



Office: 610-692-9836 • 722 Springdale Drive, Suite 100, Exton, PA 19341  
Email: [jobs@danielseengineers.com](mailto:jobs@danielseengineers.com)

January 17, 2019

Mr. Patrick J. Comerford  
900 Copeland School Road  
West Chester, PA 19380  
Via Email: [pckc1988@aol.com](mailto:pckc1988@aol.com)

**RE: STRUCTURAL CONSULTATION**

Location: 900 Copeland School Road  
West Chester, PA 19380

Date Inspected: January 16, 2019

Present: Patrick Comerford

Inspected By: Sinan S. Jawad, PE  
PA Registration No. 019706-E

Dear Mr. Comerford:

In accordance with your request, I conducted a limited, visual only, structural inspection of the referenced property. The purpose of the inspection was to evaluate the first floor common area floor joists for supporting harmonic loads (dancing) once the building is converted into a bed and breakfast facility.

**OBSERVATIONS AND OPINIONS**

The property is a 2-1/2 story building with a one story section attached in the rear and a one story section attached on the left side. The common area is all of the first floor except the left side one story section which was built over an inaccessible crawlspace. The building was reportedly built in 1732. The one story rear section was an addition built over a crawlspace. The 2-1/2 story section was built over a basement except the right rear corner which was over a crawlspace. The foundation walls and the exterior walls of the first and second floors were stone except for the addition which had a block foundation walls and timber framed exterior walls.

The first floor in the rear addition was framed with 2x8 joists spaced at 16 inches and spanning front to rear. The rest of the common area floor was framed with 3x10 at one location and logs, 3x6, 3x8, etc. joists at other locations. There was insect damage and wood rot in some of the joists.

The building code specifies 100 pounds per square foot live load for dancing area floors in addition to the dead load. The existing floor joists at all location of the common area are structurally inadequate for supporting these loads.

The recommended repairs are as follows:

#### RIGHT SIDE BASEMENT

1. Install new 2x4 stud walls in the right side basement to support the 3x10 joists. Locate the new stud walls parallel to and between 2 to 3 feet away from the front and rear basement walls. The clear span of the joists should not exceed 11 feet. Construct the new stud walls using double top plate, double studs at 16 inches and a single pressure treated bottom plate.
2. Install a new 2x4 stud wall (similar to Item #1) to support the trimmer joists next to the basement stairs. Replace the header that supports the joists at the stairs opening with new double 1-3/4 x 9-1/4 LVLs. Use joist hangers to connect the new header and the existing joists.

#### REAR ADDITION CRAWLSPACE

1. Install a new W6x15 steel beam in the rear addition crawlspace to support the 2x8 joists. Locate the new beam at approximately midspan of the joists. Pocket the beam in the crawlspace walls or support it near the ends and in the middle by steel posts on new 2 foot square by 12 inch thick concrete footers. The beam can be spliced at the middle support and may cantilever two feet beyond the end supports.

#### LEFT SIDE BASEMENT

1. Replace the existing header with new double 1-3/4 x 7-1/4 LVL's over the opening from the basement to the rear addition crawlspace and the headers over the two openings in the wall between the front and rear sections of the left side basement.
2. Replace the existing 2x4's that support the pocketed ends of the joists in the front wall with a new stud wall (similar to Item #1 for right side basement).
3. Install a new W6x15 steel beam at approximately mid span of the existing joists in the front and in the rear section of the left basement. Support the steel beams by steel posts on 2 foot square by 12 inch thick concrete footers near each end. The new beams should span 12 foot maximum.

#### CRAWLSPACE IN THE 2-1/2 STORY BUILDING

1. Install new W6x15 steel beams parallel to and two to three feet away from the front and rear walls of this crawlspace. Support the new beams by steel posts or block piers on new 2 foot square and 12 inch thick concrete footers near each end and in the middle. The new beams should span 10 foot maximum and may cantilever two foot maximum beyond the end supports.

Mr. Patrick J. Comerford  
Structural Consultation  
900 Copeland School Road  
January 17, 2019

---

CONCLUSION

It is my professional opinion that the common area floor joists are structurally inadequate for supporting the required loads for a dance floor. The recommended repairs are as described above.

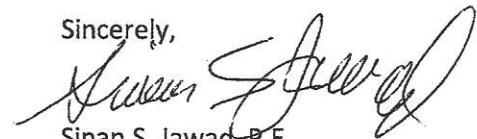
Disclaimer

*The opinions, recommendations, and conclusions presented in this report or discussed during the inspection are based on our observations and engineering experience. They are based on visual symptoms or lack of symptoms of structural problems common to this type of construction. No destructive inspection (opening of walls, floors, ceilings, etc.) or testing was performed, thus this report is based on the visual inspection of accessible areas only. Our investigation and report is not intended to warrant against present or future structural problems.*

*Any repairs discussed in this report or during the inspection are for the purpose of identifying a method of repair and/or generating an approximate cost. Actual repairs should follow detailed written recommendations/design by a licensed engineer familiar with this type of work. Inspection of the repairs should be by the engineer that prepared the detailed design.*

Please contact me if you have any questions.

Sincerely,



Sinan S. Jawad, P.E.  
Structural Engineer

