



March 14, 2023

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Subject: Engineering Consulting Services Report
HURRICANE IAN WINDOW DAMAGE REVIEW
Bridgewater at Bonita Beach
4975 Bonita Beach Road South
Bonita Springs, FL 34134
SOCOTEC Project Number VS230195

SOCOTEC Consulting Inc. (SOCOTEC) is pleased to present this report of forensic engineering consulting services for the subject building. These services were completed in general accordance with our proposal, dated February 15, 2023 and authorized by you via email on February 20, 2023. This report presents our understanding of the project, together with our findings and opinion of the conditions observed during our site investigation.

SOCOTEC has endeavored to conduct the services identified herein in a manner consistent with that level of care and skill ordinarily exercised by members of the same profession currently practicing in the same locality and under similar conditions as this project. No other representation, express or implied, is included or intended in this document. SOCOTEC used routine and repeatable scientific and engineering methodologies to evaluate the storm damage to the subject windows and to form our professional engineering opinions.

Project Information

Our understanding of your needs for our services is based on information provided by you along with our experience on similar projects. We understand that the subject building's windows experienced water intrusion during Hurricane Ian. Therefore, you

have engaged SOCOTEC to provide an evaluation of the current condition of the windows to determine whether they sustained wind damage which allowed water to enter the building.

Observations

Engineering personnel from our office visited the subject site on February 22, 2023 to conduct a visual inspection of the building's windows. Based on our observations and resident accounts, the water intrusion through the windows occurred primarily on the south, east, and west elevations. The windows were observed to be double hung, and aluminum and vinyl framed. Many windows are original components of the structure.

The subject building is a cast-in-place concrete framed structure with reinforced concrete decks supported by concrete shear walls and columns. The exterior walls of the structure consist of CMU block. We assume the structure is supported on a pile foundation system. The flat building roof is covered with a FiberTite membrane roof system. The sloped roof is covered with a metal roofing system.

The damages observed include the following:

- Gapping between the window frame and drywall.
- Difficulty opening/closing windows by SOCOTEC engineering personnel.
- In select window locations, SOCOTEC engineering personnel applied manual force to the window frame which caused the window frame to move. Gapping around the windows increased as the manual force was applied and the window frame moved.
- An account from a resident in the building during Hurricane Ian stating they observed windows bow inward with water entering between the mullion.
- An account from a resident in the building during Hurricane Ian stating difficulty opening/closing windows after the storm.
- Ripped screens at multiple window locations.
- Cracked and separated window sealant.
- Movement in the screws at the window header at multiple window locations.
- Presence of mold spores in and around window tracks.

The following photographs were taken at the time of our site visit and are representative of the 334 photographs in our project file that document the conditions observed and described above.





Overview of a window in unit 107.



Gapping at the window frame and drywall in unit 107.





Movement of screws and gapping at the head jamb in unit 107.



Gapping at the window frame and drywall in unit 107.





Ripped screen in unit 103.



Failing window sealant, unit 102.





Failing window sealant, unit 101.



Water damage at plantation shutters, unit 101.





Gapping at the window frame and drywall in unit 101.

