

Yi Chun Huang

LEED Accredited Professional
PhD (BPD) Candidate, School of Architecture
Adjunct Instructor, School of Architecture
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Summary

- Trained in architecture design. Experience in award-winning design projects.
- Research interest in building performance simulation. Experience with energy and lighting simulation projects, research, and teaching. Experience in integrating simulation with architecture curriculum.
- Expertise with building performance, performance benchmarks, BIMs, lighting and energy simulation algorithms. Recently translated China's Green Building Standard.
- Research interest in fast and effective computational design support tools. Experience with software development in Java and C++.
- Developing integrated and scalable lighting simulation tool. Recently implemented automatic LEED calculators in Java.

Academic and Professional Qualifications

PhD (Building Performance and Diagnostics)
Carnegie Mellon University, Pittsburgh, PA.

*All But Dissertation
Expected Date of Completion
Feb 2009*

Master of Architecture
National University of Singapore, Singapore.

2003

Bachelor of Arts (Architecture)
National University of Singapore, Singapore.

2000

LEED Accredited Professional
U.S Green Building Council, Washington, DC.

2008

Academic Positions

Adjunct Instructor
Carnegie Mellon University, Pittsburgh, PA.

2008

Teaching Assistant
Research Assistant
Carnegie Mellon University, Pittsburgh, PA.

2003 – 2008

2003 - 2008

Teaching Assistant
Research Assistant
National University of Singapore, Singapore.

2001 - 2003

2002 - 2003

Architecture Experience

Architecture Assistant Akitek Tenggara , Singapore.	2001 - 2002
Architecture Assistant Teh Joo Heng Architects , Singapore.	2000 - 2001
Architecture Assistant Chung Architects , Singapore.	2000
Architecture Assistant Team Five Architects , Taipei, Taiwan.	1998 - 2000
Lead Designer RVR3 Design , Singapore.	2000 - 2006

Research Projects (participated as research assistant)

(2002) I-Light 2 - Design Guide for Energy Qualitative Lighting Design in Urban Housing.
National University of Singapore, Singapore.
Conducted energy and lighting simulations. Formulated the Informational Design Guide as a quick visual aid to considering energy and lighting performance during architecture design.

(2004) Lighting simulation of 407 Craig Street.
Carnegie Mellon University, Pittsburgh, PA.
Conducted lighting simulations for LEED compliance for proposed campus building retrofit design.

(2004) Energy Modeling Tools Assessment for Early Design Phase.
Northwest Energy Efficiency Alliance, Portland, OR.
Designed methodology and experiment to review 22 and evaluate 5 energy simulation tools for early design phase. The scope of the study included user-interfaces (UI), building information modeling (BIM), approach to considering energy performance and technical capabilities of the tools.

(2005) Modeling the Performance of Energy Recovery Technology for Packaged, Rooftop HVAC Equipment.
United Technologies Research Center, East Hartford, CT.
Designed methodology and experiment setup for energy simulation modeling and evaluation of energy recovery systems.

(2005) Integrated Concurrent Design of High Efficiency Commercial Buildings.
United Technologies Research Center, East Hartford, CT.
Literature review of building performance and high performance commercial buildings. Conducted lighting simulation as part of integrated design for a live quick service restaurant project. Formulated scope and methodology for development of integrated design support tool. Developed BIM xml-based schema. Implemented lighting simulation tool prototype in Java.

(2006) Impact of Shading Control Strategies on Heating and Cooling Loads of a "Typical" Office

Building in Different Climatic Contexts in the USA.

Somfy SAS, France.

Designed methodology and conducted energy simulation to assess the impact of interior window shading products and control strategies. Formulated heuristic-based algorithm to drastically reduce the number of simulation runs required.

(2008) Extension to Phipps Conservatory.

Heinz Foundation, Pittsburgh.

Provided green design technical assistance to design team.

(2008) Double Hundred Project.

Ministry of Construction, China.

The project objective was to appraise high performance buildings in China, and to showcase the top 10 energy-saving buildings, and the top 10 green buildings. Participated in the review of appraising methodologies.

(2008) Translation of Green Building Standard Technical Reference.

Ministry of Construction, China.

Translated China's Green Building Standard Technical Reference.

(2008) Sustainable Building Information Modeling.

Autodesk, Waltham, MA.

Reviewed development of lighting and energy simulation tools. Formulated strategies and benchmarks for development of new simulation features for CAD system.

(2008) Review of (China) Design Guide for Green School Buildings in Earthquake Zones.

Ministry of Construction, China.

Reviewed and made recommendations to lighting section in new design guide.

Peer-Reviewed Publications

Wittkopf, Stephen K. and Yi Chun Huang. 2003. **Web-based computational design support tools - Use of lighting and energy performance simulation and web-based visualization for energy integrated architectural design**. Proceedings of the 8th International Conference on Computer Aided Architectural Design in Asia (CAADRIA). (Rangsit, Thailand, 2003), pp. 307-322.

Lam, Khee Poh and Yi Chun Huang. 2004. **Lighting Simulation in Architectural Design**. Proceedings of Building Performance Congress 2004 (IEECB'04) (Frankfurt, Germany, 19-22 April 2004).

Lam, Khee Poh, Stephen R. Lee, Gregory M. Dobbs, Chaoqin Zhai and Yi Chun Huang. 2005. **Simulation of the Effect of an Energy Recovery Ventilator on Indoor Thermal Conditions and System Performance**. Proceedings of Building Simulation 2005 (Montreal, Canada, 15-18 August 2005), pp.587-602.

