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REPORT DATE: 09-01-2017	REPORT NUMBER: 1	DATE OF SITE VISIT: 07-25-2017
TO: Patrick Rhodes – IDI Group		TIME OF SITE VISIT: 1:00 pm
		WEATHER/TEMP: SUNNY/85
<p>PROJECT: Paul VI - Condition Assessment Study of Original School Section</p> <p>LOCATION: 10675 Fairfax Blvd. Fairfax, VA</p> <p>SITE VISIT BY: D. Linton - LE</p> <p>PRESENT: P. Rhodes - IDI</p>		
<p>OBSERVATIONS/DISCUSSIONS: The following observations were made of the original 24,000 SF circa 1935 portion of the existing school building. All findings are based upon the visually accessible portions of the existing structure. The existing building is two stories above grade and appears to have been constructed with open web steel joists spanning to masonry bearing walls at the exterior and at the two corridor wall locations. A utility tunnel occurs below the first-floor corridor.</p> <p><u>Second Floor Level:</u></p> <p>The 2nd floor structure is framed with open web steel joists spanning front to back. See Photo #1. The joists are supported by the existing brick walls at the sides of the corridor and at the exterior walls. At some locations, the corridor walls are discontinuous and steel beams are likely present to support the floor joists. See Photo #2. Two different types of floor deck construction were observed. At some locations a steel form deck was used to span between the joists and at other locations a floor deck consisting of a wire mesh with concrete fill that was draped between the existing joists. In each case, the joists were spaced at approximately 2-feet on center. No structural defects were observed at any of the visually accessible second floor areas.</p> <p><u>Roof Framing:</u></p> <p>The framing for the roof also consists of open web steel joists spanning front to back between the brick walls at the exterior and to the interior brick walls or steel beams occurring at the interior corridor lines. See Photos #3 and #4. The joists support a roof deck system that appears to be tectum type roofing consisting of a steel “T” spanning between the joists with the tectum panels located between the tees. No structural defects were observed at any of the visually accessible roof areas.</p> <p>In looking at the various parapet conditions at the top of the roof, it was observed that parapet walls appear to align directly above the original 1935 building wall location. There are clear delineations between the existing original portion of the building and adjacent roof structures that occur where the existing Library, Cafeteria and Auditorium join to the classroom wing. See Photo #5.</p>		

Bearing Walls:

The exterior walls are composed of interlocking multi-wythe brick. Header courses are present every few feet to tie the wythes together. See Photo #6. It appears that the walls are (3) courses in thickness at the exterior and (2) courses thick at the interior bearing wall locations. Brick walls are also evident in the transverse direction of the building at the interior of the building between the classrooms. It was confirmed that these walls are non-load bearing but may be contributing to the lateral force resisting system of the building.

FINDINGS AND RECOMMENDATIONS:

Based upon the visually accessible portions of the building, the existing structure appears to be in a very sound structural condition. No structural defects were observed in the existing framing for the 1st floor, 2nd floor or the roof. Additionally, there we no signs of any foundation settlement or cracking observed which would indicate excessive structural movement/deflection occurring in the building.

The only portion of the building where any signs of deterioration were observed was at isolated exterior mortar joint locations. The most consistent damage has occurred at the mortar joint locations at the jambs of the window openings where it appears that the steel angle lintel has rusted, causing volumetric expansion of the steel. This condition causes tensile stresses to develop in the adjacent mortar joints which cracks the mortar and causes the mortar joint to become loose and in some case open to the exterior. Subsequent additional brick damage is likely at these locations as additional water penetration can occur which leads to possible freeze-thaw damage. See Photo #7.

Other locations of isolated mortar joint damage where observed at the base of wall in the front façade of the building. See Photo #8.

The existing 1935 building structure is in a good condition and it can be readily adaptively reused for the proposed modifications. Minor mortar joint repointing work is needed at some locations and some minor lintel repair work is also needed. It appears that the 1935 original portion of the building is structurally independent of the adjacent building structures. The structure is in a solid structural condition and can be readily repurposed with little additional structural work. Some further, more detailed study will be needed in the areas where the classroom wing joins the adjacent building areas to confirm the full impact of the proposed demolition work.

It will be necessary to retain some portions of the transverse brick walls in the building in order to maintain a code compliant lateral force resisting system but there should be few additional engineering requirements in reusing the existing structure. Temporary shoring and bracing may be needed at the adjacent building areas as they are sequentially removed from around the perimeter of the original portion of the building to remain.

SITE VISITORS SIGNATURE: DAVID E. LINTON, PE



Photo #1: Underside of 2nd floor joists with metal lath decking



Photo #2: Underside of 2nd floor joists with steel form decking



Photo #3: Roof joist bearing on interior brick wall.



Photo #4: Steel beam supporting roof joists at corridor bearing line



Photo #5: Parapet walls pop-up at Library and Cafeteria wings



Photo #6: Front elevation at building corner



Photo #7: Open mortar joint at corner of window



Photo #8: Deteriorated mortar joints at base of exterior wall corner.