



Dale T. Cich, PE | Catharine M. Styn, PE | Darren K. Geibel, PE

January 27, 2009

St. John's Lutheran Church  
3512 Clinton Street  
West Seneca, New York 14224

Attention: Mr. Rick Lipka  
Regarding: Exterior Bearing Walls and Roof Construction

Dear Rick:

At your request, I have observed the conditions at the above referenced church. In particular, the pushing out of the exterior brick bearing walls and piers.

The roof of the church is constructed with wood roof rafters spaced at 17 inches on center with a roof slope of 12 on 12. The wood rafters are then supported by wood purlins spaced approximately ~7 foot 6 inches on center. The wood purlins span 15 feet and are supported by wood scissor trusses. The exterior bearing walls are constructed typically with 3 wythes of brick between the brick piers that support the wood scissor trusses. The plaster cathedral ceiling is supported by wood joists at 18 inches on center. These ceiling joists are supported by wood beams spanning between the bottom chord of the scissor trusses.

The type of construction described above is typical for many churches around the Buffalo area and our office has worked on a number of them that have the same problems that exist at St. John's. Due to the roof slope and the cathedral ceiling, the roof construction has a natural tendency to spread or push out. In our experience, the wood scissor trusses which are supposed to resist the spreading are almost always under designed and therefore cannot perform as required. The end result is the roof construction pushing against the exterior bearing walls and piers which are not designed to resist the thrust being applied to them. This appears to be the case at St. John's. Adding to the problem is the fact that the wood beams that support the ceiling joists were at some time cut away from the scissor trusses. This alteration to the structure also results in additional thrusts added to the exterior bearing walls even though hangers have been added to re-support the beams.

The last measurement of the walls was taken in August 1992. At this time the walls had spread up to 5 inches at the top on each side. Almost seventeen years later, there is no reason to believe that this spreading has stopped and in fact, the walls appear to have spread even further.

I understand that this spreading has been occurring most likely over the life time of the church however, there comes a time when an acceptable limit has been reached. In this case, my opinion is that this limit has been reached. I recommend that, in the interest of public safety, the church be closed down until further investigation of the structure can be performed and action taken to correct the problems. I also recommend providing fencing around the church to prevent the public from entering the perimeter of the building.

If you have any questions or would like to discuss this letter further, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Darren K. Geibel". The signature is written in a cursive style with a large initial "D" and "G".

Darren K. Geibel, PE  
Vice President

Cc: