

Jong Bum Kim, Ph.D.

Assistant Professor
Department of Architectural Studies
College of Human Environmental Sciences
University of Missouri

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EDUCATION

- Ph.D. **Texas A&M University**, College Station, TX, 2014.
Doctor of Philosophy in Architecture
Dissertation: "Parametric Urban Regulation Models to Predict Development Performances"
Advisor: Dr. Mark J. Clayton
Committee Members: Prof. Geoffrey J. Booth, Dr. Valerian Miranda, and Dr. Wei Yan
- MS **The University of Texas at Austin**, Austin, TX, 2008.
Master of Science in Urban Design
Master thesis project: "South Dallas Revitalization"
Committee: Prof. Dean J. Almy (Chair) and Dr. Simon Atkinson
- MS **Yonsei University**, Seoul, Korea, 2000.
Master of Science in Architectural Engineering
Master thesis: "A Study on the Material Color Coding of the Office Building"
Committee: Drs. Kyounghei Lee (Chair), Sungwoo Kim, Youngki Park, Sangho Lee,
- BA **Yonsei University**, Seoul, Korea, 1998.
Bachelor of Science in Architectural Engineering

TEACHING EXPERIENCE

- 2017 **Assistant Professor.** University of Missouri, Columbia, MO.
- 2016~2017 **Lecturer.** Texas A&M University, College Station, TX.
Teach the sophomore design studio ARCH 205.
- 2014 **Instructor.** Texas A&M University, College Station, TX.
Teach the Design Communication course ENDS 115.
- 2010-2013 **Voluntary Teaching Assistant.** Texas A&M University, College Station, TX.
Review students' design, teach design software, and create studio portfolios in Dr. Clayton's undergraduate studio ARCH 205 (2010 Spring, 2010 Fall, 2011 Fall, 2012 Spring, and 2013 Fall).
- 1999 **Teaching Assistant.** Yonsei University, Seoul, Korea.
Review students' design and teach design software in the undergraduate design studio.

RESEARCH EXPERIENCE

- 2015 **Postdoctoral Research Associate.** Texas A&M University, College Station, TX.
Research projects of Unreal Projects: Using immersive visualization to learn about distant and historical locales (Supervisor: Dr. Stephen Caffey).
- 2013-2014 **Research Assistant.** Texas A&M University, College Station, TX.
Research projects of the Quadruple Net Value Analysis using Building Information Modeling and Immersive Visualization Project (Supervisor: Dr. Mark J. Clayton).
- 2010-2013 **Research Assistant.** Texas A&M University, College Station, TX.
Research projects of NSF 0967446, Physical Building Information Modeling for Solar Building Design and Simulation (Supervisor: Dr. Wei Yan).
- 2010-2011 **Voluntary Research Assistant.** Texas A&M University, College Station, TX.
Research projects of ASHRAE RP-1468, Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing (Supervisor: Dr. Mark J. Clayton).
- 2007 **Research Assistant.** University of Texas at Austin, Austin, TX.
Curate the Dallas Urban Laboratory Exhibition, "Across the divide" in AIA Dallas, October 16 2007.
- 1998-1999 **Research Assistant.** Yonsei University, Seoul, Korea.
Inchon International Airport Energy Performance Analysis.

INVITED LECTURESHIPS

- 2015 Palladio in BIM: parametric BIM modeling of Villa Rotunda for architectural history education, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2015 Plantation house modeling in parametric BIM, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2015 Computational real estate development with BIM and immersive visualization, Texas A&M University, College Station, TX. Undergraduate course of URPN 330
- 2014 Parametric BIM for economic developments, Texas A&M University, College Station, TX. Undergraduate course of URPN 330
- 2014 Parametric BIM for economic developments, Texas A&M University, College Station, TX. Graduate course of LDEV 667
- 2014 Architectural drawings and graphics, Texas A&M University, College Station, TX. Undergraduate studio of ENDS 115
- 2013 Portfolio design and publication, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2013 Architectural drawings and graphics, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205

- 2013 Data analysis in urban design, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2012 Portfolio design and publication, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2011 Portfolio design and graphics, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2010 Portfolio design and publication, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205

PROFESSIONAL EXPERIENCE

- Practiced schematic design (SD), design development (DD), construction document (CD), and construction administration (CA) approximately eight years in the United States and Korea.

