

# DONG ZHAO

Address: Human Ecology Bldg. Rm 201K  
School of Planning, Design & Construction  
Michigan State University  
552 W Circle Drive  
East Lansing, MI 48824

Phone: (517) 432-3242

Fax: (517) 432-8108

E-mail: [dzhao@msu.edu](mailto:dzhao@msu.edu)

Website: [www.msu.edu/~dzhao](http://www.msu.edu/~dzhao)

## EDUCATION:

Ph.D.	Virginia Tech (Building construction)	2014
M.S.	Virginia Tech (Building science)	2011
M.S.	Chongqing University (Management engineering)	2007
B.E.	Chongqing University (Construction engineering)	2004

## ACADEMIC POSITIONS:

Assistant Professor, Construction Management Program, School of Planning, Design and Construction, Michigan State University	2015-
Adjunct Assistant Professor, Department of Civil and Environmental Engineering, Michigan State University	2015-
Post-doctoral Fellow, Virginia Center for Housing Research, Myers-Lawson School of Construction, Virginia Tech	2014-15
Research/Teaching Assistant, Myers-Lawson School of Construction, Virginia Tech	2008-14
Research Associate, Virtual Construction Prototyping Lab, Department of Building and Real Estate, Hong Kong Polytechnic University	2007-08

## PROFESSIONAL CERTIFICATIONS:

Leadership in Energy & Environmental Design, Accredited Professional (LEED AP), #10855929, issued by the U.S. Green Building Council (USGBC).

## AWARDS & HONORS:

Best Journal Paper Award, ASCE Journal of Architectural Engineering	2016
New Hire Recognition, Michigan State University	2016
Postdoctoral Fellowship, Virginia Tech	2015
Outstanding Dissertation Nomination Award, Virginia Tech	2014
Kevin P. Granata Award, Virginia Tech	2014
Annual Achievement Award, Virginia Center for Housing Research	2013
Outstanding Thesis Award, Chongqing University	2007
Outstanding Graduate Student, Chongqing University	2006

## PUBLICATIONS:

### Books

1. Sanderford, A. R., McCoy A. P., **Zhao, D.**, and Koebel, T. (2016). *Case-specific Studies on Housing Innovation*. Momentum Press, New York, NY. ISBN-13: 978-1-60650-566-3.
2. **Zhao, D.** and McCoy, A. P. (2017). *Housing in a Systems View: Innovation and Safety*, Momentum Press, New York, forthcoming 2017.

### Refereed Journal Papers

\* denotes the students as an advisee.

1. Wang, D., Chen, J., **Zhao, D.**, Dai, F., Zheng, C., and Wu, X. (2017). "Monitoring workers' attention and vigilance in construction activities through a wireless and wearable electroencephalography system." *Automation of Construction*, DOI: 10.1016/j.autcon.2017.02.001. In press.
2. McCoy, A.P., Sanderford, A., and **Zhao, D.** (2017). "Demonstrating a New Measure & Index of U.S. Homebuilder Confidence." *Journal of Housing Research*. In press.
3. Feng, Y., Wu, P., Ye, G., and **Zhao, D.** (2017). "Risk Compensation Behaviors on Construction Sites: Demographic and psychological determinants." *Journal of Management in Engineering*, 33(4), 04017008. DOI: 10.1061/(ASCE)ME.1943-5479.0000520.
4. **Zhao, D.**, McCoy, A., Du, J., Agee, P., and Lu, Y. (2017). "Interaction Effects of Building Technology and Resident Behavior on Energy Consumption in Residential Buildings." *Energy and Buildings*, 134. 223-233. DOI: 10.1016/j.enbuild.2016.10.049
5. Liu, G, Li, K., **Zhao, D.**, and Mao, C. (2017). "Business Model Innovation and Its Drivers in the Chinese Construction Industry during the Shift of Modular Prefabrication." *Journal of Management in Engineering*, 33(3), 04016051. DOI: 10.1061/(ASCE)ME.1943-5479.0000501.
6. **Zhao, D.**, McCoy, A. P., Kleiner, B. M., and Feng, Y. (2016). "Integrating Safety Culture into OSH Risk Mitigation: A Pilot Study on the Electrical Safety." *Journal of Civil Engineering and Management*, 22(6), 800-807. DOI: 10.3846/13923730.2014.914099
7. Du, J.; Kim B., and **Zhao, D.** (2016). "Cost Performance as a Stochastic Process: EAC Projection by Markov Chain Simulation." *Journal of Construction Engineering and Management*, 142(6), 04016009. DOI: 10.1061/(ASCE)CO.1943-7862.0001115

