

Carl A. Crow, P.E., ASHRAE HBDP
Senior Project Manager / Mechanical Engineer



Professional Engineer Registrations

Alabama - 26488-E, Arkansas - 10947, California -35254, Colorado - 42452, Florida - 64219, Georgia - 029828, Illinois - 062057757, Indiana - 10810014, Iowa - 15909, Kansas - 20238, Louisiana - 0028026, Nebraska - E-12709, Ohio – 75092, Oklahoma - 21552, Tennessee - 112706, Texas - 56118, Washington - 41046, Wisconsin - 37016-006, Wyoming - 11973

Certifications

- ASHRAE High Performance Building Design Professional Certification, 2008

Experience

- Arup Texas — Houston, Associate Principal
- ccrd Partners — Houston, Senior Associate, Mechanical Department Head
- Jacobs Engineering — Houston, Senior Project Manager / Mechanical Engineer
- Smith Seckman Reid — Houston, Senior Project Manager / Mechanical Engineer
- Goetting & Associates — Austin, Principal / Project Manager / Mechanical Engineer
- Energy Engineering Associates — Austin, Senior Project Manager / Mechanical Engineer
- F B & D Technologies, Inc. — Houston, QA/QC Manager, Senior Engineer
- I. A. Naman + Associates — Houston, Senior Project Engineer/Asst. Project Manager

Education

- Bachelor of Science, Mathematics – The University of Texas at Austin
- Bachelor of Science, Architectural Engineering – The University of Texas at Austin

Associations and Memberships

- American Society of Heating, Refrigerating and Air Conditioning Engineers (Past President - Austin Chapter)
- ASHRAE Technical Committee 9.10 – Laboratory Systems
- American Society of Plumbing Engineers
- Houston Area Association for Hospital Engineering

Background / Project Responsibilities

Carl Crow is an expert strategic advisor with in depth experience providing engineering services to healthcare organizations, educational institutions and airports. Carl specializes in the design and specification of mechanical, electrical and plumbing (MEP) systems for healthcare facilities and laboratories, as well as large universities and aviation sites.

Carl has managed large facility projects with multiple subcontractors and in-house specialists to guide long- and short-term facility development. As lead mechanical engineer and principal client contact, his areas of engineering expertise include heating ventilation and air conditioning, plumbing, fire protection, medical gas/vacuum systems, building energy management and control, as well as design and commissioning of numerous building MEP systems.

Carl has also directed MEP engineering projects for a wide variety of other large facilities, including high-rise office buildings, owner-occupied office buildings, hotels, restaurants, multi-family residences, data centers and clean rooms.

Representative Projects

Central Utility Plants

- Austin Energy Hobby District Cooling Plant - 6,000 ton water chilling unit plant with 26,000 ton-hours of ice storage - Austin, Texas
- Harris County Buffalo Bayou Central Plant - 6,750 ton chilling, 29 mmbtu/h heating central utility plant – Houston, Texas

Churches & Religious Facilities

- Central United Methodist Church Childcare Center – Waco, Texas
- First Presbyterian Church of Georgetown New Children & Youth Christian Education Building – Georgetown, Texas
- First United Methodist Church - Schmidt-Jones Family Life Center - Austin, Texas
- Grace Covenant Church Cornerstone Building Renovation – Austin, Texas
- River Road Baptist Church - Austin, Texas

Commercial Offices

- 101 California Street - 1,200,000 sq. ft., 48-story office tower - San Francisco, California
- 580 California Street – 310,000 sq. ft., 23-story office tower - San Francisco, California
- Adami, Goldman, & Shuffield Law Offices – San Antonio, Texas
- Booz Allen Hamilton Lease – San Antonio, Texas
- Calcasieu Marine National Bank (Capital One Tower)- 400,000 sq. ft., 22-story office tower - Lake Charles, Louisiana
- Conoco Center - 1,200,000 sq. ft. corporate headquarters office building - Houston, Texas
- Domain Gateway Office Building & Parking Garage – Phase I -- LEED-Silver certified, 175,000 square foot, 5-story Class A office tower – Austin, Texas
- LCRA Dalchau Service Center Fire Alarm System Upgrade
- Mexican Consulate Tenant Lease – Austin, Texas
- Southwestern Bell Houston Area Headquarters - 400,000 sq. ft. office building renovation - Bellaire, Texas
- Terrace II Office Building Repairs – Austin, Texas
- Texaco Bellaire Complex - DDC building control system retrofit for 450,000 sq. ft. office building - Bellaire, Texas
- Texas Commerce Tower (JPMorgan Chase Tower) - 2,200,000 sq. ft., 75-story office tower - Houston, Texas
- Texas Eastern UPS Facility - 400 KVA uninterruptible power system in One Houston Center - Houston, Texas
- The First Boston Corporation Branch Office - 100 Federal Street Building - Boston, Massachusetts
- Tokyo Electron America, Inc. Office Building and Parts & Training Building - 73,000 sq. ft., three (3) level office building, kitchen and cafeteria and 16,500 sq. ft. warehouse and training center - Austin, Texas
- Trinity Publications – Austin, Texas
- Two Park Square - 187,000 sq. ft., 10-story office building - Albuquerque, New Mexico

