GSE Engineering & Consulting, Inc.

June 26, 2018

Mr. Rodolfo Valladares, P.E.
Public Service Director
City of Alachua
P.O. Box 9
Alachua, Florida 32616

Limited Structural Evaluation
City of Alachua Main Street Warehouse
14815 North Main Street
Alachua, Alachua County, Florida
GSE Project No. 13630

Dear Mr. Valladares:

GSE Engineering & Consulting, Inc. (GSE) is pleased to present this summary report associated with a limited structural evaluation of the City of Alachua Main Street Warehouse located at 14815 North Main Street. Our services were provided to meet the intent of your email written request dated May 23, 2018.

Background Information

The Main Street Warehouse is located at 14815 North Main Street in Alachua, Alachua County, Florida (Figure 1). Mr. Monrad Thue, P.E. from GSE met Mr. Robert Bonetti and Mr. Tony Love from the City of Alachua at the warehouse on May 31, 2018. Mr. Bonetti provided GSE with access to the interior and exterior of the building and provided background information.

We understand the warehouse was built over one hundred years ago, and has had various modifications and structural changes performed during the life of the structure. According to the Alachua County Property Appraiser, the structure was actually built in 1900, and has a total square area of 2664 square feet. The warehouse is currently unoccupied, and the City wants to occupy the structure in the future.

Purpose

The purpose of this evaluation was to observe, document, and prepare an opinion on the structural condition of the building and its structural components, identify deficiencies including areas which need immediate attention to meet the Florida Building Code, and provide an order of magnitude opinion of cost associated with required repairs and/or replacement costs for the building as a whole.

Summary of Site Observations

Mr. Monrad Thue, P.E. from GSE visited the site on May 31, 2018, to observe and document the structural condition of the building and its components. He was accompanied by Mr. Robert Bonetti and Mr. Tony Love from the City of Alachua. Pictures of representative damage found are attached to the end of this report and are referenced in the body of this report.

The structural framing and floor slab for the north warehouse portion of the building was uncovered and observable (see photo No. 1). The structural framing for the office areas on the south side (approximately 600 square feet) was covered by drywall, and the floors were covered with carpet (see photo No. 2). The foundation system for the load bearing block walls was buried and unobservable at the time of our site visit.

Below is a list of deficiencies identified on the interior of the building, along with repairs or modifications required to bring the building up to the requirements of the Florida Building Code.

- The concrete floor slab in the warehouse area has significant cracking damage with vertical offsets that pose a safety hazard/tripping hazard (see photo No. 5). This slab will require replacement or the addition of a topping slab incorporating a self-leveling cementitious material.
- The roof framing system is inadequately designed/constructed, shows signs of excessive deflections, and according to the City has been modified to rectify problems with deflection in the past (see photos No. 6 thru No. 8). It is GSE's opinion that the roof framing system is insufficient to support the Code required roof loading, and requires complete replacement.
- The electrical wiring and HVAC system appear to require repairs and most likely will need replacement to bring them up to Code.

Below is a list of deficiencies identified on the exterior of the building, along with repairs or modifications required to bring the building up to the requirements of the Florida Building Code.

- The northeast corner had cracking damage to the concrete masonry unit (CMU) load bearing walls (see photo No. 3). This damage appears to be related to the root system of a large tree that was removed in the past, and had been previously repaired. The conditions of the repairs do not appear to be appreciably worse than the completed repairs would have looked like immediately after completion. Further destructive investigations are required to determine how the CMU walls in this area are reinforced. It is GSE's opinion that additional reinforcing is most likely required to bring the wall strength up to Code requirements.
- The roof system has large deflections throughout (see photo No. 4). This coincides with the deflections and design/construction observed inside the building. No appreciable roofing damage was observable from our vantage point on the ground.

Conclusions

It is GSE's opinion that the building requires extensive repairs and modifications, and that replacement of the building would provide the best solution to bring the entire building up to Code, and to provide a building with an estimated life span of 50 years or more. The cost of replacement will depend on many factors, including local costs. We would estimate that the cost of replacement would be approximately $150/square foot for a simple warehouse structure similar to the existing building. This translates to approximately $400,000.

The existing roof framing of the warehouse is considered inadequately designed and constructed, and requires complete replacement. During a wind event, the roof framing could pose a safety hazard for anyone occupying the building. We estimate the cost of demolition and replacement will be on the order of $80,000.

The existing floor slab in the warehouse is a safety/tripping hazard, and requires replacement or the addition of a self-leveling cementitious topping. We estimate the cost of repairs for this portion of the building will be on the order of $25,000.

To keep and use the existing CMU walls and foundations, additional destructive testing would be required to determine what modifications would be required. At the least, the CMU walls in the northeast corner would require added reinforcing grouted into the existing cells of the wall. We estimate the cost of the investigation and repairs to be on the order of $20,000.

