CURRICULUM VITAE OF

Mark J. Clayton

TITLE
William M. Peña Endowed Professor of Information Management

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PERSONAL INFORMATION
Born in New Orleans, Louisiana, USA
Citizenship: USA

EDUCATION
Doctor of Philosophy, Civil and Environmental Engineering, Stanford University, 1998, *A Virtual Product Model for Conceptual Building Design Evaluation*, Committee: Dr. Paul Teicholz (Chair), Dr. Martin Fischer (Co-Chair), Dr. Helmut Krawinkler, Dr. John Kunz
Master of Architecture, University of California, Los Angeles, 1987, *A Computerized Consultant for Climate Responsive Building Design,* Committee: Murray Milne (Chair), Dr. Robin Liggett, Jeffrey Hamer
Bachelor of Architecture, Virginia Polytechnic Institute, 1983

ACADEMIC EMPLOYMENT
2012 through present, *William M. Pena Endowed Professor of Information Management. Department of Architecture, Texas A&M University*. Provide leadership in information technology, modeling, and simulation to improve design processes and outcomes.
2008-2012, *Liz and Nelson Mitchell Professor of Residential Design, Department of Architecture, Texas A&M University*. Provide leadership in design studio education related to residential design incorporating and integrating both digital technology and hands-on experiences.
2007-2008, *Professor, Interim Head, Department of Architecture, Texas A&M University*. Departmental administration, faculty management, faculty hiring, course scheduling, strategic planning, gift development, student recruiting, publicity and publications, and management of staff.
2006-2007, *Associate Professor, Interim Head, Department of Architecture, Texas A&M University*. Departmental administration, faculty management, faculty hiring, course scheduling, strategic planning, gift development, student recruiting, publicity and publications, and management of staff.
2001-2007, *Associate Professor*, Department of Architecture, *Executive Associate Dean and Director of Graduate Studies*, College of Architecture, Texas A&M University. College operations, strategic planning, academic program management, facility management, budget planning and financial management, research administration, and general administration, and courses in computer applications and architectural design.
1995-2001, *Assistant Professor, Department of Architecture, Texas A&M University*. Courses in design studio, computer applications in architecture, facility management. Research in computer applications and facility management.

1992-1993, *Graduate Teaching Assistant*, College of Engineering, Stanford University. Courses in expert systems for engineering.

1988-1991, *Lecturer*, College of Architecture and Environmental Design, Cal Poly State University. Courses in design studio and computer applications in architecture.

1987, *Graduate Teaching Assistant*, Graduate School of Architecture and Urban Planning, UCLA. Courses in climate responsive design.

PROFESSIONAL EMPLOYMENT

2010-present. *Chief Executive Officer*, SMARTreview, Inc. The company is developing automated plan review software for the construction industry.

1984-1986, *Project Architect, Architect Michael L. Oxman & Associates, Sterling, VA*. Residential and small commercial building design and drafting, CAD operations.

1983-1984, *Intern Architect*, Leo Gordon Johnson / Associates, Washington, DC Space planning and drafting

1983, *Intern Architect*, Hammil-Walter Associates, Winston-Salem, NC Architectural drafting.

1980-1981, *Office Assistant*, KCE Structural Engineers, Washington, DC. Records, reprographics, and drafting.

MEMBERSHIPS

American Institute of Architects, Associate Member

Texas Society of Architects, Associate Member

Brazos Chapter of the TSA, Associate Member

Association for Computer Aided-Design in Architecture, Member

Association for Computing Machinery, Member

National Trust for Historic Preservation, Member

HONORS

2013, J. Thomas Regan Interdisciplinary Faculty Prize, College of Architecture, Texas A&M University

1998, Second place, Fredericksburg Winery Intercollegiate Design Charrette, faculty member of team with five graduate students from Texas A&M University

1987, Dean's Award for Best Thesis, UCLA Graduate School of Architecture and Urban Planning

1983, Student Commend Award, Virginia Society of the AIA

1983, Tau Sigma Delta Honor Society

1983, Phi Kappa Phi Honor Society

1 RESEARCH

1.1 Grants

As part of my role as mentor, I make efforts to assist graduate students in obtaining research grants. Student collaborators are highlighted in boldface.

1.1.1 External Grants

1. Wei Yan, Jeff S. Haberl, and Mark J. Clayton. National Science Foundation (2010). Physical Building Information Modeling for Solar Building Design and Simulation. $300,000.
2. Mark J. Clayton, Jeff S. Haberl, Wei Yan (2009). Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing. American Society for Heating, Refrigeration, and Air Conditioning. $170,000.
3. Mark J. Clayton, Robert E. Johnson, and Jorge Vanegas (2007). Downstream of Design: the Value of Building Information Modeling. The American Institute of Architects Large Firm Round Table. $25,000.
4. **Laepple, E**. and M. J. Clayton (2005). Content Analysis of Web-based Collaborative Design. Conducted through the CRS Center, Texas A&M University. *Sponsor: AIA Board Knowledge Committee 2004 AIA Pilot Project on University Research*. $4,000.
5. **Woo, J**. and M. J. Clayton (2005). Sharing Tacit Design Knowledge in a Distributed Design Environment. Conducted through the CRS Center, Texas A&M University. *Sponsor: AIA Board Knowledge Committee 2004 AIA Pilot Project on University Research*. $4,000.
6. Clayton, M. J. (2002). Structure and value of information in the lifecycle of buildings. *Sponsor: Facility Management Industry Advisory Council.* $8000.
7. Johnson, R. E. and M. J. Clayton (2000). A Survey of the Impact of E-Commerce on Facility Management Practice. Co-Principal Investigator with Robert E. Johnson. Conducted through the CRS Center, Texas A&M University. *Sponsor: International Facility Management Association Foundation*. $15,709.
8. Clayton, M. J. and R. E. Johnson (1998). Delivery of Facility Information. Conducted through the CRS Center, Texas A&M University. *Sponsor: USAA*. $14,231.
9. Clayton, M. J. and R. E. Johnson (1997). The Information Content of As-Built Drawings. Conducted through the CRS Center, Texas A&M University. *Sponsor: USAA*. $10,000.
10. Johnson, R. E. and M. J. Clayton (1997). Information Technology: Its Impact on Facility Management Practice. Conducted through the CRS Center, Texas A&M University. *Sponsor: Haworth Discovery Institute*. 1997. $1000.
11. Teicholz, P. and M. J. Clayton (1994). Integration of CAD and Energy Analysis Software for Building Design. Conducted through the Center for Integrated Facility Engineering, Stanford University. *Sponsor: California Institute for Energy Efficiency.* $30,000.

1.1.2 Internal Grants

1. Caffey, S., G. Campagnol, M. J. Clayton, J. Kang, G. Booth, N. Klein, K. Glowacki (2014). Unreal Projects: Using Immersive Visualization to Learn about Distant and Historical Locales. *Sponsor: Core Curriculum Technology Enhancement Grant Program*. $75,000.
2. Clayton, M. J. and Mohammad Asl (2012). An Exhibition of Creative Parametric Forms Based on Mathematical and Biometric Rules. *Sponsor: Academy for the Visual and Performing Arts*. $10,000.
3. Mark Clayton, M.; Booth, G.; Kang, J.; Bigelow, B.; Solis, J.; Rybkowski, Z.; Bienko, J.; Li, M. H.; Dvorak, B. (2012). REAL PROJECTS: An Interdisciplinary Proposal for High Impact Learning through Service to the Community. $25,000. *Sponsor: College of Architecture and office of the Provost, Texas A&M University.*
4. Clayton, M. J. (2002). Structure and value of information in the lifecycle of buildings. Conducted through the CRS Center, Texas A&M University. *Sponsor: College of Architecture Facility Management Industry Advisory Council*. $8000.

5. Clayton, M. J. (1999). The effectiveness of digital desk crits in design studio. Conducted through the Department of Architecture, Texas A&M University. *Sponsor: College of Architecture Research and Interdisciplinary Council*. $5000.
6. Clayton, M. J. (1996). Empirical Evaluation Methods for Architectural CAD Research. Conducted through the Department of Architecture, Texas A&M University. *Sponsor: Program to Enhance Scholarly and Creative Activities, Texas A&M University*. $7926.
7. Clayton, M. J. (1990). Faculty Loan Workstation for Academic and Research Support. Conducted through the Department of Architecture, Cal Poly State University. *Sponsor: Academic Computing Services*. Apple Macintosh IIsi computer (approximately $2500).
8. Clayton, M. J. Computer Graphic Database of Existing Buildings. (1989). Conducted through the Department of Architecture, Cal Poly State University. *Sponsor: State Faculty Support Grant*. $4280.

1.2 Publications

Wide ranging publications in architectural computing, design, design management, and facility management have provided me with an international reputation as a leading researcher in architecture.

Because I believe strongly in mentoring students through collaboration on publications, I have highlighted in boldface type the students who have co-authored papers with me.

