

Via E-mail: mkoos@chubb.com

March 6, 2019

Mr. Michael Koos
Executive General Adjuster, North American Property Claims
Chubb
600 Independence Parkway, P.O. Box 4700
Chesapeake, Virginia 23327

Re: City of Aurora / Chubb claim # 076919006516 / 1 South Broadway / DOL 2/20/19
WJE No. 2019.1287

Dear Mr. Koos:

At your request, Sarah Van Domelen of Wiss, Janney, Elstner Associates, Inc. (WJE) visited the building located at 1 South Broadway in Aurora, Illinois on February 25, 2019 to assess damage that occurred to the building on February 20, 2019 (Chubb claim #076919006516). The building is owned by the City of Aurora (City). Ms. Van Domelen was provided with access to the building by Jim Birchall, the City's Superintendent. Michael Wowczuk of F.H. Paschen (FHP), a contractor retained by the City of Aurora, and Michael Koos of Chubb were also on site.

Background

The building located at 1 South Broadway is a three-story structure with brick masonry exterior walls (Figure 1 and Figure 2). It was designed by architect George Grant Elmslie and constructed in 1923. The building originally housed a bank, but was converted to a drug store in the early 1930s (Figure 3). The primary facades that face South Broadway (east) and East Galena Boulevard (north) are clad with tan roman brick and terra cotta accents. The west and south facades abut adjacent buildings. The exposed portions of the south facade are brick masonry covered with a cementitious coating.

Based on news reports and photos from the evening of February 20, 2019, a section of face brick located above the third floor windows, measuring approximately 9 feet high by 20 feet wide, fell from the north side of the building along East Galena Boulevard (Figure 4 and Figure 5). We understand that no pedestrians or vehicles were struck by the falling debris. According to reports from the City and their contractor (FHP), additional unstable face brick adjacent to the area of loss was removed by the contractor using a personnel lift (Figure 6). FHP also reportedly inspected the remaining areas of the north and east facades using the lift (Figure 7), and a protective canopy was erected over the sidewalk along East Galena Boulevard. At the time of our site visit, the area of loss was covered with a tarp (Figure 8). Close-up photos of the area taken from the personnel lift prior to installation of the tarp were provided to us by FHP.

Observations

Area of Loss

1. Because the area of loss was covered at the time of our site visit, the exact square footage of missing face brick could not be obtained. However, FHP had marked the extents of the bulged face brick that remains on the building adjacent to the area of loss with white chalk (Figure 9 and Figure 10). The extents of the bulged area are approximately 40 feet wide (about half of the length of the north facade) by 9 feet high (the full height of the brick between the third floor terra cotta window heads and the terra cotta copings at the top of the parapet). FHP provided close-up photos showing a gap behind the bulged face brick of over 4 inches in some locations (Figure 11 and Figure 12).
2. What appears to be efflorescence or frost spots on the backup brick masonry could be seen in some of the news photos from the night of the failure (Figure 5). Ice is also visible on the surface of the backup brick in FHP's photos (Figure 13), and efflorescence or frost was observed on the face brick at the perimeter of the bulged area (Figure 10).
3. The mild steel veneer ties that were originally installed to laterally anchor the face brick veneer to the brick backup masonry were significantly corroded, many to the point of complete section loss (Figure 14 through Figure 16). The ties visible in FHP's photos are irregularly spaced, and no ties were visible above the roof line. Diagonally laid backup brick, typically used as blind headers, were located at the roof line. Veneer ties at areas where bulged brick remained were not engaged with the face brick (Figure 17).
4. Previously installed supplemental helical anchors were visible in FHP's photos near the very top of the wall, but not throughout the entire area of loss (Figure 18). The City did not have any definitive records regarding the installation of these anchors or any previous facade repairs, but limited drawings reviewed on site indicate that some type of facade restoration may have taken place circa 2002.
5. Open mortar joints were observed in the brick masonry adjacent to the failed area (Figure 19).
6. Various cracked terra cotta units were observed above and adjacent to the failed area (Figure 19 and Figure 20). Many of these cracks had been previously repaired.
7. It is unclear whether the terra cotta units above the failed brick are deep enough to bear on the backup brick masonry, or whether any shoring was installed prior to covering the area with the tarp.
8. No collateral damage to the building from the falling brick was reported or observed.

