

NEUBAUER CONSULTING ENGINEERS, P.A.

4701 SANGAMORE ROAD, SUITE N290, BETHESDA, MD 20816
(301) 263-2727 FAX (301) 263-1039

November 9th, 2010

Chase Clement
506 Elm Street
Takoma Park, MD 20877

Re: Structural inspection of buildings at Adelphi Friends Meeting

Dear Chase:

On the 27th of October, 2010, I visited Adelphi Friends Meeting buildings at 2301 and 2303 Metzert Road to make a structural inspection. The purpose of the inspection was to offer my professional opinion as to the condition of the two structures. The two buildings were a meeting hall and a former residence. No destructive investigations were made and my comments are based solely on a visual inspection.

Before addressing the buildings themselves, it is worth noting that it appears that an extensive below-grade drainage system was installed to direct roof downspout discharge away from the buildings and towards the south end of the property. In some cases the system has been abandoned. Should the underground pipes be functioning properly, it is recommended that they continue to be used. If they are not, they should be fixed or cleaned. In my experience, the heavy concentrations of water emanating from downspout discharge are the single biggest cause of foundation settlement and basement water intrusion.

2301

The meeting hall at 2301 is a one-story rectangular building with a basement that opens almost to grade at the rear. The roof is constructed of wood trusses and the first floor of steel bar joists with concrete floor over corrugated steel decking. The exterior and most interior walls are constructed of concrete block. The exterior walls have a brick veneer finish that is twelve inches thick below grade and eight inches thick above grade. The basement floor is a concrete slab on grade. The building appears to be about 50 years old.

With the exception of the northwest corner where it was damaged during a recent storm, the roof is in good structural condition. It was noted that three of the roof trusses had thin horizontal splits in the top chord lumber. However, the size of the splits does not, in my opinion, adversely affect the structural capacity of the wood members.

NEUBAUER CONSULTING ENGINEERS, P.A.

November 9th, 2010
Chase Clement

page 2.

The first floor concrete and eighteen-inch deep steel bar joist floor likewise appears to be in good structural condition. Comments were made that there was a crack at the threshold between the front hall and the meeting room where the spaces are divided by a concrete block wall. Floor finishes prevented me from seeing the crack but its location indicates that it is likely a shrinkage crack and not due to any underlying structural malady. The front hall and the meeting room are large concrete areas that shrank as the concrete dried and cured. The threshold where they joined was the point at which the two areas shrank independently and pulled apart.

There are random thin cracks in the south concrete block wall of the meeting room as well as in the stair hall. In both cases, these walls are structurally taller than the rest of the walls being almost two stories tall (the one in the hall due to the stair construction and the one in the meeting room due to the cathedral ceiling). None of the cracks shows up in the exterior brick veneer. Had these cracks been due to foundation settlement, they would be noticeable outdoors as well. Also, their random nature is not in keeping with cracking typical of foundation settlement. It is suspected that the cracking is due to either shrinkage of the mortar during construction or expansive forces due to thermal movement. Either way, in my opinion, they do not affect the walls ability to function properly from a structural standpoint and no remedial work is recommended.

It was reported that water sometimes enters the basement, normally at the exterior door. It is likely that the areaway drain at the steps outside is clogged or overwhelmed during large rains. The areaway then would fill and the rising water climbs over the door threshold and enters the building. There appears to be a high concentration of moisture wicking through the wall in the hall to the shower at a window. This is evidenced by the peeling paint. Outside the wall is a window well since the window sill is well below grade. These are common places for water to intrude since the window well partially confines the rainwater falling within it. Some of the water then invariably tries to soak into the foundation wall.

It was also reported that the east foundation wall was strengthened some years ago. How it was strengthened is not known but there are bolts and plates along the top of the wall and a larger-than-normal mortar joint about midway up the wall. The joint appears to have been patched but it has not re-opened. Given the thickness and height of the wall as well as the fact that it retains outside soil for its entire height, it is suspected that at one point it cracked due to excessive lateral soil pressure. Whether this was due to a high moisture content in the soil from poor site drainage or unreinforced masonry is not known. However, since the crack has not re-opened, it is highly likely that whatever fix

NEUBAUER CONSULTING ENGINEERS, P.A.

November 9th, 2010
Chase Clement

page 3.

was put in place has corrected the problem. Other than that location, no other cracking past or present was noted.

2303

The building at 2303 is a former residence converted to school use and is of wood construction throughout with the exception of a solid brick foundation wall. It is suspected that the building's construction dates from the early 20th Century. The west exterior wall of the house has had brick veneer added and is the only one so clad. The two walls of the hallway are load-bearing, supporting the floor joists, and rest upon steel beams and columns in the basement. It appears that a former porch in the southeast corner of the building was enclosed years ago and converted to interior space.

It bears mentioning that the interior wall finishes (likely plaster given the home's age) are virtually free of cracks. In my experience with probably hundreds of homes of this age, this is an extremely rare occurrence. Even the attic space was devoid of wall cracking. This is very unusual due to the high heat that an attic space experiences. I feel this lack of cracking is indicative of the structural soundness of the building. Typically structural distress will be evident in the finishes since they are applied directly to the structure.

Of note is the exterior fire escape stair. While I did not climb it, it is constructed of wood which even if pressure treated with a preservative will not have a life-expectancy of more than twenty years and usually less. Thus, it would be wise to monitor the staircase for any deterioration. I did not take measurements to check the stair's design.

Conclusion

In my professional opinion, both buildings are in good to very good structural condition especially considering their ages. They do not appear to be suffering any ill-effects from the use they are presently given. Therefore, unless the loadings are significantly changed by adapting them to heavier uses or applying heavier finishes or maintenance is neglected, the buildings will continue to serve acceptably.

If any further information is desired, please let me know.

Very truly yours,



Peter A. Neubauer, P.E.

File: misc10/adelphimeeting.1