

PROJECT EXPERIENCE

Florida Institute of Technology – The Scott Center for Autism Research and Training Melbourne, Florida

Mechanical engineering and fire protection services for a two-story 21,700 s.f. autism research and training facility located on the campus of Florida Tech. The Center includes observation, treatment, and training rooms for children with autism and offices, multipurpose room, and conference rooms for staff and parents. HVAC system of chilled water with dedicated outside air units, modular indoor air handling units, variable air volume terminal units, air-cooled chillers, primary pumping arrangement, and Direct Digital Control system that monitors the power quality and the lighting control systems. Special conditions for children with autism required a quiet HVAC system with air noise eliminated and fan noise attenuated. Air filtration was increased to MERV 14 (95% efficient) filters at all air handling units. Outdoor air flow measuring stations provided to ensure ASHRAE Standard 62.1 - 2004 was met. Dedicated outdoor air handling units were provided with cooling capacity to dehumidify the ventilation air lower than typical educational facilities for dryer indoor conditions. Carbon dioxide sensors were provided in the higher density rooms to control the amount of outdoor air delivered into the space during unoccupied periods. Project designed for U.S. Green Building Council's LEED Silver rating.



Educational

PROJECT EXPERIENCE

Florida Institute of Technology – Emil Buehler Center for Aviation Training and Research

Melbourne International Airport, Melbourne, Florida

Mechanical engineering services for a single-story 12,240 s.f. aviation training facility located at the Melbourne International Airport. The Center features the “state-of-the-art aviation technology training equipment. The Center includes a 90-seat multipurpose/training room, a four-station flight simulation room, vaulted lobby with multiple display areas, a 20-person briefing room, customer service and dispatch areas, and a weather flight planning room. Administrative space offers multiple offices for flight services, student and pilot lounges, conference room, flight records, human resource and accounting offices. Mechanical systems include a chilled water system with dedicated outdoor air units for dehumidification control, modular indoor air handling units, variable air volume terminal units, air-cooled chillers, primary pumping arrangement, and Direct Digital Controls that monitor the Center’s power quality and lighting control system.



Florida Institute of Technology – Aviation Hangar

Melbourne International Airport, Melbourne, Florida

Mechanical engineering and fire protection services for a 16,800 s.f. aviation hangar located at the Melbourne International Airport for the aviation school at Florida Tech. The hangar features maintenance training for private aircraft servicing. Mechanical systems include a chilled water system with modular indoor air handling unit for the support areas and offices, air-cooled chillers, primary pumping arrangement, and Direct Digital Controls that monitor the hangar’s power quality and lighting control system. Mechanical ventilation of hangar bay provided for air circulation whenever hangar doors are closed. Large central air stratification fan was provided for general operating ventilation. Fire sprinkler coverage provided throughout hangar bay and support spaces.

Educational

PROJECT EXPERIENCE

Skurla Aerospace Engineering Building – HVAC Upgrades Melbourne, Florida

Mechanical and electrical engineering services for the complete replacement and upgrade of the HVAC systems in the existing two-story 29,950 sq. ft. aerospace engineering building located at the Melbourne campus of FIT. The Center features the “state-of-the-art aviation technology training equipment. The building includes a 90-seat multipurpose/training room, classrooms, laboratories, and administrative offices. New mechanical systems include a chilled water system with dedicated outdoor air units for moisture control of the outdoor air, modular indoor air handling units, variable air volume terminal units, primary pumping arrangement, and Direct Digital Controls that monitor the building’s power quality and lighting control system. Chilled water system was connected to the recently operational campuswide chiller plant. Pneumatic controls were removed.

Educational

PROJECT EXPERIENCE

Education Facilities for K-12 – High Schools/ Middle Schools/ Elementary Schools Various Counties, Florida



Mechanical engineering services provided for various public schools with science classrooms, art, chorus, band/orchestra, gymnasiums, cafeterias/kitchens, cafetoriums, and administration areas:

- Seminole County Public Schools, Oviedo High School Renovation/Additions
- Volusia County Schools, T. Dewitt Taylor Middle/High School
- District School Board of Collier County, Marco Island Charter Middle School
- School District of Lee County, Veterans Park Academy for the Arts Middle School/Elementary School
- School District of Lee County, Mariner Middle School
- School District of Lee County, Tice Middle School
- School District of Lee County, Challenger Middle School
- School District of Palm Beach County, John F. Kennedy Middle School
- Broward County Public Schools, Orange Brooke Elementary School
- Broward County Public Schools, Dolphin Bay Elementary School
- School Board of Brevard County, Meadowlane Elementary School



Educational

PROJECT EXPERIENCE

Community Colleges and School Districts – Energy Conservation Reports of Various Education Facilities Various Locations, Oregon and Washington

Energy engineering services for comprehensive energy studies were performed on various buildings in compliance with the Institution Buildings Program for U.S. Department of Energy (NECPA program). Studies required:

- Conducting extensive site observations of the building envelope, mechanical systems and electrical systems.
- Interviewing maintenance personnel for equipment performance histories.
- Identifying energy conservation measures.
- Performing computer simulations of building operation.
- Conducting extensive life-cycle cost analyses reporting on simple payback, internal rate of return. Responsibilities included the site observations, computer analysis and report preparation. Facilities included Lane Community College, Eugene, Oregon; Umpqua Community College, Roseburg, Oregon; Southwestern Oregon Community College, Coos Bay, Oregon; Clark Community College, Vancouver, Washington; Eugene School District, Eugene, Oregon; North Bend School District, North Bend, Oregon; and Tacoma School District, Tacoma, Washington.



Educational

PROJECT EXPERIENCE

University of Oregon – Energy Improvement Designs at Various Facilities Eugene, Oregon

Retrofit design services at various campus facilities of energy conservation measures approved by the Bonneville Power Administration from the previous energy analyses. Designs consisted of various HVAC control modifications, two-motor drive installations, equipment upgrades, heat recovery systems, and revised maintenance procedures. Responsibilities included the retrofit designs for each of the following buildings: Johnson Hall (President and Vice-President administration offices, listed with the National Register of Historic Places); Erb Memorial Union (student union with a cafeteria, kitchens, gift shops, banquet rooms, offices, recreation rooms including bowling alleys, theater, and classrooms); Science II (science department classrooms, offices and laboratories); University Inn (dormitory with kitchen and dining facilities); Villard Hall (theater department classrooms, offices and performance hall; listed with the National Register of Historic Places); and Physical Plant (central steam plant using wood chip-fired boilers, central chilled water plant using mill race stream water for heat rejection and distribution network for each system).



Educational

PROJECT EXPERIENCE

Educational

Western Washington University - Ross Engineering Technology Building Bellingham, Washington

Mechanical engineering services for the upgrade and renovation of the ventilation and control systems for a vocational and technology building at the Western Washington University campus. Building is a three-story mixture of labs, shops, classrooms, and administrative offices. Indoor air quality type issues were discovered in the 20-year old building from occupant complaints of lab and shop odors migrating into the classrooms and office areas.



University of Washington Health Science Center - RR Wing Piping Replacement Seattle, Washington

Mechanical engineering services for the replacement of the existing domestic and laboratory galvanized piping systems. Systems include cold water, hot water, and hot water circulation piping from the building backflow preventers and risers to approximately the fourth floor and existing copper pipe risers. Scope of the mechanical work was expanded to include an evaluation and design to separate the domestic

water systems from the laboratory water systems. Work included a survey of fixtures in the CHDD section of RR wing and new domestic water piping to existing kitchen sinks.

