

Michael C. Brown | Associate Principal



EDUCATION

- Virginia Tech
- BS, Civil Engineering, 1991
 - MS, Civil Engineering, 1999
- PhD, Civil Engineering, 2002

PRACTICE AREAS

- Corrosion, Durability, and Service Life Assessment
- Failure Investigation
- Structural Monitoring
- Research
- Nondestructive Evaluation
- Bridge Repair and Rehabilitation

REGISTRATIONS

- National Highway Institute
 - 130056/53 Safety Inspection of In-Service Bridges / Refresher
 - 130078 Fracture Critical Bridges
- PE in DC, MD, NJ, NY, NC, PA, RI, SC, UT, VA, and WV

PROFESSIONAL AFFILIATIONS

- American Concrete Institute, Fellow and former director
- American Society of Civil Engineers
- American Society for Nondestructive Testing
- Transportation Research Board
 - Bridge Preservation, chair
 - Structures Maintenance

CONTACT

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EXPERIENCE

Michael Brown consults on assessment, preservation planning, and rehabilitation of structures for transportation and commercial, residential, and institutional buildings. He has nearly thirty years of experience in materials testing, nondestructive evaluation, condition assessment and structural monitoring, rehabilitation design, and preservation planning. Dr. Brown specializes in bridge preservation with expertise in reinforced and prestressed concrete structures and corrosion assessment and mitigation. He was a project engineer at a national consulting firm for five years, research scientist and associate director at the Virginia Department of Transportation for fifteen years and visiting assistant professor of civil engineering at the University of Virginia for twelve years, and senior director and bridge preservation lead at an international consultancy for five years. Dr. Brown is a national leader in bridge preservation, an ACI Fellow, chair or member of several American Concrete Institute and Transportation Research Board technical committees, and the FHWA Bridge Preservation Expert Task Group and NDE Working Group.

REPRESENTATIVE PROJECTS

Corrosion, Durability, and Service Life Assessment

- San Luis Pass Bridge - Galveston, TX: Corrosion technical lead; condition evaluation of monolithic prestressed concrete four-girder/deck system on prestressed concrete pile bents; evaluation of existing arc-spray zinc cathodic protection system
- Park Road 22, Three Bridges - Corpus Christi, TX: Corrosion technical lead; condition assessment of prestressed concrete piles; recommendations cathodic protection
- Tie Line Bridge - Radford, VA: PM and technical lead; condition evaluation of steel-framed suspension utility bridge; condition assessment of cables, spelter sockets, and cause of irregular deck alignment
- Cypress Avenue Bridge - Murrells Inlet, SC: PM and technical lead; condition evaluation and service life analysis of prestressed pile bents with cast-in-place concrete caps for three-span reinforced concrete bridge

- Arthur Ravenel, Jr. (Cooper River) Bridge - Charleston, SC: PM and technical lead; investigation of pattern cracking in 18-year-old reinforced concrete stay-cable towers; evaluation of chloride exposure conditions
- I-235 NB Bridges - Oklahoma City, OK: Corrosion lead; specialized post-tensioning tendon inspection of 28-span mainline and 7-span ramp cast-in-place box girder bridges; identification of voids and in situ corrosion testing and testing grouts
- I-95 Bridge Over Lake Marion - Santee, SC: PM and technical lead; condition evaluation and service life analysis of prestressed and cast-in-place reinforced concrete bents of two-lane, multispan interstate bridge for superstructure replacement and repurposing as pedestrian multiuse facility

Failure Investigation

- Washington Bridge - Providence, RI: PM and Lead Investigator; Evaluate cause of fracture of post-tensioned tie-down rods for post-tensioned concrete cantilever girders in an 18-span interstate bridge
- Chesapeake Bay Bridge - Annapolis, MD: PM and lead investigator; investigation of failed post-tensioning bars between precast concrete blocks that form retrofitted pier cap extensions to support gantry sign structures

Structural Monitoring

- Ronald Reagan National Airport, Departures Deck - Arlington, VA: PM and technical lead; structural monitoring and vibrations investigation to assess cause of structural banging experienced during hot weather; identification of source and recommended retrofit

Research

- Nondestructive Evaluation (NDE) for Bridge Deck Preservation, FHWA: Co-principal investigator; study of state DOT use of NDE and framework to guide preservation action selection through life stages of bridge decks (new construction to rehabilitation)
- Long-Term Bridge Performance Program, FHWA: Principal investigator; technical services support contract to develop data collection protocols and perform data analyses