

# 100 IN THE LOOP

A PUBLICATION OF THE HARTFORD STEAM COMPANY

## HARTFORD STEAM: JUST THE FACTS

**Two systems:** Downtown and South End

**No. of customers:** 47

**No. of plants:** 4 (including new 1.4 MW fuel cell plant)

**No. of chillers:** 12 chillers (31,880 tons) plus one 2.1 million-gallon chilled-water storage tank

**No. of boilers:** 6 (450,000 lb/hr)

**No. of heat-recovery steam generators:** 2 (125,000 lb/hr)

**No. of turbines:** 4 (11.2 MW)

## DESIGNED FOR FLEXIBILITY, BUILT TO LAST

### 280 Trumbull Street marks 30th year

Compared to Connecticut's Old State House built in 1796, 280 Trumbull Street is a relative newcomer to downtown Hartford. Completed in 1984, the 700,000-square-foot 280 Trumbull – a Hartford Steam customer – this year celebrates its 30th anniversary.

In spite of an uncommon seven-cornered building design and an interior that features a dramatic multistory lobby, granite floors and polished stainless steel, it is 280 Trumbull's structure that makes it unique among Hartford's office towers.

"Most of the office towers in Hartford are steel framing or steel framing and concrete," says Bobby J. Demanche, property manager at Grunberg Management, which owns and manages the building. "280 Trumbull is different in that there's no steel framing here, just steel-reinforced concrete. Besides making it a massively solid building, the concrete improves the building's fire resistance and provides better stability against wind and seismic loads. Plus, the thermal mass makes it an extremely energy-efficient building to operate."

280 Trumbull received an Energy Star label with a rating of 91 out of 100 in 2008. This year the building is applying for the label once again, eyeing an even higher score that reflects recent efficiency upgrades. "We've transitioned to efficient fluorescent and LED lighting in most public

(continued on p. 2)

The 29-story 280 Trumbull Street is located across from the XL Center and Hartford Stage.



## DISTRICT ENERGY SYSTEMS, NEW AND EXPANDING

**Lincoln, Nebraska.** District Energy Corporation (DEC) in Lincoln, Nebraska, dedicated a new 27,000-square-foot district energy plant on May 14, 2014. The plant – the company’s fourth – will provide heating and cooling service to the West Haymarket Joint Public Agency, whose customers include the Pinnacle Bank Arena, shops, apartments, condominiums, hotels and offices. In operation since 1989, DEC now serves 2.8 million square feet of customer buildings, including the Nebraska State Capitol.

**Markham, Ontario, Canada.** In March 2014, Markham District Energy launched its second district energy system – Bur Oak Energy Centre – in Cornell, a new community in northeast Markham. An existing district energy system has been operating in Markham Centre for more than a decade. The new system’s customers include Markham Stouffville Hospital, Cornell Community Centre and Library, Health Services Building, Medical Office Building, Markham Fire Station, and 10 million square feet of future high-density residential, commercial and industrial building space.

From the *National Law Review*. “A district energy system can greatly increase efficiency in the delivery of heating and/or cooling services to a downtown area,” according to Dave McGimpsey of Lewis Roca Rothgerber LLP in his article, “Here’s an Energy Idea More Municipal Leaders Need to Consider.” Published Jan. 7, 2014, the full article is available here: [tinyurl.com/natlawDE](http://tinyurl.com/natlawDE).

(continued from p. 1)

spaces, plus installed occupancy sensors in common areas,” says Demanche. “In addition, we use a building automation system, have applied solar reflective film to all the building’s windows, and have upgraded our motors to variable frequency drives. These are good business decisions aimed at reducing operating expenses for our tenants. They just happen to benefit the environment, too.”

The Class A building originally used its own onsite boiler and chiller – in fact, they still remain in the building’s mechanical room. But the previous owners opted for steam and chilled water from Hartford Steam and made the switch in 1997. “It’s been a good decision,” says Demanche. “We evaluated whether or not to replace the old boiler and chiller, and it just didn’t make sense for us. Hartford

Steam is reliable and that’s at the top of our priority list when it comes to tenant comfort. Hartford Steam is always there to help if we have a question or concern.”

