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To: Dyer, NRR
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AUTHOR: Rosa Gonzalez

AFFILIATION: NY

ADDRESSEE: Nils Diaz

SUBJECT: Introduces C.J. Brown Energy....provides comprehensive mechanical and electrical consulting engineering, energy utilization, and commissioning services

ACTION: Information

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C.J. Brown Energy, P.C.

Energy Utilization Specialists

4245 Union Road, Suite 204
Buffalo, New York 14225

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www.cjbrownenergy.com

February 11, 2005

Dr. Nils Diaz, Chairman
US Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Diaz:

The undersigned, Rosa A. Gonzalez, is the Director of Business Development for C.J. Brown Energy, P.C. and Buffalo Engineering, P.C. We are a small business and professional firm providing comprehensive mechanical and electrical consulting engineering, energy utilization, and commissioning services.

We support the industry, government, nonprofit organizations, commercial, etc., to reduce energy usage and costs through sound energy conservation strategies and system technologies. Also, our firm provides services to the government to ensure compliance and implementation of Executive Order 13123, "GREENING THE GOVERNMENT THROUGH EFFICIENT ENERGY MANAGEMENT." We would like to be considered for any business opportunities with the US Nuclear Regulatory Commission (USNRC).

Enclosed are the company's profiles for C.J. Brown Energy, P.C. and Buffalo Engineering, P.C. We really appreciate your attention.

Sincerely,

Rosa A. Gonzalez, Ph.D.
Director of Business Development



C.J. Brown Energy, P.C.

*Energy Utilization &
Commissioning Specialists*

Dr. Rosa A. Gonzalez, Ph.D.
Business Development

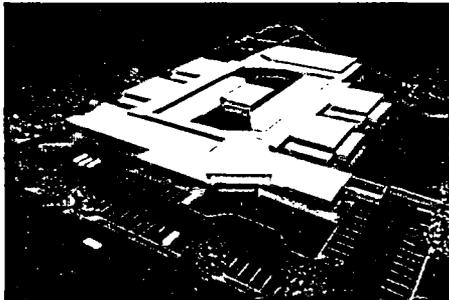
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C.J. Brown Energy, P.C.

Energy & Commissioning Specialists



**PROFESSIONAL ENGINEERS
SPECIALIZING IN
ENERGY UTILIZATION,
CONSERVATION AND MANAGEMENT
BUILDING COMMISSIONING
AND RETROCOMMISSIONING**

Member of

BUILDING COMMISSIONING



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GENERAL INFORMATION

Company Name C.J. Brown Energy Engineering & Architecture, P.C.
("C.J. Brown Energy, P.C.")

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TEL (716) 565-9190 FAX (716) 633-5598

Ohio Office 8112 Seasons Road, Streetsboro, OH 44241
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Web www.cjbrownenergy.com
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Established Incorporated in 1991 as a building systems and energy
specialist firm

Federal ID# 16-1511504

President Walid S. Daham, PE
General Manager Michael A. Conway
Commissioning Manager Christopher M. Sendker, PE, LEED
Northeast Ohio Manager Mark R. Ludrosky, CEM

Capabilities Energy Engineering Studies, Audits, Feasibility Analysis
Building Commissioning/Retrocommissioning
Energy Conservation Projects Design Engineering Services
Energy Conservation Projects Financial Procurement
Project Management and Coordination
Industrial Process Energy Evaluation
Performance Contracting
Energy Services Company Support
Energy Procurement Assistance
Demand Side Management
Mechanical, Electrical and Plumbing Engineering Design
Construction Cost Estimating and Bidding Assistance
Construction Administration

Staffing

Energy/Commissioning Specialists	10
Mechanical Engineers	13
Electrical Engineers	9
Administrative Personnel	4
Total Personnel	36

State Registrations New York New Jersey North Carolina
Ohio Pennsylvania Connecticut Virginia

Professional Affiliations American Society of Heating, Refrigeration
& Air Conditioning Engineers
American Society of Mechanical Engineers
Association of Energy Engineers
Building Commissioning Association
Illuminating Engineering Society



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CORPORATE PROFILE

C.J. Brown Energy specializes in energy utilization, conservation and management; building commissioning and retrocommissioning; and energy procurement assistance. Throughout our experience, C.J. Brown Energy has successfully demonstrated the ability to reduce energy usage and costs through sound energy conservation strategies and systems technologies, to meet the client's investment payback, design objectives, sound engineering practice, safety and productivity requirements. Through our capabilities in commissioning, we ensure that new and existing buildings, systems and equipment will operate at peak performance to maximize facility asset value. We have consistently helped clients improve their competitive utility purchasing methods, resulting in lower operating costs and a positive cash flow.

C.J. Brown Energy serves independent facility owners, architects, engineers, the building community, and energy service companies, providing our energy engineering services for a wide range of sizes and types of facilities including large and small commercial, industrial, institutional, governmental and multifamily buildings. We also work with agencies on a term contract basis:

- **New York State Energy Research and Development Authority (NYSERDA).** C.J. Brown Energy provides assistance to New York State organizations as a NYSERDA-qualified provider of energy engineering services through the Flexible Technical Assistance (FlexTech) Program, Residential Technical Assistance (ResTech) Program, the Assisted Multifamily Program (AMP), and the Retro-Commissioning Initiative for Commercial Buildings.

We also provide marketing, auditing, and program management services for NYSERDA's **New York Energy \$martSM** Energy Audit Program for the region encompassing 20 western and central New York State counties. This program provides energy audits to small businesses and other facilities to help them make informed electrical energy decision and implement energy-efficiency strategies.

- **State University Construction Fund (SUCF).** C.J. Brown Energy has a term contract to provide building commissioning services for SUCF new construction and major renovation projects at SUNY campuses throughout New York State.
- **Dormitory Authority - State of New York (DASNY).** C.J. Brown Energy has a term contract to provide diverse energy consulting services to various facilities serviced by DASNY, such as universities, hospitals, nursing homes, and court buildings. These services can include: energy conservation and technical feasibility studies; building commissioning surveys, evaluations and implementation; mechanical and electrical systems review and analysis; energy purchasing evaluations; and other assignments to reduce energy use, implement green construction practices, and procure renewable energy.

In addition, the **Erie County Department of Public Works** contracted with C.J. Brown Energy to develop and implement a comprehensive energy cost reduction and conservation plan. The County was named an Achievement Award Winner in 2000 by the National Association of Counties in recognition of an innovative program that contributes to and enhances county government in the United States.

We are highly experienced in providing services for new construction, renovation and retrofit projects. Our personnel have studied over 60 million square feet of facility space, and they have extensive expertise in HVAC, lighting, electrical, refrigeration, cooling, building envelope, and indoor air systems. Together with our sister company, Buffalo Engineering, P.C., we have a combined staff of 36 comprised of energy specialists and professional engineers (including a Mechanical/Energy PE with over 30 years of experience, a LEED certified Mechanical PE, and three Certified Energy Managers) designers and technicians. This enables us to provide a comprehensive range of energy, engineering, and commissioning services in a cost effective, time efficient and responsive manner.

SERVICES

Energy Engineering Studies, Audits and Feasibility Analysis

- Life cycle and operation cost assessments
- Lighting systems evaluations
- HVAC studies and evaluations
- Refrigeration and cooling systems
- Motors and systems analysis
- End use analysis
- Building envelope
- Boiler surveys
- Indoor air/ventilation system analysis
- Cogeneration and self-generation studies and feasibility
- State energy sales tax exemption surveys

Building Commissioning/Retrocommissioning

- Evaluate facility's and owner's requirements
- Develop commissioning specifications
- Review all phases of design and construction
- Develop and coordinate execution of testing plan
- Manage and verify system start-up scheduling and procedures
- Assess and verify system performance to contract/project documents

Energy Conservation Professional Design Engineering Services

- Develop detailed design documentation for ECMs
- Develop bid specifications for ECMs
- Provide contractor bid analysis and report

Project Management and Coordination

- Energy conservation implementation assistance
- Performance specifications for conservation measures
- Project scheduling
- Bid cost and performance evaluation
- Construction phase assistance (inspections/reports)

Industrial Process Energy Evaluation

- Steam distribution studies
- Heat source/heat sink inventories
- Industrial process plant - pinch point analysis
- Computerized process simulation
- Cogeneration studies and feasibility

Performance Contracting

- Savings/guarantees methods analysis
- Performance contract review and reports
- Energy conservation measures analysis
- Project cash flow analysis

Energy Conservation Projects Financial Procurement

Demand Side Management

- Load analysis
- Monitoring and measurement

Energy Management Systems

- Existing system evaluation
- New system concept development
- Performance specifications

Energy Procurement Assistance

- Natural gas procurement
- Electric procurement
- Primary power/secondary power analysis
- Utility rate schedule/billing analysis
- Bypass applications

Construction Cost Estimating and Bidding Assistance

Mechanical and Electrical Engineering

- HVAC
- Plumbing
- Fire protection
- Load studies
- Power distribution
- Lighting
- Controls and instrumentation
- Technology, communication and data systems

Construction Administration

LIBRARY OF ENERGY CONSERVATION/ SYSTEMS MEASURES

Following is a listing of C.J. Brown Energy's library of calculations/spreadsheets for energy conservation/systems/measures.

- Building Simulation Modeling
 - Market Manager software
 - C.J. Brown Energy simulation programs
- Geothermal Heat Pump System Analysis
- Water Source Heat Pump System Analysis
- Chilled Water Distribution System Analysis
- Primary-Secondary Hydronic System Analysis
- Boiler Stack Heat Recovery
- Chiller System Operating Cost Analysis
- Chilled Water Reset
- Variable Speed Chiller Controls
- Variable Speed Chilled Water Conversion
- Process Exhaust Heat Recovery
- Grey Water Heat Recovery
- Air-to-Air Heat Recovery
- Evaporation and Distillation Optimization
- Constant Volume to Variable Air Volume Conversions
- ASHRAE Cycle 2 & 3 Control of Facility Ventilation Systems
- City Water Cooled Refrigeration Conversion to Air Cooled
- Constant Flow to Variable Flow Pumping Systems
- Economizer ("Free") Cooling
- Variable Ventilation & Exhaust Rates for Humidity Control
- Cogeneration of Electricity
- Natural Gas Engine Driven Pumping
- Natural Gas Engine Driven Air Compressors
- Natural Gas Engine Driven Chillers
- Alternative Chiller Technology Evaluation
- Energy Management Systems
- Electric Heating Conversion to Natural Gas
- HVAC System Optimization
- Building Envelope Improvement Analysis
- Swimming Pool Dehumidification System Analysis
- Lighting Control
- Process & Facility Humidity Control
- Disaggregation of Energy by End Use
- Primary-Secondary Electric Service Analysis
- Energy Procurement Analysis

KEY PERSONNEL

C.J. Brown Energy has a staff of 36 comprised of energy specialists, professional engineers, commissioning specialists, engineering designers, design drafting technicians, and administrative personnel. A team is established in response to the specific requirements of each project. A principal is assigned to the team as well as a project manager and supporting technical personnel.

Walid S. Daham, P.E.
President

Michael A. Conway
General Manager

John E. Stoorza, P.E.
Senior Mechanical/Energy Engineer

Daniel P. Schrecongost, C.E.M.
Energy Engineering Manager

Christopher M. Sendker, P.E., LEED
Commissioning Manager

Mark R. Ludrosky, C.E.M.
Senior Energy Engineer

Richard W. Ford, C.E.M.
Energy Engineer

Robert R. Orr
Commissioning Specialist

Pasquale A. Ben
Project Engineer/Commissioning Specialist

Wayne A. Balas
Energy Engineer

Christopher A. Zajac
Energy Engineer

PARTIAL LIST OF CLIENTS/PROJECTS

Following is a partial list of our current and past clients and projects. It includes projects for which we provided consulting services directly to an owner as well as those where we were a sub-consultant.