The entire building will need to be brought up to Code. This would include replacing all of the electrical and HVAC systems. We estimate the cost of this upgrade will be on the order of $100,000.

Limitations

The opinions presented in this report are based upon visual observation, interviews, public records, and our experience with similar construction in this geographic area. This report reflects observations and conditions at the time of our site visit and should not be construed to represent a guarantee of future conditions. This report should not be construed as a review of the original structural design.

The order of magnitude costs provided in this report are based on our engineering experience, and should be confirmed by a licensed contractor with knowledge of current local costs. The presented costs are intended for planning purposes, and should not be considered a competitively bid estimate of actual costs. Actual costs are generally subject to market conditions at time of construction.

Closing

GSE appreciates the opportunity to have assisted you on this matter. If you have, any questions or comments concerning this document or if we may be of further assistance, please contact us.

Sincerely,

GSE Engineering & Consulting, Inc.

This item has been digitally signed and sealed by
Monrad R Thue
Digitally signed by Monrad R Thue
DN: cn=Monrad R Thue, o=GSE Engineering and Consulting, Inc., ou=FL P.E. #32071, email=mthue@gseengineering.com, c=US
Date: 2018.07.17 09:05:17 -04'00'
Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.

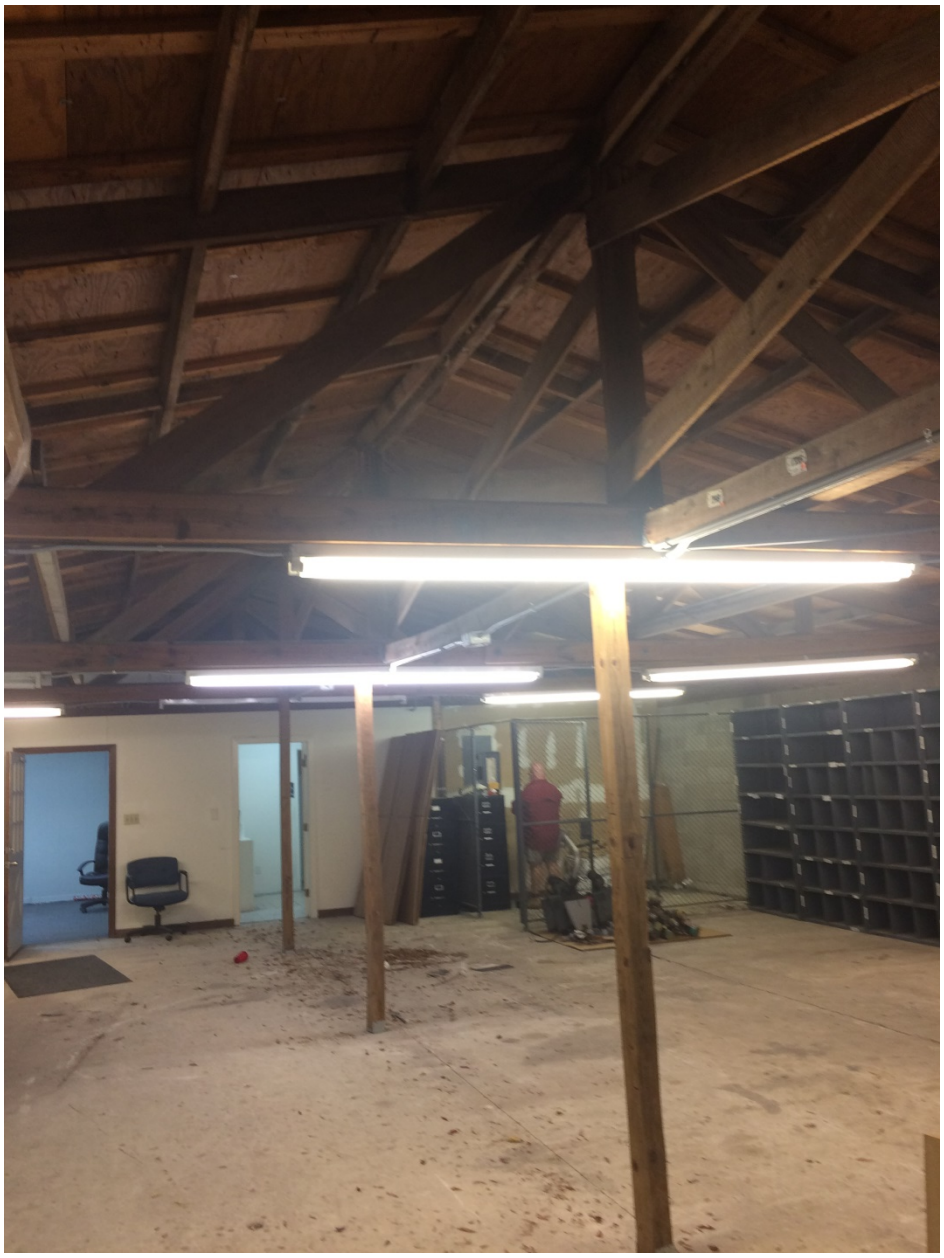
Kenneth L. Hill, P.E.
Principal Engineer
Florida Registration No. 40146