Data and Control Centers

- Arcelor Mittal Data Center Facility Assessment – Burns Harbor, Illinois
- Conoco World Headquarters Data Center – Houston, Texas
- DaVita Assessment Services Feasibility Survey – Deland, Florida
- Genesys Labs WISD Center Infrastructure Upgrades – Daly City, California
- High Energy Physics Lab Dell Blade Server Addition Feasibility Study – Tsukuba, Japan
- NREL Advanced Energy Computing Facility – Golden, Colorado
- Shell Pipeline Control Center – Houston, Texas
- SPI Litigation Direct Data Center Dell Blade Server Addition Feasibility Study – Austin, Texas
- Texaco Credit Card Fire Protection System Upgrade – Bellaire, Texas
- Texas Tech Health Science Center Data Center Upgrade – El Paso, Texas

Educational Facilities

- Austin Independent School District - Austin, Texas
 - *Bond Scope Verification Surveys*
 - *Nan Clayton Elementary School - 94,000 sf, designed to accommodate 800 students in 40 classrooms, Austin Energy Green Building Program 2-Star Rating*
- Burnet CISD - Electrical Evaluation – Burnet, Texas
- Harlandale High School Technical Energy Audit – San Antonio, Texas
- Houston Community College System Administration Building – Combined Heating & Power System Feasibility Study – Houston, Texas
- Jack C. Hays High School Career & Technology Center and Various Building Additions - Kyle, Texas
- Manor High School – Manor, Texas
- Texas A&M University Health Science Center, Education and Research Building - Biomedical Research Laboratory - Temple, Texas
- Texas A&M University - Sterling C. Evans Library, Computing and Study Complex - 114,000 sq. ft. of new library building, six-level 450 car parking garage, and 200,000 sq. ft. renovation - College Station, Texas
- Texas A&M University – Cushing Memorial Library and Archives Renovation – College Station, Texas
- The University of Texas at Austin – Austin, Texas
 - *A&E On-going Professional Design Services*
 - *Almetris Duren Residence Hall*
 - *Jamail Texas Swim Center MEP Survey*
 - *LBJ Plaza Renovation -Replace Domestic Hot Water Heaters at PHR, GEA and ETC Buildings*
 - *School of Art Renovation Feasibility Study*
- Upper/Lower Buda Elementary School New Gym & Library Addition - Buda, Texas