Municipalities

New York:

Albany County
Broome County
Cayuga County
Centerville Highway Department
City of Binghamton
City of Buffalo
City of Lackawanna
City of Lockport
City of Niagara Falls
City of North Tonawanda
Erie County
Monroe County
Suffolk County Department of Public Works
Town of Amherst
Town of Cheektowaga
Town of Granger
Town of Hamburg
Town of Tonawanda
Town of West Seneca

Other Municipalities:

City of Elyria (Ohio)
Lucas County (Ohio)
Mercer County (Pennsylvania)

State Agencies

Dormitory Authority - State of New York (DASNY)
New York State Energy Research and Development Authority (NYSERDA)
State University Construction Fund (SUCF)

Energy Service Companies

Alliant Energy/Cogenex
Chevron Energy Solutions (CMS Viron)
Comfort Systems
Energetix
Johnson Controls
Joseph Davis Co.
Niagara Mohawk Energy
Sempra
Siemens Building Technologies
Vestar

Utilities

National Fuel Gas
Niagara Mohawk
NYSE&G

C.J. Brown Energy, P.C.

Offices

Bell Atlantic Boston
Buffalo Medical Group
Cambridge Square Building
Citibank
Computer Task Group
Dunlop Building
Eaton Center (Norwich, NY)
HSBC Bank USA (multiple locations)
Koike Aronson
Lawyers Cooperative
Niagara Falls Bridge Commission
Olympic Tower
Security Mutual
The Benchmark Group
Uniland Development Company

General Facilities

Allegany Mountain Resort
Broome County YMCA
Buffalo Civic Auto Ramps
Buffalo Convention Center
Carriage House
Days Inn Hotel
Dunn Tire Park
Harris Hill Volunteer Fire Department
Hart Hotels
Knights of Columbus
Market in the Square
Nativity of Our Lord Church
Pearl Street Brewing Company
Perry VFW
Seneca Park Zoo
Southgate Plaza
St. Florian Roman Catholic Church
Tops Markets
Paddock Golf Dome
Twin City Community Outreach Center
United Cerebral Palsy
Wanakah Country Club
White Rock Baptist Church

PARTIAL LIST OF CLIENTS/PROJECTS (CONTINUED)

Educational

Albany City SD
Alden CSD
Allegheny - Limestone CSD
Amherst CSD
Andover CSD
Berlin CSD
Binghamton City SD
Bolivar - Richburg CSD
Brockport CSD
Buffalo City SD
Cato - Meridian CSD
Central Square CSD
Chautauqua Lake CSD
Cheektowaga High School
Churchville - Chili CSD
Cleveland Hill UFSD
Clyde - Savannah CSD
Dalton - Nunda CSD
Dunkirk City SD
Eden CSD
Eldred CSD
Erie City SD (Pennsylvania)
Fayetteville-Manlius CSD
Jamesville - Dewitt CSD
Kenmore - Tonawanda UFSD
Lackawanna City SD
Liveston - Porter CSD
Liverpool CSD
Lockport City SD
Manchester - Shortsville CSD
Mentor City Schools (Ohio)
Millcreek Schools (Pennsylvania)
Morrisville - Eaton CSD
Newark CSD
Niskayuna CSD
North Rose - Wolcott CSD
North Syracuse CSD
Ogdensburg City SD
Olean City SD
Oneida City SD
Oswego City SD
Oxford Academy and CSD
Pittsford CSD
Portville CSD
Rhinebeck CSD
Ripley CSD
Rochester City SD
Rome City SD
Roscoe CSD
Royalton - Hartland CSD
Salamanca City SD
Salmon River CSD
Sandy Creek CSD

Educational (continued)

Saranac CSD
Saranac Lake CSD
Scio CSD
Shenendehowa CSD
South Colonie CSD
Southwestern CSD
St. Lawrence BOCES
Susquehanna Valley CSD
Trumansburg CSD
Union Springs CSD
Utica City SD
Waterloo CSD
Waterville CSD
Wayne CSD
West Holmes High School (Ohio)
West Seneca CSD
Wheatland - Chili CSD
Woodridge Local SD (Ohio)

Colleges and Universities

Bowling Green University
Canisius College
College of Agriculture & Life Sciences
at Cornell (SUNY)
D'Youville College
Erie Community College
Hilbert College
Jamestown Community College
John Carroll University
Niagara County Community College
Schenectady County Community College
St. Bonaventure University
State University of New York at Buffalo
State University of New York College
at Buffalo
State University of New York College
at Geneseo
State University of New York College
at Oswego
State University of New York College of
Agriculture and Technology at
Cobleskill
State University of New York College of
Environmental Science and Forestry
State University of New York Upstate
Medical University
Syracuse University
University of Rochester
Utica College
Villa Maria College
Wesleyan University

PARTIAL LIST OF CLIENTS/PROJECTS (CONTINUED)

Health Care

191 North St. Medical Building
A.O. Fox Memorial Hospital
Batavia Nursing Home
Berwick Hospital
Brothers of Mercy Senior Housing
Buffalo Eye Center
Buffalo General Hospital
Chautauqua County Home
Cleveland Clinic
Crouse Irving Memorial Hospital
Copley Hospital
Erie County Medical Center
Harris Hill Nursing Home
Hill Haven Nursing Home
Lake East Hospital (Painesville, OH)
Maplewood Nursing Home
Mercy Hospital
Niagara Falls Memorial Medical Center
Niagara Hospice
Olean General Hospital
Our Lady of Victory Hospital
Oxford Veterans Home
Roswell Park Cancer Institute
Samaritan Keep Home
Samaritan Medical Center
Sheehan Hospital
Sisters of Charity Hospital
St. Elizabeth Hospital
St. Joseph Hospital
Summa Health System (Akron, OH)
VAWNY Healthcare System - Batavia
Vermont Hospital
Weinberg Campus
Wyoming County Hospital

Housing

Ambassador Apartments
Baptist Manor Housing
Bethel Estates
Buffalo Municipal Housing Authority
Edgebrook Estates
Emerald Hills
Emerson Row Apartments
Gardner Heights Apartments
George Washington Goler House
Maryner Tower Apartments
Midtown Manor
Plymouth Gardens
Rochester Highlands
Rochester Housing Authority
Steepleview Housing
The Jefferson
Wilcox Lane

Industrial/Manufacturing/Process

Alleghany Particle Board
Allied Signal
Bausch & Lomb
Buffalo Color Corporation
Buffalo Paperboard Corporation
Buffalo Technologies Corporation
Bush Industries
Fancher Chair Co., Inc.
Fleetwood Folding Trailers
Ford - Walton Hills Stamping Plant
Freeze-Dry Foods
General Motors - Honeoye Falls
Great Lakes Electronics
Huntsman Design Products
IBM - Rochester
International Flavors & Fragrances
Jamestown Container Corporation
Kraft Foods
Lapp Insulator
Lockheed Martin
M. Wile Company
Metro Community News
Milton Roy
Moog
Phillips Lighting
Polycom Huntsman
Pratt & Lambert
PVS Chemical
Rich Products
Rochester Form Machine
Stone Container
Stroehmann Bakeries (Buffalo and Olean)
The Mentholatum Company
Wendt Dairy
Weston Foods
West Valley Nuclear Demonstration Project
Wilson Greatbatch

ENERGY CONSULTING PROJECT EXPERIENCE

The scope of work for energy consulting projects typically includes, but is not limited to, the following:

- Comprehensive energy conservation studies and analysis
- Mechanical and electrical design of select conservation measures
- Detailed utility usage/comparison and preliminary analysis of existing facilities
 - Age and type of each building
 - Utility costs including gas, electric and water
 - Energy efficiency, cost and BTU consumption per square foot
 - Process systems descriptions
 - Process energy analysis
 - Geographic and architectural standards and comparisons
- Energy analysis/identification of conservation and conversion opportunities
 - Field surveys and on site data gathering
 - Determination of operating schedules of equipment and systems
 - Determination of facilities occupancy, use and environmental schedules
 - Review all existing drawings
- Provide an energy report
 - Energy conservation project financial analysis
 - Description of facilities and energy using equipment
 - Description of potential energy conservation measures
 - Equipment inventories
 - Utility consumption data form and charts
 - Energy conservation calculations
 - Rebate potentials
 - Operation and maintenance recommendations
- Provide pre-construction data for selected energy conservation measures
- Assist with project financial arrangements
- Final design phase-prepare final drawings
- Construction phase: site visits, reviews, and revisions as necessary
- Establish an up to date utility procurement program fully utilizing the deregulated energy environment



*Erie Community College City Campus
Buffalo, NY*

Erie County Energy Cost Reduction and Conservation Plan Development and Program Implementation

The Erie County DPW is responsible for operating and managing the approximately 240 buildings and facilities owned by Erie County. The DPW contracted with C.J. Brown Energy to develop and implement a long-term, comprehensive energy cost reduction and conservation program to encompass all County-owned facilities. The project was designed to evaluate the current energy usage of County facilities, identify ways that energy use and cost can be reduced, implement cost effective conservation measures, and improve County facilities overall. This project consists of the following eight stages:

(1) Utility/Usage/Comparison of Existing Facilities' Energy Efficiency: This stage provided a starting point of which facilities to address first for further energy conservation auditing. We then developed an "attack plan" that identified approximately 22 facilities with excessive costs and BTU levels above similar facilities, along with any special energy and usage-related considerations.

(2) Leveraged Energy Purchasing: We provided the County with bid documentation and executed a competitive bid process for natural gas and electric procurement. We also prepared and executed a monthly spot gas purchasing program.

(3) Preliminary Energy Analysis: This stage identified the potential energy conservation/conversion measures that would fall within the County's financial guidelines (payback and R.O.I.), based on the prioritized list established in Phase I, and that should be looked at on a detailed basis. It was designed to minimize the actual detailed study costs and allowed study costs to be applied where they would be of the greatest financial benefit.

(4) Detailed Electrical Utilization and Energy Conservation: This stage consisted of on-site data gathering involved in performing an analysis of all major energy using systems, based on operation, use, maintenance, and potential energy saving opportunities. Reports were provided for each facility studied and included energy conservation calculations, descriptions of potential energy conservation measures, project financial analysis, and identification of loan subsidy and rebate opportunities.

(5) Pre-Construction Data: This stage provides construction contractors with a basis for preparing price proposals. We provide the County with preliminary sizing of major equipment and retrofits needed to obtain contractor pricing for specific energy conservation measures. We also assist in the development of construction costs, develop schematic drawings, prepare specifications for equipment and general construction requirements, and coordinate contractors for pre-pricing visits.

(6) Project Financial Arrangements: C.J. Brown Energy assists the County in developing financial arrangements to accomplish energy conservation measures, which may include capital purchasing, operating lease, or capital lease. Additionally, we assist the County in obtaining funding that may be available for energy management services, rate analysis and aggregation technical services, and general energy related technical assistance.

(7) Final Design: On the basis of information provided to the engineer, we assist in the preparation of final drawings and design data to document the character and extent of the project. Erie County then applies for approvals from government authorities/agencies as applicable to the project. We can also participate in the agency submission and discussion process when requested.

(8) Construction/Commissioning: We provide comprehensive construction and commissioning services to monitor and document the progress and quality of contractors' work and to ensure that work proceeds in accordance with the contract documents. These services include site visits; and review and approval of shop drawings, samples, test results, inspections and other contractor data for conformance with the design concept and compliance with contract documents.



Edward A. Rath Building, Buffalo, NY

Edward A. Rath Office Building

The Rath Building is a 16-story, 460,000 sq. ft. building that houses County offices. After completing a detailed study of the building, we identified that the old T-12 lighting system was inefficient and should be replaced. The New York State Power Authority had low interest loans available to help municipalities in accomplishing this kind of retrofit. Instead of utilizing the low loan rate, it was requested that NYPA convert the money into a grant. A \$237,000 grant was approved, which amounted to over one third of the cost of the entire project. The project was completed using grant monies and a portion of avoided utility dollars generated through the buying practices of the Utility Aggregation. More than 14,000 lighting fixtures in the building were retrofitted with fluorescent lamps, electronic ballasts and reflectors. The yearly electrical savings associated with the new lighting equipment are approximately \$105,000.



