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Ms. Carolina Fuzetti

Executive Director, Design and Construction
Fort Bend Independent School District
2323 Texas Parkway
Missouri City, Texas 77489



Dear Carolina,

The following is a summary of the findings from the numerous facility walk throughs of Clements High School, located at 4200 Elkins Road, Sugarland, Texas 77479.

This information was also presented at a community tour of the facility on Wednesday, March 22, 2023.

Clements High School was built in 1983 and is approximately 370,000 square feet. The 40-year-old facility is located on 49.7 acres.

The items described below represent the more critical deficiencies discovered while walking the campus. A team of architects, mechanical engineers, electrical engineers, plumbing engineers, civil engineers, structural engineers, and geotechnical engineers made several visits to the campus to observe the existing conditions. The cost to update Clements High School, and resolve the structural, life safety, handicap accessibility and infrastructure (MEP) issues is approximately \$113,000,000.00.

The following issues have been discovered and have greatly contributed to the decision to rebuild this facility. They are as follows:

- 1) The southeast quadrant of the building is experiencing severe movement. Caused by the highly expansive soils, the building slab has dropped 3-4 inches, causing the CMU Block and Brick walls to crack and shift. Evidence can be seen in several locations.
- 2) The southwest quadrant of the building is experiencing severe movement. Cause by the highly expansive soils, the building slab has dropped 3-4 inches, causing the CMU Block and Brick walls to crack and shift. The condition can be seen in several locations around the exterior walls.
- 3) The northern, central section of the building is also experiencing extreme settlement in the building slab. This too is due to movement of the highly expansive soils. There is extreme cracking on the exterior wall in this location. The slab has dropped so much, that in classrooms 111, 1133, 1325 and 1327, there is a gap below the demising walls wide enough to slide your hand into.
- 4) The northwest corner of the building is also experiencing severe movement. In this case, the expansive soils has caused the slab to heave 3-4 inches. Cracking in the exterior brick wall demonstrates this movement.
- 5) The underground storm drainage system, around the exterior of the building and in the parking lots, has experienced severe damage due to the expansive soils. In numerous locations, the inlets no longer drain rain water because the underground piping has badly

shifted, broken and/or collapsed. In addition, under ground sink holes have developed under the paving. As a result, the paving has lost structural integrity and is collapsing.

- 6) Evidence of the storm lines moving can be seen at numerous locations in the sidewalks and exterior paving. Manhole covers are now several inches above the surrounding paving, causing handicap accessibility issues.
- 7) The building does not have a “voice evacuation” fire alarm system, which is a life safety code issue. All new school buildings must have this type of fire alarm system.
- 8) The building does not have a fire sprinkler system, which is also a life safety code issue. All new school buildings must have this type of system.
- 9) The school-wide intercom system is not functioning properly. It is an old, outdated system that needs replacing. This is a safety and security issue for the campus.
- 10) The chilled water system, which is part of the air conditioning system, is very old and leaking. It has reached the limits of its life and needs to be replaced.
- 11) The entire domestic water piping system needs to be replaced. The existing system is comprised of inferior, foreign-made galvanized piping that has corroded and is leaking. All the piping within the CMU Block walls and under the slab must be removed and replaced. Evidence of this can be seen in the Trainer’s Room in the Boy and Girls Locker rooms.
- 12) Existing concrete sidewalks around the building must be removed and replaced due to heaving and settlement caused by expansive soils. This is causing handicap accessibility issues.
- 13) The existing student restrooms need to be renovated for ADA accessibility.
- 14) Replace existing, aging roofs.
- 15) The existing baseball and softball fields cannot be used for competition because of excessive soil movement, causing consistently changing unevenness and sink holes.
- 16) Educational Adequacy – all classrooms do not meet current Texas Education Agency (TEA) requirements for minimum size requirements. Overcrowding within the classrooms is the result.
- 17) Typical for school design in the 1980’s, there are few windows in the facility. No classrooms have exterior windows. Studies have shown that access to natural lighting and the outside is directly related to learning and subsequent test scores.
- 18) There are cracks present in the terrazzo hallway floors showing slab movement. Examples can be seen in hallways X100 and X101.
- 19) Classroom and hallways are showing signs of movement with cracks in the CMU Block walls. Examples can be seen in classrooms 1320, 1322, and restrooms X251 and X252.
- 20) A vertical drop in the floor slab can be seen in the terrazzo floor in the hallway outside of Clinic Room 129. This is evidence of slab movement.
- 21) The two existing gyms are extremely small, with little spectator seating. No competition gym is present, resulting in educational adequacy issues.

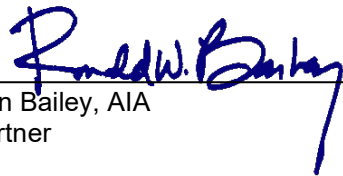
- 22) The Art Room 1603 is not handicap accessible. Existing electrical panel boxes are present in the room and accessible by the students, which is a safety issue. Wood walls are a fire hazard and against building codes.
- 23) The Drama Room 1602 is not handicap accessible. The performance stage is not ADA accessible. The sound booth is elevated and accessible only by ladder. All walls are made of wood and are in violation of fire codes.
- 24) The fan coil units in Room 1603, 1602 and 1601 are so loud, teaching is hampered. The loud fan coil units are signs that the existing air conditioning system needs to be replaced.
- 25) The existing chillers are 18 and 22 years old respectively. Expected life span for this equipment is 15 to 20 years.
- 26) The existing stage in the cafeteria dining room is not handicap accessible. In addition, there is a large crack in the furrdown above the stage.
- 27) The size of the student dining / commons is totally inadequate. The dining room for a school of this size should be approximately 13,000 square feet. The existing dining room is 7,300 square feet. As a result, the students eat lunch throughout the building, in hallways and classrooms.

A way to evaluate an exiting building, to determine if the building is starting to reach the end of its usefulness as a school teaching facility, is to develop what's called its Facility Condition Index. The Facility Condition Index (FCI) is used throughout the facility assessment industry as a general indicator of building health. As a rule of thumb, a FCI of 60% or higher is considered poor to very poor. Clements High School currently has a FCI rating of 59%. As a result, Clements High School is a candidate to be considered for retirement as an active school teaching facility.

In addition, since many of the items pertain to the structural integrity of the building and the expansive soils present on the site, we have included a copy of a report from Paradigm Consultants, dated March 30, 2023, describing the studies that were made at this site.

I hope this information proves useful and if we can help in any way, please don't hesitate to call.

Sincerely,



Ron Bailey, AIA
Partner

cc. Melissa Turnbaugh, PBK
Caroline Harris, PBK