



## A Cooler Warehouse Design

Jack Holleran

In today's business environment where organizations stretch resources to maintain profitability and secure sustainability, doing more with less is the common mantra. That is no different for the beer wholesaler, faced with many challenges to consider, including an ever-changing list of brewery temperature requirements for new products. But what does this mean to the warehouse HVAC system? Should domestic beer, craft beer, wine, soda and water all be stored at the same temperature? Should you keep those products not requiring storage in a controlled environment warehouse (CEW) in the same space needlessly consuming energy? Does the cost of separating these spaces outweigh the benefit of energy savings?


Recently, Anheuser-Busch raised its temperature requirements in its CEWs. The increase has allowed the A-B wholesaler to capitalize on energy savings due to the fact that its equipment is not cycling as often, but these savings could be compounded by taking a closer look at the overall cooling system. Lower set points require more refrigeration capacity, and with those set points raised, or relaxed, the need for refrigeration becomes less necessary. Too much capacity can cause the equipment to short-cycle, a condition that is unhealthy for the components and adds to increased power demand and respective costs.

Comparatively, Miller wholesalers also are evaluating methods to make cooling more economical. In air-conditioned buildings, supply fan energy can be reduced with a tuned-up control strategy and the use of high volume, low-speed fans to stir the air.

Most wholesalers today are operating with equipment that is near or past its useful life. Typically this equipment uses R-22 refrigerant, which is being phased out by the EPA. It's still possible to replace this equipment with identical units, but the equipment currently installed is sized for requirements that are just as old as the equipment. Taking a step back to evaluate the life of existing systems and determine cost benefit analysis on replacement costs vs. energy savings is well warranted. Depending on the utility companies in your local area, certain incentives may be available for upgrading.

One misconception is that more is better when it pertains to a building's insulation system. While it is true that adding insulation where none exists will pay an energy dividend in a short time, doubling insulation where insulation already exists does not have as favorable a return. We would recommend a complete building energy study be provided to identify areas for improvement. This study would encompass building envelope, lighting and mechanical systems.

Del Papa Distributing in Galveston, Texas recently completed a new building where options on HVAC, building envelope and lighting systems were modeled and presented. The project was designed by my firm, HDA Architects, a specialist in working with beverage wholesalers on facility needs. Examples of the energy savings systems installed include high-efficiency lighting with automatic lighting controls, chilled water cooling, water cooled refrigeration, and a white roof assembly to reflect the heat from the roof. They saw a payback on these in less than five years.

No two warehouse facilities are the same. Location, product storage requirements, building design and product mix all play a large role in identifying the right approach to capitalize on energy savings opportunities. 

*Jack Holleran is president of HDA Architects. He can be reached at 636.449.2450 and [jholleran@hdai.com](mailto:jholleran@hdai.com).*



hda  
architects  
[www.hdai.com](http://www.hdai.com)