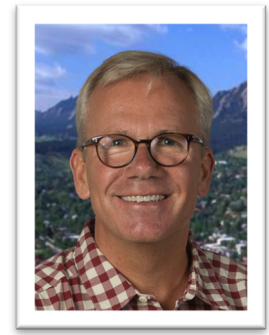


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Experience

INTERIM CO-DIRECTOR

RENEWABLE AND SUSTAINABLE ENERGY INSTITUTE BOULDER, COLORADO JULY 2020 – TODAY

ASSOCIATE DIRECTOR

RENEWABLE AND SUSTAINABLE ENERGY INSTITUTE BOULDER, COLORADO JULY 2017 – JUNE 2020

Providing leadership in the development and execution of sponsored research programs; mentor junior faculty and facilitate R&D partnerships between all UC Boulder faculty and potential collaborators at NREL with expertise in building systems, building efficiencies and other renewable and sustainable research topics.

VISITING SCIENTIST

INSTITUTE FOR PROSPECTIVE TECHNOLOGICAL STUDIES SEVILLA, SPAIN OCTOBER 2014 – JUNE 2015

Visiting scientist in research group providing global long-term (100 year) energy forecasting and analysis as part of the European Commission's Joint Research Center.

VISITING PROFESSOR

UNIVERSIDAD DE SEVILLA SEVILLA, SPAIN SEPTEMBER 2014 – JUNE 2015

Visiting professor in Department of Electrical Engineering with focus on building-to-grid integration and electric grid innovation.

JOINT PROFESSOR

NATIONAL RENEWABLE ENERGY LABORATORY GOLDEN, COLORADO OCTOBER 2013 – PRESENT

Joint appointment in the Commercial Buildings Research Group

AREN FACULTY DIRECTOR

UNIVERSITY OF COLORADO BOULDER, COLORADO JULY 2012 – JUNE 2014

AREN Faculty Director for Department of Civil, Environmental and Architectural Engineering

ASSOCIATE CHAIR

UNIVERSITY OF COLORADO BOULDER, COLORADO JULY 2010 – JUNE 2012

Associate Chair for Department of Civil, Environmental and Architectural Engineering

FOUNDER/CHIEF SCIENCE OFFICER

QCOEFFICIENT, INC. CHICAGO, ILLINOIS JULY 2008 – PRESENT

Founder and chief science officer for Chicago-based company developing model predictive control solutions to integrate commercial building HVAC operation with electric grid operations.

PROFESSOR

UNIVERSITY OF COLORADO BOULDER, COLORADO AUGUST 2008 – PRESENT

Faculty member in the Building Systems Engineering Program of the Department of Civil, Environmental and Architectural Engineering in the College of Engineering and Applied Science at the University of Colorado. Teaching focus on thermal environmental engineering, mechanical systems design, building control and

automation systems, advanced solar systems, applied data analysis for energy scientists and engineers, as well as sustainable building design.

His research includes model predictive optimal control of building energy systems and building thermal mass, control strategies for mixed-mode buildings that incorporate both natural and mechanical ventilation, uncertainty quantification of occupant behavior and its impact, occupancy detection using distributed sensor networks as well as the integration of building energy system operations with the electric grid system.

VISITING SCIENTIST

FRAUNHOFER INSTITUTE FOR SOLAR ENERGY SYSTEMS FREIBURG, GERMANY SEPTEMBER 2005 – JULY 2006

a) Solar Buildings Group: 1) Impact of adaptive comfort criteria and heat waves on optimal building thermal mass control. 2) Primary energy and comfort performance of ventilation assisted thermo-active building systems in continental climates.

b) Fuel Cell Group: Heat transfer analysis of a micro-reformer fuel cell system (μ -RFCS).

VISITING PROFESSOR

UNIVERSITY OF APPLIED SCIENCES BIBERACH BIBERACH, GERMANY SEPTEMBER 2005 – JULY 2006

Teaching responsibility for courses in heat and mass transfer, control theory, as well as building energy system modeling and simulation. Developed two new courses in computational intelligence in control engineering as well as modeling and system theory.

PRINCIPAL

HENZE ENERGY CONSULTING BOULDER, COLORADO SEPTEMBER 2005 – PRESENT

Sole proprietor of small business that provides consulting services on renewable energy systems, building energy system engineering, and for the analysis of thermal and hydraulic problems.

VISITING SCIENTIST

SIEMENS BUILDING TECHNOLOGIES ZUG, SWITZERLAND MAY 2005 – AUGUST 2005

a) HVAC Laboratory: Measured and recommended modifications for the radiative/convective split of sensible heat gains from cooling load simulators and human subjects for spaces employing thermo-active building structures (concrete core conditioning) using scanning net radiometry. Investigated air velocity dependence of relative humidity sensors. b) Energy Controlling and Monitoring: Analysis and recommendation for enhancements.

ASSOCIATE PROFESSOR

UNIVERSITY OF NEBRASKA – LINCOLN OMAHA, NEBRASKA FALL 2004 – JULY 2008

VISITING PROFESSOR

TECHNICAL UNIVERSITY OF DRESDEN DRESDEN, GERMANY AUGUST – SEPTEMBER 2002

Research exchange at the Institute of Thermodynamics and Building Systems Engineering to collaboratively develop an approach for the real-time predictive optimal control of combined active and passive building thermal storage inventory.

ASSISTANT PROFESSOR

UNIVERSITY OF NEBRASKA – LINCOLN OMAHA, NEBRASKA OCTOBER 1999 – SUMMER 2004

Founding faculty member of the Architectural Engineering Program in the College of Engineering at the University of Nebraska – Lincoln. Responsibilities include assisting in the development of the Architectural Engineering curriculum for the B.S., M.Eng., M.A.E., and Ph.D. degrees, developing and teaching undergraduate and graduate courses, recruiting and advising students, and establishing a research and an international exchange program.

ENERGY ENGINEERING MANAGER

JOHNSON CONTROLS, INC. ESSEN, GERMANY OCTOBER 1998 – SEPTEMBER 1999

Manager of engineering department responsible for energy engineering activities in Germany. Duties included project coordination, customer relations, quality assurance, standardization of business processes, and strategic planning.

PROJECT MANAGER

JOHNSON CONTROLS, INC. FRANKFURT, GERMANY OCTOBER 1997 – SEPTEMBER 1998

Development of a building energy performance monitoring database management system suitable for continuously monitoring and analyzing large groups of remote building sites over multiyear periods.

ENERGY ENGINEER

JOHNSON CONTROLS, INC. ESSEN, GERMANY JANUARY 1996 – SEPTEMBER 1997

Responsible for energy engineering in start-up energy savings performance contracting (ESPC) group. Tasks included energy analysis of more than 40 commercial buildings throughout Europe, development of strategies to improve energy utilization and decrease utility costs including financing procedures.