8. Du, J., El-Gafy, M., and **Zhao, D.** (2016). "Optimization of Change Order Management Process with Object-Oriented Discrete Event Simulation: Case Study." *Journal of Construction Engineering and Management*, 142(4): 05015018. DOI: 10.1061/(ASCE)CO.1943-7862.0001092.
9. **Zhao, D.**, McCoy, A. P., and Du, J. (2016). "An Empirical Study on the Energy Consumption in Residential Homes after Adopting Green Building Standards." *Procedia Engineering*, 145, 766-773. DOI: 10.1016/j.proeng.2016.04.100
10. Shi, Y., Du, J., Lavy, S., and **Zhao, D.** (2016). "A Multiuser Shared Virtual Environment for Facility Management." *Procedia Engineering*, 145, 120-127. DOI: 10.1016/j.proeng.2016.04.029
11. **Zhao, D.**, McCoy, A. P., Kleiner, B. M., Du, J., and Smith-Jackson, T. L. (2016). "Decision-making Chains in Electrical Safety for Construction Workers." *Journal of Construction Engineering and Management*. 142 (1). DOI: 10.1061/(ASCE)CO.1943-7862.0001037
12. **Zhao, D.**, McCoy, A. P., Kleiner, B. M., Smith-Jackson, T. L., and Liu, G. (2016). "Sociotechnical Systems of Fatal Electrical Injuries in the Construction Industry." *Journal of Construction Engineering and Management*, 142 (1). DOI: 10.1061/(ASCE)CO.1943-7862.0001036
13. **Zhao, D.**, McCoy, A. P., Kleiner, B. M., Mills, T., and Lingard, H. (2016). "Stakeholder Perceptions of Risk in Construction." *Safety Science*, 82, 111-119. DOI: 10.1016/j.ssci.2015.09.002.
14. **Zhao, D.**, McCoy, A. P., and Smoke, J. (2015). "Resilient Built Environment: New Framework for Assessing Residential Construction Market." *Journal of Architectural Engineering*, 27(4), B4015004. DOI: 10.1061/(ASCE)AE.1943-5568.0000177 (**Best Paper Award of the Year**)
15. **Zhao, D.**, McCoy, A. P., Kleiner, B. M., and Smith-Jackson, T. (2015). "Control Measures of Electrical Hazards: An Analysis of Construction Industry." *Safety Science*, 77, 143-151. DOI: 10.1016/j.ssci.2015.04.001
16. **Zhao, D.**, and Lucas, J. (2015). "Virtual Reality Simulation for Construction Safety Promotion." *International Journal of Injury Control and Safety Promotion*. 22(1), 57-67. DOI: 10.1080/17457300.2013.861853
17. **Zhao, D.**, McCoy, A., Bulbul, T., Fiori, C., and Nikkhoo, P. (2015). "Building Collaborative Construction Skills through BIM-integrated Learning Environment." *International Journal of Construction Education and Research*, 11(2), 97-120. DOI: 10.1080/15578771.2014.986251

