

---

## PROJECT EXPERIENCE

## Industrial

Siemens Energy –  
Gas Turbine  
Manufacturing Plant  
Charlotte, North Carolina

Mechanical engineering and BIM services for a 500,000 s.f. manufacturing plant that will support the production of large Natural Gas-fired turbines. Project includes a 3-story, 65,000 s.f. office building and support spaces interior to the plant. Mechanical systems installed consist of rooftop, packaged direct-expansion units with full economizers and Natural Gas-fired heaters. **Mechanical design and BIM services provided as a subconsultant to the mechanical contractor, Gamewell Mechanical, Inc., in a design/build contract arrangement.** 2011 Revit MEP Suite and 2010 Navisworks Manage software was used in providing the 3D files for mechanical, piping and plumbing and for the clash detection effort. **Project designed to U.S. Green Building Council's LEED Silver rating.**

DRS Technologies –  
Babcock Street  
Facility Remodel  
Melbourne, Florida

Mechanical and electrical engineering services for the complete replacement and upgrade of the HVAC, lighting, plumbing, and power systems in various locations within the existing two-story manufacturing and office building located in Melbourne, Florida. The project included converting 75,000 sq. ft. of space to multiple executive offices, high-end executive conference rooms and training rooms. Lighting included upgrades to LED fixtures. Mechanical included improved indoor air quality with improved thermal zoning of the areas being remodeled.

Harris Corporation  
– Government  
Communications  
Systems Division  
Rodes 5 GOES-R  
Computer Lab  
Melbourne, Florida

Prime consultant for multidiscipline engineering and architectural services to convert 6,200 s.f. office space to a raised floor computer lab of mission-critical support from mechanical and electrical systems. Raised floor is 24-inch height with chilled water piping, power, and data routed underfloor. New electrical power service is provided from Florida Power & Light with standby generator and full UPS. HVAC was designed for 9.5 kW per rack cooling load with cooling system consisting of multiple downflow chilled water computer room units located on raised floor, air-cooled chillers located outdoors, and circulating pumps with VFD motors.

---

## PROJECT EXPERIENCE

## Industrial

Harris Corporation,  
Government  
Communications  
Systems Division –  
Building 5W High-  
Bay Conversion to  
Cleanroom  
Melbourne, Florida

Prime consultant providing mechanical and electrical engineering services for conversion of existing high-bay assembly facility to ISO Class 7 cleanroom. Project consisted of combining two adjacent high-bays into one 3,900 s.f. bay with modifications and upgrades of HVAC air handling unit, replacement of all HVAC ductwork, modification of pneumatic controls, and the upgrade of the air filtration system to meet the ISO cleanroom requirements. Project was certified by industrial hygienist.

Harris Corporation,  
Government  
Communications  
Systems Division –  
Building 22C Chiller  
Plant Upgrade  
Melbourne, Florida

Prime consultant providing mechanical and electrical engineering services for upgrading existing 300-ton water-cooled chiller with a new 400-ton chiller. Project consisted of replacing the two chilled water and three condenser water pumps with larger capacity pumps to match the larger chiller capacity, replacing the electrical power feed and power panel, and installing a refrigerant leak detection monitor. Challenges included the physical dimension limitations of the existing chiller plant that required the new chiller to be disassembled by factory-trained personnel prior to installation. Project qualified for Florida Power & Light incentive funding for energy conservation.

Harris Corporation,  
Government  
Communications  
Systems Division  
– Building 14 Data  
Center  
Melbourne, Florida

Prime consultant providing mechanical engineering support services for renovating and upgrading the HVAC systems for the corporate Data Center. Project consisted of researching the existing data center electrical loads and sizing the larger HVAC system for the 5,000 s.f. facility. Existing electrical loads were determined by metering the Data Center for one month and site survey of all other non-UPS electrical loads.

---

## PROJECT EXPERIENCE

## Industrial

Northrop Grumman  
Corporation – Building  
222 Auditorium HVAC  
Upgrade  
Melbourne International  
Airport, Melbourne,  
Florida

Mechanical and electrical engineering services to upgrade the existing HVAC system dedicated to high-profile corporate 200-person auditorium of 3,000 s.f. Dedicated HVAC system was problematic since the original installation in 1993. After computer modeling of the system and room, discovered original setup and controls were incorrect. Project designed to the more recent ASHRAE Standards. Upgrade resulted in a Florida Power & Light incentive funding for energy savings.

Northrop Grumman  
Corporation – Building  
219 400 Hz System  
Replacement  
Melbourne International  
Airport, Melbourne,  
Florida

Mechanical engineering and energy simulation services were provided to determine the economic feasibility of replacing the existing out-dated centralized 400 Hz generation system with a new de-centralized distribution system. The existing 400 Hz system is well over 20 years old and is generated by a centralized 500 horsepower rotary frequency converter. The 400 Hz power system supports the various labs throughout the building. A request to evaluate the energy saving opportunity of installing smaller dedicated static type frequency converters at each lab in lieu of the rotary type converter.

---

## PROJECT EXPERIENCE

## Industrial

Aluminum Company of  
America, Warrick  
Operations –  
HVAC for Various  
Industrial Facilities  
Newburgh, Indiana

Mechanical engineering services for the design and installation of direct-expansion air conditioning systems for various facilities throughout the plant. Responsibilities included the design, purchasing the equipment and materials, supervising construction, system start-up, and developing operation and maintenance documents. The following facilities were constructed: Environmental Lab (included the installation of inert gas piping and storage, laboratory fume hoods, and high efficiency filtration system), Maintenance Shops, Switchgear Equipment Buildings, Offices, Recycling Scrap Inspection Facility, Finishing Area Quality Assurance Lab (4,000 s.f. lab and office facility that included the installation of laboratory fume hoods, natural gas laboratory piping, dehumidification, and high efficiency filtration system).

Kimberly-Clarke  
(formerly Scott Paper)  
No. 10 Boiler Building,  
Chemical Room  
Ventilation  
Everett, Washington

Mechanical engineering services for an employee safety project that consisted of an acid-resistant exhaust ventilation system for the chemical room. Design included the installation of acid-resistant ductwork from the existing Conquor, Sulfite, Phosphate, and Nitrate mix tanks, routed to a fiberglass centrifugal exhaust fan (42,000 CFM) located outdoors adjacent to the building. The exhaust duct was terminated above the building roof. New inlet louvers to the room were also installed, as was additional plumbing venting for three existing chemical storage tanks.