



GETTING TO “YES” FOR ENERGY EFFICIENCY



CASE STUDY:

WESTMINSTER RIDING CLUB



How a Historic Maryland Social Club Overcame Hurdles to Harness Energy Efficiency

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INTRODUCTION

Westminster Riding Club was established in 1934 as a social center for residents of Carroll County, Maryland, to share their collective interests in horses, riding, and equestrian competitions. Over time, it evolved into a community landmark that offered its members swimming, recreation and sports, and a homey clubhouse fitted with a commercial kitchen and an event hall for hosting banquets, dances, and receptions. Most days, the energy use in the facilities is relatively low. But when Westminster Riding Club hosts a wedding with hundreds of attendees, the demand for energy for heating, cooling, cooking, and refrigeration spikes dramatically, straining systems and causing stress for staff responsible for making guests comfortable and events memorable.

In early 2012, Westminster Riding Club general manager Barbara Norman learned that the facility’s heating and cooling systems would require extensive—and expensive—repairs. Some limited, short-term repairs were ordered, but, given that the broken systems were already 35-years old, Ms. Norman began exploring options for installing new systems. She started by gathering quotes from trusted local contractors and researching online the availability of utility rebates and state grants. She was also taking her first steps along the way of becoming the Westminster Riding Club’s energy efficiency “Champion.”

At first, with a natural emphasis on controlling costs, Ms. Norman aimed to limit improvements to only those systems in more immediate need of repair. But as the project advanced, it became clear that opportunities to leverage more varied and interdependent measures would generate greater savings and provide more value for the investment. Soon Ms. Norman was consulting with heating, ventilation, and air conditioning (HVAC) and lighting contractors, utility Baltimore Gas and Electric (BGE), and the Maryland Energy Administration (MEA) to develop a comprehensive project. All that remained was permission to make the investment from the Westminster Riding Club's board of directors. "Everybody owns this," said Ms. Norman. "We can't let it deteriorate." The club's membership would benefit from energy efficiency improvement, she argued, and also a motivation to be good stewards of the environment. The board agreed, and Ms. Norman moved forward with the project motivated by a need for reliable systems, the promise of savings, and an interest in preserving the club and its place in the environment for future members.

PREPARING FOR SUCCESS

Build a Team

One of the first realizations most energy efficiency champions experience is that it is much easier to implement a project with the support of others who can contribute authority, resources, and expertise. Ms. Norman's support team took shape over time and included local HVAC contractors, BGE representatives, interested board members, and eventually the MEA energy finance program manager. By the time the project was implemented, it expanded further to involve an engineering consultant from MEA, the property's mortgage holder, and the club's legal counsel.

Language of Audience

Making arguments is like giving a speech: a Champion must know her audience and adjust her message accordingly. Ms. Norman assembled quotes from contractors and the results of a walkthrough assessment with an engineering consultant to make a compelling case. She ensured that the Westminster Riding Club's board members understood that energy efficiency was both a path to more reliable heating and cooling systems that are critical to serving clients and a means to reduce expenses that were previously beyond their ability to manage. Using the monthly "Horsetails" newsletter, Ms. Norman also made the club's membership aware of the environmental and conservation benefits that would result from more efficient systems and equipment.

Cost of Delay

After realizing the state of the Westminster Riding Club's HVAC system, Ms. Norman's chief and immediate worry was the system crashing and inconveniencing clients renting the facility for their events. Every delay would have four consequences:

1. possibly losing business from events held in the banquet space,
2. an increased likelihood of a system breakdown as failing systems are pressed into longer service,
3. costly and wasteful repairs to systems that would eventually be replaced, and
4. a longer wait until cost savings are realized.

These time-sensitive factors were at odds with the process of developing the project, including bundling measures to meet internal and financial payback requirements. This time conflict was mitigated to some degree by having a champion managing the effort from the middle, prioritizing and pushing the project forward all the while.

Project-Process Alignment

“If you think this is in your future, get started,” advised Ms. Norman. “Have that energy assessment.” The most difficult thing to manage during the Westminster Riding Club project implementation was time. The first measures implemented, even before the systems needed extensive repair, were programmable thermostats. The project scope expanded because of opportunities to leverage measures and programs to maximize savings, eventually encompassing HVAC equipment, internal and external lighting, and controls. Ms. Norman managed the unexpected challenge of scheduling the time it took to identify measures, hire contractors, apply for rebates, secure financing (and seek advice from counsel and permission from the board), and finally implement the project. Each step required its own timeline and process, requiring in many cases resources from Ms. Norman’s support team.

