

## Dehumidifier Replacement Improves Efficiency at Luxury Ottawa Apartment Community

By Ralph Kittler, P.E. September 21, 2019

Overlooking the lively downtown Ottawa neighbourhood of Sandy Hill, and steps away from shopping, higher education and public transit, 50 Laurier's big claim to fame is no doubt its ideal location.

The luxury apartment building boasts more than that, though. A rooftop terrace, a gym and an indoor pool are just some of its many amenities. For many years, a Dectron Dry-O-Tron® dehumidifier had reliably conditioned the pool environment and kept it comfortable for residents and their guests. The operator of 50 Laurier decided in 2019 that, after 16 years of operating the unit, it was time for a replacement. The results were improved efficiency and reduced maintenance costs.



Mathieu Coulombe, sales engineer with Dectron's local rep office Longhill Energy, offered to visit the old unit and evaluate the facility for current needs. Doing so is always a good idea because it can uncover original deficiencies with the design that may prevent a new unit from reaching its full potential.

In this case, Coulombe's site visit quickly paid off when he noticed the original ductwork was blending fresh outdoor air with the return airstream before entering the unit for conditioning. From an efficiency and equipment life perspective, this is not best practice. Especially in the winter, introducing cold outdoor air can cause issues with the refrigerant pressure inside the dehumidifier coil, resulting in reduced equipment lifespan. The new unit fixes this problem with a separate outdoor air opening so the blending occurs at the end of the conditioning process, after return air has been treated.



The new unit provides air conditioning by connecting to the building's chilled water loop, a cost-effective choice as it eliminated the need to install an outdoor refrigerant condenser. The original unit had a 53-lbs charge of R-22, a refrigerant currently being phased out due to its damaging effects on the ozone layer if accidentally released. Many old refrigeration systems installed prior to 2010 are still using R-22, often in large quantities. Fast-tracking the replacement of old systems is a best practice as it

eliminates the liability of an R-22 leak, which is bad for the environment and could prove costly in replacing the lost fluid. The new unit has only 25 lbs of R-410A.

Any old HVAC unit that gets replaced today will benefit from new technologies as well as the improved performance that naturally comes with updated equipment. New Dry-O-Tron® units, for example, include all-new and premium components that offer significant upgrades over past designs.

Standard on the DS-020 installed at 50 Laurier is a highly efficient, direct-drive EC motor fan that provides 2,000 CFM of supply airflow. Direct-drive fans are standard across the Dectron product line, as they provide major benefits over old-fashioned belt-drive fans found in old models. They're quieter and not prone to the traditional inefficiencies, like belt slippage. That also reduces the maintenance component because there is no longer a requirement to inspect or replace the fan belt every year. EC motor fans are significantly more efficient and easily save thousands of dollars in electricity costs over the lifetime of a small dehumidifier.

Also standard is Supervisaire, Dectron's state-of-the-art system controller, with Vision 2.0 internet monitoring and remote-control capability. By plugging into an Ethernet connection, the unit can upload operating data in real-time to Dectron's servers for live monitoring and analysis of over 100 key parameters. Because a full history of the unit's activity is stored on the company's servers, authorized service contractors can easily see the history by logging into the unit remotely. This makes troubleshooting much easier and, in many cases, the contractor can use the Vision 2.0 platform to resolve issues without ever having to make a site visit.

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The 50 Laurier pool is an example of how a dehumidifier replacement can be more than a drop-in install; it can be a total upgrade that improves the environment while reducing operating and maintenance costs for the owner. Add in a little expert advice, and you get a pool that will remain a patron favourite for years to come.

## About the Author

*Ralph Kittler, P.E., is VP Sales National Accounts for Dehumidified Air Solutions (DAS) — a leading manufacturer of humidity and temperature control equipment. He's had more than three decades of experience in indoor pool design and dehumidification and is the revisor responsible for Chapters 25 (Mechanical Dehumidifiers) and Chapter 6 (Indoor Swimming Pools) in the ASHRAE Handbooks. He also was an ASHRAE Distinguished lecturer for 12 years on indoor pool design.*

