



Taylor Engineering

1080 Marina Village Parkway, Suite 501 ■ Alameda, CA 94501-6427 ■ (510) 749-9135 ■ Fax (510) 749-9136

TRACY L. MARCIAL, P.E.

Ms. Marcial is a Registered Mechanical Engineer with a BS in Mechanical Engineering from the University of California, Los Angeles and an MS in Engineering Management from Santa Clara University. She has over 11-years of energy efficiency work experience including HVAC design, extensive experience with building energy analysis, simulation modeling, measurement and verification, energy auditing, and lifecycle cost analysis. During this time Ms. Marcial worked on a diverse range of projects including commercial buildings, schools and universities, laboratories, clean rooms, hospitals, and warehouse facilities.

Ms. Marcial's work experience includes energy use and life cycle cost analyses for the purpose of producing economical and energy efficient retrofit recommendations. She has conducted energy audits for several facilities of up to 4,000,000 square feet. Computer models were created during these audits through the use of DOE-2 based energy simulation programs and time-of-day based Excel Spreadsheets. Actual historical utility data and specific measured data were used to develop calibrated computer models of the facilities. The computer models were then used to analyze the economic viability of various energy conservation measures.

Upon implementation of energy conservation recommendations, Ms. Marcial assisted clients in receiving incentives from utility companies through the use of California's Standard Performance Contract (SPC) program and other similar incentive programs. This work included processing necessary application calculations and submittals through the final stages of measurement and verification of achieved savings after the first and second years of operation of the retrofitted system.

Ms. Marcial combines practical field experience, excellent engineering fundamentals, and a focus on energy usage to design complete HVAC systems for a wide variety of projects.



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TRACY L. MARCIAL, P.E.

Education

- 1999 - 2001: Santa Clara University, M.S. Engineering Management & Leadership, Graduated with High Honors
1995 - 1998: University of California, Berkeley Extension, Certificate in HVAC&R
1990 - 1993: University of California, Los Angeles, B.S. Mechanical Engineering

Registration

- 1997 - present State of California: Mechanical Engineer M-30412
1998 - present Association of Energy Engineers: Certified Energy Manager (CEM)

Experience

- 2002 - present: Taylor Engineering, Alameda, CA
Mechanical Engineer
HVAC system and control system design; AutoCAD drafting and detailing; energy conservation and computerized energy analysis.
- 1994 - 2002 TECO BGA, Lafayette, CA
- 2000 – 2002: Operations Manager
Supported the operation of the office through monthly invoicing, project management, proposal development and presentation, work assignments, training and supervising. Developed a database to track the status and costs associated with jobs. Continued to perform duties of an Energy Analysis Manager more than 85% of the time. Developed and used time-of-use and weather dependent spreadsheets for various air handling systems, chiller and boiler plants and lighting systems.
- 1998 – 2000: Energy Analysis Manager
Trained and supervised other energy engineers in addition to continuing to perform the duties of an Engineer II.
- 1997– 1998: Engineer II
Continued duties of Engineer I. Performed project management and completed jobs from beginning to end.
- 1994– 1997: Engineer I
Developed fieldwork forms to assist in collection of installed HVAC system equipment information. Performed detailed, calibrated energy audits by developing computer simulations of existing facilities using DOE based programs. Performed field surveys to compare as-built drawings with installed equipment. Interviewed staff and reviewed controls systems to determine existing building/plant operating parameters. Assisted in load calculations and duct design. Wrote detailed energy reports describing the existing and proposed facility HVAC systems, lighting



systems, chiller and boiler plants and any recommended system retrofits and upgrades.

1990- 1994 PG&E, Various Locations and Positions During Summer Internships

Created load profiles for natural gas transmission lines to determine the deficiencies of the natural gas system and to forecast the impact of future usage. Developed procedures used for shutting down portions of the natural gas transmission lines during emergencies. Created and implemented a computer inventory program and database. Investigated results of surveys to determine the necessity and cost of ergonomic equipment. Analyzed inventory to determine the need for computer upgrades

Professional Associations

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

Associate Member 1995 to present

Association of Energy Engineers (AEE):

Member 2002

Representative Design Projects

Projects for which Ms. Marcial played a major role in designing the HVAC systems:

UC Merced Recreation & Wellness Center – Merced, CA. 35,000 ft² – Includes variable volume air distribution with hot water reheat, parallel fan powered VAV boxes. Submitted application for Utility Savings-by-Design incentives and submitted application for Silver LEED rating.

US Treasury FMS – Emeryville, CA. 80,000 ft² – Includes packaged variable volume, variable temperature air distribution, single zone packaged units and single zone variable volume units.

Neiman Marcus – San Francisco, CA. 230,000 ft² – variable volume air distribution with hot water reheat, parallel fan powered VAV boxes.

UC Santa Cruz Humanities Building – Santa Cruz, CA. 84,000 ft² – Includes variable volume reheat system, without cooling, single zone variable volume system, and packaged air conditioners. Obtaining Utility Savings-by-Design incentives.

UC Merced Classroom Office Building – Merced, CA. 90,000 ft² – Includes dual fan, dual duct variable volume air distribution. Obtained Utility Savings-by-Design incentives and submitted application for Silver LEED rating.