

Aradhana Agarwal | Associate II



EDUCATION

- Bucknell University
 - Bachelor of Science, Civil and Environmental Engineering, 2015
- University of Illinois at Urbana-Champaign
 - Master of Science, Civil Engineering, 2017
 - Doctor of Philosophy, Civil Engineering, 2025

PRACTICE AREAS

- Bridges and Civil Infrastructure
- Concrete Structures
- Nondestructive Evaluation
- Seismic Performance Evaluation
- Structural Analysis/Modeling

REGISTRATIONS

- Engineer in Training in IL

PROFESSIONAL AFFILIATIONS

- American Institute of Steel Construction
- American Society of Civil Engineers
- Structural Stability Research Council

CONTACT

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EXPERIENCE

Aradhana Agarwal is a structural engineer specializing in the analysis of steel and concrete structures. She has extensive experience in numerical modeling and analysis, nondestructive evaluation, condition assessments, and repair design. Dr. Agarwal joined the Washington, D.C. office as a full-time associate in 2022.

Her graduate-level research focused on the seismic design, performance, and retrofit of steel multitiered, braced frames using nonlinear finite-element analyses. Additionally, Dr. Agarwal has conducted research on human-structure interaction and the corrosion properties of coated aluminum substrates.

REPRESENTATIVE PROJECTS

Bridges and Civil Infrastructure

- I-81 New River Bridge - Radford, VA: Ground penetration radar survey for steel reinforcement and analysis for corrective plan development
- Approach Slab - Chicago, IL: Field instrumentation of I-390 Elgin O'Hare Western Access *

Concrete Structures

- Precast Parking Garages - Multiple Locations: Load testing of precast double-tee flange connections, structural condition assessment, analysis, and repair design
- Storage Facility - Marion, PA: Visual condition assessment and corrosion evaluation

Nondestructive Evaluation

- Historic Concrete Building - Port Arthur, TX: Visual condition assessment and ground penetration radar survey for steel reinforcement
- Utility Tunnel System - Wichita Falls, TX: Visual assessment, ground penetration radar survey for steel reinforcement, and half-cell potential survey for in-service utility tunnels

Structural Analysis/Modeling

- Wood Trusses - Multiple Locations: Analysis of metal-plate-connected wood trusses and repair design
- Warehouse Building - Baltimore, MD: Structural analysis of open-web steel joists and tilt-up wall construction with three-dimensional finite-element modeling using frame and shell elements
- Metro Rail Components - Washington, D.C.: Structural analysis using various finite elements and software
- Silver Spring Transit Center - MD: Performance evaluation of a post-tensioned concrete structure
- Multistory Buildings - Multiple Locations: Analysis of two-way reinforced concrete slab systems

RESEARCH PUBLICATIONS/PRESENTATIONS

- Seismic Collapse Performance of Multi-Tiered Ordinary Concentrically Braced Frames, *Journal of Structural Engineering*, 2025
- Comparative Seismic Response Evaluation of Steel Multi-Story and Multi-Tiered Ordinary Concentrically Braced Frames, *Journal of Structural Engineering*, 2022
- Parametric Evaluation of Multi-Tiered Ordinary Concentrically Braced Frames under Seismic Loading, Structural Stability Research Council Annual Stability Conference 2021, Louisville, KY

* Indicates work completed as an undergraduate or graduate researcher