Monrad R. Thue, P.E.
Principal Engineer
Florida Registration No. 32071

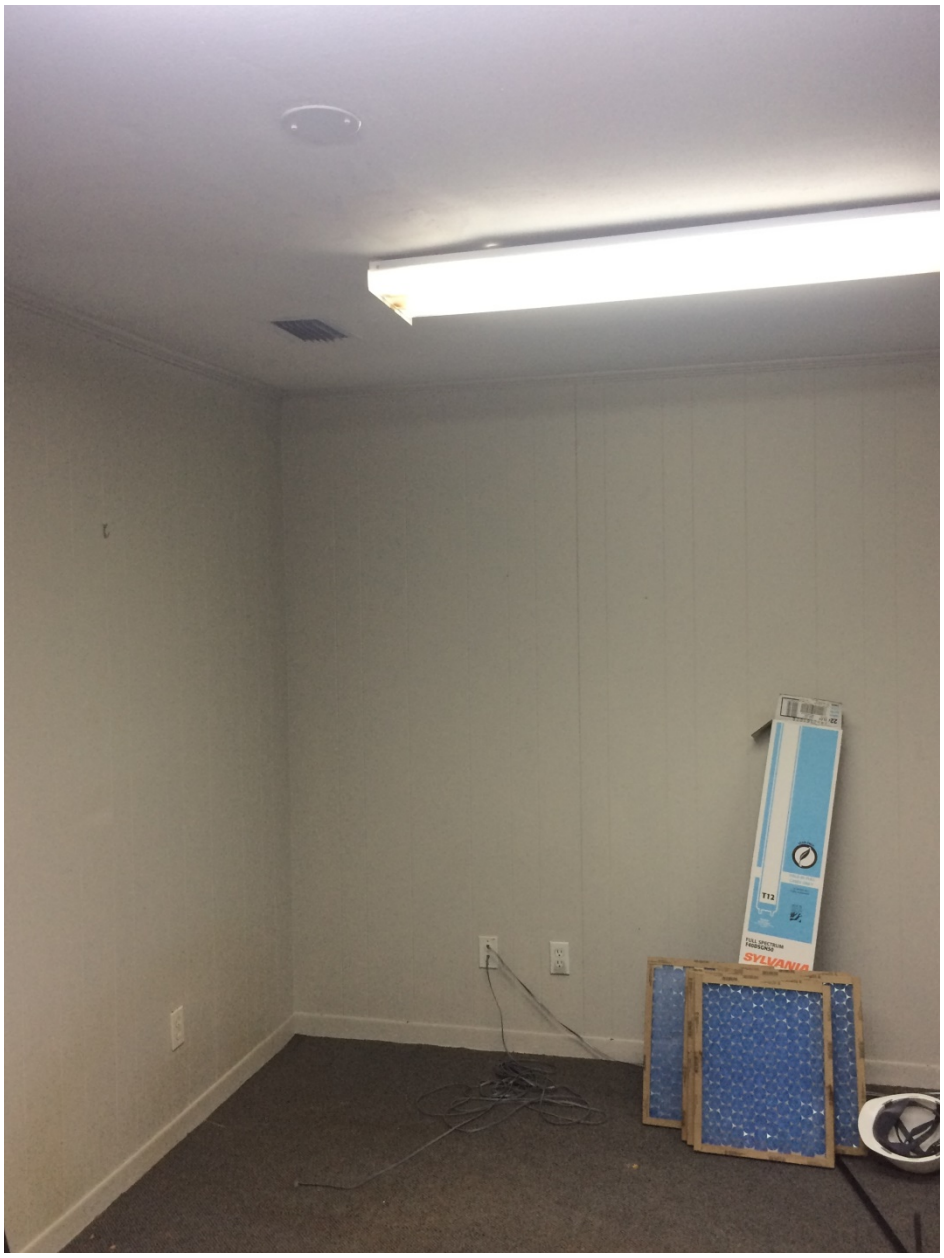
KLH/MRT:ldj
Z\\SERVER1\Projects\13630 Alachua Main Street Warehouse Assessment Report\13630 Assessment Report.doc

