



## PERSONNEL QUALIFICATIONS

### Elizabeth R. Pugh | Senior Associate



#### EDUCATION

- Purdue University
  - Bachelor of Science, Civil Engineering, 2012
- Illinois Institute of Technology
  - Master of Architectural Engineering, 2013

#### PRACTICE AREAS

- Building Enclosure Consulting
- Computer Modeling
- Facade Assessment
- Water/Air Leakage Assessment
- Masonry Assessment
- Repair and Rehabilitation
- Roofing and Waterproofing
- Windows and Curtain Walls

#### REGISTRATIONS

- NFRC Certified Simulator
- Professional Engineer in IL

#### PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers (ASCE)
- ASTM International
- National Fenestration Rating Council (NFRC)

#### CONTACT

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#### EXPERIENCE

Since joining WJE in 2014, Elizabeth Pugh has participated in a wide range of building enclosure investigations and repair projects. She has participated in facade investigations on a variety of structures. Ms. Pugh has performed investigations of moisture problems in buildings of all types, including in situ air pressurization, temperature measurements, and water penetration testing. She has assisted in the development of repair designs and has performed construction observations during the repair of building enclosures. Ms. Pugh has also assisted with design reviews of building enclosures in new construction. She is proficient in the use of AutoCAD and SketchUp to model building assemblies and develop detailing between enclosure system interfaces.

Ms. Pugh has particular expertise in building enclosure issues relating to moisture and condensation problems. She is an NFRC Certified Simulator, proficient in the use of THERM and WINDOW to analyze thermal performance and localized heat transfer effects in building enclosures. Ms. Pugh has also studied the use of advanced three-dimensional finite element analysis and computational fluid dynamics (CFD) software packages for building enclosure applications.

#### REPRESENTATIVE PROJECTS

##### Building Enclosure Consulting

- Hospital - Chicago, IL: Precast concrete facade investigation, condensation investigation, and construction observations
- Recreational Facility - Southern IL: Moisture damage investigation, thermal analysis, development of conceptual repairs, and review of implemented repairs
- Lurie Children's Hospital Meadow Park Facility - Northbrook, IL: Thermal analysis and design recommendations to minimize air infiltration and condensation
- SIH Cancer Center - Carterville, IL: Thermal analysis and design recommendations to minimize air infiltration and condensation
- Private Residence - Lyford Cay, Bahamas: Peer review of building enclosure design for main house and guest house

##### Facade Assessment

- Stonebridge Manor House - Lake Bluff, IL: Investigation of exterior stucco cladding and wood windows and development of conceptual repairs
- Operations and Checkout Building, Kennedy Space Center - FL: Exterior facade assessment and development of conceptual repairs to address water leakage
- Joseph P. Kinneary U.S. Courthouse - Columbus, OH: Investigation of cast stone cracking

##### Masonry Assessment

- Ozaukee County Courthouse - Port Washington, WI: Investigation of limestone facade deterioration and development of conceptual repairs

##### Repair and Rehabilitation

- 415 Fullerton Avenue - Chicago, IL: Design and construction period services for repairs to the masonry facade
- Joslyn Art Museum - Omaha, NE: Construction observations of granite site wall repairs

##### Roofing and Waterproofing

- Northwestern University, Parkes Hall - Evanston, IL: Design and construction period services for low-slope roof replacement
- Northwestern University, Levy Mayer Hall - Chicago, IL: Design and construction period services for slate roof replacement
- Northwest Community Hospital - Arlington Heights, IL: Investigation of roof damage

##### TECHNICAL COMMITTEES

- ASTM C16 - Thermal Insulation