

ULRIKE PASSE Dipl.-Ing. Architekt BDA (2005 – 2010) - Associate Professor of Architecture
Iowa State University, 146 College of Design Ames, Iowa 50011 • 515-294-7142 • E-mail: upasse@iastate.edu
Director of the Center for Building Energy Research (CBER)

Ulrike Passe is Associate Professor of Architecture at Iowa State University, USA teaching architectural design and environmental technologies and serving as the Director of the Center for Building Energy Research. She received her Diplom - Ingenieur in Architecture from the Technical University in Berlin, Germany in 1990 and is a licensed architect in Germany. Her work experience includes more than 15 years of architectural practice specializing in energy efficient buildings and six years at the Technical University in Berlin prior to moving to Iowa State University.

Ulrike Passe's multidisciplinary research projects study space as environmental technology. In 2009 she served as faculty advisor to the ISU Solar Decathlon Team. Further funded research included "The fluid-dynamics of Air-Flow in Free-flow Open Space: An Architectural Approach to Energy Efficient Building" (Boston Society of Architects, 2007) and a 2013-16 NSF EFRI EAGER grant "Multi-scale material and dynamic thermo-fluid computational models and controls for sustainable buildings using efficient energy harvesting materials". Passe lead the building science plank in the Iowa NSF EPSCoR project "Harnessing Energy in the Biosphere to Build Sustainable Energy Systems" (2011-2016) and currently leads the Iowa State University research team on Big Data for Sustainable Cities Decision-Making funded by the ISU Presidential Initiative for Interdisciplinary Research (PIIR) 2016 – 2019). She has lectured and published nationally and internationally. Ulrike Passe is the lead author of "Designing Spaces for Natural Ventilation: an Architect's Guide" published by Routledge (London, New York) in April 2015.

The Center for Building Energy Research at Iowa State focuses on strategies to reduce energy consumption in buildings using effective building design and efficient and renewable energy sources and technologies. The Center supports interdisciplinary and collaborative research between disciplines such as architecture, agriculture, geological and atmospheric sciences, business, mechanical, construction and electrical engineering, material science and engineering as well as interior design, environmental psychology and behavioral science.

Ulrike Passe is currently the President of the Society for Building Science Educators and leads the Board of Directors (<http://www.sbse.org/board>) till the end of 2019.

EDUCATION AND PROFESSIONAL LICENSE

Registered Architect in Germany	Architects Registration Board Berlin	1993
Technical University Berlin	Architecture Dipl. – Ing.	1990
University College London	Architecture non-degree-study	1988/89

ACADEMIC APPOINTMENTS

Iowa State University, Ames, IA, Associate Professor with tenure	since	08/2013
Iowa State University, IPRT, Ames, IA, Director of CBER	since	10/2008
Iowa State University, Ames, IA, Assistant Professor	since	08/2007
Iowa State University, Ames, IA, Lecturer		01/2006
University of Applied Sciences, Potsdam, Germany, academic/research faculty	07/2004-	12/2005
University of Kentucky; Architecture Study-Abroad Program in Berlin	F	2004
University of Kentucky; Architecture Study-Abroad Program in Berlin	F	2002
Technical University Berlin, Germany, academic/research faculty		1993- 1999
Technical University of Liberec, Czech Republic, studio instructor	Su	1994

ARCHITECTURAL PRACTICE

Passe.Kälber Architects, Berlin, Germany, founding partner	1995 - 2010
Marina Stankovic Architect; Berlin, Germany	1991 - 1993
Stirling & Wilford Architects, London, UK; Berlin, Germany	1989 1990

BOOKS

Ulrike Passe and Francine Battaglia, *Designing Spaces for Natural Ventilation: An Architect's Guide*, London, New York: Routledge 2015. <http://www.tandf.net/books/details/9780415817776/>

BOOKCHAPTERS

Passe, U., Timothy Lentz (2016) *Designing Passive Solar Heated Spaces*, in: *Low energy low carbon architecture: recent advances and future directions*, edited by Khaled Al Sallal, CRC Press, Taylor and Francis. ISBN 9781138027480

FUNDED RESEARCH PROJECTS

- ASHRAE research contract 1710-TRP "Effect of Dynamic Shading Devices on Daylighting and Energy Performance of Perimeter Zones" over \$158,369 received for Sept 2016 to August 2018, co-PI with Dr. Kristen Cetin as PI. 2016
- Passe, Ulrike, Anderson, N., De Brabanter, K., Dorneich, M., Goodwin, J., Krejci, C., Poplin, A., Shenk, L., Anderson, C., & Graham, L. (2016). Big data for sustainable city decision-making. Iowa State University, Presidential Initiative for Interdisciplinary Research in Data Driven Science. \$375,000 September 1st 2016 – June 30th, 2019. (\$375,000) <http://www.news.iastate.edu/news/2016/01/28/presidentialresearch> 2016
- Passe, U., Anderson, N., De Brabanter, K., Dorneich, M., Goodwin, J., Krejci, C., Poplin, A., Shenk, L., Anderson, C., & Graham, L. (2015). Big data for sustainable city decision-making. Iowa State University, Presidential Initiative for Interdisciplinary Research in Data Driven Science (\$55,000) <http://www.news.iastate.edu/news/2016/01/28/presidentialresearch> 2015
- Iowa Energy Center (IEC) Building Envelope Commissioning (BECx) 2015
Train the trainer program development (\$ 31,186)
- Iowa Energy Center (IEC) Opportunity Award (\$20,000): Preliminary research effort for development of low-cost Vacuum Insulation Panels (VIP) for building applications, with Mufit Akinc and Ganesh Balasubramanian, <http://www.news.iastate.edu/news/2014/11/25/nanoinsulation> 2014
- Iowa Energy Center (IEC) Opportunity Award (\$79,591): Pursuit funding for a NSF CyberSEES proposal on green buildings: Preliminary work on validating a large scale modeling framework, with Baskar Ganapathysubramanian (<http://www.news.iastate.edu/news/2014/12/11/baskar>). 2014
- NSF EFRI EAGER Award #1345381 (\$50,000 awarded Sept 2013): Multi-scale material and dynamic thermo-fluid computational models and controls for sustainable buildings using efficient energy harvesting materials received no cost extension till August 31st, 2015 (http://nsf.gov/awardsearch/showAward?AWD_ID=1345381&HistoricalAwards=false) 2013
- IOWA NSF-EPSCOR "Harnessing Energy Flows in the Biosphere to Build Sustainable Energy Systems" (PI: Robert Brown, ISU and others) Passe selected as junior faculty and building science plank leader Energy Utilization Platform in Iowa wide \$20,000,000 project 2011 - 2016
- "Improving Energy Efficiency in Schenker Logistics Warehouses in Iowa City" (PI: Passe, Co-PI: Nelson) Funded by IPRT Company Assistance Program and DBSchenker Logistics (Total project cost: \$53,619 of which: Company: \$25,000/IPRT: \$16,811/ ISU IDC subsidy: \$11,808) 2009 - 2010
- "Cost Benefit Analysis for Energy Efficiency in a Small Retrofit Building" PI (\$7,500) Small Demonstration Grant funded by the Iowa Energy Center. 2009
- US Department of Energy's Solar Decathlon 2009
Principal Investigator, Faculty Adviser
to design and build a solely solar powered 800sft house (\$100,000 award / \$805,000 total budget),
Co-funded by Iowa State University, Department of Energy's Ames Laboratory,
ISU IPRT, Iowa Energy Center and others
Co-PI's: Bruski, Cardinal-Pett, Dalal, Grewell, Geske, Honeycutt, Horwitz, Jarboe, Martin, Muecke, Nelson, Pate, Shane, Strong, Townsend, Zarecor 2008 -2009