2007-2008 **FTC Architects**, Georgetown, TX.
As a chief designer, designed site plans, floor plans, and elevations in the SD and the DD phase for two projects. Designed floor plans and elevations for interior layout in the CD and the CA phases.

Completed Projects:

2007. TAMIRO Plaza, Georgetown, TX. (Mixed-use, 130,000 sq.ft.)
2008. VINA Plaza, Austin, TX. (Retail, 220,000 sq.ft.)

Proposed Projects:

2008. TAMIRO Plaza II, Georgetown, TX. (Mixed-use)

2000-2006 **Mooyoung Architect & Engineers**, Seoul, Korea.
As a project manager, carried out many international design competitions and turnkey-based projects for public housings, high-rise mixed use, retails, and office buildings. Led the building permit process for three residential developments and managed the Construction Documentation (CD) and Contract Administration (CA) phases.

Completed Projects:

2006. Sewoon District #4 Urban Redevelopment, Seoul, Korea. (Mixed-use, 25,500 sq.ft.)
2005. Gao Housing, Daejeon, Korea. (Residential, 650 units)
2003. Simone Head Office, Uiwang, Korea. (Office, 74,200 sq.ft.)
2003. Dongbak Miraedo Housing, Youngin, Korea. (Residential, 1174 units)
2002. Jangwal District Public Housing, Seoul, Korea. (Residential, 230 units)

Winning Design Competition:

2004. Sewoon District #4 Urban Redevelopment, Seoul, Korea. (Mixed-use, 25,500 sq.ft.)
2003. Central District Development, Hwasung, Korea. (Mixed-use, 1,033,000 sq.ft.)
2001. World Meridian Housing, Suwon, Korea. (Residential, 2,063 units)
2000. New Urban Master Plan, Hwaseong, Korea. (Mixed-use, 9,479,000 sq.ft.)
2000. Daelim Acrovile High-rise Residence, Seoul, Korea. (Mixed-use, 365,000 sq.ft.)

Schematic Design:

2004. Van Tri Master Plan, Vietnam

2003. Saidong Housing Complex Master Plan, Vietnam.

2002. Youngsan Urban Revitalization Project Master Plan, Korea.

PEER-REVIEWED JOURNAL PUBLICATIONS

Kim, J. B., Jeong, W., Clayton, M. J., Haberl, J. S., and Yan, W. (2015). Developing a Physical BIM Library for Building Thermal Energy Simulation. *Automation in Construction*, vol. 50, P.16-28, <http://dx.doi.org/10.1016/j.autcon.2014.10.011>.

Jeong, W., **Kim, J. B.**, Clayton, M. J., Haberl, J. S., and Yan, W. (2015). A Framework to Integrate Object-Oriented Physical Modelling with Building Information Modelling for Building Thermal Simulation. *Journal of Building Performance Simulation*, <http://dx.doi.org/10.1080/19401493.2014.993709>.

Kota, S., Farias, F., Jeong, W., **Kim, J. B.**, Bermudez Alcocer, J., Clayton, M. J., Yan, W., and Haberl, J. S. (2015). Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing (RP-1468) Part-I: Guidelines for Generating Thermal Model Input Files, *ASHRAE Transaction* (Accepted)

Farias, F., Kota, S., Jeong, W., **Kim, J. B.**, Bermudez Alcocer, J., Haberl, J. S., Clayton, M. J., and Yan, W. (2015). Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing (RP-1468) Part-II: Test Cases and Analysis, *ASHRAE Transactions* (Accepted)

Jeong, W., **Kim, J. B.**, Clayton, M. J., Haberl, J. S., and Yan, W. (2014). Translating Building Information Modeling to Building Energy Modeling Using Model View Definition. *The Scientific World Journal*, vol. 2014, Article ID 638276, 21 pages, <http://dx.doi.org/10.1155/2014/638276>.

