

KARL W. FRIESEN, PE, LEED AP

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SUMMARY OF CAREER

August 2005 to Present

Assist public and private sector clients solve their engineering analysis, design and resource utilization challenges. Develop solution designs and evaluate the cost/benefit impacts from initial situation assessment, technical and financial analysis, decision processes, design, and project execution/construction project management. ETO/ATAC Energy Auditor/Modeler and Retro-Commissioning Engineer, ODOE Energy Program Schools Energy Analysis Auditor.

Recent successful outcomes for clients include;

- Pacific Natural Foods HVAC design and feasibility study, Energy Star and LEED Silver and Certified levels and DDC upgrade controls designs for two large downtown Portland offices for Felton Properties, HVAC Feasibility Evaluation for the Portland Development Commission's Urban Core Renewal Retail – Hand and Eye, Sustainability Lead for King County on their WWTP Upgrades, and Kaiser Permanente Performance Contracting RFQ process lead.
- DDC/PLC controls design integration for five large offices for Norris Beggs and Simpson/Unicor, in Portland area, Clean Room/FAB in Hillsboro, and facility HVAC upgrade and two chiller control integrations for Boeing in Gresham.
- ETO Energy Audits for US Bank Tower - Unicor, Legacy Good Samaritan, Mt Hood and Holladay Park Hospitals, Salem Hospital, Bridgeport and Cascade Offices, Oregon Humane Society, Rose City Church, SW WA Medical MOB.
- Ten ODOE Energy Audit/Analysis for four Beaverton SD Schools, and six Sweet Home SD schools/Admin office
- Legal testimony and advice on co-generation system litigation for a local electrical equipment supplier on a project in CA, two commercial office buildings and one residential construction deficiency claims.
- Commissioning Agent analysis for Portland Building Renovation, and University of Portland new Academic Center
- Solar PV integration and feasibility analysis on four buildings for the Confederated Tribes of the Grand Ronde
- Bonneville Environmental Foundation feasibility study for forest wood waste for electrical generation

JOHNSON CONTROLS INC – July 2011 to October 2013

OR SW WA Branch Manager

Managed a team of engineers, software programmers, and operations/project management staff (15) and sales engineers on HVAC DDC controls on new construction and major retrofit projects. Managed the 3rd party (Johnson Air Products/Johnson Barrow) representation of JCI owned, York HVAC equipment line.

CONTROL CONTRACTORS, INC. - May 2002 to July 2011

Sr. Project Development Engineer

Energy efficiency analysis and upgrades to HVAC/DDC system for Kaiser Permanente at multiple facilities, including energy audits/energy savings analysis and evaluations, and upgrade equipment/system designs/specifications development. HVAC/ DDC upgrade for United Technologies ESPC for the Sheridan Federal Corrections, City of Portland - Columbia Waste Water Treatment controls upgrade planning and implementation, Solar World and Amy's Kitchen HVAC DDC controls design and implementation, Willamette View HVAC and controls upgrades, HVAC DDC upgrades for Legacy Emanuel, SW Wash Med Center, AT&T, Maxim Semiconductor, PacifiCorp, Rogue Valley Mall, Market Center Bldg, Amity SD, McMinnville SD, Evergreen SD and Beaverton SD, renewable energy upgrades to the McMinnville City Waste Water Treatment. As well as HVAC DDC systems, PLC systems with OR DHS, Mercy Med Center, Metro, Tri-Met, OR Dept of Corrections, Veterans Memorial Coliseum. Commissioning engineer for eleven Kaiser Medical offices (50k to 200k sqft), and two Providence Hospitals (150k to 250k sq. ft).

COLE INDUSTRIAL – December 1999 to May 2002

Sr Project Development Engineer

Technical/financial investigation/problem solving, and service efforts developed thru local energy firms, public/commercial/ industrial customers, and mechanical contractors on steam and hot water boiler, heat recovery and co-generation applications. Key project clients include Intel, Weyerhaeuser, Georgia Pacific, US Bank, Wafertech, Komatsu (Solar World), Lam Research (Novellus), ETEC, Maxim, SEH America, Florigon Forest Products.

PG&E ENERGY SERVICES (CHEVRON ENERGY SERVICES) - June 1996 To December 1998

NW Region Manager

Performance contracts development, pursued energy system upgrade solutions opportunities for Nike HQ, Embassy Suites Hotel, PSU, OSU, Oregon Electric, PGE, OHSU, and PacifiCorp.

PACIFICORP - November 1986 to May 1996

Director, Product and Service Development

Project launches included "Energy-Works" joint venture with Bechtel to develop micro-generation projects, electric distribution services, and deregulated electric sales from fuel cells and small turbines, real time software metering services, power quality monitoring/solution services.

Manager, Commercial Energy Efficiency Services

Managed multi-discipline team (11 person, \$10M/year budget) including budget development, business planning, exec presentations on energy efficiency implementation, revamping existing EEMs, project financing, to support public/ commercial/engineering firms throughout 7 state territory. Engineering lead and QC on DOE-2 energy modeling and project commissioning

District Utility Services Company, Manager of Engineering/Operations Manager – Led project engineering, management, energy modeling/audits and designed "district system central plants" as performance contracts for public/ commercial customers. Including, The Inn of the 7th Mountain - full facility renovation and geothermal district central plant heating and cooling system installation and OSU's Hatfield Science Center HVAC/DDC renovation effort.

Lead Industrial Project Engineer, Performed energy analysis evaluations and engineering investigations for most of Pacific Power's largest customer manufacturing/ production facilities and processes for semiconductor, food, metals and minerals processing, waste water treatment and forest products industry sector facilities.

ARIZONA PUBLIC SERVICE CO. May 1979 to November 1986

Supervisor Commercial & Industrial Customer Services/Lead Engineer

Led team on design, and technology innovation introduction of Thermal Storage Program (S.T.E.P.)
Developed five large thermal storage system projects in the first ten months, (Pointe Office, Cortez Office, ASU West campus, Arizona Supreme Court, Rouse office complex).

PROFESSIONAL ENGINEER (PE) OR ('91), (PE) CA ('14), LEED AP ('07), OR GC CCB ('13), GGP ('14)

EDUCATION - OREGON STATE UNIVERSITY

Bachelor of Science, Mechanical/Nuclear Engineering with honors, 1978.

Graduate courses in Marketing, & Finance.

SELECTED COMMUNITY SERVICE ACTIVITIES

- City of Lake Oswego - Sustainability Advisory Board Member - current
- Chairman – 5 years running of Multi-Handicapped Events State Games - Special Olympics
- Chairman – Companywide. – United Way Campaign (plus other officer roles).