

Sean M. McGrath, PE | Senior Forensic Engineer

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Professional Summary:

As an experienced forensic engineer, Mr. McGrath brings a wealth of expertise in meticulously investigating a wide spectrum of building failures. With a focus on residential and commercial roof systems, building enclosures, structural framing, and foundations, he adeptly identifies the root causes, be it weather-induced challenges, construction discrepancies, or unforeseen incidents like fires, vehicle impacts or explosions. Notably, Mr. McGrath holds an EVS/R Roof Specialist certification, enabling him to expertly evaluate roof coverings for hail and wind damage, construction defects, and the cause and origin of water intrusion. His proficiency extends to evaluating catastrophe-related damages resulting from hurricanes, derechos, tornados, explosions, fires, and floods.

An important aspect of Mr. McGrath's approach is his exceptional communication skills; bridging the gap between technical and non-technical stakeholders, he adeptly clarifies complex structural conditions, facilitating effective repair, remediation, or reconstruction processes. Drawing from a foundation in structural design and construction of new buildings, combined with invaluable experience as a municipal engineering intern covering roles in construction inspection and land surveying, he possesses a comprehensive perspective on various aspects of engineering.

Moreover, Mr. McGrath's proficiency shines through in his ability to seamlessly interact with diverse stakeholders. He navigates technical intricacies to convey crucial insights to engineers, contractors, and insurance adjusters, while also ensuring clear understandings by building owners. His effective communication extends to collaborating with building code officials, ensuring adherences to code standards while proposing repairs that are constructible and pragmatic, without unnecessary complexity.

Licenses and Certifications:

Professional Engineer, IL #062-070561

Professional Engineer, WI #46547-6

Professional Engineer, IA #P24862

Professional Engineer, MN #56549

Professional Engineer, ND #PE-27826

Professional Engineer, SD #14226

Professional Engineer, NE #E-17503

Professional Engineer, FL #91394

Professional Engineer, MI #6201310550

EVS/R – Roof Specialist

Federal Aviation Administration (FAA) Part 107 – Certified Remote (Drone) Pilot

Level 1 Roof Specific Rope Access Certified – Authorized Person

Confined Space Certified per Title 29 CFR 1910.146

Construction Fall Protection Trained per OSHA 1926 Subpart M

Aerial Boom Lift Trained per Title 29 CFR 1910 & 1926

OSHA 10-Hour Construction Program

Project Experience:

Forensic Engineering of Structures

Mr. McGrath has experience investigating failures of residential and commercial roof systems, façades, structural framing, and concrete and masonry foundations and slabs. These failures are typically related to weather conditions, construction errors or omissions, or fires, vehicle impacts, or explosions. He also holds an EVS/R Roof Specialist certification to perform engineering evaluations on all types of roof coverings for hail/wind damage, construction defects, and the cause and origin of water intrusion.

Catastrophe (CAT) Response

Mr. McGrath has experience evaluating catastrophe related damages to residential and commercial structures including:

- Hurricane Irma (2017) – *Location: Caribbean, British Virgin Islands*
- Hurricane Harvey (2017) – *Location: Texas Gulf Coast*
- Hurricane Michael (2018) – *Location: Florida Gulf Coast*
- Iowa Derecho (2020) – *Location: Cedar Rapids, IA*
- Chemical Plant Explosion (2021) – *Location: Rockton, IL*
- Tornadoes (2021) – *Location: Naperville/Woodridge, IL*
- Hurricane Ian (2022) – *Location: Fort Myers, FL*
- And numerous floods, tornadoes, fires, and explosions.

Building Enclosure Consulting

Mr. McGrath has assessed the exterior façades of commercial and residential buildings for construction defects, cause and origin of water intrusion, extents of storm damages, deterioration of window/door systems, etc.

Structural Engineering Building Design

Mr. McGrath has completed structural calculations and design for wood, precast and poured concrete, masonry, and steel commercial structures.

Existing Condition and Construction Inspection

Mr. McGrath has performed structural inspections for both existing structures and new construction.

Structural Repair Design and Detailing

Mr. McGrath has designed and detailed many different structural repairs for existing structures.

AutoCAD Design & Drafting

Mr. McGrath manages the Drafting Department in the EFI Global Chicago Service Center. He is proficient in several engineering drafting programs such as AutoCAD, Sketchup, and Revit.

Professional Experience:

EFI Global, Senior Forensic Engineer, 2021-Present

EFI Global, Forensic Engineer, 2017 – 2021

HBK Engineering, Structural EIT, 2014 – 2017

Education:

Masters, Structural Engineering, Ohio University, Athens, OH, 2016

Bachelors, Civil Engineering, University of Iowa, Iowa City, IA, 2014

Affiliations:

American Society of Civil Engineers (ASCE)
Structural Engineers Association of Illinois (SEAOI)

Publications and Presentations:

Schoenberger, Carl and McGrath, Sean, EFI Global, Inc. "Repair Recommendations After a Forensic Investigation", ASCE 9th Congress on Forensic Engineering, Denver, CO, November 2022

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

Expert Witness Experience:

Available Upon Request