A BOMA Building of the Year winner, 280 Trumbull is home to a number of long-time, prominent tenants, including Prudential Retirement and Robinson & Cole, as well as a growing number of new tenants, such as Microsoft and Whittlesey & Hadley P.C. The property’s expansive 25,500-square-foot floors can accommodate tenants of all sizes and layouts up to 100,000 square feet of contiguous space. The building also features a new workout facility, conference center and parking shuttle service as free tenant amenities.

Hartford Steam congratulates 280 Trumbull on 30 years in downtown Hartford. We’re pleased to be your heating and cooling provider.



280 Trumbull’s welcoming lobby is complete with a 19-foot waterwall and a player grand piano.

Courtesy Grunberg Management.

## THANK YOU

When June 30 comes to a close, Gus Acuna (shown here) will retire from his job as Technician 3 at Hartford Steam Co. after 33 years of service. Gus has enjoyed the variety and challenge of his work over the years and says he will miss his coworkers. “They all were nice to me all of these years, without exception,” he says. Originally from Peru, Gus will travel there for a month-long visit in July before heading back to the U.S. Once back, he says he will be plenty busy following the tennis and music activities of his high-school-age son. Congratulations, Gus, on your retirement. You will be missed.

Hartford Steam is also saying good-bye to Bob Lanza, who is also retiring this summer. Bob served as Plant Technician and has been with the company since 1980. Thank you, Bob, for all you did to keep the meters running!



Gus Acuna

# SIMULTANEOUS HEATING AND COOLING: FAQs

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

## Q. What is simultaneous heating and cooling?

A. There are two types of simultaneous heating and cooling:

1. “Reheat” is when the same air stream is both heated and cooled before it gets to the space to be conditioned. Usually this takes the form of the air-handling unit delivering cool air for a core area with internal heat gains but also supplying perimeter areas that require warm air heat to cover their envelope heat losses.

2. “Blending” occurs when there are two separate air streams leaving the air-handling unit. One air stream is being cooled, the other is being heated, and the two streams are blended together before the air gets into the space. Two types of systems do this: dual-duct and multizone systems. (The blending process also applies to water and other fluids, in addition to air.)

## Q. Why would anyone do that?

A. Simultaneous heating and cooling by means of either reheat or blending can produce very precise space temperature control, achieving any desired supply air temperature between the cold and hot streams, i.e., between 55° F and 100° F, respectively. For example, if you need 86.2° F air to exactly meet the space requirements, the controls will automatically blend the correct amount of 55° F and 100° F air to create 86.2° F supply air.

Unintended simultaneous heating and cooling can also occur, however, when there are separate heating and cooling sources – for example, in the case of a cooling-only air handler serving a space that uses hot water baseboard heating. If the control equipment malfunctioned, both systems could discharge their opposite

energies into the space. This is especially common where the two systems each have their own thermostats, and they don’t work together (e.g., cooling set at 70° F and heating set at 72° F).

## Q. Isn’t it against current energy codes?

A. No. The codes emphasize that you must minimize simultaneous heating and cooling but fall short of banning it. The space temperature precision it offers is sometimes just too good to pass up. In addition, a reheat system usually has a lower first cost than the alternatives (separate perimeter and core systems, for example).

## Q. What can I do to minimize energy usage if I have such a system?

A. There are a number of strategies for minimizing the energy use of reheat or blending systems. Remember, however, that doing so will mean giving up the precision that the system was built to provide. Those strategies include the following:

1. Turn off the off-season temperature. In summer, use return air for your warm air requirements; in winter, turn off your cooling system and use return air to meet cool air requirements.

2. Reset the off-season temperature. Lower your warm system temperature setpoint for summer and raise your cool system temperature setpoint for winter.

3. Convert to a variable-air-volume system, if you haven’t already, so that the air flow that is simultaneously heated and cooled is always set at the lowest possible flow rate.