Dunn Tire Park, Buffalo, NY

Dunn Tire Park

C.J. Brown Energy provided a comprehensive energy conservation audit and feasibility analysis for this 20,000+ seat minor league baseball stadium. Energy conservation opportunities included installation of variable speed drives on pumps, installation of a summer boiler for domestic hot water, ventilation based on occupancy, and installation of canopy light fixtures. We also provided financial analysis of potential improvements; description of facility and energy using systems; analysis of existing utility bill costs and usage; energy savings calculations and installation cost documentation; and building, system and assumption documentation.



*Buffalo & Erie County Public Library
Central Branch, Buffalo, NY*

Buffalo & Erie County Public Library Central Branch

As part of the energy cost reduction and conservation program, the library was selected as one of the County facilities to receive a more detailed energy audit. Improvements identified included lighting retrofits, variable speed drives for hot water pumps and cooling tower fans, high efficiency motors for the HVAC system, and conversion from a constant air volume ventilation system to a VAV system.

Erie County entered into a performance contract with Siemens Building Technologies to implement the facility improvements. The total project cost was \$1.24 million, with NYSERDA providing \$165,355 in financial incentives through the Commercial and Industrial Performance Program. The \$108,870 annual energy savings exceeded the guaranteed amount for Year 1 of the contract.

ENERGY CONSULTING - GOVERNMENT



Niagara Center, Buffalo, NY

Niagara Center, Buffalo, NY

Acquest Development Company and Uniland Development Company are constructing a new \$18 million eight-story, 280,000 sq. ft. multi-tenant office building at 150 S. Elmwood Avenue in downtown Buffalo. The Department of Veterans Affairs, the Internal Revenue Service, and the Small Business Administration will be the anchor tenants.

C.J. Brown Energy was contracted to perform a life cycle cost analysis for proposed HVAC systems, to meet Federal Executive Order 13123, "Greening the Government Through Efficient Energy Management." C.J. Brown Energy modeled the energy usage for four different HVAC systems proposed by the equipment manufacturer and four systems proposed by the engineering firm. All scenarios were modeled using the guidelines in the Life Cycle Costing Manual for the Federal Energy Management Program. The systems evaluated included water source heat pumps, a VAV system, pipe fan coil systems, air cooled chillers and gas boiler, and water cooled chillers and gas boiler. The water source heat pump option was ultimately selected.



*Albany County Office Building
Albany, NY*

Albany County, Albany, NY

C.J. Brown Energy completed detailed facility assessments and energy conservation studies for 14 buildings in support of a performance based cost reduction program. The project included office buildings, correctional facilities, DPW buildings, and sports facilities. The scope encompassed:

- Detailed evaluation of each facility's historical utility use, including gas, electric and water.
- Building and systems description, including construction and occupancy schedules.
- Evaluation of heating, cooling, air handling, domestic water, make-up air, exhaust and ventilation systems.
- Energy conservation documentation, with description of measures and detailed savings equations for each measure.

Energy efficiency measures identified included replacement of cooling towers, installation of energy management systems, lighting retrofits, electric heat to gas conversion, heat recovery, and installation of variable speed drives. Potential savings opportunities totaled over \$350,000 per year.

ENERGY CONSULTING - OFFICES



HSBC Bank, Buffalo, NY



HSBC Tower, New York City, NY



*HSBC Power City Branch
Niagara Falls, NY*

HSBC Bank USA, Buffalo, NY

HSBC Bank USA, headquartered in Buffalo, NY, is the principal subsidiary of HSBC USA Inc., the 13th largest U.S. bank holding company ranked by assets. Since 1999, C.J. Brown Energy has worked closely with HSBC Bank to address and manage a full range of energy conservation, utilization and procurement issues. Our work has included:

- **Energy Conservation Audit, 1 West 39th Street and 452 5th Avenue, New York, New York:** This facility consists of two adjacent buildings which are closely connected through the various mechanical and electrical systems. The "second" building is a further integration of three buildings: the Knox Building, the Kress Building and a new Tower. The two buildings total approximately 850,000 square feet. The purpose of this project was to assist HSBC in understanding and documenting energy use in the facilities and to develop a comprehensive plan to reduce operating costs through sound energy conservation measures. Through this study, we have developed a facility improvement plan which has a calculated annual savings of \$462,871 in Year 1.
- **Energy Cost Reduction and Conservation Program:** HSBC operates fully staffed bank locations at over 350 sites in New York State. Primary objectives for this project were to establish a baseline of energy use for HSBC facilities, identify cost-effective energy conservation measures, and develop a project implementation strategy to prioritize phases for implementation.

We studied approximately 200 branch bank sites from Long Island to Buffalo (totaling approximately 1,300,000 square feet). The facilities' design, condition and operation were analyzed. We also provided subsequent mechanical and electrical design for selected retrofits. Through the study, we identified over \$330,000 in energy cost saving opportunities. We also assisted in developing a plan to pay for the energy conservation retrofits through energy savings. In addition, a cost saving program has been implemented to demonstrate positive cash flow without incurring financial risk. Installation of improvement measures is in progress.

- **Site Assessments, System Evaluations, Planning and Implementation of Facility Improvements ("Retro-commissioning"):** The objectives of these services are to bring facility equipment to its proper operational state, reduce energy and demand costs, increase equipment life, and improve facility operation and maintenance. We have completed projects for multiple locations including HSBC's Atrium Building (Buffalo), Computer Operations Center (Syracuse) and Power City Branch (Niagara Falls).

ENERGY CONSULTING - HEALTH CARE



*Erie County Medical Center
Buffalo, NY*

Erie County Medical Center, Buffalo, NY

Erie County Medical Center (ECMC) is a 15 building, 1.2 million square foot advanced academic medical center with 550 inpatient beds and 156 skilled nursing home beds. The Medical Center serves as the regional center for trauma, burn, and rehabilitation, and it is a major teaching facility for the State University of New York at Buffalo School of Medicine.

C.J. Brown Energy has completed multiple projects for the facility:

- Detailed study of lighting, boiler, chiller, hydronic and air distribution systems to identify ways to conserve energy, modernize controls, and improve system performance. The energy conservation measures identified offered annual energy cost savings of \$425,000. ECMC subsequently implemented the following measures: conversion of secondary chilled water-variable flow system; variable speed drives for heating hot water; secondary chilled water and domestic water; enhanced control strategies; and lighting retrofits.
- Reduced operating hours of chilled water systems through changes to the control sequence and piping modifications. This project provided ECMC with immediate utility cost savings of \$1,000 per day during the winter months. Payback was accomplished within one year.
- Investment grade energy audit in support of a performance based cost reduction program. The scope of this project encompassed the boiler/chiller plant, the main building, and "F" building (medical offices, patient treatment areas). The project expanded on the previous study and also evaluated operational changes that resulted from the study. Fifty different energy conservation measures were identified. If implemented together, these measures could save ECMC over \$420,000 in annual energy costs.



Summa Health System, Akron, OH

C.J. Brown Energy performed investment-grade energy audits in support of a performance based cost reduction project at St. Thomas Hospital, a 449-bed facility with extensive outpatient facilities and specialty services; and Akron City Hospital, a 438-bed facility offering comprehensive medical care and specialty centers. We completed detailed facility assessment and energy

conservation studies of 16 buildings (total) and identified over \$700,000 in annual energy cost savings. Two of the key measures implemented were:

- Replacing the existing water tube boiler plant in St. Thomas Hospital with four new Ohio Special boilers. As part of the boiler room renovation, boiler stack economizers were installed to improve the thermal efficiency of the boiler plant. Energy savings were calculated based on meeting the building's steam loads with higher combustion efficiency and lower off-cycle and jacket losses. Savings also occurred from a reduction in manpower.
- On-site steam generation at Akron City Hospital. The facility was purchasing most of its steam from a district steam company. The cost of steam was tied to the cost that Summa would otherwise pay to generate steam in-house. Due to reliability issues with the district steam, Summa is required to maintain hot standby boilers that are able to take over upon short notice. The hospital was therefore incurring the manpower and energy costs of full-time operation of a steam boiler plant without actually producing steam. Our cost evaluation of purchased steam vs. on-site production was used to support financial decision making.

ENERGY CONSULTING - HOUSING



*University Tower/Rochester Housing Authority
Rochester, NY*

Rochester Housing Authority, Rochester, NY

The RHA owns and operates over 2,500 housing units (high-rise and low-rise apartment buildings and complex-style developments) throughout the City of Rochester. As a result of discussions with the U.S. Department of Housing and Urban Development (HUD) and C.J. Brown Energy, the RHA decided to pursue implementing energy conservation measures through a performance contract, together with the New York State Energy Research and Development Authority's Assisted Multifamily Program (AMP) and with the assistance of the Community Environmental Center (CEC). This is a unique approach for the AMP, as measures have not typically been implemented under a performance contract.

We were selected by the RHA to provide implementation assistance services for the project and for coordination with the New York State agencies. Our scope of work encompasses:

- Initial energy services project development.
- Review ESCO proposals to assess their capacity to perform the audit and the contracting services as required by AMP.
- Develop a scope of work and appropriate methodology for the comprehensive energy audit to be performed by the selected ESCO.
- Complete a TREAT audit, using field data gathered by the ESCO, on one high-rise and one low-rise building.
- Review the comprehensive energy audit and present review findings to the RHA and CEC with recommended modifications/clarifications.
- Review the proposed performance contract with the ESCO as it affects the requirements of AMP and make recommendations to the RHA.

Based on preliminary reports, the RHA will save an estimated \$290,000 in annual energy costs through the measures to be implemented.



Midtown Manor, Rochester, NY

Midtown Manor, Rochester, NY

Midtown Manor, constructed in 1972, has 200 studio and one-bedroom apartments, an office area, library and a community room. Through an energy use assessment, C.J. Brown Energy identified the following energy conservation measures:

- Replace electric heat with gas fired.
- Replace old refrigerators with more efficient units.
- Replace T-12 lighting with T-8 technology.
- Replace incandescent lights with compact fluorescents.
- Replace roof and increase the R-value.
- Replace the top loading washers with front loading units.
- Replace electric dryers with gas fired units.
- Install an EMS to control facility systems.
- Replace the domestic hot water system.

Implementation of the above measures would result in an estimated annual savings of more than \$73,000.

ENERGY CONSULTING - HIGHER EDUCATION



*Hall of Languages, Syracuse University
Syracuse, NY*

Syracuse University, Syracuse, NY

Syracuse University is situated on 200 acres east of downtown Syracuse. The main campus has 170 buildings. C.J. Brown Energy provided extensive energy consulting services as part of a four-year performance based energy conservation project. Objectives were to reduce the University's operating costs (through energy efficiency measures, capital improvements to infrastructure, and O&M improvements) and support long-term planning.

The project encompassed over 40 large buildings totaling over 6 million square feet. Facilities included academic and science buildings, laboratories, residence halls, dining halls, sports facilities, offices, maintenance facilities, and steam and chiller plants. Total energy savings over the term of this project are unknown but estimated in the millions.

Facilities assessments and energy conservation studies typically included identification and evaluation of the following:

- Typical annual energy use and historical consumption.
- Building design considerations.
- Envelope systems: Thermal performance, air infiltration, solar considerations.
- Mechanical systems: Primary fuel sources, equipment design, distribution systems, controls, fuel conversion efficiency, thermal efficiency, and operating performance.
- Electrical systems: Service entrance, metering, secondary distribution, emergency power systems, motors, interior and exterior lighting.
- Plumbing systems: Water service, protection of service, primary service water heating equipment, storage tanks, distribution systems, controls, fuel conversion efficiency, thermal efficiency, special equipment.
- Testing, balancing, commissioning.
- Design of selected energy improvement measures.



Eggers Hall

Central plant and distribution issues were two key additional areas. C.J. Brown Energy completed a study of the central chilled water plant cooling economic performance. The objective was to identify the most cost effective way to expand the existing chiller plant considering various fuel costs, future chilled water loads, diversity of energy source, chiller technologies and efficiencies. We also completed a study to provide a preliminary review of potential options open to the University to obtain high pressure steam from market sources and the University's own facilities. The need for the study was based on the potential impact on the University of pending deregulation of electricity. Also considered was the impact of the University's ancillary steam customers on total steam requirements.