Other Areas

1. The roof was reportedly installed in 2014, and generally appeared to be in good condition (Figure 21). The roofing membrane continues up the backside of the parapet and terminates beneath a metal coping (Figure 22). No visually obvious damage or sources of significant moisture infiltration were observed at the roof.
2. Isolated water marks were observed on the ceilings in some of the third floor spaces adjacent to the north facade (Figure 23 and Figure 24). The City does not believe these are active leaks.
3. A potential area of bulged face brick was observed at the parapet on the north facade near the northeast corner (Figure 25).
4. Various cracked and spalled terra cotta units (unrelated to the failure) were observed throughout the north and east facades, particularly at the units just below the parapet coping (Figure 26), the courses above the third floor windows (Figure 27 through Figure 29), and the majority of the second floor window lintel units on the north facade (Figure 30 and Figure 31).
5. Various cracked, separated, eroded, and missing mortar joints were observed throughout the facades, particularly at joints between terra cotta units and within the masonry at the parapets.
6. Cracked and peeling paint was observed on the wood window frames outboard of the exterior storms (Figure 32).

Discussion and Conclusions

Overall, the brick and terra cotta masonry cladding throughout the building is deteriorated with evidence of limited past maintenance and repair. In and around the area of failure, the brick masonry has deteriorated mortar joints and there was evidence of significant long-term moisture penetration within the wall system. Significant amounts of moisture likely penetrate the wall assembly from the open mortar joints on the exterior, and the upper portion of the wall likely stays wet for an extended periods of time due to the presence of the vapor impermeable roofing membrane on the back of the parapet wall. The efflorescence and/or frost and ice on both the face brick and backup brick indicates that there was a significant amount of moisture in the masonry around the time of the failure. The spacing of the lateral ties was found to be irregular, and all metal ties exhibited severe corrosion, indicating a limited means of lateral support for the exterior masonry veneer.

It is impossible to say with certainty what exactly caused the final destabilization of the face brick. It may have been repeated temperature cycling or freeze-thaw action over this winter, excess moisture from rain on the day of the failure, a gust of wind, a particularly large vehicle driving by (or any other similar source of vibration), or a combination of these factors.

Although FHP reported that they removed the additional unstable material around the failed area, we recommend confirming the dimensions and condition of the terra cotta above the area to ensure that it is adequately supported in the interim prior to reconstruction of the brick.

We understand that FHP is providing pricing to replace the face brick along the full length of the north facade and at the short return on the west end of the parapet (approximately 84 feet long by 9 feet high). Alternative options may include only rebuilding the lost and bulged areas and installing supplemental lateral anchors in areas that do not exhibit displacement. We recommend performing inspection openings to verify backup conditions and in-situ anchor testing to verify anchor capacities in the deteriorated masonry assembly. If necessary anchor capacities are not possible, full rebuilding may be required.

In addition to reconstruction of the face brick at the failed and bulged areas, the City should consider performing a comprehensive facade repair and maintenance program to address other conditions that were observed. Cracked and spalled terra cotta should be inspected up close, and any potentially hazardous conditions should be removed, stabilized, or repaired prior to removal of the canopy. Additional facade repairs may include repointing deteriorated mortar joints and repainting exterior surfaces of wood windows.

Thank you for the opportunity to assist with this project. Please feel free to contact us with any questions or if you require any additional information.

Sincerely,

WISS, JANNEY, ELSTNER ASSOCIATES, INC.