Government Facilities

- Austin Police Department South Austin Police Substation. New 26,000 sq. ft. police substation - Austin, Texas
- Camp Humphreys Community Center Natatorium Design Review – Pyongtaek, Korea
- Capital Metropolitan Transportation Authority
 - *Bus Maintenance Facility - Pflugerville, Texas*
 - *Northeast Operations Center - Austin, Texas*
- City of Austin – Austin, Texas
 - *Austin Energy Hobby District Cooling Plant*
 - *Spicewood Springs Fire/EMS Station*
 - *Town Lake Animal Shelter Addition – Austin, Texas*
- LBJ Presidential Library and Museum – Austin Texas
 - *Energy conservation measures*
 - *Renovation of LBJ Auditorium and Creation of new Ladybird Johnson Center*
- San Antonio Military Medical Center (South) – Wilford Hall Medical Center Renovation – San Antonio, Texas
- Texas Department of Criminal Justice
 - *Boiler Room Surveys at Multiple Prison Sites*
 - *Beto Unit Kitchen and Dining Renovation - Tennessee Colony, Texas*
 - *McConnell Unit Boiler Room Upgrades – Beeville, Texas*
 - *Preston E. Smith Unit - Lamesa, Texas and Gibb Lewis Unit - Woodville, Texas. Served as Commissioning Authority to the Texas Department of Criminal Justice for two new maximum security prisons.*
 - *Tempered Air System for Glossbrenner State Jail - San Diego, Texas*
 - *Tempered Air System for Halbert State Jail - Burnet, Texas*
 - *Tempered Air System for Ney State Jail - Hondo, Texas*
 - *Riverside and Hilltop Units Kitchen Renovations - Gatesville, Texas*
 - *Replace Chillers - 12 Building (Hughes Unit) Gatesville, Texas*
 - *Replace Chillers - 12 Building (Connally Unit) Kenedy, Texas*
 - *Replace Chillers - 12 Building (McConnell Unit) Beeville, Texas*
 - *Intake Medical Building HVAC Upgrade - Garza West Unit Beeville, Texas*
- Texas Department of Transportation Elevator Room Surveys - Austin, Texas
- Texas Department of Public Safety - North Austin Driver's License Facility Renovation - Austin, Texas
- Texas Military Facilities Commission – Major maintenance projects at Readiness Centers in Alice, Arlington, Marshall, and San Antonio, Texas
- Texas National Guard Operational Maintenance Shop – Fredericksburg, Texas

- Texas Workforce Commission
 - *Media center conversion to offices – Austin, Texas*
 - *HVAC replacements/renovations at multiple office buildings – Austin, Texas*

Healthcare Facilities

- Ascension Healthcare – Multiple Retro-commissioning Projects across the United States
- Audie L. Murphy Memorial VA Hospital - San Antonio, Texas
 - *Cardiac Care Unit Renovations*
 - *Laundry Renovations*
- Austin Endoscopy Centers I & II - Austin, Texas
- Batterjee Medical College Hospital – Jeddah, KSA
- Bay Area Regional Medical Center – Clear Lake, Texas
- Bodyscan Imaging Center – Austin, Texas
- Brackenridge Hospital – Austin, Texas
 - *Fire Protection Upgrade*
 - *Emergency Department Minor Emergency Clinic*
- Cedra Clinical Research – San Antonio, Texas
- Central Texas Medical Center Operating Room and Cardiac Catheterization Lab Addition - San Marcos, Texas
- Coleman County Medical Center Renovation and Expansion- Coleman, Texas
- Conoco Center Clinic Relocation - Houston, Texas
- Cornerstone Hospital ICU Renovation- Houston, Texas
- Doctor's Outpatient Surgicare Renovation- Pasadena, Texas
- El Paso Specialty Hospital - El Paso, Texas
- Fort Knox Ambulatory Healthcare Center – Fort Knox, Kentucky
- Four Corners Regional Health Center - Red Mesa, Arizona
- Frisco Specialty Hospital - Frisco, Texas
- Frisco Medical Office Building – Frisco, Texas
- Georgetown Behavioral Health Institute – Georgetown, Texas
- Hill Country Memorial Hospital - Fredericksburg, Texas
 - *IT Server Room -Level 2 Patient Rooms Renovations*
 - *Renovation and Expansion (add ICU, expand central plant, and renovate outpatient surgical suite)*
- Indian Health Service - Deep Look Surveys - Various Locations in Utah, Nevada & Arizona
- Johnson Regional Medical Center MEP Systems Survey – Clarkesville, Arkansas
- La Vernia Medical Clinic - La Vernia, Texas
- Lincoln General Hospital Technical Energy Audit - Ruston, Louisiana
- Methodist Hospital Dunn Tower Expansion - Houston, Texas
- National Specialty Hospital of El Paso- El Paso, Texas
- New Parkland Hospital – Dallas, Texas
- Northern Colorado Medical Center, Infrastructure A Project – Greeley, Colorado
- Infrastructure A Project
- Park Place Surgery Center - Lafayette, Louisiana
- Park Plaza Hospital Due Diligence Survey – Houston, Texas
- Physicians Surgicenter of Lubbock - Lubbock, Texas
- PPD Phase I Clinic – Austin, Texas
- San Antonio Behavioral Healthcare Hospital – San Antonio, Texas
- San Antonio Military Medical Center (South) – Wilford Hall Medical Center Renovation – San Antonio, Texas
- Seton Women's Center – Austin, Texas
- Sioux San IHS Hospital Master Plan – Rapid City, South Dakota
- Sievers Medical Clinic - Gonzales, Texas
- South Texas Surgicare Center Renovation and Consolidation - Corpus Christi, Texas
- Texas Children's Hospital Diesel Fuel Transfer System Upgrade – Houston, TX
- Texas MedClinic - San Antonio, Texas
- Texas Orthopedic Hospital - Houston, Texas

