

# in the Loop

## State House Square: A model of style, efficiency and convenience

The juxtaposition is striking. State House Square, built in 1987, sits just hundreds of yards from the Old State House, built nearly 200 years before. Yet both are very much a part of the Hartford we know today. With a nearly 95 percent occupancy rate, State House Square is one of downtown Hartford's premier office buildings and has been using steam and chilled water from Hartford Steam for its entire 20-year history.

The 845,000-sq-ft structure comprises two 14-story towers and integrates a 1920s-era building seamlessly into its design. Featuring a granite and marble façade, State House Square is home to such prominent tenants as St. Paul Travelers; Pullman & Comely; Hilb, Rogal & Hamilton Co.; Aeltus; ING; North American Insurance; UBS Financial Services; Edwards & Angell; and Dechert LLC.

"Running a Class A office building means meeting and surpassing tenant needs 24 hours a day," says David M. Jakubowski, general manager at State House Square. "So we always try to stay ahead of the curve to ensure their satisfaction. Steam and chilled water are an important part of tenant comfort. We know Hartford Steam service is available year-round, round-the-clock. So we don't have to worry about firing up chillers during unusually warm days in February. Hartford Steam does that for us and gives us what we need, so we have confidence when it comes to building temperature control."

Harbor Group International, which manages the building, continues to strive for improvements and efficiencies. Between 2003 and 2006, Harbor Group invested about

\$250,000 to help reduce electricity use. And it worked, as the building reduced its electrical consumption by 14 percent. A major focus was on lighting because "that is one of the fastest ways to become more energy efficient," said Jakubowski in a *Hartford Courant* article in August 2006. Even the 450 exit signs saw a change, as their 20-watt bulbs were switched to two-watt LED bulbs that use less power.

Located at Main and Market streets, State House Square is not just efficient, it is also extremely convenient, featuring a 444-space parking garage, a full food court, Wi-Fi service and a 48,000-sq-ft health club complete with indoor track, swimming pool, sauna and more.

State-Market Hartford, LLC, a joint venture between FBE Limited and Cammeby's International Ltd., purchased the building from Harbor Goup in March 2007.

Hartford Steam is pleased to be of continued service to State House Square, an integral part of the Hartford community.

## The Intelligent Use of Energy: Cut heat losses with insulation

*Richard R. Vaillencourt, PE, Canterbury Engineering Associates LLC*

*Editor's Note: This is the fourth in a series of articles on intelligent energy use in buildings by consulting engineer Richard Vaillencourt. The article also appears in full on Hartford Steam's Web site at [www.hartfordsteam.com/articles/intelligent4.htm](http://www.hartfordsteam.com/articles/intelligent4.htm). Previous articles also are available. We hope you'll find them helpful as you work to optimize your building's energy use.*

Insulation is the least expensive but most important part of your energy equipment. Unfortunately, it is also often the most ignored. Any money spent on energy that doesn't get to where it is supposed to go is wasted. Anytime the energy that you bought doesn't hang around, but quickly exits the building, you are spending more money than you need to.

Paradoxically, insulation does not stop heat flow! But it does present a major restriction to the flow of heat. No matter how much insulation is in place, heat will always be lost. If lost heat isn't replaced by your heating system, the inside temperature eventually will equal the outside temperature. The temperature will remain constant only if you replace energy in the space as fast as it is lost. Having insulation slows the rate of energy losses and therefore the rate at which energy needs to be replaced. Your goal should be to lose the least amount of energy possible over time.

The most important thickness of insulation is the first inch. Adding a covering of 1-inch-thick fiberglass insulation to a bare steam pipe will have an amazing effect on heat loss. A bare 4-inch pipe carrying 15 psig steam at 250 degrees F will lose about 530 Btu per hour per linear foot. Add just 1-inch-thick fiberglass pipe insulation, and the heat loss drops to 57 Btu/hr per linear foot. This is a heat loss reduction of



Courtesy: State House Square.