Sarah Van Domelen
Senior Associate

Figures



Figure 1. Overall view of the building from the northeast



Figure 2. Overall view of the building and adjacent buildings from the southeast

AMERICAN NATIONAL BANK




Photo Courtesy of the Aurora Historical Society

Prior to the late 1860s, a grand three-story Italianate style building, the H. H. Evans Block, was located on this site. The German American National Bank had located here by 1895. After the outbreak of World War I, and in the wake of general anti-German feelings sweeping throughout the United States, the bank changed its name to the American National Bank in 1917. Prairie School architect George Grant Elmslie (who also designed the Old Second National Bank and the Keystone Building) was commissioned to create a new building on the site, which was completed in 1923. During the Great Depression, the American National Bank failed.

This 1923 photo shows construction almost complete on the American National Bank building, designed by Prairie School architect George Grant Elmslie. The entire first floor was remodeled when a Walgreens store opened here in the early 1930s. The building was rehabilitated by the City of Aurora for offices, reopening in 2003.

One South Broadway housed the Walgreens drug store for many years afterward. The basement of the original H.H. Evans block still remains at One South Broadway.

The short, wide Roman bricks used in this building, plus the bands of terra cotta detail and windows, lend themselves to the horizontal feel that is typical of the Prairie style. The street-level façade was originally constructed of bricks, terra cotta, and art glass windows. The facade was altered to serve a retail purpose in 1931. Plate glass and an angled entryway were added to the first floor. The building was rehabilitated in 2003 as commercial office space, after standing vacant for many years.

Figure 3. Photo and history of the building posted in front of 1 South Broadway



Figure 4. Aerial view of 1 South Broadway (image courtesy Google, labels added by WJE)

↑N



*Figure 5. Conditions on February 20, 2019 shortly after brick fell; note what appear to be efflorescence or frost spots on backup masonry (arrows)
(photo courtesy of Aurora Police Department as published in the Daily Herald:
<https://www.dailyherald.com/news/20190220/galena-boulevard-in-aurora-closed-after-partial-building-collapse>)*



Figure 6. Conditions on February 22, 2019 after removal of additional brick masonry and erection of sidewalk canopy (photo courtesy of FHP)



Figure 7. Inspection of east facade on February 22, 2019 (photo courtesy of FHP)



Figure 8. North facade on February 25, 2019; area of loss covered with tarp



Figure 9. Extents of bulged face brick marked with white chalk by FHP (outline added for clarity)

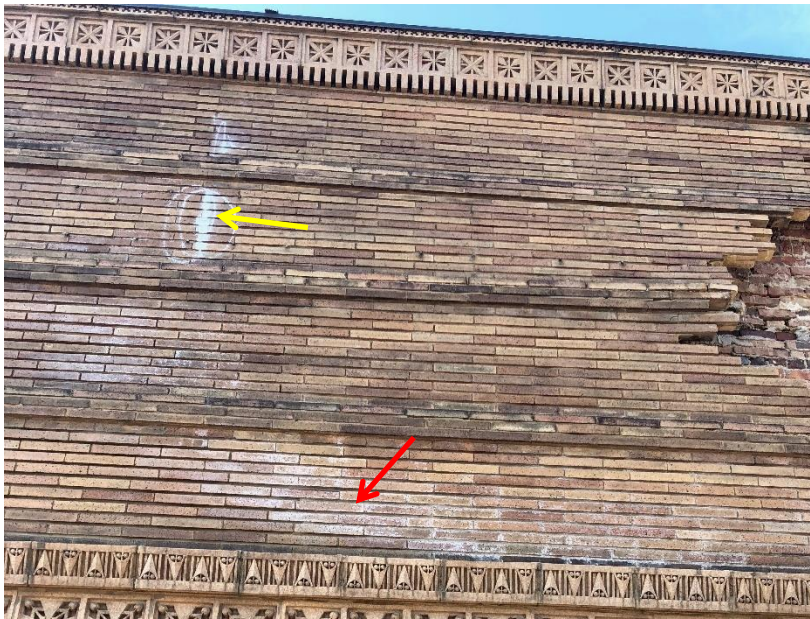


Figure 10. Extents of bulged face brick marked with white chalk by FHP (yellow arrow); also note frost or efflorescence on face brick (red arrow) at perimeter of bulged area (photo courtesy of FHP)