- "The fluid dynamics of air flow in free flow open spaces: An architectural approach to energy efficient buildings", (Co-PI: Dr. F. Battaglia) Research Award, Boston Society of Architects (\$20,000) 2007
- "Master of Science by Research" (PI: Prof. Dr.-Ing. Johannes Vielhaber) leading researcher
University of Applied Science Potsdam, funded
by State of Brandenburg and German Federal Education and Research Agency (~ \$150,000) 2004/5
- „Systematic building with steel“ (PI: Prof. Matthias Sauerbruch)
TU Berlin, TU Darmstadt, Vallorec & Mannesmann Steel GmbH on the
relationship of industrial prefabrication, climate control and architectural design (~ \$40,000) 1998

JOURNAL PUBLICATIONS, PEER_REFEREED CONFERENCE PROCEEDINGS (RELEVANT SELECTIONS)

- Kunwar, N., Cetin, K.S., Passe, U., (2018) Effect of Automated Dynamic Control of Interior Roller Shades on Daylighting and Energy Performance of South Facing Office Spaces, Fifth BEST CONFERENCE Building Enclosure Science & Technology, Philadelphia, PA, April 15-18, 2018. (Abstract Accepted)
- Kunwar, N., Cetin, K.S., Passe, U., Gorostiaga, Y. (2018). Energy Performance of Automated Dynamic Interior Venetian Blinds in Commercial Buildings. ASHRAE Annual Conference, Houston, TX, June 23-27, 2018. (Abstract Accepted)
- Kunwar, N., Cetin, K.S., Passe, U. (2018). Energy Performance of Automated Dynamic Interior Roller Shades using Calibrated Simulation. 2018 Building Performance Analysis Conference and SimBuild. Chicago, IL, Sept 26-28, 2018 (Abstract Accepted)
- Kunwar, N., Cetin, K.S., Passe, U. (2018) Dynamic Shading: A Review of Full-Scale Testing Methods and Recent Findings. Current Sustainable/Renewable Energy Reports. (Accepted)
- Passe, Ulrike, AIA Iowa workshop 22: Building Energy Research with the 2009 Iowa State University's Solar Decathlon Home: Lessons Learned for Sustainable Design in Iowa presentation, presented Sept 29, 2018 at the AIA Iowa Annual Convention in Des Moines.
- Wanyu Huang, Caroline Krejci, Michael Dorneich and Ulrike Passe: Weatherization Adoption in A Multilayer Social Network: An Agent-based Approach, 2017 Computational Social Sciences Conference in Santa Fe, NM, October 19-22, 2018, short-listed for best paper award.
- Jacklin Stonewall, Katherine Fjelstad, Michael Dorneich, Linda Shenk, Caroline Krejci, and Ulrike Passe, Iowa State University, Best Practices for Engaging Underserved Populations, Proceedings of Annual Conference of Human Factors and Ergonomics Society 2017, October.
- Charvi Jagani, Ulrike Passe, Simulation-based Sensitivity Analysis of Future Climate Scenario Impact on Residential Weatherization Initiatives in the US Midwest, Proceedings of SimAUD 2017, Toronto, CA, edited by: Michela Turrin, Brady Peters, William O'Brien, Rudi Stouffs, Timur Dogan. Ulrike Passe, Kaylenn Taggart, Shan He, Observation and analysis of passive solar home control strategies for active users, in: PLEA 2017, Edinburgh.
- Passe, Ulrike, Performance, data and the expanding field of sustainable design, paper presented at the 6th International Alvar Aalto Meeting on Contemporary Architecture _ TECHNOLOGY & HUMANISM; 14 -15 September 2017, Seinäjoki, Finland https://www.alvaraalto.fi/content/uploads/2017/08/passe_ulrike-1.pdf
- Vansice, K., Passe, U., Method to Evaluate and Develop Next Generation Vacuum Insulation Panels for Implementation in the Retrofit of Existing Building Envelopes, Proceedings of Building XIII conference, organized by DOE Oakridge National Laboratory, Dec 2016, Clearwater Florida.
- Ghosal, S., Liu, C., Passe, U., He, S., and Sarkar, S. (2016) "Data-driven persistent monitoring of indoor air systems," in ASHRAE IAQ 2016 Conference, 2016.
- Jeanblanc, E., He, S., Passe, U. (2016). Occupant-Centered Building Operation Strategies for Balancing Thermal Comfort and Energy Efficiency in Warm and Humid Climates. In Nicol, F., Roaf, S., Brotas, L., Humphreys, R., (Eds.), Making Comfort Relevant. Paper presented at the Network for Comfort and Energy Use in Buildings (NCEUB) 2016 Windsor Conference, Windsor, United Kingdom. April 7-10. Network for Comfort and Energy Use in Buildings, <http://nceub.org.uk>
- Krejci, C. C., Passe, U., Dorneich, M. C., & Peters, N. (2016b), "A Hybrid Simulation Model for Urban Weatherization Programs", Proceedings of the 2016 Winter Simulation Conference, Arlington, VA, December 11-14.
- Passe, U., Anderson, N., De Brabanter, K., Dorneich, M., Krejci, C., Poplin, A., & Shenk, L., (2016). Methodologies to Study Human- Microclimate Interaction for Resilient, Smart City Decision-making. Proceedings of International

