

Commercial Building Operations and Management

SIEVERT "PULLS OFF" \$10 MILLION DOLLAR BANK JOB



When a Chicago bank went public it acquired other Illinois institutions and expanded its branch banking operations. As a result, the bank decided to consolidate computer and check processing, bookkeeping and some administrative operations of five banks into an existing facility.

The objective was to achieve the efficiencies and economies that could result from a single location. At the same time, the mandate was to provide a superior work environment to maintain, retain and motivate personnel. Worker comfort and productivity were also stressed. Moreover, shower and exercise facilities were provided to show the bank's commitment to an employee wellness program. Although most of the facility is of open landscape design, a quiet room is provided for employees to study or prepare special reports. All told the bank invested \$10 million dollars to design, engineer and renovate a leased space.

The bank took out a 10-year lease on River Center's entire 15th or top floor of 60,000 sq. ft. and about 11,000 sq. ft. on the 14th floor of the 70-year old building. The downtown Chicago River Center location is not only close to the Federal Reserve Bank of Chicago for convenient clearing of all checks, but it is right across the street from a commuter train station.

The bank assigned overall engineering and construction management responsibility to The Sievert Group. The Sievert Group also assisted the bank in lease negotiations and identified that certain base building systems were inadequate for the bank's data processing operations. This enabled the bank to negotiate additional mechanical equipment as part of their lease.

The basic architecture of the space had a lot going for it and the bank just tried to capitalize on that. The finished interior represents a theme that is high-tech, intense or high-energy, but not opulent or rich. Saw-toothed monitor windows, typical of old warehouse buildings, were reconstructed into skylights so that bank personnel would have access to the natural daylight.

The Sievert Group provides a comprehensive multidisciplinary approach to planning, designing, constructing, maintaining and operating commercial buildings. These services boost the intrinsic value of a building in terms of profitability and versatility, and occupant health, comfort, safety and productivity. Customers demand that building owners and managers provide a high degree of services at competitive rates. Competition also dictates that they supply more amenities.

Today's buildings must be equipped to properly support computer, telecommunications and Internet developments, building automation and energy saving technologies, increases in HVAC and power capacities, local as well as remote control of HVAC, lighting and security systems.

The Sievert Group is recognized as a highly professional creator and implementer of practical cost effective design, construction and operations strategies for a broad array of prestigious buildings and companies across the United States. These buildings house corporate offices, banks and financial centers, insurance companies, real estate companies, hotels, apartments and condominiums, shopping centers, e-commerce and communications businesses, and trade associations.

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The biggest challenges were dealing with the electrical and mechanical requirements and how to light the space innovatively. Ceilings vary between nine and ten ft. high and are illuminated with both ambient and neon light. An exceptional amount of utilities had to fit into a limited space because the skylights took up such a tremendous area. The skylights limited the space that was available to run all of the conduit to more than 250 work stations, each of which would have at least a computer terminal, calculator and a phone. The basic problem was solved with the addition of ornamental capitals to existing columns to act as transitional elements. These would permit electrical and data communications cable to be concealed and run to the work stations.



PRE-ACQUISITION SURVEY AND EVALUATION OF FIVE-STORY OFFICE BUILDING

Problem

To determine the general condition of the building and site, identify any remedial repairs or upgrades necessary to accommodate a planned program for use of the building, and prepare an estimate of fair costs for making needed improvements.

Observation

Building is typical of many speculative office buildings erected in the late 1970s and early 1980s. Some building systems were apparently designed with first-cost economies in mind (HVAC, electrical, and fire protection).

Recommendation

Upgrade and repair various building systems to maintain comfortable space conditions, reduce energy costs, meet new ventilation requirements, and extend the life of certain building systems. Remedial structural repairs are required to meet lateral wind load code requirements.

Result/Payoff

Pre-acquisition survey observations and recommendations, with estimates of probable construction costs for associated remedial repairs and improvements, assisted purchaser in arriving at an informed decision with respect to the purchase of the building, and helped the purchaser negotiate a substantial reduction from the seller's asking price.



