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December 2, 2014

Kenneth Bassler, Selectman
P.O. Box 308, 435 Main Road
Monterey, MA 01245

RE: Structural Review Monterey School

edm Project No.: TOM-3839

Dear Mr. Bassler:

As requested, a visual structural observation and review of the existing school building located in the Town of Monterey at 459 Main Street was conducted.

The school building is presently in use as part of the Southern Berkshire Regional School for Early Kindergarten and Kindergarten students.

This school building is a two story wood frame structure supported by a stone masonry foundation. The addition attached to the North end of the structure is supported by a concrete foundation.

Typical Framing and Piers Picture 1

Typical Framing and Piers - Note Decay on Beam Picture 2

The first floor framing consists of 3x7 wood joists spaced at 24 inches on center supported by a center beam consisting of either an 8x8 wood member or 8 inch diameter log member. Laid stone piers support the beam members at 12½ feet intervals.

The second floor framing was not observed. Based on the thickness of the floor system and the first floor framing the joist members are anticipated to be 3x8 members spanning the length of the class room with a center support and beam.

The roof system framing consists of 1x8 rafters and 2x12 collar ties spaced at 24 inches on center.

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The following items were noted as structural issues:

1. The existing first floor framing is failing in the bathroom area, located on the Northeast corner of the building addition. This failure appears to be caused by the decay of the floor joists along the North wall and has created a floor displacement greater than 3 inches. The floor framing repair should be implemented immediately if the school structure is to remain occupied.


Floor Joist Decay/Failure
Picture 3

The opinion of probable cost for the trim and sill beam repair in present dollars is approximately $6,000 to $7,000.

2. Exterior trim and sill beam decay was noted at the door and near the center of the building along the West side. The exterior trim pieces should be replaced within the next year to limit water infiltration into the sill beam. The sill beam should be repaired within the next two to five years. The urgency of this replacement will increase as the sill beam continues to decay.


Trim and Sill deca by Door
Picture 4

The opinion of probable cost for the trim and sill beam repair in present dollars is approximately $4,000 to $5,000.

3. Along the West side, the foundation masonry has been displaced. It is recommended that the foundation wall be repaired and realigned within the next three to five years.

The opinion of probable cost for the foundation repair in present dollars is approximately $5,000 to $6,000.


Foudation Wall Displacement
Picture 5

4. Excessive debris has accumulated along the North side of the building. This debris creates the potential for water damage to the building and building structure along the North side. It is recommended that the debris be removed from along the building within the next year and debris cleaning should be performed on an annual basis.


Debris Accumulation at Northeast Corner Building Picture 6

The opinion of probable cost for the removing the accumulated debris in present dollars is approximately $200.

5. It was noted to be extremely damp in the crawl space below the building. See Pictures 1, 2, and 3. This should be addressed by increasing the ventilation of the crawl space area, and installing a layer of polyethylene on the crawl space floor (lapping and sealing joints of the polyethylene).

   The opinion of probable cost for the moisture reduction in present dollars is approximately $2,000 to $3,000.

6. Decay was noted in both the first floor joists and beams. See picture 2. In particular at the pier location opposite the crawl space entry where the decay had allowed the beam to settle ½ inch onto the stone pier. This should be addressed at the same time as item 7.

   The opinion of probable cost for the floor joist and beam repair in present dollars is approximately $22,000 to $24,000.

7. The floor framing for both the first and second floor provides and allowable live load of 22 psf and 18 psf respectively. This does not meet present code rtequirements.

   Based on the Massachusetts State Building Code, the minimum allowable design loads are as follows:

Schools - Classrooms	50 psf.
Schools - Corridors	80 psf.
Schools - Flexible Open Plan Areas	100 psf.

   It is recommended that the second floor be used only for light storage and the framing for the first floor be reinforced as required for compliance with the Massachusetts State Building Code minimum allowable design load requirements. This should be performed within the next year.

The opinion of probable costs associated with reinforcing the first floor is included in item 6. The opinion of probable cost for the reinforcement of the second floor in present dollars is approximately $17,000 to $20,000.

edm recommends discussing the live load deficiency with the local building official to determine its urgency and how it should be addressed.

Ignoring these issues could result in additional structural failure, increasing repair costs and compounding existing problems.

The general condition of this building is poor. The framing for this building does not meet the structural requirements as required by the Massachusetts State Building Code. Numerous areas of decay are located in the first floor framing that additionally reduce the allowable load carrying capacity of the framing system.

This study includes a visual structural observation only and does not address any noncompliant architectural, electrical, mechanical, etc. items that could be required in its current state or as part of a major building improvement.

Please feel free to contact **edm** with any questions.

Sincerely,

Carlo Schneller, P.E.

school frame/cs