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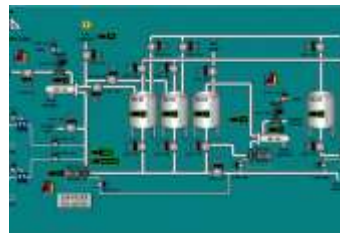
Qualifications



Energy Management Consultation Services



Governor's Award for
Environmental
Excellence 2008





I. Experience in Energy Management Consultation/Energy Audits


Energy Management Consultation/Energy Audits

Borton-Lawson performs energy audits for various types of facilities including manufacturing, commercial, and institutional. Our Qualified Specialists will perform an audit and educate site staff on opportunities to reduce the use of energy. We analyze actual utility bills and production data, present project savings and implementation costs, and finally review energy-saving options with the client:

Level 1: Focus on low and no-cost ways to improve energy efficiency through optimization of existing equipment or through operational changes.

Level 2: Focus on particular pieces of equipment that may need to be replaced. This means a capital outlay and an ROI calculation.

Level 3: Focus on an investment-grade engineering study after all the cost-saving strategies have been exhausted. If you are already running efficiently, this may allow you to squeeze even more energy out of your monthly bill.

don't get shocked 
by electric deregulation


take small steps now to save big later
borton-lawson can help!

evaluate bills and metering strategies

implement simple energy-saving measures

explore energy-efficient operational improvements to your facility

call us at 570.821.1999
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Borton-Lawson's Energy Audit Services will be led by one of our qualified design professionals.

- Bill McFarland, PE, LEED AP, RPA, FMA, Director of Electrical Engineering Services, has over 20 years of utility and facility management experience. He brings a unique perspective and insight on energy savings solutions.
- Thomas Maheady, PE, Vice President Facilities Engineering, oversees our team of structural, mechanical, electrical and automation engineers and designers. Working in industry and consulting since 1979, Mr. Maheady has successfully engineered and supervised hundreds of projects, ranging in scope from concise technical studies and expert witness work, to major construction projects with budgets in the tens of millions of dollars.
- Patrick Walko, PE, Mr. Patrick Walko is a Project Manager in the Facilities Engineering Division. With over ten years of engineering and project management experience, Pat has served as a Mechanical Engineer, designing mechanical (chilled water, etc.), combustion, HVAC, and plumbing systems.
- AJ Speicher, PE, Mechanical Engineer, has experience in a broad range of Direct Digital Control (DDC) and HVAC design work including project engineering/management for projects including steam, hot water, chilled water, and compressed air systems.

Energy Audits are supported by our comprehensive team of mechanical and environmental engineers, architects, and automation specialists.

Here is an outline of the program:

Provide:

- Meeting to review your operations and how “green” you want to be
- Site tour with operations personnel
- Available prints and diagrams
- Roof access

Review:

- Utility Metering
- Facilities operating systems including
 - HVAC including retro-commissioning
 - Lighting
 - Thermal
 - Control
 - Process
 - Water

Receive:

- A written report with findings and recommendations
- Potential paths for savings
- Green/LEED Alternatives
- Possible tax incentives, grants, and other funding mechanisms
- A face-to-face meeting to review results



II. Project Experience

Borton-Lawson has a portfolio of projects that clearly demonstrate minimizing energy consumption, reducing emissions, and shrinking our carbon footprint. Here are just a few examples of projects that we have completed that illustrate that balance between economic growth and environmental stewardship.

- Large glass furnace conversions and modification programs have resulted in tremendous reductions of fuel consumption and emissions.
- Some of our employees, certified as Steam System Experts, completed Energy Audits for the United States Department of Energy at several U.S. manufacturing facilities. These audits identified millions of dollars in energy and cost savings.
- Modernization of compressed air and steam as well as space heating systems at Kimble Glass in Vineland, New Jersey. As part of this project, our team identified synergies between the two systems to develop a single, cost-effective project that would modernize both and handle future expansion.

We believe in helping our clients achieve their goals while increasing efficiency and reducing energy consumption.