Attachment: Photos No. 1 thru 8

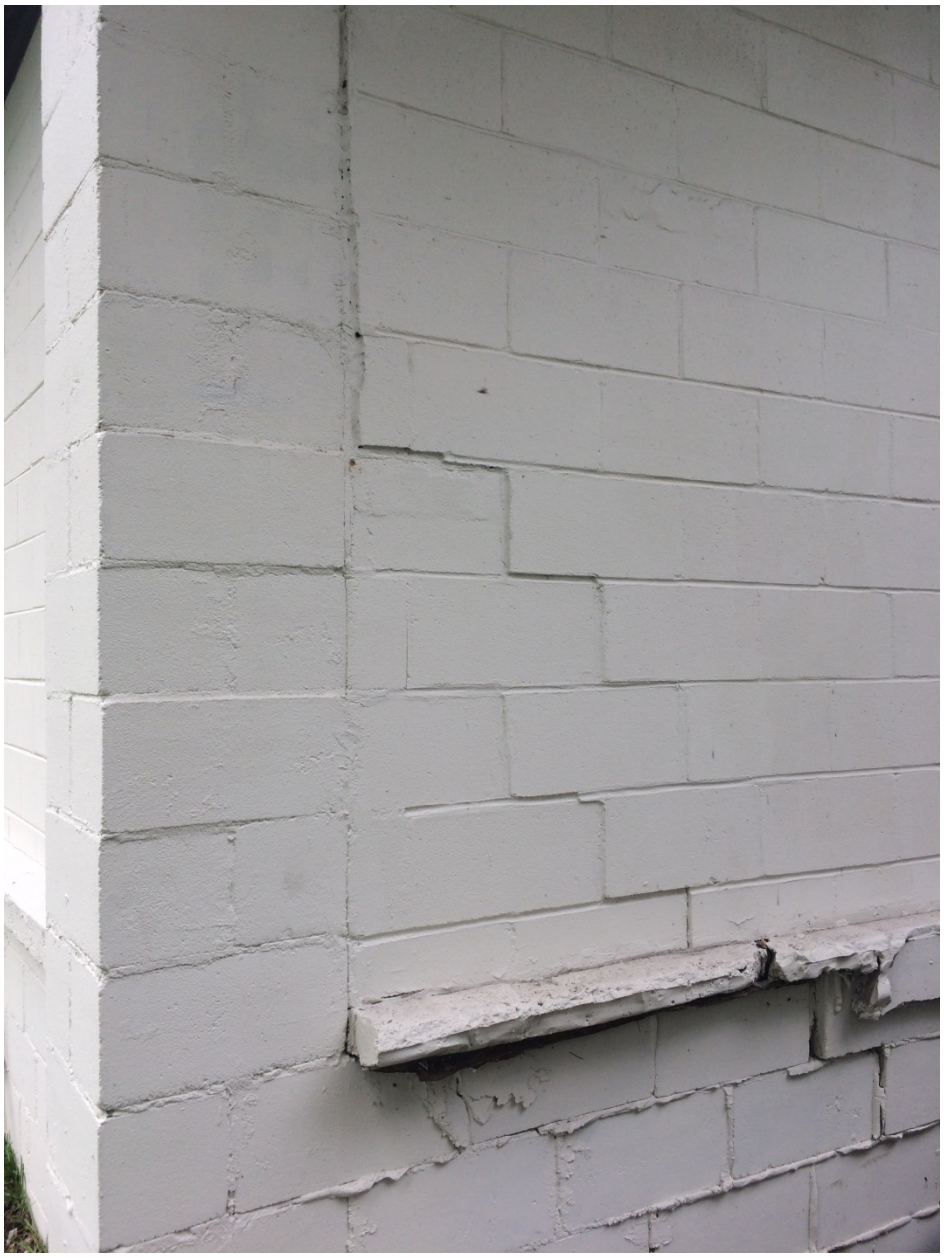
Distribution: Addressee (1)
File (1)