Figure 11. Bulged face brick; backup brick laid diagonally (arrow) corresponds roughly with roof line; the diagonal bricks may have served as blind headers to engage the adjacent projecting courses of face brick (circled) (photo courtesy of FHP)



Figure 12. Bulged face brick (photo courtesy of FHP)



Figure 13. Ice visible on backup brick (photo courtesy of FHP)

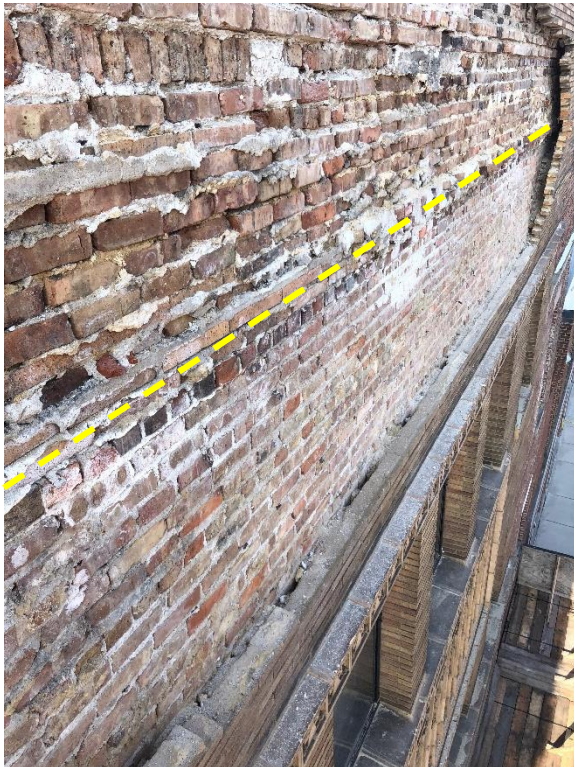


Figure 14. Irregularly spaced and corroded veneer ties visible below roof line (approximate location shown by dashed line), see Figure 15 for closer view (photo courtesy of FHP)

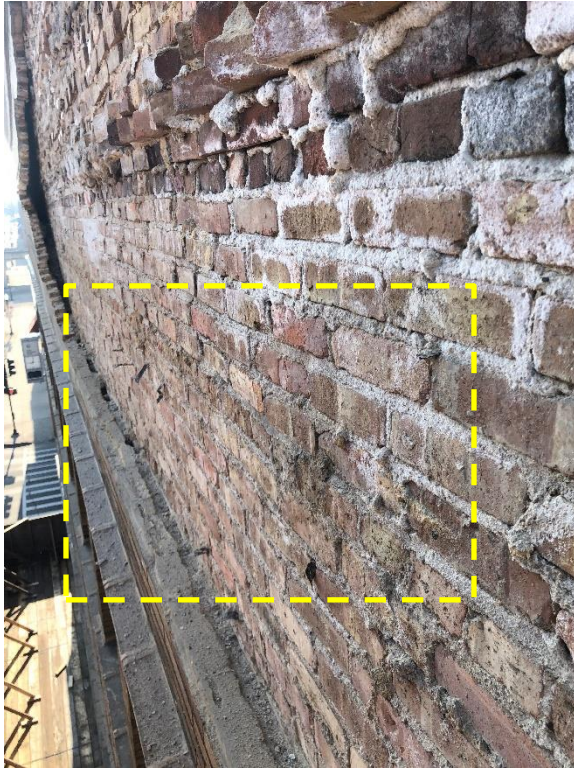


Figure 15. Irregularly spaced and corroded veneer ties below roof line, see Figure 16 for enlarged view of outlined area (photo courtesy of FHP)



Figure 16. Irregularly spaced and corroded veneer ties below roof line (photo courtesy of FHP)



