

GSA's Scope of Engineering Services

- ▶ Prepare MEP/FP/LV basis of design for the project
- ▶ Prepare preliminary utility load estimates for the project including HVAC estimated loads
- ▶ Prepare code review as it relates to MEP systems
- ▶ Attend design coordination meetings
- ▶ Provide construction administration services
- ▶ Provide onsite review and observations with reports
- ▶ Provide review of all testing and balancing
- ▶ Provide full time onsite representation during construction (when requested)
- ▶ Provide M/E/P V.E. Design Services
- ▶ Provide M/E/P Commissioning Services

Mechanical Engineering and Design

- ▶ Heating, ventilation and air conditioning (HVAC)
- ▶ Central plant facility engineering
- ▶ Chilled water/hot water DX and split system HVAC system design
- ▶ Energy recovery systems
- ▶ Sustainable systems
- ▶ Under floor and displacement air systems
- ▶ Humidification/dehumidification systems
- ▶ Kitchen exhaust systems
- ▶ Smoke management systems and testing

Electrical Engineering and Design

- ▶ Incoming electrical services
- ▶ Power distribution systems (medium and low-voltage)
- ▶ Normal power, standby and life safety generation
- ▶ UPS systems
- ▶ Renewable energy systems
- ▶ Energy code compliance analysis
- ▶ Interior/exterior lighting
- ▶ Power quality systems
- ▶ Life safety fire alarm systems

Plumbing Engineering and Design

- ▶ High-rise and low-rise domestic water systems
- ▶ Gas piping systems
- ▶ Sanitary (foul) piping systems
- ▶ Grease waste systems
- ▶ Roof drainage systems
- ▶ Vacuum and compressed air systems

Fire Protection Engineering and Design

Sprinkler System Design and Calculations

- ▶ Wet systems
- ▶ Dry systems
- ▶ Chemical systems
- ▶ Pre-action systems
- ▶ Sprinkler piping system design
- ▶ Pipe sizing
- ▶ Piping layouts
- ▶ Sprinkler head location design (in coordination with the interior ceiling designs)

Low-Voltage Systems Cabling Engineering and Design

- ▶ Provide layout and design of space requirements for IT rooms, slot data rooms, IDF closets, and MDF rooms
- ▶ Determine the BTUH output and power requirements of the equipment and work with the MEP engineers to establish cooling and UPS requirements, as well as raceway coordination and requirements
- ▶ A/V design and engineering (subconsultant to GSA)
- ▶ Surveillance and security systems design engineering (subconsultant to GSA)
- ▶ Provide design and engineering of the following cabling requirements for the project:
 - Main computer system/network
 - Accounting system
 - LAN, WAN and Internet Network Infrastructure
- ▶ Point of sale (POS system)

- ▶ Telephone system including:
 - VoIP
 - PoE
 - Time and attendance system
 - Tracking system
 - RFID systems
 - Interconnection to any local and corporate accounting software
- ▶ Beverage dispensing and control systems (interfaces)
- ▶ Building automation systems
- ▶ Infrastructure cabling required to meet State Gaming Board requirements for online central slot reporting to the State
- ▶ Wireless Wi-Fi/first responders radio systems
- ▶ Cell phone reception systems
- ▶ Credit card/ATM systems
- ▶ Convergence of the listed systems where feasible

Sustainable Systems Building Design (LEED Services)

At GSA, we have the responsibility to be environmentally sound in our design with regards to impact, efficiency and sustainability. Our consulting engineers have the knowledge and supporting technologies to assist clients in creating sustainable “green” buildings. We are a member of the U.S. Green Building Council (USGBC) and maintain a highly qualified staff of professionals who concentrate in the area of sustainability, primarily with respect to building services and building envelope. Areas of application include:

- ▶ Renewable energy technologies
- ▶ Appropriate ventilation strategies
- ▶ Effective use of thermal mass
- ▶ Energy and CO2 emissions
- ▶ Reductions of unnecessary heat gains
- ▶ Water use
- ▶ Our sustainability group includes registered engineers possessing certification as LEED (Leadership in Energy and Environmental Design) accredited professionals