1.2.1 Proceedings

1. Clayton, M. J. and Vasquez de Velasco, G. P. (eds.) (2000) ACADIA 2000: Eternity, Infinity and Virtuality in Architecture, Proceedings of the 22nd Annual Conference of the Association for Computer-Aided Design in Architecture, Washington D.C. 19-22 October 2000, 284 pages.

1.2.2 Book Chapters

1. **Wu, C**.; **Zarrinmehr, S**.; **Asl, M. R**.; Clayton, M. J. (2015). Facilitating Fire and Smoke Simulation Using Building Information Modeling. In *Computer-Aided Architectural Design The Next City - New Technologies and the Future of the Built Environment 16th International Conference*, Selected Papers from CAAD Futures 2015, São Paulo, Brazil, July 8–10, 2015. Celani. G.; Sperling, D. M.; Franco, J. M. S. (Eds.). Springer-Verlag Berlin Heidelberg. 366-382.
2. **Barekati, E.;** Clayton, M. J.; Yan, Wei (2015). A BIM-Compatible Schema for Architectural Programming Information. In *Computer-Aided Architectural Design The Next City - New Technologies and the Future of the Built Environment 16th International Conference*, Selected Papers from CAAD Futures 2015, São Paulo, Brazil, July 8–10, 2015. Celani. G.; Sperling, D. M.; Franco, J. M. S. (Eds.). Springer-Verlag Berlin Heidelberg. 311-328.
3. Clayton, M. J. (2014). Chapter 3: Modeling Architectural Meaning, *Building information modeling: BIM in current and future practice,* K. M. Kensek and D. E. Noble, eds. John Wiley & Sons, Inc., pp 29-40.
4. Rodriguez, S.; Giese, A.; Amato, N. M.; **Zarrinmehr, S.;** Clayton, Mark J.; Al-Douri, F. (2012). Environmental effect on egress simulation. In *Lecture Notes in Computer Science* (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Vol.7660, pp.7-18.
5. Clayton, M. (2000). Diagramming aesthetics: Modernism and architecture in the 21st century. In *Lecture Notes in Artificial Intelligence; 2000*, Springer-Verlag Berlin, 1889 p257-p270, 14p.

1.2.3 Journal Articles

1. **Kim, J. B.; Jeong, W.;** Clayton, M. J.; Haberl, J. S. ; Yan, W. (2015). Developing a physical BIM library for building thermal energy simulation. *Automation in construction* [0926-5805] vol: 50 pg: 16 -28

2. **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.* DOI: 10.1080/19401493.2014.993709.

3. **Jeong, W.; Kim, J. B.;** Clayton, M. J ; Haberl, J. S.; Yan, W. (2014) Translating building information modeling to building energy modeling using model view definition. *The Scientific World Journal*, 2014, Vol.2014, pp.638276.

4. **Kota, S.;** Haberl. J. S.; Clayton, M.J.; Yan, W. (2014). Building Information Modeling (BIM)-based daylighting simulation and analysis. *Energy and Buildings* 81 (2014) 391–403.

5. Clayton, M. J. (2006). Renewal Architecture, *Journal of Architectural Education*. Sep 2006, Vol. 60 Issue 1, p13-15.

6. **Woo, J. H.,** M. J. Clayton, R. E. Johnson, B. E. Flores, and C. Ellis (2004). Dynamic Knowledge Map: reusing experts' tacit knowledge in the AEC industry, *Automation in Construction*, Mar 2004, 13(2): 203-208.

7. Clayton, M. J., R. B. Warden, and T W. Parker. (2002). Virtual construction of architecture using 3D CAD and simulation, *Automation in Construction* 11 [2]: 227-235. Elsevier Science Ltd

8. **Song, Y.,** M. J. Clayton, R. E. Johnson, (2002). Anticipating reuse: documenting buildings for operations using web technology, *Automation in Construction* 11 (2): 185-197.

9. Clayton, M. J., P. Teicholz, M. Fischer and J. Kunz. (1999). Virtual components consisting of form, function and behavior. *Automation in Construction* 8: 351-367. Elsevier Science Ltd.

10. Johnson, R. E. and M. J. Clayton. (1998). The impact of information technology in design and construction: the owner's perspective, *Automation in Construction* 8:3-14. Elsevier Science Ltd.

11. Vasquez de Velasco, G. P., E. Akleman, M. J. Clayton, D. House and R. B. Warden. (1997). Living in a magazine: alternatives in the use of shared virtual reality, *STOA*. European Association for Architectural Education.

12. Clayton, M. J. (1998) Computing in Civil Engineering 1998, ACADIA Quarterly, vol. 17, no. 4, p. 7.

13. Clayton, M. J., J. C. Kunz and M. A. Fischer. (1996). Rapid conceptual design evaluation using a virtual product model, *Engineering Applications of Artificial Intelligence* 9(4):439-451. Elsevier Science Ltd.

14. Fruchter, R., M. J. Clayton, H. Krawinkler, J. C. Kunz and P. Teicholz. (1996). Interdisciplinary communication medium for collaborative conceptual building design, *Advances in Engineering Software*, 25: 89-101. Elsevier Science Ltd.

1.2.4 Conference Publications (Full-paper peer-reviewed)

All conferences produced bound publications that are widely available in scholarly libraries. Dates of conferences that I attended and at which I presented the paper are shown.

1. **Wu, C.** and Clayton, M. J. (2015) Visualizing Climate Data as a 3D Climate Torus. In *Emerging Experience in Past, Present and Future of Digital Architecture*, Proceedings of the 20th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA 2015) / Daegu 20-22 May 2015, pp. 273-281 http://cumincad.scix.net/cgi-bin/works/Show?caadria2015_013

2. **Wu, C.; Zarrinmehr, S.; Asl, M. R.;** and Clayton, M. J. (2015) Facilitating fire and smoke simulation using Building Information Modeling, The next city - New technologies and the future of the built environment [16th International Conference CAAD Futures 2015. Sao Paulo, July 8-10, 2015. Electronic Proceedings/ ISBN 978-85-85783-53-2] Sao Paulo, Brazil, July 8-10, 2015, pp. 383. http://cumincad.scix.net/cgi-bin/works/Show?cf2015_383

3. Campagnol, G.; Caffey, S.; Clayton, M.; and Booth, G. (2015). Immersive Visualization and Industrial Heritage in Texas. In *Proceedings of Industrial Heritage in XXI Century, New Challenges*. Lille, FR, 6-11 September 2015.

4. **Barekati, E**.; Clayton, M. J. and Yan, W. (2015). A BIM-compatible schema for architectural programming information. In *The next city - New technologies and the future of the built environment* [16th International Conference CAAD Futures 2015. Sao Paulo, July 8-10, 2015. Electronic Proceedings/ ISBN 978-85-85783-53-2] Sao Paulo, Brazil, July 8-10, 2015, pp. 380. http://cumincad.scix.net/cgi-bin/works/Show?cf2015_380

5. Kang, J.; Campagnol, G.; Caffey, S.; and Clayton, M. J. (2015). 4D construction simulation model of MASP. In *The next city - New technologies and the future of the built environment*. 16th International Conference CAAD Futures 2015. São Paulo, July 8-10, 2015. Electronic Proceedings. Celani. G.; Sperling, D. M.; Franco, J. M. S. (Eds.) Universidade Estadual de Campinas. 370-379.

6. Campagnol, G.; Caffey, S.; Clayton, M. J.; Kang, K.; Booth, G.; Klein, N.; Glowacki, K. (2014) Unreal Projects: Using Immersive Visualization to Learn about Distant and Historical Locales. In *12th International Conference on Urban History: Cities in Europe, Cities in the World*. European Association for Urban History (EAUH), Lisbon, Portugal, September 03-06, 2014

7. **Barekati, E**; and Clayton, MJ (2014) A universal format for architectural program of requirement - a prerequisite for adding architectural programming information to BIM data models, Thompson, Emine Mine (ed.), *Fusion - Proceedings of the 32nd eCAADe Conference - Volume 2,* Department of Architecture and Built Environment, Faculty of Engineering and Environment, Newcastle upon Tyne, England, UK, 10-12 September 2014, pp. 385-394 http://cumincad.scix.net/cgi-bin/works/Show?ecaade2014_202

8. Bunch, M.; Zarrinmehr, S.; Clayton, M. J. (2014). The Biomimicary Architecture Nexus: Experimental Golden Star System. *2nd International Conference on Biodigital Architecture & Genetics* in Barcelona, Spain. 4th - 6th June, 2014.