- Conference on Passive Low Energy Architecture, San Francisco, CA
- Passe, U., Deza, M., Ganapathysubramanian, B., He, S., Vansice, K., Xu, S. (2016). Typological studies for passive design strategies based on coupled measured and modelled data. Proceedings of the 2016 Simulation for Architecture and Urban Design (SimAUD) conference, May 16-18, 2016, London.
- Shenk, L., Anderson, N., Passe, U., & Krejci, C. (2016). Engaged science and working with youth for sustainable cities: A partnership between "East High Cares" and an Iowa State University research team. In Jean Goodwin (Ed.), *Confronting the Challenges of Public Participation: Issues in Environmental, Planning and Health Decision-Making*. (189-199). Charleston, SC: CreateSpace.
- Shenk, L., Krejci, C., Dorneich, M.C., Passe, U., & Stonewall, J. (2017). When the humanities partner with engineering and design for community capacity-building: Co-designing a community's story of weatherization using agent-based modeling. Community Development Society Conference. Big Sky, Montana, June 11-14, 2017.
- Passe, U., Ganapathysubramanian, B., & Yesilata, B. (2014). The Harran Houses as a case study for solar assisted passive ventilation and cooling. In B. Yesilata, K. Bayraktar & G. Kocar Eds.), *Proceedings of the Turkish Solar Energy conference SolarTR*, Izmir.
- Passe, U., Deza, M., Ganapathysubramanian, B., He, S., Xu, S, Typological Studies For Passive Design Strategies Based On Coupled Measured And Modelled Data, abstract accepted for the 2016, Simulation for Architecture and Urban Design (SimAUD) 2016, London.
- Passe, U., Capturing the Nordic Light in Italy? In: Aalto beyond Finland (Silvia Micheli and Esa Laaksonen eds) the second Alvar Aalto research seminar, February 16-18, 2015, Rovaniemi Townhall, Alvar Aalto Museum and Academy, Helsinki, Finland 2015.
- Deza, M., He, S., Passe, U., Ganapathysubramanian, B. (2015). High Fidelity CFD Modeling of Natural Ventilation in a Solar House, ASME 2015 Conference Proceedings International Mechanical Engineering Congress and Exposition, Houston TX.
- He, S., Passe, U., Integrating CFD with Preliminary Architectural Design for Natural Ventilation (NSF acknowledged, full EPSCOR support), poster presented at 2015 Spring Simulation Multi-conference in Alexandria, VA, April 12-15, 2015.
- He, S, Passe, U., (2015) Architectural student's attitude towards building energy modeling: A pilot study to improve integrated design education Proceedings of the 14th International Conference of the International Building Performance Simulation Association, Hyderabad, India.
- Kalvelage, K., Dorneich, M., & Passe, U. (2015, 7-9 Dec). Simulating the future microclimate to identify vulnerable building interior conditions. Proceedings of the 14th International Conference of the International Building Performance Simulation Association, Hyderabad, India.
- Kalvelage, K., Passe, U., & Dorneich, M. (2015). Investigating the impact of reflective facades on the microclimate. Manuscript submitted for publication.
- Kalvelage, K., Passe, U., Krejci, C., & Dorneich, M. (2015, 5-7 Oct). Incorporation of future building operating conditions into the modeling of building-microclimate interaction: A feasibility approach. In K. P. Lam (Co-chair), *The First International Symposium on Sustainable Human-Building Ecosystems (ISSHBE)*. Symposium conducted at the meeting of A. A. AEI, Carnegie Mellon University, Pittsburgh, PA.
- Kalvelage, Kelly, Ulrike Passe, Shannon Rabideau, and Eugene S. Takle. "Changing Climate: The Effects on Energy Demand and Human Comfort." *Energy and Buildings* 76, no. 0 (2014): 373-80.
- Nelson, Kris, Ulrike Passe, Hand to Mouse: Integrated Technology Laboratory in Undergraduate Architectural Education, ARCC EAAE International Conference proceedings: Intersections at the University of Hawaii in Honolulu, Hawaii, February 12-15, 2014.
- He, Shan, Ulrike Passe, The Potential Energy Efficiency of a Hybrid Designed House: A Post-occupancy Case Study on the Heating and Cooling System, ASHRAE Annual meeting Seattle in June 2014, published in proceedings.
- Leysens, Isabelle and Ulrike Passe, Towards a Dynamic Daylight Understanding. NCEUB Windsor conference, April 10-13, 2014, proceedings: http://nceub.org.uk/W2014/webpage/pdfs/workshop5/W14098_Leysens.pdf,
- Passe, U. and Nelson, R. (2013). "Constructing Energy Efficiency: Rethinking and Redesigning the Architectural Detail." *J. Archit. Eng.* 19, SPECIAL ISSUE: Emerging Trends of Sustainable Engineering, Design, and Construction, 193-