PEER-REVIEWED JOURNAL PUBLICATIONS (UNDER REVIEW)

Kim, J. B. and Clayton, M. J. (2016). Parameterization of urban design regulations in Building Information Modeling: A case study of the United States Zoning Codes. Submitted to *Journal of Sustainable Cities and Society*. (1st round review)

Zarrinmehr, S., Wu, Ch., Rahmani Asl, M., **Kim, J.B.**, Miranda, V., Booth, G., and Clayton, M. J. (2016). An Automated Framework of Creating Parametric BIM from GIS Data to Support Design Decisions. Submitted to *Journal of Computing in Civil Engineering*. (2nd round review)

CONFERENCE PROCEEDINGS

Clayton, M. J., Booth, G., **Kim, J. B.**, and Zarrinmehr, S. (2014). The fusion of BIM and quadruple net value analysis for real estate development feasibility assessment. In *Fusion, Proceedings of the 32nd International Conference on Education and research in Computer Aided Architectural Design in Europe (eCAADe)*, 10-12 September, Newcastle Upon Tyne, UK.

Booth, G., Clayton, M. J., and **Kim, J. B.** (2013). A framework for designing sustainable real estate developments using Quadruple Net Value Analysis and Building Information Modelling. The proceedings of CIB World Building Congress 2013 Conference, 05-09 May, Brisbane, Australia.

Clayton, M. J., Booth, G., **Kim, J. B.**, and Zarrinmehr, S. (2013). Quadruple Net Value Analysis using Building Information Modeling and Immersive Visualization. ENHSA Conference, Napoli 3-5 October 2013. Napoli, Italy.

Jeong W., **Kim, J. B.**, Clayton, M. J., Haberl, J. S., and Yan, W. (2013). Visualization of Building Energy Performance in Building Information Models. In Proceeding of the ACADIA 2013 International Conference, October 21-23, Cambridge, Ontario, Canada.

Kim, J. B., Clayton, M. J., and Yan, W. (2013). Parameterize urban design codes with BIM and Object-Oriented Programming. Open Systems. The Proceedings of the 18th International Conference of the Association of Computer-Aided Architectural Design Research in Asia (CAADRIA) 2013, Singapore 15-18 May 2013, pp. 33-42.

Yan, W., Clayton, M. J., Haberl, J. S., Jeong, W., **Kim, J. B.**, Kota, S., Bermudez Alcocer, J., and Dixit, M. (2013). Interfacing BIM with Building Thermal and Daylighting Modeling. 13th International Conference of the International Building Performance Simulation Association (IBPSA), August 25-28, 2013. Chambéry, France.

Kim, J. B., Clayton, M. J., and Yan, W. (2011). Parametric Form-Based Codes: Incorporation of land-use regulations and Object-Oriented Parametric Modeling of BIM. In Proceeding of the ACADIA 2011 Regional Conference, March 10-12, Nebraska.

Kim, J. B. and Clayton, M. J. (2010). Support Form-based Codes with Building Information Modeling – The Parametric Urban Model Case Study. In Proceeding of the 30th ACADIA 2010 International Conference, New York.

TECHNICAL REPORTS

Clayton, M. J., Haberl, J., Yan, W., Kota, S., Farías, F., Jeong, W., **Kim, J. B.**, and Bermudez Alcocer, J. (2013). Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing, RP-1468, ASHRAE.

Yan, W., Haberl, J., Clayton, M. J., Jeong, W., **Kim, J. B.**, Kota, S., Luis. J. B. A., Dixit, M. (2012). Physical Building Information Modeling for Solar Building Design and Simulation – Annual Report 2012, NSF 0967446.

Yan, W., Haberl, J., Clayton, M. J., Jeong, W., **Kim, J. B.**, Kota, S., Luis. J. B. A., Dixit, M. (2011). Physical Building Information Modeling for Solar Building Design and Simulation – Annual Report 2011, NSF 0967446.

