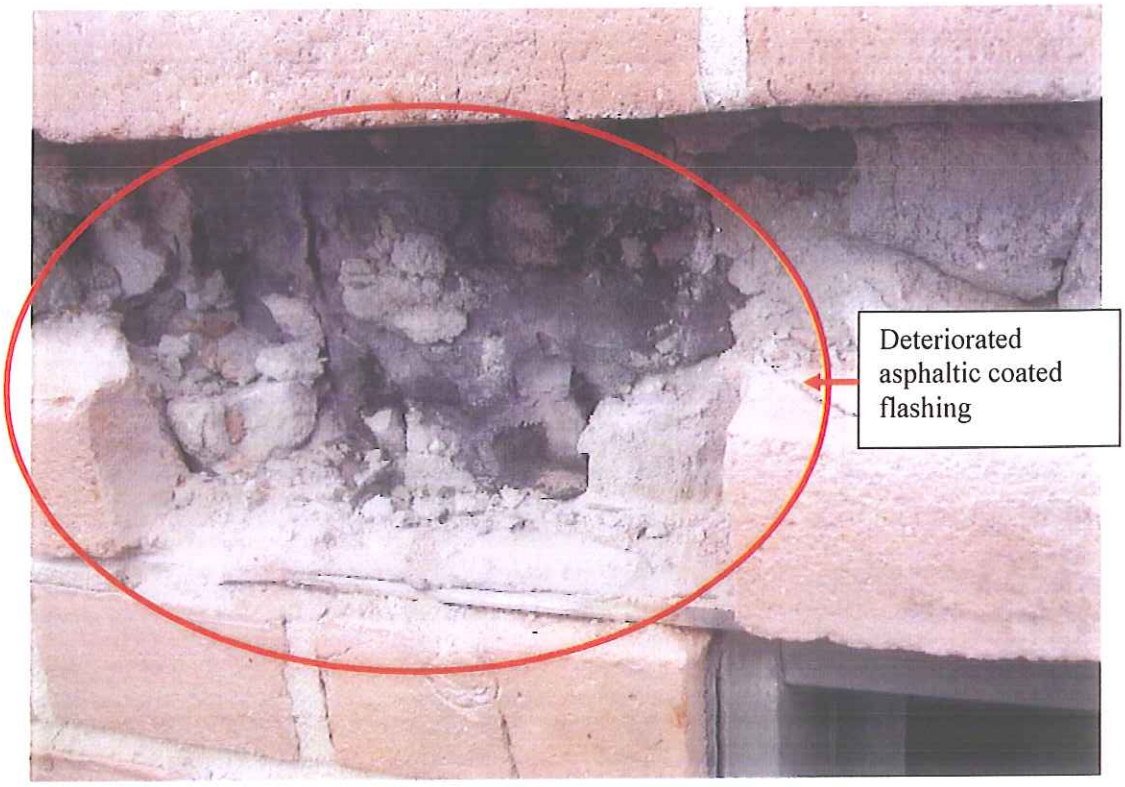
Close up of spalling directly above copper flashing on west wall of Fan Room

Three bricks remove to expose minimal space between the exterior brick and interior block. Water entering through brick is absorbed by interior block which is in contact with the brick

- The second area to be investigated was above the windows for the Park and Recreation Department offices along the south face of the original multi story building. The offices are located on the main level floor. The 2008 report identified spalling mortar joints, shifting brick and visible corrosion to the steel lintel angles spanning the openings.

  The mason removed 3 bricks above and adjacent to the window jambs to expose any flashing and the condition of the steel angles. The flashing is dry and deteriorating with holes present throughout the exposed area. There are no end dams on the end of the steel lintels to prevent any water in the cavity from draining behind the brick and into the inner wythe block. Also there are no weep holes above the steel lintels to drain the wall. The flashing was installed to within a ¼" from the exterior edge of the steel lintels so they are protected from exposure to the moisture. The minimal cavity between the outer wythe brick and inner wythe block is typically filled with mortar droppings which clog the pathway of any water trying to drain from the wall.

South wall of Park and Recreation Department



Wall construction visible including flashing and steel lintels where 3 bricks were removed

