

# Consulting engineer recommends steam humidification to benefit skilled nursing facility residents and staff

## FROM EMPLOYER TO CAREGIVER

Lila Liimatta's first mailing address is only seven miles from her mailing address 94 years later. Between the two homes, Lila went to college, supported the war effort at the Highland Park Defense Plant in the Detroit area, married, raised three kids, and worked as a nurse aide at the Houghton County Medical Care Facility, which is now the Canal View—Houghton County skilled nursing facility.

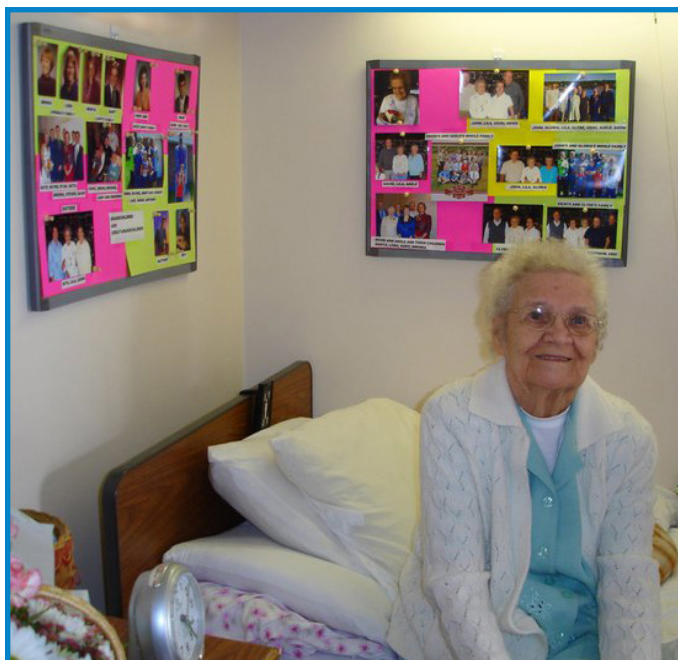
"She was still super sharp at 90 years old," her sister Leona remembers, "but she couldn't read her pill bottles and had fallen down a couple times at home. Having worked at Canal View, Lila knew they would take good care of her. So she asked them to let her move in."

## HUMIDITY TO REDUCE VIRUS TRANSMISSION

Built in 1951, the facility first existed as the 105-bed Michigan Tuberculosis Sanitarium. A drafty, old building, it underwent a transformation in 2017 with curtain wall upgrades and a two-story addition with a new mechanical room and air handler. To limit virus transmission among building occupants, the last component in the new air handler before the conditioned space is a panel that disperses 285 pounds per hour of steam humidification. Design conditions include 100 percent outside air at 34 °F and 55% relative humidity, which is not extreme, given the moderate air volume of 21,000 cfm. However, because this is a senior living facility, another design condition is an indoor air temperature of 74 °F. Compared to a more typical 70 °F, the higher indoor temperature alone makes a humidification load difference of 124,000 pounds (14,860 gallons of water) per year with 2,000-hour humidification seasons.



Canal View—Houghton County got a new addition and air handler in 2017.



Lila kept tabs on family while living at her former employer and new home.

"So I specified an STS-400 for a steam generator," said Lane Bentsen, the consulting-specifying engineer from Hooker/DeJong, Inc., engineering firm for the Canal View addition. This humidifier model, capable of exceeding design conditions during sustained cold snaps, is large enough for even the coldest, driest winters in Houghton County. The reason engineers specify DriSteem's STS® steam-to-steam humidifiers is two-fold. Bacteria and viruses thrive in dry air, and boiler chemicals in the air have come under scrutiny in the decades since the building was a sanitarium. For the benefit of patients and staff, the STS humidifier boils clean water, rather than chemical-treated boiler water, into humidification steam. The boiler steam and the chemicals it contains return to the boiler and never enter the humidified space.

## WATER SAVINGS AND SHORT STEAM ABSORPTION DISTANCES

Steam generated by the STS humidifier reaches the air handler via the dispersion panel mentioned earlier, which is a DriSteem Ultra-sorb® XV steam dispersion panel. Like



The STS steam-to-steam humidifier uses pressurized boiler steam in a heat exchanger to boil chemical-free water into clean humidification steam.



Condensate from the Ultra-sorb XV dispersion panel is never wasted; it is flashed back to humidification steam by a heat exchanger in the header.

#### RESOURCES:

Find your local DriSteem representative:  
<https://www.dristeem.com/find-a-rep>

Download DriCalc®, DriSteem's free sizing and selection software:  
<https://www.dristeem.com/register-for-driCalc>

Learn about the following equipment installed at Canal View—Houghton County:

STS® steam-to-steam humidifiers:  
[www.dristeem.com/products/steam-generation/steam-exchange-humidifiers](http://www.dristeem.com/products/steam-generation/steam-exchange-humidifiers)

Steam dispersion:  
<https://www.dristeem.com/products/steam-dispersion>

#### DRI-STEEM Corporation

A subsidiary of Research Products Corporation. DriSteem is an ISO 9001:2008 certified company.

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

U.S. Headquarters:  
 14949 Technology Drive  
 Eden Prairie, MN 55344  
 800-328-4447 or 952-949-2415  
 952-229-3200 (fax)  
 Email: [inquiries@dristeem.com](mailto:inquiries@dristeem.com)

European office:  
 Grote Hellekensstraat 54 b  
 B-3520 Zonhoven  
 Belgium  
 +3211823595  
 Email: [dristeem-europe@dristeem.com](mailto:dristeem-europe@dristeem.com)

© 2020 Research Products Corporation

Form No. Canal-View-Houghton-County-0620

the STS humidifier, this dispersion panel also takes advantage of the building's pressurized boiler steam. It does not have a condensate drain. Instead, it has a heat exchanger in the header that flashes any dispersion-generated condensate right back into humidification steam. The result is zero water waste. This DriSteem breakthrough has been saving buildings from wasting condensate to the drain since 2007. Because the Ultra-sorb XV dispersion panel contains hundreds of steam outlets in a 34-square-foot cross section of the Canal View air handler, the steam absorbs completely into the airstream before traveling ten inches downstream. Together, the heat exchanger and the high-efficiency tubes built into one moderately sized 72-inch by 48-inch Ultra-sorb XV dispersion panel can save more than 144,000 pounds (17,000 gallons) of water per year with 2,000-hour humidification seasons.

#### DID THEY TAKE CARE OF LILA?

In the interest of letting the family assess how well this senior care facility takes care of its residents, we asked Leona.

"Before signing on as a resident, Lila requested that she be allowed to sleep in every morning as late as she wished."

So?

"So they let her sleep in. Canal View took very good care of Lila."

DriSteem is proud to be specified for the new mechanical room and air handler of Canal View—Houghton County. The drafty, old sanitarium is experiencing new life while safeguarding the lives of its residents and staff.