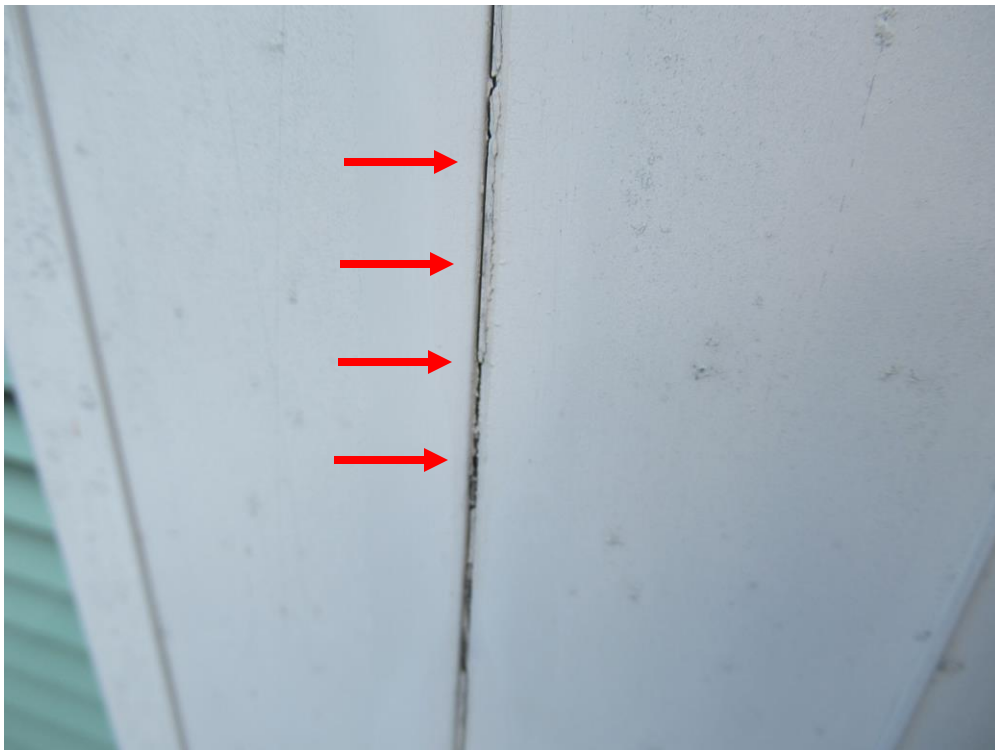


Gapping at window header, unit 101.





Failing window sealant, unit 106.



Failing window sealant at mullion at unit 105.





Gapping at the window frame and drywall in unit 301.



Failing window sealant, unit 301.



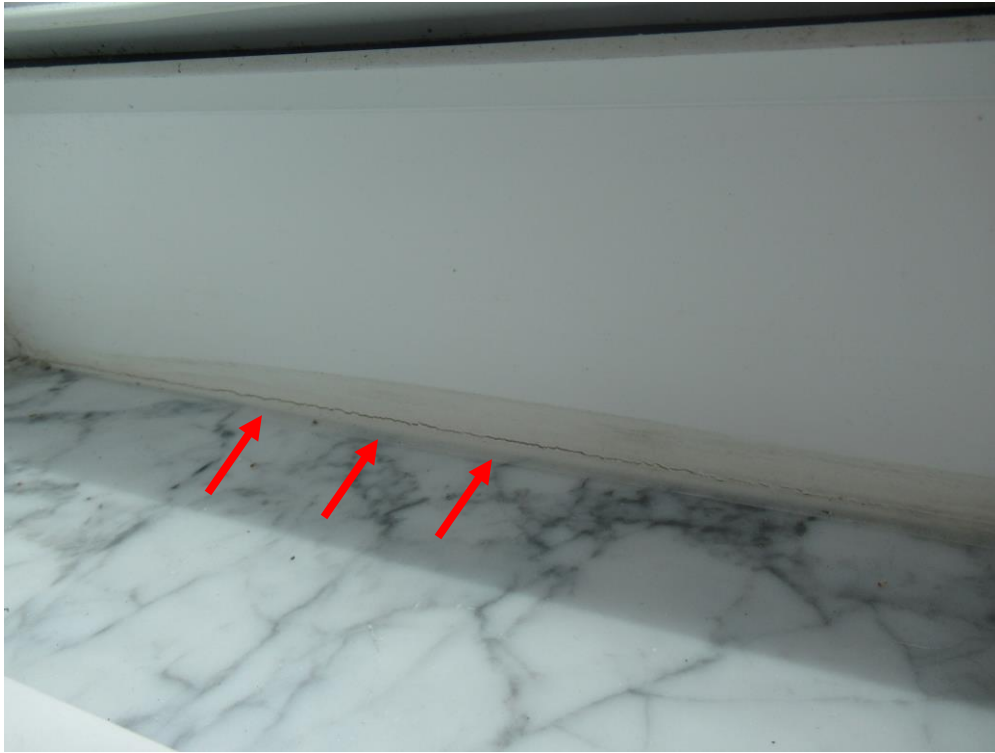


Mold spores in a window track, unit 301.



Gapping at the window frame and drywall in unit 301.