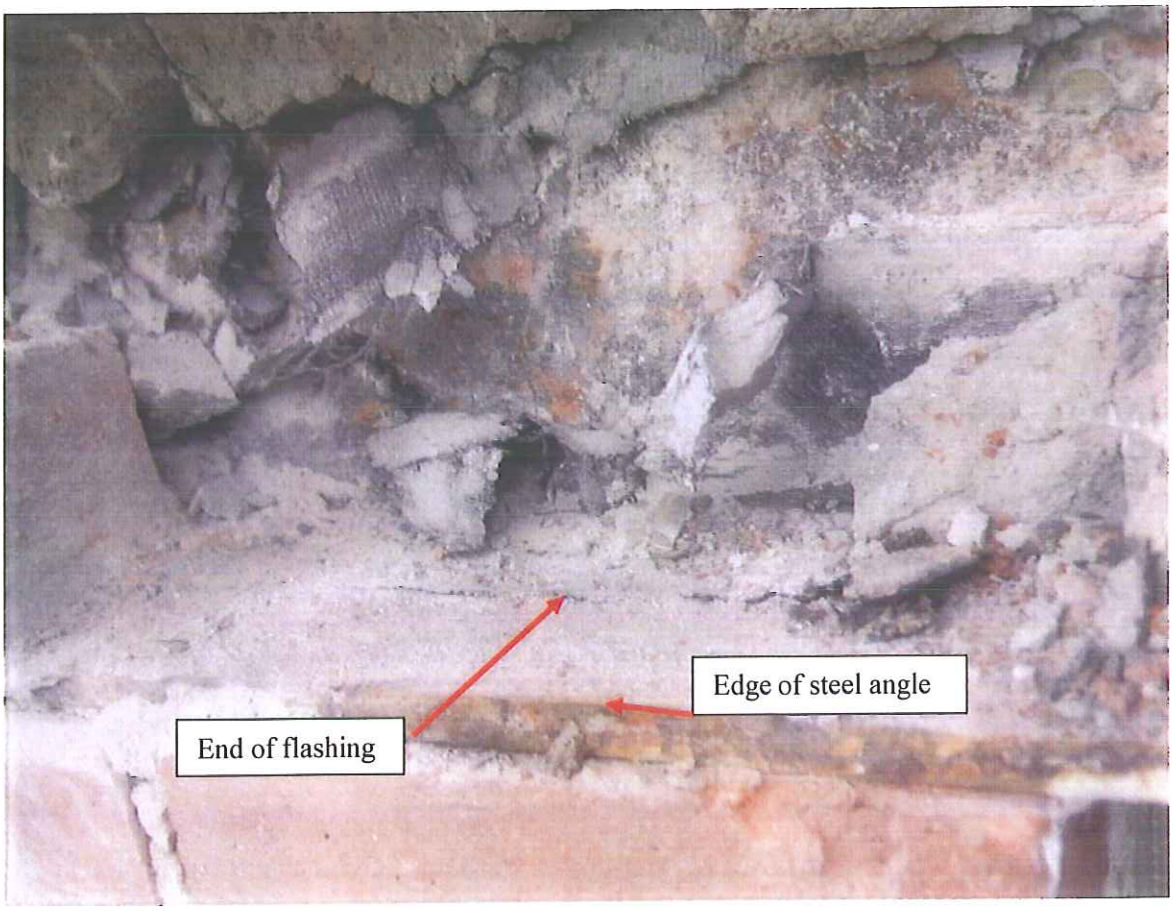
Close up of asphaltic coated flashing condition

Spalled mortar joint and cracked bricks at opposite widow jamb allowing passage of water into building and freeze/thaw damage

- The third location was above the windows at the Gymnasium along the exterior south face of the original multi story building. The bricks were removed above and adjacent to the large glass block window openings where spalled mortar joints were visible as well as deflecting steel angle lintels.

  The mason removed 3 bricks to expose the flashing and condition of the cavity and steel angle supporting the brick masonry above the window opening. Similar to the flashing at the windows in the Park and Recreation Department, the flashing was dry with holes and cracks that allow any water absorbed by the brick to infiltrate into the inner wythe masonry wall. The flashing terminated approximately 2" back from the outside edge of the steel angles so that any water draining from the limited cavity comes in contact with the bare steel surface. Corrosion has developed on the steel angles do to the lack of weep holes for draining the cavity, the end of the flashing and lack of galvanized coating of the steel. There were also no end dams to contain any moisture on the flashing from draining into the space between the two walls.

Opening in exterior brick to document construction of wall and condition of materials



Deteriorated flashing, termination of flashing on steel lintel as viewed in exploratory opening

- In addition to the three areas investigated, I also observed two other conditions involving the structure and masonry. Adjacent to the Auditorium Fan Room a gable roof intersects the exterior wall of the Fan Room. Along the high/low condition there is a noticeable sag in the roof deck. This indicates that the deck in that area is failing and the roofing membrane and flashing is supporting the roof deck below which is not acceptable. It is not clear as to extent of the damage.

Sagging roof deck and shingles supported by roof deck. On north face of Fan Room

- Efflorescence is visible on the west exterior masonry wall of the upper floor and on a portion of the south wall of the building. In both instances, this is caused by water infiltration into the brick wythe and the brick is remaining wet which draws lime from the mortar to the surface. Leaks in the roof appear to be possible cause of efflorescence. The wetting of the brick will lead to spalling of the mortar joints and brick during the freeze/thaw cycles.

Efflorescence on west wall of original building

Efflorescence on the south wall of Gymnasium