# Energy Audit – Health Care
# Albany Memorial Hospital
# Albany, New York

### Program
NYSERDA FlexTech Feasibility Study and follow-up implementation services directly with the customer

### Scope of Services
- Detailed Energy Audit
- Infrastructure & Physical Needs Assessment
- Design Services
- Construction Administration Services
- Incentive Assistance

### Level of Involvement
Prime Contractor

### Facility Size
635,580 sq. ft.

### Facility Type
Acute Care Hospital

### Project Results
- Replace inefficient lighting
- Occupancy based lighting controls
- Upgrade building management system
- Retro-cx air side HX loop on AHU-1, -2 and -3
- Install primary/secondary chilled water distribution
- Upgrade chiller and boiler plants
- Install boiler economizer

### Projected Annual Savings
Electric Demand: 511 kW
Electric Consumption: 2,548,146 kWh
Thermal: 242,432 Therms
Energy Cost Savings: $446,585

AMH has expanded over the years and is comprised of multiple connecting wings and buildings dating from 1957 totaling 635,580 sq.ft. AMH, due to its various wings and dates of construction, is heated and cooled through an assortment of different system types. The main systems include a central boiler plant which generates medium pressure steam (75 psig) for use in space heating, sterilization of equipment and service hot water. The main source of space heating is hot water which is converted through heat exchangers. Cooling is primarily provided through the central chiller plant which generates chilled water for distribution throughout the hospital. There are air cooled rooftop units which served individual areas in the hospital as well as dedicated air cooled units serving datacenters and special systems.

**New Chiller and Piping**

EME Group has been working with the hospital since 2004 when we performed a detailed energy assessment of their facility through NYSERDA's FlexTech program. After we completed the energy assessment, we performed a detailed infrastructure study that examined the remaining systems in the hospital including plumbing, electric power and fire alarm. As a result, we developed a list of 70 projects including estimated construction costs. In addition, since the chiller plant was being modified from steam fired absorbers to electric centrifugals, a new service and switchgear had to be designed and installed prior to the chiller installation. Since then, we have been assisting the facility with the implementation of a $15 million renovation program by providing mechanical, electrical and plumbing design services. EME Group first developed construction documents and provided construction administration services for the replacement of two cooling towers which enabled the facility to meet the summer's demand. The following winter we replaced three independent 300-ton centrifugal chillers with two 500 ton high efficiency chillers and designed into the facility a primary/secondary chilled water distribution system. This enabled the hospital to install variable speed drives on the secondary system to take advantage of part loads due to non-peak weather and for the areas (administration, offices, day clinics, etc) of the hospital that are unoccupied at nights and weekends. An environmentally friendly, non-chemical water treatment system has been successfully employed for the condenser water with documented low bacterial counts at a fraction of the operating costs of traditional chemical treatment systems.