CLEARING THE HURDLES

Some hurdles are more imposing and difficult to overcome than others. For Ms. Norman, the Westminster Riding Club’s energy efficiency champion, the hurdles were related to beginning the process of implementing a project, evaluating systems and energy efficiency opportunities, and scoping the project to maximize the investment and leverage available rebates and financing. Ms. Norman’s strong internal support team, including the board and club members, was critical to her success. External support came from BGE, MEA, and project contractors.



“Where Do We Start?”

Old equipment and interdependent systems led to confusion that required a walkthrough assessment with an energy consultant and the lead contractor.

UNDERSTANDING THE HURDLE

Ms. Norman knew she had a problem that could affect Westminster Riding Club’s members and clients. She even knew that some amount of repair to the HVAC system would be necessary and perhaps followed with a replacement. But she soon discovered that focusing too closely on a particular system, and not viewing the building as a whole, was hiding other improvements that would improve the performance and efficiency of the HVAC installation and generate savings that would lead to overall lower energy costs. Simply put: it is not easy to know where to start when you only see part of the problem.

PREPARING FOR THE RACE

At first, Ms. Norman did not have enough knowledge of the energy use at Westminster Riding Club. As she proceeded, she found that without a building-wide perspective of systems and energy use it was difficult to access the full range of utility rebates and qualify for low-interest financing from MEA. The most important step Ms. Norman took was to make time for a walkthrough assessment with an energy consultant provided by MEA and the lead HVAC contractor.

Once the assessment was complete, she knew the full range of options available and opportunities for savings. She was also able to bundle extremely cost-effective measures such as light-emitting diode (LED) fixtures that qualified for generous rebates from BGE with improvements to the HVAC system. Ms. Norman found that expanding the project’s scope and qualifying for more incentives meant greater savings and, ultimately, a degree of cost-effectiveness that qualified for MEA’s financing.

STRATEGIES AND TOOLS

Challenge: Lack of Understanding of Building Systems

- Contact your state energy office and utility
- Hire an energy auditor

Challenge: Timeliness and Seasonality

- Hire an energy auditor
- Learn which fuels your building consumes
- Recommend efficiency projects at opportune times

Common Strategies and Tools

- Create a baseline of your energy use



“We Don’t Have the Technical Expertise”
Utility and other public-sector resources are available...if you ask for assistance.

UNDERSTANDING THE HURDLE

Because Westminster Riding Club is an important social center in Carroll County, Ms. Norman knew many local contractors who were members or clients. But hiring contractors is not the same challenge as managing an energy efficiency project. Projects must be scheduled around weather and events so members and clients are not inconvenienced. And the interdependence of building systems requires a Champion to manage contractors and ensuring that projects are implemented in the proper order to maximize savings.

PREPARING FOR THE RACE

Ms. Norman’s online research led her to the right resources. Ms. Norman contacted BGE and MEA and found that experienced experts were available to assist with the evaluation of efficiency projects and provide advice and some project support. Ms. Norman assembled quotes from HVAC and other contractors but was confused where to begin, especially with respect to accessing utility rebates and financing from MEA. After sharing her situation with MEA, she agreed to a walkthrough energy assessment with an energy consultant and the lead HVAC contractor. With a baseline in hand and the full range of options, she ordered her contractors to implement measures according to a schedule that worked for Westminster Riding Club’s members and clients.

STRATEGIES AND TOOLS

Challenge: Lack of Technical Expertise

- Contact your state energy office and utility
- Hire an energy auditor

Challenge: Difficulty Verifying Benefits

- Recommend efficiency projects at opportune times
- Create a baseline of your energy use



“We Can’t Afford It.”

Thinking beyond basic repairs and replacements, wise investments in cost-effective energy efficiency can be managed to ensure savings are greater than costs.

UNDERSTANDING THE HURDLE

When the Westminster Riding Club HVAC system began to fail, Ms. Norman knew there would be a cost to repair and replace equipment to keep the facilities in operation. As she grew in her role as energy efficiency Champion, she used the information provided by the energy assessment to develop a more holistic project that would provide updates to critical systems and maximize cost-effective improvements to generate savings in excess of project costs.

PREPARING FOR THE RACE

In one important way, Ms. Norman’s arguments in favor of energy efficiency were easier to make than might the case for other organizations: Westminster Riding Club’s HVAC system required repairs and replacement equipment in order to conduct its business. The status quo—i.e., having a broken HVAC system—was unsustainable. This meant that Ms. Norman was not attempting to persuade others to invest in energy efficiency at Westminster Riding Club as an alternative to doing nothing with existing systems.