POST-DOCTORAL ASSISTANT

UNIVERSITY OF COLORADO BOULDER, COLORADO JULY 1995 – DECEMBER 1995

Development of a predictive optimal controller for thermal energy storage systems subject to uncertainty in thermal loads, ambient conditions, and underlying system models.

RESEARCH ASSISTANT

UNIVERSITY OF COLORADO BOULDER, COLORADO JANUARY 1993 – JUNE 1995

(1) Development of optimal control strategies for ice storage systems in commercial building cooling plants and comparison of their performance with conventional controls. (2) Experiments on the performance and robustness of direct digital control systems in a large-scale HVAC laboratory.

TEACHING ASSISTANT

TECHNICAL UNIVERSITY OF BERLIN BERLIN, GERMANY MAY 1990 – MARCH 1992

Assisted in courses in thermodynamics and renewable energy sources. Generation of a simulation model and setup of a digital data acquisition system for a solar domestic hot water system.

RESEARCH ENGINEER

EMS CHEMIE AG DOMAT/EMS, SWITZERLAND FEBRUARY 1990 – APRIL 1990

Development of improved waste heat removal concepts for polymer and synthetic fiber production at a Swiss chemical engineering company.

Consulting

- *Google, Inc. v. EcoFactor*: Representing Google as defendant in patent infringement case in the International Trade Commission regarding smart thermostats as technical expert, since November 2019.
- *TAS Energy Inc. v. Stellar Energies Americas, Inc.*: Representing TAS Energy Inc. as plaintiff in patent infringement action regarding gas turbine inlet cooling technology as technical expert; case settled Nov 2016 (May 2015 - Nov 2016).
- *Carrier Corp. v. Goodman Global, Inc., et al* (D. Del): Representing Carrier as plaintiff in patent infringement action regarding HVAC technology as technical expert; jury trial won September 2014 (2012-2014).
- Robert Bosch GmbH: Investigation of short-term forecasting models and advanced algorithms for energy efficiency in commercial buildings (2007-2013).
- Belimo Automation AG: Evaluation of novel control valve designs (2007-today).
- Boehringer Ingelheim Pharmaceuticals: Optimal design and control of a chilled-water thermal energy storage system (2006-2007).

- Fraunhofer Institute for Solar Energy Systems: Simplified hybrid modeling of buildings and associated parameter estimation, automated fault detection and diagnostics (2006-today).
- Bruehlmann IMR Consulting: Modeling and simulation of coupled hydraulic and thermal networks (2005 – 2007).
- MCE Stangl GmbH: Consultant for energy services (2005 – 2007).
- Johnson Controls, Inc.: Consultant assisting in the preparation of proposals for federal energy savings performance contracts, in particular for the U.S. Air Force and U.S. Army. Contributions include energy engineering, development of measurement and verification methods according to FEMP guidelines, and proposal writing (2000 – 2005).

Education

University of Colorado	Doctor of Philosophy – Ph.D. Civil Engineering – Building Systems Engineering, 1995 Dissertation: <i>“Evaluation of Optimal Control for Ice Storage Systems”</i> Advisor: Moncef Krarti
Technical University of Berlin	Diplom-Ingenieur – Dipl.-Ing. Mechanical Engineering (Energy and Processes), 1992 Thesis: <i>“Performance Characterization and Optimization of a Ceramic Vehicular Gas Turbine on the Basis of Turbo-Charger Units”</i> Advisor: Helmut Pucher
Oregon State University	Master of Science – M.S. Mechanical Engineering (Thermal Sciences), 1991 Project: <i>“Order-of-Magnitude Analysis: An Approximate Approach to the Solution of Selected Engineering Problems”</i> Advisor: Murty Kanury
Technical University of Berlin	Vor-Diplom – B.S. Mechanical Engineering (Energy and Processes), 1989

Professional Registration

ASHRAE-certified High-Performance Building Design Professional (HBDP).
Licensed professional mechanical engineer in Nebraska (license no. E-10692).

Honors and Awards

- Interim Co-**Director** RASEI 2020-2021
- RASEI **Associate Director** for Energy Systems for the Built Environment 2017-2020
- Charles Victor Schelke **Endowed Chair** 2017
- University of Colorado Architectural Engineering **Appreciation Award** 2015
- University of Colorado CEAE Department **Service Award** 2014
- Endowed **Lewis-Worcester Faculty Fellowship** 2014-2018
- Architectural Engineering Institute (AEI) 2013 Conference **Best Paper Award**
- University of Colorado CEAE Department **Distinguished Achievement Award** 2012

- Colorado Cleantech Industry Association **Research and Commercialization Award** 2011
- University of Colorado CEAE Department **Research Development Award** 2011
- Renewable and Sustainable Energy Institute (RASEI) **Founding Fellow and Executive Committee Member** 2010
- University of Nebraska-Lincoln College of Engineering **Holling Family Distinguished Teaching Award for Innovative Use of Instructional Technology** 2006
- University of Nebraska-Lincoln College of Engineering **Holling Family Teaching Award** 2006
- University of Nebraska at Omaha **Alumni Outstanding Teaching Award** 2006
- American Society of Mechanical Engineers (ASME): **Best Paper Award**, International Solar Energy Conference 2004, Portland, Oregon
- UNL College of Engineering **Faculty Fellowship** for 2003 and 2004
- American Society of Mechanical Engineers (ASME): **Best Paper Award**, National Solar Energy Conference 2002, Reno, Nevada.
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE): **New Investigator Award** for the year 2001 (one per year).
- American Society of Mechanical Engineers (ASME): **Best Paper Award**, International Solar Energy Conference 1996, San Antonio, Texas.
- Texas A&M University, College Station, Texas: **Winner of Energy Predictor Shootout II** in team effort with Robert H. Dodier, 1995.
- William **Fulbright Scholarship** for graduate study at Oregon State University 1990 – 1991.