- 203, American Society of Civil Engineers.
- He, Shan, U. Passe, ZJ Wang (2012): "Integrating thermo-fluid computational models into understanding sustainable building design", Association of Collegiate Schools of Architecture International Proceedings.
- Passe, Ulrike, "Evaluating passive and active solar design and performance interaction: First measured results," in Proceedings of The Second International Conference on Building Energy and Environment (COBEE), August 1-4, 2012, Boulder, Colorado, edited by Dr. Zhiqiang Zhai, Dr. Xiangli Li and Haidong Wang, 2012: 265.
- Passe, Ulrike "Alvar Aalto's open plan architecture as an environmental technology device." International Alvar Aalto Now: New research initiatives conference, founding of the Alvar Aalto Researcher Network organized by the Alvar Aalto Foundation and Alvar Aalto Museum, Seinajoki, Finland, March 12-14, 2012. (Committee reviewed, online journal available online at <http://www.alvaraaltoresearch.fi/>)
- Passe, Ulrike, Robert Demel. "Performance and Form: new pedagogical approaches to designing the building envelope as an adaptive interface." in Proceedings of the EAAE ARCC International Conference on Architectural Research: Cities in Transformation Research and Design, Polytechnic in Milano, June 7-10, 2012.
- Mann, Bryan, Ulrike Passe, Shannon Rabideau, Eugene S. Takle, "Future context for thermal comfort: Impact of a changing climate on energy demand and human thermal comfort," in Proceedings of the 7th Windsor Conference: The changing context of comfort in an unpredictable world, Cumberland Lodge, Windsor, UK, 12-15 April 2012. London: Network for Comfort and Energy Use in Buildings, online available at <http://nceub.org.uk>.
- Fernandez-Gonzalez, Alfredo, Ulrike Passe, Rod Kruse, Jörg Rügemer: "Simplicity and Integration: Passive Solar Design and Passive House in Integrated Practice and Education," in Proceedings of the World Renewable Energy Forum and the American Solar Energy Society in Denver, Co, May 2012. <http://ases.org/conference/proceedings-2012/>.
- Rabideau, S.L., Passe, U., & Takle, E.S. (2012). Exploring Alternatives to the "Typical Meteorological Year" for Incorporating Climate Change into Building Design. ASHRAE transactions, 118(1), 384-391.
- Passe, Ulrike, Kerry Dixon-Fox, "Integrating Research into Student Learning by Integrating Student Learning into Research," in Proceedings of the IXth Greening the Campus Conference proceedings: "Building Pedagogy" Ball State University, Muncie IN, March 18-20, 2012.
- Passe, Ulrike, "Constructing Energy Efficiency: Rethinking and Redesigning the Architectural Detail," in: ICSDC (International Conference for Sustainable Design and Construction) 2011 Integrating Sustainability Practices in the Construction industry, ed. W. K. O. Chong and Chr. Hermreck, ASCE (American Society for Civil Engineers, Virginia 2012, 467-473.
- Passe, Ulrike, "Traveling Michel Serres' Passage du NordOuest: what happens, once the ice breaks? A reflection on architectural research conducted between the humanities and engineering," in Proceedings of the ARCC Architectural Research Center Consortium) 2011 Spring Research Conference in Detroit April 23rd, 2011. Lawrence Tech University and ARCC, 2011, 209-224.
- Passe, Ulrike, "Innovation in the Academy," in: Proceedings of the 6th International Conference on Innovation in Architecture, Engineering & Construction at Penn State University, (2010), 497-506. (2 stage peer-review)
- Rabideau, Shannon, Ulrike Passe, Eugene Takle. "Exploring Alternative to the 'Typical Meteorological Year' for Incorporating Climate Change into Building Design," ASHRAE paper CH12-CO49; in: ASHRAE Transactions Volume 118 Part I (2012): 384.
- Stoakes, Preston, Ulrike Passe, Francine Battaglia. "Predicting Natural Ventilation Flows in Whole Buildings Part1: The Viipuri Library." Building Simulation: An International Journal, BUILD SIMUL, Vol 4, No 3 (2011): 263-276. Journal published by Tsinghua University Press and Springer Publishing, Heidelberg Germany.
- Stoakes, Preston, Ulrike Passe, Francine Battaglia. "Predicting Natural Ventilation Flows in Whole Buildings Part 2: The Esherick House." Building Simulation: An International Journal Vol. 4, No. 4 (2011): 365-377. Journal published jointly by Tsinghua University Press and Springer Publishing, Heidelberg Germany.
- Passe, Ulrike, Stoakes, P. Battaglia, F.; "Interdisciplinary Research into the Fluid Dynamics of Natural Ventilation Flows" In *Healthy Buildings 2009: Proceedings of the 9th International Healthy Buildings Conference and Exhibition*. Eds.: Santanam, S., Bogucz, E.A., Peters, C., and Benson, T., Healthy Buildings

- 2009, Syracuse, NY, USA. Paper No: 226. Official publication of the Syracuse Center of Excellence in Environmental and Energy Systems for the 9th International Conference of ISIAQ in Syracuse, USA.
- Passe, Ulrike; "Designing Sensual Spaces: Integration of Spatial Flows Beyond The Visual" in: *Design Principles and Practices; An International Journal* Vol. 3, Common Grounds Publisher, Melbourne 2009.
- Passe, Ulrike; "Atmospheres of Space. The development of Alvar Aalto's free flow section as a climate device." in: *Architectural Research Quarterly (ARQ), Linking practice and research*, volume 12 number ¾ 2008, Cambridge University Press, Cambridge, UK, 2008.
- Passe, Ulrike: Haus Marxen / Germany / 2001 in: *Invitation to ArchiPhen, Some approaches and interpretations of Phenomenology in Architecture*, edited by Neuman, E & Aravot, I. The Center for Architectural Research and Development, Technion IIT Haifa, Israel 2008.
- Passe, Ulrike, Stoakes, P. Battaglia, F.: Simulation of Natural Ventilation Flows: Possibilities for the Restoration of the Viipuri Library, in: *The Challenge of Change, Dealing with the Legacy of the Modern Movement, Proceedings of the 10th International Docomomo Conference*, edited by Heuvel, D, Mesman, M., Quist, W., Lemmens, B. IOS Press Delft, 2008.
- Passe, Ulrike: 'Space is Technology' in: *Proceedings 'Architecture & Phenomenology'*, edited by Eran Neumann and Iris Aravot., Technion, Haifa, Israel, 2007.
- Passe, Ulrike: 'Free-flow Open Space, Climate and Sustainability', in: *Emerging Research and Design, EAAE Transactions on Architectural Education number 32* edited by Wingert-Playdon, Neuckermans, H.; Proceedings of the International ARCC/EAAE Conference, Philadelphia, , 2007
- Passe, Ulrike: "Sustainable Building Typology: Free flow open space as climate technology" in: *The International Journal of Environmental, Social, Cultural and Economic Sustainability*, Vol. III. Common Ground Publisher, Melbourne 2007.
- Passe, Ulrike: 'Free-flow Open Space, Climate and Sustainability', in: *Proceedings of Healthy Buildings 2006*, Vol III p.27, Ed: E. de Oliveira Fernandes, M. Gameiro da Silva, J. Rosado Pinto, Lisbon 2006.
- Passe, Ulrike, N. Schincker: "Steel-Prototypes" Technical University Berlin, research-publication, 1999
- Passe, Ulrike, H. Kleine (Ed.): "Nach dem Bauhaus / After the Bauhaus - 13 positions on undergraduate design teaching", ISA, TU Berlin Press, Book 1, 1997.

