

HUGO A. SHEWARD
Curriculum Vitae
September 4, 2015

Personal Information

Assistant Professor
Architecture
University of Kansas
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Lawrence, KS 66045

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Biography

Hugo Sheward is a professional architect with three major degrees in architecture. A design computation Ph.D. candidate at Georgia Institute of Technology, he has worked in the development of design tools and software specification for the United States General Services Administration and for the implementation of BIM tools for the purpose of laboratory design. His current work focuses in the development of automation of ventilation systems performance estimation for early stages of laboratory design.

His research interest concentrates in the development of Building Information Modeling (BIM) technologies. Mr. Sheward is particularly interested in the development of design performance evaluation tools for early stages of design.

Education

Ph.D., Design Computing, 2015
Georgia Institute of Technology, Atlanta, GA

M.Arch, Architecture, 2005
University Of Southern California, Los Angeles, CA

Professional Architect degree, Architecture, 2002
Universidad Maritima de Chile, Vina del Mar, Chile

B.Arch, Architecture, 1999
Universidad Maritima de Chile, Vina del Mar, Chile

Licensures, Certifications, and Professional Training

Licensed Architecture, 2002 Chile

Advertising, Fundacion Duoc Chile, Vina del Mar, Chile, 1988 - 1990

Employment History

Academic

University of Kansas
Assistant Professor, August 2014 - Present

Georgia Institute of Technology
Graduate Teaching Assistant, School of Architecture, Fall 2006 - Summer 2015
Instructor, class curriculum developer, School of Building Construction, 2011 - 2012
Research Assistant, Prof Charles M Eastman, 2007 - 2012
Graduate Mechanical engineer. Prof. Ruchi Choudary, School of Architecture, Fall 2007 -
Summer 2007
Georgia Tech Solar Decathlon entry. in charge of design and implementation of Photovoltaic
panels kinetics systems.

University of Missouri
Architectural Studies Instructor, College of Human Environmental Sciences, 2013

Universidad de las Americas, School of Architecture
Substitute Instructor, Contemporary Architecture Theory, March 2006 - July 2006

University of Southern California
Graduate Research Scholar, Dean Robert Timme, School of Architecture, Fall 2004
Reconstruction project of: Franck Lloyd Wright Freeman House.

Universidad Maritima De Chile, School of Architecture
Teaching Assistant. Prof Pedro Eizaguirre; Descriptive Geometrics, 1997 - 2004

Professional

Cristian Alcota architecture
Construction site manager for small size retail store, 2000 - 2001
Associate designer medium for medium size housing and health care facilities, 2000 - 2001

Quiroz & Puelma Architecture
1998 - 1999
Part of a group participating on a international competition in design. Quinta Vergara
Theater, public competition; design of a musical theater and all the annex installations.

Algeciras Realty Company
Modeling artist, 1994 - 1997
In charge of the production of real estate exhibit quality models, ranging from supermarkets,
to shopping centers models

Teaching Key Words

BIM; Design; Computation; CAD; Parametric Modeling

Research/Scholarly Work

Publications

Reviewed/Refereed

Journal Articles

Lee, J. K., Lee, J., Jeong, Y., Sheward, H., Sanguinetti, P., Abdelmohsen, S., & Eastman, C. M. (2012). Development of space database for automated building design review systems. *Automation in Construction*, 24, 203-212.

Sanguinetti, P., Abdelmohsen, S., Lee, J. M., Lee, J. K., Sheward, H., & Eastman, C. M. (2012). General system architecture for BIM: An integrated approach for design and analysis. *Advanced Engineering Informatics*.

Conference Proceedings

Sheward, H., & Eastman, C. (2011). Preliminary Concept Design tools for laboratory buildings, automated design optimization and assessment embedded in Building Information Modeling (BIM) tools. In P. Leclercq, A. Heylighen, & G. Martin (Eds.), *Proceedings of the 14th International conference on Computer Aided Architectural Design*. Les Éditions de l'Université de Liège. ISBN: 978-2-8745-6142-9

Swarts, M., & Sheward, H. (2009). Using multi-level virtual environments as a medium for conducting design review through a shared IFC dataset. In T. Tidafi & T. Dorta (Eds.), *CAAD Futures 2009; Proceedings of the 13th International CAAD Futures Conference*. Les Presses de l'Université de Montréal, Montréal. ISBN: 978-2-7606-2177-0

Sheward, H., & Do, E. L. (2007). Comparing Notes, analyzing teachers' and students' perceived concept importance based on highlighting architecture study documents. In S. Poggenpohl (Ed.), *IASDR07 Proceedings, 12-15 Nov*. Hong Kong: The Hong Kong Polytechnic University. The International Association of Societies of Design Research (IASDR) 07.

