HP ENGINEERING

Andrew Mock, PhD, PE, SE

Andrew Mock, PhD, PE, SE
Vice President &
Director of Structural Engineering

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Professional Profile

As Director of Structural Engineering, Andrew manages HP Engineering's structural services for building projects, including new construction, additions, renovations, and assessments. His professional experience has included commercial, education, entertainment, healthcare, hospitality, industrial, infrastructure, mixed-use, and multi-family market sectors. Through these experiences, Andrew provides technical leadership in the analysis, design, and construction of commercial structures of steel, reinforced masonry, structural concrete, cold-formed metal framing, and wood.

As a Project Manager and Engineer of Record, Andrew delivers complete structural engineering design services, integrated design coordination with other disciplines, development of contract documents, and construction administration through closeout. His specialty areas include reinforced concrete behavior, tornado shelter construction, foundations on highly expansive soils, engineering specifications, and non-linear structural analysis.

Education & Professional Honors

a. Ph.D., Civil Engineering, University of Illinois, Urbana-Champaign, 2018
b. M.S., Civil Engineering, University of Illinois, Urbana-Champaign, 2012
c. B.A.E., Architectural Engineering, Oklahoma State University, 2011
d. National Science Foundation Graduate Research Opportunities Worldwide, Fellow, 2014
e. National Science Foundation Graduate Research Fellowship Program, Fellow, 2011-2014
f. Oklahoma State University Dean's Award for the Outstanding Graduate from the College of Engineering, Architecture and Technology, 2011

Professional Licensure

a. Professional Engineer (PE): AL, AR, CO, FL, IA, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, ND, NE, NJ, NM, NY, OH, PA, RI, SC, SD, TN, TX, VT, WA, WI, WV, WY
b. Professional Structural Engineer or Structural Engineer (SE): AZ, GA, HI, IL, NV, OK, UT
c. National Council of Examiners for Engineering and Surveying (NCEES): Record Holder and Model Law Structural Engineer (MLSE)

Professional Affiliations

a. American Concrete Institute (ACI), Member
    - ACI Structural Journal, Peer Reviewer
b. American Institute of Steel Construction (AISC), Professional Member
c. American Society of Civil Engineers (ASCE), Member
    - Committee on Preparing the Future Civil Engineer (CPFCE), Voting Member
    - Engineering Grades Project Team, Member
d. National Storm Shelter Association (NSSA), Professional Member & Peer Reviewer
    - Design Practices Committee, Voting Member
    - Professional Designer/Peer Reviewer Examination Committee
    - 2021 NSSA Conference and Examination Participant
e. Oklahoma Structural Engineer's Association (OKSEA), Member
f. Structural Engineering Institute (SEI), Member

Prior Experience

a. Senior Engineer, Exponent, Inc., 2020-2021
b. Structural Engineer, Stantec Architecture, Inc., 2016-2020
c. Structural Designer, Structural Consultants Associates, 2014-2015
d. Visiting Research Fellow, LMT-Cachan, 2014
e. Research Fellow, University of Illinois, 2011-2014

Publications

A.1.1.1 Peer-Reviewed Journal

a. Behrouzi, A. A., A. Mock, D. Lehman, L. Lowes, and D. Kuchma (2020). Impact of bi-directional loading on the seismic performance of C-shaped piers of core walls. Engineering Structures, 225, 111289.

A.1.1.2 Conference Proceedings

a. Behrouzi A., A. Mock, D. Lehman, L. Lowes, and D. Kuchma (2018). Seismic Performance of Slender C-shaped walls Subjected to Uni-and Bi-directional Loading, Proceedings of the 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, CA, pp. 1-5.

A.1.1.3 Technical Reports

a. Mock, A (2018). Performance of C-Shaped Structural Concrete Walls Subjected to Bi-Directional Loading, PhD dissertation, University of Illinois at Urbana-Champaign, pp. 1-400.

b. Mock, A., A. Behrouzi, L. Lowes, D. Lehman, and D. Kuchma (2014). Empirically derived effective stiffness expressions for concrete walls, Performance-Based Seismic Design of Concrete Walls. Charles Pankow Foundation, pp. 1-13.
c. Behrouzi, A., A. Mock, L. Lowes, D. Lehman, and D. Kuchma (2014). Summary of large-scale nonplanar reinforced concrete wall tests, Performance-Based Seismic Design of Concrete Walls. Charles Pankow Foundation, pp. 1-40.
d. Mock, A., L. Lowes, A. Behrouzi, D. Lehman, and D. Kuchma (2013). C-Shape Wall Summary Document, NEESR-SG: Seismic Behavior, Analysis, and Design of Complex Wall Systems. Network for Earthquake Engineering Simulation.

A.1.1.4 Presentations

a. Mock, A, A. Behrouzi, L. Lowes, D. Lehman, and D. Kuchma. "Seismic Performance of Slender C-shaped walls Subjected to Uni-and Bi-directional Loading," 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, California, June 26, 2018. Presentation.
b. Mock, A., R. Bumedijen, F. Gatuingt. "Development of a six -degree-of-freedom load cell," LMT-Cachan Civil Engineering Sector Presentation, Paris, France, June 26, 2014. Presentation.
c. Mock, A., M. Bletzinger, D. Kuchma. "Multi-degree-of-freedom response-based load control at the Illinois NEES facility for large-scale testing of reinforced concrete structures," Network for Earthquake Engineering Simulation QuakeSummit, Reno, Nevada, August 8, 2013. Presentation.
d. Lowes, L, D. Lehman, A. Mock, A. Behrouzi, and D. Kuchma. "Seismic Behavior of Slender C-Shaped Concrete Walls," Network for Earthquake Engineering Simulation QuakeSummit, Reno, Nevada, August 8, 2013. Presentation.
e. Kuchma, D., A. Behrouzi, A. Mock. "Why Buildings Don't Fall Down," Illinois New Teacher Collaborative Beginning Teacher STEM Conference, Champaign, Illinois, July 31, 2013. Presentation.
f. Mock, A., A. Behrouzi, L. Lowes, D. Lehman, and D. Kuchma. "Large Scale Testing and Behavior of Reinforced Concrete C-Shaped Walls," Network for Earthquake Engineering Simulation QuakeSummit, Boston, Massachusetts, July 11, 2012. Poster Session.

A.1.1.5 Datasets

a. Birely, A., A. Mock, A. Behrouzi, D. Kuchma, D. Lehman, and L. Lowes (2014). "Seismic Behavior of Modern Reinforced Concrete C-Shaped Walls (Specimen UW6)." Dataset, DOI:10.4231/D3C24QP0D. Design-Safe Cyber Infrastructure (distributor).
b. Behrouzi, A., A. Mock, A. Birely, D. Kuchma, D. Lehman, and L. Lowes (2014). "Seismic Behavior of Modern Reinforced Concrete C-Shaped Walls (Specimen UW7)." Dataset, DOI:10.4231/D37D2Q79C. Design-Safe Cyber Infrastructure (distributor).
c. Mock, A., A. Behrouzi, A. Birely, D. Kuchma, D. Lehman, and L. Lowes (2014). "Seismic Behavior of Modern Reinforced Concrete C-Shaped Walls (Specimen UW8)." Dataset, DOI:10.4231/D33N20F5M. Design-Safe Cyber Infrastructure (distributor).