Figure 17. Close-up view of veneer tie with relatively minor corrosion but no engagement with face brick (photo courtesy of FHP)

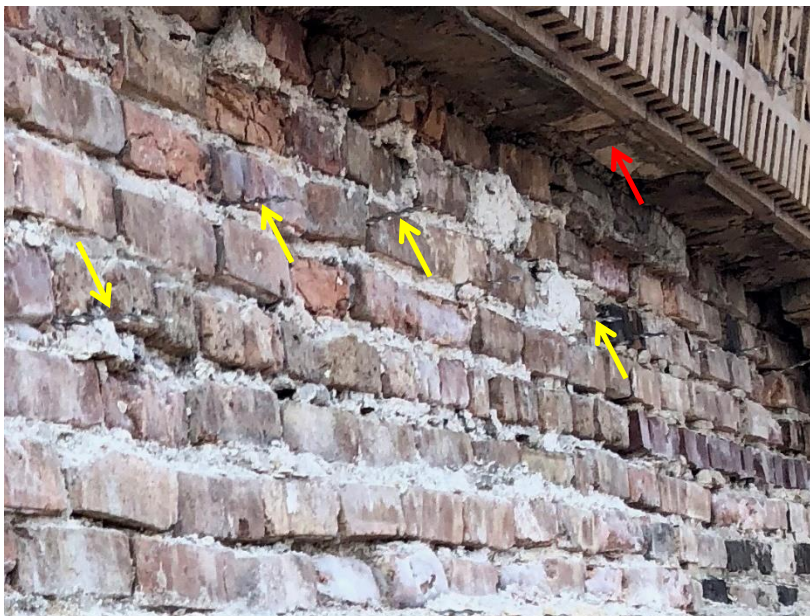


Figure 18. Previously installed supplemental helical anchors near top of failed area (yellow arrows); it is unclear whether the terra cotta units above (red arrow) are deep enough to bear on the backup brick masonry, or whether any shoring was installed prior to covering the area with the tarp (photo courtesy of FHP)

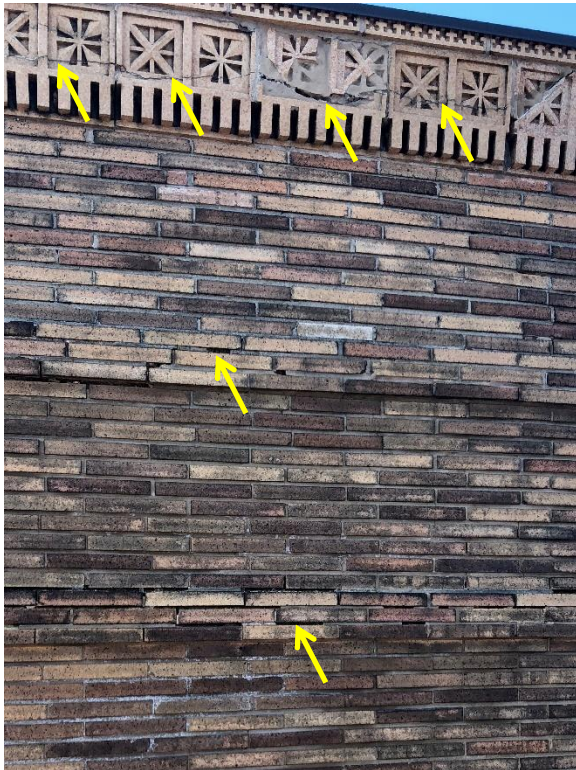


Figure 19. Open mortar joints in brick masonry and cracked terra cotta units (photo courtesy of FHP)