Non-Reviewed/RefereedBooks

Eastman, C. (2008). *BIM handbook: A guide to building information modeling for owners, managers, architects, engineers, contractors, and fabricators*. Hoboken, NJ: Wiley. (Invited)

Kensek, K., & Noble, D. (2014). *Building information modeling: BIM in current and future practice*. Hoboken, NJ: Wiley. (Invited)

Magazine Articles

Eastman, C. (2009). Automated assessment of early concept designs. *Architectural Design*, 79(2), 52-57. (Invited)

Technical Reports

Sheward, H. (2011). *BuildingSmart MVD; Architectural design to Circulation/Security Analysis, defines the Model View Definition to support process defined data exchanges from BIM authoring applications to Industry Foundation Classes 2x3 (IFC2x3) for the purpose of GSA Final Concept Design Circulation and Security Validation*.
<http://www.blis-project.org/IAI-MVD/>

Sheward, H. (2011). *BuildingSmart MVD; Early Concept Design to Analysis, defines the Model View Definition to support process defined data exchanges from BIM authoring applications to Industry Foundation Classes 2x3 (IFC2x3) for the purpose of GSA Preliminary Concept Design Assessment*. <http://www.blis-project.org/IAI-MVD/>

Sheward, H. (2010). *Circulation and Security Validation, contain a compendium of best practices and modeling guide lines required to comply with the modeling requirement set forth by the GSA automated circulation and security checking (GSA BIM)*. <http://www.gsa.gov/portal/content/105075>

Sheward, H. (2007). *Guide for Preliminary Concept Design Review, Circulation and Security Validation, contain a compendium of best practices and modeling guide lines required to comply with the modeling requirement set forth by the GSA Preliminary Concept Design review process (GSA BIM: Guide series 006)*. <http://www.gsa.gov/portal/content/105075>

Presentations/Lectures

Chang, J., Criss, S., Sanguinetti, P., & Sheward, H. (2015, August 20). *Diagramming, Scaffolding, and Transforming the Architecture Curriculum*. KU Teaching Summit: Exploring the Spectrum of Engaged Learning, KU Lawrence. A new model is presented for the sequence of courses that supports the curricular core. The first course in the sequence is restructured to be hybrid, flipped, and collaborative. A new course is created to end the sequence. Examples of student work are shared, with emphasis on learning through visualization techniques, diagramming, and modeling. Lessons learned and next steps are discussed.

Sheward, H. (2015, March 30). *Building Information Modeling (BIM) for Engineers*. The University of Kansas Department of Civil, Environmental and Architectural Engineering: Professional Development Series

Spring 2015, Burns & McDonnell World Headquarters, This presentation will explain the importance of BIM technologies for the engineering field and how BIM impacts the building design and construction business model. We will examine how BIM is used to develop and support highly integrated design processes.

Sheward, H. (2012, October 4). *The development of the Laboratory Design Assistant*. Labs21 annual 2012; I2SL conference, Session B4, San Jose, California.

Sheward, H. (2012, May 16). *Energy Planning in Laboratories*. Third Annual GA Tech Digital Building Laboratory Industry Symposium, Atlanta, Georgia.

Sheward, H. (2011, July 8). *Preliminary Concept Design tools for laboratory buildings, automated design optimization and assessment embedded in Building Information Modeling (BIM) tools*. CAAD Futures 2011, Liège, Belgium.

Sheward, H. (2011, May 26). *Embedding expertise in design tools: Preliminary design of laboratories*. 2011 Second Annual GA Tech Digital Building Laboratory Industry Symposium, Atlanta, Georgia.

Sheward, H. (2009). *The Necessity for Semantically Rich Building Data Models*. Georgia Institute

of Technology, School of Architecture, 5th year Masters Studio class.

Sheward, H. (2009, June 19). *Using multi-level virtual environments as a medium for conducting design review through a shared IFC dataset*. CAAD Futures 2009, Montreal, Canada.