ENERGY CONSULTING – HIGHER EDUCATION



*Science & Technology Building
Niagara County Community College
Sanborn, NY*

Niagara County Community College, Sanborn, NY

C.J. Brown Energy completed a detailed energy conservation audit and building analysis at Niagara County Community College as a subconsultant to Johnson Controls Inc. The project was completed in support of a performance-based cost reduction program.

The detailed energy audit encompassed seven buildings: administration, physical/health education, student center, library, and four academic facilities. The energy conservation measures identified by C.J. Brown Energy, and recommended and installed by Johnson Controls, included lighting upgrades, energy efficient motors, variable-speed drives, and a high efficiency chiller. It is

anticipated that the measures implemented will save NCCC more than \$350,000 in annual energy costs. The total project cost was \$3.4 million. The New York State Energy Research and Development Authority (NYSERDA) provided nearly \$450,000 in financial incentives for the energy efficiency measures through the Commercial/Industrial Performance Program.



*Erie Community College City Campus
Buffalo, NY*

Erie Community College, Buffalo, NY

C.J. Brown Energy performed facilities and central plant assessments/studies for ECC's three campuses:

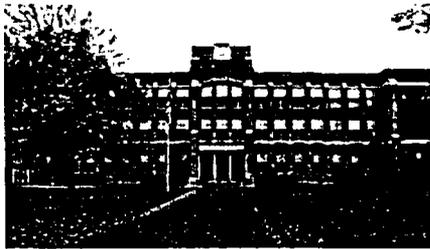
- City Campus — Located in downtown Buffalo, the campus consists of the 235,000 square foot main building (originally a post office which opened in 1901 and was renovated in 1980); and a 119,700 square foot athletic center housing a gymnasium, two swimming pools, weight and locker rooms and classrooms (completed in 1993).
- North Campus — Located in Williamsville, the campus consists of seven buildings totaling 486,000 square feet.
- South Campus — Located in Orchard Park, the campus is comprised of seven main buildings totaling 350,000 square feet.

C.J. Brown Energy provided the following services:

- Energy utility analysis - annual electric and natural gas consumption.
- Building and systems descriptions - mechanical and distribution systems.
- Identified and evaluated energy conservation measures and O&M measures.
- Performed a project financial analysis to implement the energy conservation measures under a performance contracting scenario, encompassing expenditures (capital costs, rebates, financed amount, finance payments); cash flows (net cash flow, cumulative cash flow, value of project); project costs; project utility savings; and total savings.

Our study, analyses and reports provided a good preliminary look at the energy conservation opportunities available at the three campuses. Additionally, our information provided initial verification that it would be in ECC's and Erie County's interest to pursue a performance contract to implement conservation projects. It was also used in developing the performance contract that was negotiated with C.J. Brown Energy's assistance.

ENERGY CONSULTING - EDUCATIONAL K-12



*Kenmore Middle School
Kenmore, NY*

Kenmore – Town of Tonawanda Union Free School District, Town of Tonawanda, NY

The Ken-Ton school district includes 13 large buildings and a number of smaller support buildings totaling 1,823,000 sq. ft. C.J. Brown Energy provided detailed facilities assessments and energy conservation studies in support of a performance based cost reduction project. Also included in the project was the subsequent mechanical and electrical design work for select remedial upgrades. Among the facility energy improvements were: night setback and unoccupied ventilation; reduce hot water circulating pump hours; improve facility ventilation; increase boiler combustion efficiency; install high efficiency motors; reduce fan operating hours; install facility management systems; and electric to gas conversion of building heating, hot water and kitchen equipment. The estimated total annual energy savings were more than \$840,000.



*Allendale Elementary School
West Seneca, NY*

West Seneca Central School District, West Seneca, NY

C.J. Brown Energy completed a building analysis and energy conservation audit for 12 district buildings in support of a performance-based cost reduction program. The ECMs we identified, and that were recommended and installed by the ESCO included: lighting retrofits; energy management systems; high efficiency motors; boiler replacement; and installation of thermal glazing on windows. We also developed the Web-Enabled Advanced Metering plan used to gather data on electric use. It is anticipated that the measures implemented will result in a reduction of the district's annual energy bill by over \$230,000.



*Craig Elementary School
Niskayuna, NY*

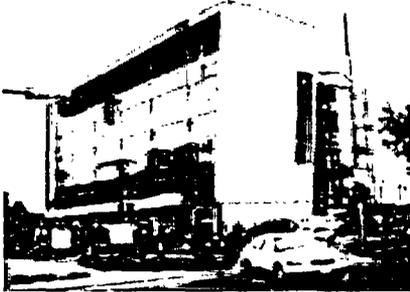
Niskayuna Central School District, Niskayuna, NY

C.J. Brown Energy performed a detailed energy utilization and conservation study of eight district buildings in support of a performance based cost reduction project. Also included in the project was the subsequent mechanical and electrical design work for select remedial upgrades, which included:

- Electric to gas conversion - heating systems, domestic water systems and kitchen equipment
- Energy efficient motors
- Improve facilities' ventilation/indoor air quality
- Energy management system control
- Lighting system retrofits/replacements
- Chiller modifications
- Roof and window replacements
- Weatherstripping and caulking

The net calculated energy savings were over \$125,000 per year.

Erie County Public Safety Center, Buffalo, NY — New Construction Commissioning



Description: The Public Safety Center will be a new five story, 120,000 square foot building in downtown Buffalo that will serve as the headquarters for all of Erie County's crime investigation and emergency management resources. The facility will house a forensic laboratory, regional forensic computing lab, regional 911 communications center, evidence collection, emergency operations center, NYS Wireless, and administrative and support spaces. The \$33 million project is the first development in what is expected to become a multi-building Public Safety Campus.

Erie County is planning a partial opening of the building (three floors housing the forensic lab, lobby and other common areas) in late 2004, with completion slated for April 2005. C.J. Brown Energy is working with the project team to develop a phased plan for functional testing that will provide the necessary testing for the opened areas, and for testing the completed facility with minimum disruption.

Owner:
Erie County

Architect:
Cannon Design

Size:
120,000 sf

Project Cost:
\$33 million

Commissioning Services:
Design development
through warranty

Systems Include:
Mechanical
Electrical
Plumbing
Building automation
Emergency power
Fire protection
Fire alarm
Security
Audio/visual
Telephone
Data/communications

Scope of Work/Results:

- During schematic design review, we identified that the energy efficiency of the mechanical and electrical systems was, in general, effectively addressed at this project stage.
- "Green" options were explored for the facility, with the Owner's intent to incorporate them where feasible. Photovoltaics were considered, and C.J. Brown Energy performed a life cycle cost analysis to assess their viability.
- We provided design review at 30%, 50%, 90% and 100%. Numerous design-related comments were made and are now incorporated into the construction documents. These comments were made to ensure the Owner's design intents are met.
- Specification development has been completed.
- The bid phase is complete. All bids came in under budget.
- Prefunctional checkout forms have been developed and supplied to contractors.
- Functional checkout forms and procedures are being developed.
- The building structure is nearing completion.
- Prefunctional testing on installed HVAC equipment is in progress.
- Plumbing and ductwork pressure testing is ongoing.
- Site visits to review installations are ongoing.
- O&M manuals are currently being assembled for C.J. Brown Energy's review.
- Development of a phased functional testing plan is in progress that will accommodate partial opening of the building.

Erie County Courts Renovation (25 Delaware, 92 Franklin and 77 West Eagle), Buffalo, NY — Commissioning for Major Renovation



Description: Erie County is undertaking a four year, seven phase capital improvement project to renovate three court buildings to comply with the Court Capital Facilities Act. In 1999, C.J. Brown Energy completed a study of the facilities as part of our Comprehensive Energy Cost Reduction and Conservation Program for Erie County. We evaluated the HVAC mechanical and electrical systems with the goal of reducing the capitalized costs of renovation through sound energy conservation measures and selective continued utilization of existing systems and equipment. Our subsequent design review and value engineering enabled the County to begin commissioning at the construction phase.

Scope of Work/Results:

Owner:
Erie County

Architect:
Hamilton Houston
Lownie Architects

Size:
280,000 sf

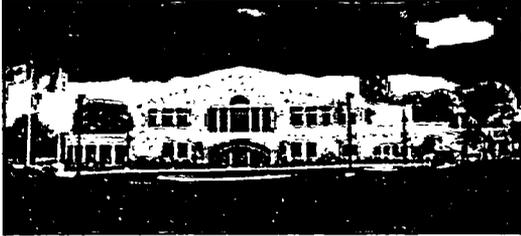
Project Cost:
\$44 million

Commissioning Services:
Design review
through warranty

Systems Include:
Mechanical
Electrical
Plumbing
Steam
Chillers and cooling towers
Facility management
Temperature control
Fire protection
Fire alarm
Security
Audio/visual
Data/communications

- Design review resulted in a value engineered cost reduction of more than \$400,000, which was utilized to help bring the project back within the original budget.
- A number of the original design concepts disposed of equipment that had many years of useful life remaining. Many systems were overhauled instead of replaced.
- Several of the conceptual design ideas submitted by C.J. Brown Energy were eventually incorporated into the base design and specification. An example of this "design retrofit" is the addition of the converter system necessary to use the city's District Heating Plant. This system will help to reduce future utility costs by leveraging the county's gas bid for this building against the city's cost/therm.
- The inclusion of a performance contract into the bid documents helped to offset present capital costs and allowed the purchase of high efficiency HVAC primary equipment which was originally thought to be cost prohibitive.
- Prefunctional documentation has been completed for the 1st and 2nd phases.
- Training has been completed for the 1st and 2nd phases.
- O&M manuals have been reviewed and are complete for the 1st and 2nd phases.
- Prefunctional and functional checkout forms have been developed and issued for all phases.
- Field inspections continue for the 3rd phase of the project.
- Life safety system testing is in progress as floors are completed to allow for occupancy.

Niagara Falls Bridge Commission New Administration Building, Lewiston, NY —
New Construction Commissioning



Description: The Niagara Falls Bridge Commission (NFBC) is an international agency that operates the Rainbow Bridge, the Whirlpool Rapids Bridge, and the Lewiston-Queenston Bridge. At its own expense, the NFBC builds and maintains facilities for U.S. Customs and Immigration functions on both sides of the U.S. and Canadian border. The NFBC's new 24,000 sq. ft. administration building consolidates and centralizes administrative, finance, information technology, and operations center functions previously based at three locations. The project was designed and commissioned to meet the U.S. Green Building Council's LEED™ Rating System. Substantial completion was in July 2004.

Owner:
Niagara Falls
Bridge Commission

Architect/Engineer
Wendel Duchscherer

Size:
24,000 sf

Project Cost:
\$6 million

Commissioning Services:
Construction
through warranty

Systems Include:
Air handlers, building
automation system,
chilled water system,
computer room A/C unit,
emergency power/UPS, fans,
fire alarm/protection,
hot water system, humidifiers,
lighting controls, service
water systems, TAB, terminal
units (VAV), unit heater

Scope of Work/Results:

- Conducted construction phase commissioning kickoff meeting with the project manager, construction manager, design team, and representatives from the general contractor and subcontractors. At this meeting, we outlined the roles and responsibilities of each project team member, and specified procedures for documenting commissioning activities and resolving issues. Comments and suggestions from team members were used to help finalize the commissioning plan and schedule.
- Conducted multiple site visits to verify and inspect equipment.
- Reviewed submittals.
- Attended weekly foreman's meeting and conducted multiple commissioning meetings.
- Developed prefunctional checkout forms and supplied to contractors.
- Developed functional checkout forms and procedures.
- Developed and maintained issues log.
- During construction, we ensured that the equipment was installed in the proper location and that all equipment was labeled. We also worked with the contractors to help avoid common construction problems related to accessibility, code issues and equipment installation.
- Conducted functional tests.
- Reviewed O&M manuals.
- Developed training plans for all systems and equipment and coordinated facility staff.

IBM Data Center, Rochester, NY — Free Cooling Re-Commissioning



Description: The IBM Data Center is a 100,000+ sq. ft. facility that operates 24/7. It was constructed in the 1970's as a joint venture between IBM and Kodak. Currently it is owned by IBM and managed by Grubb & Ellis Management Services. IBM provides data processing services to Kodak and other clients from the facility.