Grants

- DOE STTR Phase II: “P2P Transactions with Demand Flexibility for Increasing Solar Utilization.” \$994,698 (UCB share: \$325k), 2020-2022, V. Cushing (PI), G. Henze & G. Pavlak (Co-PIs).
- UCB CEAS Seed Grant: “Building Energy and Water Conservation Benefits from Peroxide Enhanced Germicidal Irradiation (PEGI).” \$92,449, 2019-2020, M. Hernandez (PI), G. Henze & K. Linden (Co-PIs).
- National Renewable Energy Laboratory: “The Relationship between Energy Efficiency and Demand Response.” \$256,919, 2019-2020, G. Henze (PI).
- DOE EERE BTO BENEFIT: “Multiobjective Deep Reinforcement Learning for Grid-Interactive Energy-Efficient Buildings.” \$1,579,684, 2019-2022, A. Bernstein (PI), G. Henze (Co-PI).
- DOE ARPA-E: “Battery-Free RFID Sensor Network with Spatiotemporal Pattern Network Based Data Fusion System for Human Presence Sensing.” \$2,000,000, 2018-2021, G. Henze (PI).
- WSP USA: “Evaluating the Value of Intelligent Building Systems.” \$72,981, 2017-2018, G.P. Henze (PI).
- National Renewable Energy Laboratory: “Reduced Order Models for Fuel Cell Integrated Commercial Buildings.” \$11,659, 2017, G.P. Henze (PI).
- Construction Industry Institute: “Modeling and Optimizing the Lifecycle Business Return of Building Investments.” \$128,330, 2017-2018, G.P. Henze (Co-PI).
- National Renewable Energy Laboratory: “Building-to-Grid Model Development for Advanced Sensing in the Distribution Grid.” \$195,000, 2016-2019, G.P. Henze (PI).
- National Renewable Energy Laboratory: “Load Disaggregation for Distributed Energy Resource Siting and Optimization” \$39,176, 2016, G.P. Henze (PI).
- National Renewable Energy Laboratory: “Hybrid Model-Based and Data-Driven Fault Detection and Diagnostics for Buildings.” \$49,149, 2014-2015, G.P. Henze (PI).

- Belimo, Switzerland: “Investigation Central Plant Benefits of Energy Valves.” \$37,630, 2014, G.P. Henze (PI).
- National Renewable Energy Laboratory: “Energy Signal Tool.” \$82,762 , 2013-2014, G.P. Henze (PI).
- Belimo, Switzerland: “Investigation Central Plant Benefits of Energy Valves.” \$36,000, 2013, G.P. Henze (PI).
- National Renewable Energy Laboratory: “Energy Systems Integration (ESI) Visualization Framework.” \$78,180, 2013, G.P. Henze (PI).
- The Energy Research Corporation: “Monitoring Based Commissioning Using Calibrated Building Models.” \$93,291, 2012-2013, G.P. Henze (PI).
- Belimo, Switzerland: “Investigation Central Plant Benefits of Energy Valves.” \$34,000, 2012, G.P. Henze (PI).
- NSF EAGER: “Centralized Control of Large-Scale Distributed Sensor/Actuator Networks: Self-organizing Amorphous Facades.” \$120,000, 2012-2013, G.P. Henze (Co-PI) with Nikolaus Correll (PI).
- Clean Urban Energy, Inc.: “Buildings2Grid: Integration of Commercial Buildings Operation with the Electric Grid System.” \$376,465, 2011-2013, G.P. Henze (PI).
- Belimo, Switzerland: “Experimental Investigation of Pressure-Independent Control Valves.” \$32,000, 2011, G.P. Henze (PI).
- Clean Urban Energy, Inc.: “Reduced Order Modeling for Dynamic Building Control in Response to Real-Time Utility Signals.” \$80,519, 2011, G.P. Henze (PI).
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE): “Stochastic Control Optimization of Mixed-Mode Buildings for U.S. Climates,” \$297,866, 2010-2012, G.P. Henze (PI), G.S. Brager (co-PI, University of California), C. Felsmann (Co-PI, Technical University of Dresden).
- ITG Dresden, Ltd.: “Control of Thermally Activated Building Structures,” \$47,540, 2010, G.P. Henze (PI).
- Tendril Networks, Inc.: “Evaluation and Validation of Smart Grid Automated Control Strategies for Residential Buildings,” \$37,484, 2009-2010, G.P. Henze (PI).
- Clean Urban Energy, Inc.: “Dynamic Building Control in Response to Real-Time Utility Signals.” \$77,556, 2009, G.P. Henze (PI).
- U.S. Green Building Council: “HVAC Control Strategies for Mixed Mode Buildings,” \$249,915, 2009-2011, G.P. Henze (PI), C. Felsmann (Co-PI, Technical University of Dresden), J. Pfafferott (co-PI, Fraunhofer Institute for Solar Energy Systems).
- German Ministry for Commerce and Technology (Bundesministerium für Wirtschaft und Technologie): “Low-Exergy System Integration ,” 2008-2011, level of funding: €1,170,000 (\$1,837,000), Co-PI. (PI: J. Pfafferott, Fraunhofer Institute for Solar Energy Systems with German industrial partners Johnson Controls, DS-Plan, ITG Dresden, and others.).
- U.S. Department of Education: “Nebraska Graduate Assistance in Areas of National Need (GAANN) in Engineering and Assistive Technology,” 2007-2010, level of funding \$383,643, Co-PI.
- German Ministry for Commerce and Technology (Bundesministerium für Wirtschaft und Technologie): “ModBen –Development of a Procedure for Model-Based Building Performance Analysis,” 2006-2010, level of funding: €1,200,000 (\$1,680,000), Co-PI. (PI: C. Neumann, Fraunhofer Institute for Solar Energy Systems with German industrial partners M+W Zander and Ennovatis).
- U.S. Department of Energy – National Energy Technology Laboratory: “Development of an Accurate Feed-Forward Temperature Control Tankless Water Heater,” 2005 – 2008, funding level: \$456,395, Consultant. (PI: G. Yuill).
- Johnson Controls, Inc.: “Evaluation of Modelica for Building Control Systems Analysis,” 2005-2007, level of funding: \$90,000, PI.
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE): “Evaluation of Building Thermal Mass Savings (1313-TRP),” 2004 – 2006, level of funding: \$89,101, PI.
- University of Nebraska – Lincoln Strategic Cluster Research Grant: “Integrated Wireless Systems for Assistive Technology”, 2004 – 2006, funding level: \$80,000, Co-PI.

- State Technologies Advancement Collaborative Solicitation 03-STAC-1: “Real-Time Predictive Optimal Control of Active and Passive Building Thermal Storage Systems” STAC. 2004 – 2005, level of funding: \$151,656, Co-PI.
- U.S. Department of Energy – National Energy Technology Laboratory: “Converging Redundant Sensor Network Information for Improved Building Control”, 2004 – 2006, funding level: \$354,440, Co-PI.
- University of Nebraska – Lincoln: Layman Award, 2003, level of funding: \$10,000, PI.
- Nebraska Research Initiative – “Development of the University of Nebraska Center for Building Integration”, 2002 - 2004 level of funding: \$130,732, Co-PI.
- U.S. Department of Energy – National Energy Technology Laboratory: “Analysis, Laboratory Testing, and Field Implementation of Predictive Optimal Control of Active and Passive Building Thermal Storage Inventory”, 2001 – 2004, level of funding: \$401,179, PI.
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE): “Evaluation of Predictive Optimal Control of Active and Passive Building Thermal Storage Inventory” (New Investigator Award for 2001), 2001 – 2002, level of funding: \$61,185, PI.
- University of Nebraska – Lincoln: Layman Award, 2001, level of funding: \$7,000, PI.
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE): “Metering Residential Hot Water by End Use (Development of Standard Protocol),” ASHRAE 1172-TRP, 2000 – 2003, level of funding: \$70,354, Co-PI.