9. Clayton, MJ; Booth, G; **Kim, JB** and **Zarrinmehr, S.** (2014) The fusion of BIM and quadruple net value analysis for real estate development feasibility assessment, Thompson, Emine Mine (ed.), *Fusion - Proceedings of the 32nd eCAADe Conference - Volume 2*, Department of Architecture and Built Environment, Faculty of Engineering and Environment, Newcastle upon Tyne, England, UK, 10-12 September 2014, pp. 445-453 http://cumincad.scix.net/cgi-bin/works/Show?ecaade2014_206

10. **Wu, C.; Zarrinmehr, S.; Asl, M.;** Miranda, V.; Clayton, M. (2014). An attempt to automate the creation of Building Information Model and physical model from GIS data. 18th GIS/CAMA Technologies Conference, held February 24-27, 2014 in Jacksonville, Florida.

11. **Jeong, WS**; **Kim, JB**; Clayton, MJ.; Haberl, JS.; Yan, W (2013) Visualization of building energy performance in building information models, *ACADIA 13: Adaptive Architecture* [Proceedings of the 33rd Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA) ISBN 978-1-926724-22-5] Cambridge 24-26 October, 2013), pp. 87-92 http://cumincad.scix.net/cgi-bin/works/Show?acadia13_087

12. Clayton, MJ; Fudge, P; and Thompson, J. (2013) Automated Plan Review for Building Code Compliance Using BIM. EG-ICE 2013 Workshop, Vienna, Austria, June 29 through July 3, 2013.

13. **Zarrinmehr, S**; **Asl, M**; Clayton, MJ; and Yan, W. Optimizing Building Components to Minimize the Level of Danger in Panic Evacuation, EG-ICE 2013 Workshop, Vienna, Austria, June 29 through July 3, 2013.

14. **Kim, JB**; Clayton, MJ, and Yan, W. (2013). Parameterize Urban Design Codes with BIM and Object-Oriented Programming, Open Systems: Proceedings of the 18th International Conference on Computer-Aided Architectural Design Research in Asia (CAADRIA 2013) / Singapore 15-18 May 2013, pp. 33-42 http://cumincad.scix.net/cgi-bin/works/Show?caadria2013_208

15. **Yenerim, D;** and Clayton, MJ (2013). Improving Self-Help Housing in Texas Colonias Using Spatial Agents and Building Information Modeling (BIM). CIB World Congress 2013, Brisbane, Australia.

16. **S. Zarrinmehr**; S. Rodriguez; F. Al-Douri; M. Clayton; A. Giese; N. Amato (2013). Prototyping an Evidence-Based Evaluation System for Nursing Scenarios Using Agent-Based Modeling, EDRA44,

Annual Conference of The Environmental Design Research Association, May 29 - June 1, 2013, Providence, RI.

17. Booth, G.; M. J. Clayton; **J. B. Kim** (2013). A framework for designing sustainable real estate developments using Quadruple Net Value Analysis and Building Information Modelling, CIB World Congress, May 5-8, Brisbane.

18. Yan, W. ; Clayton, M. ; Haberl, J. ; **Jeong, W.** ; **Kim, J. B.** ; **Kota, S.** ; **Alcocer, J. L. B .**; Dixit, M**..** (2013). Interfacing BIM with building thermal and daylighting modeling, in *Proceedings of BS 2013: 13th Conference of the International Building Performance Simulation Association*, pp. 3521-3528.

19. Rodriguez, S.; A. Giese; N. M. Amato; **S. Zarrinmehr**; F. Al-Douri; M. Clayton (2012). Environmental Effect on Egress Simulation, In *Proc. of the 5th Intern. Conf. on Motion in Games (MIG), 2012, in Lecture Notes in Computer Science (LNCS)*, pp. to appear, Rennes, Brittany, France, Nov 2012.

20. Clayton, M. J.; **O. O. Ozener**; **E. Barekati**; **J. Haliburton** (2012). Signature architecture franchising: Improving average architecture using BIM. Proceedings of Digital Aptitudes and other openings, ACSA 100th Annual Meeting, March 1-4, 2012 in Boston, MA.

21. **Nome, C**; Clayton, M J.; Aguiar, M (2011). BIM: configurações e desdobramentos para implementação prática e ensino de arquitetura [BIM: configurations and unfoldings for implementation in practice and architectural education], SIGraDi 2011 [Proceedings of the 15th Iberoamerican Congress of Digital Graphics] Argentina - Santa Fe 16-18 November 2011, pp. 507-511 http://cumincad.scix.net/cgi-bin/works/Show?sigradi2011_234.

22. **Yenerim, D.**; Clayton, M. J. (2011). An Urban Challenge of Transforming Informal Settlements: Using BIM to Monitor the Colonias' Growth Patterns And Increasing energy Consumption. Proceedings of Fall 2011 PUARL International Conference: Generative Process, Patterns and the Urban Challenge (pp. 61-66). Portland, OR: PUARL Press.

23. **Yenerim, D.**; Clayton, M. J. (2011). Exploring the Applications of Building Information Modeling in Informal Settlements: Texas Colonias. Proceedings of 2011 ACSA Fall Conference Local Identities / Global Challenges. Houston, TX.

24. **Yenerim, D.**; Mark J. Clayton, Glen Mills (2011) Parametric Modeling of Informal Settlements, Parametricism (SPC) ACADIA Regional 2011 Conference Proceedings http://cumincad.scix.net/cgi-bin/works/Show?acadiaregional2011_026

25. **Kim, J.B.**; M. J. Clayton, W. Yan (2011) Parametric Form-Based Codes: Incorporation of land-use regulations into Building Information Models, *Parametricism (SPC) ACADIA Regional 2011 Conference Proceedings* http://cumincad.scix.net/cgi-bin/works/Show?acadiaregional2011_025.

26. **Haliburton, J.**; M. Clayton, **O. Ozener**, **F. Farias**, **W. Jeong** (2011) Parametric Modeling and BIM: Innovative Design Education for Integrated Building Practices, *Parametricism (SPC) ACADIA Regional 2011 Conference Proceedings* http://cumincad.scix.net/cgi-bin/works/Show?acadiaregional2011_028

27. **Kim, J. B.**; Clayton, M. J. (2010) Support Form-based Codes with Building Information Modeling – The Parametric Urban Model Case Study, ACADIA 10: LIFE in:formation, On Responsive Information and Variations in Architecture [Proceedings of the 30th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA) ISBN 978-1-4507-3471-4] New York 21-24 October, 2010), pp. 133-138
http://cumincad.scix.net/cgi-bin/works/Show?acadia10_133

28. Clayton, M. J.; **O, Ozan**; **Haliburton, J.**; **Farias, F.** (2010) Towards Studio 21: Experiments in Design Education Using BIM, SIGraDi 2010_Proceedings of the 14th Congress of the Iberoamerican Society of Digital Graphics, pp. Bogotá, Colombia, November 17-19, 2010, pp. 43-46
http://cumincad.scix.net/cgi-bin/works/Show?sigradi2010_43

29. **Ozener, O. O.**; **Farias, F.**; **Haliburton, J.**; Clayton, M. J. (2010) Illuminating the Design: Incorporation of natural lighting analyses in the design studio using BIM, FUTURE CITIES [28th eCAADe Conference

Proceedings / ISBN 978-0-9541183-9-6] ETH Zurich (Switzerland) 15-18 September 2010, pp.493-498
http://cumincad.scix.net/cgi-bin/works/Show?ecaade2010_056

30. **Ozener, O. O.**; **Jeong, W.**; **Haliburton, J.**; Clayton, M. J. (2010) Utilizing 4D BIM Models in the Early Stages of Design, FUTURE CITIES [28th eCAADe Conference Proceedings / ISBN 978-0-9541183-9-6] ETH Zurich (Switzerland) 15-18 September 2010, pp.89-96
http://cumincad.scix.net/cgi-bin/works/Show?ecaade2010_058

31. Clayton, M. J. (2006). Mission unaccomplished: form and behavior but no function. Smith, Ian F. C. (ed). *Intelligent computing in engineering and architecture*, Lecture notes in artificial intelligence 4200, ISSN 0302-9743.

32. Clayton, M. J. (2006) Replacing the 1950's Curriculum, *Synthetic Landscapes* [Proceedings of the 25th Annual Conference of the Association for Computer-Aided Design in Architecture] pp. 48-52.

33. Clayton, M. J. (2005) Computational design and AutoCAD: reading software as oral history, in *SIGraDi 2005 - Proceedings of the 9th Iberoamerican Congress of Digital Graphics.* Lima, Peru 21-24 November 2005, vol. 1, pp. 103-107.

34. Clayton, M. J. (2005). How I stopped worrying and learned to love AutoCAD. In *Smart Architecture, Proceedings of 2005 Annual Conference of Association for Computer Aided Design in Architecture*. 94-103. Association for Computer-Aided Design in Architecture.

35. **Al-Douri, F. A.**, Clayton, M. J. and Abrams, R. F. (2005) The Impact of 3D Digital Modeling on the 3D Design Aspects in Urban Design Plans, Digital Design, in *The Quest for New Paradigms*, *23nd eCAADe Conference Proceedings.* Lisbon (Portugal) 21-24 September 2005, pp. 331-340.

