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June 27, 2016 (*revised January 22, 2019*)

Saint Peter's Preparatory School
144 Grand Street
Jersey City, NJ 07302

Attention: Mr. Jim Horan

Re: Assessment of Existing Foundation Conditions
Grammar School
Saint Peter's Preparatory School
Jersey City, New Jersey
MRCE File No. 12787

Dear Mr. Horan,

Mueser Rutledge Consulting Engineers (MRCE) visited the St. Peter's Grammar School building several times since 2016. This letter summarizes our observations and recommendations based on observations made during those site visits.

Project Description

The Grammar School building was built in the 1860's and operated until 2002. The building was then used on a limited basis until 2011. We understand the building sustained significant damage during and after a major storm event in 2012, and the Jersey City Fire Prevention Bureau required an engineer's report to determine the structural stability of the building.

The building is located in Jersey City, New Jersey, on the block bounded by York Street to the north, Grand Street to the south, Warren Street to the east, and Van Vorst Street to the west. The building is adjacent to a parking lot and the existing Saint Peter's Church.

Evaluations of the property have been made by Madonna Designs Architect, LLC, GACE Consulting Engineers, DPC, and the Jersey City Fire Prevention Bureau. Letters prepared by each entity following inspections describe damage to floors, the cellar slab, and exterior facades attributed to settlement of the structure.

General Building Condition Observations

The first floor of the grammar school exterior is partially obscured by a sidewalk bridge scaffold surrounding the entire perimeter. North and east exterior brick walls are generally in fair condition. The west exterior wall has several stepped cracks and areas of deteriorated mortar between courses of brick. The south exterior brick wall has visible stepped cracks above windows and doorways, as well as vertical and stepped cracks at second and third floor levels. Several

courses of brick at the roof line in the center of the south wall are missing, and the top of the wall is covered with a waterproof curtain.

A gap between the center portion of the grammar school building and the west wing of the building is about 1.5 inches wide at sidewalk level, and appears to increase in width higher up the structure. Metal flashing and timber or plywood or boards are fastened over the gap. The gap appears to have widened since the flashing was attached. Stepped cracks about ½ inch wide in the perimeter brick walls are visible above windows in the boiler room. Similar cracks are visible in the restroom north of the boiler room. An exposed timber floor joist supporting the first floor above the restroom exhibits significant deterioration in the perimeter wall pocket.

The walls of first floor classrooms in the east wing of the building exhibit signs of distress, including stepped or diagonal cracks near corners and doorways, as well as uneven floors. Limited areas of perimeter brick walls are exposed where paneling or plaster has been removed.

Signs of distress are more severe in the west wing of the building. Significant cracking and damaged plaster are visible in walls and passageways between the auditorium and west wing. Cracking in these areas is more pronounced on the second floor, suggesting greater displacement between the main building and west wing. West wing classroom floors and stairways generally slope toward west. Diagonal cracks in classroom walls are generally wider than ¼ inch.

Cellar and Foundations - Observations

During our initial site visit in 2016, the floor slab in the center of the cellar had settled several inches between existing columns. Column foundations were not visible. Interior and perimeter walls in the center and east wing cellar were covered with paneling, thus the condition of the walls were not observed. Slab settlement caused significant racking of the stairs leading to the first floor auditorium, as well as separation between the first floor and the stair structure of over one inch. Water damage and mold growth were prevalent throughout the cellar.

The main auditorium floor, with the exception of the area adjacent to the racked cellar stairs described above, exhibits no significant signs of distress, suggesting the columns and column foundations below have not settled differentially, or settlement was small.

In 2018, two test pits were excavated in the building cellar. The test pit locations are shown on the attached plan. One of the test pits was excavated adjacent to an interior column and the other test pit was excavated adjacent to a bearing wall. Photos of the test pits are shown on Photos 1 and 2, attached. The test pit at the column exposed a brick pier supported on timber mat at a depth of about 4 feet just below the groundwater table. Probing by the excavation contractor suggest presence of timber piles below the piers. Based on our pencil cores of the mat timber, its condition is fair considering its age. The column test pit was not extended deeper as excessive dewatering would be required to do that. The wall test pit exposed the wall supported on brick foundation wall likely supported on a timber mat as well. The test pit was terminated at the groundwater table.

Subsurface Conditions

Historic maps, e.g., 1804 map attached, indicate the grammar school site is the area of old streams likely surrounded by marshlands. Remnants of the old stream bottom or marsh deposits are typically found in such areas. These deposits are highly compressible and results in ground settlements when fills or structures are placed on top of them, unless piles are used.

MRCE Opinions

Based on observations made during our site visits and subsurface information available, we conclude that significant settlement of the western part of the grammar school structure has occurred, as evidenced by significant damage to interior floors and walls, as well as the visible gap between the center and west wing of the building.

The building cellar slab indicates significant differential settlement consistent with presence of compressible soils discussed above. As the columns of the main building are likely supported on piles, they do not experience as much a settlement as surrounding cellar slab resulting in the observed differential settlement and damage to the cellar floor.