Hotels

- Austin Crowne Plaza Hotel Electrical System Due Diligence Survey – Austin, Texas

- Hilton Garden Inn Renovation – Austin, Texas
- Hilton Hotel at Austin Convention Center – Modification of outside air handling units serving ballrooms to add additional cooling capacity – Austin, Texas
- Hotel Santa Rita – Midland, Texas
- Westin Hotel - 18-story, 350-room downtown hotel Austin with a restaurant on the street level and a pool deck and bar on the third floor – Austin, Texas

Industrial Facilities

- Formosa Hydrocarbons, Inc. - 25,000 BPD Fractionation Plant - Point Comfort, Texas
- Merit Medical Manufacturing Facility – Pearland, Texas
- Mobil Salt Creek CO₂ Plant - 160 MMSCFD CO₂ recovery, removal, compression and injection facility - Kent County, Texas
- Montana Refining Company - 5,000 BPD Distillate Hydrotreater/Desulfurization Unit - Great Falls, Montana
- Motorola, Inc. - Survey of Exhaust & Makeup Air Systems - Bldg. B - Austin, Texas
- PEMEX Two Middle Distillates Hydrodesulfurization Plants - 85 Metric ton per day sulfur recovery and tail gas treating units - Amor Refinery, Salamanca, Mexico and Hidalgo Refinery, Tula, Mexico
- Shell Pipeline Control Center - 16,000 sq. ft. oil movement control facility in Two Shell Plaza - Houston, Texas
- Waterford on Lake Travis Water Treatment Plant Modifications – Austin, Texas

Laboratories / Clean Rooms

- Eaton Corporation, Semiconductor Equipment Division Manufacturing Technologies Center - 108,000 sq. ft., two-level office building, kitchen and cafeteria and 23,500 sq. ft. clean manufacturing, laboratory, and testing spaces - Austin, Texas
- Motorola, Inc. - Ed Bluestein Campus, Building “W” Expansion, 7,900 sq. ft. Class 10,000 clean room test probe facility, 15,000 sq. ft. Kitchen/Cafeteria, and 50,000 sq. ft. office expansion - Austin, Texas
- National Bio and Agro-Defense Facility, Manhattan, Kansas
- Pacific Health Research Laboratory, BioSafety Level 2 (BSL-2) and BioSafety Level 3 (BSL-3) labs and supporting facilities, with the ability to simultaneously conduct several different experiments or diagnoses involving different pathogens (bacteria or viruses – Oahu, Hawaii)
- Ross Technology, Inc. Clean Room - 425 sq. ft. Class 100 clean room for a wafer saw cutting operation - Austin, Texas (not constructed)
- STEAG Applications Laboratory - Design for a 7,000 sq. ft. semiconductor tool manufacturer's metrology laboratory with 2,700 sq. ft. of raised floor clean room area - Austin, Texas (not constructed)
- Texaco, Inc. Laboratory Building E - Ventilation study and preliminary cost estimate for fume hood exhaust system renovation at 40,000 sq. ft. lab building - Bellaire, Texas
- Texas A&M University Health Science Center, Education and Research Building - Biomedical Research Laboratory - Temple, Texas
- University of Oklahoma Health Science Center, Stanton L. Young Biomedical Research Center, Oklahoma City, OK
- The University of Texas at Austin
 - *Renovations to existing Dr. Parichy's fish research lab on level 2 of the J. T. Patterson (PAT) Laboratories Building.*
 - *Renovations to Dr. Theresa Jones animal research lab on level 3 of the Animal Resource Center (ARC) building.*
 - *Renovations to Dr. Alcantara's brain tissue research lab on level 3 of the Animal Resource Center (ARC) building.*
- US Air Force Drug Testing Laboratory - San Antonio, TX
- USC Zilkha Building Fifth Floor Lab Renovation, Los Angeles, CA
- UT Baptist Research Park - Memphis, TN

