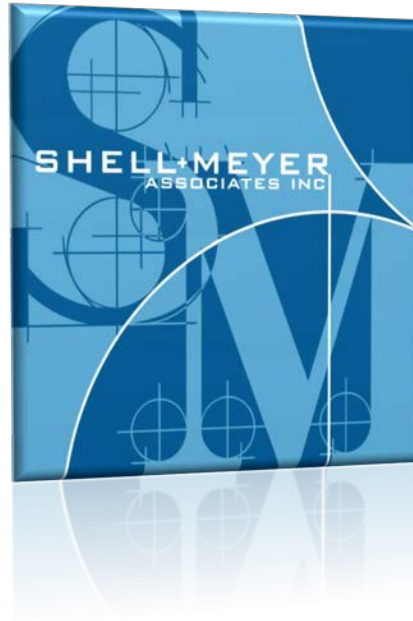


# YELLOW SPRINGS SCHOOLS – GENERAL STRUCTURAL CONDITION REPORT OF HIGH SCHOOL AND MIDDLE SCHOOL

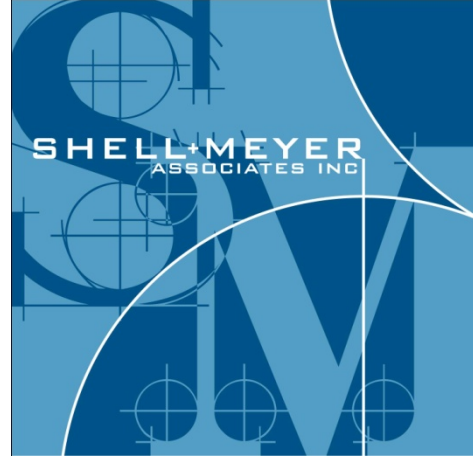


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Date: July 3, 2018



July 3, 2018

Mr. Mario Basora, Superintendent  
Yellow Springs Schools  
201 S. Walnut Street  
Yellow Springs, OH 45387

Re: Yellow Springs Schools  
High School and Middle School General Structural Observation  
SMA Project No.: 18.800.118

Dear Mr. Basora,

Per your request, two engineers from our firm (myself and Richard Meyer) visited the above referenced site on June 13, 2018 to observe the general structural condition of the High School and Middle School. Documents available for the purpose of our visit was a set of existing drawings provided at the site and a Facilities Appraisal dated 03-29-2017 prepared by the Ohio Facilities Construction Commission (OFCC). A detailed description of the existing structures can be found in the Facilities Appraisal Report.

The focus of our observations was on the structure of three-story High School and the modular construction of the Middle School. The findings in this report are limited to visual observations. Detailed inspections or testing of structural elements were not performed. Structural analysis of the existing structural members is outside the scope of our work for this project. Referenced photos can be found in the back of this report.

A summary of our observations follows:

### High School

1. The east exterior wall of the high school (Photo 2) is separated by the steel floor joist and deck system by a 1/2 - 1 inch thick expansion joint material. This material does not provide a solid surface for the tile to bear and has caused the tile to break at this joint (Photos 3 & 4).
  - a. Expansion joint material is not required here and if the tile is repaired this joint material can be removed and replaced with a more rigid material to give the tile support.
2. The steel joist bridging terminates at the exterior wall but some of the bolts that connect the bridging the exterior wall are missing or were never installed (Photo 5).
  - a. The existing bridging shall be attached to the exterior CMU wall with new HILTI HIT HY 70 Adhesive Anchoring System using appropriately sized screen anchors. Use 5/8 inch minimum diameter anchors. Follow all of the Manufacturer's Published Installation Instructions.
3. The remaining items observed were related to general shrinkage and temperature cracking of the brick veneer or cracking of concrete due to multiple freeze-thaw cycles.
  - a. This does not pose an immediate structural concern, however it is recommended that the brick be tuck pointed to repair cracked mortar joints and that exterior cracked concrete be pressure injected with an epoxy adhesive to minimize further damage. (Photo 6)

### Middle School

The Middle School was constructed of modular units placed together and are constructed over a crawl space. The perimeter foundations consist mostly of ungrouted CMU blocks.

1. The brick veneer of the south wall does not align with the ungrouted CMU foundation. As a result the cores of the CMU foundation become exposed as the veneer line tracks inward from east to west. (Photos 8 & 9). This has allowed water and moisture to enter into the crawl space.
  - a. Exposed cores should be grouted solid and recommendations for waterproofing of the foundation walls and moisture barriers in the crawl space should be obtained from others.
2. The remaining items observed were related to general shrinkage and temperature cracking of the brick veneer or cracking of concrete due to multiple freeze-thaw cycles.
  - a. This does not pose an immediate structural concern, however it is recommended that the brick be tuck pointed to repair cracked mortar joints and that exterior cracked concrete be pressure injected with an epoxy adhesive to minimize further damage. (Photo 10)
3. Photos 11 & 12 indicate the basic modular framing consisting of steel floor beams on CMU piers in the crawl space and engineered lumber beams and modular panels for the roof construction.
  - a. Structurally there were no visible issues regarding the modular construction.

This concludes our summary of the general structural observations for the High School and Middle School. Please let us know if we can be of additional assistance to you in the future.

Sincerely,

SHELL + MEYER ASSOCIATES, INC.



Christopher R. Meyer, P.E.

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Encl: Photo Sheets Attached



Photo 1- North Elevation of Existing High School

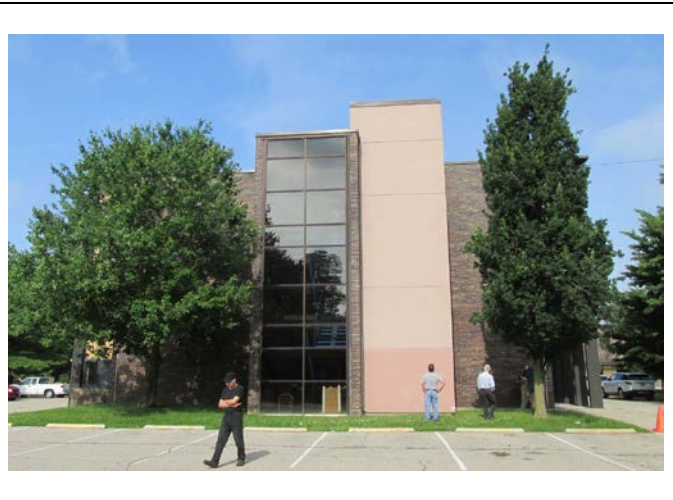


Photo 2 – East Elevation of Existing High School



Photo 3 – Expansion joint between wall and floor



Photo 4 – Expansion joint between wall and floor (Enlarged)



Photo 5 – Typical Bridging Angle with Missing Anchorage Bolt to Wall



Photo 6 – General condition of exterior concrete



Photo 7- View of McKinney Middle School from High Roof



Photo 8 – Exposed cells of block foundation along South Elevation



Photo 9 – Openings in Foundation at Crawl Space Vent



Photo 10 – General shrinkage cracks in brick veneer



Photo 11 – Crawl Space Framing



Photo 12 – Typical Modular Roof Framing