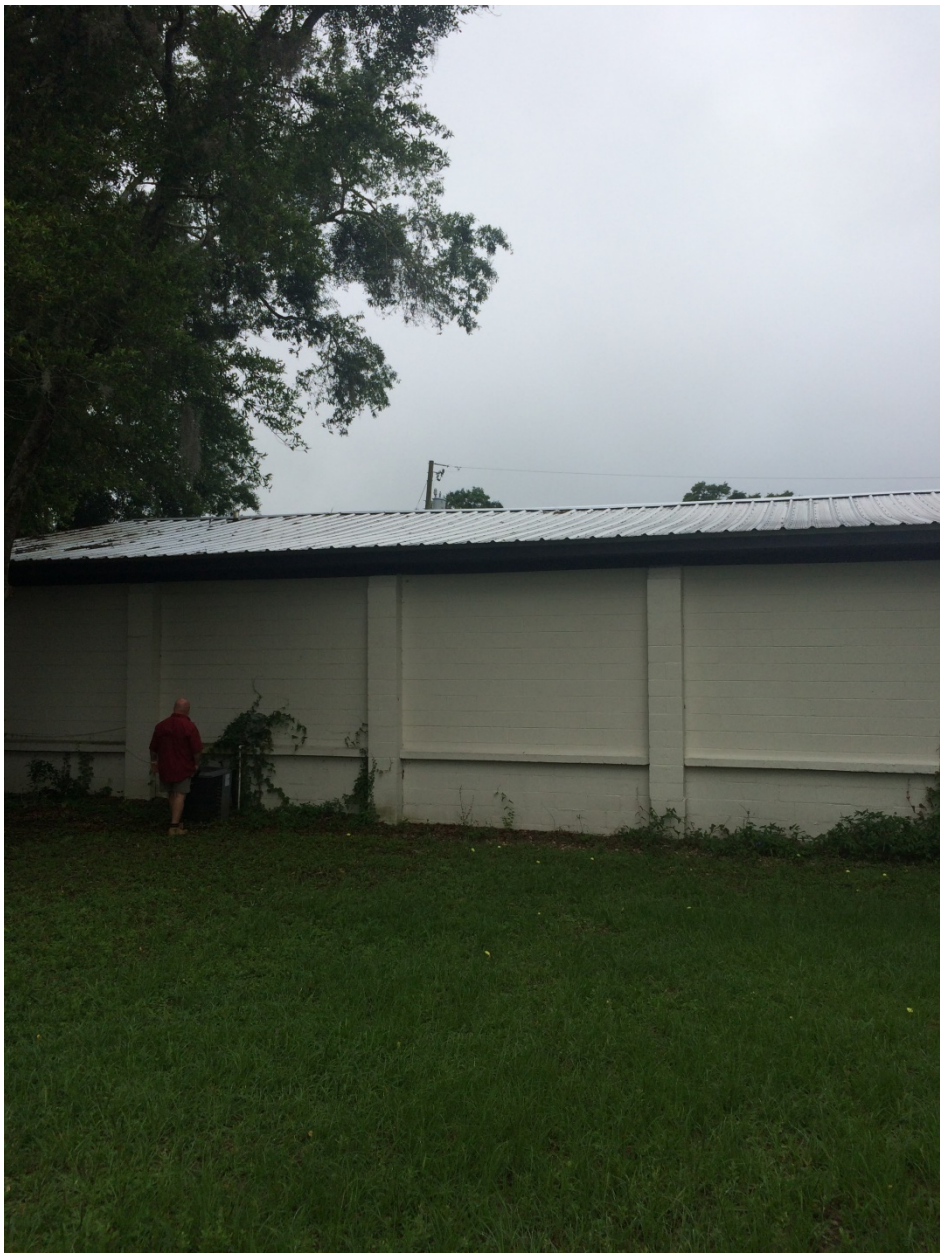
Picture 1
Interior of Warehouse Portion



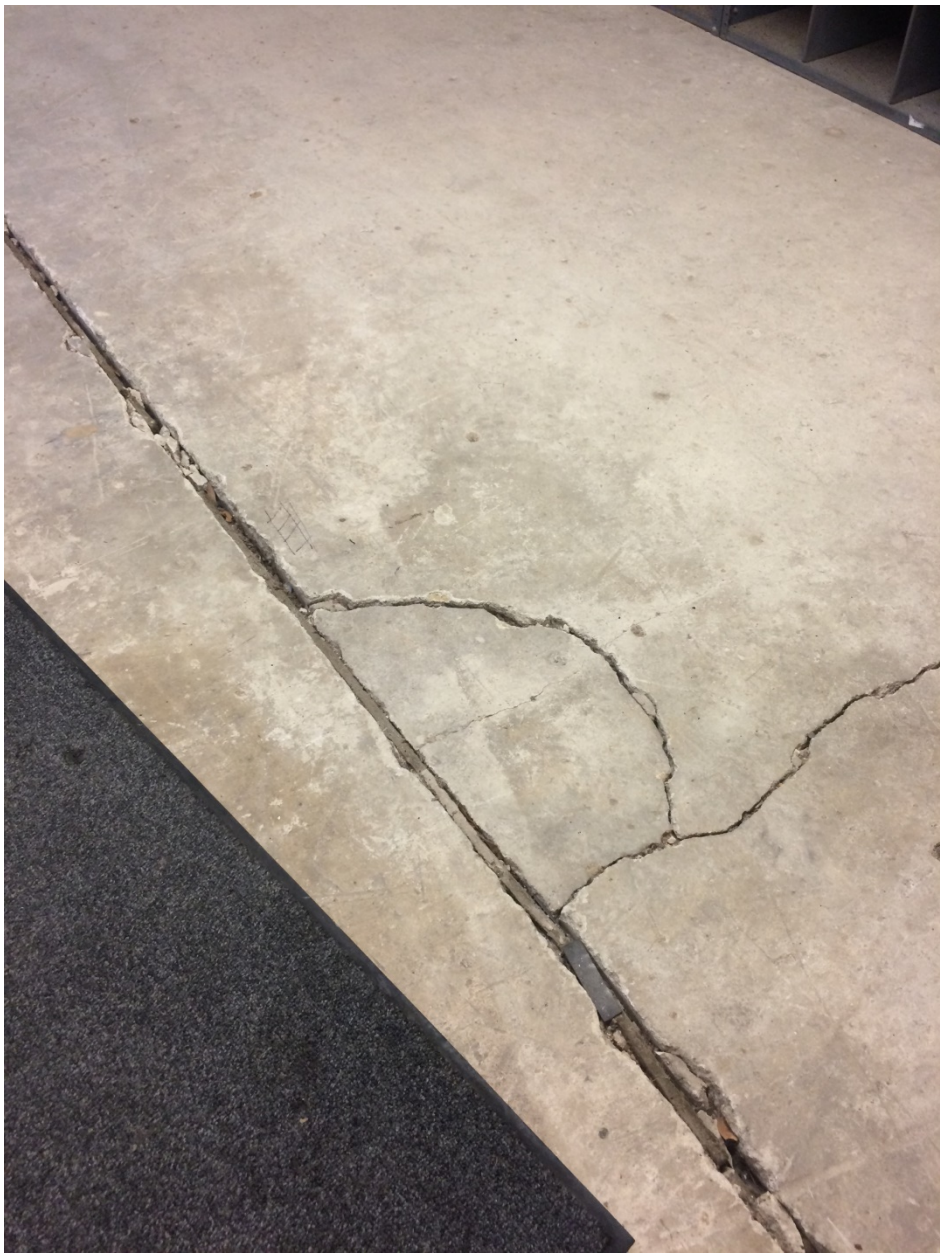
