



December 7, 2016

Mr. Timothy Wales, P.E.
City Engineer
City of Saratoga Springs
City Hall - 474 Broadway
Saratoga Springs, New York 12866

**Re: 26 Caroline Street Investigation
Saratoga Springs, New York
Ryan Biggs | Clark Davis Project 11584**

Dear Mr. Wales:

At your request, I made a site inspection of the building at 26 Caroline Street in Saratoga Springs on December 6, 2016. A fire that occurred on November 24, 2016, caused damage to the buildings interior and structure, and the safety and general structural stability of the building is of concern to the City. The purpose of my visit was to observe current conditions and to determine the general structural stability of the building and whether the damage forms an unsafe condition requiring the building to be demolished, or if the building or portions of the building can be stabilized and saved.

My observations were performed from the exterior of the building, adjacent roofs, and a portion of the first and second floor near the front of the building where fire damage was not as extensive. Observations were limited to areas that were considered safe. No access was made into the basement.

My observations were mainly related to the conditions at 26 Caroline Street, although some limited observations were made to the adjacent properties at 24 and 30 Caroline Street as part of my inspections.

Description

It was reported that the fire started in the rear of Mio Posto at 68 Putnam Street, and spread to portions of the buildings at 24, 26, and 30 Caroline Street, with the majority of the damage occurring at 26 Caroline Street.

The building at 26 Caroline Street is two stories with a basement, roughly 50-feet by 40-feet in plan and faces north on Caroline Street. It was reported that the building was originally constructed in the 1870s, with additions to the rear constructed in the last 20 years.

The building consists of brick masonry exterior walls at the front (north), rear (south), and east, with wood roof and floor framing. The second floor and roof framing consist of wood joists and rafters respectively, spanning in the east-west direction. This framing is supported by a masonry bearing wall to the east and a wood bearing wall to the west, with wood and steel beams and columns within the interior. The interior support beams span in the north-south direction and are supported by the front and rear masonry walls.

It was reported that the front masonry facade was modified in the early 1900s to provide the current larger window openings.

At the rear, additions were constructed that include an elevator and an additional stair tower for egress out of the second floor.

The adjacent properties at 24 and 26 Caroline Street abut the walls of 26 Caroline Street.

Conditions/Observations

From the observations performed, the fire has damaged a large portion of the building causing local collapse of the roof and floor framing and additional structural stability issues. See the attached photographs for some of the areas of damage observed. Comments of my observations are as follows:

1. The fire has severely damaged the wood floor and roof framing with portions of the framing collapsed in the middle and rear portions of the building.
2. There are two large rooftop HVAC units on the roof in the area of the partial collapse. The weight of these units could cause further collapse of the building framing. See Photograph 2.
3. The rear masonry wall has displaced laterally into the building (towards the north), which appears to be due to the collapsed framing. This area is shown in Photographs 3, 4, and 5. A complete review of this wall could not be made.
4. The front masonry facade does not appear to have been damaged or displaced by the fire; however, there are some pre-existing conditions consisting of minor displacements and bulges in the masonry. However, further collapse of the building framing could compromise this wall.
5. The floor and roof framing is supported by a timber bearing wall where it abuts the building to the west at 24 Caroline Street. Portions of the bearing wall were severely damaged by the fire. The two buildings do not appear to be structurally connected; however, all areas could not be observed and there could be some non-structural connections present.
6. The floor and roof framing appear to be supported by a masonry bearing wall on the east side of the building where it abuts 30 Caroline Street. This wall is part of 26 Caroline Street, and 30 Caroline Street appears to have a separate masonry bearing wall for the support of its framing. However, it could not be determined if the two buildings are totally separated.

7. At the rear southwest corner of the building, a masonry wall that appears to be part of the addition has partially collapsed. This was observed from within 24 Caroline Street. This area is shown in Photograph 8.
8. A portion of the masonry parapet wall on the east side where it abuts 30 Caroline Street has collapsed onto the roof. Currently this area has been covered with plastic for weather protection.
9. Within the first-floor space near the front of the building, there were areas where the second floor was supported by temporary shoring posts. It was reported that the building was under renovations prior to the fire.

Conclusions/Comments

Based on my observations, the extent of damage caused by the fire has compromised the structural integrity of the building at 26 Caroline Street and forms an unsafe condition, which is a risk to the public in front of the building, as well as the adjacent properties. Further collapse to portions of the building could occur at any time or with added loads from snow on the roof that could occur at this time of year.

Based on the extent of damage that has occurred, in my opinion, the building should be demolished to reduce the chance of further damage and the risk to the public.

The front masonry facade appears to be stable with no signs of major structural distress; however, with the potential additional collapse of the floor and roof framing, this could cause damage and/or movements of the facade with possible collapse of the wall. With regard to saving the front facade, in my opinion this is structurally feasible. However, design of a shoring and lateral stabilization system would need to be completed and implemented immediately.

The concern with attempting to retain the front facade is the time the building would be left in an unstable condition during the design and construction of the stabilization, and the potential high cost to implement the stabilization. In addition, access to the building for demolition or major construction activities can only be made from the front (north side) and the safe demolition of the remaining portions of the building would be more difficult and costly if the facade is to remain.

Therefore, costs of the stabilization and shoring of the facade along with increased demolition costs appear to be disproportionately high to the benefit to save the front wall that has current problems.

It appears that the complete demolition of the building may need to occur to form a safe condition if a stabilization system cannot be installed immediately.

If the City decides to proceed with the demolition of the building, it is recommended that each adjacent property owner have their buildings reviewed by their own engineer in advance of the demolition to determine if there are any other concerns with the structural stability of their buildings if 26 Caroline Street is demolished. The adjacent buildings were not thoroughly reviewed by Ryan Biggs | Clark Davis as part of this investigation.

The current issues with the buildings structural system should also be reviewed by the demolition contractor's engineer so they are aware of existing conditions and any special methods and sequencing of demolition that may be required. Demolition will most likely need to proceed slowly to access the existing conditions where 26 Caroline Street abuts the adjacent properties to make sure no unstable conditions are formed in the adjacent properties.

Until stabilization or demolition occurs, the sidewalk and at least one lane of the road in front of the building should be closed. The adjacent properties should be reviewed more closely by their engineers to determine if there are any current safety issues, as well as determining the effects on their building if 26 Caroline Street is demolished.

Please call me if you have questions or need anything further.

Sincerely,

RYAN BIGGS | CLARK DAVIS
ENGINEERING & SURVEYING, P.C.

A handwritten signature in black ink, appearing to read "Michael C. Miller". The signature is fluid and cursive, with the first name "Michael" and last name "Miller" clearly distinguishable.

Michael C. Miller, P.E.
Sr. Associate

MCM/vma/lt.01

Attachment

Photographs



Photograph 1 - front masonry façade looking southwest.



Photograph 2 - portion of partially collapsed roof where existing HVAC units are present.



Photograph 3 - separation gap between rear building wall and rear stairwell.



Photograph 4 - area of partial roof collapse and lateral displacement between main building and rear additions.



Photograph 5 - area of partial roof collapse and lateral displacement between main building and rear additions.



Photograph 6 - area of fire damaged roof and partial collapse at southwest corner of building.



Photograph 7 - area of second-floor collapse within the building.



Photograph 8 - partial wall collapse at southwest corner of building.