

William H. Clark II, P.E.
Mechanical, Electrical and Plumbing Engineer

Years of Professional Experience: 18

Education:

BSME with honors - 1978/University of Texas at Austin, Engineering Scholar
U.S. Naval Academy - 1974- 1976, 21st in class, Superintendent's List

Professional Affiliations:

Professional Engineer - Texas
Marquis Who's Who in the Southwest, 1995
Building Environment and Thermal Envelope Council (NIBS) - Technical Advisor
Home Energy Rating Systems Council (NIBS) - Technical Advisor
ASHRAE - Member
IEEE - Member
Illuminating Engineering Society (IES) - Member
Technical Calculations Committee, IES
American Society of Mechanical Engineers (ASME) - Member
ASME Geothermal Energy Committee - past Chairman
Psychological Associates Advisory Committee (subordinate to the Psychologists' Licensing Board), Public Member appointed by Governor Bush
Board of Directors, ENGINEERED SYSTEMS magazine, Business News Publishing

Related Professional Experience, Mechanical Engineering & Design:
(arranged in increasing size; values are for engineering work done alone)

- **Anstin Community College Rio Grande Campus HVAC Renovation - Austin, Texas**
 - * \$4 million retrofit of historic building in ten phases to water source heat pumps with a cooling tower (electrical design also)
- **MHMR State School & State Hospital - San Antonio, Texas**
 - LoanStar energy audit of this 1 million square foot facility.
- **Austin Independent School District - Austin, Texas**
 - * Major renovations to athletic facilities with rooftop dx equipment at Lamar and Burnet Elementary Schools and Johnston High School (electrical design also)
 - * Complete retrofit to ground source heat pumps at Brooke, Becker and Pease (historic building) Elementary Schools (electrical design also)
- **Minimum Security County Correctional Facility - LaGrange, Texas**
 - * HVAC and plumbing design for fifty bed facility
- **Second Wind Fitness Center - Cedar Park, Texas**
 - * Plumbing and HVAC for a 1000 member full service health club with nursery, aerobics room and staff (electrical and lighting also)



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- **Small Hospitals Energy Management Program - Texas**
 - * Final report to the Texas Governor's Energy Office on the SHEMP program, including an analysis of the most efficacious projects implemented by each hospital in the survey
 - * Edited and reviewed ten in-house audit reports for small hospitals around the state
- **Kim Sun Chinese Restaurant - Round Rock, Texas**
 - * Full service facility with wok burners in kitchen and energy efficient hoods. The dining area and kitchen were isolated by pressure differential to reduce odor migration
- **YMCA Athletic/Community Service Complex - Round Rock, Texas**
 - * HVAC for gymnasiums, locker rooms, nursery and community meeting areas
- **Atlanta Medical Office Building - Atlanta, Texas**
 - * Seven suites of doctor's offices with a central administration and minor emergency room (electrical design also)
- **St. David's Hospital - Austin, Texas**
 - * Therapy pool HVAC design
 - * Energy audit of hospital complex including electrical M&O's and ECRM's
 - * Analysis of HVAC renovation options of Park St. David, a medical office building
- **Nissan Auto Dealership - Austin, Texas**
 - * Plumbing and HVAC design for showroom, service areas and parts
- **SPCA Intake/Treatment Facility - Austin, Texas**
 - * HVAC design of animal holding and treatment areas, plus office spaces
- **Howerton Laser Surgery Clinic - Austin, Texas**
 - * HVAC design with rooftop dx, constant flow system
- **Towers Nursing Home - Smithville, Texas**
 - * Domiciliary and common/administration spaces (electrical also)
- **Steelchase Office Complex - Austin, Texas**
 - * HVAC design of general office areas in existing facility
- **Texas LoanSTAR Program - State Energy Conservation Office**
 - * Design review of thirty projects funded by SECO with ICP funds
- **Wilbarger County Hospital - Vernon, Texas**
 - * Three energy conservation SHEMP projects: chiller change out, renovations to surgery HVAC system, and installation of new steam converter for domestic water system
- **Stephen F. Austin Building - Austin, Texas**
 - * Fire alarm system design (complete relighting design also)
- **Federal Bureau of Prisons Energy Audits - Alexandria, Louisiana**
 - * On site evaluations of two new facilities for energy conserving opportunities



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- **Texaco Research Facility - Austin, Texas**
 - * Design of dehumidification system for research laboratory
- **Texas Youth Commission Facility - Giddings, Texas**
 - * HVAC design of small free standing structures for client interviews (electrical also)
- **City of Austin RBJ Clinic : AIDS/Tuberculosis - Austin, Texas**
 - * HVAC, exhaust, heat recovery (heat pipes) and air balance of isolation wards
- **Powers Residence - Austin, Texas**
 - * HVAC design of new \$1 residence in the Hill Country
- **Technical Assistance Reports for SHEMA. Nomographs were built into a spreadsheet-based computer program. Presented at the Texas Association of Hospital Engineers convention in 1992 on the Small Hospitals Energy Management Program of the Governor's Energy Office.**
- **Light Commercial Energy Analysis Software to calculate annual & peak building loads (used for the SHEMA hospital studies), perform bin analysis and energy conservation analyses.**

