

RPA ENGINEERING, P.A.

Structural Engineering Solutions

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August 27, 2014

Mr. Jerry Climer
Edenton-Chowan Partnership, Inc.
101 W. Water St.
Edenton, NC 27932

**Re: Building Structural Evaluation – 119 W. Water St, Edenton, NC
RPA Engineering Project No. 2014242**

Dear Mr. Climer:

I visited the building at the location referenced above on August 6, 2014 to perform a cursory structural examination of the building and discuss possible options for future use. The following report describes my observations and includes recommendations for addressing deficiencies that were identified.

My site evaluation involved only a visual examination of reasonably accessible areas except as may be specifically discussed within the body of the report. This is not a building inspection or building code compliance inspection. While I may comment on any building code or other untoward conditions that I observed, they are not the focus of this investigation. Unless otherwise specifically described below, I have not performed any destructive or invasive testing or procedures during the investigation.

Background Information

The building is a 1-story structure with wood roof framing and load-bearing exterior masonry walls. The building is located on the waterfront in downtown Edenton, NC. I understand that the building was built in 1896. It was originally an ice manufacturing facility and is currently used as office space.

Roof construction consists of timber trusses at about 10' on center which span about 57' between the exterior longitudinal walls. The trusses are built with a combination of timber framing and steel rods. Rough-cut 2x6 rafters span between the trusses and are spaced about 3' to 4'-6" on center. The rafters support 1x4 to 1x12 sheathing boards and metal roofing. The interior stud walls were added after original construction and are not load-bearing.

There is an attached storage building on the left side which is constructed with pre-engineered wood trusses (relatively new) and load-bearing masonry exterior walls. There is a small wood-framed connector that attaches the storage building to the main building.

Observations/Recommendations

I visited the site on August 6, 2014 at approximately 10:00 AM under partly cloudy skies with temperature in the 70's. You and Mr. Bob Quinn were present at the time of my visit. Following is a

summary of my observations, along with general recommendations for addressing problems that were identified. For reference, left and right directional references assume one is facing the front of the building (short wall facing the water). See photographs 1-5 and 12 for general views of the building.

1. The roof framing appeared to be in good condition except for one area at the front wall, near one of the windows, where some of the attic flooring is rotten and a small section of the timber truss bottom chord is partially rotten (see photographs 6 and 7). The flooring can be easily replaced and the truss damage can be repaired by reinforcing the existing bottom chord. The damage appears to be the result of window and/or roof leakage.
2. There is a hairline crack near the center of the front wall (see photograph 8). This appears to be a settlement crack and is not a significant structural concern. The crack should be repaired by removing loose/cracked mortar and re-pointing with new mortar. There are some areas where other cracks have been repaired but have not re-opened.
3. The steel lintel plate above the front double doors at the storage building is rusty and sagging (see photograph 9). This lintel is not severely damaged but should be repaired. There is 8" concrete block behind the outer brick that is supported by the plate but the block is not supported by a lintel. Also, there are cracks in the block at the top corners of the door opening (see photograph 10). The cracks appear to be settlement related but could also be related to the lack of a lintel above the door opening. It is recommended that the rusty steel plate be replaced at the outer brick and a new steel lintel installed at the concrete block. Another option is to completely remove the block because it does not appear to be required and is a later addition to the original construction.
4. There is an area at the front left corner of the storage building where the brick is damaged and the soil adjacent to the front corner and left side wall has eroded. The damaged brick should be repaired and the low ground areas filled and sloped away from the building.

Conclusions

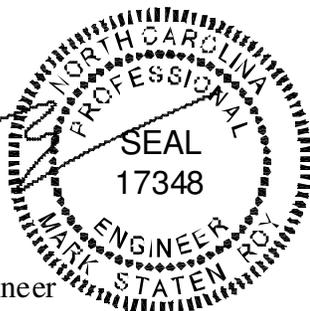
The most significant damage identified is the partially rotten truss bottom chord described in item 1. This damage can be repaired by reinforcing the bottom chord member. We can provide additional assistance with this if needed. Otherwise, the building appears to be in good overall structural condition.

We discussed the possibility of converting the attic area to habitable 2nd floor space. Due to the configuration of the roof trusses, which cannot be modified without completely replacing the trusses, I do not believe that this is feasible. Another limitation is that the foundations are probably sized for only 1 floor level and cannot support the additional loads imposed a 2nd floor. Modifying the foundation is probably possible but would be very expensive.

Please contact me if you have questions or need further assistance.

Sincerely,

Mark S. Roy, PE
President/Structural Engineer



8/27/14



Photograph 1 – Front View



Photograph 2 – Partial Left Side View



Photograph 3 – Rear View



Photograph 4 – Left Side View



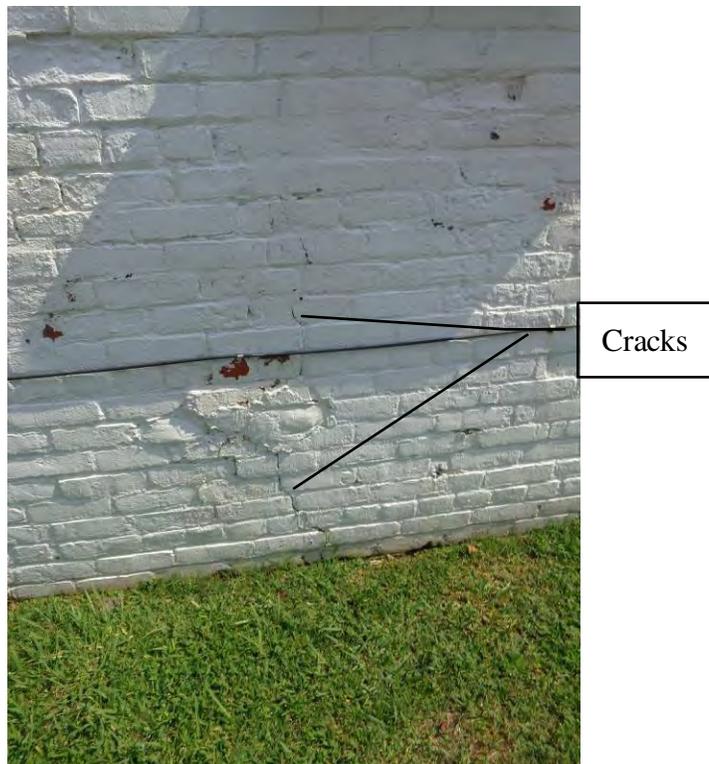
Photograph 5 – Roof Trusses



Photograph 6 – Damaged Attic Flooring Near Front Wall



Photograph 7 – Damaged Truss Bottom Chord at Front Wall



Photograph 8 – Cracks at Front Wall



Photograph 9 – Damaged Lintel at Storage Building Front Wall



Photograph 10– Crack in Concrete Block at Storage Building Front Wall



Photograph 11 – Wall Damage and Soil Erosion at Storage Building Front Left Corner



Photograph 12 – Storage Building Roof Framing