

# Energy News

## Big Energy Savings Await Beer Distributors

*Murphy Co. and Holleran Duitsman Architects Tap Tax Incentives to Improve Wholesaler Profitability*

**B**eer distributors with facilities of nearly any age can save tens of thousands of dollars annually by reducing the energy demands of their refrigeration, HVAC (heating, ventilation and air conditioning), and lighting systems.

Now there's extra motivation to act on that savings potential. **Until Dec. 31, 2009**, the federal government is offering a tax deduction of up to **\$1.80 per square foot** for improving the energy efficiency of an existing commercial building or designing high efficiency into new buildings. The deduction is highest for companies achieving total annual energy savings that are 50 percent more efficient than standards set by the American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE).

**Holleran Duitsman Architects (HDA)** and **Murphy Co. Mechanical Contractors & Engineers**, both based in St. Louis, are leading the way for beer distributors to qualify for the tax savings and long-term operational advantages of energy efficiency.

"Most beer distributors don't realize these savings are available," says **Mark Bengard**, P.E., senior

vice president of design/build for Murphy Co., which has worked with HDA on scores of projects in every region of the country for nearly two decades. "The potential savings are significant because beer distribution facilities operate 24 hours a day and have substantial refrigeration and cooling loads."

### Government and Utility Incentives in Place

"We help beer wholesalers identify and qualify for the array of incentives available," Bengard notes. "Our goal is to drive costs out of wholesaler operations to generate higher profits for our clients while continuing to meet their performance requirements."

Tax deduction eligibility requires that energy efficient systems be placed in service within commercial properties between Jan. 1, 2006 and Dec. 31, 2009. They must be **certified by a qualified third party**, such as a Murphy engineer, to verify the installation meets particular

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*At College City Beverage, Murphy and HDA evaluated four systems to heighten operational savings. Using Minnesota's cold winter temperatures to meet winter cooling needs and other innovations, Murphy's design will save the owner \$40,000 in HVAC costs. Energy savings, tax incentives and utility incentives exceeding \$62,000 create a two-year payback for the owner.*

*Murphy designed a chilled water system using three 250-ton chillers at the Silver Eagle corporate headquarters and distribution center in Houston to generate 30% energy savings compared with a conventional refrigeration system, and saving \$306,000 annually in energy costs.*



requirements for the tax deduction. The deduction covers both improvements and new installations for heating, cooling, ventilation and hot water systems as well as interior lighting systems and the building envelope.

Beer distributors nationally can take advantage of Murphy's understanding of the tax code

The business decision for energy efficiency is more compelling than ever:

- ✓ **Current tax incentives at the federal and state levels.**
- ✓ **Rising utility costs.**
- ✓ **Availability of utility rebates for energy studies and retrofits.**
- ✓ **Uncertainties about power availability.**

requirements as well the complex calculations, methodologies and tools required to qualify for the savings. A key indicator of Murphy's capabilities is its designation as an **EnergyStar Partner** by the U.S. Department of Energy and the U.S. Environmental Protection Agency.

Additional incentives are available from state governments, many of which are substantial. Electric utilities in a number of states, seeking to avoid the cost of constructing new power plants by reducing power loads and peak demand, offer rebates for energy studies and program implementation totaling tens of thousands of dollars.

"The refrigeration and cooling challenges faced

by beer distributors are truly unique. Every container of beer coming in is like a little furnace that must be cooled to specified temperatures within 24 hours. That requires some oomph in the mechanical systems and efficiencies in the building envelope and lighting," describes **Jack Holleran**, president of HDA, whose experience encompasses more than 60 beer wholesalers. "The more efficiency we can achieve, the greater impact we can deliver to distributors' bottom line."

## Step-by-Step Savings

Murphy Co. and HDA work together to assess potential savings, armed with the expertise they've developed on beer distribution facilities over the last two decades. To deliver creative and practical energy-saving solutions, Murphy taps the expertise of its 30-plus industrial, HVAC and energy engineers plus its vast in-house construction, temperature controls and service experience.

Murphy begins its work with a complimentary **Energy Screening** to gather utility data and basic building facts. Within a few days, Murphy applies this wholesaler-provided data to create a building profile and benchmark the facility's energy efficiency against other refrigeration distribution centers nationwide. Murphy provides an assessment of energy savings potential and its

recommendation on whether it is worthwhile to contract with Murphy for the next step, an **Energy Audit**.