It is our opinion that construction of underpinning or installation of additional foundation piles to arrest the continued settlement of the structure would be complex and extensive and will likely result in additional damage to the already weakened structure during construction. We concur with the assessments provided by Madonna Designs Architect LLC and GACE Consulting Engineers that demolition is the most reasonable course of action.

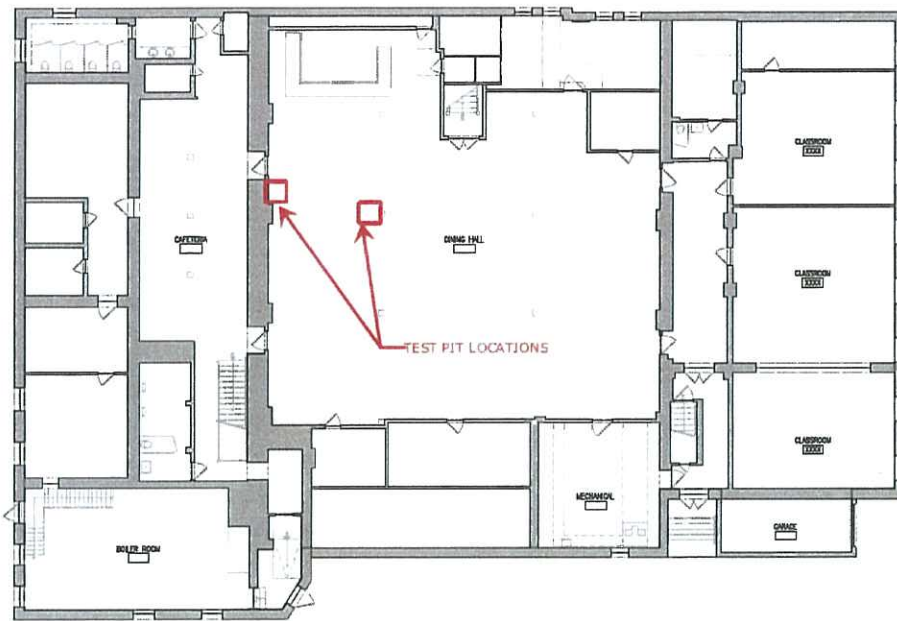
Please do not hesitate to call us with any questions.

MUESER RUTLEDGE CONSULTING ENGINEERS



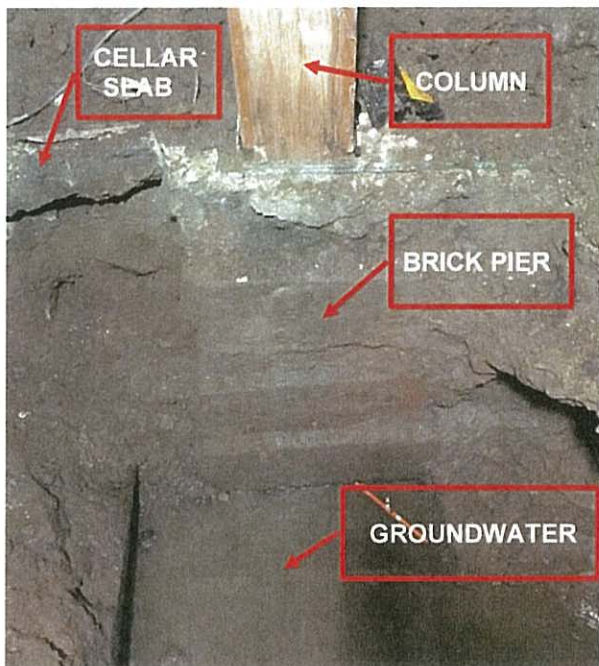
Jan Cermak, PhD, PE

TEST PIT LOCATION PLAN

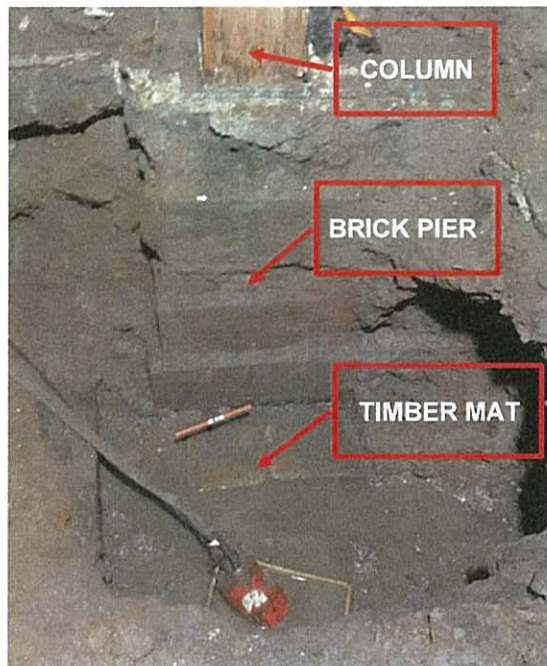


Basement Level TEST PIT LOCATIONS

COLUMN TEST PIT PHOTOS



Test pit without dewatering.



Test pit with dewatering.

1840 MAP OF JERSEY CITY

