



#### EDUCATION

- University of Michigan
  - Bachelor of Science, Civil Engineering, 2018
  - Master of Science, Civil Engineering, 2019

#### PRACTICE AREAS

- Concrete Structures
- Wood Structures
- Failure Investigation
- Facade Assessment
- Leakage Investigation

#### REGISTRATIONS

- Professional Engineer in IN and MI

#### PROFESSIONAL AFFILIATIONS

- International Concrete Repair Institute - Greater Michigan Chapter

#### CONTACT

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#### EXPERIENCE

Since joining WJE in 2018, Justin Barden has worked on projects related to structural engineering and the exterior architecture of new and existing buildings. He has been involved in assessments, investigations, structural analyses, structural damage and failure evaluations, and the preparation of construction documents.

Mr. Barden performs structural and water-related investigations, develops repair designs, and implements quality control construction observations on the repair of concrete, steel, and wood structures.

#### REPRESENTATIVE PROJECTS

##### Concrete Structures

- NOW Parking Structure - Birmingham, MI: Condition assessment of parking structure, development of emergency facade stabilization, design of new cable barrier system and concrete repairs, and construction observation of two-way reinforced concrete structure
- Henry Ford Health Systems - Detroit, MI: Condition assessment and development of repair and maintenance plan of two-way reinforced concrete structure
- Beaumont Hospital - Dearborn, MI: Evaluation of prestressed, double-tee beam structure with corrosion-related distress
- General Motors Warren Technical Center - Warren, MI: Assessment, development of repairs, and construction observation of pre-stressed, double-tee beam parking structures with connection failures
- Westin Hotel - Boston, MA: Design of repairs for a post-tensioned concrete parking structure

##### Wood Structures

- University of Michigan, Hoover Building - Ann Arbor: Assessment and structural analysis of historic wood trusses
- Detroit Central Farmer's Market - MI: Structural analysis and conceptual design of historic, timber-framed structure with traditional timber-frame joinery
- Beaver United Church - Dayton, OH: Investigation, structural analysis, and development of repair recommendations for historic queen rod timber trusses

- The Salvation Army - Bay City, MI: Investigation, structural analysis, and construction observation of wood bowstring trusses
- Saint Alfred Church - Taylor, MI: Structural analysis and repair design of curved glulam beams
- Taylor Creek Stables - Davison, MI: Assessment and repair design of laterally buckled metal plate-connected wood trusses
- Old Dominion Freight Line - Buffalo, NY: Investigation and analysis of historic wood trusses with split ring connections

#### Failure Investigation

- Lee Middle and High School - Wyoming, MI: Investigation of partial building collapse and development of structural framing demolition documents
- Schools and Apartment Buildings - Dayton, OH: Failure and damage investigation of multiple tornado-damaged buildings
- Suburban Office Building - Southfield, MI: Investigation of roof and floor collapse

#### Facade Assessment

- Historic School Buildings - Detroit, MI: Structural and facade assessment of multiple vacant historic school buildings
- Cadillac Place - Detroit, MI: Facade ordinance assessment of limestone cladding
- Royal Oak Middle School - Royal Oak, MI: Assessment of failed masonry cladding and design of stabilization repairs
- Book Depository - Detroit, MI: Facade assessment of vacant historic building and rehabilitation construction observation

#### Leakage Investigation

- General Motors Warren Technical Center - Warren, MI: Investigation of water leakage of exterior wall insulated metal panels
- Apartment Building - Birmingham, MI: Investigation of water leakage of apartment building terraces and exterior walls clad with brick masonry and fiber cement siding
- Dominican Sisters of Mary Mother of the Eucharist - Ann Arbor, MI: Investigation of water leakage of standing seam metal roofing and single-ply membrane roofing