



September 24, 2019

Kelly Kistner  
City of San Marcos  
630 E Hopkins  
San Marcos, TX 78666

Re: Vie Lofts of San Marcos  
817 Chestnut St,  
San Marcos, TX 78666

UBSE Project No. 19029

Mr. Kistner:

Pursuant to your request, Unified Building Sciences & Engineering, Inc. (UBSE) evaluated the Vie Lofts building to determine the extent of structural damage at Stairwell A and the adjacent retaining wall, as well as general observations of the overall structure of the building.

#### **Stairwell A**

The walls of the stairwells were constructed with concrete masonry units (CMU's) that fill the space between the floor slab and the structural beam of the next floor. The walls were grouted approximately every 4' and they were constructed with no gap between the top of the wall and structural beam. According to the As-Built drawings prepared by Morris Architects dated September 28, 2019, there should be a one-inch gap between the top of the CMU wall and the bottom of the concrete beam. We observed no evidence that the walls were constructed with a gap. The steel-framed stairs are welded to steel support angles that are bolted into the CMU walls and concrete structure.

There were vertical cracks and spalling in the CMU walls of Stairwell A on levels B2 and B3, with the damage being more severe on the lowest level. The spalling was typically along the top of the wall against the beam. We observed an elevated ridge in the slab of level B3 approximately 9-feet from the edge of the structure, corresponding with a joint in the floor slab. The ridge was measured to be approximately 2.75-inches higher than the slab areas 10-feet away. According to the As-Built drawings, there is only subgrade soil below the slab in this area. Further testing including removal of portions of the slab would be needed to determine the exact cause of the elevated ridge. We observed no evidence of damage or distress to the concrete beams and columns comprising the structure of the building.

Based on our observations, damage was limited to the CMU walls of Stairwell A on levels B2 and B3. The damage was related to upward movement in the ground-floor slab. The damaged walls on these two levels can be demolished and rebuilt according to the specified plans. The steel-framed stairs can be shored and kept in place during demolishing and reconstruction of the walls. The remaining concrete structure of the building was not damaged or distressed.

#### **Stairwell C**

During our site visit, it was noticed that the door in Stairwell C at level B3 had difficulty opening. Additionally, two blocks along the top of the wall had some minor spalling. Similar to Stairwell A, the walls were built up to the overhead beam, with no expansion gap. We observed no evidence of heaving or elevated portions of the ground slab in this area. Based on our observations, the minor spalling and distress to the door in Stairwell C were related to no expansion joints installed between the stairwell walls and concrete beams to account for the normal movement of the structure.

### **West Retaining Wall**

A retaining wall is constructed on the west side of the building and supports the entrance to the building as well as additional retail parking. No drawings of the wall were provided at the time of writing this letter. Our inspection was limited to this retaining wall, and other walls on the property were not evaluated.

There were vertical cracks in several locations on both west and south sides of the wall. The stones were installed in such a way as to create a vertical construction joint approximately every 15-feet. The cracks typically extended along these vertical joints. Additionally, the face of the wall was constructed with an uneven appearance. We observed no evidence of outward movement in the wall that would indicate an impending structural failure. Further evaluation of the wall, including review of the construction documents and possible soil testing is recommended.

Based on our observations, the vertical cracks in the retaining wall were related to normal movement of the wall and we observed no evidence of outward movement in the wall that would indicate an impending structural failure.

### **Additional Non-Structure-Related Observations**

Additional observations of the building revealed conditions associated with normal weathering and deterioration that were not structurally related. A siding panel was displaced on the west side of the building. The siding panels were held in place via face nailing. We observed other panels with nails that were no longer flush to the panel. Similar nailing conditions were observed on ceiling panels of the breezeways. Additionally, the brick on the northwest corner of the building was beginning to pull away from the structure. The brick was visibly pulling away from the structure in Google Street View photographs dated as early as November 2017. While the brick has been distressed for some time, it should be repaired as soon as possible to prevent further damage to the brick and possible failure.

### **Conclusions and Recommendations**

Based on the results of our investigation, we conclude the following:

1. The overall concrete structure of the building was not damaged or distressed.
2. Damage was limited to the CMU walls of Stairwell A on levels B2 and B3. The damage was related to upward movement in the ground-floor slab. The damaged walls on these two levels can be demolished and rebuilt according to the specified plans. Further testing including removal of portions of the slab would be needed to determine the exact cause of the elevated ridge. The steel-framed stairs can be shored and kept in place during demolishing and reconstruction of the walls.
3. Distress in Stairwell C was limited to minor spalling on the CMU walls and distress to the door. The distress was related to no expansion joints installed between the stairwell walls and concrete beams to account for the normal movement of the structure. The distress can be repaired.

4. Distress in the retaining wall to the west of the structure was limited to vertical cracks mostly located at control joints that were related to normal movement of the wall. We observed no evidence of outward movement in the wall that would indicate an impending structural failure.

Should you have any questions regarding the above or require additional assistance, please contact our office.

Respectfully,

Paul N. Most, P.E.  
Project Engineer