Failing window sealant, unit 301.



Gapping at the window frame and drywall in unit 303.



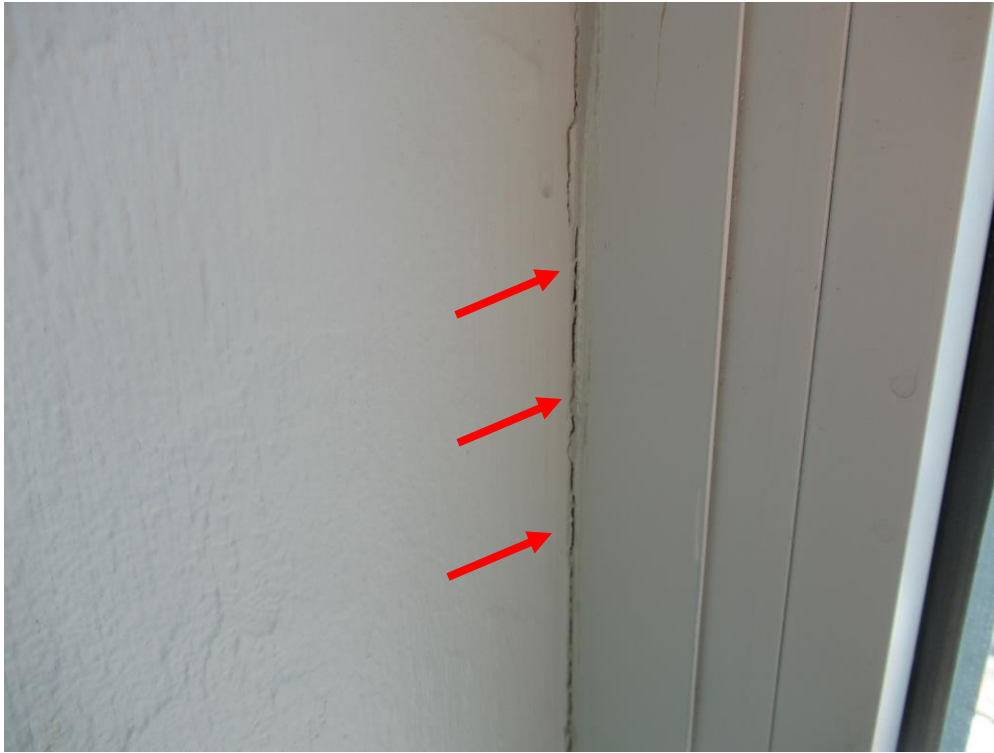


Gapping at the window frame and drywall in unit 303.



Gapping at the window frame and drywall in unit 303.





Gapping at the window frame and drywall in unit 304.



Ripped screen in unit 306.





Failing window sealant, unit 307.



Failing window sealant, unit 506.



