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Structural Condition Assessment
on
Boxborough Police Station
Boxborough, Massachusetts

Prepared for:
Context Architecture
65 Franklin Street
Boston, MA

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Date: April 17, 2023
To: Ellen Light, AIA LEED AP BD&C - Context Architecture
From: Carmine Guarracino, P.E.; Stephanie Snider, E.I.T.
Project: Boxborough Police Station
Location: Boxborough, MA
Reference: Structural Conditions Report

Overview

This letter summarizes our findings regarding the present condition of the structures of the Boxborough Police Station in Boxborough, Massachusetts, as well as, our recommendations regarding repairs and maintenance of this structure. These observations and recommendations are based on information provided to us, as well as, our field observations of April 13, 2023. Our comments are based on the existing structural building drawings, our field observations and experience. Our field observations were only visual surface observations and we have not cut any holes in building finishes to verify structure, nor have we done any testing to determine the structures underlying condition.

Existing Conditions

On April 13, 2023, R&G toured the existing building. The building was built in 1989. The building is composed of a wood trussed roof, wood shear and bearing walls at the first floor, hollow core plank making up the first-floor diaphragm, CMU bearing walls below grade in the basement and concrete foundation walls.

Overall, the existing building is in very good condition. No visible cracking or water damage can be seen at the wood framed upper level. The lower level was also in good condition structurally. Some cracks were found within mechanical closet, see photo 1, but it was determined that the wall was non-load bearing. The cracking is most likely due to the compressible fill between the top of wall and the plank and which is not a structural concern. Additionally, small area of spalling was noted on the edge of the plank within the locker room area, see photo 2. This appears to be superficial and does not cause a structural concern. Photo 3 shows the telecommunication equipment currently installed at the station. It is assumed these were installed according to applicable codes and the building was checked for additional loading at the time of installation. There were no additional items noted during the visit.
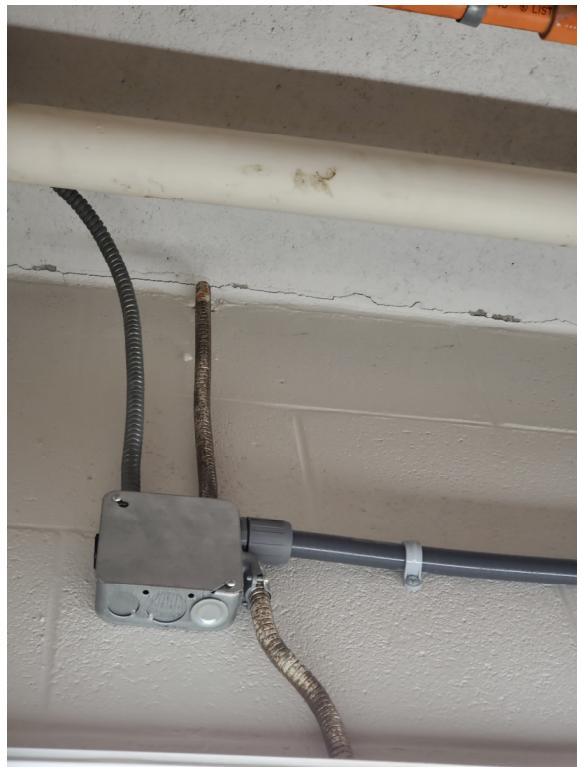
Photo 1.

Photo 2.

Boxborough Police Station Assessment
Boxborough, MA

Photo 3.

Assessment of Existing Conditions

The existing structure is in good condition with no visible structural deficiencies. The exterior retaining walls show no signs of movement and the interior shows no signs of movement. Any attached addition will require a lateral evaluation of the existing structure and possible reinforcement of the existing structure per IBC and current loading requirements for a risk category IV building. However, it is expected that any required reinforcement will be minimal including adding plywood sheathing, hold downs and straps to increase the capacity of the existing wood framed shear walls. If an addition is built adjacent to but not structurally tied in to the existing building then the existing structure will only need to be laterally evaluated if the existing exterior walls (lateral force resisting system) are modified or if building alterations are equivalent to Level 3 Alterations per IEBC. The hollow core plank floor system appears to be designed for a minimum of 80 psf according to existing drawings. If any areas are to be changed from police live load to a public live load may require some reinforcement of the existing floor system.

If you have any further questions, or if we can be of any further assistance, please feel free to call.

Very truly yours,
ROOME & GUARRACINO, LLC

Stephanie Snider, EIT
Engineer

Carmine Guarracino, P.E.
Principal

CG:cg