RECENT CONFERENCE AND WORKSHOP PRESENTATIONS (SELECTION, without paper)

- Janette Thompson, Ulrike Passe, Human Behaviors Buildings, and Near Building Climates: Decision Support Tools to Increase Resilience of Urban Neighborhoods, research poster presented at the Science, Business, and Education of Sustainable Infrastructure Conference by the National Council for Science and the Environment, Jan, 22-24, 2018
- Passe, U. (2015, April 6-9). Typological Studies for passive design strategies based on modelled and measured data. Presentation at the ARCC (Architecture Research Center Consortium): The future of architectural research, Chicago.
- Leysens, Isabelle, Ulrike Passe, "Evaluating daylight performance in a passive solar home: a study based on design simulation and post-occupancy monitoring results, In: Proceedings of the annual conference of the American Solar Energy Society (ASES), Baltimore April 2013.
- Passe, Ulrike: Changing the relationship of form and performance: The conceptual integration of quantitative performance evaluations into design pedagogy. International ACSA Conference on Change, Barcelona, Spain, June, 20-22, 2012
- Shan He, Ulrike Passe, Zhi Jian Wang: Integrating thermo-fluid computational models into understanding sustainable building design. International ACSA conference on 'Change'. Barcelona, Spain, June 20-22, 2012
- Cardinal-Pett, C, Horwitz, J, Passe, U.: Learning from the Solar Decathlon: Making a place for multidisciplinary applied research in architectural education; paper accepted to the ARCC/EAAE International Conference "The place of research / the research of place" at the Catholic University in Washington DC, 2010
- Passe, Ulrike: Space, Time, Energy: Learning From Interlocking A House With The Sun Invited Participant at the

NSF funded US-Israel workshop on Sustainable Buildings Materials and Energy at the Technion in Haifa, Israel, July 2010.

Passe, Ulrike: Energy Efficiency and Preservation of Small-Scale Commercial Building Heritage; presentation at The Cultural Role of Architecture –International Conference at the University of Lincoln, UK, June 2010.

Passe, Ulrike: Building a solar house for interdisciplinary learning of sustainability; Paper presentation at the 2010 AASHE (American Association for Sustainability in Higher Education) Conference in Denver, CO.

Passe, Ulrike: Balancing Memory, Nostalgia and Sustainability: *Energy Efficiency and Preservation of Small Scale Midwestern Main Street Commercial Heritage* at the The Association for Preservation Technology International, 2010 Annual Conference: Layers Across Time – Preserving a Diverse Western Heritage.

PUBLIC EXHIBITIONS OF RESEARCH, CREATIVE AND BUILT WORK (SELECTION)

- "The Green & Main energy efficiency in historic community project," Center for Building Energy Research involvement highlighted at the Iowa State Design in Action exhibit at the Smithsonian FolkLife Washington DC, June 27 - July 1 and Aug. 4-8, 2012. 2012
- "The Interlock House" Department of Energy's 2009 Solar Decathlon competition and public exhibition of an 800 sft solely solar powered house designed by ISU students under leadership of faculty adviser and principal investigator Ulrike Passe. 2009
- "The fluid dynamics of air flow in free flow open spaces: An architectural approach to energy efficient buildings"; by Ulrike Passe, Francine Battaglia. Exhibition of research projects funded by the Boston Society of Architects at the 2008 AIA (American Institute of Architects) Annual National Convention in Boston. 2008
- New members to the "Bund Deutscher Architekten" (BDA), Group exhibition, BDA Gallery Berlin 2006
- "Sustainable architecture for the future: Context," BDA Gallery Berlin, House Marxen 2006
- "DA! Year exhibition of the Berlin Architect's Institution: House Marxen," Stilwerk Berlin 2004
- German Open Day of Architecture, Architect's Chamber of Germany; House Marxen 2004

AWARDS

- AIA Iowa Educator Award 2017
<https://www.design.iastate.edu/news/2017/12/ulrike-passe-aia-iowa-educator-award/>
The award recognizes significant contributions to architectural education in Iowa. In his nomination letter, Morrill Professor Thomas Leslie, the Pickard Chilton Professor in Architecture at Iowa State and winner of last year's AIA Iowa Educator Award, observed that Passe has, "through her skillful teaching, insightful research and passionate advocacy, advanced issues of environmental and energy-efficient design within our curriculum and throughout our profession. More than this, she has coached hundreds of students through the difficult task of integrating these issues into thoughtful and accomplished designs."
- Iowa State University College of Design Research Award 2016
As director of the ISU Center for Building Energy Research, Ulrike collaborates with researchers across campus to develop strategies to reduce energy consumption in buildings. She leads the building energy plank on the Iowa NSF EPSCoR project and the ISU Presidential Initiative for Interdisciplinary Research in Big Data for Sustainable City Decision Making. She recently published the first book intended to help architects without an engineering background develop successful natural ventilation strategies. Ulrike has organized two college research networking socials to encourage interdisciplinary collaboration. She is an outstanding mentor whose students regularly present their research and win awards at conferences and competitions.
- NSF Iowa EPSCoR Broader Impacts Mentoring and Outreach Award 2014
<http://iowaepscor.org/news/annual/2014/Passeaward>
- Iowa State University Excellence in Sustainability Award to ISU USGBC Research to Practice 2013
- United States Green Building Council (USGBC) R2P2 Scholarship to present student research at the 2012 GreenBuild Conference and Expo in San Francisco 2012
- Iowa State Alumni Association IMPACT Award for the interdisciplinary Solar Decathlon project 2010
"Iowa State University gained substantial visibility in October 2009 with its presence on Washington, D.C.'s National Mall: The university's solar decathlon team was one of only 20 in the world to participate in the final round of the U.S. Department of

Energy's Solar Decathlon, an event showcasing sustainable residential innovation on college and university campuses. Those who were involved in the extensive project agree: Iowa State's celebrated Interlock House would not have been possible without the tremendous leadership of Ulrike Passe."