18. **Zhao, D.**, Thabet, W., McCoy, A. P., and Kleiner, B. M. (2014). "Electrical Deaths in the U.S. Construction: An Analysis of Fatality Investigations." *International Journal of Injury Control and Safety Promotion*, 21(3), 278-288. DOI: 10.1080/17457300.2013.824002
19. Ren, H., and **Zhao, D.** (2006). "Innovation of Construction Projects Management Based on the Five-dimension Modeling." *Journal of Chongqing University (Natural Science Edition)*. 29(9), 152-155.
20. Huang, Z., and **Zhao, D.** (2006). "An Empirical Study and Forecast of the Cyclic Fluctuation of Real Estate Investment in China." *Journal of Civil, Architectural and Environmental Engineering*, 28(4), 110-113.
21. **Zhao, D.**, Bi, W., and Liu, L. (2005). "A Study on the Investment of Real Estate Development under the Macro-regulation in China." *Journal of Civil, Architectural and Environmental Engineering*, 27(s), 128-130.
22. Wang, H., and **Zhao, D.** (2005). "A Study of the Effect of Construction Project Design Quality on the Overall Cost Management and Control." *Journal of Civil, Architectural and Environmental Engineering*, 27(s), 109-111.
23. **Zhao, D.**, and Ren, H. (2005). "Thinking on China Western Area Real Estate Industry's Development." *Special Zone Economy*. 2005(2): 112-113.
24. **Zhao, D.**, and Huang, Z. (2004). "The Analysis of the Relationship between Cyclic Fluctuation of Real Estate Industry and Macro-economy." *Chuanshan Journal*, 262-263.

### **Refereed Conference Papers**

25. Paige, F., Philip Agee, P., **Zhao D.**, McCoy, A. (2018). "The Longitudinal Impact of Energy Education on Affordable Energy Efficient Multifamily Senior Housing." *Proc. the 4th Residential Building Design and Construction Conference (RBDCC)*, State College, PA.
26. Mo, Y.\*, **Zhao, D.**, Syal, M., and Aziz, A. (2017). "Construction Work Plan Prediction for Facility Management Using Text Mining." *Proc., the 2017 International Workshop of Computing in Civil Engineering (IWCCE)*, Seattle, WA.
27. Mo, Y.\*, **Zhao, D.**, McCoy, A., Du, J., and Agee, P. (2017). "Latent Relationship between Construction Cost Takeoffs and Energy Efficiency for Multifamily Green Buildings." *Proc., the 2017 International Workshop of Computing in Civil Engineering (IWCCE)*, Seattle, WA.

28. Zou, Z., Du, J., Shi, Y., and **Zhao, D.** (2017). "Simultaneous Data Exchange between BIM and VR for Collaborative Decision-making." *Proc., the 2017 International Workshop of Computing in Civil Engineering (IWCCE)*, Seattle, WA.
29. **Zhao, D.**, McCoy, A. P., Agee, P., and Ladipo, T. (2016). "Impacts of Housing Technology and Behavior on Energy Efficiency for Affordable Rental Housing." *Proc. the 41th IAHS World Congress – Sustainability and Innovation for the Future*, Algarve, Portugal.
30. **Zhao, D.**, McCoy, A. P., and Kleiner, B. M. (2016). "Do Designers and Builders Share Similar Understanding of Occupational Safety and Health Risks?" *Proc., the 2016 Construction Research Congress (CRC)*, San Juan, Puerto Rico, pp. 2821-2830. DOI: 10.1061/9780784479827.281
31. Valdes-Vasquez, R., Simmons, D.R., **Zhao, D.**, and Parrish, K. (2016). "Lessons Learned from the Michael Horman Symposium: Developing a Network of Researchers and Mentorship for Sustainability topics." *Proc., the 2016 Construction Research Congress (CRC)*, San Juan, Puerto Rico. DOI: 10.1061/9780784479827.129
32. **Zhao, D.**, Sanderford, A. R., and McCoy, A. P. (2016). "Homebuilder's Confidence: a New Index of Land, Labor, Capital, and Opportunities." *Proc., the 2016 American Real Estate Society Annual Conference (ARES)*, Denver, CO.
33. **Zhao, D.**, Feng, Y., Ye, Y., and Suh, M. J. (2014). "Integrating Safety Culture into OSH Risk Mitigation via Information Technologies." *Lecture Notes in Electrical Engineering*, 241 LNEE, 335-344. DOI: 10.1007/978-3-642-40078-0\_29.
34. Keefe, M., McCoy, A., Sanderford, A., and **Zhao, D.** (2014). "Adoption Patterns of Energy Efficient Housing Technologies 2000-2010: Builders as Innovators." *Proc., the 2nd Residential Building Design and Construction Conference (RBDCC)*, Bethlehem, PA.
35. **Zhao, D.** (2014). "BIM-integrated Group Learning in Construction Education." *Proc., the 6th Conference on Higher Education Pedagogy (CHEP)*, Blacksburg, VA.
36. Feng, Y., **Zhao, D.**, Wu, P., and Xia, B. (2013). "Risk Compensation and Safety Interventions in Construction Site." *Proc., the 38th Australasian Universities Building Education Association Conference (AUBEA)*, Auckland, New Zealand.
37. **Zhao, D.** (2013). "Merging Habitus into Safety Risk Management: A Case from the U.S. Construction Industry." *Proc., the 7th IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, Bangkok, Thailand, 507 - 511. DOI: 10.1109/IEEM.2013.6962463

