



## **GLENN FRIEDMAN, P.E.**

### **PRINCIPAL**

Glenn Friedman is a Registered Mechanical Engineer with a BS in Chemical Engineering from the University of California, Berkeley. Mr. Friedman is a Fellow of the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE). He has over 37-years of commercial and industrial HVAC system design experience.

Mr. Friedman is an authority on the design/build process for HVAC and energy management & control systems. His design/build projects include hospitals, laboratories, chemical refineries, manufacturing, schools, casinos, municipalities, offices, malls, restaurants, hotels, retail, and high-end custom residences throughout the Bay Area.

Mr. Friedman is an experienced control systems designer. He has designed controls for many commercial and industrial projects, in addition to designing and programming the control systems for the HVAC projects he designed and installed. He has factory training and practical experience with a large variety of controls systems including direct digital controls (DDC), electric, and pneumatic controls.

Mr. Friedman has worked closely with end-users, owners, architects, general contractors, and field crews. Combining his knowledge of HVAC system design, control systems, energy conservation, indoor air quality, commissioning, system service, maintenance, and system balancing Mr. Friedman brings exceptional value to HVAC projects.

Mr. Friedman's HVAC experience ranges from high end custom residential to high tech, including creative energy efficiency work, laboratories, data centers, radiant and evaporative cooling systems and many LEED projects.

Mr. Friedman also uses his HVAC systems experience combined with his commissioning skills to do construction management and dispute resolution work. He has worked on many jobs by other firms that were at risk of failure or had not met owner's expectations. Mr. Friedman has been able to work with the existing design and construction teams to achieve successful resolutions and job completion.

Mr. Friedman has been an instructor at the University of California, Berkeley, Extension, teaching several HVAC courses.

### **EDUCATION**

B.S. Chemical Engineering,  
University of California,  
Berkeley, 1980

### **REGISTRATIONS**

Mechanical Engineer,  
California #22870

### **AFFILIATIONS**

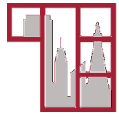
American Society of Heating,  
Refrigeration, and Air-  
Conditioning Engineers

United States Green Building  
Council

Air Conditioning Contractors  
of America

### **YEARS OF EXPERIENCE**

37 years total  
19 years with Taylor  
Engineering



## **Professional Associations**

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

- National ASHRAE Member 1981 – 1991; Member 1991 – 2012; Fellow Member since 2012, Recognized for Distinguished Service in 2014
- National ASHRAE Technical Committee TC4.1 Load Calculations Program and Standards Chair 2002 – present
- National Standing Special Project Committee SSPC 15, Safety Standard for Refrigeration Systems, Voting Member 2017 to present
- National Standing Special Project Committee SSPC 100, Energy Conservation in Existing Building, Vice Chair 2018 to present, Secretary, 2009 to 2018
- National Special Project Committee SPC 180, Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems, Voting Member 2014 to present
- National Special Project Committee T-STDS-SPC 203 Method of Test for Determining Heat Gain of Office Equipment Used in Buildings, Chair 2011 to 2014
- National Special Project Committee T-STDS-SPC 193 Method of Test for Determining the Air-Leakage Rate of HVAC Equipment, Voting Member 2007 to 2011
- National Special Project Committee SPC-183 Peak Cooling and Heating Load Calculations in Buildings Except Low-Rise Residential Buildings, Voting Member 2005 – 2007
- National ASHRAE Technical Committee TC9.5 Residential and Small Buildings (RSBA) Applications Chair 2003 – 2005
- Golden Gate Chapter Foundation Board Committee, Chair 2011 – Present
- Golden Gate Chapter Nominating Committee, Voting Member 2008 – 2011
- Golden Gate Chapter Board of Directors 2002 – 2007, Chapter Treasurer 2003 – 2004, Secretary 2004 – 2005, President-Elect 2005 – 2006, President 2006 – 2007, Past President 2007 – 2008

