SHEPPARD STRUCTURAL CONSULTING, P.C.

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June 22, 2012

Mr. Michel Soucisse
Hostel Detroit
2700 Vermont
Detroit, MI 48216

Re: 2700 Vermont, Detroit, MI
SSC Job No. 12-083

Dear Mr. Soucisse:

I inspected, measured and took 18 photographs of this 24'x74' two-story 1910-era building on Wednesday, June 20, 2012. The photos are captioned and enclosed. You were present and guided my inspection of the interior. My wife was along to assist in the measurements.

The building appears to be square, plumb and true, with brick veneer on all sides and a near-flat roof that slopes slightly toward a gutter and downspouts on the north side. It was not possible to see the actual wall construction, though it appeared at first to be a double-wythe brick wall with plaster on the inside. However, there are no header courses at every 7th or 8th course, so it is unlikely that the walls are solid brick. It is probable that there are wood studs, wood board sheathing on the outside, an air or finger space, and then brick on the exterior. The interior probably has lathe and plaster. None of this could be confirmed, as there were no voids or other inspection holes.

The brick on the west wall has bulged away from the wall at approximately the second floor line as seen in several of the photos. I suggest that one brick be removed from this area as an inspection hole to see what the construction is behind it, and possibly use a tape measure or yardstick to inspect for brick ties. The brick ties, if present, must have pulled loose from the framing or from the mortar joints which allowed the brick to bulge away from the wall. If it were possible to find stud locations and push the brick back to more-or-less its original plane, it might be possible to hold the brick using a retro-fit brick tie such as the Helifix anchor, of which a manufacturer's sheet is enclosed.

If it is not possible to push the brick back and hold it in place with retro-fit brick ties, then I would suggest removing brick above the approximately 12-foot wide lower window in a step pattern up to the 6-foot wide upper window. I have shown this possible repair on my 8½x11 drawing. It would involve salvaging the brick if possible, checking the wall framing for water damage or rot, repairing any areas necessary with new studs, sheathing, Tyvek, and reinstalling the brick. It may be necessary to add additional reclaimed brick to replace any that get damaged during removal. During the re-bricking, there should be flashing installed at the horizontal steel plate above the lower window with weep holes in the bottom of vertical joints about 24 inches o.c. (i.e., every third vertical joint). This should allow any water which gets through the brick or mortar joints to drain down the water-resistant barrier (Tyvek or equivalent), onto the flashing and out through the weep holes without causing water damage to the framing or rusting of the steel.

There are several locations inside the building, mostly on the north wall, where water damage can be seen on the bubbled or blistered plaster near the bottom of the wall. These water-damage locations should have the plaster removed, the wall framing inspected both visually and with an ice pick or ⅛" drill to determine the condition of the wood framing. If there has been significant wood rot, the existing studs could be left in place but new doubler studs sistered along-side. It may be possible to use a ⅛" drill through the plaster and into the framing as an initial inspection without removed plaster. If the wood shavings come out clean and bright, it is a pretty good indication that that particular hole did not involve rot or deterioration, though it still would need the plaster removed and repaired.

During the repair process of removing the plaster, I would suggest spraying the wall or window outside with a garden hose for 15-20 minutes to see if water is still coming through that area. Once it is assured that water is no longer coming through the wall or window, repair should be completed on the inside.

Since some of the water damage seems to be below windows, I suggest it might be possible to put a small sloping "roof" above the window with flashing at the top and roofing, almost like a small awning but made of plywood framing and roofing material. See the sketch on my drawing.

The brick veneer needs more attention at mortar cracks or where mortar is missing. I recommend that any mortar cracks be cleaned out and "tuck-pointed" to provide a weather-proof joint. Some of the water-damaged plaster inside may have been the result of water coming through mortar cracks or missing mortar at joints in the brick.

There is a strip of concrete on the ground along the north side which appears to have been intended originally to shed water away from the building. There is now a ¾"-1" wide gap or crack between this concrete and the north wall. This gap should be cleaned out as much as practical, backer-rod pushed down as a horizontal "rope" or barrier and about ½"-¾" of caulk installed on top to prevent water entry. This will take a lot of caulk, so buy it in quantity. The reason for ½" or ¾" depth of caulk is to provide enough "body" below the surface that it does not harden, dry out and crack prematurely. I favor a slight convex top to the caulk or beveled angle rather than the typical concave surface. Another alternative to this repair would be to remove the concrete, bring in some extra top soil and grade it away from the building. This grade would need to be maintained in order to continue to direct water away from the building.