The original system was designed with total redundancy and the ability to utilize the area's cold climate to provide free cooling in the winter months. It was intended to provide a reliable means of producing 50° chilled water using the existing plate and frame heat exchanger. The equipment

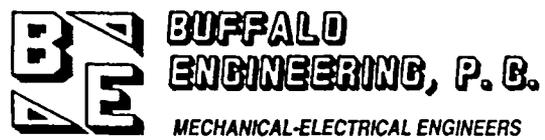
possessed this capability, according to the manufacturer's performance data. However, operating personnel identified that the system had not operated properly since it was installed and that they could not change back from free cooling to chiller operation without severe problems. Timely cooling was critical to prevent damage to the water-cooled computers that were being used at that time, so the free cooling system was not utilized. Changes in computer systems provided a bigger window for system switchover, resulting in the decision to re-commission the free cooling system.

Scope of Work:

- Owner: IBM
 - Size: 100,000+ sf
 - Systems Include: BMS
 - Chillers
 - Cooling towers
 - Heat exchangers
 - Chilled water flows (free cooling chilled water pump and heat exchanger flow)
 - Condenser water flows (free cooling condenser water pump and heat exchanger flow)
- Reviewed the existing BMS hardware and software (point to point review) to determine if the correct control devices and programs were in place to seamlessly transfer from mechanical cooling to free cooling operation. This was performed in conjunction with Siemens Building Technologies, Inc., the controls system manufacturer.
 - Verified the existing field devices (temperature, pressure, etc.). This was performed in conjunction with Siemens.
 - Reviewed existing building drawings and manuals.
 - Performed a field survey to verify all equipment capacities, equipment arrangements, etc. which would impact the proposed re-commissioning solution.
 - Performed a cooling load study to determine the existing cooling load during free cooling operation.

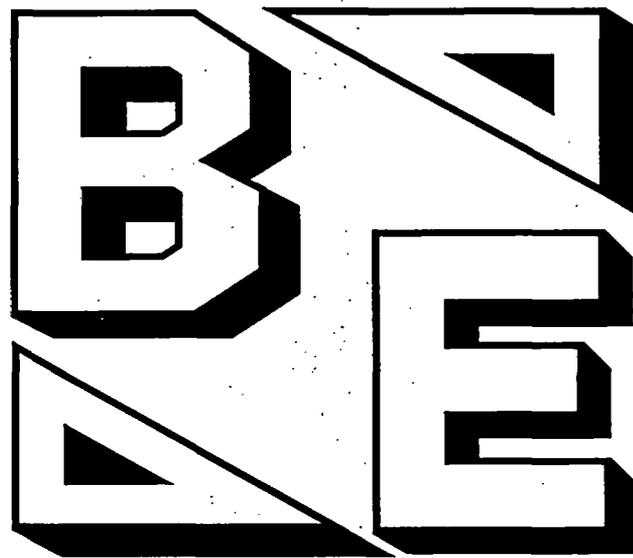
Services Provided/Results:

- The chilled water/condenser water system was manually operated to function on free cooling. The manual switchover was successful and the system operated on free cooling for approximately 1½ hours. Manual switchover back to mechanical cooling was accomplished with no tripouts, water hammer, or other major problems.
- Problems identified included invalid readings (digital temperature sensors and pressure gauges); improper closing of isolation valves; increased pressure drop (caused by restrictions or by the chilled water flow exceeding the design); and conflicting information about the heat exchanger design.
- Recommendations for operating the free cooling system with existing components include BMS programming modifications to re-enable automated free cooling, and system maintenance to correct leaking valves.
- System optimization would reduce energy use and provide increased savings. System modifications are also being considered to prevent potential cooling tower icing.



Dr. Rosa A. Gonzalez, Ph.D., Business Development

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Firm Profile

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www.buffaloengineering.com info@buffaloengineering.com

Principal: Walid S. Daham, P.E., President and Principal-in-Charge

Year Founded: 1990

Registrations: **Buffalo Engineering, P.C. is licensed in the states of:**
New York North Carolina Pennsylvania Virginia
New Jersey Ohio Connecticut

Staffing:

Mechanical:	13	Includes 2 licensed engineers
Electrical:	9	Includes 2 licensed engineers
Energy Specialists:	10	Includes 3 Certified Energy Managers
Administrative:	4	
Total:	<u>36</u>	

Areas of Expertise:

<p>HVAC Heating, Ventilating, Air Conditioning Air Filtration and Exhaust Laboratory Fume Hoods Pollution Control Pressure Control Energy Recovery Central Energy Plants Pneumatic/Electronic Temp. Controls Direct Digital Controls Energy Management Systems Facilities Management Systems</p> <p>Plumbing Domestic Water Natural Gas Distribution Backflow Prevention Medical Gas Systems Water Treatment/Conditioning Metering</p> <p>Systems Paging Nurse Call Emergency Call Security Fire Alarm Annunciator Telephone Cable</p>	<p>Power Distribution Primary Power Distribution Secondary Power Distribution Substations Switchgear Transformers Emergency Power Conditioned Power Uninterruptable Power</p> <p>Lighting Interior Exterior Controls Occupancy Sensing Emergency Lighting Specialized/Feature Lighting Energy Retrofits</p> <p>Fire Protection Wet/Dry Sprinklers Standpipe Systems Chemical Fire Suppression</p> <p>Technology Voice Video Data Networks Fiberoptic/Electronics</p>
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Introduction to Buffalo Engineering, P.C.

This Statement of Qualifications provides an overview of Buffalo Engineering, P.C., our personnel, technical capabilities, professional services offered, and relevant project experience. This document will demonstrate that Buffalo Engineering can meet your mechanical, electrical and energy engineering requirements in a manner that will exceed your highest expectations.

Buffalo Engineering, P.C. is a full service mechanical - electrical - plumbing (M/E/P) and energy consulting engineering firm providing our clients with high quality, responsive and cost-effective professional services.

Established as a professional corporation in New York State in 1990 by Walid S. Daham, P.E. and Lyman Lowrey, P.E., Buffalo Engineering provides design and construction administration services to governmental/municipal, educational, institutional, health care, housing, commercial, retail and industrial clients. We are well qualified in new construction, and in renovations and retrofits to improve facilities and processes.

Buffalo Engineering has an extensive and diverse client base of owners, municipalities, architects and developers throughout New York State and the northeast. We point with pride to our strong partnerships and longstanding relationships with our clients, a number of whom have been with our firm since its founding. On a yearly basis over 80% of our work is with repeat clients, and referrals are a significant portion of our new business. We are registered in New York, Ohio, Connecticut, New Jersey, Pennsylvania, North Carolina and Virginia.

Buffalo Engineering has consistently expanded the firm's personnel and capabilities to effectively serve our clients and respond to industry changes. Our engineering and design resources include a staff of 36, comprised of experienced professional engineers, energy and systems specialists, designers and technicians; and an automated, electronic office with CADD stations and networked functions to provide quality results and expedite project completion.

Buffalo Engineering combines M/E/P consulting engineering services with specialized energy engineering expertise. Our energy services division, C.J. Brown Energy, is owned by Walid S. Daham, P.E. and shares offices with Buffalo Engineering. We provide comprehensive energy utilization and conservation services and technical assistance to independent facility owners, the State of New York, energy service firms, and investor owned utility companies. We also provide building, systems and equipment commissioning services to help ensure peak facility performance.

Our full spectrum of M/E/P and energy engineering capabilities results in a "whole building" approach that considers how a building's systems can work together most efficiently. Through our green design support, we can enable clients to achieve savings on operating costs, reduce environmental impact, and create a more productive, healthier work environment.

Quality of service has been and will always be the cornerstone of our company. We are totally dedicated to meeting the most exacting standards in working for our clients...with their satisfaction as a key measure of our success.

We look forward to the opportunity to assist you in your design engineering, construction and energy utilization needs and to becoming your partner in achieving your project goals.

Our Advantages

Buffalo Engineering, P.C. offers numerous advantages that benefit our clients and are sound reasons to select us.

- You receive value-added solutions through our combination of superior engineering services and demonstrated expertise in energy utilization and conservation. Our ability to deliver systems with optimal operating productivity and energy efficiencies is of substantial benefit to our clients.
- Your objectives are achieved with the highest level of quality and in a cost-effective manner. We are committed to the success of your project and to helping you obtain the greatest return on investment.
- Buffalo Engineering is totally client-focused. There is ready, easy access to our design group managers and timely response to your questions or concerns. Our team approach ensures consistent and careful attention throughout all project phases.
- You can count on our reliability. Through our years of experience, effective project management and skilled design abilities, we have achieved (on average) an on-time completion rate of 95% and a change order track record of less than 3%.
- Whether the requirement is full facility design and contract document preparation or specialized systems analyses/troubleshooting, we are prepared to assist at any point in the process and on a variety of levels. Our flexibility contributes to your satisfaction.
- We understand the demands and challenges of today's building industry. The Buffalo Engineering team brings broad knowledge and practical understanding to the project requirements. We can handle the most complex projects through our multi-disciplinary capabilities and extensive relevant experience.

Professional Services

Buffalo Engineering, P.C. offers a wide range of professional services starting with the preliminary planning steps for a project and continuing through post construction operations and maintenance.

Buffalo Engineering can provide any of the following comprehensive array of services:

Level I Planning	Technical Studies <ul style="list-style-type: none">• Energy Conservation Studies• Feasibility Analyses• Life Cycle Cost Analyses Site Selection/Evaluation Site Surveys Cost Estimating
Level II Designing	Engineering Design <ul style="list-style-type: none">• Schematic Design• Design Development• Construction Documents Cost Analyses <ul style="list-style-type: none">• Cost Estimating• Value Engineering• System Comparisons• Life Cycle Cost Analyses
Level III Constructing	Bidding Assistance <ul style="list-style-type: none">• Contractor Identification• Contractor Notification• Advertisement• Bid Analysis• Contract Preparation Construction Administration <ul style="list-style-type: none">• Client Representation• Site Observation• Submittal Review• Testing and Balancing Review• Systems Acceptance• Systems Commissioning
Level IV Start-Up	Operations and Maintenance Assistance <ul style="list-style-type: none">• Operator Training• Documentation Systems Analyses <ul style="list-style-type: none">• Performance Confirmation• Operational Improvements

Technical Capabilities

Buffalo Engineering, P.C. specializes in the analysis, design and construction of mechanical, electrical and plumbing building systems.

The following is a partial list of the types of systems for which Buffalo Engineering can provide professional engineering services:

HVAC

- Heating
- Ventilating
- Air Conditioning
- Air Filtration
- Exhaust
- Laboratory Fume Hoods
- Pollution Control
- Pressure Control
- Energy Recovery
- Central Energy Plants
- Pneumatic/Electronic
 - Temperature Controls
- Direct Digital Controls
- Energy Management Systems
- Facilities Management Systems

Plumbing

- Domestic Water
- Natural Gas Distribution
- Backflow Prevention
- Medical Gas Systems
- Water Treatment/Conditioning
- Metering

Fire Protection

- Wet/Dry Sprinklers
- Standpipe Systems
- Chemical Fire Suppression

Systems

- Paging
- Nurse Call
- Emergency Call
- Security
- Fire Alarm
- Annunciator
- Telephone
- Cable

Power Distribution

- Primary Power Distribution
- Secondary Power Distribution
- Substations
- Switchgear
- Transformers
- Emergency Power
- Conditioned Power
- Uninterruptable Power

Lighting

- Interior
- Exterior
- Controls
- Occupancy Sensing
- Emergency Lighting
- Specialized/Feature Lighting
- Energy Retrofits

Technology

- Voice
- Video
- Data Networks
- Fiberoptic/Electronics

Energy Conservation

- HVAC System Retrofits
- Plumbing System Retrofits
- Electrical System Retrofits
- Building Envelop Retrofits
- Operations/Maintenance
 - Improvements
- Operator Training
- Building, Systems and
 - Equipment Commissioning
- Cogeneration of Electricity
- Energy Procurement Analysis
- Process Energy Evaluation

Project Types

The following is a list of representative project types for which Buffalo Engineering has provided consulting services:

Governmental

Federal, State and Local
Government Agencies
Municipalities
Emergency Facilities
Department of Defense
United States Postal Service
Veterans Administration

Commercial/Retail

Multi-tenant Malls
Shopping Centers
Office Buildings
Specialty Shops
Supermarkets
Convenience Stores
Banks

Educational

Private Schools
Public Schools
Colleges and Universities
Community Colleges
Business Institutes
Trade Schools
Day Care Centers

Hospitality/Leisure

Hotels/Motels
Meeting/Convention Spaces
Country Clubs
Fast Food Restaurants
Food Courts
Specialty Restaurants
Travel Plazas

Health Care

Hospitals
Nursing Homes
Long Term Care Facilities
Specialized Care Facilities
Ambulatory Care Centers
Skilled Nursing Facilities
Medical Centers
OT/PT Centers
Medical Office Buildings
Regulated Medical Waste
Processing Facilities

Industrial

Manufacturing Facilities
Plant Layouts
Industrial Processes
Central Power Plants
Building Environmental Systems
Energy Analyses/Retrofits

Housing

Collegiate Student Housing
Apartment Buildings
Retirement Communities
Assisted Living Facilities

Religious

Churches/Synagogues
Meeting Spaces
Conference Areas

Partial List of Clients/Projects

Buffalo Engineering provides consulting services directly to owners and as a subconsultant. We work with the area's leading architectural firms, and we are the consulting engineering firm for term contracts obtained by several of these firms.

