

Health Care Facilities

CLEAN ROOMS, RESEARCH LABS, AND SPECIAL ENVIRONMENTS



As part of our total systems approach, we design, build and maintain Clean Rooms (Federal Standard Room Classifications 100 to 100,000) for Bio-Medical and Industrial facilities. We can perform consulting engineering services, extended architectural-engineering with construction management (AE-CM), or pure Agency Construction Management.

Our “turnkey” approach begins with preliminary consultation and project programming, site analysis, system concept design and engineering, equipment selection, cost estimates and schedules. After receiving customer approval of the program requirements, conceptual design, budget and schedule, we complete detailed construction documents suitable for obtaining a building permit and receiving competitive bids from equipment suppliers and specialty contractors to perform construction. Next, we negotiate and prepare construction contracts on behalf of the project owner and assist him in procuring major equipment direct from manufacturers to avoid contractor price-markups. During the construction phase we review contractor shop drawings and submittals, and provide field representation services. Finally, our engineers and technicians adjust, test and balance the systems to assure they are commissioned properly.

Continuous advances in medicine and technology as well as changing regulatory requirements necessitates constant re-evaluation of health facilities. Proper space layout and construction, air conditioning and ventilation, humidity control and filtration, space pressurization, power and lighting, communications and life-safety systems are critical in the prevention and treatment of diseases and injuries. Moreover, there is constant pressure to minimize costs while maintaining or improving the quality of facility support services.

For the purpose of this publication, health care facilities are represented by the following categories:

- **Hospital facilities**
- **Pharmaceutical facilities**
- **Outpatient care facilities**
- **Nursing home and assisted-living facilities**
- **Health care product manufacturing facilities**
- **Doctor's offices and dental facilities**

A diverse group of health care facilities managers depend on The Sievert Group for timely, cost-effective, and quality solutions to their facilities design, engineering, construction and maintenance problems.

BLOOD SUBSTITUTE LABORATORY

Following is just one example of numerous engineering and construction projects performed over the years by The Sievert Group for an internationally known pharmaceutical company. In this case, the project was a new Blood Substitute Laboratory.

Blood Substitute Laboratory

The Blood Substitute Laboratory consists of approximately 4,050 square feet of Class 100,000 clean room and support areas for cancer research. The laboratory consists of a Hot Room for drying tanks, a Cold Room for blood storage and research and a Laboratory.

Hot Room

The HVAC system for the Hot Room consists of constant volume air system with hot water heating coil and steam humidifier. Dehumidification for drying is achieved by modulating the outside air and exhaust air volume to remove excess moisture.

Cold Room

The HVAC system for the Cold Room consists of a constant volume air system having a supply and return fan; parallel direct expansion refrigeration coils and compressor/condensing units; an electrical duct mounted reheat coil and a dessiccant dehumidifier. Defrosting of the coils is achieved by transferring the operation of the refrigeration systems with a time clock and by heating the coil with a built-in electric heating element.

Laboratory

The HVAC system for the laboratory areas consist of a constant volume air system having supply and return fans, a direct expansion refrigeration coil and compressor/condensing unit, and individual zone hot water heating coils and steam humidifiers.

Filtration

Filtration is achieved by a 30% pre-filter, an 85% secondary filter, and a 99% final (HEPA) filter. Pressurization control is achieved by an air monitoring system for modulating air flow at the supply and return fans.

HVAC System

The HVAC system includes a hot water heating system and low pressure steam humidification system supplied from the plant's existing steam boilers.

HIGH PRAISE FROM SATISFIED CLIENTS

I wanted to take this opportunity to acknowledge the high degree of confidence I have in the abilities and dedication of your entire staff. The knowledge and experience of your engineering staff and corporate management, along with the foresight demonstrated in analyzing difficult engineering situations have proven to be a real asset in the projects you have worked on in our facilities. I especially appreciate the broad range of analyses that are examined in your project scope investigations. Your team always seems to be asking the right questions ensuring that our projects are in strict code and regulatory compliance. Your group is sensitive to the individual needs and preferences of each customer. Your staff has always been cooperative, energetic and insightful in their approach to problem solving. Your staff has a broad range of engineering and construction experience which enables them to handle a wide range of projects. In situations where unusual obstacles were encountered, innovative cost efficient solutions were offered to resolve complex mechanical problems. It is a comfort to know that no problem is considered too insignificant to deserve your attention. It is always a pleasure to work with your staff.