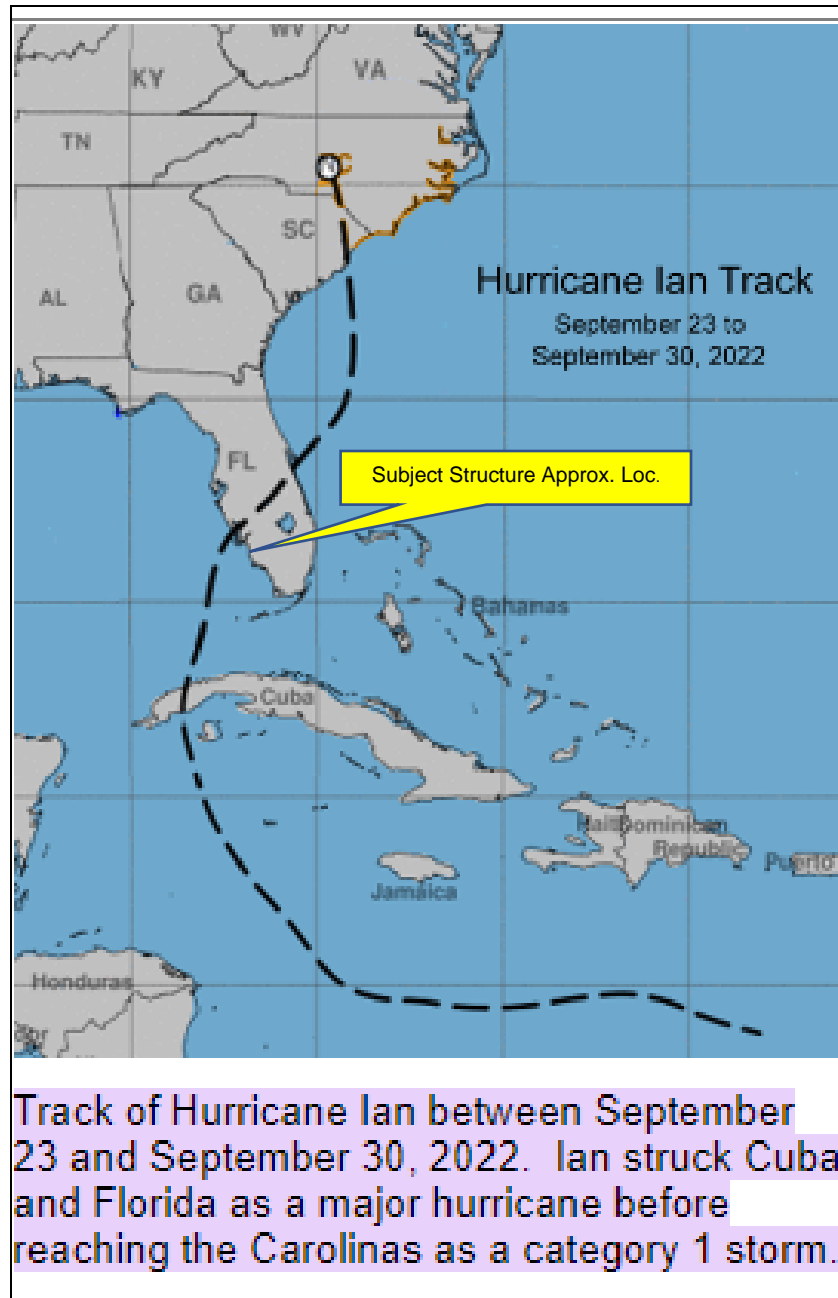
Evaluation

Our evaluation is based on the project information provided to us, our field observations, and our experience in forensic engineering. Should new information become available or the conditions encountered substantially differ from the information presented in this report, please contact us so we may evaluate the new information.

Based on our site observations, it is obvious the subject structure was significantly damaged when Hurricane Ian passed through the area. Southwest Florida was impacted by hurricane force winds from Hurricane Ian for approximately 12 hours on September 28, 2022. More specifically, Ian made landfall at 4:35 p.m. in Pirate Harbor, Florida, or just south of Punta Gorda, with maximum sustained winds of 145 mph, just below Category 5 with a central pressure of 940 hPa. The National Weather Service (NWS) Tampa Bay local office reported provisional peak wind gusts of 120 mph in Naples, Collier County and 140 miles per hour (225 km/h) in Cape Coral, Lee County. A catastrophic storm surge struck the west coast of Florida south of Tampa, and over 20 inches of rain caused major flooding across the peninsula all the way to the Atlantic coast.

Therefore, the building envelope and structural systems of the building were subjected to hurricane strength wind loads for an extended period of time, as well as impact loads from debris. This data along with the following excerpts has been obtained from readily available sources such as the NOAA National Hurricane Center Tropical Cyclone Report - Hurricane Ian. The subject structure is located directly in the path of the hurricane force winds from Hurricane Ian as clearly documented in the following excerpts from the referenced NOAA report.





It is apparent that the windows at the subject building shows signs of hurricane-related damages. Based on our evaluation of the windows, it is evident that the windows have been comprised by lateral wind forces created by Hurricane Ian. After our review of the existing site conditions, it is our professional engineering opinion that the windows experienced movement and deflections during Hurricane Ian which allowed for water entry into the building.



Closing

We trust the information contained herein is suitable for your needs and appreciate the opportunity to have been of service to you. Please contact us if you have any questions or if we can assist you with other aspects of the property.

Sincerely,
SOCOTEC CONSULTING, INC

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