

# Mosaic Campus Structural Review - Original Dennis Building

<http://www.dps61.org/cms/lib/IL50010903/Centricity/Domain/4/Mosaic%20FINAL%20School%20Evaluation%20Observations%20ar>

FROM: Klinger & Associates, P.C.

TO: Dr. Mike Curry, COO @ 400 E Cerro Gordo, CC Kent Metzger

Introductory details: Inspection limited to north stair area

"We were informed that there were recent concerns with the structural integrity of the north multi-story main-entrance stairs, so the focus of our inspection and evaluation was limited to this north stair area of the Mosaic School building"

Later, the report notes:

"the possibility exists of areas of structural deficiencies that were covered up or were not identifiable during our visual inspection."

Final recommendation:

1. Restrict access to "north multi-story stair and areas below, above, and adjacent to the stair until further stabilization, repairs, or replacement of the stair can be completed"
2. BEFORE staff is allowed to access unaffected areas of the school, an emergency exit path should be established that does not involve the north stair.

Findings

Foundation:

1. basement floor slab is deteriorated
  - previous concerns of the basement slab and foundation had led to others drilling two small exploratory holes
  - top 1"-1.5" is hard, below is soft/sandy. Expected thickness is 4" or 5", but not detailed in original plans.
  - "it is unlikely that any of the structural concerns related to the north stair is related to the deteriorated basement floor slab."

Stair and Landing Superstructure:

1. Excessive permanent deflection was observed on this stair flight with gaps between the wall closed stringer and the wall mounted trim.
  - "The gap was up to 1" at the middle of the stringer span of the west side and up to ½" at the middle of the stringer span of the east side"
  - "we observed previous attempts to repair some of the stair stringers"
  - It appears "an 8" steel W-beam was added at some time in the past was pocketed into and added brick support pedestals on the east and west ends"
  - **Recommendation:** Replace or repair. Do not use basement slab for support. Raise stairs to original elevation. Add additional supports.
2. "minor interior brick wall deterioration observed" and it is "unlikely that any of the structural concerns related to the north stair" are due to this.
3. "two timber column supports" are "leaning or deflecting excessively". 6X6 timber posts, Not part of original plans.
  - "possible" that they were added "as a repair attempt for the 2nd floor landing"
  - "do not appear to be adequately spliced or fixed to the guardrail portion of post below the column"
  - Vertical splitting of TRIM on the post.
  - **Recommendation:** Replace or repair 2nd floor landing header strong enough to allow removal of 2 column supports. Replace/repair 1st floor landing guardrail post after column supports are removed.
4. "plaster was missing and heavily cracked in areas below the east and west stair flight which is likely a sign of excessive deflections of the stair stringers or stringer header supports in the past"
  - **Recommendation:** Replace or repair "the east and west stair flight that runs from 1st floor level to the middle landing" and replace or repair middle landing header.
5. "This 2nd floor landing appears to deflect excessively, which may have been the reason why the column supports were likely added below it in the past. Even with the columns below, the header support on the north end of the 2nd floor landing appears to be inadequate"
  - **Recommendation:** See #3 recommendations. Also replace/repair "the stair flight that runs from the middle landing up to the 2nd floor landing level"

6. "The upper level and both of these upper stair and stair landings have excessive deflection"
  - "someone has had to cut the door down to reduce the door height by up to 1" to "allow the doors to be able to swing open."
  - "The wall on the south side of the upper landing is also deflecting"
  - Decorative wood trim is splitting
  - "it appears the upper-level south header is inadequate to support the stair landings and the wall above it"
  - **Recommendation:** Repair or replace upper landing header, and raise upper landing & wall to original elevation.  
Replace or repair stair flight from 2nd floor to upper landing. Replace upper level doors.
7. "One of the exposed joists of the upper level has been notched for a previous plumbing penetration. There was also some minor existing water damage to the nearby joists and ceiling where it appeared a previous plumbing repair had been made" (*no recommendation*)