

Fred Betz
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Education

Carnegie Mellon University, Pittsburgh, Pennsylvania

Doctor of Philosophy, Expected graduation, May 2008

Major: Building Performance and Diagnostics

Relevant Coursework: Advanced Building Systems Integrations, Thermodynamics, Building Energy Simulation, Zero Energy House, LEED, Building Controls and Diagnostics, Internal Combustion Engines. **GPA:** 3.72

Milwaukee School of Engineering, Milwaukee, Wisconsin

Master of Science, May 2005

Major: General Engineering

Relevant Coursework: Building Energy Simulation I & II, Absorption Refrigeration Systems, Energy Systems Design. **GPA:** 3.94

Milwaukee School of Engineering, Milwaukee, Wisconsin

Bachelor of Science, May 2003

Major: Mechanical Engineering

Relevant Coursework: Thermodynamics I, II & III, Fluid Mechanics, Fluid Applications, Heat Transfer. **GPA:** 2.98

Academic Experience

Carnegie Mellon University Intelligent Workplace Project, Pittsburgh, Pennsylvania

Graduate Research Assistant, October 2004-Present

Specifying and selecting cogeneration equipment including generator sets, heat exchangers, and the control and monitoring equipment to maximize system efficiency. Further work includes overseeing detailed engineering and installation as well as the development and implementation of a test plan.

Carnegie Mellon University Intelligent Workplace Project, Milwaukee, Wisconsin

Graduate Research Assistant, October 2004-August 2005

-Specifying and selecting cogeneration equipment including generator sets, heat exchangers, and the control and monitoring equipment to maximize system efficiency.

Milwaukee School of Engineering, Milwaukee, Wisconsin

Master's of Engineering Capstone Project, September 2004-December 2005

-A Theoretical Model of the Processing and Economics of a Biodiesel Refinery.

Milwaukee School of Engineering, Milwaukee, Wisconsin

Undergraduate/Graduate Research Assistant, September 2002-September 2004

-Demonstration/Analysis a 60kW microturbine distributed generation cogeneration power plant.

Work Experience

Dennis Tronca & Associates, Milwaukee, Wisconsin

Engineer, May 2003-August 2005

- Account representative for product development.
- Product development for plastics and adhesives industry.
- Research & development of an adhesive processing line.

Fritz Usinger, Inc., Milwaukee, Wisconsin

Intern Energy Engineer, May 2002-August 2002

- Thermodynamic efficiency analysis of smoke houses.
- Design recommendations for next generation of smoke houses.

Eisenmann Corporation, Crystal Lake, Illinois

Intern Sales Engineer, May 2001-September 2001

- Assist sales engineers in the development of the Mercedes Benz plant in Tuscaloosa, Alabama and transferring engineering documentation to the plant engineers regarding this project

Eisenmann Corporation, Crystal Lake, Illinois

Intern Technician, May 2000-September 2000

- Learn all the tasks of the fabrication shop including: shipping/receiving, prefabrication, painting, assembly, and maintenance.

Eisenmann AG, Holzgerlingen, Germany

Intern Engineer, May 1999-September 1999

- Development of wastewater treatment plant layouts and flow diagrams for industrial processes including industrial dry cleaners, automotive plants, and film processing centers.

Eisenmann Corporation, Crystal Lake, Illinois

Intern Engineer, January 1999-May 1999

- Assist engineers in the develop of regenerative thermal oxidizers and other clean air technologies for paint systems and other industrial process exhausts

Published Papers

American Society for Engineering Education

A 60-KW MICROTURBINE DEMONSTRATION FACILITY. PHASE II: INSTRUMENTATION, WEB SITE DEVELOPMENT, AND EVALUATION, 2004

DESIGN, CONSTRUCTION, AND COMMISSIONING OF A 60-KW MICROTURBINE DEMONSTRATION FACILITY, 2003

Additional Skills

Computers: Windows, Microsoft Office Suite, AutoCAD, MATLAB with Simulink, Trnsys, Energy 10 and Energy Plus.

Languages: Fluent in technical and conversational German

Professional Organizations

International Facilities Management Association (IFMA)

American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)

Volunteer Organizations

Founding member of the MSOE chapter of Engineers Without Borders (EWB)
Member and past vice president of Delta Sigma Phi Fraternity (DSP)

Awards

Recipient of full graduate research assistantship in the Center for Building Performance and Diagnostics at Carnegie Mellon University.
Recipient of South East Wisconsin International Facilities Management Association Scholarship, 2004
Recipient of Harley Davidson Engineering Scholarship 1999 – 2003.