Yan, W., Haberl, J., Clayton, M. J., Jeong, W., **Kim, J. B.**, Kota, S., Luis. J. B. A., Dixit, M. (2010). Physical Building Information Modeling for Solar Building Design and Simulation – Annual Report 2010, NSF 0967446.

A study on the improvement of intelligent building indoor air quality, Korea Heavy Industries & Construction, Co. Ltd. (1999), Project report, Korea.

Incheon International Airport: Great Hall HVAC-simulation, Incheon International Airport Corporation (1999), Project report, Korea.

OTHER PUBLICATIONS

Real Projects (2012). Student works of an Affordable Housing. Texas A&M University, College Station, TX.

Studio portfolio (2010). Passenger Depot and Housing, Texas A&M University, College Station, TX.

Studio portfolio (2010). Affordable Housing, Texas A&M University, College Station, TX.

Michael Neuman (ed.), (2010). **Hillsborough County, Florida Comprehensive Plan Sustainability Audit**, 2010, Department of Landscape Architecture and Urban Planning, Texas A&M University, College Station, TX.

PRESENTATIONS AND EXHIBITIONS

- 2015 BIM-based real estate development software, Caldwell Companies, Houston, TX.
- 2015 Parametric urban regulation models to predict development performances, Autodesk seminar, Texas A&M University, College Station, TX.
- 2014 Undergraduate Studio Design Exhibition, Texas A&M University, College Station, TX.
- 2014 Quadruple Net Value Analysis System, BIMSIM talk seminar, Texas A&M University, College Station, TX.
- 2014 Quadruple Net Value Analysis System, A presentation with Bill Peel, Texas A&M University, College Station, TX.
- 2013 Parameterize Urban Design Codes with BIM and Object-Oriented Programming, Fiatch Technology Conference & Showcase, 25-27 March 2013, San Antonio, Texas
- 2013 Parameterize Urban Design Regulation System, A meeting with Midway, Houston, TX.
- 2013 Parameterize Urban Design Codes with BIM and Object-Oriented Programming, College BIM Seminar, Texas A&M University, College Station, TX.
- 2013 Real Projects Exhibition, Texas A&M University, College Station, TX.
- 2010 Student Research Week, Texas A&M University, College Station, TX.
- 2009 Student Research Week, Texas A&M University, College Station, TX.
- 2007 The Dallas Urban Laboratory Exhibition, October 16, AIA Dallas, TX.

HONORS

- 2011 Robert L. and Helen Wingler Endowed Scholars Fund, Texas A&M University, College Station, TX.

- 2010 Carol J. and Jason W. Beal '77 Endowed Scholarship, Texas A&M University, College Station, TX.
- 2007 ULI design competition, 2nd prize at University of Texas at Austin, Austin, TX.
- 2007 Excellence in Design, University of Texas at Austin, Austin, TX.
- 2007 Jorge Luis Divino Centennial Scholarship, University of Texas at Austin, Austin, TX.

SERVICE AND AFFILIATIONS

- 2015-Present Reviewer, Journal of Automation in Construction, Elsevier
- 2014-Present Member, Computer-Aided Architectural Design and Research in Asia (CAADRIA).
- 2010-Present Member, Association for Computer Aided Design in Architecture (ACADIA).
- 2008-Present Researcher, BIMSIM Research Group, Texas A&M University.
- 1998-1999 Member, American Society of Heating and Air-Conditioning Engineers (ASHRAE).
- 1998 Licensed Engineer Architecture in Korea (98202010689B).

SKILLS

- An expertise in architectural graphic (15 years) and portfolio design tools (15 years), parametric modeling and BIM (6 years), and building energy simulation (10 years). An expertise in photography and digital imaging.

BIM and parametric modeling: Revit, Dynamo, Rhino, Grasshopper

Architectural design: AutoCAD, SketchUP

Graphics and imaging: Photoshop, Illustrator, InDesign, Lightroom

Rendering: Maxwell, 3D studio max

Computer programming: C#, Python, Modelica

Building energy simulation: EnergyPlus, DOE, Ecotect, Radiance, DAYSIM

Others: Navisworks, ArcGIS, SPSS, VISIO