36. **Laepple, E.,** M. J. Clayton and R. E. Johnson (2005). Case Studies of Web-Based Collaborative Design: Empirical evidence for design process. In *Computer Aided Architectural Design Futures 2005* [Proceedings of the 10th International Conference on Computer Aided Architectural Design Futures] Vienna (Austria) 20–22 June 2005, pp. 455-464.

37. Clayton, M. J. and **Y. Kim** (2005). Finding evidence for design process: Web-based timesheets for architecture students. In *The Art of Architecture, the Science of Architecture, Proceedings of the ACSA 2005 Annual Conference,* R. Hejduk and H. van Oudenallen, eds., 163-171. Association of Collegiate Schools of Architecture.

38. Clayton, M. J. (2005). Relevant to the future: an agenda for research in the architecture schools. In *Proceedings of the 2005 ACSA International Conference. Association of Collegiate Schools of Architecture*. Association of Collegiate Schools of Architecture.

39. Clayton, M. J. (2004). Strategic priorities for research in the built environment. In *Computational Mechanics WCCM VI in conjunction with APCOM '04*, Sept. 5-10, 2004, Bejing, China.

40. **Woo, J. H.,** M. J. Clayton and R. E. Johnson (2004). Synchronous Chat for Knowledge Sharing in a Distributed Design Environment. In *Proceedings of the ISARC 2004*, 676-681. Jeju, South Korea.

41. Clayton, Mark J. (2003) Connecting Digital Tools, in *Connecting >> Crossroads of Digital Discourse* [Proceedings of the 2003 Annual Conference of the Association for Computer Aided Design In Architecture / ISBN 1-880250-12-8] Indianapolis (Indiana) 24-27 October 2003, p. 299.

42. **Woo, J. H**., M. J. Clayton, R. E. Johnson, and B. Flores (2003). Case Study of Tacit Knowledge Sharing in a Distributed Design Studio. In *Proceedings of ACADIA 2003*, 107-116. Indianapolis, Indiana.

43. **Woo, J. H.,** M. J. Clayton, R. E. Johnson, and B. Flores (2003). Tacit Knowledge Sharing in a Design Studio. In *Proceedings of the International Conference on Building Education and Research*, 267-277. Manchester, UK.

44. **Woo, J. H.,** M. J. Clayton, R. E. Johnson, B. Flores and C. Ellis (2002). Dynamic Knowledge Map: Reusing Experts' Tacit Knowledge in the AEC Industry. In *Thresholds - Design, Research, Education and Practice, in the Space Between the Physical and the Virtual* [Proceedings of the 2002 Annual Conference

of the Association for Computer Aided Design In Architecture], 407-411. Pomona (California) 24-27 October.

45. Clayton, M. J, **Y. Song**, **K. Han**, **K. Darapureddy**, **H. Al-Kahaweh**, and **I. Soh** (2001). Data for reflection: monitoring the use of web-based design aids. In *Reinventing the Discourse - How Digital Tools Help Bridge and Transform Research, Education and Practice in Architecture*, 142-152. Association for Computer-Aided Design in Architecture.

46. **Kang, H**., Anderson, S.D. and Clayton, M.J. (2001) Web4D: Challenges and Practices for Construction Scheduling. In *Reinventing the Discourse - How Digital Tools Help Bridge and Transform Research, Education and Practice in Architecture* [Proceedings of the Twenty First Annual Conference of the Association for Computer-Aided Design in Architecture / ISBN 1-880250-10-1] Buffalo (New York) 11-14 October 2001, pp. 132-141.

47. Clayton, M. J. (2000). Design desk crits: digital or face to face? In *SIGraDi'2000 - Construindo (n)o espacio digital (constructing the digital Space),* 41-44. Rio de Janeiro.

48. Clayton, M. J. (2000). Time for design. In CIB W96 Design management in the architectural and engineering office. Atlanta.

49. Clayton, M. J. (2000). Diagramming aesthetics: modernism and architecture in the 21st century. In *Theory and Application of Diagrams, Proceedings and Lecture Notes in Artificial Intelligence* 1889: 257-270. Springer-Verlag.

50. Clayton, M. J., and **J. Al-Qawasmi** (2000). The effectiveness of digital desk crits in design education. In *Computing in Civil and Building Engineering*, ed. R. Fruchter, F. Pena-Mora, W. M. K. Roddis, 365-372. American Society of Civil Engineers.

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ACADIA '98 Conference, ed. T. Seebohm and S. Van Wyk, 240-253. Association for Computer Aided Design in Architecture.

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1.2.5 Conference Publications (Abstract peer-reviewed)

1. **Zarrinmehr, S; Asl, M.;** Clayton, M.; and Booth, G. Topographic Representation of Pedestrian Cognition: Integrating the Impacts of Environmental Qualities to Plan Walking Paths, *Design Computing and Cognition* 12, London, June 21-25, 2014.

2. Clayton, M. J., and **Y. Kim** (2005) Web-based timesheets for architecture design students. In The Reach of Research: Proceedings of Architectural Research Centers Consortium Spring 2005 Conference.

3. **Laepple, E.,** and M. J. Clayton. (2004). Communication data analysis: Web-based project communication in interdisciplinary architecture teams (poster). Design Computation and Cognition '04, at Cambridge, MA.

4. Clayton, M. J. (2003). The Perfect Classroom: Getting the Space that you Need for Distance Education. In The Tenth Annual Distance Education Conference. College Station, TX: The Center for Distance Learning Research.

5. Clayton, M. J. (1998). Digital representations of construction for design studios. In Research in Design Education, Proceedings of ARCC/EAAE Conference, 102-110. Ed. M. Scotford, J.F. Mabardi, and R. Schneider. Heberger Center for Design Excellence, Arizona State University.

6. Johnson, R. E. and M. J. Clayton. (1997). Information technology: its impact on facility management practice, In ARCC Spring Conference. Architectural Research Centers Consortium.

7. Clayton, M. J. (1997). Design-Process Based Interoperable Software. In Proceedings of the ACSA Technology Conference. American Collegiate Schools of Architecture.

8. Fruchter, R., M. J. Clayton, H. Krawinkler, J. C. Kunz and P. Teicholz. (1993). Interdisciplinary communication medium for collaborative design. In Proceedings of CIVIL-COMP93 / AICIVIL-COMP 93 Conference. American Society of Civil Engineers, Pergamon Press.

1.2.6 Research Reports

1. M. J. Clayton, W. Yan, and J. Haberl (2013). Automating Building Thermal Model Creation: Interoperability from BIM to Energy Simulation Software, ASHRAE-RP1468.

2. W. Yan, M. J. Clayton, and J. Haberl (2013). Physical Building Information Modeling for Solar Building Design and Simulation, NSF CBET – 0967446.

3. Yan, W.; Haberl, J.; Clayton, M.; **Jeong, W.; Kim, J.; Kota, S.; Alcocer, J.; Dixit, M.** (2012) Physical Building Information Modeling for Solar Building Design and Simulation- Annual Report 2012. (Energy Systems Laboratory (http://esl.tamu.edu) Texas A&M University (http://www.tamu.edu), 2012)

4. Yan, W.; Haberl, J.; Clayton, M.; **Jeong, W.; Kim, J.; Kota, S.; Alcocer, J.; Dixit, M.** Physical Building Information Modeling for Solar Building Design and Simulation- Annual Report 2011. (Energy Systems Laboratory (http://esl.tamu.edu)Texas A&M University (http://www.tamu.edu), 2011)

5. M. J. Clayton, R. E. Johnson, J. Vanegas, **O. Ozener**, **C. Nome**, and C. Culp. (2009). Downstream of Design: the Value of Building Information Modeling. The American Institute of Architects Large Firm Round Table. CRS Center, Texas A&M University.

6. **Laepple, E.,** M. Clayton, R Johnson and S. Parshall. (2005). Content Analysis of Web-based Collaborative Design. In *2005 Report on University Research*, 104-117, American Institute of Architects. Accessible at http://www.aia.org/SiteObjects/files/Laepple_color.pdf

7. **Woo, J.** and M. J. Clayton. (2005). Sharing Tacit Design Knowledge in a Distributed Design Environment. In *2005 Report on University Research*, 46-59, American Institute of Architects. Accessible at http://www.aia.org/SiteObjects/files/Woo_color.pdf

8. Clayton, M. J., R. E. Johnson, **Y. Song**, and J**. A. Al-Qawasmi** (1998). *A Study of Information Content of As-Built Drawings for USAA*. CRS Center, Texas A&M University.

9. Clayton, M. J., R. E. Johnson, **J. A. Al-Qawasmi** and **Y. Song** (1997). *Collaborative Facility Management Using Intranet Technology*. CRS Center, Texas A&M University.

10. Johnson, R. E., and M. J. Clayton. (1997). *The Impact of Information Technology on Facility Management Practice*. CRS Center, Texas A&M University.