Pre-Acquisition Surveys of Select Building Systems

Sievert also conducts building surveys on behalf of businesses prior to leasing of a new space or renewal of an existing lease. We conduct space load calculations to determine shortfalls or excesses in the capacities of existing HVAC and power systems.

RISING FUEL PRICES SPUR ENERGY-OPERATION AUDITS

Since 1974 our organization has emerged as a leader in the field of energy-operational audits and retrofits. We have conducted energy conservation audits for many major companies and have developed alternative modes of operation and/or system retrofits that resulted in substantial savings for our customers.

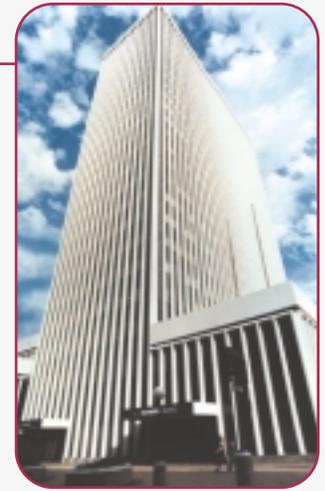
During the course of our work we have developed a unique, multi-disciplinary team approach that combines professionals from engineering, construction, controls, maintenance and operator education. In this fashion, we are able to engineer, design, evaluate, construct and train our customers' operating personnel on all electro-mechanical systems.

Our conclusions are based on temperature and light level measurements throughout the building, and diagnostic tests performed on equipment including amperage draws, RPM of fan systems, hours and methods of operation of equipment, static pressures to accurately measure fan performance, water pressure drops and flow rates, combustion efficiency tests, electronic tube analysis, and vibration analysis to determine mechanical system efficiency.

In making our survey we also review pertinent building record drawings and specifications, evaluate building operations and maintenance practices, and examine historical energy cost data. We have found it mutually advantageous to survey buildings and discuss operations with staffs at all levels, including engineering and operational personnel. In connection with this our engineers and service technicians are able to provide operational and maintenance advice during this phase of the audit. Once our team has evaluated all of their energy-saving ideas, we prepare a comprehensive energy-study report. The report includes findings from the study and estimates of the potential savings associated with each energy conservation opportunity.



Dresser Industries, Houston, TX



Financial Center, Des Moines IA

Connecticut General Insurance Company HVAC System Alterations

O'Hare Plaza Office Buildings
Chicago, Illinois

Sievert was retained to provide engineering services, perform energy/operational audits, and to develop designs that would implement findings of the various studies.

O'Hare Plaza is a commercial office complex consisting of Building "AA" (10 story office space, 243,200 sq. ft.); Building "B" (3 story office space, 75,600 sq. ft.); Building "C" (3 story office space, 97,200 sq. ft.); mall level (27,800 sq. ft. of public and 56,100 sq. ft. of rental spaces); and an open parking garage.

The HVAC System alterations consisted of the following:

1. The existing constant volume air handling units with zoned reheat coils were converted to a variable air volume distribution design without reheat.
2. The conversion of the air handling units to a VAV design resulted in a reduction to the reheat system requirements. This revision resulted in the installation of two (2) 95 horsepower boilers to replace the operation of the two (2) existing 500 horsepower boilers. The design included a separate domestic hot water system and a boiler hot water reset schedule.
3. The conversion of the air handling units to a VAV design resulted in a reduction to the refrigeration requirements. This revision resulted in modifications to the piping of the chillers and cooling towers to allow for independent operation of each chiller at part load operation.

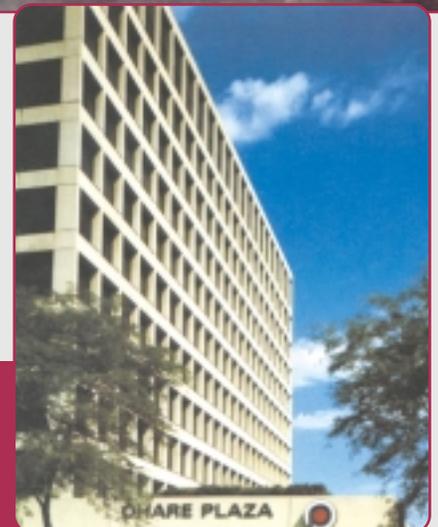
The HVAC system alterations resulted in the reduction of gas and electric energy consumption by over 50% annually while maintaining tenant comfort.

