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Fourteen years of experience analyzing building energy performance, advocating sustainable building design practices, and designing high-performance buildings. Accomplished these activities by managing large projects, including motivating project teams to reach a common goal. Expert at setting obtainable goals and timelines and engaging support.

EDUCATION

University of Colorado, Boulder, CO

MS in Mechanical Engineering December, 1997

Thesis: CFD and Experimental Analysis of Air Flow Through a Linear Troffer Diffuser

Kansas State University, Manhattan, KS

BS in Mechanical Engineering, May 1990, Dean's List

PROFESSIONAL HISTORY

National Renewable Energy Laboratory (NREL), Golden, CO Senior Engineer I

May 1992 to present

Project Leader, U.S. Coast Guard (USCG) Renewable Energy (RE) Initiatives Support Services

- Managing project that includes developing a USCG RE program strategic plan, completing a RE resource assessment of all USCG sites, cataloging USCG existing RE systems, recommend actions for the USCG to meet legislative mandates and implement RE opportunities, and perform a feasibility study to develop the concept and general specifications for RE project on USCG site.

Project Leader, "LANL Sustainable Design Guide"

- Responsible for bringing in \$419K to NREL from Los Alamos National Laboratory (LANL) to support development of this document, the first of its kind for use by a DOE research laboratory.
- Managed entire project, including staff and budget planning, client communications, and ensuring mid-project milestones were met (project completed in 15 months using over 3 person years).
- Ensured document addressed all aspects of sustainable building design, construction, operation.
- Co-authored 4 out of 10 chapters, including the 2 core chapters of the document (architectural and engineering).

Project Leader, Photovoltaics (PV) for Buildings

- Managed project activities and provided the link between the Center for Buildings and Thermal Systems (CBTS) and the National Center for Photovoltaics (NCPV), 2 separate entities within NREL having no overlapping objectives except through the PV for Buildings activities.
- Ensured continued/increased funding of the activity, even through periods of reduced federal support to the NCPV.
- Originated web site providing consumer-level PV for buildings systems information (www.nrel.gov/buildings/pv).
- Established the *Better Buildings* fact sheet series to communicate consumer-level information on PV for buildings systems and other energy efficiency and renewable energy technologies.
- Managed CBTS staff support of the 2002 Solar Decathlon (www.solardecathlon.org).
- Contributed to planning and conducting 2002 and 2005 Solar Decathlon: developed rules and regulations, reviewed participant designs, developed process for judging by architects and engineers, coordinated the engineering design panel activities, co-authored final project report.
- Managed activities to publish 5 documents to provide guidance to building designers on PV for buildings systems.

Project Engineer, High Performance Buildings Research Initiative (www.highperformancebuildings.gov)

- Analyzed building energy performance of commercial and residential buildings using the computer simulation tools DOE2.1E and SERI-RES.
- Identified design strategies to reduce building energy consumption by more than 50%.
- Represented NREL during meetings with building design teams to ensure sustainable design strategies were incorporated into the designs of actual building projects.
- Led design charrettes and breakout groups for high-performance building projects.
- Produced written documents of the High Performance Buildings Research Initiative findings.

Project Leader, Manufactured Home Energy Audit

- Managed creation of a computerized tool to assist state weatherization assistance programs identify appropriate retrofits for manufactured (commonly referred to as “mobile”) homes. Software released in 1996 and is still in use.
- Developed algorithms for calculating energy performance of manufactured homes.
- Managed staff, subcontractors, and student interns to complete this project.

ZBA Engineers/Architects, Cincinnati, OH

July 1990 to May 1992

Lead Mechanical Engineer, United States Post Office, Covington, KY

- Analyzed and designed HVAC system for new 18,000-ft² branch post office, including evaluating building energy consumption and air distribution system, designing the mechanical system, completing specifications and cost estimates, and reviewing contractor submittals.

Project Engineer, Crane Naval Weapons Support Center, Crane, IN

- Prepared pipe stress and steam flow computer analysis model for new 5000-ft outdoor steam distribution system.
- Led design of new system, including preparing specifications and cost estimates.

Assistant Project Engineer, Queen City Metro, Cincinnati, OH

- Analyzed air distribution system, exhaust system, and indoor air quality control for the Southern Ohio Regional Ohio Transportation Administration Metro bus maintenance and storage facility and recommended alternatives for air quality improvements based.

Other related activities

- Chilled water system hydraulic analyses for university campuses, industrial production building complexes, and individual building systems.
- HVAC system design for industrial and institutional buildings.

PROFESSIONAL ORGANIZATIONS

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

- Research Activities Committee, 2000–present (vice chair), Board appointment
- Advanced Energy Design Guide Planning Ad Hoc (chair, 2003), presidential appointment
- Continuing Education Committee, 1995–2000 (chair, 1999), presidential appointment
- 5-Year Strategic Plan Ad Hoc Committee, 1995–1997, presidential appointment
- ASHRAE Program Committee, 1993–1995, presidential appointment
- Technical Committee 1.10, Energy Resources, (chair, 2000–2002)
- Technical Committee 9.1, Large Building Air-Conditioning Systems, (chair, 1997–1999)

PUBLICATIONS

Published over 25 conference papers and journal articles since joining NREL on topics related to energy efficiency and renewable energy technologies in buildings, approximately half those were peer reviewed papers and articles.

RECOGNITION & AWARDS

2001 Distinguished Service Award, ASHRAE

1999 ASHRAE Technology Award, First Place, Alternative and/or Renewable Energy Use

1997 Licensed Professional Engineer, State of Colorado