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Employee Owned

City of Leesburg

July 13, 2008

P.O. Box 490630

Leesburg, Florida 34749

Attention: Mr. Jimmy Feagle

**Reference: Structural Evaluation
Girl Scout Building
Venetian Way, Leesburg, FL**

This report presents the structural evaluation for the referenced building based on visual inspection and review of the geotechnical report from Universal Engineering Sciences. Record drawings for this structure were not made available. Boyle Engineering Corporation did not conduct physical testing of any part of the Girl Scout Building.

Geotechnical investigation was carried out by Universal Engineering Sciences. The Preliminary Geotechnical Report, dated May 27, 2008, stated no finding of organic materials that may cause the structural distress of the system. Moreover, the site soils were found to be capable of supporting the foundation loads from the current building. The groundwater depth was found 6-7 feet below grade at time of exploration, and the seasonal high groundwater table is estimated to be 3-feet below site grade. Excavations performed by the geotechnical engineer show the footing supporting the A-frame structure is a concrete thickened edge, 12-inch thick and 24-inch wide. The floor of the building is a 4-inch thick slab.

The structural system of this structure is a series of concrete A-Frames. These A-frames are supported by a continuous concrete footing at each leg. Lateral stability of the A-frames is provided by timber roof panels which span perpendicular to the A-frames. Masonry walls with framed glass form the east and west end of the structure (Figures No.1 & 2).

There does not appear to a rigid structural member connecting the continuous footing on each side, except for a 4" slab.

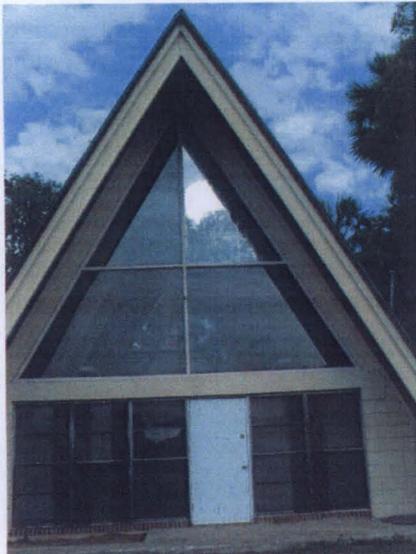


Figure No.1



Figure No.2

Visual Inspection:

The top connection of the A-frames have either separated or formed a crack. This anomaly is more substantial in the A-frames on the east end of the structure (Figures No.3 & 4). Step cracks have occurred in the masonry walls on each end. The cracks are more evident on the north side of the east wall (Figures No.4 & 5). Cracks in the floor slab are visible on the north-east section of the structure (Figure No.6). Termite damage was also observed on the timber roof panels.

The grading around the structure is not contoured to provide positive roof drainage away from the structure. There were some areas on the north side where standing water was present.

It is unknown if the triangular shaped framed glass sections located in each end wall have been subjected to loading due to movement of the A-frames. It is also unknown how the frames holding these glass sections are connected to A-frames.