The project design was recognized by ASHRAE with an Energy Conservation Award for an energy design of an existing commercial building.



American Society of Heating,
Refrigerating and Air Conditioning
Engineers

ENERGY CONSERVATION AWARD



JONES, LANG, WOOTTON REALTY ADVISORS HVAC System Alterations

Woodfield Hilton and Towers Hotel
Arlington Heights, Illinois

Sievert was retained to perform an energy analysis of 376 guest rooms to determine their annual operating cost and the energy savings associated with a proposed installation of an energy management system.

The HVAC system for each room consists of a 3/4 ton fan coil unit having a chilled water cooling coil and a 2 KW electric strip heater. In addition, there is a 2 KW electric baseboard heater installed below the windows. The analysis is based on a computer model developed by Sievert to match the projected monthly occupancy schedule.

The analysis is based on maintaining the guest room at a temperature of 72 degrees year around with the savings based on resetting the guest room temperature up to 80 degrees during the summer and down to 65 degrees during the winter along with cycling of the fan coil when the room is unoccupied.

The energy analysis concluded the following:

1. The annual operating cost for each guest room HVAC system is approximately \$166.00, or \$62,400.00 for the 376 rooms.
2. The total annual energy savings by installing the energy management system without fan cycling is approximately \$6,666.00.
3. The total annual energy savings by installing the energy management system with fan cycling is approximately \$9,537.00.
4. The energy management system savings did not conform to the corporate guidelines for a return on investment.
5. The energy analysis demonstrated that the greatest opportunity for saving energy and operating costs occurs in the public spaces of the hotel.

PAN AMERICAN PROPERTIES HVAC System Alterations

Washington, D.C.

Sievert was retained to provide engineering services for the renovation of the existing HVAC system in a multi-story office building having an area of approximately 165,500 sq. ft. The engineering analysis documented the following:

1. The existing HVAC system for floors two through eight consisted of perimeter heating/cooling induction units supplied by an air handling unit (AHU-1) and a constant volume interior air handling unit (AHU-2). Sievert recommended the addition of a steam reheat coil for the north induction units zone, revision of the control system for AHU-1 & 2 and conversion of AHU-2 into a variable air volume system.
2. The existing HVAC system for the first floor consisted of an air handling unit (AHU-3) serving the east side, an air handling unit (AHU-4) serving the west side and an air handling unit (AHU-5) serving the lobby. Sievert recommended deleting the reheat coils for AHU-3 & 4 and revising the control system.
3. The existing HVAC system for the basement consisted of a heating and ventilating unit (AHU-6) serving the garage and an air handling unit (AHU-7) serving the basement core area. Sievert recommended the addition of a carbon monoxide detection system for the garage and revisions to the control system.
4. The existing refrigeration system was a chilled water design. Sievert recommended revisions to the sequences of operation for the chiller, cooling tower and the freeze protection converter that serves the cooling tower and waterside economizer.
5. Sievert designed a separate condenser water system for tenant air conditioning systems (i.e. computer rooms and telephone equipment rooms).
6. The existing heating system consisted of steam to water converters for the perimeter radiation system and for a snow melting system. Sievert recommended revising the snow melting converter into a perimeter radiation converter for the first floor and a revision to the control system.
7. Sievert performed metallurgical testing of the aging piping systems to determine their life expectancy.



122 "C" Street, Washington, D.C.

HIGH PRAISE FROM ANOTHER SATISFIED CLIENT

I am pleased to report that our recent energy retrofit program has achieved significant savings in energy cost and has provided our tenants with better cooling comfort. As a result of your engineering studies and retrofit design, we were able to attain these important objectives.

I can also report favorably on the retrofitted HVAC system at our office building in Washington, D.C. The new load analysis and design detail prepared by your engineering group were most beneficial.

These improvements have achieved our objectives; namely, providing energy savings and better heating and cooling comfort for our tenants.