Murphy's Energy Audit begins with a site visit at which interviews are conducted with the facility owners and managers. In addition, all building systems and equipment are inspected and further operational details are gathered. A more complete assessment of power demands and costs, equipment, layout, lighting and building skin is developed. "We then quantify all energy savings opportunities and costs and identify available tax deductions and rebates," says Murphy Engineer **Joe Krewson, P.E.** "Our Energy Audit can be completed in full within four to six weeks. Once the owner makes a decision to move forward with our recommendations, completion and commissioning of the retrofit take two to four months."

The analysis is complex because beer distribution facilities consist of several space "types," including the draught cooler, the beer warehouse, offices, and the drive-through loading area. Operations span two to three shifts, each with different environmental factors in play. "By far, refrigeration is the greatest energy hog and wholesalers must meet the stringent requirements of brewers," notes Bengard.

"We're always looking for ways to save the owner money, meet operational requirements and earn a referral through outstanding results," Krewson says. "We take that initial data and perform an analysis of various solutions, using special software to model the potential savings for different systems and equipment with real-time data to calculate investment, savings and return on investment."

Because Murphy takes a holistic approach and is staffed by engineering, construction, temperature controls, service and maintenance staff, the firm is uniquely qualified to provide valuable and practical solutions to counter fast-rising energy costs and to reduce energy demands.

Krewson describes a commonplace finding: oversized equipment. He explains, "If we can achieve the required performance with lower tonnage, we create substantial savings – both on the initial investment and in long-term operating costs."

While refrigeration is the most significant energy drain for beer wholesalers, Murphy and HDA consider all building components. For instance, reduced lighting loads will decrease mechanical loads as well.

Holleran notes a key differentiator. "As a team, we can work smarter for our beer distributor clients because we know the unique demands. If a distributor takes their needs to a local contractor or architect, they'll get whatever approach is commonplace in their local market," he reports. "We have a unique expertise to bring to this work based on our knowledge and experience and can share the experiences we have had nationwide."

## Compelling Paybacks

On a recent 153,000-square-foot project for **College City Beverage** in southern Minnesota, Murphy and HDA evaluated four systems to heighten operational savings. Murphy developed a solution that used Minnesota's cold winter temperatures to meet winter cooling needs, and moved equipment from its normal rooftop location to reduce structural load and make it more accessible for year-round service maintenance. HDA designed a building skin and roof with insulation that exceeded code requirements. A fluorescent lighting system with sensors further reduced loads.

"Our mechanical system for the warehouse alone will save the owner \$40,000 a year in HVAC costs compared with the one proposed by another contractor, and that's before factoring for inflation," Krewson says. "We also applied for local utility incentives and obtained more than \$62,000 in

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*Jack Holleran  
HDA Architects*



*Murphy integrates mechanical systems, building envelope and lighting systems to achieve high returns on beer distributor investments aimed at reducing total energy costs. These ceiling-mounted aircoil evaporators are part of a warehouse cooling system.*

**Roof-mounted cooling towers complete the energy-efficient chilled water system. Murphy's energy services encompass the mechanical, refrigeration and lighting systems as well as the building envelope, in coordination with HDA.**



extra savings for the owner. Our client will recoup his investment in about two years.”

College City Beverage President **Christopher Sawyer** adds, “When the Murphy-HDA team told me they could save us that kind of money, I was happy with the significant annual utility savings and the quick two-year payback. On top of that, we’re getting a closed-loop system for our drive-

through truck wash. The filtration system lets us clean the water and reuse it to gain savings and improve our environment.”

At **Silver Eagle** in Houston, HDA and Murphy partnered on a new 356,000-square-foot corporate headquarters and distribution center. The chilled water system designed by Murphy generates an energy savings of about 30% compared with a conventional refrigeration system, equating to a \$306,000 annual utility cost savings.

“Our in-depth knowledge of how load profiles work helps us strategize how and where we can help clients save energy,” Krewson

notes. “At Silver Eagle, the chilled water system we designed cools the entire building from a single central plant. In Houston, the warehouse’s energy load peaks each spring and fall, then drops in the summer. This lets us use the central plant’s system capacity to cool the office space, even when it reaches 100°F and higher outside.”

Krewson adds, “Our system design located all the equipment in one centralized room tied into a building automation system. That generated substantial energy savings versus a dozen condensing units operating independently. This contributed to roof structure savings because we kept multiple units off the roof, and we created a more streamlined building appearance.”

## **Energy Efficiency Is Good Business**

A June 2004 study of energy management in the commercial property sector by Innovest Strategic Value Advisors found that businesses focused on energy management achieved 34 percent better stock market and financial performance over the prior two years. The difference was tied to added revenue from reduced energy costs and higher property value. They also benefited from increased appeal to socially responsible investors and an enhanced image as a well-managed company.

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Murphy and HDA are ready to help.



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