

School humidifies gym year-round to protect floor

The Aurora Academic Charter School on Edmonton's north end grew from 300 students in 1996 to over 800 in 2019. The steady growth required a move to a larger building and several facility updates over two decades. One such update, the school's most recent, is a new elevator. The demolition phase of the elevator project created an adjacent opportunity to replace the old floor and HVAC system in the gym.

THE JOB

Edmonton's dry winter air can be tough on building materials, so the school hired a hardwood flooring contractor that offered an extended warranty. A requirement for warranty coverage was that the gym be humidified, so the project manager contacted Cody Byar at Kehoe Equipment Ltd. to discuss humidification options.

In Edmonton, the annual cost for humidifying a room the size of the Aurora School gym (3,000 feet² with an 18-foot ceiling) year-round with a gas-fired humidifier is \$3100 lower than humidifying with an electric humidifier.² Upon learning the estimated humidification load and that natural gas was available, Byar recommended a DriSteem Gas-to-Steam (GTS®) humidifier LX series for the job.



THE CHALLENGE

While the warranty requirement made humidification a worthy investment, the mechanical room was already built, and space was extremely limited. The only place for new HVAC equipment was an area barely 30 inches (760 mm) wide between the makeup air unit and the wall. Whatever went into that space would also need room for manufacturers' recommended clearances.



The hardwood flooring contractor's extended warranty is available only for customers with humidification systems. The ASHRAE recommendation for gyms with wood floors is 35 to 50 percent relative humidity.¹

RESOURCES AT DRISTEEM.COM

LX series humidifiers:

[GTS humidifier LX series](#)

Find your local DriSteed representative:

[Find a rep](#)

Compare gas and electricity costs:

[EnergyCalc](#)

DriCalc®, DriSteed's free sizing and selection software:

[Register for DriCalc](#)

THE SOLUTION

The recommended LX series was the only humidifier available that was small enough to fit into the space, yet with enough steam capacity for the job. Having solved the space challenge, the order was secured when Byar explained two more features: PVC flue material and ultra-low nitrogen oxides (NO_x).

PVC flue material: LX series humidifiers are Category IV condensing appliances. As such, the humidifier flue gasses are cool enough for PVC flue material. PVC significantly lowers installation costs compared to Category I appliances with their metal, double-walled flues.

Ultra-low NO_x: Edmonton is a member of Local Governments for Sustainability, which began in 1990 as the International Council for Local Environmental Initiatives (ICLEI). This network of local governments has grown into a global movement that conspicuously calls on all levels of government to create and enforce incentives for reducing greenhouse gas emissions³, including NO_x. Not only is DriSteed's LX series the most efficient steam humidifier available, it is also certified as a low-NO_x appliance by stringent standards⁴.

THE RESULTS

The Aurora School's LX series humidifier has been humidifying the gym flawlessly since the 2017-18 school year while providing significant energy savings. The energy savings can be substantiated by the school's utility bills, not only comparing LX series humidifiers to electric humidifiers, but also to all other gas-fired humidifiers.

DriSteed enjoys the distinction of having been the only manufacturer that could meet the most pressing need of the gym humidification project in a crowded mechanical room.

"In the end, the humidifier fits into what looks like a carefully planned room," observes Byar. "What stands out now is the cost savings."



The DriSteed GTS® humidifier LX series was chosen for its small footprint, efficiency, and the low installation cost of PVC venting.

1. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). *ASHRAE Handbook: Heating, Ventilating, Air Conditioning Applications*. Chapter 8: Educational Facilities. Table 6: Typical Recommended Temperature and Humidity Ranges for K-12 Schools. Atlanta, GA.
2. Determined by EnergyCalc, DriSteed's online tool for determining energy savings of natural gas compared to electricity.
3. *Change for Climate - Edmonton Declaration*. March 6, 2018. https://www.edmonton.ca/city-government/environmental_stewardship/change-for-climate-edmonton-declaration.aspx
4. Under 20 ppm. Conforms to SCAQMD (South Coast Air Quality Management District) 1146.2 air quality management standards for gas-fired humidifiers.

DRI-STEEM Corporation

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

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

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

© 2019 Research Products Corporation
Form No. AuroraSchool-1119



The makeup air unit for the Aurora School gym uses outside air all winter long, furthering the need for humidification.