Energy Audits for the United States Department of Energy

Borton-Lawson performs energy audits for the United States Department of Energy as part of the Save Energy Now program. Our Qualified Specialists are sent to selected sites for an intense three days of auditing and training the site staff in the use of the DOE energy analysis software tools. To date, we have completed audits at the following facilities:

- Schweitzer-Mauduit International in Lee, MA (Paper Mill)
- American Refining Group in Bradford, PA (Petroleum Refinery)
- CelluTissue Holdings in Neenah, WI (Paper Mill)
- Huntsman Chemical in Conroe, TX (Chemical Processing)
- Gunlocke Company in Wayland, NY (Furniture Manufacturing)
- Hormel Foods in Rochelle, IL (Food Processing)
- SCA Tissue in Glens Falls, NY (Paper Mill)

At each of these sites, numerous opportunities were identified to reduce the use of fuels and electricity. We analyze the opportunities by first creating a model of the facility with the DOE energy-analysis software. The model is constructed using actual utility bills and production data. Once all parties agree that the model is an accurate representation of the actual facility operation, each opportunity is simulated, and project savings and implementation costs are presented.

The facility is left with a list of Near (less than 1 year), Medium (1-3 years) and Long Term (more than 3 years) projects to consider, along with the projected reductions in energy use and carbon footprint.

Governor's Award for Environmental Excellence Pine Street Neighborhood

Nine organizations from across Pennsylvania were honored for innovative projects that demonstrate their environmental stewardship and promoting economic development in Pennsylvania. From advances in clean energy to community revitalization, each of this year's winners have made invaluable contributions to improving the health of Pennsylvania's natural resources.

Borton-Lawson was selected as a recipient for their work on the Pine Street Revitalization, which has been acclaimed for utilizing "Green Technology" and "Smart Growth" as part of a residential development. The Pine Street Neighborhood Revitalization encompasses a three-block area of downtown Hazleton. The area traditionally served the city as a light industrial district but for the past decade, a change in the city's demographic caused the area to become largely vacant and no longer viable.

Borton-Lawson, in partnership with the Housing Development Corporation of Northeastern Pennsylvania, Mayor Louis Barletta's office, and other government agencies, financial institutions and community groups, spearheaded the 24 single-home complex.

Pine Street Homes have highly efficient heating, cooling, ventilation, lighting and appliances. Energy efficient construction paired with these features can provide energy cost savings of about 30 percent over standard construction. The inclusion of solar electric systems on the southern-sloped roofs to supplement the domestic hot water heaters enables residents to produce their own solar energy, thereby cutting down on utility costs.

Additionally, through net metering, residents have the ability to transfer any energy surplus to the local utility, in return for reductions in the level of billable energy consumption. Pine Street homeowners can expect to spend about \$700 a year for energy costs, as opposed to more than \$1,100 a year for owners of a traditional home built to code. In addition, ventilation heat recovery systems were used recapturing 70 percent of the heat.

"The 2008 Governor's Award was highly competitive. It was a challenge to choose from among the best of the best. Applicants are to be commended for their efforts in putting in place projects that take on environmental problems in ways that build new businesses, enhance the bottom line and engage residents in a renewed commitment to investing in their communities."

Selinsgrove School District Energy Audit

A detailed energy audit was completed for a 138,000 square foot Middle School facility. Numerous energy conservation opportunities were identified and modeled using building simulation and economic evaluation software. Those that satisfied the school's payback criteria were recommended for implementation.

The evaluation process included a site survey to compare existing conditions to available documentation, and interviews with School's facilities staff. Existing equipment was inspected to evaluate operational history as well as condition of filters, coils, controls and other energy-related components. The use of non-HVAC energy consuming equipment, such as domestic hot water, kitchen and shop systems, was documented.

Historical utility information was compiled and entered into a spreadsheet to allow for graphic analysis. The building model was then refined to reflect past performance.

Energy conservation opportunities (ECO's) were proposed and those identified as having the greatest return on investment were identified through a preliminary screening procedure. Those ECO's passing this test were subjected to a life cycle cost analysis using the BLCC software developed by the National Institute for Standards and Technology.

The Owner chose to implement those ECO's which offered self-funding opportunities.

Kimble Glass, Energy, Heat and Air Upgrade

Borton Lawson worked with Rhodes Industries, an industrial mechanical contractor to develop a strategy to upgrade or replace aging compressed air and steam, space heating systems, at Kimble Glass in Vineland, New Jersey.

