

[Home](#) » [Columns](#) » [Design Solutions](#) » Gas-to-Steam Humidifier Helps Museum Preserve Artifacts, Reduce Energy Costs

Gas-to-Steam Humidifier Helps Museum Preserve Artifacts, Reduce Energy Costs

Apr 9, 2010 4:29 PM

Unit provides chemical-free, low-cost humidification

Dedicated to the memory of Glenn H. Curtiss, who in 1908 manned the first pre-announced public flight in America, the Glenn H. Curtiss Museum in Hammondsport, N.Y., is filled with hundreds of historical artifacts. Made of a variety of materials (wood, canvas, fabric, paint), those artifacts are subject to cracking, chipping, peeling, and distortion without the right amount of humidity—ideally, 40- to 60-percent relative humidity (RH). The museum, however, lacked a humidification system, and RH hovered between 3 and 10 percent.

Looking to maintain a RH level of at least 40 percent with minimal(± 3 percent) fluctuation, Jim White, the museum's engineer, began a search for a humidification system.

"My first consideration was to find a system that could handle a large area, yet fit in the limited floor space I had available," White said.

White explored several options, including an electric humidifier with disposable cylinders. But "I knew that would be ... expensive to operate and maintain," White said.

Brian Williamson of R.L. Kistler suggested a steam-to-steam humidification system. Such a system provides chemical-free steam to a space. Because boiler steam is the heat source, energy costs are low. There was just one problem: The museum did not have a boiler.

"We knew the steam-to-steam product would work for the museum," Williamson said, "but in order to operate the system, they would have to invest in a boiler, and we just didn't want them to have to make that extra investment."



The Glenn H. Curtiss Museum in Hammondsport, N.Y., contains a priceless collection relating to early aviation and local history.

Because the museum had natural gas as an energy source, Williamson told White about the DRI-STEEM GTS gas-to-steam humidifier. The GTS could provide chemical-free, low-cost humidification with the control the museum required and fit in the space allotted without additional equipment.

"What excited me most about the GTS was the fact that it was a direct-fired, stand-alone unit that could be provided with an area-type steam-distribution system designed to distribute steam in large spaces without ductwork," White said. "And I was certainly excited about the lower energy costs we would incur by using natural gas instead of electricity."

White added: "I thought we may need to add one more unit to humidify the 2,000-cfm continuous outdoor air supplied by our rooftop air conditioners, but we're up and running at ideal RH levels."

Information and photograph courtesy of DRI-STEEM Corp.