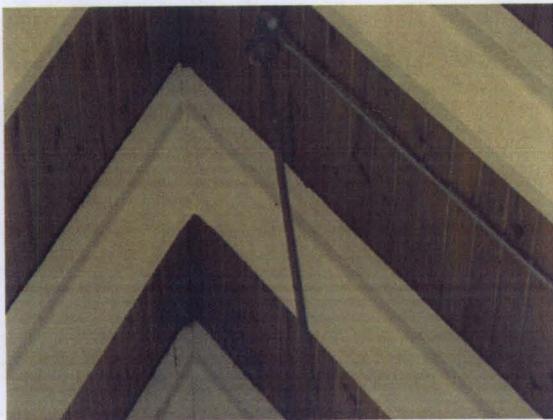


Figure No.2



Figure No.3



Figure No.4

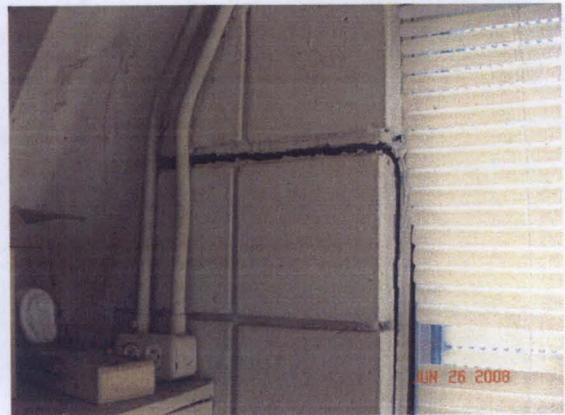


Figure No.5



Figure No.6

Conclusion:

The separation of the top joint and the step cracks in the masonry wall indicate settlement and /or horizontal movement of the supporting foundation of the A-frame (Figure No.7). This is possibly caused by the poor drainage around the structure, in particular on the north side.

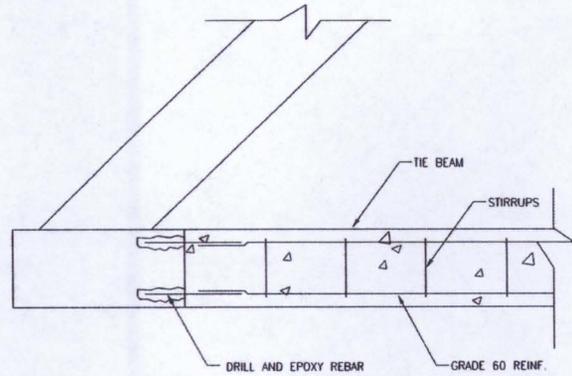
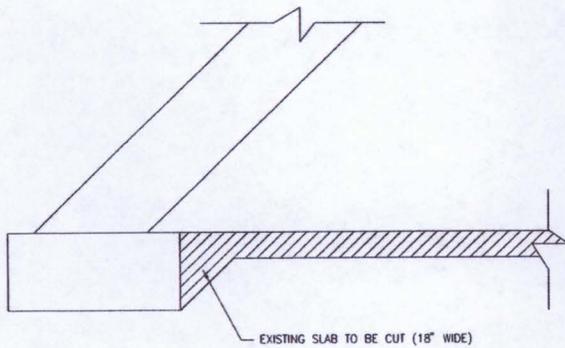


Figure No.7

Recommendations:

The following are suggested repairs:

1. Construct reinforced concrete tie-beams across the floor of the building to connect each pair of A-frame leg sections. These tie-beams should be designed to prevent horizontal movement of the continuous footing. The top of each tie beam should be flush with the floor. Partial removal of each wall section and the internal lavatory wall will be required to install these tie-beams..
2. Clean and repair all cracks using a two-component, 100 percent solids, high-modulus, low viscosity epoxy adhesive designed for structural repair.
3. Clean and repair all spalls using a two-component, polymer-modified cementations mortar and shall have a minimum 28-day compressive strength of 7,000 psi.
4. The top connection of the A-frame should be reinforced with a galvanized steel plate on each face. Secure steel plate to concrete frame with $\frac{3}{4}$ inch galvanized bolts.
5. Provide positive drainage away from the structure. As recommended by the geotechnical engineer, permanent measures shall be constructed and maintained to ensure positive drainage from the structure throughout the functional life of the structure.
6. Replace termite damaged timber roof panels. It should be noted that the timber panels form the lateral brace system of the structure. It is recommended that the contractor retain the services of a professional engineer to assist with removal of these panels without compromising the lateral stability of the structure..
7. The settlement of the foundation may be imparting additional loads on the glass frame on each side of the structure. It is recommended that a professional be retained to evaluate the integrity of the glass panels before the structure is returned to service, especially if the tie beams are not installed.
8. A survey of the existing foundation should be performed and a monitoring system should be implemented to measure possible future settlement.



Exception:

It is assumed that the building was designed to meet requirement of the building code enforced at that time. The building codes have changed significantly over the years and the building may not meet the requirements of the current building code. An evaluation of the building was not performed to determine if the building meets current code.

Boyle Engineering Corporation

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