Kimble knew that the oversized 350 HP (high pressure) steam boiler and 50 year old reciprocating air compressor, as well as their leaky distribution systems, represented lost profits. The BL/Rhodes team was able to identify synergies between the two systems to develop a single, cost-effective project that would modernize both and handle future expansion.

Besides the construction and engineering aspects of the project, the Rhodes/BL team addressed related issues such as project financing and opportunities for the purchase of "over the level" compressed air from a third party.

Department of Energy Audits

Borton-Lawson performed energy saving assessments for the Department of Energy for the following clients:

As tasked by the Scranton School for the Deaf, Borton-Lawson conducted this Study and Life Cycle Cost Analysis to determine if there was engineering and fiscal justification to support exemption from the requirement to utilize coal for the heating system, as well as evaluate the total cost of ownership related to the operation and maintenance of a coal-fired heating system in comparison to a natural gas fired heating system.

Borton-Lawson was hired by a manufacturing plant to evaluate its steam plant operations and equipment, and to identify potential projects that offer an attractive return on investment.

During the period from March 24 to May 12, 2006, we prepared our evaluation by visiting the site, discussing system operation with plant personnel, reviewing utility bills and operational logs. We prepared a system model using the United States Department of Energy's Steam System Assessment Tool (SSAT.)

We evaluated seven potential projects, and identified five as being worthy of further consideration.

Borton-Lawson was retained to conduct an engineering evaluation of the steam and condensate systems in the Carolina Turkey plant in Mount Olive, North Carolina. The scope of the evaluation was as follows:

Walk out the entire system, noting main and branch pipe sizes, and making observations of lack of best practices or other shortcomings.

- Record locations of control devices and main steam traps.
- Determine system connected loads and individuals load operating parameters.
- Develop overall system operating patterns, and optional boiler sequence of control.
- Create a system model, and use it to identify bottlenecks and other shortcomings.
- Check steam velocities and pressure drops; analyze condensate removal and return effectiveness.
- Deliver an engineering evaluation with recommendations for system improvements

Merck Site Wide HVAC Energy Reduction

Borton-Lawson provided engineering services for Merck West Point Site Wide Retro-Commissioning including analysis of existing airflows/temperatures and the resulting PPCL revisions. Merck & Co., Inc. Utilities Technical Services (UTS) Group desired to use a retrospective commissioning process to identify differences between the design energy baseline and the actual performance of buildings on their West Point, PA site. The UTS group had performed this type of retrospective commissioning in other buildings on the West Point site and had identified specific methods to conserve and/or reduce energy consumption. Due to the time-intensive nature of this process, the UTS group was looking to have someone with knowledge of the BAS system work independently to perform this work in future buildings.

Borton-Lawson attended an on-site orientation and facility walk-through with the building owner and utilities personnel. Services provided included implementing Merck UTS group “best practices” spreadsheet for energy reduction by specifically looking to eliminate simultaneous heating/cooling when not needed and looking for opportunities to condition the air more intelligently (e.g. supply static pressure reset, outside air and/or discharge air temperature reset, sequencing air handlers and exhaust fans to produce the most efficient operating conditions, etc.); completing the “as-found” and “proposed” data on the Merck air flow spreadsheets for laboratories in each building; identifying mechanical issues found during course of data collection.



III. Team Experience

Thomas M. Maheady, P.E.

Principal-In-Charge, Vice President Facilities Engineering Division

EDUCATION

Bachelor of Science, Mechanical Engineering, Villanova University

PROFESSIONAL LICENSE(S)

Professional Engineer CT, GA, NJ, NY, OH, PA, UT
AEE Certified Energy Manager
US Department of Energy Qualified Steam Specialist

SUMMARY OF EXPERIENCE

Vice President of the firm Thomas M. Maheady manages the firm's Facilities Engineering Division. Working in the industry for over 24 years, he possesses extensive background in both Industrial and Private Practice environments. Mr. Maheady's experience has served to supervise quality assurance efforts throughout the entire design period. Involved in the design, coordination and final review, he has prepared bid documents for numerous Industrial, Commercial, Institutional and Governmental construction projects, and has experience working on and managing PA DGS projects since 1986.

