

JIH Structural Engineering, Inc.

10 Athens Dr., Essex Jct., VT 05452

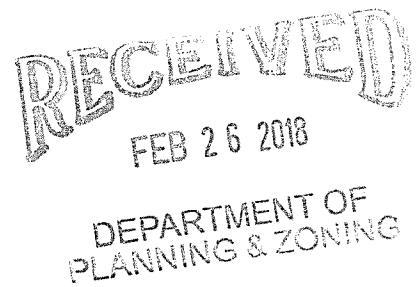
phone # (802) 878 - 3504

Draft

Preliminary Structural Report

36 Convent Square

Burlington, Vermont



January 29th, 2010

The following is a preliminary structural evaluation of the 36 Convent Square building based on my observation of the structures on December 21st, 2009. The purpose of the investigation was to determine the structural condition of the building, to identify any visible structural problems and to make recommendations for repairs.

The main front part of the building is a two story wood framed structure with a full basement.

The back part is a one story addition on grade. The basement walls are stone walls. The second floor framing was not fully accessible but based on one area where the framing could be partially observed reasonable assumptions about the second floor framing could be made.

The first floor framing can be observed at the basement. There have been alternations to the

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original floor framing system over the years.

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Basement and Foundations

The basement is divided into two separate spaces by a partial stone wall and 6x7 beam. The basement walls appear to be more than stone walls that were reinforced with concrete walls cast against them with CMU blocks on top of the original walls. Parts of the original walls were completely rebuilt.

First Floor Structure:

The first floor framing was visible from the basement. At the front part of the building (under the living room) the floor joists consists of 2"x 7" joists spaced at approximately 18". The joists clear spanning between the basement walls. Floor joists in the middle part of the building (the kitchen and dining room area) consists of 2"x 6" joists sistered with 1½" x 7¼" and are spaced at approximately 20". Here the joists are supported by central beam. The main central beam is 6" x 7" and bears on steel columns that seem to be added at later time. The columns are spaced 5 to 6 feet apart and most of them rest on concrete footings. Some of the existing joists were cut off, rotted or otherwise compromised and would have to be sistered or replaced, but thanks to the repairs that were done to the walls and the main beam, the first floor framing is adequate for the residential loading. The basement walls were reinforced so only some minor repointing and filling the void where plumbing enters the building will be needed but no major structural repairs are necessary.

Second Floor Structure:

Second floor structure was not accessible at all in the front part of the building, however I was able to see and measure the floor joists in the bathroom (middle part of the building) and they are 1½"x 9" at 16" o.c. They appear to bear on the bathroom wall (which is not supported by any beam in the basement) but there was no header over the door opening in the wall. Existing floors are out of level and uneven. I would suggest to assume that floor joists will need sistering or replacement and load bearing wall will need new headers. Also supports would be needed under the baring wall in the basement. The second floor in the front part is inadequate and would require to be completely rebuild.

Roof structure

The roof structure consists of 2" x 4" rafters spaced at about 18" inches on center. The rafters are supported on exterior walls. There is no ridge beam. The roof has a visible sag in the middle. The rafters themselves are adequate but all the connections to the walls and at the top would need to be fixed.

Exterior walls

It is hard to tell how the walls are constructed. The walls appear to bulge and are overhanging the foundations. The overhang varies so it seems that there is no sound connection between the walls and foundations. The exterior walls at the second floor seem to be spreading from the thrust imposed on them from the rafters.

Summary and Recommendations

The back part of the building is inadequate and needs to be rebuilt.

I would also recommend rebuilding the whole building, as the second floor will need a lot of work and it is hard to tell if the exterior walls are sound. Should the decision be made to keep the structure the exterior wall structure will need to be determined as well as how the wall is connected to the foundations and what are the details at the eaves before any recommendations about the repairs could be made.

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