Governmental

City of Buffalo
City of Lockport
City of Niagara Falls
Erie County
New York State Department of Health
New York State Energy Research and
Development Authority (NYSERDA)
New York State Parks Department
Niagara County
Office of General Services
Peace Bridge Authority
Town of Alden
Town of Allegany
Town of Gaines
Town of Newstead
Town of Niagara
Town of Tonawanda
U.S. Department of Labor/Employment
Training Administration
U.S. Postal Service
U.S. Social Security Offices

Emergency Facilities

Colden Fire Dept.
Getzville Fire Dept.
Grand Island Fire Dept.
Harris Hill Fire Dept.
Hutchinson Hose Fire Dept.
HyView Fire Dept.
Lakeview Fire Dept.
Lake Shore Fire Dept.
Rapids Fire Company
Rural/Metro Ambulance
Twin District Fire Dept.
Woodlawn Fire Dept.

Multi-Use/Community Facilities

Beaver Island State Park Casino
Buffalo Convention Center
Buffalo & Erie County Botanical
Gardens
Delavan-Moselle Community Center
Father Belle Community Center
Frank Lloyd Wright Gas Station
Hennepin Park Community Center
Ralph Wilson Stadium
Riviera Theater
Shea's Performing Arts Center

Partial List of Clients/Projects

Health Care

Aesthetic Associates
Batavia Nursing Home
Brierwood Medical Offices/OLV Hospital
Buffalo Cardiology
Buffalo M.R.I.
Buffalo Psychiatric Center
Center for Plastic Surgery
Children's Hospital
DeGraff Memorial Hospital
Erie County Medical Center
Gastroenterology Associates
Immco Diagnostics
Jones Hospital
King's Imaging
Medina Memorial Hospital
Millard Fillmore Hospital
NorthAmericare
Odd Fellows and Rebekah Health Care Facility
PresGar Imaging
Riverfront Medical Center
Samaritan Medical Center
Seton Hall Medical Offices/Sisters Hospital
Sheehan Memorial Hospital
Summit Medical Park
St. Joseph Hospital
TLC Health Network
Veterans Administration
West Seneca Developmental Center
WNYMP Ambulatory Surgery Center

Housing

Buffalo Municipal Housing Authority
Cranberry Court Apartments
Elizabeth Harvey Apartments
Frederick Douglass Towers
Hertel Park Apartments
HUD 202, Main and Utica
Jefferson Apartments
Ken-Ton Presbyterian Village
Kirkwood Housing
Lewis Street Senior Housing
Meadowood Apartments
Niagara Village Housing
Parkside Housing
Ridgeview Condominiums
Rochester Housing Authority
Samaritan Keep Home
Southwind Landing
Stratford Arms
Urban Street Apartments
Walden Elderly Housing
Weinberg Campus
West Seneca Housing
West Seneca MEWS Housing
Westbrook Apartments
Windsong Apartments
Woodland Place Apartments
YWCA Housing

Partial List of Clients/Projects

Offices

ADP Corporate
Airborne Industrial Park
Chemical Bank
Chiampou Travis Besaw & Kershner LLP
Evans National Bank
Federal Center
Fleet Bank
HSBC Bank USA (Marine Midland)
Ingram Micro
IDRC Call Center
Key Bank
Lippes Mathias Wexler Friedman LLP
Lockport Savings Bank
M&T Bank
Met Life
NationsBanc
Niagara Center
NYNEX
Norstar Bank
Olympic Towers
Sheridan Meadows Corporate Park North
Stokes Seed Company/737 Main St.
Thomas Cook
Unifrax
Williams Communications
Wyoming County Bank

Direct Clients

84 Lumber Company
Benderson Development Company
Erie County Department of Public Works
HSBC Bank USA
Johnson Controls
Lakeshore Volunteer Fire Company
McGuire Group
Moore Business Forms
Panera Bread
Rosina Food Products
Select Energy
Siemens Building Technologies
Specialty Restaurants
Syracuse University
The Waters of East Aurora
Tops Markets
Uniland Development Company

Architects

Architectural Resources
Barton Hovey Nardini & Tries Architects
Cannon Design
Conway and Company Architects
DiDonato Associates
Fontanese Folts Aubrecht Ernst Bammel Architects
Hart Howerton Architects (New York City)
John Shaflucas Architects
K2M Architects
Kideney Architects
Lauer-Manguso & Associates Architects
Macon Chaintreuil Jenson & Stark
Pasanella, Klein, Stolzman & Berg (New York City)
Scheid Architectural
Silvestri Architects
Stieglitz Snyder Architecture
TRM Architect

Partial List of Clients/Projects

Public/Private Schools

Buffalo City SD
Chautauqua Lake CSD
Cincinnatus CSD
DeSales Catholic School
East Aurora UFSD
Gateway-Longview
Geneseo CSD
Gouverneur CSD
Holy Angels Academy
Lake Shore CSD
Lancaster CSD
Lockport City SD
Massena CSD
Mt. St. Mary's Academy
Nardin Academy
National Heritage Academies (Buffalo, Brooklyn
and Rochester Charter Schools)
Niagara Falls City SD
Orchard Park CSD
Park School of Buffalo
Saranac Lake CSD
Schodack CSD
Stepping Stone Academy Charter School
Sweet Home CSD
Valley CSD
Watertown City SD

Colleges/Universities

Alfred University
Canisius College
D'Youville College
Erie Community College
Hilbert College
Niagara University
Rochester Business Institute
Rochester Institute of Technology
St. Bonaventure
SUNY College at Brockport
SUNY at Buffalo
SUNY College at Fredonia (SUCF)
SUNY College at Geneseo (SUCF)
SUNY College at New Paltz (DASNY)

Key Personnel

Buffalo Engineering has a total staff of 36 consisting of professional engineers, engineering designers, design drafting technicians and administrative personnel. A team is established to meet the specific requirements of each project. A principal is assigned to the team as well as a project manager and supporting technical personnel.

Staffing

Mechanical	13
Electrical	9
Energy Specialists	10
Administrative	4
Total Personnel	36

Registered in the States of:

New York	Ohio
New Jersey	Virginia
North Carolina	Connecticut
Pennsylvania	

Key Personnel

Walid S. Daham, P.E.
President/Principal-in-Charge

Lisa Grabenstatter
Electrical Designer

Michael A. Mastrandrea, P.E.
Principal/Electrical Group Manager

Jeffrey R. Griffith, E.I.T.
Electrical Engineer

Christopher M. Sendker, P.E., LEED AP
Principal/Senior Mechanical Engineer

Jeffrey D. LeMere
Senior Plumbing Designer

Robert C. Herr
Mechanical Group Manager

Michael J. Mentel
Senior Electrical Designer

Thomas J. Dorsheimer
Senior Project Manager

Robert L. Reiter
Senior Mechanical Designer

Mark P. Dorsheimer
Senior Project Manager

Michael H. Stringer
Electrical Engineer

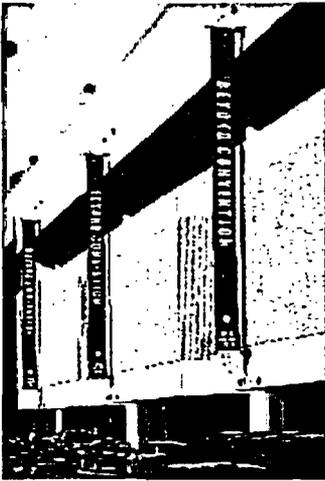
Paul E. Bukowski
Electrical Project Designer

David P. Zdolinski
Electrical Engineer

Stephen W. Cartwright
Mechanical Project Engineer

Project Experience

Government/Municipal



Buffalo Convention Center
Buffalo, NY

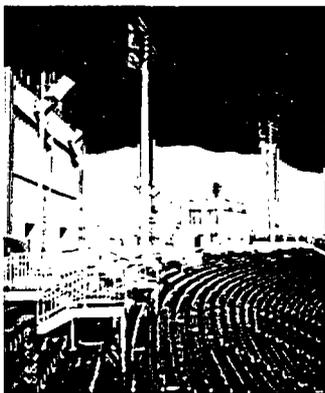
Erie County Department of Public Works, Buffalo, NY

The Erie County Department of Public Works (DPW) is responsible for the operation and management of the approximately 240 buildings and facilities owned by Erie County. Buffalo Engineering has provided engineering and energy consulting services for numerous projects for the DPW:

Buffalo Convention Center: Buffalo Engineering completed a Project Initiation Report to investigate the feasibility, scope and cost of upgrading, repairing, and renovating selected mechanical and electrical systems. We subsequently provided MEP design services for a \$1.2 million, multi-phase renovation project which included boiler, chiller and cooling tower replacement; a new fire alarm system; lighting upgrades; and a new snowmelting system.

Central Library: We completed a Project Initiation Report to investigate the feasibility, scope and cost of using the existing basement as record storage for the County's Surrogate Courts and Division of Information and Support Services. We subsequently provided MEP design, specifications, and construction management for the \$800,000 project, which included renovation of the existing space; new HVAC, fire suppression and sprinkler systems; and electrical and mechanical installation design for an hydraulic passenger elevator.

Erie County Fire Training Academy/Emergency Operations Center. We provided MEP design for a \$1.4 million addition and renovation project for the Erie County Department of Public Works. The 7,200 sq. ft. addition features a 100-person lecture hall and two 40-person classrooms, and state-of-the-art data communications and cabling. Our scope of work encompassed HVAC, plumbing, fire protection, data/communications, A/V and security systems, and tie-ins to the existing 17,000 sq. ft. facility. We also provided building commissioning services for the project.



Ralph Wilson Stadium
Orchard Park, NY

Ralph Wilson Stadium: We have been responsible for multiple projects at "the home of the Buffalo Bills":

- Engineering design for lighting and plumbing upgrades for the renovation of 32 sideline suites. Our scope of work also included lighting and plumbing design for 14 suites located in the former administration building, along with upgrades in common areas and toilet rooms.
- Technical assistance and project management for A/V upgrades. Our personnel worked with national consultants Acoustic Dimensions and Signal Perfection, LTD, to design a state-of-the-art sound system as part of a \$63 million renovation. The design featured approximately 800 new speakers in the "main bowl," the dugout suites and in the new clubs. The A/V system for the boxes and the clubs are interfaced with the PA system, TV, local radio, and actual crowd noise from the main bowl.
- Conditions survey of electrical, lighting, HVAC, and plumbing systems in areas including the press box, locker rooms, toilet facilities, field house, and training facilities. We also provided recommendations for improvements and estimated costs.

Project Experience

Government/Municipal



Olympic Towers, Buffalo, NY

Olympic Towers, Buffalo, NY

Olympic Towers, which is listed in the National Register of Historic Places, underwent extensive renovation to convert the building into Class A office space to house the U.S. Bankruptcy Court, Food and Drug Administration, and the Office of Hearings and Appeals. We provided engineering design services for mechanical, electrical, plumbing, security, fire protection and data/communications systems for over 48,500 sq. ft. of space accommodating offices, conference rooms, courtrooms, and public areas.