11. Johnson, R. E., and M. J. Clayton. (1997). Information Technology: "Best Practices" of Facility Management Organizations. CRS Center, Texas A&M University.

12. Clayton, M. J., J. C. Kunz, and M. A. Fischer. (1996). *Rapid Conceptual Design Evaluation Using a Virtual Product Model, Technical Report Number 105*. Center for integrated Facility Engineering, Stanford University, Stanford, CA.

1.2.7 Publications (Not peer reviewed)

1. Clayton, M.; Daas, M.; Jabi, W.; Luhan, G. (2013). Formative Pathways | Changing Systems of Design – From Heuristics to Applications, Pedagogies, and Processes (editorial). *International Journal of Architectural Computing*. Dec2013, Vol. 11 Issue 4, piii-viii. 6p.

2. Clayton, M. J. (2002). Taking computer aided design forward, *Intelligent Build and Design Innovations 2002*. London: Cornhill Publications.

3. Clayton, M. J. (2000). A play on sport, *Texas Architect*, May/June, 2000.

4. Johnson, R. E. and M. J. Clayton, (1999). As-Builts or Operational Documents, *The Construction Specifier*, Constructions Specifications Institute.

5. Clayton, M. J.. (1996). Object-oriented CADD: the researcher's point of view, *Managing CADD*, April. CADD Management Institute.

6. Clayton, M. J. *ARCH 250 COMPUTER APPLICATIONS Lab Assignment Workbook*,. Cal Poly State University, San Luis Obispo, California, 1990.

1.2.8 Unpublished Presentations and Workshops (Invited)

1. Thompson, J.; Clayton, M. J.; Fudge, P. (2015). BIM technology for project code compliance and expedited release of building permits – SMARTreview. 2015 International Building and Fire Codes Workshop, North Central Texas Council of Government (NCTCOG). Arlington, TX, November 5, 2015.

2. **Zarrinmehr, S.; Asl, M. R;** Clayton, M. J.; and Booth, G. (2014). Topographic Representation of Pedestrian Cognition: Integrating the Impacts of Environmental Qualities to Plan Walking Paths. Sixth International Conference on Design Computing and Cognition, London, June 22-26, 2014.

3. Clayton, MJ. (2013). Learning with BIM: Architectural Concepts Embodied in Software. BIM FUTURES 2013: the Seventh Annual BIM Symposium on Building Information Modeling: Views from the Academy and the Profession. Los Angeles, July 15 through July 16, 2013.

4. Clayton, M. J. (2013). Architectural language and BIM. Oklahoma State University Department Spring 2013 Lecture Series, Stillwater OK, March 4, 2013.

5. Clayton, M.J. (2012). Using BIM to aid diagrammatic reasoning about architectural aesthetic concepts. Fifth International Conference on Design Computing and Cognition, College Station, TX, 7-9 June, 2012.

6. Clayton, M.J. (2011). The Conceptualization, Modelling and Sustainability of Land and Property Development, students in LDEV 667, Master of Science in Land Development.

7. Haliburton, J. and M. J. Clayton. (2011). ACSA BIM Workshop: The BIM Singularity—it is farther than you think. Association for Collegiate Schools of Architecture Fall Conference, Houston. 9 October 2012.
8. Clayton, M.J. (2011). Mentoring Undergraduates in Research: A Workshop for Faculty and Postdocs. Invited to participate on a panel by Office of Honors and Undergraduate Research, at Texas A&M University, 9 September 2011.
9. Clayton, M. J. (2011). Sharing knowledge of technology through the Subversive Manifesto for Underground Technology. Department of Computer Science, University of Birmingham, March 29, 2011.
10. Clayton, M. J. (2011). Guest critic, Post-graduate design reviews, London Metropolitan University, Faculty of Architecture and Spatial Design, London, UK. March 10, 2011.
11. Clayton, M. J. (2011). Signature Architecture Franchising: Reorganizing the building industry for BIM, Research Institute in the Built Environment, University of Reading, Reading UK. February 23, 2011.
12. Clayton, M. J. (2011). Guest lecturer, Module in International Construction, MSc Project Management/MSc Construction Cost Management. University of Reading, Reading, UK. February 9, 2011.
13. Clayton, M.J., **O. Ozener**, and **C. No**me. (2009). BIM to CAFM: An Investigation of Adapting a Building Information Model to a Legacy Computer Aided Facility Management System. *CIB W078 Managing IT in Construction*, Istanbul, October 2, 2009.
14. Clayton, M. J., B. Yazdani, J. Vanegas, and C. Culp. (2008-2009). Presenter, Energy efficient communities: comprehensive community-based energy management planning. Sponsored by State Energy Conservation Office (SECO), Bryan, TX; Plano, TX; Nacogdoches, TX; Tyler, TX; Kilgore, TX; Commerce, TX; Athens, TX; Lufkin, TX; Marshall, TX; Laredo; Weslaco, TX; El Paso, TX; Beaumont, TX.
15. Clayton, M. J. (2008). Presenter, Downstream of Design: The Value of Building Information Modeling. Meeting of the American Institute of Architects Large Firm Round Table, Vail, CO. October 1-3, 2008.
16. Clayton, M. J. (2008). Presenter, A curriculum geared to the times: 2008 edition. *Oxford Conference 50 Years On: Resetting the Agenda for Architectural Education*, Oxford, UK, July 23, 2008.
17. Clayton, M. J. (2008). Architecture divided: the three option curriculum for US education. Oxford Conference 50 Years On: Resetting the Agenda for Architectural Education, Oxford, UK, July 23, 2008.
18. Vanegas, J. A. and M. J. Clayton (2008). A technology roadmap for capital projects: challenges and opportunities for architecture education. *Oxford Conference 50 Years On: Resetting the Agenda for Architectural Education*, Oxford, UK, July 22, 2008.
19. Clayton, M. J., J. A. Vanegas, R. Johnson, **O. Ozener**, and **C. Nome** (2008). Life span costs and benefits of Building Information Modeling. *Change the World: Harnessing BIM Technology and Integrated Project Delivery for Sustainable Design*, Annual Conference of the American Institute of Architects, Boston, May 13, 2008.
20. Clayton, M. J. (2004). Panelist, Setting an Academic Research Agenda for the FIATECH Capital Projects Technology Roadmap Initiative: An Interdisciplinary Charrette, FIATECH/NSF Workshop. Houston, October 13-15.
21. Clayton, M. J. (2004). Panelist, Texas Historic Courthouse Preservation Program Maintenance Advisory Board, Austin, TX, July 14.
22. Clayton, M. J. (2003). Life cycle costs, nD CAD Workshop, Salford University, Manchester, United Kingdom. January 31.
23. Clayton, M. J. (2003). Empirical evidence for design process, nD CAD Workshop, Salford University, Manchester, United Kingdom. February 1.
24. Clayton, M. J. (2002). Saturation and restlessness: architectural computing at Texas A&M University. Association of Collegiate Schools of Architecture Annual Conference, New Orleans, April 13.
25. Clayton, M. J. (2002). IT collaboration tools beyond the horizon. Six Degrees of Collaboration Symposium, American Institute of Architects, Washington DC, April 6, 2002.
26. Clayton, M. J. (2001). Judgment, process and evidence. Jordan Architects Association, Amman, Jordan, May 19, 2001.
27. Clayton, M. J. (2001). Design process, process design. Keynote address at the Conference of the Arab Society for Computer Aided Architectural Design, Irbid, Jordan, May 16, 2001.
28. Clayton, M. J., R. E. Johnson, (2001). FIT Research: Understanding the Life Cycle of Facility Information, E-ProCom Conference, Houston, USA, February 27, 2001.

29. Clayton, M. J. (2001). Information technology and information management. University of Kansas graduate program in architectural management, Kansas City, November 1, 2001.
30. Clayton, M. J., and R. E. Johnson (2000). Facility information technology: adding value for owners and operations, M. J. Clayton, AIA National Convention 2000, Philadelphia.
31. Johnson, R. E. and M. J. Clayton. (1998). Facility Management in the Information Age. Tappa '98. Texas Association of Physical Plant Administrators. College Station, TX, April 26-28.
32. Clayton, M. J., and R. E. Johnson (1997). Information technology in facility management: adoption and plans, TeamCAD: GVU/NIST Workshop on Collaborative CAD, Atlanta.
33. Clayton, M. J. (1997). Testing CAD Software Prototypes, M. J. Clayton, TeamCAD: GVU/NIST Workshop on Collaborative CAD, Atlanta.
34. Johnson, R. E. and M. J. Clayton. (1997). The impact of information technology on facility management practice, World Workplace '97, Dallas.

