

SEAN M. MCGRATH, P.E.

Senior Associate



Summary

Sean specializes in building envelope consulting, roofing assessments and structural evaluations for commercial and residential structures. From weather-related damage and construction defects to incidents such as fires, vehicle impacts, and flooding, he has extensive expertise in identifying root causes and delivering clear opinions and solutions. Sean brings a unique perspective rooted in both structural design and hands-on construction experience. His early background includes roles in municipal and utility engineering, construction inspection and land surveying, providing a well-rounded foundation for understanding complex systems within the built environment. This experience, combined with his in-depth knowledge of forensic evaluations, enables him to accurately assess a wide range of building conditions, from routine wear and tear to complex failures related to extreme events like hurricanes, tornadoes, derechos and explosions.

Areas of Technical Expertise

- Forensic Engineering
- Structural Engineering
- Civil Engineering

Education

- M.S., Structural Engineering, 2016, Ohio University
- B.S., Civil Engineering, 2014, University of Iowa

Registrations

- Registered Professional Engineer in FL, IA, IL, IN, MI, MN, ND, NE, SD, WI
- FAA Unmanned Aerial Pilot, UAS Part 107

Professional Activities

- American Society of Civil Engineers (ASCE)
- International Institute of Building Enclosure Consultants (IIBEC)
- Structural Engineers Association of Illinois (SEAOL)

Select Project Experience

Forensic Engineering

Building Enclosure Assessments / Chemical Plant

Explosion, Rockton, IL.* Provided numerous residential damage assessments following an explosion and subsequent fire which dropped flaming debris onto homes in the vicinity.

Commercial Roof Damage Assessment, Henry, IL.*

Completed a wind damage analysis due to uplift and subsequent water intrusion reported on a low slope, membrane roof system over elementary school.

Commercial Roof Damage Assessment, Sarasota, FL.*

Estimated the extent of wind damage on 35+ concrete tile roofs which resulted from winds related to Hurricane Ian.

Explosion Damage Assessment, Louisville, KY. Assessed the extent of damage to a 90+ year old masonry church which resulted from a nearby explosion.

Facade Collapse Assessment, New Orleans, LA. Analysis of the cause of the partial collapse of a stucco facade on a 100-year-old masonry building.

Hail Damage Assessments, Aurora, IL.* Accessed the asphalt shingle roofs of 40 buildings which were impacted and subsequently damaged by a severe hailstorm.

Hurricane Ian, Damage Assessment, Fort Myers Beach, FL.* Identified structural damage to a mid-rise condominium which resulted from a Cat 5 hurricane and subsequent storm surge.

Hurricane Irma, Damage Assessment, Caribbean, VGB.* Assessed damage resulting from a Cat 5 hurricane which impacted an 80-building resort and provided repair recommendations.

Hurricane Michael, Building Enclosure Assessment, Panama City Beach, FL.* Assessed each and every window in a high-rise condominium structure for deflection to determine if the windows were compromised and required replacement.

*Denotes work performed with previous employer.

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Library Tower, Building Enclosure Assessment, Chicago, IL.* Completed a building enclosure assessment to determine the cause of the water seepage and subsequent deterioration of the brick façade.

Private Residence Water Damage Assessments, Bucktown, Chicago, IL.* Completed water testing to determine the cause of water seepage into a high-end residential home which led to widespread microbial growth.

The Wit Hotel, Façade Damage Assessment, Chicago, IL.* Determined the extent of damage resulting from fires during a riot.

Wind Damage Iowa Derecho, Cedar Rapids, IA.* Assessed structural damage and building enclosure failures on numerous residential and commercial buildings which resulted from an intense derecho.

Structural Engineering

Metropolitan Water Reclamation District, Chicago, IL.* Provided construction consulting and completed stability analysis for the temporary removal and replacement of the aging roof deck on a pump house.

Partial Roof Collapse, Rockford, IL.* Completed a cause and origin assessment to determine the cause of the failure of the roof system on a commercial warehouse structure.

Private Residence, Adjacent Construction Damage, Chicago, IL.* Assessed the extent of damage to a 100-year-old brownstone home due to an undersized and improperly constructed shoring system at the adjacent property.

Structural Building Design, Coralville & Cedar Rapids, IA.* Completed structural calculations and drawings for the construction of several mid-rise, podium structures consisting of wood, steel, concrete, and masonry.

Civil Engineering

Commercial Strip Mall, Cause & Origin Assessment, Wheaton, IL.* Analyzed a storm water pipe failure which caused water to backup settlement of the footings due to soil consolidation.

Fairfield Inn & Suites, Water Damage Assessment, Glendale, WI.* Conducted a water intrusion cause and origin assessment following the flooding of a hotel basement during a high intensity rain event.

Injury & Accident Investigations

Construction Accident Investigation, Coralville, IA.* Investigated an accident where a pipe plug became a high-velocity projectile upon release, resulting in injury and analyzed contributing factors related to pressure buildup, installation and safety protocols.

Slip, Trip, & Fall Investigations, Chicago, IL.* Conducted investigations for personal injury litigation involving slips, trips, and falls, analyzed site conditions and reviewed building codes to assess compliance and factors contributing to the accidents.

Sworn Testimony

Deposition, Rasmussen v. Heritage Prop. & Cas., regarding damage to a residence following Hurricane Ian. August 6, 2024.

Deposition, Raigaga v. State Farm Fire & Cas. Co., regarding alleged hail damage to roofing components. January 16, 2024.

Deposition, Rakoncay v. State Farm Fire & Cas. Co., regarding alleged hail damage to roofing components. April 13, 2023.

Deposition, Struthers v. State Farm Fire & Cas. Co., regarding alleged hail damage to window components. October 13, 2022.

Deposition, Motor Lodge v. Regent Ins. Co. (QBE), regarding damage to an exterior drop ceiling system resulting from a freeze event. July 29, 2021.

Litigation

Hortascu v. Norsman Architects. Alleged construction defect regarding the installation of shear walls.

Newman v. Norsman Architects. Alleged construction defects relating to a renovation of 100+ year old home with modern additions.

Select Papers, Lectures and Publications

"Navigating Steep Slope Roof Repair Assessments," ASCE 10th Congress on Forensic Engineering, November 2024 (co-presenter)

"Repair Recommendations After a Forensic Investigation," ASCE 9th Congress on Forensic Engineering, November 2022 (co-presenter)

"Structural Assessment of Hurricane Damage: The Aftermath of a CAT 5 Hurricane in the British Virgin Islands," Structural Engineers Association of IL (SEAOL) Young Engineers Symposium, January 2019 (presenter)

CONTACT

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