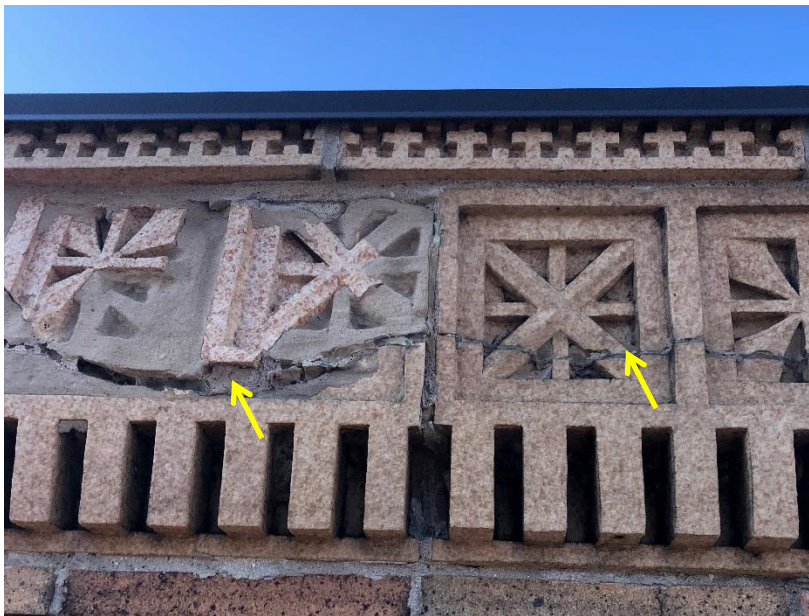


Figure 20. Cracked and previously repaired terra cotta units (photo courtesy of FHP)



Figure 21. Overall photo of the roof looking northwest



Figure 22. Roof side of the parapet at the area of loss



Figure 23. Isolated water marks on the ceiling and wall in third floor space adjacent to the north facade



Figure 24. Isolated water marks on the ceiling in third floor space adjacent to the north facade



Figure 25. Potential area of bulged face brick at parapet on north facade near northeast corner



Figure 26. Cracked and previously patched terra cotta unit at parapet on east facade



Figure 27. Cracked terra cotta units on east facade above third floor windows



Figure 28. Cracked terra cotta unit on the north facade at the top course above the third floor windows

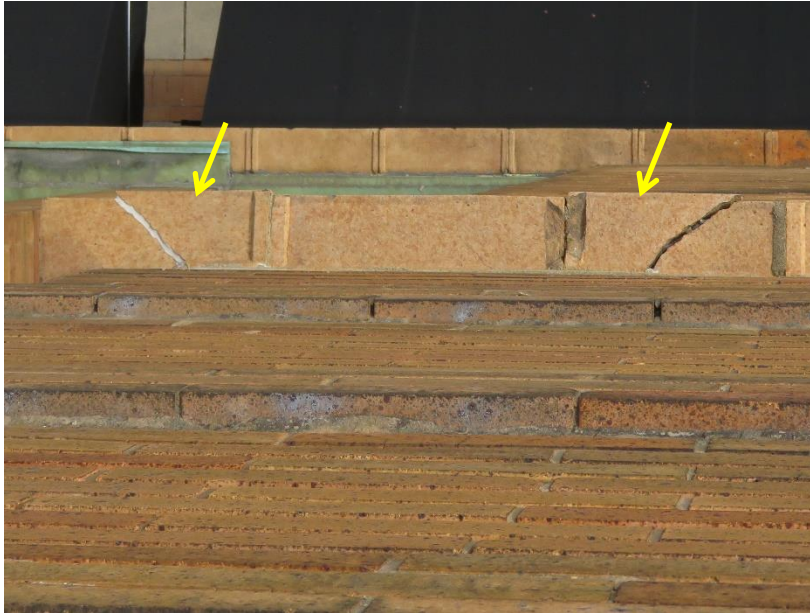


Figure 29. Cracked and displaced terra cotta units on the east facade at the top course above the third floor windows (viewed from the roof)



Figure 30. Cracked lintel units above the second floor windows on the north facade (condition typical at majority of second floor window lintel units on north facade)



Figure 31. Cracked and spalled lintel units above the second floor windows on the north facade (condition typical at majority of second floor window lintel units on north facade)



Figure 32. Peeling paint at wood window frame outside of metal storm window