1.2.9 Invited exhibits

1. Exhibit of watercolors, at Polisportiva Montecchio Vesponi, Montecchio, Italy, October 17, 1999.

1.3 Mention in Popular Press

1. Students create designs for University Drive; exhibit and presentation, Interview by Monica Castro for KAGS, College Station, Television.
   The interview was broadcast in two stories on January 18 and 19, 2013. Videos can be reviewed at:
   a. http://youtu.be/f9xNcOCEttw
   b. http://youtu.be/bDD4HuucRJA
2. TA Staff, (2011). A&M students take concept to reality with digitally fabricated installation, *Texas Architect*, May/June 2011, 25.
   The article describes a plywood mesh ceiling designed, fabricated and installed by my students, Josh Canez, Lauren Hensley, and Nick Schaider for their senior design studio.

   Texas Architect is the magazine publication of the Texas Society of Architects, an organization whose membership is licensed architects in the Texas. It is widely read by members of the profession of architecture and those involved in the mission of teaching architects.

1.4 Software development

1. SMARTreview APR, 2011, 2012, 2013, 2014, 2015. This is a commercial prototype software system that performs a review of a BIM with respect to the International Building Code. SMARTreview Inc. continues with development and marketing.
2. ICC SMARTreview Fire Safety, 2012. This is commercial software available for mobile devices from the Apple App Store. It performs calculations related to compliance with the International Building Code.
3. Virtual Product Model, 1995. Research prototype of Internet-based integration of computer graphics systems with engineering analysis software.
4. Semantic Modeling Extension, 1995. Integration framework to connect Autodesk AutoCAD with DOE-2 building energy simulation system. Produced under contract to the California Institute for energy Efficiency.
5. Climate Consultant (with Alex Acenas), 1987. Software has been continuously updated and integrated by staff at UCLA and is distributed on the Web at http://www2.aud.ucla.edu/energy-design-tools/

2 TEACHING

Over seventeen years of teaching experience at Universities are a track record of proven ability. My responsibilities have been primarily to teach architectural design and computer methods to students in architecture and allied arts, within both undergraduate and graduate curricula and at both introductory and advanced levels. I have taught design studios at first year, second year, third year and fourth year levels.

At Texas A&M University, my teaching has been split among computing, design studios, and graduate research supervision.

2.1 Classroom Instruction

2.1.1 Courses Taught at Texas A&M University (1995 through present)

ENDS 103 Design foundations II Lecture. Provides orientation and survey of views about architectural education, practice, and research.
ENDS 105 Design Foundations I. Introductory freshman studio in environmental design.
ENDS 170 Computer Techniques. Introduction to computer applications relevant to architecture.
ENDS 205 Environmental Design I. Sophomore design studio.
ENDS 211 Digital Design Media III. Sophomore laboratory course in computer-aided drafting.
ENDS 211 Design Detailing. Sophomore laboratory course in materials and detailing using computer-aided drafting.
ENDS 270 Computer Techniques for Building Design and Analysis. Introduction to computer applications relevant to architecture.
ENDS 481 Seminar. Special topics in architecture theory and practice.
ENDS 485 Directed Studies. Special topics by arrangement.
ARCH 205 Architectural Design I. Sophomore design studio.
ARCH 206 Architectural Design I. Sophomore design studio.
ARCH 207 Architectural Design I. Sophomore design studio with a focus on digital technology.
ARCH 291 Research in Architectural Innovation. Preparation of undergraduates to conduct research in the Research Track.
ARCH 305 Architectural Design II. Junior studio in building design.
ARCH 306 Architectural Design III. Junior studio in building design.
ARCH 405 Architectural Design IV. Senior design studio in building design.
ARCH 406 Architectural Design V. Senior design studio in exploratory topics.
ARCH 408 Experimental Home Architecture. Senior studio with a focus on sustainable home design.
ARCH 485 Directed Studies. Special topics by arrangement.
ARCH 607 Architectural Design III. Graduate design studio in architecture.
ARCH 652 Facility Information Technology. Advanced topics in databases, digital modeling, work flow management, and Web applications focused on facility management.
ARCH 653 Building Information Modeling for Architectural Design. Advanced topics in BIM and software development.
ARCH 685 Directed Studies. Special topics by arrangement.
ARCH 689 Special Topics in Building Information Modeling for Design Studio. Application of BIM for support of design studio projects.
ARCH 689 Special Topics in Facility Management Information Technology. Experimental course in advanced topics in database systems and Web applications for facility management.
ARCH 691 Research. Supervision of doctoral students.
ARCH 693 Professional Studies. Supervision of master of architecture students.
CARC 301 Field Studies in Design Innovation. Study abroad course in building technology.
CARC 311 Field Studies in Design Communication. Study abroad course in drawing, drafting, painting, and graphics.
VIZA 691 Research. Supervision of graduate students in visualization sciences.

2.1.2 Courses Taught at Stanford University (1993 through 1994)

As a teaching assistant at Stanford University, I developed lab exercises and graded assignments for a graduate level course in civil engineering. The course focused upon applying artificial intelligence methods in engineering and was cross-listed in Computer Science.

CE 214 Symbolic Modeling in Engineering (teaching assistant for Dr. John C. Kunz). Graduate course on expert systems, logic programming, object-oriented programming for civil engineering applications.

2.1.3 Courses Taught at Cal Poly State University (1988 through 1991)

At Cal Poly, I primarily contributed lecture and lab courses in computer applications although I also occasionally taught design studio courses. I was responsible for revising computer courses to keep them up-to-date with new technology. I redesigned EDES 250 to incorporate Macintosh computers rather than IBM PC's, instituted ARCH 250 to replace EDES 250 and EDES251, and qualified ARCH 250 as a University-wide computer literacy course. I also revised ARCH 457, 458 and 459 as a sequence of advanced courses in computer applications in architecture.

EDES 250 Computer Applications. Sophomore laboratory in computer applications for architecture.

EDES 251 Digital Computer Applications. Sophomore lecture in computer applications for architecture.

ARCH 250 Computer Applications. Sophomore lecture and laboratory in computing theory, concepts, and applications for architecture.

ARCH 252 Architectural Design Fundamentals. Sophomore architectural design studio.

ARCH 400 Special Topics. Experimental course in advanced computing methods for architecture.

ARCH 457 Computer Applications. Senior course in computer applications.

ARCH 458 Computer Graphics Applications in Architecture. Senior course in computer-aided design for architecture.

ARCH 459 Advanced Computer Applications. Three dimensional computer aided design techniques, rendering, and animation.

2.1.4 Courses Taught at UCLA (1987)

At UCLA, I assisted Dr. Milne by providing lab instruction in computer methods and energy analysis software. I also reviewed and graded assignments.

AUP 442 Climate Responsive Design (teaching assistant to Dr. Murray Milne). Graduate course on the effects of climate on building form and computer applications for modeling those effects.

2.2 Graduate Student Supervision

2.2.1 Doctoral students, completed degree

CHAIR OF COMMITTEE
1. Dr. Jong Bum Kim. PhD in Architecture, 2014. *Parametric Urban Regulation Models for Predicting Development Performances*. Post-doctoral researcher at Texas A&M University.
2. Dr. Duygu Yenerim. PhD in Architecture, 2014. *A Process Using Building Information Modeling (Bim) for Improving Self-Help Housing in Texas Colonias*. Intern Architect at Page, Southerland, Page, Inc.
3. Dr. Francisco Farias. PhD in Architecture, 2013. *Contemporary Strategies for Sustainable Design*. BIM and sustainability expert at Stride Treglown, Bristol, UK.
4. Dr. Chamila Subasinghe. PhD in Architecture, 2011, (Co-chair). *Rebuilding for Sustainability: Spatial Analysis of Bolivar Peninsula after Hurricane Ike*. Visiting Assistant Professor, Iowa State University..
5. Dr. Ozan Ozener, PhD in Architecture, 2009. *Studio Education for Integrated Practice Using Building Information Modeling.* Assistant Professor, Istanbul Technical University.
6. Dr. Firas Al-Douri, PhD in Architecture, 2006. *Impact of utilizing 3D digital urban models on the design content of urban design plans in US cities.* Assistant Professor, University of Nevada, Las Vegas.
7. Dr. Eberhard Laepple, PhD in Architecture, 2005. *The Utilization of Web-based Systems in Architecture*. HOK Advanced Strategies.

8. Dr. Jeong-Han Woo, PhD in Architecture, 2005. *Sharing Tacit Design Knowledge in a Distributed Design Environment.* Associate Professor, Department of Construction, Milwaukee School of Engineering.
9. Dr. Inchul Soh, PhD in Architecture, 2004. *The acquisition and analysis of time management perception in the architectural domain.*
10. Dr. Julian Kang, PhD in Civil Engineering, 2001. Co-chair with Dr. Stuart Anderson, Department of Civil Engineering. *Web-based four-dimensional visualization for construction scheduling.* Associate Professor, Department of Construction Science, Texas A&M University.
11. Dr. Jamal Al-Qawasmi, PhD in Architecture, 1999. *A study of computer-mediated, collaborative architectural design.* Assistant Professor, Department of Architecture, King Fahd University of Petroleum and Minerals.