GOLUB & COMPANY

Lake Shore Place Office Building
Chicago, Illinois

Sievert was retained to provide engineering services to study the HVAC system at 680 N. Lake Shore Drive, Chicago. The purpose of our study was to determine how to improve performance of the various systems to obtain acceptable environmental conditions for the building ownership and its tenants.

Our assignment was to improve system performance without adding additional equipment or making extensive modifications, as the ownership did not want to incur large capital expenditures.

Our approach to this assignment was to benchmark the existing building by performing the following tasks:

1. Program the building requirements.
2. Perform a computerized load analysis to establish the existing thermal load of the building.
3. Monitor the performance of the system.
4. Air and equipment testing of the various systems to determine the present level of performance.
5. Select certain cost-effective improvements which would be required to achieve acceptable performance of the existing systems.
6. Analyze data, review performance, develop sketches and summarize findings in report form.

After implementation of the following cost effective recommendations, acceptable environmental levels were achieved:

1. Modify the discharge ductwork immediately adjacent to the various air units to improve the system effect thereby increasing air delivery capabilities and performance to acceptable levels.
2. Seal the medium pressure ductwork to reduce leakage to acceptable levels, change type of filtration.
3. Implement certain changes to the operating procedures.

Upon completion of this assignment, Sievert prepared a manual outlining minimum design and construction standards for the building which were to be used by design/build contractors for tenant buildouts.



This case was featured in the Real Estate Section of the Chicago Tribune.

GWL PROPERTIES Due Diligence Studies

Great Western Life Insurance Company, Oak Brook, Illinois

The due diligence studies consisted of a review of six office buildings to observe their design characteristics and to identify certain building deficiencies which could affect the purchase of the properties.

The survey team consisted of a mechanical engineer, mechanical service technician, electrical engineer, structural engineer, architect, roofing consultant and an environmental consultant. The team reviewed the buildings and their systems, and issued a report which addressed existing construction, observed physical condition, building deficiencies, code compliance, and included recommendations for additional analysis.

The report concluded that the original design concepts were based on aesthetics versus maintainability; first construction cost versus life cycle cost; equipment space restrictions versus serviceability; temperature design limitation versus occupant comfort and inadequate handicap provisions. These concerns are then compounded by the age and limited maintenance performed on the buildings and their support systems.

Information contained in the report assisted G.W.L. Properties in arriving at a fair value for the buildings. The report also provided significant data for development of a strategic business plan for the capital improvements necessary to bring the buildings to a competitive position in the marketplace.

CONTINENTAL TOWERS

The entire Sievert team consistently exceeded our expectations at The Continental Towers. Sievert recently rebuilt one of our 90,000 CFM main fans, replaced a 280 ton evaporative condenser and rebuilt a 125 ton air conditioning compressor.

All of these jobs had demanding requirements centered around our commitment to not affect or compromise tenant comfort at The Continental Towers. These requirements included after hour and weekends around the clock working to meet a deadline. None of this had posed a problem to this group. The courtesy and professionalism they display is second to none.

You really have a great team and we appreciate the excellent support you consistently provide to us.



W.W. GRAINGER, INC. New Data Center

Skokie, Illinois

Sievert was retained to provide engineering, architecture, construction management, and mechanical systems installation services for a new 18,000 sq. ft. data processing center.

The design scope of work consisted of the following:

1. Architectural design for the demolition of the existing office area and the addition of a data center for support of e-commerce transactions and data management.
2. Mechanical design for the computer room air conditioning units.
3. Mechanical design for the revisions to the existing office area air distribution system serving the data center.
4. Mechanical design for the revisions to the existing computer room ventilation system.
5. Mechanical design for the truck dock ventilation system.
6. Fire protection design.
7. Electrical design for the power distribution system associated with the addition and relocation of the process equipment and the HVAC systems.
8. Electrical design for the lighting system.



As part of the construction management scope of services, Sievert assisted the customer in preparing the project program requirements, estimating the construction cost, scheduling the project, bidding and negotiating construction contracts, and providing a field representative to manage daily construction activities.