Museums

- Blanton Art Repository – Austin, Texas
- Louisiana Children's Museum – New Orleans, Louisiana

Recreational Facilities

- Walnut Creek Softball Park – Austin, Texas
- FMH Foundation Natatorium – Midland, Texas

Residential Facilities

- Almetris Duren Residence Hall - New 588 bed university residence hall -The University of Texas at Austin, Austin, Texas
- Bayou Bend Towers Condominiums – 101 Westcott Drive Houston, Texas
 - *Added diesel fuel transfer system for emergency generator*
 - *Corrected problems with domestic hot water circulation system*
 - *Replaced outside air handling unit and added filters to remove pollen and fireplace smoke*
- Major Hotel Chain, Analysis and Correction of Air Conditioning Problems in Main Lobby and Ballroom – Austin, Texas
- Park Square Condominiums - 49 Briar Hollow Lane, – Houston, Texas
 - *Analysis of water source heat pump system piping failures in multiple apartments*
- Visitors' Quarters at Osan Air Force Base - 350 Room Officer Visiting Quarters - Osan, South Korea
- 98 San Jacinto Residences – Austin Texas
- Queen Emma Building Residence Hall – Honolulu, Hawaii

Retail Facilities

- Fendi's Boutique – Fairfax , Virginia
- Florida Turnpike Enterprise C-Stores and Restaurants – various locations in Florida
- Moe's Southwest Grille – Austin, Texas
- Nothing But Noodles Restaurants – Multiple States
- Pei Wei Restaurants – Aventura and Ft. Lauderdale, Florida

Senior Living Facilities

- Deerfield Continuing Care Retirement Community - Urbandale, Iowa
- Army Residence Community Dementia Unit – San Antonio, Texas
- McKenna Health Village – New Braunfels, Texas
- Morningside Manor -San Antonio, Texas
 - *Major renovations of rehab and commons areas*
 - *Private room/shower room renovation*
- Westminster Manor - Austin, Texas
 - *Outside air conditioning units addition to correct negative pressurization problems*
 - *Penthouse sunroom addition*

Single Family Residences

- Hines Residence – Houston, Texas
- Hines Ski Lodge Addition – Aspen, Colorado
- Whittington Residence – Austin, Texas

Studies – Building Envelope Performance

- New Technology Building - Texas Southern University, Houston, Texas

Studies - Due Diligence

- 1001 McKinney Building - Due diligence survey for 373,000 sq. ft., 24-story office building – Houston, Texas
- Park Plaza Hospital – Houston, Texas

Studies - Energy Use

- Technical Energy Audits
 - *Harlandale High School – San Antonio, Texas*
 - *Lincoln General Hospital – Ruston, Louisiana*
 - *LBJ Library and Presidential Museum – Austin, Texas*
 - *Northwestern University ITEC Lab – Evanston, Illinois*
- Thermal Energy Storage Feasibility Studies
 - *Shell Woodcreek – Houston, Texas*
 - *Freescale Semiconductor – Ed Bluestein Site – Austin, Texas*
 - *Freescale Semiconductor – Oak Hill Site – Austin, Texas*
- Predominant Use Studies

- *AFP Corrugated - Austin, Texas*
- *Buffalo Technologies – Austin, Texas*
- *Cedra Clinical Research Laboratory – Austin, Texas*
- *Loredo Truss – Austin, Texas*
- *Selco, Inc. – Austin, Texas*
- *Truform Metalservice – Austin, Texas*

Transportation Facilities

- Austin Bergstrom International Airport Maintenance Shed – Austin, Texas
- Capital Metropolitan Transportation Authority
 - *Bus Maintenance Facility - Pflugerville, Texas*
 - *Capital Metro Northeast Operations Center – Austin, Texas*
- IAH Terminal B, South Side Replacement – Houston, Texas
- IAH Terminal D, Renovation and Expansion – Houston, Texas
- IAH Terminal D, Gate 12A Modifications and Improvements - Houston, Texas*
- New Doha International Airport – Doha, Qatar
- Yampa Valley Regional Airport Terminal Renovation and Expansion – Hayden, Colorado