- Iowa State University's Excellence in Sustainability Award for the Solar Decathlon Team 2010
 ISU College of Design Faculty Award for Extraordinary performance 2009
"Ulrike Passe has assumed a key role in the architecture technology curriculum, increasing the emphasis on sustainable design principles and integrating her extensive "green" practice experience in Germany into the design studio. She is committed to interdisciplinary efforts. ... As the principal investigator for ISU's Solar Decathlon project, Ulrike has engaged with students and faculty across campus and throughout our College in the design and construction of a solar-powered house. ... Ulrike handles this ambitious range of projects with flexibility and humor. ... "
 Hans-Schaefer-Prize (BDA-Berlin) for emerging architects practices in Berlin 1998

INVITED LECTURES AND PRESENTATIONS (A Selection)

- Passe, U. Invited panel presentation 'Building Socio-Technical Collaborations within Academia' at the NSF SCC workshop on NSF-Sponsored Workshop on Effective Community-University-Industry Collaboration Models for Smart and Connected Communities Research, December 2017 in Washington DC. 2017
- Passe, U. Designing Spaces for Natural Ventilation invited public lecture at the Architecture Department of the German University of Technology (GUTECH), Muscat Oman 2017
- Passe, U. Designing Spaces for Natural Ventilation invited public lecture at the Architecture Department of the Israel Institute of Technology (The Technion, Haifa, Israel). 2016
- Passe, U. Designing Spaces for Natural Ventilation invited public lecture at the Interiro Architecture Department of the Rhein-Main University in Wiesbaden, Germany 2016
- Passe, U., Designing Spaces for Natural Ventilation from XXXL to XS, invited guest lecture at Columbia University's Sustainable Management MSC program on October 9, 2014 2014
- "The future of Solar (is) Architecture" invited keynote lecture at SOLARTR (Turkish Solar Energy Society) Annual Conference in Izmir, Turkey SOLAR TR on November 21, 2014. 2014
<http://www.solartr.org.tr/eng/?p=solar4>.
- "NEW FRONTIERS in DESIGN MODELING & SIMULATION TOOLS" invited lecture 'Future research for Sustainable Buildings' panel at Green Summit of Turkish Green Building Council (CEDBIK) in Istanbul, February 18-19, 2013 2013
- "Learning from Interlocking a House with the Sun," Public Lecture at CVUT Technical University Prague on the ISU Solar Decathlon project, May 24, 2012. 2012
- "How to organize a Solar Decathlon," Design workshop with Team Prague on Solar Architecture at CVUT, May 25, 2012. 2012
- "Natural Ventilation: from XXL to XS," Invited public lecture, Sustainability in the Urban Environment Spring 2012 Lecture Series: Rebalancing Flows in the Post-Industrial City at the The Bernard & Anne Spitzer School of Architecture of the City College New York (CCNY), March 21, 2012. 2012
- "Homecoming of a solar home: solar home design and energy efficient retrofit," at weekly program for seniors by Grinnell Regional Medical Center at Drake Community Library in downtown Grinnell, IA 50112, April 2nd, 2012.
- "Integrated Design for a sustainable world," Invited Key Note Speech at AEI / ASHRAE Omaha Nebraska, first joint regional AEI/ ASHRAE professional conference in Omaha, Nebraska. March 7, 2012 2012
- "Space, Time. Energy: Learning from Interlocking a house with the sun," public lecture at the University of Nevada Las Vegas (UNLV) Sept. 2, 2011.
- "Atmospheres of Space: The development of Alvar Aalto's free flow section as climate device, Interdisciplinary Research into the Fluid Dynamics of Natural Ventilation Flows," Public Lecture at the annual reception of the Center for Excellence in the Arts and Humanities (CEAH) at ISU, Sept. 27, 2010. 2010
- "Light, Sun, Air....A Modern Vision Come True: The Solar Decathlon Experience" Nov, 16th, 2009: Public evening lecture by invitation of the AIAS, Department of Architecture at Bowling Green State University, Bowling Green, Ohio, USA. 2009

- "Designing Sensual Spaces" Invited lecture to ARTH 4400/5400 'History of Modern Architecture' on air flow in buildings, with a specific focus on the work of Alvar Aalto the Bowling Green State University, Bowling Green, Ohio, USA. 2009
- "The Interlock House as an Interface: Sustainability and Occupant Interaction" Invited lecture in observance of World Usability Day 2009 "Designing for a Sustainable World" at the Usability Professionals Association, Iowa Chapter in West Des Moines. 2009
- "Simulation of natural ventilation flows possibilities for the restoration of the viipuri library ventilation system" Invited presentation of research findings to committee members of The Finnish Committee for the Restoration of Viipuri Library / Alvar Aalto Foundation at post-symposium tour to Vyborg / Viipuri Alvar Aalto Symposium Edge- Paracentric Architecture, Jyväskylä, Finland, August. 2009
- "Implementing energy evaluation and simulation tools into the design studio" Presentation at the Society for Building Science Educators (SBSE) Retreat: The leap to zero carbon in Quebec 2009
- "Integrating the Solar Decathlon into coursework at Iowa State University: A case study into interdisciplinary design education necessary to achieve net zero energy buildings." Presentation at the Society for Building Science Educators (SBSE) Retreat: The leap to zero carbon in Quebec Sustainability Consortium of the City of Rock Island Rock Island, Illinois; Presentation of the Solar Decathlon Project to the Advanced Technology and, lead by the Major, March 24, 2009
- "Energy and Buildings: Doing more with less....and the sun." Invited keynote speaker at the National Smart Living Conference at Duke University as participant of the Duke Conversations program, April 3-5, 2009, Duke University, Durham N.C. 2009
- 'Sustainable conservation practices' International panel discussion at DOCOMOMO (Invited participant) panel chaired by Kyle Normandin of WJE Engineers, Architects and Material Scientists, USA, Other panelists: Susan MacDonald (Architect, Getty Conservation Institute, Los Angeles, USA), Tom Haartsen (Climatic Design Consult, Delft, The Netherlands), Uta Pottgiesser (Hochschule Ostwestfalen-Lippe, University of Applied Sciences, Hannover, Germany), Norman R. Weiss (Integrated Conservation Resources Inc.,USA) at the X. International DOCOMOMO Conference in Rotterdam NL. 2008