38. **Zhao, D.**, Sands, K., Wang, Z., and Ye, Y. (2013). "Building Information Modeling-enhanced Team-based Learning in Construction Education." *Proc., the 12th International Conference on Information Technology Based Higher Education and Training (ITHET)*, Antalya, Turkey, 1-5. DOI: 10.1109/ITHET.2013.6670999
39. **Zhao, D.**, Thabet, W., McCoy, A., and Kleiner, B. (2012). "Managing Electrocutation Hazards in the US Construction Industry Using VR Simulation and Cloud Technology." *Proc., the 2012 European Conference of Product and Process Modeling (ECPPM)*, Reykjavik, Iceland, 759-764. DOI: 10.1201/b12516-120
40. **Zhao, D.**, and Ye, Y. (2012). "Using Virtual Environments Simulation to Improve Construction Safety: An Application of 3D Online-game based Training." *Lecture Notes in Electrical Engineering*, 172 LNEE, 269-277. DOI: 10.1007/978-3-642-31006-5\_33.
41. **Zhao, D.**, Lucas, J., and Thabet, W. (2009). "Using Virtual Environments to Support Electrical Safety Awareness in Construction." *Proc., the 2009 Winter Simulation Conference (WSC)*, Austin, TX, 2679-2690. DOI: 10.1109/WSC.2009.5429258
42. **Zhao, D.**, and Ren, H., (2006). "The Instauration of China Construction Labor Market Using International Experiences." *Proc. Reform and Innovation of China Construction Labor Policy*, Beijing, China, Construction Industry Press, 10-14.

### **Book Chapters**

43. Zhao, D. (2014). "Mobile Virtual Reality: An Approach for Safety Management," In Cecilia S. Lanyi (Ed.), *The Thousand Faces of Virtual Reality*. InTech Press. ISBN 978-953-51-1733-9.
44. **Zhao, D.**, and Ren, H. (2008). "Constructing Security Systems for Public Housing in Rural and Urban Areas," In *Blue Book of Chongqing Municipality*. Chongqing: Chongqing Press Group. ISBN 978-7-5366-9419-4, pp91-99

### **Research Reports/Abstracts/Others**

45. Kleiner, B., and **Zhao, D.** (2017). "Preventing Fatalities in the Construction Industry." Report to the Associated General Contractors of America (AGC).
46. McCoy, A., **Zhao, D.**, and et al. (2015). *Report: the Impact of Energy Efficient Design and Construction on LIHTC Housing in Virginia*. Virginia Center for Housing Research, Virginia Tech, Blacksburg, VA.
47. **Zhao, D.**, Kleiner, B., McCoy, A., and Mills, T. (2014). "Research on Safety in Construction Supply Chain." *The 2014 College of Architecture and Urban Studies Research Symposium*, Virginia Tech, Blacksburg, VA.