Picture 2
Office Area



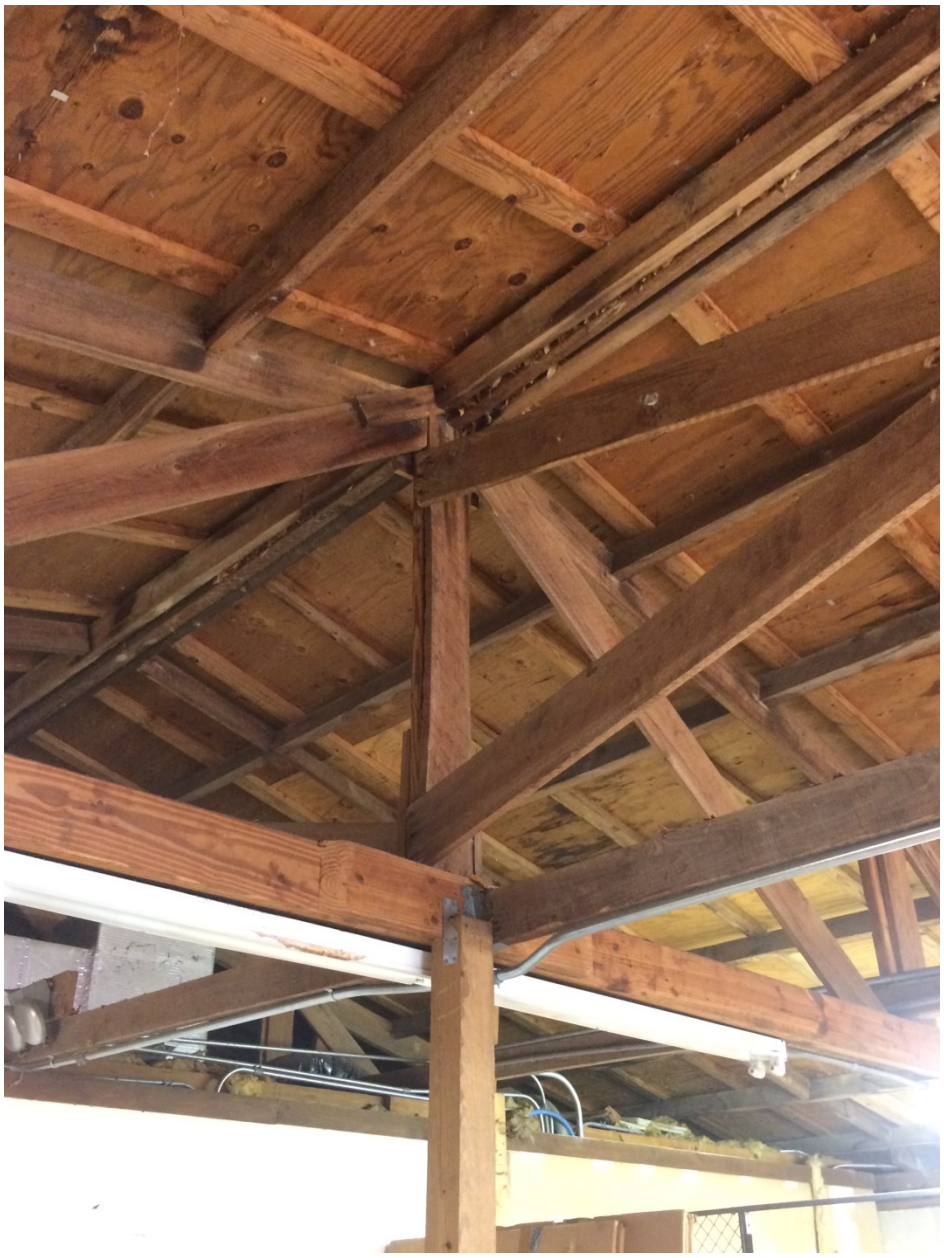
Picture 3
Northeast Corner CMU



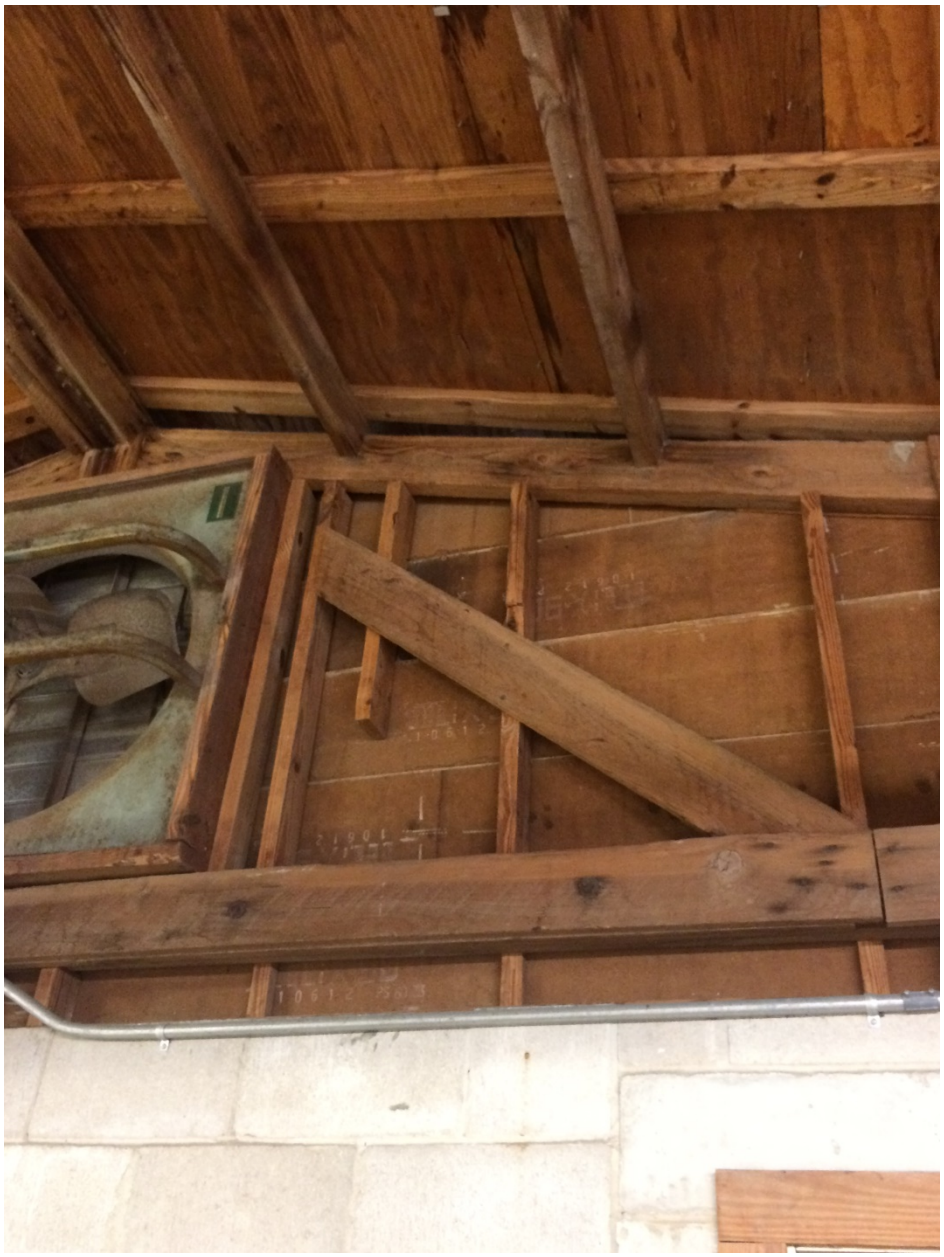