As general manager, Ms. Norman was concerned with the overall finances at Westminster Riding Club and not simply the specifics of the energy efficiency project. She worked closely with MEA to complete an application and the necessary loan documents to secure low-interest financing from the Jane E. Lawton Conservation Loan Program. MEA was willing to accept a security interest in the installed equipment as collateral, which is a common accommodation that lenders specializing in energy efficiency financing are frequently willing to entertain. Ms. Norman also coordinated an adjustment of the Westminster Riding Club’s mortgage, which made more cash available on a monthly basis to pay for the new loan for the energy efficiency improvement.

Following the completion of the walkthrough energy assessment, Ms. Norman was instead preparing arguments in favor of different amounts of energy efficiency. She was able to make informed recommendations because she knew the baseline energy usage at Westminster Riding Club as well as how BGE rebates and low-interest financing from MEA could be applied to manage costs and maximize savings. Ms. Norman recommended the best course of action for Westminster Riding Club from several choices following careful consideration, which is about all an energy efficiency Champion can ask for.

STRATEGIES AND TOOLS

Challenge: “It Costs Too Much”

- Finance and structure the project so finance costs are less than savings

Challenge: Debt Ceilings

- Attempt to renegotiate restrictive covenants
- Portray financing as a means to a better result

Challenge: Creditworthiness

- Seek a specialty lender willing to lend against cash flow
- Suggest pledging unencumbered collateral

Common Strategies and Tools

- Apply for state or local government grant funding
- Research utility, state, or local government efficiency financing options

ENERGY AND COST BENEFITS FROM IMPROVEMENTS

Following the walkthrough energy assessment, Ms. Norman had several potential measures to select and combine into a project. The best balance between costs and savings resulted in a project that included: demand control ventilation (DCV) and carbon dioxide sensors, boiler hot water temperature resets, domestic hot water tank timer, kitchen make-up air unit, and walk-in refrigerator condenser unit relocation. Annual total project cost savings were estimated to be over \$7,600.

	Electric		Fuel Oil		Combined
	kWh Savings	\$ Savings	Gal. Savings	\$ Savings	\$ Savings
Annual Estimated Savings	45,515	\$5,486.06	176.7	\$2,155.37	\$7,641.43

MEA’s Lawton Loan Program requires projects to achieve a simple payback of no more than 10 years. Before the walkthrough energy assessment, the project would not meet that requirement. The attractiveness of MEA’s financing pushed the project to become broader and deeper, including more cost-effective measures, in order to qualify. BGE’s rebates (about 10% of total project cost) reduced the amount of financing ultimately required to implement the project.

	Total
Project Cost	\$66,785.43
Project Savings	\$7,641.43
Project Payback Period	8.7 Yrs.
Utility Rebates	\$6,308.34

LESSONS FOR OTHER CHAMPIONS

Ms. Norman is an inspiration for energy efficiency Champions everywhere. She began as many start, with a need to “do something” about a broken HVAC systems but little information about how to embrace energy efficiency. She assembled a support team and educated herself about options and learned some building science. Her research led her to explore financing from MEA and eventually an energy consultant qualified to perform a walkthrough assessment. She succeeded in overcoming each hurdles to project implementation. Today, Westminster Riding Club benefits from lower energy bills, improved comfort for members and clients, more reliable critical systems, and a more sustainable footprint.

Some lessons from Ms. Norman’s experience for other aspiring energy efficiency Champions:

- *Get started with an audit.* Once a Champion is given a mandate to pursue energy efficiency, the first step should be an energy assessment or audit. The local utility or state energy office is a good point of reference.
- *Know your range of options.* Get to know the building systems in the facilities that need improvement. Think about the interdependency of critical systems (e.g., how interior lighting affects HVAC systems).
- *Research incentives.* Become familiar with available resources and how to leverage rebates and financing.
- *Plan ahead.* Thoughtful planning can save time and help Champions avoid frustration and delays. A Champion’s support team can be a valuable resource when plotting a project’s implementation.
- *Projects have timelines that have to be accommodated.* Understand how seasonality might affect project timing. Consider time when requesting quotes from contractors and applying for rebates and financing.
- *Advertise success.* Champions are critical to project success. It is okay to let stakeholders know how energy efficiency is affecting the organization’s bottom line or helping meet sustainability goals. (Go ahead: take some credit, Champion!)