Professional Memberships and Service

- Co-Chair for Workshop on Intelligent Building Operations, University of Colorado, August 2019
- Co-Chair for Workshop on Intelligent Building Operations, Purdue University, June 2018
- Associate Editor for IEEE Control Systems Letters 2017 – 2020
- Co-Chair for Workshop on Intelligent Building Operations, Purdue University, June 2016
- Editorial Board Member for Journal Building Performance Simulation since 2015
- Associate Editor for ASCE Journal of Architectural Engineering 2015 – 2019
- Associate Editor of Elsevier Journal *Renewable Energy* in the topical area of “Low Energy Architecture and Buildings” for 2014 – 2015.
- Renewable and Sustainable Energy Institute (RASEI) Executive Committee Member
- Chair for Workshop on Intelligent Building Operations, Boulder, June 2013
- Taskforce on Applications of Approximate Dynamic Programming and Reinforcement Learning for the IEEE Computational Intelligence Society - ADPRL Technical Committee
- Chair for Workshop on Model Predictive Control in Buildings, Montreal, June 2011.
- American Society of Mechanical Engineers Solar Energy Division Technical Committee Chair for Conservation and Solar Buildings for 2008-2014.
- Associate Editor of the *Journal of Solar Energy Engineering* in the topical area of “Conservation and Solar Buildings” for 2008-2014.
- Member of ASHRAE committee charged with developing a certification program on Sustainable Building Design and Operation
- American Society of Heating, Refrigerating, and Air Conditioning Engineers
 - ✓ Technical Committee 7.5 Smart Building Systems: member
 - ✓ Technical Committee 1.4 Control Theory: member

Patents

Records of Invention

R. Cruickshank, G.P. Henze, A.R. Florita, C.D. Corbin, ROI-19-68 Joint optimization of electricity generation and use, April 1, 2019

Application Pending

V.J. Cushing and G.P. Henze, Optimization of Attributes in a Portfolio of Commercial and Industrial Facilities, application submitted Feb 24, 2012, US PTO.

Awarded

G.P. Henze, V.J. Cushing, C.D. Corbin, and S. Plamp, Integration of Commercial Building Operations with Electric System Operations and Markets, patent no. 10,373,082, awarded Aug 6, 2019, US PTO.

C.J. Sloup, D. Karnes, and G.P. Henze (2011) Real-Time Global Optimization of Building Setpoints and Sequence of Operation, patent no. 7,894,943, awarded Feb 22, 2011, US PTO.

Publications

Google Scholar *h*-index = 38 with over 5000 citations (accessed September 2020)

Publications – Under Review

Yang Shiyu, Wan Man Pun, Ng Bing Feng, Swapnil Dubey, Gregor P. Henze, Chen Wanyu, Krishnamoorthy Baskaran (2020). An Experimental Study of Model Predictive Control for Integrated Control of Air-Conditioning and Mechanical Ventilation, Lighting and Shading Systems. *Applied Energy*, submitted August 6, 2020.

Nicholas Long, Fatema Almajed, Justus von Rhein, Gregor Henze (2020). Development of a Metamodeling Framework for Building Energy Models with Application to Fifth-Generation District Heating and Cooling Networks. *Journal of Building Performance Simulation*, resubmitted on May 31, 2020.

Margarite Jacoby, Cory Mosiman, Gregor Henze, Hannah Blake, Sin Yong Tan, Homagni Saha, Soumik Sarkar “Development of a Human Presence Detection System for Residential Occupancy Data Collection.” Sixth International High Performance Buildings Conference at Purdue, July 13-16, 2020, submitted April 4, 2020.

Book Chapters

Henze, G.P. (2019) “Modelling and Simulation in Building Automation Systems.” Chapter 14 in *Building Performance Simulation for Design and Operation 2/e* (eds. J.L.M. Hensen and R. Lamberts), Taylor and Francis.

Henze, G.P. and C. Neumann (2012) “Modelling and Simulation in Building Automation Systems.” Chapter 14 in *Building Performance Simulation for Design and Operation* (eds. J.L.M. Hensen and R. Lamberts), Taylor and Francis.

Journal Publications – Published, In Print, or Accepted for Publication

Adam McKittrick and Gregor Henze (2020). Cost Analysis of Annual and Monthly Net Zero Energy Performance for Multifamily Buildings in the United States. *Journal of Architectural Engineering*, accepted October 20, 2020.

Christina Turley, Maggie Jacoby, Gregor Henze and Gregory Pavlak (2020) “Development and evaluation of occupancy-aware HVAC control for residential building energy efficiency and occupant comfort.” *Energies* 2020, 13, 5396. <https://www.mdpi.com/1996-1073/13/20/5396>.

John Nelson and Gregor Henze (2020). Evaluation of the passive cooling potential of mass inherent in medium to large commercial buildings. *Journal of Architectural Engineering*, accepted on September 9, 2020.

Buffa, S.; Soppelsa, A.; Pipiciello, M.; Henze, G.; Fedrizzi, R. Fifth-Generation District Heating and Cooling Substations: Demand Response with Artificial Neural Network-Based Model Predictive Control. *Energies* 2020, 13, 4339.