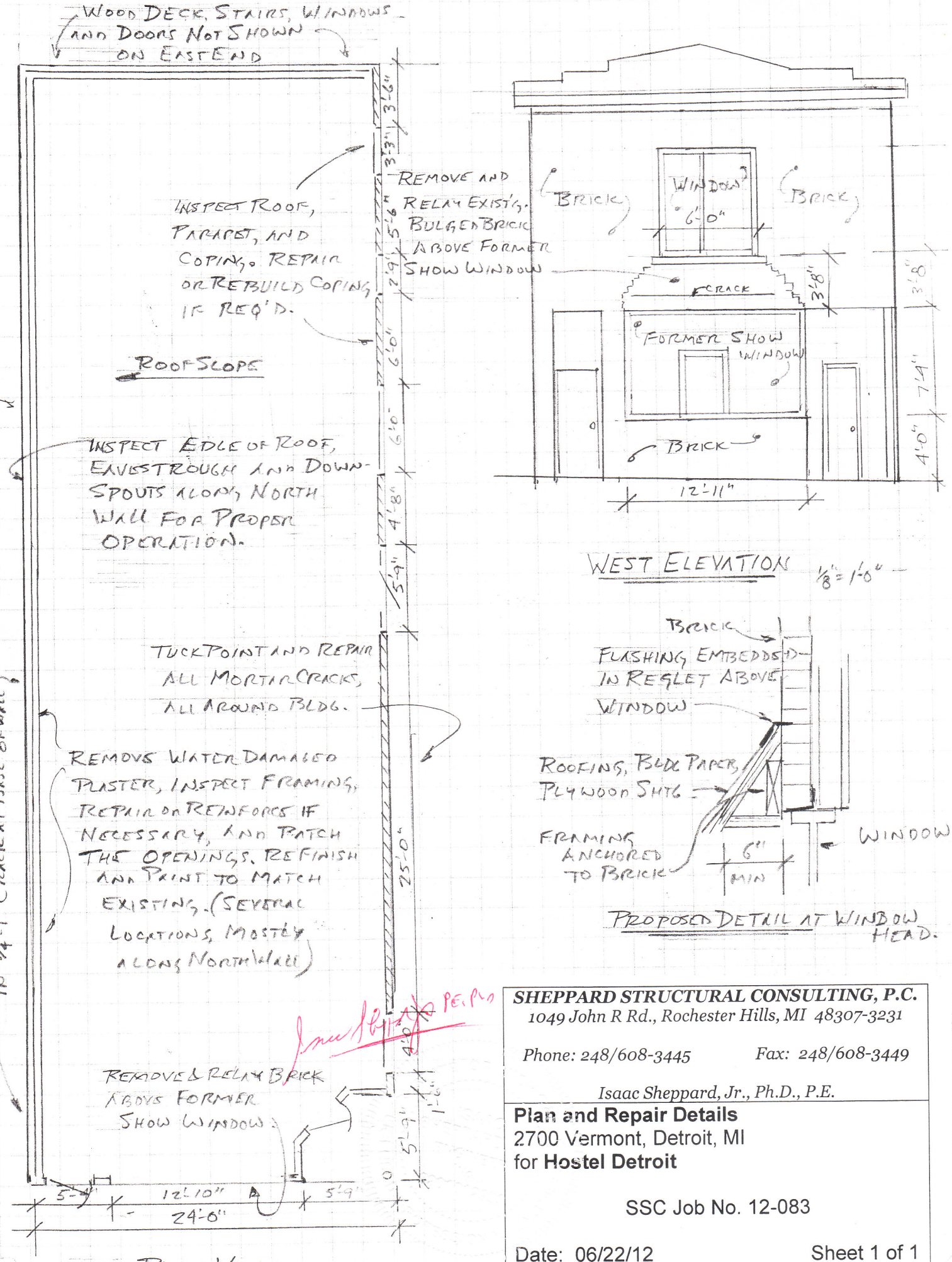
I did not go on the roof and thus have no direct experience with this roof. However, it is important that the roof shed water into the eaves trough and that the eaves troughs be maintained and cleaned of leaves and debris. If the edge of the roof is such that water can drain between the back of the eaves trough and the brick, instead of going into the eaves trough, the roof water will tend the "wash" down the wall. This would result in far more water on the wall than if it were only the rain that hits the wall directly. Therefore, the roof and eaves troughs should be inspected. As a minimum, since the roof may be difficult to access, one could view the eaves trough and wall from the ground during a rain to get some idea of what happens.

I could not inspect the parapets on the east, south, or west walls from the ground, except to note that the south parapet appeared to have had extensive mortar or sealant applied. See Photo 18. While on the roof, the parapets should be inspected and possibly a new cap or coping installed if it is found that the condition of the parapet is such that it might be a source of water into the building.

Sincerely,

PE. PhD

Isaac Sheppard, Jr., Ph.D,. S.E.
Professional Engineer



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Plan and Repair Details
2700 Vermont, Detroit, MI
for **Hostel Detroit**

SSC Job No. 12-083

Date: 06/22/12 Sheet 1 of 1