DATA CENTER OUTAGE IN LOS ANGELES, CALIFORNIA

The failure to maintain adequate cooling in a data center owned by a major telecommunications provider in Los Angeles resulted in the inability of approximately 2,000,000 subscribers to access their voice mail messages for two and one half hours. The data center suffered from a number of basic problems:

- 1) Age of certain mechanical equipment is beyond its prime.
- 2) Changes and additions to data center equipment pose additional loads on existing air conditioning equipment and systems.
- 3) Lack of record drawings, load calculations and other record documents needed to support or dispute existing space requirements.

Sievert was commissioned by the telecommunications company to survey and document existing field conditions, perform cooling load calculations and conduct an engineering study to determine if there is sufficient capacity to handle the present cooling load and projected future cooling loads. Other facilities surveyed and studied for the telecommunications company in California are located in San Diego, Oakland, and Sacramento.



REMOTE MONITORING OF BUILDING SYSTEMS TO ACHIEVE OPTIMUM EFFICIENCY

Sievert offers low cost remote monitoring of building conditions to optimize the performance of mission-critical mechanical support systems. If a failure occurs, or the system is operating outside desired temperature, humidity or various other conditions, the equipment can immediately send a message directly to the Sievert headquarters. Oftentimes we become aware that a system is not performing properly before our customers and take appropriate action. Our data center, research laboratory and manufacturing customers rely on this service as a cost effective crisis prevention, building management and maintenance tool.

GET ACQUAINTED WITH SOME OF OUR COMMERCIAL BUILDING CLIENTS

Financial Institutions

All American Bank of Chicago
Allstate Insurance Co.
Allied Federal Savings & Loan
Austin Federal Savings & Loan
Avondale Savings & Loan
Bank of Palatine
Bank One
Benefit Trust Life
Boulevard Bank
Chicago Federal Savings & Loan
Citizen's Bank
Cole Taylor
Combined Insurance
Connecticut General Life Insurance
Cragin Savings & Loan
Des Moines Financial Center
Federal Savings & Loan
Financial Federal Savings & Loan
First Bank System
First National Bank of Des Plaines
First National Bank of Skokie
Harris Bank of Barrington
Heritage Insurance Group
Melrose Park Works Credit Union
Mutual Federal Savings & Loans
National Security Bank
Northwestern Savings and Loan
Poulsen Insurance Agency
R.O. Schultz Co.
Security Federal Savings & Loan
Talman Federal Savings & Loan Association
Telegraph Savings & Loan
Wohlers Insurance
Woodfield Financial Center

Commercial Office Buildings, Condominiums and Apartments

Affiliated Realty & Management
American Veterinary Medical Association
Berger Realty Group, Inc.
Brownstone Condominium Association
Central Park East Apartments
Condos of Northbrook Court
Coventry Condos
Des Moines Financial Center
Draper & Kramer
FC&S Management Co.
Glen Management, Inc.
Golub & Co.
Hiffman Schaffer Anderson
John Buck Co.
Landmark Properties, Inc.
LaSalle Partners
Newport Condos
Oak Creek Condominiums
Oak Hill Condominium
Oakton Pavillion Towers
O'Hare Plaza
One Northbrook Place
Pan American Properties
Prime Group Realty Trust
PSM Realty
Randville Condo
Rauch & Co.
Scotland Yard Apartments
Scribcor
Sears Tower
Signature Group
U.S. Equities Realty
Washington Court Condos
Woodland Creek Apartments
Wrigley Building

Hotels & Hospitality

Best Western Inn
Comfort Inn
Courtyard by Marriott
Embassy Suites Hotel
Fairmont Hotel
Fairfield Inn
Hampton Inn
Hilton Garden Inn
Holiday Inn
Howard Johnson
Hyatt
Marriott Residence Inn
Marriott Suites
Motel 6
O'Hare Plaza Motel
Naperville Hilton
Radisson Suites Hotel
Ramada Inn
Sheraton Hotel
Sixpence Inn
Union League Club
Woodfield Hilton & Towers

Retail

Arlington Market Shopping Center
Borders Books and Music
Crate & Barrel
Des Plaines Mall
Goodyear Tire & Service
Hallmark
Hawthorne Center
K-Mart
Montgomery Wards
Neiman-Marcus Co.
Northbrook Court
Palatine Center
Randhurst
Rolling Meadows Shopping Center
Sears
W.W. Grainger