Related Professional Experience, Electrical Engineering & Design:

- **Olin E. Teague Veteran's Center - Temple, Texas**
 - * \$15 million 290 Bed Replacement Facility - lighting, power and signals design, with lighting, short circuit and voltage drop calculations (designed whole facility twice, once with interstitial floors, then without)
- **Alter Squadron Operations Building, Kelly AFB**
 - * Power, signals, fiber optics network, communication backbone, fire alarm and lighting
- **Olin E. Teague Veteran's Center Outpatient Clinic - Temple, Texas**
 - * Power, lighting, signals and communication
- **Smithville Hospital Authority - Smithville, Texas**
 - * Power and lighting design and calculations
- **Central Texas College - Killeen, Texas**
 - * New Science and Nursing Building - complete electrical design
 - * Renovation of existing Science and Academic Buildings - power, signals, lighting
- **Presbyterian Theological Seminary - Austin, Texas**
 - * Power, lighting and communications for classroom/assembly/domiciliary facility
- **Brackenridge Outpatient Clinic - Austin, Texas**
 - * Power, lighting, nurse call and signals for remodel project
- **Uvalde Labor Delivery Wing - Uvalde, Texas**
 - * \$1 million power, lighting, nurse call and signals for addition with labor delivery rooms, operating suites and natural birth rooms



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- **Electrical Analysis Software** programs to calculate voltage drop, perform short circuit and coordination analyses, determine savings from motor sizing and other energy conserving projects.

Related Professional Experience, Lighting Design:

- **Olin E. Teague Medical Center** - 290 Bed Replacement Facility - Temple, Texas
- **Central Texas College** - Laboratory Building, Science & Academic Building - Killeen, Texas
- **Stephen F. Austin Building** - State of Texas office building - Austin, Texas
- **Smithville Hospital** - New freestanding acute care facility - Smithville, Texas
- **Austin Presbyterian Theological Seminary** - Austin, Texas
- **Brackenridge Hospital Specialty Care Center** - Austin, Texas
- **Lighting Calculations Program**, a database application to determine lighting conditions and perform batch energy analyses by the IES zonal cavity method.
- **Lighting Energy Analysis Software**, database applications to analyze lighting retrofits, model existing lighting conditions and to perform detailed energy savings calculations.

Related Professional Experience, Plumbing Design

- **TxDOT Asphalt Testing Laboratory** - San Antonio, Texas
MEP design of a new testing lab and renovation of an existing facility. Design included site utilities and rebuilding the electrical service to the existing building.
- **Cesar Chaves Human Resources Building** - Austin, Texas
MEP design of a 17,000 sq.ft. renovation of an old grocery store into an outpatient treatment facility for TB patients. The patient area is served by a 100% outside air unit with heat recovery via flat plate heat exchangers and a water spray pre-cooler.
- **Zaragoza Library** - Austin, Texas
MEP design of a small public library, including security and fire alarm systems.
- **Kealing Jr. High Boiler Replacement Project** - Austin ISD
MEP design of a boiler-storage tank system to replace two existing hot water boilers.

Publications:

- **"Lighting Design,"** proceedings for the symposium on Improving Building Systems in Hot and Humid Climates - Dallas, Texas 1992
- **"Lighting Calculations,"** proceedings for the Texas Association of Energy Engineering Conference - Dallas, Texas 1993



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- **Lone Star Magazine** for the Texas Association of School Boards, quarterly series of articles on energy conservation for schools (reprinted in *The News*, a weekly national newsmagazine)
- **"Energy Conservation in Central Plants,"** Engineered Systems, a six page feature length technical article
- **Feature articles on energy conservation** for the Austin Skyliner, the Texas Hospital Association magazine and other regional publications.
- **Daily energy conservation pointers and tips** for the Austin American-Statesman, the North Lake Travis Log and the Austin ASHRAE chapter newsletter.
- **Energy Conservation in Existing Buildings**, a 400-page textbook (available as a software program, "book on disk")
- **Papers presented at the Hot and Humid Climates Symposium - Dallas, 1994**
 - **"Computerized Duct Design"**
 - **"Energy Conservation Analysis on the PC"**
 - **"Micro-Management of Lighting Controls Projects"**
- **HVAC Designer's Manual**, 400 page textbook (work in progress)
- Numerous other technical reports on geothermal energy applications, including four published in the proceedings of the 1994 Intersociety Energy Conversion Engineering conference, one in the proceedings of the annual meeting of ASHRAE in Atlanta in 1996
- **"Dehumidifying a School Library,"** Engineered Systems, April 1994
- **Daily Energy Tips** on KFON AM radio since February 1994 - Austin, Texas
- **Design of Therapy Pool HVAC systems** - Engineered Systems, April, 1996
- **Psychological Implications of IAQ** - HPAC News, June 1996