From energy audits to district heating and cogeneration, Mr. Maheady has performed several major engineering studies in accordance with the principles of the Federal Energy Management Program. Each study has involved extensive field investigation, engineering analysis, detailed economic evaluation and formal presentation of all results. Energy audits and evaluations include a survey of all energy consuming equipment, identification of energy conservation opportunities, computer simulation of the entire facility and formal economic analysis.

Mr. Maheady holds current certification as a Certified Energy Manager designation issued by the Association of Energy Engineers.

RELEVANT PROJECT EXPERIENCE

United States Department of Energy

Energy Audits as part of the Save Energy Now program – Project Manager

Scranton State School for the Deaf, Scranton, PA

Emergency Boiler Replacement – *Project Manager*
Boiler Plant Life Cycle Cost Analysis - *Project Manager*

Selinsgrove School District, Selinsgrove, PA

Middle School Energy Audit – Project Manager

VA Medical Center

Rohrbach Library Addition - *Project Manager*

County of Luzerne

Electrical Upgrade - Project Manager
Facility Inventory & Assessment of all County-Owned Facilities - Mechanical Engineer

East Stroudsburg University, East Stroudsburg, PA

Engineering Evaluation - *Project Manager*

Clarks Summit State Hospital, Clarks Summit, PA

HVAC Projects - *Project Manager*
Newton Building – *Structural Designer*

Selinsgrove School District

Energy Evaluation - *Project Manager*



Alfred J. Speicher, Jr., P.E.

Project Manager

EDUCATION

Master of Science, Mechanical Engineering, Villanova University
Bachelor of Science, Mechanical Engineering, Penn State University

PROFESSIONAL LICENSE(S)

Professional Engineer PA
AEE Certified Energy Manager
US Department of Energy Qualified Steam Specialist

SUMMARY OF EXPERIENCE

Mr. A.J. Speicher has experience in a broad range of Direct Digital Control (DDC) and HVAC design work including project engineering/management for projects including steam, hot water, chilled water, and compressed air systems. He has managed various aspects of cGMP validated projects including Detailed Design Specifications, Site Acceptance Tests, HVAC system commissioning, and Installation and Operational Qualifications.

Mr. Speicher has designed and created AutoCAD control drawings, sequences of operation, and valve/damper schedules for Building Automation System (BAS) control systems. He has also assisted with the BAS "point-to-point" checkouts. Maintained overall project delivery and profitability.

RELEVANT PROJECT EXPERIENCE

Wyoming Seminary Master Plan Study, Hemmler Camayd, Kingston, PA

Mechanical Engineer responsible for engineering services involved in the Master Plan Study for Nesbitt Hall, Sprague Hall and the Lower School on the Wyoming Seminary campus, Kingston, PA.

Engineering Services New Manufacturing Plant, Sealy, Inc., Mountain Top, PA

Senior Mechanical Engineer responsible for the design of mechanical systems within a 210,000 SF mattress manufacturing facility. The project involved project management and design engineering services for building fit-out, equipment installation, and support system installation. Tasks included code research, equipment sizing, vendor interaction, general arrangement drawings, piping/duct work/conduit layout, technical specifications, electrical coordination, and related Civil, Architectural, and Structural design.

Line 2 Engineering Services, Sealy, Inc., Mountain Top, PA

Mechanical Engineer responsible for overall mechanical systems design, including all process utility and HVAC systems for the installation of a second production line, following closely upon the successful first six months operation of the initial line, for which Borton-Lawson had provided all engineering.

LDS Administration Building Humidifiers, Spirax Sarco, Salt Lake City, UT

Mechanical Engineer responsible for mechanical design of clean steam system, associated piping, and humidifier controls. The project re-established positive space humidification control by using a clean steam system to minimize any potential indoor air quality issues.

Cocoa Processing Facility, Hazleton, PA

Mechanical Engineer responsible for responsible for development of HVAC design approach and preparation of all HVAC construction documents.

Steam Assessment Bldg. 110, Robins Air Force Base, Warner Robins, GA

Mechanical Engineer responsible for the assessment of the steam system deficiencies that were identified in the East and West wings of Building 110 at Robbins Air Force Base, Georgia.