- Amy Allen, Gregor Henze, Kyri Baker, and Gregory Pavlak (2020) "Evaluation of Low-Exergy HVAC Systems and Topology Optimization for Deep Energy Savings at the Urban District Level." *Energy Conversion and Management*, Volume 222, 15 October 2020, 113106.
- Nicholas Smith and Gregor Henze (2020). Modeling Wastewater Heat Recovery Heat Pump Systems. *Journal of Sustainable Development of Energy, Water and Environment Systems*, accepted April 7, 2020.
- Karpilow, Alexandra; Henze, Gregor; Beamer, Walter (2020). Assessment of Commercial Building Lighting as a Frequency Regulation Resource. *Energies* 13, 613.
- Vazquez-Canteli, Jose Ramon; Deetjen, Thomas; Henze, Gregor; Kämpf, Jérôme; Nagy, Zoltan (2019). Multi-Agent Reinforcement Learning for Adaptive Demand Response in Smart Cities, *Journal of Physics: Conference Series* 1343 (012058).
- Yang, S., Wan, M. P., Ng, B. F., Dubey, S., Henze, G. P., Rai, S. K., & Baskaran, K. (2019). Experimental study of a model predictive control system for active chilled beam (ACB) air-conditioning system. *Energy and Buildings*, 203, 109451.
- Cruikshank, R., Henze, G., Balaji, R., Hodge, B. M., & Florita, A. (2019). Quantifying the Opportunity Limits of Automatic Residential Electric Load Shaping. *Energies*, 12(17), 3204.
- Fallahi, Z., & Henze, G. P. (2019). Interactive Buildings: A Review. *Sustainability*, 11(14), 3988.
- von Rhein, J., Henze, G. P., Long, N., & Fu, Y. (2019). Development of a topology analysis tool for fifth-generation district heating and cooling networks. *Energy Conversion and Management*, 196, 705-716.
- Homagni Saha, Anthony Florita, Gregor Henze, Soumik Sarkar (2019). Occupancy Sensing in Buildings: A Review of Data Analytics Approaches. *Energy and Buildings*; 188–189, 278-285.
- Doubleday, Kate; Hafiz, Faeza; Parker, Andrew; Elgindy, Tarek; Florita, Anthony; Henze, Gregor; Salvalai, Graziano; Pless, Shanti; Hodge, Bri-Mathias (2019). Integrated Distribution System and Urban District Planning With High Renewable Penetrations; *WIREs Energy and Environment*; 8(5), e339.
- Patteeuw, D., Henze, G. P., Arteconi, A., Corbin, C. D., & Helsen, L. (2019). Clustering a building stock towards representative buildings in the context of air-conditioning electricity demand flexibility. *Journal of Building Performance Simulation*, 12(1), 56-67.
- Elci, M., Delgado, B. M., Henning, H. M., Henze, G. P., & Herkel, S. (2018). Aggregation of residential buildings for thermal building simulations on an urban district scale. *Sustainable Cities and Society*, 39, 537-547.
- Liu, C., Akintayo, A., Jiang, Z., Henze, G. P., & Sarkar, S. (2018). Multivariate exploration of non-intrusive load monitoring via spatiotemporal pattern network. *Applied Energy*, 211, 1106-1122.
- Bruggmann, P, G.P. Henze (2017). Towards Grid Friendly Zero Energy Buildings. *Journal of Architectural Engineering*, 24(2).
- Jiang, Z., Liu, C., Akintayo, A., Henze, G.P., & Sarkar, S. (2017). Energy prediction using spatiotemporal pattern networks. *Applied Energy*, 206, 1022-1039.
- Pfaffertrott, J., Henze, G. P., Lang, T. (2017). Bauteilaktivierung: Welche Betriebsführungsstrategie passt zu welchem Gebäude? (In German) *Bauphysik*; October 2017.
- Wang, N., Phelan, P. E., Gonzalez, J., Harris, C., Henze, G. P., Hutchinson, R., ... & Roth, K. (2017). Ten questions concerning future buildings beyond zero energy and carbon neutrality. *Building and Environment*, 119, 169-182.
- Ryan, M. H., & Henze, G. P. (2017). Airside System-Type Prediction Enabled by Intelligent Pressure Independent Control Valves. *Journal of Architectural Engineering*, 23(3), 04017017.
- Boxer, E., Henze, G. P., & Hirsch, A. I. (2017). A model-based decision support tool for building portfolios under uncertainty. *Automation in Construction*, 78, 34-50.
- Corbin, C. D. & Henze, G. P. (2017) Predictive control of residential HVAC and its impact on the grid. Part I: simulation framework and models, *Journal of Building Performance Simulation*, 10:3, 294-312, DOI: 10.1080/19401493.2016.1231220
- Corbin, C. D. & Henze, G. P. (2016). Residential HVAC as a Supply Following Resource Part II: Simulation Studies and Results. *Journal of Building Performance Simulation*.
- Lawrence, T. M., Boudreau, M. C., Helsen, L., Henze, G. P., Mohammadpour, J., Noonan, D., Patteeuw, D., Pless, S., & Watson, R. T. (2016). Ten questions concerning integrating smart buildings into the smart grid. *Building and Environment*, 108, 273-283.

- Pavlak, G. S., Henze, G. P., Hirsch, A. I., Florita, A. R., & Dodier, R. H. (2016). Experimental verification of an energy consumption signal tool for operational decision support in an office building. *Automation in Construction*, 72, 75-92.
- Giuliani, M., Henze, G. P., & Florita, A. R. (2016). Modelling and calibration of a high-mass historic building for reducing the rebound effect in energy assessment. *Energy and Buildings*, 116, 434-448.
- Patteuw, D., Henze, G. P., & Helsen, L. (2016). Comparison of load shifting incentives for low-energy buildings with heat pumps to attain grid flexibility benefits. *Applied Energy*, 167, 80-92.
- Henze, G. P., Pless, S., Petersen, A., Long, N., & Scambos, A. T. (2015). Control limits for building energy end use based on frequency analysis and quantile regression. *Energy Efficiency*, 8(6), 1077-1092.
- Pavlak, G. S., Henze, G. P., & Cushing, V. J. (2015). Evaluating synergistic effect of optimally controlling commercial building thermal mass portfolios. *Energy*, 84, 161-176.
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Henze, G.P. and P.T. May-Ostendorp (2012) "United States Green Building Council Green Building Research Fund Final Report - HVAC Control Algorithms for Mixed Mode Buildings." United States Green Building Council.

Neumann, C. et al. (2011) "Modellbasierte Methoden für die Fehlererkennung und Optimierung im Gebäudebetrieb (English Translation: 'Model-Based Methods for Fault Detection and Optimization in Building Operations')." Fraunhofer ISE, Technical Report O327410A-C.

Tiller, D.K., G.P. Henze and X. Guo (2008) "U.S. Department of Energy Cooperative Agreement DE-FC26-04NT41971 – Converging redundant sensor network information for improved building control – Final Report." U.S. Department of Energy – National Energy Technology Laboratory.

Henze, G.P., M.J. Brandemuehl, C. Felsmann, A. Florita, and H. Cheng (2007) "Final Project Report for ASHRAE Research Project 1313-RP: Evaluation of Building Thermal Mass Savings." American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Atlanta, Georgia.

Henze, G.P. and S. Liu (2005) "U.S. Department of Energy Cooperative Agreement DE-FC-36-03G013026 - Real-Time Predictive Optimal Control of Active and Passive Building Thermal Storage Inventory - Final Report for Phase II: Laboratory Testing." U.S. Department of Energy – National Energy Technology Laboratory.