MEMBER OF COMMITTEE
1. Dr. Darrell Thompson, PhD in Architecture, 2014. *A Study of Perceived Building Information Modeling Usage and the Utilization of Building Information Modeling Technical Specifications for Facilities Management at Higher Educational Institutions in Texas*. Assistant Professor, Department of Construction Science Texas A&M University. \
2. Dr. Woonseong Jeong. PhD in Architecture. 2014. *Integrating Building Information Modeling with Object-oriented Physical Modeling for Building Thermal Simulation*. Research Professor, Ewha Womans University, Architectural Engineering Department.
3. Dr. Jose Luis Bermudez Alcocer, PhD in Architecture. 2014. *An Analysis of a Low-Energy, Low-Water Use Community in Mexico City*. Professor, ITESM Campus Estado de México y Campus Ciudad de México.
4. Dr. Manish Dixit, PhD in Architecture, 2013. *Embodied Energy Calculation: Method and Guidelines for a Building and its Constituent Materials*. Assistant Professor, Sam Houston State University.
5. Dr. Simge Andolsun, PhD in Architecture, 2013. *Small Residence Multizone Modeling with Partial Conditioning for Energy Efficiency in Hot and Humid Climates*.
6. Dr. Edelmiro Escamilla, PhD in Architecture, 2011. *Investigation of Project Management Planning Practices for Renovation of Historical Buildings in Urban Contexts Located in Texas*. Assistant Professor, Department of Construction Science, Texas A&M University.
7. Dr. Ahmet Ugursal, PhD in Architecture, 2010. *Thermal Comfort Under Transient Metabolic and Dynamic Localized Airflow Conditions Combined with Neutral to Warm Ambient Temperatures*.
8. Dr. Carlos Nome, PhD in Architecture, 2008. *Pre programming: evaluation of workspace alternatives in school settings.* Assistant Professor, University of Rio Grande del Norte, Brasil.
9. Dr. Sopa Visitsak, PhD in Architecture, 2008. *An evaluation of the bioclimatic chart for choosing design strategies for a thermostatically-controlled residence in selected climates*.
10. Dr. Amr Bagneid, PhD in Architecture, 2006. *The creation of a courtyard microclimate thermal model for the analysis of courtyard houses*.
11. Dr. Seongchan Kim, PhD in Architecture, 2006. *An analysis of International Energy Conservation Code (IECC)-compliant single-family residential energy use*.
12. Dr. Scott Arvin, PhD in Architecture, 2004. *Physically based mechanical metaphors in architectural space planning*. Software Engineer, Autodesk, Inc.

2.2.2 Master students, completed degree

CHAIR OF COMMITTEE
1. Kevin Walsh, Master of Architecture, 2013. Non-thesis.
2. Glenda Fletcher, M Architecture, Master of Architecture, 2012. Non-thesis.
3. *Umesh Atre, MS in Architecture, 2005. Effect of daylighting on energy consumption and daylight quality in an existing elementary school.*

4. Young-No Kim, MS in Architecture, 2005. *A Web-based Timesheet Tool for the Design Studio.*
5. Amitava Sinharay, MS in Architecture, 2003. *Adapting the Building System Integration Method to Portray Architectural Organizations.*
6. Leena Mulye, MS in Architecture, 2002. *HBDR: A Case-based Tool for Organizing Architectural Information on Historic Building Design.*
7. Sunku Lee, MS in Architecture, 2001. *New Method for Classifying Construction Information.*
8. Timothy Winger, M. Architecture, 2001. Non-thesis.
9. Kiran Darapureddy, M. Architecture, 2001. *Web Integrated Cost Estimation System in Architecture Education.*
10. Abha Biyani, M. Architecture, 2001. Non-thesis.
11. Ge Xia, M.S. in Architecture, 2001. *E-business and Organizational Partnerships in Corporate Real Estate: A Case Study.*
12. Joey Ottman, M. Architecture, 2000. Non-thesis.
13. Kreshna Gopal, M.S. in Computer Science, 2000, co-chair with Dr. Tom Ieorger. *An adaptive planner based on learning of planning performance*.
14. Lynette House, MS Visualization Science., 1999. *Developing a Web-Site on Schizophrenia and Assessing its Effectiveness and Impact.*

MEMBER OF COMMITTEE
1. Lee Seok Chae, 2015. MS in Construction Management. Questionnaire for Owners to Evaluate Contractors' Proficiency in BIM.
2. Jacob Vinson, 2014. M Architecture.
3. Aaron Eaquinto, 2013, MS in Land Development.
4. Ashley McGarity, 2012, MS in Land Development.
5. Nick Naugle, 2011. MS in Visualization Sciences.
6. Amrit Bains, 2010. MS in Construction Management.
7. William Graham, 2010. MS in Construction Management.
8. Vineeet Bailur, MS in Construction Management (non-thesis) 2009. *Green features as a benchmark in single-family detached homes of San Antonio, Texas*.
9. Wade Zimmer, M. Architecture, 2005. Non-thesis.
10. Jong Kwon, MS in Construction Management, 2005. Non-thesis.
11. Leticia Keremian, M. Architecture, 2003. Non-thesis.
12. Jiwon Choi, MS in Construction Management, 2003.
13. Jaemin Lee, MS in Visualization Sciences, 2002. *Practical image based lighting*.
14. Aparna Varadharajan, MS in Architecture, 2002. *Study of approaches to quality in the architectural profession*.
15. Neelu Shah, MS in Architecture, 2001. *Coststudio: A Web-based cost estimation tool for architectural design studio*.
16. Edelmiro Escamilla, M. Architecture, 2001. Non-thesis.
17. Nan Li, M. Architecture, 2001. Non-thesis.
18. Supwat Jearkpaporrn, MS in Construction Management, 2001. Non-thesis.
19. Richa Dayal, MS in Architecture, 2001. *Use of information technology in facility management practices – A case study*.
20. Terrell Newberry, MS in Land Development, 2001. Non-thesis.
21. Keerati Satasook, MS in Land Development, 2001. Non-thesis.
22. Brent Swain, M. Architecture, 2000. Non-thesis.
23. Terrell Newberry, MS in Land Development, member. Non-thesis.

24. Keerati Satasook, MS in Land Development, member. Non-thesis.
25. Jong Kwon Min, MS in Construction Management, member. Non-thesis.
26. Yun Huh, MS in Construction Management, member. Non-thesis.
27. Alex Ling, M. Architecture, 2000. Non-thesis.

2.2.3 Graduate students, continuing
1. Greg Luhan, PhD in Architecture, chair.
2. James Haliburton, PhD in Architecture, chair.
3. Saied Zarrinmehr, PhD in Architecture, chair.
4. Ehsan Barekati, PhD in Architecture, chair.
5. Jinhoon Le, PhD in Architecture, member.
6. Hyoungsub Kim, PhD in Architecture, chair.
7. Lee Seok, Chae, MS in Construction Management, member.
8. Chengde Wu, PhD in Architecture, chair.
9. Andres Martinez Prieto, MS in Construction Management, member.
10. Brent C. Gohmert, MS in Construction Management, member.
11. Jawad Altabtabai, PhD in Architecture, member.
12. Victor Badillo, M Architecture, member.
13. Javier Arenas Bermudez. MS in Construction Management, member.

2.2.4 Graduate Council Representative
1. Dr. Bongkoo Lee, PhD in Recreation, Park and Tourism Sciences, 1998. The dynamic nature of emotions during a trail based leisure experience : an application of affect control theory (ACT).
2. Dr. Manoj S. Shouche, PhD in Chemical Engineering, 1996. Closed-loop identification and predictive control of chemical processes.
3. Dr. Wangyan Feng, PhD in Chemical Engineering, 1996. The application of time-frequency techniques to process control and identification.

2.3 Undergraduate Research
1. Shelby Martin, 2013.
2. Brent Gohmert, 2013.
3. Le Phuc, 2012.

2.4 Educational Software Grants
4. Bentley Systems, Incorporated. 2010-2011. Two year subscription at no charge to Academic SELECT program, providing 10 licenses to over 50 software products for use by students in the College of Architecture at Texas A&M University.
5. Autodesk Green Building Studio. 2009. Granted 200 licenses for use by students in the Department of Architecture at Texas A&M University.
6. Autodesk Student Web Community. 2006. Entitles Texas A&M University students to free software from the industry leading computer-aided design software developer. Texas A&M was one of only twenty universities internationally invited to participate in the pilot program. The program has become an open forum with over 3.5 million membes.
7. Buzzsaw . 2005. Web-based project management software, Autodesk Inc. Entitles Texas A&M University to use Web-based project management software from the leading developer of computer aided design products.

8. ARCHIBUS/FM Software Site License for Educational Use. 1999. Entitles Texas A&M University to employ leading facility management software in educational settings. $120,000 product value.

3 SERVICE

I am an active and respected participant in the governance of the department, the college, university, and the community. I am well known among peers throughout the United States and the world for contributing to academic organizations.