Sheward, H. (2007, November 15). *Comparing Notes, analyzing teachers' and students' perceived concept importance based on highlighting architecture study documents*. IASDR 07, Hong Kong.

Sheward, H. (2006). *Kinetics in Architecture: current developments in architectonic organisms*. Universidad de las Americas, School of Architecture, Inaugural Class.

Dissertation/Thesis Supervision

University of Kansas

Dissertation Committee Member

Aydin Tabrizi, PhD in Architecture, "LEED-Rated Educational Buildings and their Potential to become Net-Zero Energy Buildings" Status: in progress. Spring 2015 - Present

KU Courses Taught

Summer 2015

ARCH 515 87029 Building Information Modeling

ARCH 605 88048 Visualizing Natura Forces

Spring 2015

ARCH 609-58665, Comprehensive Studio

Fall 2014

ARCH 503-18879, Accelerated Design II

ARCH 515-29957, Building Information Modeling

Summary List of Courses Taught

Georgia Institute of Technology

ARCH 4420 introduction to design computation, teaching assistant to Prof. Harris Dimitropoulos
BIM for Building Construction, BC 4803 undergrad level, BC-8803 graduate level

University of Missouri (2013)

Design communication ArchSt 2230, Architectural Studio 3 ArchSt 4823, Architectural Studio 3
ArchSt 4824

ARCH 4420 introduction to design computation, teaching assistant to Prof. Harris Dimitropoulos

Service Interests (Statement)

KU School of Architecture Curriculum Committee;

School Service

Georgia Institute of Technology

Guest critic

School of Architecture, first year studio, final studio presentations. (Fall 2009)

School of Architecture, first & Second year studio, final studio presentations. (Fall 2007)

Department Service

University of Kansas

Architecture

Member (Elected)

(Fall 2015 - Present)

(August 20, 2014 - Present)

Professional Service

International

Guest critic

Universidad de Talca, School of Architecture, second and fourth year studio final studio presentations. (June 2006)

Reviewer

Automation in construction, International research journal, Elsevier. (2012 - Present)

National

Guest critic

University of Kansas, School of Architecture, fifth year studio final studio presentations.

Urban intervention in earthquake zone: Haiti. Prof. Paola Sanguinetti (December 2010)

Honors/Awards/Honor Societies

Scholarship/Research

Awarded the GSA development and implementation of automated BIM-based circulation validation to evaluate the design of Federal courthouses with respect to security and occupant movement requirements, Fiatch, CETI ;GSA BIM program, Circulation and security analysis modeling application. Automated circulation validation analyzes human movement under various spatial configurations and conditions.

Student modeling competition award, First Place. Building Simulation 2009; The competition required the development of a control model for a hybrid ventilation system, for a small building located in Glasgow (Scotland). (2009)

Other Activity or Information

Language Proficiencies

Fluent in Spanish, & English

Research

Georgia Institute of Technology

Research Assistant to Prof Charles M Eastman on the following projects:

GSA PCD building assessment. The project researched the automation of Preliminary Concept Design assessment of US Court Houses in the areas of: Circulation and Security, Space Program Review, Energy Analysis, Cost Estimation (2010-2012)

GSA automation of Courthouse design. The project researched the automation of Final Concept Design assessment of US Court Houses in the areas of: Circulation and Security (2007-2009)

GSA-FDA Laboratory design automation. The project researched the development of computational design assistances for the design of laboratory facilities (2009)

Software Skills

Expert level user:

Computer Aided Design (CAD): Autodesk Autocad R-14, 2000, Form Z v.4 to v.6.

Building Information Modeling CAD: Autodesk Revit 2012, 2013 (developer level),

Graphisoft Archicad 12, Vectorworks v8; v9; v10; v11; 2012

Parametric CAD: Dassault Systemes Catia V5., Gehry Technologies Digital Project V3.,

Bentley Generative Components.

Rendering engine: Abvent Artlantis., 3D Studio Max V5; V6; V7.

Building simulation: Autodesk Ecotech v5.20, Trane trace 700, Contam, Equest

Industry Foundation Classes building checker: Solibri SMC V5; V6, DDS CAD

4D simulation and: Autodesk Navisworks 2013, Synchron 2012

Developer level user:

Building Information Modeling CAD: Autodesk Revit 2012, 2013

Industry Foundation Classes building checker: Solibri SMC V5; V6

Programming languages: Java, C#

Programming environments: Visual studio 2010, Eclipse, Dr. Java