Henze, G.P. and M. Krarti (2005) "U.S. Department of Energy Cooperative Agreement DE-FC-26-01NT41255 – Predictive Optimal Control of Active and Passive Building Thermal Storage Inventory – Final Report." U.S. Department of Energy Information Bridge: www.osti.gov/servlets/purl/894509-GH9Mqf/.

Tiller, D.K. and G.P. Henze (2003). "Final Report on ASHRAE Project 1172-TRP: Metering Residential Hot Water by End Use (Development of Standard Protocol)." American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Atlanta, Georgia.

Henze, G.P. (2003) "ASHRAE New Investigator Award – Final Report." American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Atlanta, Georgia.

Krarti, M., M.J. Brandemuehl, and G.P. Henze (1995) "Final Project Report for ASHRAE 809-TRP: Evaluation of Optimal Control for Ice Storage Systems." American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Atlanta, Georgia.

Krarti, M., G.P. Henze, D. Bell, J.F. Kreider, M.J. Brandemuehl, and L.K. Norford (1997) "Model Based Optimizer Systems With TES: Final Report." JCEM Technical Report TR/97/15, University of Colorado at Boulder.

Professional Presentations

- IEEE Blockchain Transactive Energy Summit at the University of Colorado, February 2020: Seminar on Estimating the Value of Jointly Optimized Electric Power Generation and Residential Electrical Use as an Opportunity for Blockchain Enabled Transactions with Robert Cruickshank.
- Università di Napoli Federico II, Naples, Ital, October 2018: Overview seminar on research portfolio.
- SDEWES 2018, Palermo, Sicily, October 2018: Research seminar on Modeling, Simulation, and Life Cycle Cost Analysis of Fifth-Generation District Heating and Cooling Networks.
- Libera Università di Bolzano, June 2018: Research seminar on End-to-End Modeling for Integration of Residential Building Portfolios with Electric Grid Operations.
- ETH Zurich, Department of Architecture, Chair of Information Architecture, July 2017: Research seminar on Building Response for Demand Flexibility - From Building Control to Electric Grid Integration.
- IBPSA Education Webinar: Building Automation in Building Simulation, June 2017: http://www.ibpsa.org/?page_id=695 or <https://www.youtube.com/watch?v=eg-Y30xsR-A&feature=youtu.be>
- IBPSA Building Simulation Applications Conference Bolzano, Italy, February 2017: Keynote seminar on Exploration of Building Model Complexity for Residential and Commercial MPC.
- IBPSA Building Simulation Applications Conference Bolzano, Italy, February 2017: Research seminar on Weather Scenario Generation for Stochastic Model Predictive Control using Vector Autoregressive Prediction.
- NREL Power Systems Engineering Center, September 2015: Research seminar on End-to-End Impact of Building Systems Response and Load Flexibility.
- International Institute for Energy Systems Integration (iiESI), August 2015: Research seminar on End-to-End Impact of Building Systems Response and Load Flexibility.
- Joint Research Center – Institute for Prospective Technological Studies, June 2015: Research seminar on Opportunities for Building Systems Response and Load Flexibility.
- Universidad de Sevilla, Spain, May 2015: Presentation of research seminar on the integrating of building energy consumption in smart grids focusing on residential building portfolios.
- Universidad de Sevilla, Spain, April 2015: Presentation of research seminar on the integrating of building energy consumption in smart grids focusing on commercial building portfolios.

- Universidad de Sevilla, Spain, November 2014: Presentation of research seminar on a probabilistic decision support system for building energy management.
- Joint Research Center – Institute for Prospective Technological Studies, September 2014: Research seminar on Impact of Large-Scale Distributed Residential HVAC Control Optimization on Electricity Grid Operation and Renewable Energy Integration.
- Portland State University, May 2014: Research seminar on Impact of Large-Scale Distributed Residential HVAC Control Optimization on Electricity Grid Operation and Renewable Energy Integration, available at <https://youtu.be/Ai6vxETH7ZM>
- Universidad de Sevilla, Spain, January 2014: Presentation of research seminar on Optimizing Building Operations in the Presence of Grid Feedback.
- University of California Davis, November 2013: Keynote speaker at “Green City. Smart City” German Innovation Seminars on Green Buildings: “Low-Energy Building Design and Optimal Operation”
- Santa Clara University, San Jose, California, November 2013: Keynote speaker at “Green City. Smart City” German Innovation Seminars on Green Buildings: “Net Zero Energy Buildings: State of the Industry”
- IEEE Power and Energy Society General Meeting in Vancouver, BC, July 2013: Presentation of one research seminar.
- ASHRAE Annual Meeting, Denver, Colorado, June 2013: Presentation of one research seminar.
- Intelligent Building Operations Workshop, Boulder, Colorado, June 2013: Presentation of four research seminars.
- RASEI 2013 Summer School on Energy Efficiency, Boulder, CO, May 2013: Presentation of one research seminar.
- University of Minnesota, Institute for Mathematics and Its Applications: Mathematical and Computational Challenges in the Control, Optimization, and Design of Energy-Efficient Buildings, Minneapolis, Minnesota, June 2013: Presentation of research seminar on Optimizing Building Operations in the Presence of Occupant-Driven Uncertainty and Grid Feedback
- Architectural Engineering Institute Conference, State College, PA, April 2013: Presentation of five technical papers.
- Institute for Energy Efficiency at the University of California at Santa Barbara, Oct 2012: Invited research seminar speaker on opportunities and challenges of advanced building controls.
- Joint Research Center of European Community, Ispra, Italy, June 2012: Invited research seminar speaker on opportunities and challenges of advanced building controls.
- Bosch Research and Technology Center, Pittsburgh, PA, April 2012: Invited research seminar speaker on advanced algorithms for energy efficiency in buildings.
- Society of Industrial and Applied Mathematics (SIAM) Conference on Uncertainty Quantification, Raleigh, NC, April 2012: Research seminar speaker on “Uncertainty Quantification for Better Commercial Buildings: From Design to Operation.”
- University of Colorado - Deming Center for Entrepreneurship, March 2012: Keynote speaker at “Entrepreneurship under the Microscope” annual celebration event.
- Nanyang Technological University, February 2012: Invited research seminar speaker on opportunities and challenges of advanced building controls.
- United States Green Building Council, December 2011: Invited research seminar speaker on mixed mode building design and associated advanced control.
- Lawrence Berkeley National Laboratory, Berkeley, CA, November 2011: Invited research seminar speaker on thermal mass and demand response.