**State House Square, one of the largest office buildings in downtown Hartford, also features two floors of retail, which include the famous Morton's Steakhouse, two full-service banks, a wine shop, a tailor and the U.S. Post Office.**

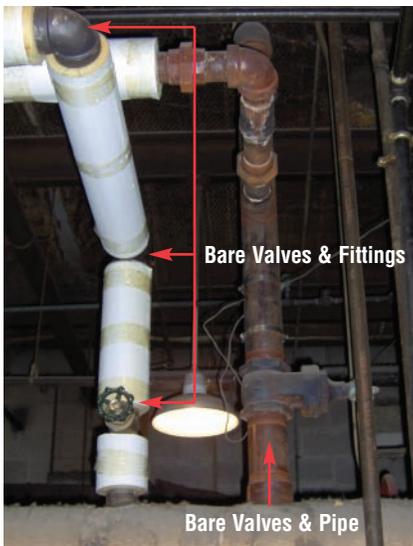
473 Btu/hr per linear foot – or close to 90 percent. Adding a second inch of thickness will bring the heat loss down by only 20 more Btu/hr per linear foot to approximately 37 Btu/hr per linear foot.

Insulation is equally effective on flat surfaces. If the temperature is 70 F on one side of a wall and 0 F on the other, a wall without insulation will lose approximately 117 Btu per hour per square foot. Adding 3.5 inches of fiberglass insulation (R-11) will reduce that heat loss by about 95 percent down to only 6 Btu/hr per square foot. Adding an additional 2 inches to R-19 will bring the heat loss down by only 2.5 more Btu/hr per square foot to about 3.5 Btu/hr per square foot.

These examples should bring home two truths about insulation:

- Always insulate.
- If you can only afford to use thin insulation, do it.

Straight pipes are the easiest and cheapest to insulate. But don't just insulate the pipes: insulate all the fittings, valves, etc. (except steam traps). The irregular shapes of fittings and valves dramatically increase the heat losses. As a rule of thumb, the heat loss from a 4-inch valve will be two to three times greater than that from one foot of 4-inch pipe.



**Insulating bare piping, valves and fittings is a prime opportunity for energy and cost savings.**

In the past, insulating fittings was a very expensive thing to do. The insulation was custom-made from rigid, castable insulation for each valve or fitting. This made the insulation hard to remove when maintenance was required on the fittings and easily damaged every time it was handled. The current practice is to purchase a blanket that is very flexible, durable and wire-tied around the valve or fitting and is easy to remove and reinstall.

Once insulation is in place, there is almost no maintenance involved. All that is necessary is to protect it from damage. Insulation works by creating multiple layers of air spaces. These air spaces can be lost if crushed or filled with water.

In the past, insulating fittings was a very expensive thing to do. The insulation was custom-made from rigid, castable insulation for each valve or fitting. This made the insulation hard to remove when maintenance was required on the fittings and easily damaged every time it was

Do not let anyone walk on insulation – whether on pipes, ducts or just in the ceiling. If the insulation gets wet from roof or pipe leaks, it is virtually useless and must be replaced.

So the bottom line is insulate. No matter what you do, it is going to make a difference.

### Winter in Connecticut.

January averages 12.3 inches of snowfall. It can also mean temperature swings. On Jan. 16, 1995, the temperature hit a record high 62 degrees F. The record low for that date is -8 F!

*Courtesy Connecticut Department of Environmental Protection.*

### We Can All Do OneThing.

Mark your calendar now for Oct. 10-12, 2008, and plan to attend the OneThing Expo at the Connecticut Convention Center. The OneThing Expo is based on the concept that Connecticut residents can conserve energy – and make a difference every day – by doing just OneThing. The Connecticut Convention Center will be filled with a million OneThings, giving individuals, businesses and families a socially conscious experience that is stimulating and imaginative. For more on the OneThing campaign, go to [www.onethingct.com](http://www.onethingct.com).

### A Virtual Tour of Hartford Steam Customers.

Curious about which other buildings use steam or chilled water from Hartford Steam Company? Go to [www.hartfordsteam.com/customers](http://www.hartfordsteam.com/customers) and check out the many government, museum, schools, office buildings and more that are on our system.

Even on the coldest winter day, may your heart be warmed with thoughts of friends, family and the hope the new year brings.



♻️ Printed on recycled paper that includes 100% post-consumer fiber.

[www.hartfordsteam.com](http://www.hartfordsteam.com)

For information, call (860) 548-7348.  
Emergency? Call (860) 725-7005.

*In the Loop* is a publication of The Hartford Steam Co.

60 Columbus Boulevard  
Hartford, CT 06103-2805