### California Commissioning Collaborative

- Advisory Committee, 2005 – 2006

### Air Conditioning Contractors of America (ACCA)

- Commercial Load Calculation MN Review Committee, 2006 – 2007
- Quality Contractor/Quality Installation Specification Review Committee, 2005 – 2006
- Residential Quality Installation Manual S Review Committee, 2005 – 2006
- Residential Extended Care ECR Manual Review Committee, 2005 – 2006
- Duct Manual D Review Committee, 2005 – 2006
- Residential Load Calculation MJ8 Review Committee, 2002 – 2006
- Technical Committee, 1991 – 2007, Chair 1997 – 2003, 1999 – 2002 Interim Technical Manager of the Association's Technical Department
- Advisory Council, 1996 – present, Chair 1997
- Information Systems Committee, 1997 – 1998
- National President, 1996
- Executive Committee, 1994 – 1999
- Board of Directors, 1990 – 1999

### Air Conditioning Contractors of America – California State Chapter (Cal ACCA)

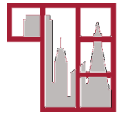
- Board of Directors, 1988 – 1991 and 2002 – 2006
- President for three terms, 1988 – 1991
- One of the Association's Founders, 1988

### International Building Performance Simulation Association (IBPSA)

- Member, 2002 – 2005

### National Environmental Balancing Bureau (NEBB)

- Nominations Committee, 1998 – 1999



Certified Air and Water Balancing Supervisor, 1986 – 1999

Refrigeration Service Engineers Society (RSES)

Member, 1992 – 2000

## **HONORS AND AWARDS**

ASHRAE Distinguished Service Award, 2014

ASHRAE Technology Award, National ASHRAE, 2013

CASH (California Coalition for Adequate School Housing) Design Merit Award 2011

ASHRAE Technology Award, National ASHRAE, 2010

ASHRAE Technology Award, National ASHRAE, 2010

ASHRAE Milton W. Garland Refrigeration Award, 2001

ASHRAE Alex Anderson Award, Exemplary Performance, 2001

ASHRAE Region X 1999 – 2000 R. Alex Anderson Award for Exemplary Performance

Quality Home Comfort Award, First Place, 1994

Commercial Design/Build Award, First Place, 1991

## **PUBLICATIONS**

ANSI/ASHRAE/ACCA Standard 180-2018 Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems ASHRAE Standard Energy Efficiency in Existing Building, 2018

ANSI/ASHRAE/IES Standard 100-2018, (Supersedes ANSI/ASHRAE/IES Standard 100-2015), Includes ANSI/ASHRAE/IES addenda listed in Annex N Energy Efficiency in Existing Buildings, 2018

ANSI/ASHRAE/IES Standard 100-2015, Energy Efficiency in Existing Buildings, 2015

ANSI/ASHRAE Standard 203-2014 Method of Test for Determining Heat Gain of Office Equipment Used in Buildings, 2014

ANSI/ASHRAE/ACCA Standard 183-2007 (RA 2014) (Reaffirmation of ANSI/ASHRAE/ACCA Standard 183-2007) Peak Cooling and Heating Load Calculations in Buildings Except Low-Rise Residential Buildings, 2014

Climate-Adapted Design, ASHRAE Journal, May 2014

Energy-Saving Dorms, ASHRAE Journal, May 2010

ANSI/ASHRAE Standard 193-2010 Method of Test for Determining the Airtightness of HVAC Equipment, 2010

ANSI/ASHRAE/ACCA Standard 183-2007 Standard Peak Cooling and Heating Load Calculations in Buildings Except Low-Rise Residential Buildings, 2007

Taking Controls In-House, Contracting Business, September 2005

Too Hot/Too Cold: Diagnosing Occupant Complaints, ASHRAE Journal, January 2004

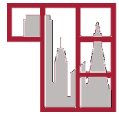
Good HVAC Practices for Residential and Commercial Buildings, ACCA, 2003