- General Electric Co. (GE) Controls Symposium, Schenectady, NY, September 2011: Invited research seminar speaker on opportunities and challenges of advanced building controls.
- United Technologies Research Center, Hartford, CT, August 2011: Invited research seminar speaker on advanced building controls, past and current projects.
- Natural Resources Canada, Montreal, Canada, June 2011: Invited research seminar speaker on NZEB control.
- ASHRAE Annual Meeting, Montreal, Canada, June 2011: Presentation of research seminar.
- TetraTech, Inc. Annual Meeting, Denver, CO, May 2010: Invited dinner speaker on sustainable building design
- Lawrence Berkeley National Laboratory, Berkeley, CA, March 2010: Invited research seminar speaker
- 2009 Energy Symposium: Business and Regulatory Climate Check and Industry Forecast, Kansas City, Missouri, October 2009: Invited speaker on alternative energy technologies.
- ASME Energy Sustainability Conference, San Francisco, CA, July 2009: Presentation of three technical papers.
- Henze, G.P. 2009, "Advanced Building Control Strategies." NSF CMMI Workshop on Multifunctional Materials and Distributed Renewable Energy for Sustainable Infrastructure, Honolulu, Hawaii, June 22, 2009.
- Henze, G.P. 2007, "European Perspectives and Experiences with High-Efficiency Commercial Buildings." SolWest, John Day, Oregon, July 31, 2007.
- Henze, G.P. 2007, "Optimal Building Operation." Eighth Biberach Forum Building Systems Engineering, Biberach, Germany, March 15, 2007.
- Henze, G.P. 2006, "Passive and Low-Energy Cooling Systems for Continental Climates." Research seminar at the University of Applied Sciences Biberach, Germany, Nov. 10, 2006.
- Henze, G.P. 2006, "Optimal Building Operation." Seminar at the federally funded workshop *Konzepte Konzepte zur optimierten Betriebsführung von Gebäuden* held in Frankfurt, Germany, July 7, 2006.
- Henze, G.P. 2006, "Impact of Adaptive Comfort Criteria and Heat Waves on Optimal Building Thermal Mass Control" Research seminar at the University of Applied Sciences Biberach, Germany, June 22, 2006.
- Henze, G.P. 2006, "Sustainable Building Design in the U.S.A." Seventh Biberach Forum Building Systems Engineering, Biberach, Germany, March 22, 2006.
- Waters, C.E., K.W. Houser, D.K. Tiller, G.P. Henze, A.R. Florita, S. Plamp, 2005, "Center for Building Integration Research," American Council of Engineering Companies/Nebraska - Annual Conference, Omaha, Nebraska, June 9, 2005.
- Waters, C.E., K.W. Houser, D.K. Tiller, G.P. Henze, E. Bowden, M. Eble-Hankins., 2005, "Center for Building Integration Research," The Built Environment Conference, Omaha, Nebraska, March 3, 2005.
- Channel 7 KETV: Discussion of Ground-Source Heat Pump Heating of Residences in Nebraska, <http://www.theomahachannel.com/news/4161240/detail.html>; aired February 3, 2005.
- Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, November 2004: Invited speaker at the Research Symposium "Architectural Engineering".
- ASME Solar Energy Engineering Conference, Portland, OR, July 2004: Presentation of three technical papers.
- ASHRAE Annual Meeting, Nashville, TN, June 2004: Presentation of one technical paper and two seminars.
- ASHRAE Winter Meeting, Anaheim, CA, January 2004: Presentation of one technical paper.

- Eighth International IPBSA Conference Building Simulation 2003 in Eindhoven, Netherlands, August 2003: Presentation of two technical papers.
- American Institute of Architects, Omaha Chapter, November 2002: Invited panelist in discussion on the role of architecture in the community.
- Technical University of Dresden, Sep. 2002: Institute of Thermodynamics seminar series.
- ASHRAE Annual Meeting, Honolulu, HI, June 2002: Presentation of two technical papers.
- ASME Solar Energy Engineering Conference, Reno, NV, June 2002: Presentation of two technical papers.
- Pacific Energy Center, San Francisco, CA, December 2001: Invited speaker at day-long “Cool Thermal Storage” Seminar.
- Lawrence Berkeley National Laboratory, Berkeley, CA, December 2001: Invited speaker at Environmental Energy Technologies Division Seminar.
- ASHRAE Annual Meeting, Seattle, WA, June 1999: Presentation of one technical paper.
- ASHRAE Winter Meeting, San Francisco, CA, January 1998: Presentation of two technical papers.
- Umwelt-Campus Birkenfeld, Germany, October 1998: Invited speaker at day-long energy management workshop.
- Metaheuristics International Conference, Breckenridge, CO, July 1995: Presentation of one paper.

Graduate Student Advising

- Doctor of Philosophy (Ph.D.):
 - ✓ José Ramón Vázquez-Canteli (August 2020): Multi-Agent Reinforcement Learning for Demand Response and Load Shaping of Grid-Interactive Connected Buildings
 - ✓ Danielle Griego (April 2020): Implementing Community-Scale PV Systems as a Sustainable and Governable Urban Common
 - ✓ Simone Buffa (January 2020): Advanced Control Strategies for District Heating and Cooling Systems
 - ✓ Robert Cruickshank (August 2019): Estimating the Value of Jointly Optimized Electric Power Generation and Residential Electrical Use
 - ✓ Anthony Florita (May 2019): A Data-Driven Toolchain for the Operational Performance Analysis and Optimization of Buildings
 - ✓ Mehmet Elci (July 2018): Smart Decentralized Solar District Heating
 - ✓ Peng Zhao (May 2014): Dynamic Building-to-Grid Integration Through Combined Building System Resources for Frequency Regulation Service
 - ✓ Marco Giuliani (April 2014): Development of An Energy Modeling Approach to Analyse Historical Building Performance
 - ✓ Gregory Pavlak (April 2014): Building-to-Grid Integration through Commercial Building Portfolios Participating in Energy and Frequency Regulation Markets
 - ✓ Charles Corbin (April 2014): Assessing Impact of Large-Scale Distributed Residential HVAC Control Optimization on Electricity Grid Operation and Renewable Energy Integration
 - ✓ Ryan Tanner (Jan 2014): Stochastic Optimization of Building Control Systems for Mixed-Mode Buildings
 - ✓ Sebastian Burhenne (Nov 2013): Monte Carlo Based Uncertainty and Sensitivity Analysis for Building Performance Simulation