Federal Center, Buffalo, NY

This 160,000 sq. ft. building in downtown Buffalo houses the U.S. Attorney and Immigration offices. We provided design and construction administration in compliance with the federal government specifications.

United States Postal Service, New York (multiple locations)

We have completed multiple projects for the USPS, which include complete MEP design of a new post office branch in Market Square, Buffalo; MEP design of existing offices in Pittsford and Greece; and boiler replacements at the Westside and Galleria Drive branches in Buffalo. We have also completed projects for the William Street facility: MEP design for an expansion of the general mail facility; and mechanical and electrical renovation for the battery room expansion to provide additional ventilation and as part of an electrical upgrade.

Niagara County Training Facility/911 Emergency Operations Center, Lockport, NY

We provided the mechanical and electrical design for a new \$2.5 million, 25,000 sq. ft. training facility for the Niagara County Department of Public Works. Design features included central dispatch, vehicle storage, a shooting range, emergency response center, classrooms and training rooms. The scope of work encompassed HVAC, plumbing, air conditioning and humidification control of computer rooms and the operations room, communications systems, security, a total flooding FM200 fire suppression system, and backup power generators.

Town of Niagara Parks Department, Niagara Falls, NY

For the Town of Niagara's new baseball field, we provided engineering design services for site utilities, field lighting, and an irrigation system. The project also involved construction of a community center, which houses a multi-purpose room/gameroom, kitchen, offices and storage space. We were responsible for all MEP design including fire alarm and sprinkler systems.

Harris Hill Volunteer Fire Company, Williamsville, NY

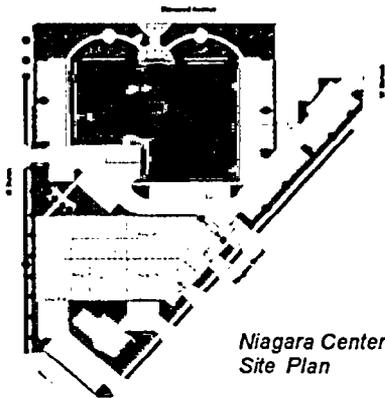
We are currently providing "green building" energy technical assistance and MEP engineering design for construction of a new 24,000 sq. ft. fire station. We have worked closely with architect to review LEED requirements and to identify LEED credits that could cost-effectively be fulfilled in this project. Our services have included design development of MEP systems to meet LEED criteria, such as high efficiency heating and lighting; temperature controls; ventilation heat recovery; water efficiencies; on-site sewage; gray water; and other measures. We also identified opportunities for project funding and services through multiple NYSERDA programs.

Project Experience

Commercial/Offices



Niagara Center, Buffalo, NY



Niagara Center
Site Plan

UNILAND
DEVELOPMENT COMPANY



Sheridan Meadows Corporate Park North
Amherst, NY

Niagara Center, Buffalo, NY

Acquest Development Company and Uniland Development Company are constructing a new \$18 million eight-story, 280,000 sq. ft. multi-tenant office building at 150 S. Elmwood Avenue in downtown Buffalo. The Department of Veterans Affairs and the Internal Revenue Service, previously located in the Dulski Federal Building, will be the anchor tenants. The VA will occupy three floors, and the IRS will occupy two floors. The offices of the Small Business Administration will also relocate to the facility. The project includes a five-story parking ramp to be located on an adjacent parcel.

Buffalo Engineering was responsible for mechanical, electrical, plumbing and fire protection design services for the shell, and MEP design for the parking ramp. Buffalo Engineering is also providing engineering design and construction administration services for the tenant buildouts. Occupancy by the VA and the IRS is planned for early 2005.

Uniland Development Company, Amherst, NY

Uniland is one of the largest developers of office and industrial parks in the Buffalo-Rochester, New York corridor with over 6 million square feet in its portfolio. Buffalo Engineering has completed multiple projects for the company including:

Sheridan Meadows Corporate Park North, Amherst, NY: Mechanical, electrical and plumbing design for a new 117,000 sq. ft., two building, three story, Class A office complex. Our scope of work included HVAC; power distribution, emergency power, data, telephone, fire alarm and card reader systems; interior and exterior lighting; and an exhaust/ventilation system for covered parking. It also encompassed plumbing design for a multi-level atrium and winter garden with a waterfall.

University Corporate Centre (300 and 500 Corporate Parkway), Amherst, NY: Mechanical, electrical, plumbing and fire protection design for two new Class A office buildings. 300 Corporate Parkway is an \$8 million three-story, 130,000 square foot building completed in 1996. 500 Corporate Parkway is a \$6.5 million two-story, 86,000 square foot building completed in 1999. The University Corporate Centre, a 32-acre business campus is Uniland's premier corporate complex and home to the company's regional headquarters.

Project Experience

Commercial/Offices



*HSBC Mortgage Processing Center
Depew, NY*



*HSBC Bank USA Headquarters
Buffalo, NY*

HSBC Bank USA (multiple locations)

Since 1993, Buffalo Engineering has worked extensively with HSBC Bank USA to provide engineering design and energy consulting services. Engineering projects include:

New Mortgage Processing Center, Depew, NY: HVAC, power distribution, electrical, lighting and plumbing design. Our work also included data and communication wiring for over 750 workstations. The design required category 5 cable for data and category 3 for communications originating from IDF room patch panels and punch down blocks. The intra-building backbone system consisted of fiberoptic and copper backbone cable and uninterruptable power system for critical load. We have also provided the design for numerous facility development and expansion projects including a 50,000 square foot raised floor call center training room.

Corporate Headquarters, Buffalo, NY: New 2,400 square foot computer room housing 113 servers. The project consists of new UPS and HVAC equipment, which is interfaced with the building management systems.

Branch Bank Locations: We have provided mechanical, electrical, plumbing and fire protection design for multiple branch banks throughout New York State and Florida. Included in these projects have been new branch builds and renovations. This work is ongoing.

Edward A. Rath Office Building, Buffalo, NY

The Rath Building is a 16-story, 460,000 square foot building that houses Erie County government offices. Buffalo Engineering is working with Erie County to develop electrical service, lighting, data and telephone system design standards for the building. The standards will be used to provide design consistency for ongoing renovation projects, and for long term abatement, HVAC, electrical and special systems major renovations.

Adelphia Communications, Inc., Coudersport, PA

We provided mechanical and electrical design for a new freestanding data center and computer server building. The three story, 80,000 square foot building featured a raised floor design with 3,500 computer server racks throughout the building. The equipment required heavy duty cooling (four 600 ton cooling towers), an uninterruptible power supply, and conditioned power. The project included 34.5 KV plus distribution at 4160 to multiple buildings and final distribution at 277/480. The project required five 2,000 KW generators and a full fuel oil system.

Project Experience

Health Care



VAWNY Medical Center
Buffalo, NY

VA Western New York Medical Center Buffalo and Batavia, NY

Buffalo Engineering provided HVAC, plumbing, fire protection and electrical engineering design and construction management for the renovation of a 10,000 sq. ft. GI unit at the Buffalo facility. The scope of work included the complete replacement of an existing air handling system, upgrade of temperature controls, extension of an existing voice and data communication system, replacement of lighting systems, upgrade of a medical gas alarm system, and upgrades of plumbing and sprinkler systems. Additional projects for the Buffalo VA facility include MEP systems

design and construction administration for consolidation of the 8th floor medical services; and for renovations of the emergency department, kitchen, cafeteria and morgue. At the Batavia facility, we were responsible for sprinkler system design that was part of a multi-floor renovation project; HVAC, electrical, fire alarm and plumbing design for office renovation in SPD Storage; and MEP engineering and construction administration for a day care center.

TLC Health Network/Lake Shore Health Care Center, Irving, NY

Buffalo Engineering provided HVAC design to improve the air conditioning system in the hospital's fluoroscopy suite. We also provided HVAC design to improve the ventilation system in the kitchen and dishwasher areas serving the hospital and skilled nursing facility.

Endoscopy Center of Western New York, Amherst, NY

Buffalo Engineering is providing MEP, fire protection and medical gas systems design for a new \$1.8 million endoscopic ambulatory surgery center operated by Gastroenterology Associates. The facility, located adjacent to the group's current offices, includes seven procedure rooms, seven recovery rooms, and a film reading area.

DeGraff Memorial Hospital, North Tonawanda, NY

This project encompassed the HVAC, plumbing, fire protection and electrical design for a new \$5 million, two-story, 15,000 sq. ft. family health center connected to the hospital. MEP work for the addition included air handling, plumbing, security, data, communication, emergency call, and fire protection systems; primary and secondary power distribution; and interior and exterior lighting.

The McGuire Group, Buffalo, NY (multiple locations)

Buffalo Engineering is providing engineering design services for projects at multiple McGuire Group locations in Western New York and Long Island:

- Harris Hill Nursing Facility, Williamsville — MEP, fire protection and medical gas system design for a 55 bed addition. Also, HVAC design to add air conditioning to a 40 bed unit.
- Autumn View Health Care Facility, Hamburg — MEP, fire protection and medical gas system design for a 62 bed addition.
- Seneca Health Care Center, West Seneca — MEP and fire protection design for a new eight bed unit.
- Garden Gate Health Care Facility, Cheektowaga — MEP and fire protection design for two new eight bed units.
- Smithtown Health Care Facility, Smithtown (Long Island) — MEP and fire protection design for a 2nd floor addition for OT/PT services.
- Brookhaven Health Care Facility, East Patchogue (Long Island) — MEP, fire protection and medical gas system design for a link addition to house OT/PT services.

Project Experience

Housing



Frederick Douglass Towers, Buffalo, NY

Frederick Douglass Towers, Buffalo, NY

Frederick Douglass Towers is a 697-unit housing project built in the 1950s in a neighborhood east of downtown Buffalo. Through an extensive redevelopment project, more than 300 affordable family town homes and rental units are being built, along with creating a sense of residential community in an urban setting.

Buffalo Engineering is providing MEP design for the Phase III construction of 46 new town homes with unit mixes from one bedroom handicap to five bedroom family units. We are also providing MEP design for a new 3,700 square foot community center with a community room, classroom, kitchen and toilet rooms. The architect is Stieglitz Snyder Architecture.



Southwind Landing, Cheektowaga, NY

Southwind Landing/Transit Road Senior Housing, Cheektowaga, NY

This project is a new two-story, four wing senior housing facility with 95 one and two bedroom apartments, a community room, laundry facilities, lounge areas, lobby and offices. Our engineering design work includes mechanical, electrical, plumbing, fire protection, telephone, emergency call systems, and exterior lighting.



Elizabeth Harvey Apartments, North Tonawanda, NY

Elizabeth Harvey Apartments North Tonawanda, NY

Buffalo Engineering provided mechanical and electrical design for a new two story, 24-unit apartment building for the visually impaired. The \$2.2 million project was financed by the sale of federal low-income housing tax credits issued through the State of New York Department of Housing and Community Renewal.



Hertel Park Apartments, Buffalo, NY

Hertel Park Apartments, Buffalo, NY

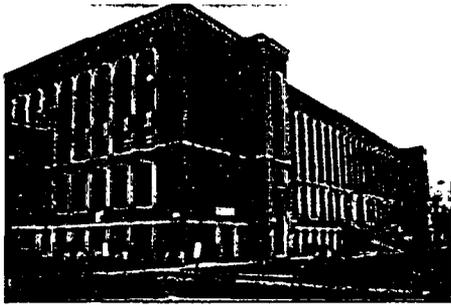
Buffalo Engineering provided the mechanical and electrical design for the conversion of a former department store into a 144-unit apartment building with first floor retail space.

Project Experience

Educational K-12

Buffalo Public Schools Reconstruction Project, Buffalo, NY

The Buffalo Public Schools Project is a decade-long, district-wide reconstruction effort that will involve more than 80 preK-12 schools in the city of Buffalo and nearly \$1 billion in capital improvements. Buffalo Engineering is responsible for projects during Phases I and II.