Residential Duct Diagnostics and Repair, ACCA, 2003

Residential Load Calculation, Manual J Eighth Edition, ACCA, 2002

Comfort, Air Quality, and Efficiency by Design, Manual RS, ACCA, 1997

Residential Equipment Selection, Manual S, ACCA, 1995



Residential Duct Systems, Manual D, ACCA, 1995

Commercial Applications, Systems and Equipment, Manual CS, ACCA, 1993

## Research Projects

ASHRAE RP-1618 Low Energy LED Lighting Heat Distribution in Buildings, Project Monitoring Committee Voting Member

ASHRAE RP-1729 Experimental Verification of Cooling Load Calculations for Spaces with Non-Uniform Temperature Radiant Surfaces, Project Monitoring Committee Chair

ASHRAE RP-1742 Update to Measurements of Office Equipment Heat Gain Data, Project Monitoring Committee Chair

ASHRAE RP-1816 Reporting the Energy Use and Heat Gain from Imaging Equipment, Project Monitoring Committee Voting Member

## REPRESENTATIVE PROJECTS

733 Front St.	San Francisco, CA, 110,000 ft <sup>2</sup>
Alameda County Master Plan	Admin Building and Courthouse, Alameda, CA
Alameda County Waste Management	Alameda, CA, 15,000 ft <sup>2</sup> , LEED NC Platinum
Alameda Free Library	Alameda, CA, 46,000 ft <sup>2</sup> , LEED NC
American Airlines Admiral Club, SFO	San Francisco, CA, 9,500 ft <sup>2</sup> , LEED CI Silver
Caltech Linde + Robinson Lab	Pasadena, CA, 45,000 ft <sup>2</sup> , LEED NC Platinum
Caltech Campus Retro-Commissioning	Pasadena, CA, 500,000 ft <sup>2</sup> , ~20 buildings
Caltech Noyes Laboratory	Pasadena, CA, 92,000 ft <sup>2</sup>
Caltech Broad Vivarium	Pasadena, CA, 20,000 ft <sup>2</sup>
Caltech Thomas Lab	Pasadena, CA, 54,000 ft <sup>2</sup>
Chartwell School	Seaside, CA, 20,000 ft <sup>2</sup> , LEED NC Platinum
City College SF, New Mission Campus	San Francisco, CA, 230,000 ft <sup>2</sup>
City of El Cerrito City Hall	El Cerrito, CA, 17,000 ft <sup>2</sup> , LEED NC
City of Orinda City Offices	Orinda, CA, 12,000 ft <sup>2</sup> , LEED NC Gold
Dahlin Group Office Building	Pleasanton, CA, 27,000 ft <sup>2</sup> , LEED CI Silver
East Palo Alto YMCA	Palo Alto, CA, 32,000 ft <sup>2</sup> , LEED NC Gold
Fremont Fire Station	Fremont, CA, 45,000 ft <sup>2</sup>
Informatica Office and Data Center	San Mateo, CA, 160,000 ft <sup>2</sup>
Harker School Gym and Theater	San Jose, CA, 80,000 ft <sup>2</sup>
Los Gatos Library	Los Gatos, CA, LEED NC Gold
Neiman Marcus Remodel	San Francisco, CA, 230,000 ft <sup>2</sup>
OUSD Educational Complex	Oakland, CA, 86,000 ft <sup>2</sup> , CHPS Certified School
PG&E Conference Center	San Ramon, CA, 240,000 ft <sup>2</sup>
Ritz Carlton Resort	Half Moon Bay, CA, 261 guest rooms
San Francisco Replacement Jail No. 3	San Bruno, CA, 283,000 ft <sup>2</sup>
St. Anthony's Foundation	San Francisco, CA, 47,000 ft <sup>2</sup> , LEED NC Gold
UC Merced Sierra Terraces Dorm	Merced, CA, 84,000 ft <sup>2</sup> , LEED NC Gold
Wright Institute Graduate School	Berkeley, CA, 15,000 ft <sup>2</sup>