- ✓ Darcie Chinnis (Dec 2012): Exploration of a Dynamic Lighting Energy Modeling Algorithm for Data Collection Support
- ✓ Peter May-Ostendorp (May 2012): Offline Model Predictive Control of Mixed Mode Buildings for Near-Optimal Supervisory Control Strategy Development
- ✓ Dirk Jacob (Jan 2012): Optimization of Commercial Building Operations
- ✓ Abigail Watrous (Nov 2011): Environmental Impacts of the Socioeconomic Factors Affecting Energy Use for Rural Families and Migrant Workers in China
- ✓ Simeng Liu (May 2005): Analytical and Experimental Comparison of Model-Based, Model-Free, and Hybrid Learning Control of Active and Passive Building Thermal Storage Inventory
- Master of Science (M.S.):
 - ✓ Christina Turley (May 2020): Development and Evaluation of Occupancy-Aware HVAC Control for Residential Building Energy Efficiency and Occupant Comfort
 - ✓ Sade Odumuye (May 2019): Performance Evaluation of a Hybrid AFDD Tool for Small Commercial Buildings under Physical and Operational Model Parameter Mismatch
 - ✓ Adam McKittrick (May 2019): Cost Comparison between Annual and Monthly Net Zero Construction for Multifamily Buildings
 - ✓ Fatema Almajed (May 2019): Increased Diversity of Reduced Order Models for Rapid Analysis of 5GDHC Networks for Commercial Buildings
 - ✓ Nicholas Smith (May 2019): Modeling of a Wastewater Heat Recovery System
 - ✓ John Nelson (Dec 2018): Evaluation of the passive cooling potential of mass inherent in medium to large commercial buildings
 - ✓ Cory Mosiman (Aug 2018): Occupant-Centric Metrics for Occupant-Aware Buildings: An Evaluation Using Current Technologies
 - ✓ Nicholas Long (Aug 2018): Reduced Order Models for Rapid Analysis of Ambient Loops for Commercial Buildings
 - ✓ Catherine Dressler (Aug 2017): Data Science Modules for Energy and Buildings
 - ✓ Philipp Bruggmann (April 2016): Grid-Friendly Zero Energy Building Design and Operation
 - ✓ Eric Boxer (April 2015): Empirical Testing of an Energy Signal Tool: An Application of Building Energy Performance Monitoring
 - ✓ Miles Ryan (Dec 2014): Optimal Control Strategy Selection for Intelligent Pressure Independent Control Valves
 - ✓ Benjamin Brannon (Dec 2013): Modeling and Control Strategy Development of a Thermally Activated Residence
 - ✓ Lincoln Harmer (May 2013): Monitoring Based Commissioning Using Calibrated Energy Models
 - ✓ Bryce Buchanan (Nov 2012): Chilled Water Plant Taxonomy and Energy Valve Modeling
 - ✓ Forest Reider (Apr 2012): Adaptive Real-Time Cooling Coil Curve Fitting Using a Computationally Simple Approach
 - ✓ Jeanne Stratton (Apr 2012): Dominant Wavelengths Comprising 3- and 4-Color Combinations of LED and Laser White Light with Optimal CQS and LER
 - ✓ Justin Bellucci (Apr 2012): Model Development and Experimental Validation of Pressure Independent Hydronic Circuits
 - ✓ Jordan Mann (Oct 2011): Fault Detection and Diagnosis using a Probabilistic Modeling Approach

- ✓ Emily Rader (Aug 2011): Populating a Building Component Library with Retail Plug Load Model Snippets Derived from Measured Data
- ✓ James Hauswirth (Aug 2011): Design and Control of a Mixed-Mode University Building in a Continental Climate
- ✓ William Surlis (May 2011): Development of a Control Analytic Tool for Evaluating Automated Residential Smart Grid Controls Strategies
- ✓ Simon Olivieri (Dec 2010): Evaluation of Commercial Building Demand Response Potential Using Optimal Short-Term Curtailment of HVAC Loads
- ✓ Rois Langner (Dec 2010): Managing the complexity of energy modeling with time efficiency: An investigation of driving factors that affect commercial high-rise office building energy consumption and demand
- ✓ Erik Greensfelder (August 2009): An Investigation of the Cost Savings Potentials Found Using Optimal Control of Passive Thermal Storage with Real Time Pricing and an Exploration of Temporal Carbon Emissions Signals
- ✓ Anthony Florita (August 2007): Development of a Simulation and Optimization Environment for the Analysis of Building Thermal Mass Control.
- ✓ Sandro Plamp (May 2006): Development of Learning Modules for Building Control and Automation Systems.
- ✓ Doreen E. Kalz (May 2004): Experimental Analysis of Model-Based Predictive Optimal Control for Active and Passive Building Thermal Storage Inventory.
- Master of Architectural Engineering (M.A.E.):
 - ✓ Matthew Pfannenstiel (2008): An Essential Utility System for a Healthcare Building in St. Luce, Madagascar.
 - ✓ Shaun Nienhueser (2008): Investigation of a Carbon-Neutral Medical Building through the Use of Cogeneration and Photovoltaics.
 - ✓ Jennifer Machacek (2008): Improving Abilities of Building Automation and Control Systems to Better Meet Client Needs.
 - ✓ Clayton Miller (2007): Technical and Economic Feasibility Study of the Peter Kiewit Institute in Attaining LEED-EB Certification.
 - ✓ Andrew Yosten (2007): Building Load Management by Means of Optimal Operation of Distributed Generation Equipment.
 - ✓ Daniel Karnes (2005): Investigation of Global Setpoint Optimization of HVAC Systems in an Office Building.
 - ✓ Chad Liechti (2005): Verification of Evaporative Cooling and Cooling Coil Model.
 - ✓ Stephanie Wright (2005): Life Cycle Cost Analysis of Cold Air Distribution Systems.
 - ✓ Daniel Barnes (2004): Modeling of Indirect/Direct Evaporative Cooling.
 - ✓ Kimberly Bunz (2004): A Comparative Study of Sustainable Building Design Practices in North America, Europe, and Asia.
 - ✓ Nick Rosenberry (2004): Guidelines for the Selection of Chiller Technologies to Minimize Life Cycle Cost.
 - ✓ Nathan Sheets (2004): Comparison of Neural Network Based Controllers for Building Control.
- Diplom-Ingenieur (Dipl.-Ing.): Sebastian Kurz, Sandro Plamp, Jens Klostermann, Gregor Strassberger, Jobst Schoenmann, Ronny Goepfert, Magnus Fischer, Mathias Rieger, Mathias Roemhild.

- Post-Doctoral and Research Scholars: Matteo Saviozzi (2015), Ahmed Rizk (2007-2008), Robert Dodier (2004-2005) and Thoi Le (2004-2005).

Languages

German: native language

English: fluent (speaking, reading, writing)

Italian: intermediate (speaking, reading, writing)

Spanish: intermediate (speaking, reading, writing)