As was explained in our initial project meetings, we are a budget concious community hospital that must maintain medical services 24 hours a day, seven days a week. While this project directly served the kitchen, many other areas of the facility were impacted during the construction and demolition. Other areas of note include radiology, receiving, accounting and the emergency department.

We appreciate your project staff planning ahead, coordinating work with our plant operations people, sharing schedules with our directly and indirectly related departments, remaining flexible to our operational needs and doing it right the first time. We need more contractors that understand our operational requirements and keep us informed of the impact of forthcoming work.

ENERGY/OPERATIONAL ANALYSIS

Excerpted from an energy/operational analysis study report prepared by Sievert for a medical center located in Pennsylvania. The center requested that an energy study be performed in conjunction with a major facility remodeling and expansion program.

LEVEL	PROPOSED FUNCTION/USE	EXISTING SYSTEMS	PREVIOUS OR EXISTING USE	CFM Low / High	TONS Low / High	KW Low / High
BASEMENT	Personnel	AHU-4	Same			
GROUND	Ind. Health	AHU-6	Med. Records			
	Audiology	AHU-2	Conference			
	Chemo Therapy	Ahu-6 AHU-10A	Dining Q.A	200 / 400	0.5 / 1.0	0.5 / 1.5
	Cardiology (N) (S)	AHU-10A	Soc. & In- Serv Lib., Pharm.	300 / 800	2.5 / 4.0	1.0 / 2.0
	Out Patient Waiting	AHU-2	Out Patient Registration			
	Maternal & Child Care Clinic	AHU-9	Emergency			
ONE	Geriatric Clinic	AHU-10A	Gen. Stores	500 / 1300	1.5 / 3.0	1.3 / 2.0
	Out Patient Waiting	AHU-10A	Meeting Room/Conference			
	Pain & Arthritis	AHU-10A	Kidder Room/ Conference	250 / 500	0.5 / 1.5	1.0 / 1.5
	Out Patient Pharmacy	AHU-10B	Resp. Therapy			
	Surgery	AHU-7	Surgery/Recovery			

OUR MECHANICAL SERVICES UNIT ALSO MAINTAINS AND SERVICES STATIONARY AND MOBILE MRI FACILITIES



GET ACQUAINTED WITH SOME OF OUR HEALTH CARE INDUSTRY CLIENTS

Hospitals and Health Care

Alexian Brothers Hospital
Alliance Imaging Inc.
American Shared Hospital
Comdisco Medical Exchange
Delnor Hospital
DuPage Dialysis, Ltd.
Ellis & Watts
Franklin Boulevard Hospital
GE Medical Systems
Genesis
Geneva Community Hospital
Glenbrook Hospital
Glen Ellyn Clinic
Gottlieb Hospital
Hinsdale Medical Center
Humana Hospital
Johnson & Johnson
King Equipment Services
Lutheran General Hospital
Meadville Hospital
Medical Imaging Resources
Miller Medical Systems
Mobile Technology, Inc.
Northlake Community Hospital (now Westlake Hospital)
Northwest Community Hospital
Northwestern Memorial Hospital
Premier Health Services
Ressurrection Hospital
Shared Imaging Inc.
Siemens Medical Systems
St. Anne's Hospital
St. Elizabeth Hospital
St. Joseph Hospital
Synergetics
University of Chicago Medical Center
University of Illinois Medical Center
Veteran's Administration Hospital
West Suburban Hospital Medical Center

Retirement and Assisted Living Facilities

Americana Healthcare Center
Asbury Court Retirement Village
Brentwood Nursing Home
Church Creek
Fox Valley Nursing Center
Friendship Village
Lakeshore Nursing Home
Lee Manor Health Care
Lexington Health Care
Lutheran Home for the Aged
Mangus Farms
Rest Haven West
St. Benedicts Home for the Aged
St. Procopius
Swedish Retirement Home
Tamarak Retirement Residence, Inc.