48. Kleiner, B., McCoy, A., Chen, A., and **Zhao, D.** (2014). "A 'Whole Industry' Approach to Construction Safety through International Collaboration and Benchmarking." *The 2014 Deans' Forum on Global Engagement*, Virginia Tech, Blacksburg, VA
49. Kleiner, B., **Zhao, D.**, and et al. (2014). "From Finger-Pointing to Lifesaving: A Supply Chain Approach to Construction OSH." IC-SAFE, Virginia Tech, VA.
50. McCoy, A., Jones, M., **Zhao, D.**, and et al. (2014). *Consolidated Plan for the Fairfax County, Virginia*. Virginia Center for Housing Research, Virginia Tech, VA.
51. Ren, H, Liu, G., **Zhao, D.**, and et al (2007). *Design and Development of Public Housing in Chongqing Municipality: An Investigation Report*. School of Construction Management and Real Estate, Chongqing University, China.

## **COURSES TAUGHT:**

### **Michigan State University**

CMP828: Advanced Virtual Design & Construction (developed)  
CMP328: Construction Presentation Graphics and Building Information Modeling (BIM)  
CMP891: Advanced Topic in Construction Management - BIM  
PDC491: Special Topic in Planning, Design and Construction - BIM

### **Virginia Tech**

ISE 4994: Undergraduate Research - Data Mining for Improved Safety and Health  
CNST 5124: Integrated Construction Studio  
BC 4064: Construction Practice Lab  
BC 3064: Building Systems Technology Lab  
BC 2064: Construction Principles Lab  
BC 2114: IT in Design & Construction

## **STUDENTS ADVISING**

### **Doctoral Graduate Students**

Yunjeong Mo, PhD in CM (2016), MSU. (Co-Chair)  
Faizan Shafique, PhD in CM (2015), MSU.  
Zach Hansmann, PhD in CM (2015), MSU.  
Philip Agee, PhD in ISE (2016), Virginia Tech.

### **Master Graduate Students**

Sahil Navlani, MS in CM (2015), MSU. (Chair)

Navwant Thakur, MS in CM (2015), MSU. (Chair)  
Harshal Shah, MS in CM (2015), MSU  
Pranathi Ramaswamy, MS in CM (2015), MSU.  
Harshal Shah, MS in CM (2015), MSU  
Ana Beatriz Miotto, MS in CM, graduated in 2016, MSU.

## **PRESENTATIONS:**

### **Invited Seminars & Presentations**

1. “Be a Spartan: Perspectives of Research in Built Environment.” Presented at Michigan State University, School of Planning, Design and Construction, East Lansing, MI, 2015.
2. “The Game Changer: BIM’s Worldwide Implementation.” Presented at Chongqing University, Faculty of Built Environment, Chongqing, China, 2015, with A McCoy.
3. “Toward the Future of Housing: Leveraging Technology and Efficiency.” Co-presented with A. McCoy at Chongqing University, Faculty of Built Environment, Chongqing, China, 2015.
4. “Uncertainty Management and Risk Mitigation in Building Design and Construction.” Presented at the Southwest Jiao Tong University, School of Economics & Management, Chengdu, China, 2015.
5. “Market Behavior Effects on Innovative Green Building Technologies for US Residential Firms.” Co-presented with A. McCoy at the Southwest Jiao Tong University, School of Economics & Management, Chengdu, China, 2015.
6. “Control Measures of Electrical Hazards for Construction Workers.” Presented at Virginia Tech, CIB Chapter, Blacksburg, VA, 2015.

