



DRY-O-TRON® RS-120 DEHUMIDIFIER

Rahway YMCA HVAC Retrofit

Cuts Energy Costs While Adding A/C and Free Pool Water Heating

Engineer specifies new A/C and dehumidification, as well as space heating and pool water heating – all from a packaged HVAC unit.



Rahway, N.J., — The most common complaint of swimmers entering a pool is “cold” water, but summertime swimmers at the Rahway Branch YMCA, Rahway, N.J., regularly voiced criticism that the 200,000-gallon indoor pool was too hot.

dehumidification. The latter had yet to be invented when the pool addition building was constructed 35 years ago.

Armed with a \$500,000 budget earmarked for a variety of improvements – including new lighting, electrical upgrades,

match the superior upgrading of the pool.

The HVAC equipment retrofit is expected to provide a quick pay-back through energy savings. Besides economical benefits, the addition of air conditioning and dehumidification has helped

Today, the Rahway YMCA sports one of the area's most modern, efficient, and state-of-the-art pools with indoor air quality that rivals the most recently built facilities.

The 42 X 75-ft. pool's water would start a hot summer day at the desired set point of 84°F, but water temperatures frequently surpassed 90°F because of no air conditioning or modern mechanical

re-coated pool surface, epoxy-painted walls and ceiling, plus the replacement of the chemical feeder, filter pump, motor, and strainer systems – the Y set out to make the Indoor Air Quality (IAQ)

improve attendance figures by enhancing the 6,230-sq. ft. natatorium's overall aesthetics, comfort, and IAQ.

Rahway's need for space heating, air conditioning, and

dehumidification as well as pool heating, called for a design specifying a packaged HVAC heat recovery dehumidifier from Dectron Inc., Roswell, Ga., that would meet all IAQ requirements in one unit. In order to get the most for their money, the YMCA needed one-stop-shopping and a custom-manufactured heat recovery dehumidifier would give them everything in one package with single source responsibility.

The retrofit included replacing the natatorium's outdated HVAC system consisting of make-up air handlers that circulated air and depended greatly on exhausting and bringing in large quantities of outside air. While adequate for ventilation, exhausting and replacing a huge volume of air instead of reconditioning it, is not energy efficient by today's standards. Additionally, introducing hot, humid outside air without conditioning it in the summer only worsened the indoor air comfort concerns.

Conversely, the DRY-O-TRON® Model RS-120 dehumidifies both room air and outdoor air, while simultaneously conditioning them to either cool or heat the space.

The energy recovered by the dehumidification process, plus the compressor heat, provides free pool water and space heating. While the dehumidifier's heat recovery provides 100-percent of the pool water heating for the majority of the year, the package also includes a 512,000-Btu hot water boiler as a backup for extremely cold days. While the Y's existing 512,000-Btu boiler



The Rahway YMCA Indoor Pool

previously heated the pool air and water, it has been retained for only a backup role to the building's hot water heating system. The combination of integral gas hot water heating and dehumidification are controlled and operated by the Dectron unit's Supervisaire® microprocessor, which assures single source responsibility.

In addition to the gas-fired boiler, a 9,500-cfm purge mode exhaust fan, that provides a quick air change in 10 minutes for the Y's routine super-chlorination treatments of the pool water, was also specified.

The Dectron unit was purposely specified for the identical 11,000-cfm capacity of the previous HVAC air-handling units, and adjustments for static pressure were then calculated. This allowed the retrofit to use the existing 65 X 24-inch-rectangular stainless-steel sheet metal ductwork trunk line and its branches,

thus saving the project approximately \$100,000 in stainless steel materials and installation labor.

Today, the Rahway YMCA sports one of the area's most modern, efficient, and state-of-the-art pools with Indoor Air Quality that rivals the most recently built facilities.

Dectron Inc., an ISO-Certified company, is a global HVAC industry leader. For more than 28 years, Dectron's highly-skilled engineers and technical staff have been designing and manufacturing innovative, state-of-the-art DRY-O-TRON® dehumidification equipment that use leading-edge technology to recycle energy, conserve pool water, and CHLORAGUARD® filter natatoriums. Dectron Inc.'s DRY-O-TRON® line of products encompasses an extensive array of custom and semi-custom systems for industrial, commercial, and residential applications.



designer indoor air®

USA
10898 Crabapple Road
Suite 103
Roswell, Georgia 30075
Tel.: (770) 649-0102
1 800 676 2566
Fax: (770) 649-0243

CANADA
3999 Cote Vertu
Montreal, Quebec
Canada H4R 1R2
Tel.: (514) 336-3330
1 888 DECTRON
Fax: (514) 337-3336



www.dectron.com

Dectron Inc. is a subsidiary of Dectron Internationale.