If simultaneous heating and cooling happens unintentionally, fix the controls and the controlled equipment. The trick is to recognize when it is happening. Many times the control system is correctly

sending a signal to shut off one stream before starting the other, but the valve or the damper is stuck open. Identify locations that have two systems and separate controls, and make sure that they are working together. Better yet, combine them into one control that cannot send conflicting signals and ensure that the valve or damper is not stuck open.

If you’d like to further discuss simultaneous heating and cooling, please contact Jeff Lindberg, [jefflindberg@hartfordsteam.com](mailto:jefflindberg@hartfordsteam.com), (860) 548-7348.

## DEBRIEFING YOUR SEASONAL STARTUP

Spring will soon turn to summer, so you’ve already started using chilled water for air conditioning. How did your seasonal startup go?

Now is a good time to debrief your chilled-water startup procedure and note what went well vs. what procedures you’d like to change next year.

Perhaps the most important startup step is flushing all cooling coils and piping that were laid up for winter. Did you use city water for the procedure? It’s extremely important that our customers use city water instead of our chilled water so that we don’t experience an unexpected depletion of our chilled-water supply.

We run a closed-loop system – which is very efficient and good for the environment – but if everyone uses that water to drain their coils, we have to pump in a lot of extra water to make up for it. That not only increases costs, but also temporarily decreases our cooling capacity.

It’s also vital to use city water to refill all in-house chilled-water systems, then vent the systems to release trapped air before opening the district cooling service valves. For more information, visit [hartfordsteam.com/seasonal.htm](http://hartfordsteam.com/seasonal.htm).

Please contact Diane Wojcik, [dianewojcik@hartfordsteam.com](mailto:dianewojcik@hartfordsteam.com), (860) 548-7357, if you’d like to discuss how to further optimize your chilled-water startup procedures for 2015.

Source: Rich Vaillencourt





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## ONE BIG SUMMER NIGHT: Library sizzles with food, fun and Ruth Reichl

Hartford Public Library, “A place like no other,” is throwing a gala fundraiser like no other, and we’re all invited to attend.

Set for June 12, the Library’s annual One Big Sizzling Summer Night event promises to be the most successful yet, with Ruth Reichl, the best-selling author, former *New York Times* food critic and editor in chief of *Gourmet* magazine, headlining the program.

The Library’s beautiful glass-front main building overlooking Main Street will serve as the venue and feature an evening of delicious cuisine and entertainment.

Guests can take in special exhibits showcasing the Library’s services while dining on gourmet fare from some of the city’s top restaurants.

The gala’s goal is to generate funds to help the library provide free resources that inspire reading, guide learning and encourage individual exploration. While the Library receives essential funding from the City of Hartford, it also relies on this main annual fundraiser to help provide access to critical literacy and educational programming; technology including free public access to computers and the Internet; services for those with special needs; guidance for immigrants and refugees; and programming for children, teens and adults. Each year, One Big Summer Night brings in a celebrated author to entertain guests. Past galas have featured actor Henry Winkler; President and Editor-

in-Chief of Huffington Post Media Group Arianna Huffington; MSNBC’s Morning Joe co-hosts Joe Scarborough and Mika Brzezinski; and Julie Powell, author of *Julie and Julia*, which was adapted into a major motion picture.

For further event details and to purchase tickets, visit [tinyurl.com/HPLsizzling](http://tinyurl.com/HPLsizzling). Hartford Steam Company is an event sponsor and heats and cools the Downtown Library.

### HPL RECOGNIZED AS NATION AWARD FINALIST

Hartford Public Library was recognized as a finalist for the 2014 National Medal for Museum and Library Service—the country’s highest honor conferred on museums and libraries for service to the community. 2014 marks the second consecutive year that the Hartford Public Library has been a finalist for this honor. It was awarded the medal in 2002. Learn more at [tinyurl.com/HPLimls](http://tinyurl.com/HPLimls).