ARCHITECTURAL PUBLICATION ON OWN DESIGN WORK (RELEVANT SELECTIONS)

- House Marxen's Interior by Passe. Kaelber Architects in: Ro Spankie: Basics Interior Architecture: drawing out the interior, AVA Academia Lausanne, 2009
- 1000 x European Architecture, ed.: Chris van Uffelen, Braun Verlag Berlin, p. 577. 2007
- "Casa a Marxen," in '*l'architettura naturale*', international review on sustainable architecture; anno IX, no 30, Marzo 2006, Edicom Edizione, Milano, p. 62 – 65 2006
- "House Marxen" in *Architektur in und aus Berlin 04*, ed: Architektenkammer Berlin. p. 84. 2004
- "Practical Experience - A Students Guide to Internship and the Year Out," (Ed: Rüedi-Ray, K., Marjanovic, I, Tankard, J), London Elsevier Press. 2004
- "House Marxen in NDR" 3-minute television feature a regional TV news channel 2004

SELECTED ARCHITECTURAL DESIGN PROJECTS (RELEVANT SELECTION)

- Low-energy house in Marxen/Niedersachsen, completed 2001/04
- Loft refurbishment, energy conservation, extension of a furniture factory Berlin-Mitte; completed 2003
- "Ebbinghaus," energy efficient retrofit and extension of a listed modernist department store completed 2003
- Interior for a vine-merchant in the old slaughterhouse district, Berlin, completed 2001
- Loft refurbishment and energy conservation of a milk-laboratory 2001
- Preussischer Landtag Refurbishment into Berlin City Parliament completed 1991
- B.Braun Melsungen, production facility for pharmaceutical products , completed 1990

PRIZE-WINNING COMPETITION ENTRIES (RELEVANT SELECTION)

"Experimental Housing," Biesdorf-Süd; Berlin-Marzahn	2. Prize	1999
Representational House for two States at the Federal Gov., Berlin	Hon. Recommendation	1998
Extension of University of Nürnberg	Hon. Recommendation	1997
Extension of a public bath in Potsdam	2. Prize	1995
Townplanning-Competition Brandenburg / Havel	Hon. Recommendation	1995

COURSES TAUGHT (SELECTION)

ARCH 351 Whole Building Energy Modeling		Sp 2015
ARCH 601 Sustainable Building Design (Towards net-zero) (Graduate Design Studio)		F2010 - 2016
ARCH 245 Building Science and Technology I		F2010 - 2016
ARCH 341 Building Science and Technology II (Env Forces and Controls Module)		S 2011 - 2016
ARCH 342 Building Science and Technology III (Env Forces and Controls Module)	F	2010- 2016
ARCH 343 Building Science and Technology IV (Env Forces and Controls Module)	S	2012 /14 / 16
ARCH 445 Building Science and Technology V (Env Forces and Controls Module)	F	2012 - 2015
ARCH 576 DE Study Abroad: Berlin Summer Academy: Designing for a Low-Carbon Life	SS	2010 -2016
ARCH 402 Architectural Design (study abroad in Rome)	Sp	2010
ARCH 431 Analytical Drawing (study abroad in Rome)	Sp	2010
ARCH 528B Topical Studies in Architecture (Technology)		
Solar Decathlon public communication and jury presentation	F	2009
DSN S 446/546: Design Studies: Solar Decathlon Interdisciplinary Workshop and Studio	F/Sp	2008/09
DSN S 446/546: Timber in the City Competition studio	Sp	2013
ARCH 458: Environmental Control Systems in Architecture	F	2007/08/09
ARCH 528b Topical Studies in Architecture: Energy modeling with Ecotect	Su	2008
ARCH 401: Architectural Design V: Comprehensive Design Studio	F	2007
ARCH 357: Environmental Forces in Architecture	Sp	2007/08/09
ARCH 506: Architectural Design II for Graduate Students	Sp	2007/08
ARCH 601: Advanced Architectural Design I for Graduate Students	F	2006
ARCH 402: Architectural Design VI/ Rome Study Abroad Program	Sp	2006
Berlin Study-Abroad Program, U. Kentucky: Building Technology & Professional Practice	F	2002/2004
Elective Advanced Architectural Design: Wide Span Steel Prototypes, TU Berlin		1998-1999
Design Foundation, Building Technology, Climate Design and Professional Practice, TU Berlin		1993-1998

DIRECTION OF MASTERS CANDIDATES (Major Professor)

M.S. in Architecture thesis supervisor for Brian Walker: "The promotion of user autonomy within an architectural space through the design and application of adaptable systems."	2011
M.Arch II Thesis supervisor for Gaurav Tuladhar (B.Arch): "Design Strategies for Sustainable Residential Building in Kathmandu Metropolitan City: Nepal."	2010

SERVICE ON MASTERS COMMITTEES

- PhD in Construction Engineering, Thesis Committee member for Firas
- M.Sc. In Mechanical Engineering, Thesis Committee member for Lucas Mutti, "Numerical simulation of a comprehensive 1-D building energy model and conjugate heat transfer analysis on the internal flow field at the Harran houses in southern Turkey for a brick corbelled internal surface" (2014). Graduate Theses and Dissertations. Paper 14049.