### **Presentations**

7. “Impacts of Housing Technology and Behavior on Energy Efficiency for Housing in Virginia.” Co-presented with A. McCoy & P. Agee at the 41st International Association of Housing Science (IAHS) World Congress, Albufeira, Portugal, 2016.
8. “Do Designers and Builders Share Similar Understanding of OSH Risks?” presented at Construction Research Congress, San Juan, PR, 2016.
9. “Energy Consumption in Residential Buildings after Adopting Green Building Standards.” Present at International Conference on Sustainable Design, Engineering, and Construction, Tempe, AZ, 2016

10. "Construction Safety through International Collaboration and Benchmarking." Co-presented with B. Kleiner at Virginia Tech, Deans' Forum on Global Engagement, Blacksburg, VA, 2014.
11. "Research on Safety in Construction Supply Chain." Co-presented with B. Kleiner at Virginia Tech, CAUS Studies Research Symposium, Blacksburg, VA, 2014
12. "Integrating Safety Culture into OSH Risk Mitigation via Information Technologies." Presented at Drexel University, Philadelphia, PA, 2014.
13. "Team-based Learning in Building Information Modeling Education." Presented at the International Conference on Information Technology Based Higher Education and Training, Antalya, Turkey, 2012
14. "Merging Habitus into Safety Risk Management." Presented at IEEE international Conference on Industrial Engineering and Engineering Management, Bangkok, Thailand, 2012
15. "Managing Electrical Hazards through VR and Cloud Technology in the US Construction." Presented at the European Conference of Product and Process Modeling in the Building Industry, Reykjavik, Iceland, 2012
16. "Using Virtual Environments to Support Electrical Safety Awareness in Construction." Co-presented with J. Lucas at Winter Simulation Conference, Austin, TX, 2009

## **ACADEMIC SERVICES:**

### **Committees**

Review Panel member, National Science Foundation (NSF), 2016-  
Academic committee member, Construction Industry Institute (CII), 2015-  
Scientific committee member, ASCE CRC, 2018  
Scientific committee member, CIB W78, CONVR, IGLC, 2017  
Scientific committee member, ASCE IWCCE, 2017  
Scientific committee member, ASCE ICSDEC, 2016  
Scientific committee member, IEEE IEEM, 2015  
Organizing committee member, CIB W78, 2010

### **Journal Reviewer**

Accident Analysis and Prevention – Elsevier  
Automation in Construction - Elsevier  
Canadian Journal of Civil Engineering - NRC  
Construction Management and Economics - Taylor & Francis  
Engineering, Construction and Architectural Management - Emerald  
International Journal of Construction Education and Research – Taylor & Francis

International Journal of Construction Management - Taylor & Francis  
International Journal of Injury Control and Safety Promotion - Taylor & Francis  
Journal of Architectural Engineering - ASCE  
Journal of Civil Engineering and Management - Taylor & Francis  
Journal of Cleaner Production - Elsevier  
Journal of Construction Engineering and Management - ASCE  
Journal of Management in Engineering - ASCE  
Journal of Habitat International – Elsevier  
Journal of Professional Issues in Engineering Education and Practice - ASCE  
Safety Science – Elsevier  
Sustainability - MDPI  
Renewable & Sustainable Energy Reviews – Elsevier

**Conference Reviewer**

CIB W78, CONVR, IGLC, 2017  
ASCE Construction Research Congress (CRC), 2016, 2018  
ASCE International Workshop on Computing in Civil Engineering (IWCCE), 2017  
ASCE International Conf. on Sustainable Design, Engr. and Constr. (ICSDEC), 2016  
ASCE International Structural Engineering and Construction Conf. (ISEC), 2017  
ASEE Annual Conference, 2016  
ASC Annual Conference, 2015  
IEEE IEEM Annual Conference, 2015  
West Africa Built Environment Research Conference, 2013

**PROFESSIONAL AFFILIATIONS:**

American Society of Civil Engineers (ASCE)  
American Society of Engineering Education (ASEE)  
U.S. Green Building Council (USGBC)  
Construction Management Association of America (CMAA)  
International Council for Building (CIB)

- Updated by 04/27/2017