Merck & Company, Inc., West Point, PA

Project Manager responsible for project management utilizing a retrospective commissioning process to identify the actual energy performance of a Merck Medicinal Chemistry Building (#14), West Point, PA.



Patrick M. Walko, P.E.

Mechanical Engineer/Project Manager

EDUCATION

Bachelor of Science, Mechanical Engineering, Wilkes University, Wilkes-Barre, PA

PROFESSIONAL LICENSE(S)

Professional Engineer PA

SUMMARY OF EXPERIENCE

Mr. Patrick Walko is a Project Manager in the Industrial Division. With over ten years of engineering and project management experience, Mr. Walko is competent in the proposal management process, efficiency optimization, budget administration, and relationship management. He has managed many multi-million dollar projects for all branches of the U.S. military, as well as in Canada, Germany, Italy and Israel.

He has been a Manager of Mechanical Design Engineering, directing a staff of ten engineers and technical team members, including the planning and direction of all aspects of mechanical design engineering activities and a Manager of Rapid Response Engineering where he planned, prioritized, implemented and supervised work assignments in areas of functional responsibility.

Mr. Walko has also served as a Mechanical Engineer, designing mechanical (chilled water, etc.), combustion, HVAC, and plumbing systems. He has performed Value Engineering for the U.S. Army Corps of Engineers and is proficient with many types of computer operating systems and software including Johnson Controls METASYS, BSD Costlink, AutoCAD and ANSYS.

RELEVANT PROJECT EXPERIENCE

5M Vacuum Proctor and Gamble, Foth, Mehoopany, PA

Project Manager responsible for project management of the mechanical and structural engineering design of the 5M Vacuum at the Proctor and Gamble facility in Tunkhannock, PA.

Lexus 1.0 Karlinal Delivery System, Foth, Mehoopany, PA

Project Manager responsible for process and mechanical design.

#4 Boiler Analysis Foth, Mehoopany, PA

Project Manager Industrial Design -

6M Mezzanine Cooling, Foth, Mehoopany, PA

Project Manager responsible for mechanical design.

Engineering Services for New Manufacturing Plant, Sealy, Inc., Mountain Top, PA

Mechanical Designer responsible for mechanical design involving the building fit out and process equipment layout in an existing manufacturing facility for the first Sealy latex foam plant in the United States. Borton-Lawson was chosen to provide project management and design engineering services for building fit-out, equipment installation, and support system installation.

M1/M2 Wash Water P & ID's, CertainTeed Corporation, Mountain Top, PA

Structural Designer responsible for the preparation of P&ID's for M1/M2 Wash Water System at CertainTeed's Mountain Top facility.

Mechanical Designer responsible for mechanical design. The project involved the building fit out and process equipment layout in an existing manufacturing facility for the first Sealy latex foam plant in the United States. Borton-Lawson was chosen to provide project management and design engineering services for building fit-out, equipment installation, and support system installation. Tasks included code research, equipment sizing, vendor interaction, general arrangement drawings, piping/duct work/conduit layout, technical specifications, electrical coordination, and related Civil, Architectural, and Structural design. Total project cost was \$8 million.



David T. Summers

Director of Automation Services

EDUCATION

SUMMARY OF EXPERIENCE

RELEVANT PROJECT EXPERIENCE

Bachelor of Electronics Technology, Electronic Engineering Technology, Durham College, Ontario, Canada

Director of Automation Services, David T. Summers possesses design and startup experience in all areas of automation and control. His experience includes control/drive panel design, control system design, operator interface, PLC and SCADA programming and cost estimating. He has extensive experience with controlling stand alone machines, press systems, handling equipment and process lines.

Serving as Onsite Electrical Supervisor for multi-million dollar projects, Mr. Summers has been involved in all aspects of commissioning various size control systems. He also has exceptional working knowledge of mechanical systems, hydraulics and pneumatics.

sanofi pasteur, Swiftwater, PA

Project Manager/Designer/Programmer responsible for designing new electrical panels and developing schematics, solicit new panel build and installation pricing from vendors and contractors for Labwatch / Facility Monitoring System.

sanofi Pasteur, Swiftwater, PA

Project Manager/Designer/Programmer responsible for programming Allen-Bradley SLC5/05 PLC and PanelView HMI to control the heating and cooling cycles on a process fermenter. Developed the URS, FRS, DDS, and Loop Check documents adhering to GAMP standards.