The former Buffalo Vocational Technical Center
Buffalo, NY

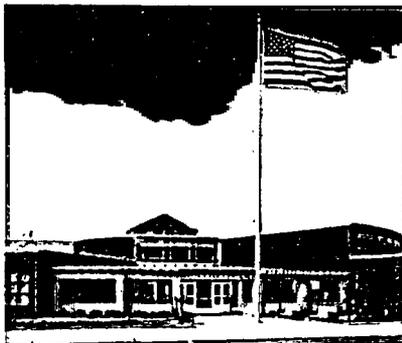
Phase I

- \$18.5 million renovation of the Buffalo Vocational Technical Center to convert the facility to the Comprehensive East High School, which will be a traditional high school offering a comprehensive academic curriculum. The project includes total reconfiguration and renovation of academic areas; new kitchen, cafeterias and library; and complete renovation of the gymnasium, pool and locker rooms. Our engineering design includes HVAC, electrical, plumbing, data/communications wiring, and fire protection systems. Completion is slated for the 2005 school year.

- MEP demolition, renovation and construction services to relocate and consolidate 13 programs from the Buffalo Vocational Technical Center and other schools to seven other high schools in the district.

Phase II

- Division 16 and 17 schematic design for renovations and additions to 13 schools totaling over 1 million gsf of space. Our scope of work encompasses site surveys, evaluation of electrical distribution systems, report development, and schematic specifications.
- We have been selected by various architects to provide the engineering design for the total renovation of five schools, representing over \$70 million in construction costs:
 - School #6 – Buffalo Elementary School of Technology (BEST) School (grades preK – 8): Mechanical, electrical and plumbing design, \$11.7 million.
 - School #37 – Futures Academy (grades preK – 8): Mechanical, electrical and plumbing design, \$9.2 million.
 - School #90 – Drew Science Magnet/Early Childhood Center (grades preK – 1): Mechanical, electrical and plumbing design, \$5.8 million.
 - School #95 – Waterfront Elementary (grades preK – 8): Mechanical, electrical and plumbing design, \$17.5 million.
 - School #192 – Buffalo Traditional School (grades 5 – 12): Mechanical and plumbing design, \$28.1 million.



Chautauqua Lake Central School District
Mayville, NY

Chautauqua Lake Central School District Mayville, NY

Buffalo Engineering provided the mechanical and electrical design for a new \$32 million, 310,000 sq. ft. school accommodating 1,200 students in grades preK-12. The facility features a comprehensive computer and communication system, media center, distance learning lab, and a TV studio. It has three full size gymnasiums, swimming pool with a designated kiddie pool, a suspended running track, fitness center, and extensive outdoor athletic grounds. The design included an air-to-air heat recovery system, natatorium dehumidification and heat recovery system, open protocol direct digital control system, geothermal well field system, and an integrated data and communication system.

Project Experience

Higher Education



Mason Hall, SUNY College
at Fredonia, Fredonia, NY

State University of New York College at Fredonia Fredonia, NY

Buffalo Engineering was selected by Pasanella & Klein Stolzman & Berg Architects of New York City to provide the mechanical and electrical design for the \$7.9 million Phase I renovation of Mason Hall. The project involved removing the first story portion of the 1960s addition (known as Mason Annex) and adding a new two-story, 503-seat recital hall. The structure included a new lobby, faculty offices, an 880 sq. ft. classroom, a recording studio with drum and vocal booths, and a control room with equipment and editing rooms. A specialized HVAC system was required to maintain the acoustical integrity of the new recital hall and auditorium, and humidity levels needed to be rigidly maintained throughout the facility to safeguard the costly musical instruments. As part of Phase I, New Mason underwent renovations for new office space. Also included were provisions for the Phase II total renovation of Old Mason. This project was funded by the State University Construction Fund (SUCF).



Science and Technology Center
Syracuse University, Syracuse, NY

Syracuse University, Syracuse, NY

Buffalo Engineering has provided engineering consulting services for multiple projects:

- Extensive MEP design services to convert a laser lab in the Science and Technology Center to a 3,000 sq. ft. processing lab to handle chemical, flammable and medical waste.
- MEP design and project management for fit out of two wet labs and renovations to a laser spectroscopy lab in the Science and Technology Center; geography lab renovation in the Heroy Geology Building, and an anthropology lab renovation in Bowne Hall.
- Multiple projects at the Ernest Stevenson Bird Library, including humidification system design, total lighting replacement, electronic to hydronic reheat coils conversion, and installation of variable speed drives on all air handlers.

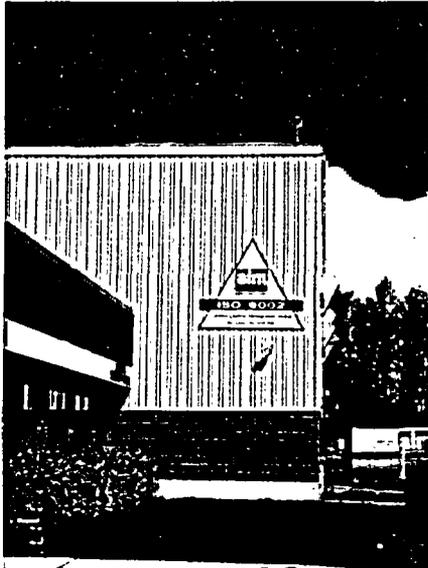
State University of New York at Buffalo, Amherst and Buffalo, NY

We have been responsible for multiple projects at the university's North and South campuses.

- Flickinger Court Student Housing — MEP design for a new apartment-style graduate student housing complex at the university's North Campus. The complex contains 115 units in 13 townhouse apartment clusters (including five handicap-accessible units) and a community building. The design also included a fiberoptic backbone.
- Goodyear Hall — Design and construction management services for new fire protection and detection systems for the ten-story residence hall as part of an energy efficiency project. We were also responsible for construction management for all MEP replacement work for the project (heating system upgrades, new windows, lighting, water conservation, and air ventilation improvements).
- Bissell Hall Public Safety Building Addition & Renovation — A 2,000 sq. ft. addition incorporating a new fitness center area and locker rooms. Adding this new space opened up existing interior space for conversion to offices and a staff multi-purpose room.
- Clark Hall — Lighting replacement and upgrades to the lighting power distribution in the natatorium at UB's South Campus athletic and recreation facility.
- Student Union — Renovations to the health/wellness, student newspaper, Student Program Services and UB Card Services suites, and creating space for a Campus Tees store and a bank of ATM machines.

Project Experience

Industrial/Manufacturing



Aim Corrugated Container Corp., Lancaster, NY

Aim Corrugated Container Corp., Lancaster, NY

Buffalo Engineering provided the HVAC, plumbing and electrical design for the new manufacturing facility, which included a recycling warehouse and offices. Additionally, we provided the electrical and mechanical design for the manufacturing equipment layout.

Georgia Pacific Distribution Center, Hamburg, NY

Buffalo Engineering provided the HVAC, electrical and plumbing design for the construction of a new 135,000 sq. ft. distribution center.

Multi-Purpose Incubator Facility, Salamanca, NY

This incubator facility is an 80,000 sq. ft. complex with warehouse, manufacturing and office spaces for small emerging businesses. We provided the engineering services for HVAC, plumbing, electrical, fire protection, and related site utilities. Our service also included schematic design, cost estimating, and construction documents.

Ceres Corporation, Wheatfield, NY

This project involved the design of a new 34,000 sq. ft. plant and office facility for the production of cubic zirconia. The design services included 4000 KVA, 13.2 KV-480V, 5,000 amp service, power distribution to electrical ovens and motor control centers, and various equipment such as mixers, drills, saws, pumps, etc. A water-cooling system, heat reclamation system, lighting and plumbing were also included in the design.

CPS Ink, Dunkirk, NY

We provided the HVAC, plumbing, electrical, and fire protection design for a 70,000 sq. ft. addition and consolidation of the plant. The scope included an update of primary electrical service, power to equipment, process piping, and an overhead line for distribution into the plant.

Medina Power/R & G Packaging, Medina, NY

Medina Power is a cogeneration facility that produces considerable waste heat. This project entailed the design of systems to utilize 600 GPM of 200° F engine jacket water and 480 GPM of 150° F lube oil cooling water. The project included lube oil/water plate/frame heat exchanger, dryer coils, pumps, 6" piping, controls, hydronic specialties, 4160/480 electrical power transformation, and power distribution.

Ashton-Potter USA Ltd., Amherst, NY

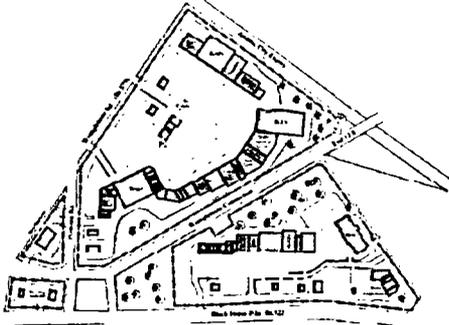
Ashton-Potter produces definitive and commemorative postage stamp products under contract to the United States Postal Service. The company is expanding with an 11,000 sq. ft. addition at its Curtwright Drive plant. Buffalo Engineering is providing mechanical, electrical and plumbing design for the project. Our electrical work includes power, lighting, fire alarm and data systems.

Rosina Food Products, West Seneca, NY

Buffalo Engineering was responsible for the mechanical, electrical, plumbing design and construction administration for the total renovation of the vacant former Lender's Bagels plant, which was acquired by Rosina Holdings Inc. The 90,000 sq. ft. facility will serve as the primary distribution hub for all of the company's brands. Production operations are also being shifted to the site.

Project Experience

Retail



Wrangleboro Consumer Square
Hamilton Commons, Mays Landing, NJ



Barnes & Noble Booksellers
Boulevard Consumer Square, Amherst, NY

Benderson Development Company

Buffalo, NY/University Park, FL

Benderson Development is one of the largest privately owned development companies in North America and is a national leader in retail and power center development. Since 1990, Buffalo Engineering has provided mechanical, electrical, lighting and plumbing design services to Benderson Development for their Consumer Square and The Commons retail power centers located in New York, New Jersey, North Carolina and Ohio.

We have provide engineering services directly to Benderson through the architect for shell design and also for anchor and tenant fit outs, which include major U.S. retailers such as Barnes & Noble; Bed, Bath & Beyond; Best Buy; Home Depot; Linens & Things; Marshalls; Michaels Arts & Crafts Store; Office Depot; Office Max; Old Navy; PetsMart; Staples; and T.J. Maxx. Additionally, we provide engineering design services to Benderson for numerous other retail holdings.

In 2004, Benderson sold portions of its shopping center portfolio in Florida, New York, Ohio and Kentucky to Developers Diversified Realty of Cleveland.

To date, Buffalo Engineering has provided design services for more than 15 million square feet of gross leasable area (GLA), including the following locations:

- Big Flats Consumer Square, Big Flats, NY (625,000 GLA)
- Boulevard Consumer Square, Amherst, NY (600,000 GLA)
- Consumer Square East, Columbus, OH (450,000 GLA)
- Consumer Square West, Columbus, OH (370,000 GLA)
- Delaware Consumer Square, Buffalo, NY (210,000 GLA)
- Hamilton Commons, Mays Landing, NJ (350,000 GLA)
- Howell Commons, Howell, NJ (120,000 GLA)
- Ithaca Consumer Square, Ithaca, NY (550,000 GLA)
- McKinley Commons, Hamburg, NY (75,000 GLA)
- Mohawk Commons, Niskayuna, NY (400,000 GLA)
- Monmouth Consumer Square, West Long Branch, NJ (300,000 GLA)
- Mooresville Consumer Square, Mooresville, NC (580,000 GLA)
- New Hartford Consumer Square, New Hartford, NY (550,000 GLA)
- Niagara Consumer Square, Niagara Falls, NY (450,000 GLA)
- Plattsburgh Consumer Square, Plattsburgh, NY (450,000 GLA)
- Union Consumer Square, Cheektowaga, NY (400,000 GLA)
- Walden Consumer Square, Cheektowaga, NY (300,000 GLA)
- Wrangleboro Consumer Square, Mays Landing, NJ (850,000 GLA)