Huang, Yi Chun, Chaoqin Zhai and Khee Poh Lam. 2007. **Heuristic Use of Energy Simulations in Building Design**. Proceedings of Building Simulation 2007 (Beijing, China, 3-6 September 2007), pp.1103-1108.

Dong, B, Khee Poh Lam, Yi Chun Huang and Gregory M. Dobbs, **A comparative study of the IFC and gbXML informational infrastructure for data exchange in computational design support environments**. Proceedings of Building Simulation 2007 (Beijing, China, 3-6 September 2007).

Huang, Yi Chun and Khee Poh Lam. 2008. **Automatic Calculation of Lighting Regulations**. Proceedings of First International Conference on Building Energy and Environment (Dalian, China, 13-16 July 2008).

Huang, Yi Chun, Khee Poh Lam and Gregory M. Dobbs. 2008. **Development of a Lighting Simulation Tool for Integrated Building Design**. Proceedings of First International Conference on Building Energy and Environment (Dalian, China, 13-16 July 2008).

Lam, Khee Poh, Yi Chun Huang and Gregory M. Dobbs. 2008. **A Scalable Lighting Simulation Tool for Integrated Building Design**. Simbuild 2008 (San Francisco, 29-31 July 2008).

Other Publications

Huang, Yi Chun, Khee Poh Lam and Gregory M. Dobbs. 2008. **Development of a Lighting Simulation Tool for Integrated Building Design**. Featured Article of IBPSA News, Vol.18, No. 2.

Lam, Khee Poh, Yi Chun Huang and Chaoqin Zhai. 2005. **Evaluation of Energy Modeling Tools for Early Conceptual Design**. Paper presented at Greenbuild 2005 (Atlanta, Georgia, 9-11 November 2005).

Huang, Yi Chun. 2003. **Use of Computational Tools in Architecture Design and Industry**. M.Arch Dissertation, National University of Singapore.

Huang, Yi Chun. 2003. **Re-Thinking the City and Infrastructure**. M.Arch Thesis, National University of Singapore.

Huang, Yi Chun, W.P Goh, C.H. Tan, K.L. Choy, B.H. Ler, Y.S. Lye, Cheryl Heng, Y.C. Tan. 1999. **Ubin, Sustaining the Rural Experience**. 45-page environmental conservation report presented to National Parks, Minister for the Environment and several academic institutions.

Featured Architectural Works

Teh Joo Heng Architects. 2006. **No. 63 & 65 Emerald Hill Residences**. Project published in Singapore Architect #231 Feb 2006. Also awarded URA Architectural Heritage Award in 2000.

Akitek Tenggara. 2005. **Saigon House**. Project published in Singapore Architect #225 Feb 2005.

Teh Joo Heng Architects. 2003. **House at Bin Tong Park**. Project published in Singapore Architect #218 Feb 2005.

Teh Joo Heng Architects. 2000. **House at Bin Tong Park**. Project published in 20 Under 45 (URA:Singapore) pp.139-143.

Edmund, Waller, et. al. 1999 **"Last Chinese Village in Singapore"** exhibition.

Architectural Competitions

Huang, Yi Chun. 2004. Anderson Graduate Design Award, Carnegie Mellon University.

Tsuto Sakamoto et. al. 2003 Designing the Highline, NY. Jury Selection.

Teh Joo Heng Architects. 2001. NTUC Building, Singapore. 2nd runner up.

Huang, Yi Chun et. al. 1999. Sony Environmental Conservation Prize.

Huang, Yi Chun. 1998. NParks Bishan Park Design Competition, Singapore. 2nd runner up.

Team Five Architects. 1998. Extension to Lin-Kuo High School, Taiwan. 1st prize.

Team Five Architects. 1998. Extension to Chung-Hsing University, Taiwan. 1st prize.

Classes Taught

Carnegie Mellon University (As faculty)

Fall 2008 (48410) Acoustics and Lighting

Carnegie Mellon University (As teaching assistant)

Spring 2008 (48410) Acoustics and Lighting

Fall 2006 (48410) Acoustics and Lighting

Summer 2006 (48505) Summer Study Abroad - Design Studio in Hong Kong, China

Fall 2005 (48410) Acoustics and Lighting

Spring 2005 (48405) Architectural Design Studio (Gates Center, Carnegie Mellon University)

Fall 2004 (48410) Acoustics and Lighting

Spring 2004 (48405) Architectural Design Studio (Labs 21 Design Competition)

National University of Singapore (As teaching assistant)

Spring 2002 (AR1721) Environmental Control I

Fall 2002 (AR3221) Topics in Architectural History and Theory: Contemporary Japanese Architecture

Spring 2001 (AR1721) Environmental Control I

Departmental Activities

Carnegie Mellon University

2004 – 2007, Leader. School of Architecture Graduate Orientation Team. (4 separate appointments)

2005, Member. HBCU Summer Exchange Program

National University of Singapore

2002, Member. NUS-Princeton Exchange Program

1999, Editor. Folio 3. Yearly publication showcasing student works.

Review Committees

2006, Reviewer. Simbuild 2006.

Consultancy Services

Imbue Technology Solutions Inc., Pittsburgh, PA

Building Energy Modeling of McDonald's Restaurant, Kennywood, Pittsburgh, PA.
(July - August 2005).

Architect's Circle, Singapore

Data visualization and modeling of urban planning policies
(August 2001).

MCST 1119, Singapore

Planning of estate improvement works
(May 2001).

References

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Principal Architect
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