- M.Sc. In Geological and Atmospheric Sciences, Thesis Committee member for Patton, Shannon, "Development of a future typical meteorological year with application to building energy use" (2013). Graduate Theses and Dissertations. Paper 13635.
- M.Sc. in Mechanical Engineering, Thesis Committee member for Ali Surel (B.Sc.) "Evaluation of Pleotint, A new thermochromic glass material," Iowa Energy Center and Prof. Ron Nelson, Gregory Maxwell. 2012
- M.Sc in Mechanical Engineering, Thesis Committee member for Tim Lentz (B.Sc.) "Energy Systems design and performance evaluation for the ISU Solar Decathlon." Prof. Ron Nelson, Gregory Maxwell. 2010

PROFESSIONAL LEADERSHIP, INSTITUTIONAL SERVICE AND AFFILIATIONS (A Selection)

- Society for Building Science Educators (SBSE) President Elect since 2015
- Data Driven Science ISU faculty steering committee member since 2015
- Research, Extension and Outreach Council Chair in the College of Design (elected) since 2014
- Chair of faculty search committee for a Technology position 2013
- "Ad hoc committee in the VPRED office for Research,"
Develop an ISU description for Sustainability in Research (University wide, appointed). 2012
- ISU "Live Green Loan Fund Committee," (University wide, appointed) 2011
- Corresponding Member of Technical Committee 4.2: Weather Data of the American Society of Heating, Refrigeration and Air-Conditioning Engineers. 2011
- "ISU President's Committee for the organization of the Third Annual Sustainability Symposium,"
Chair of the poster session organization subcommittee (February 21, 2011) (Appointed Member). 2010 /2011
- Member of Faculty search committee for History and Structure (Appointed). 2011
- Member of Faculty search committee for Design and Technology (Appointed). 2011
- ISU College of Design Ad hoc committee Masters degree in Interdisciplinary Sustainable Design 2010
- ISU Center for Excellence in the Arts and Humanities (CEAH) Committee to develop
new grant structures based on new strategic plan 2010
- ISU President's Committee for the organization of the Second Annual Sustainability Symposium 2010
- ISU Council of Sustainability Steering Committee Member 2009 - 2013
- ISU College of Design Sustainability Consortium 2009
- ASHRAE, Associate Member 2009
- Director, Iowa State University's Center for Building Energy Research (CBER) since 2008
- AIA, American Institute of Architects, International Associate 2008
- Society for Building Science Educators (SBSE) Member and Scholarship subcommittee 2009
- Chair of the Technology Committee of the Department of Architecture (re-elected till 2012) 2007
- Member to the Curriculum Committee of the Department of Architecture 2007
- Solar Decathlon Planning Team 2006
- Steering Committee, Green Design Research Collaborative (GDRC) 2006
- Bund Deutscher Architekten (equivalent to the College of Fellows of the AIA) 2005
- Head of the Jury for the Prize of German Steel 2004 announced by "Bauen mit Stahl" 2004
- Head of the Jury for the MSH-Prize for Steel Architecture 2002; Vallourec & Mannesmann 2002

IOWA STATE INTERNAL FUNDING

- Foreign Travel Grant to Seinajoeki Finland to attend the 2017 Alvar Aalto Seminar 2017
- Foreign Travel Grant to Rovaniemi Finland to attend the 2015 Alvar Aalto Researcher conference 2015
- Miller faculty fellowship (\$9,000) received for 2014-2015 from ISU CELT: Active Collaboration for Sustainable Technological Integration with Rob Whitehead (PI), Kris Nelson and Andrea Wheeler.
<http://www.celt.iastate.edu/for-faculty/miller-faculty-fellowships/2014-2015/>. 2014
- IPRT seed funding award for Spring 2014 (\$19,547): Towards future urban microclimate models. 2014
- "USGBC R2P2 (United States Green Building Council Research to Practice Project),"
in collaboration with ISU F,P&M and ISU Council on Sustainability. (\$2,000 internal ISU funding

as Co-PI, PI: Kerry Dixon-Fox),	2012
College of Design Investment grant to conduct preliminary collaborative CFD research	2011
Foreign Travel Grant to Helsinki, Finland and Vyborg, Russia meeting with Aalto Foundation	2009
IPRT Company Assistance Seed Funding: Prototype of biobased insulation based on the soy protein zein (Co-PI / PI: Muecke) (\$8,600).	2009
IPRT Company Assistance Seed Funding: Monitoring Equipment Solar Decathlon House (PI/Co-PI: Nelson) (\$5,000).	2009
Iowa State College of Design Faculty Enhancement Grant to set up the Solar Decathlon 2009 team	2007
Foreign Travel Grant to present a research paper at a conference in Chennai, India (\$1621)	2007
CELT TEACH Grant Center for Excellence in Learning and Teaching (\$1500)	2006
Women Enhancement Mini – Grant, Iowa State U. to organize the lecture series, “Women in Sustainable Design” (with Prof. Francine Battaglia) (\$3000)	2006

SERVICE AS A REFEREE FOR JOURNALS, BOOKS, GRANTS, CONFERENCES (recent)

Department of Energy Building Technology Office Peer reviewer	2015 / 2016
Proposal review for U. S. Department of Energy's EERE (Energy Efficiency and Renewable Energy) Strategic Programs SBIR/STTR Phase I, Release 3 Review (Small Business Innovation Research and Technology Transfer Program).	2012
Peer-review of a paper submitted for the Energy Efficient Buildings and Green Buildings Special Edition of the Energies Journal (http://www.mdpi.com/journal/energies).	2012
Paper review for The ASME (American Society of Mechanical Engineers) 2012 International Design Engineering Technical Conferences (IDETC) and Computers and Information in Engineering Conference (CIE); August 12-15, 2012 in Chicago, IL. The conference is the flagship international meeting for Design Engineering.	2012
Editorial Board member (invited) to the Journal of Architecture Engineering Technology (JAET).	2012
Working Group III of the Intergovernmental Panel on Climate Change (IPCC). Invitation to participate in the expert review of the First Order Draft (FOD) of the WG III contribution to the IPCC's Fifth Assessment Report (AR5). The IPCC, with seat in Geneva (http://www.ipcc.ch), is the leading scientific body for the assessment of climate change, established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to provide the world with clear scientific view on the current state of climate change and its potential environmental and socio-economic consequences.	2012
Grant Reviewer for the US Department of Energy (DOE) the DOE reviewing Concept Paper applications for the Building Technologies Program FOA, “Energy Savings through Improved Mechanical Systems and Building Envelope Technologies, DE-FOA-0000621”.	2012
Peer-reviewer for Solar 2010, Annual Conference of ASES (American Solar Energy Society).	2010
Peer-reviewer of research proposals for the AAAS (American Association for the Advancement of Science).	2009
Peer-reviewer of research proposals for the BSA (Boston Society of Architects)	2009
Manuscript peer- reviewer for ASHRAE Transactions (major research publication of ASHRAE)	2009
Associate Editor to the International Journal of Design Principles and Practices.	2009
Peer-reviewer for a session at the 2010 ACSA Annual Meeting in New Orleans.	2009