Picture 4
Roof Deflection



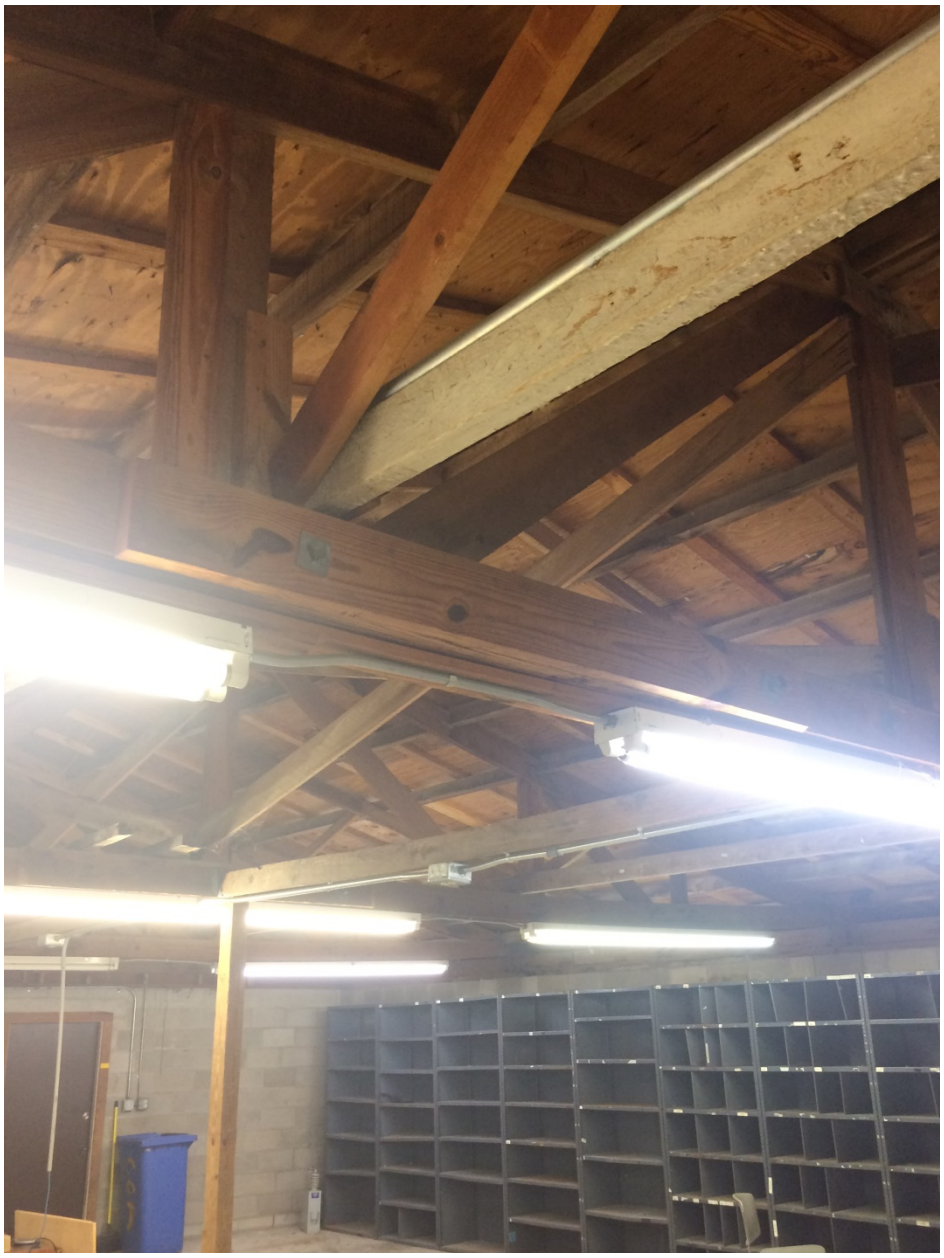
Picture 5
Cracked Floor



Picture 6
Column to Shore Roof Framing



Picture 7
Bracing Disconnected with Panel Points



Picture 8
Haphazard Bracing System