3.1 Grants

1. Clayton, M. J.; Culp, C.; Vanegas, J.; Yazdani, B. (2007). A Comprehensive Community-Based Energy Management Program for Counties, Municipalities, and School Districts. Sponsor: Texas State Energy Conservation Office. $138,000. The grant provided funds for developing course materials about community level energy efficiency and delivering them to 16 municipalities in Texas.

3.2 Significant Administrative Accomplishments

3.2.1 Renovation and Remodeling of Buildings

User representative for renovations to Building B, College of Architecture, Texas A&M University, 2005. Primary new facilities are a state-of-the-art audio-visual auditorium seating 280 people.

User representative for renovations to Building A, College of Architecture, Texas A&M University (with Dr. Mardelle Shepley), 2005. Primary new facilities are office spaces for the Office of Student Services, the Azimuth Café, remodeling and repairs to public spaces, and office spaces for 30 graduate students.

Planning, conceptual design, and project management of renovations to Building C, College of Architecture, Texas A&M University, 2004. Primary new facilities are offices for the faculty in the visualization program in the Department of Architecture.

Planning, conceptual design, and project management of renovations to the Williams Building, College of Architecture, Texas A&M University, 2004. Primary new facilities are new offices for faculty, new offices for four research centers, and seminar and graduate student spaces.

Project management for renovation of fourth floor, Building A, College of Architecture, Texas A&M University, 2001. Installation of overhead power and data supply, selection, purchase, and installation of furnishings.

3.2.2 Acquisition and Development of Computing Infrastructure

Implementation of a teaching lab for computer controlled fabrication, 2005.

Negotiation of student licensing agreements with Autodesk, 2005.

Implementation of a computing requirement for new students in the College of Architecture, Texas A&M University, 2005.

Guidance in development of management information systems for the College of Architecture, including: a classroom scheduling Web site and database; Exchange Server system for sharing calendars, tasks and documents; graduate student tracking Web site and database; research activity database; faculty search and hiring database; and faculty annual report Web site and database, 2001-2006.

Implementation of a wireless LAN in the College of Architecture, Texas A&M University, 2002. A pilot effort funded by the Computer Access Fee Grant Program was implemented in 2002, followed by expanded service to all buildings and floors in the Langford Architecture Center and the first floor of the Williams Building.

3.2.3 Strategic Planning

Preparation of Proposal for Enhancing Undergraduate Education, College of Architecture, Texas A&M University, 2005.

Facility Needs of the College of Architecture, Texas A&M University, 2003.

Preparation of Proposal for Signature Programs of the College of Architecture, Texas A&M University, 2002.

College of Architecture Briefing Report to Dr. Robert Gates, August, 2002.

Strategic Plan, College of Architecture, Texas A&M University, 2002.

Strategic Plan, Department of Architecture, Texas A&M University, 2001.

3.2.4 Curricular innovation

I led the Department of Architecture in revising our undergraduate Bachelor of Environmental Design degree to meet state legislated mandates for 120 credit hours. This included creating the influential Integrated Studio at the senior year, establishing and undergraduate research program, and establishing a home architecture program.

3.2.5 Accreditation

While Department Head, I led successful efforts to obtain re-accreditation by the National Architecture Accrediting Board.

3.3 International and National Academic Service

2004-2005. Conducted accreditation visits for the American Society of Landscape Architects.
Founding member of the Arab Society of Computer Aided Architectural Design.

3.4 University Service

Member, University Faculty Development Leave Committee, 2011 - 2013.
Member, Faculty Senate Task Force on Academic Excellence, 2010-2011.
Member, University Committee on the Built Environment, 2010-2012.
Member, Faculty Senate, Texas A&M University, 2009-2012.
Member, College of Architecture Dean Search Committee, 2009.
Member, University Special Task Force on Sustainability Curricula, 2008.
Member, Graduate Council and Graduate Operations Committee, 2005-2007.
Member, Faculty Senate Legislative Affairs Committee, Texas A&M University, 2002 through 2004.
Chair, University Computer Access Fee Grant Committee, Texas A&M University, 2004
Chair, Faculty Senate Elections Committee, Texas A&M University, 2003
Member, University Telecommunications and Informatics Task Force, Texas A&M University, 2001-2003
Member, University Computer Access Fee Grant Committee, Texas A&M University, 2002-2003
Chair, Faculty Senate Planning Committee, Texas A&M University, 2001-2002
Member, Faculty Senate, Texas A&M University, 2001-2004

3.5 College Service

Member, College Research and Interdisciplinary Committee, 2009 through 2012.
Associate Director, Center for Housing and Urban Development, Texas A&M University, 2008 through present.
Member, College of Architecture Promotion and Tenure Committee, Texas A&M University, 2008 through present.
Chair, College of Architecture Strategic Planning Committee, Texas A&M University, 2001 through 2006.
Associate Director, CRS Center for Leadership and Management in the Design and Construction Industry, Texas A&M University, 1998-2007..
Chair, College Information Technology Committee, Texas A&M University 2005-2006.
Chair, College Graduate Academic Affairs Committee, Texas A&M University, 2005- 2006.
Co-chair, College Academic Affairs Committee, Texas A&M University, 2001 through 2005.
Chair, College Information Technology Committee, Texas A&M University 2001-2002.
Member, College Executive Committee, Texas A&M University, 2001 through present.
Member, College Research and Interdisciplinary Committee, Texas A&M University, 2001 – 2003.
Member, College Working Group for Computing Resources and Information Technology Committee, Texas A&M University1997 through 2001.

3.6 Department Service

Member, Department Promotion and Tenure Committee, 2015 through present.
Member, Department Head Search Committee, 2015 through present.
Member, Design Committee, 2008 through present.
Member, Technology Committee, 2011 through present.
Host, Viza-go-go Digital Animation Festival, Texas A&M University, May 7-8, 2004.
Chair, Department of Architecture Strategic Planning Committee, Texas A&M University, 2001.

Member, Lectures Committee, Department of Architecture, Texas A&M University Fall 1998 - 2000.
Member, Visual Studies Curriculum Task Force, College of Architecture, Spring 2000-2001.
Coordinator, 3rd Year Design Studios for Department of Architecture, Texas A&M University 1998-2000.

3.7 Scholarly Service

Member, Steering Committee, Association for Computer-Aided Design in Architecture (ACADIA), 2007 through 2009.
Reviewer, Association for Computer-Aided Design in Architecture (ACADIA) 2005 Conference, Savannah¸
Reviewer, 7th International Conference on Design & Decision Support Systems in Architecture and Urban Planning, DDSS 2004, Eindhoven.
Reviewer, Automation in Construction, 1999-present.
Member, editorial board, Advanced Engineering Informatics, 2003 through present
Member, editorial board, Information Technology in Engineering, 2001-2003.
Co-Technical Chair, Association for Computer-Aided Design in Architecture (ACADIA) 2000 Conference, Washington DC.
Moderator, Computing in Civil and Building Engineering 2000 Conference, Stanford, 2000.
Review of papers, Association for Computer-Aided Design in Architecture (ACADIA) 1999 Conference, Salt Lake City.
Review of articles, Archi-Forum Electronic Journal, 1999.
Review of papers, CAAD Futures 1999, Atlanta.
Review of research proposals, Stanford University Center for Integrated Facility Engineering Seed Research Awards, 1999.
Member, Steering Committee, Association for Computer-Aided Design in Architecture (ACADIA), 2002 through 2004.
Vice President, Steering Committee, Association for Computer-Aided Design in Architecture (ACADIA), 2000 through 2001.
President, Association for Computer-Aided Design in Architecture (ACADIA), 2000.
Member, Steering Committee, Association for Computer-Aided Design in Architecture (ACADIA), 1998 through 2000.
Moderator, Association of Collegiate Schools of Architecture Southwest Regional Conference, College Station, TX, 1998.
Review of papers, 1998 International Conference on Computing in Civil Engineering, Boston.
Review of papers, Association for Computer-Aided Design in Architecture (ACADIA) 1998 Conference, Quebec City.
Review of papers, Association for Computer-Aided Design in Architecture (ACADIA) 1997 Conference, Cincinnati.
Review of papers, Association for Computer-Aided Design in Architecture (ACADIA) 1996 Conference, Tucson.
Review of research proposal, State University of New York at Buffalo, Office of the Vice President for Research, 1996.

3.8 Community Service

Member of Board of Adjustments, City of College Station, TX, 2000 through 2003.
Leader of the REAL PROJECTS initiative collaboration with Brazos Valley Affordable Housing Corporation, Bryan, TX. 2012 through present.

4 PROFESSIONAL ACTIVITY

4.1 Entrepreneurship

Chief Executive Officer of SMARTreview, Inc. 2010 through present. SMARTreview provides mobile applications for the architecture, engineering, construction, and operations industry focused upon regulatory enforcement.

4.2 Consulting

Continuing education workshops on building codes.