Wyoming Valley Pump Station Project, U.S. Army Corps of Engineer

Designer / Programmer responsible for designing a fully automatic PLC and SCADA system to control thirteen storm water stations located on the Wyoming Valley levee system.

Perstorp, Sweden

Laminate Press and High Speed Material Handling - *Project Manager / Designer / Programmer*
Siemens PLC

PolyHi Solidur

Process Line for Plastic Pressing and Mold/Material Handling - *Project Manager / Designer / Programmer*
AB PLC 5 and SCADA

Resopal GMBH, Germany

High Speed Laminate Press Line - *Project Manager / Designer / Programmer*
Siemens PLC/SCADA

Chamberlain Manufacturing

Furnace PLC/SCADA System - *Designer / Programmer*
AB SLC 5/05 and RSVIEW 32

General Dynamics

Land Systems Holcroft Furnace PLC SCADA - *Project Manager / Designer / Programmer*
AB PLC 5 and RSVIEW 32

Meshoppen Borough, Meshoppen, PA

Designer / Programmer responsible for designing two Allen Bradley PLC control systems in a master/slave role. The master PLC system was designed to monitor elevated tank level and pressures.



William J. McFarland, P.E., LEED-AP

Director, Electrical Engineering Services

EDUCATION

Bachelor of Science, Electrical Engineering, Manhattan College
Master of Science, Electrical Engineering, Manhattan College
Master of Science, Business Administration, Marist College
Certificate, Facilities Management Administrator, Building Owners & Managers Institute
Certificate, Real Property Administrator, Building Owners & Managers Institute

PROFESSIONAL LICENSE(S)

Professional Engineer NY, PA
Leadership in Energy and Environmental Design
IEEE Senior Fellow

SUMMARY OF EXPERIENCE

Mr. William McFarland is Director of Electrical Engineering for Borton-Lawson. He has over 20 years electrical engineering experience in design of electrical distribution systems with a focus on power quality engineering services for large industrial and commercial customers.

Mr. McFarland has RPA (Real Property Administrator) and FMA (Facilities Management Administrator) certification from the Building Owners and Managers Institute, as well as his LEED Professional Accreditation (LEED-AP) with experience in sustainable site development and green building design practices. He has served as Building/Facilities Manager for major corporations where he designed and implemented construction projects to increase data center capacity; increased reliability of all systems including UPS, battery, generator, cooling towers; managed in-house resources responsible for engineering and maintenance, space planning, help desk operations, distribution services, development and implementation of 'Green' polices and compliance to government regulations.

He served as capital project manager for replacement of a fire alarm system with a \$3.1 million budget, modernization of an elevator system with a \$3.5 million budget, and facade restoration with a \$1.6 million budget; handled interior electrical and mechanical construction of a 790,000 sq ft of owned and leased space, as well as mechanical, electrical, fire, relocation and furniture support for renovation of a facility with a \$42 million budget.

RELEVANT PROJECT EXPERIENCE

District-wide Facility Study Northwest Area School District, Shickshinny, PA

Electrical Engineer for the District-wide Facility Study providing the information necessary for the School Board to decide what, if any construction, addition, renovation or alterations should occur in the Northwest Area School District.

Building 9 Breathable Compressed Air, Ameresco Select, Inc., Tobyhanna Army Depot, Tobyhanna, PA

Electrical Engineer for the design of a new structure, mechanical piping and electrical for a new breathable compressed air system in Building #9.

Infrastructure Improvements, Geisinger Health System Services, Wilkes-Barre, PA

Electrical Engineer for project involving the site design of overall infrastructure improvements including a new 221-car parking lot, modifications to the hospital entrance drives, and miscellaneous stormwater improvements.

Wyoming Seminary Study, Hemmler & Camayd, Kingston, PA

Project Manager responsible for the Master Plan Study for Sprague Hall, Nesbitt Hall, and the Lower School.

Valley Crest Nursing Home, Wilkes-Barre, PA

Electrical Engineer for the design of a 180 bed nursing home.

