

**Need for  
FreshAire Evacuator®**

It is all too common to walk into an indoor pool facility and smell “chlorine”. The layman’s typical reaction is that there is too much chlorine in the pool. However, this chlorine odor is not caused by excess chlorine but rather by a chlorine compound called chloramine and by airborne disinfection byproducts (DBP) that are being created in the water and off-gassing from the surface of the pool.



Figure 1 - FreshAire Evacuator® Bench Option

These contaminants are heavier than air and form a “chloramine bubble”. This not only causes problems with the staff and swimmers, it can also be the source of corrosion on metal components in the pool facility.

The FreshAire Evacuator® addresses the chloramine problem in a unique way and provides an immediate and long-term solution. It tends to inhibit the mixing of chloramine laden air found close to the water surface with the balance of the natatorium air. The air which blankets the pool surface contains the bulk of the eye, nose and throat irritants. This chloramine laden air is separately captured and exhausted, leaving the balance of air more healthful for instructors, coaches, swimmers, staff and spectators.

The FreshAire Evacuator® system reduces maintenance and corrosion on the deck equipment and metal appendages incorporated in a natatorium structure. This life extending benefit is inherent in the FreshAire Evacuator® system as it promptly collects the chemically laden air and discharges this air, eliminating a large portion of chloramines before it can cause corrosion inside of the natatorium.

**System Integration**

This chemically saturated air is collected by the FreshAire Evacuator® completely separate from the HVAC dehumidification system. The collected air is discharged outside the natatorium from a location which, under normal conditions, prevents it from reentering the natatorium air handling system.

The HVAC system dehumidifies, heats and air conditions the recirculated natatorium air. In addition the dehumidifier supplies the following functions:

- All of the ventilation air is supplied through the dehumidifier including what is required for operation of the FreshAire Evacuator®.
- The dehumidifier’s control system shall modulate the FreshAire Evacuator® exhaust speed based on required mode of operation (refer Desert Aire literature code # SA 430d Source Capture for details)
- The dehumidifier supplies the additional exhaust air to meet the ASHRAE 62 ventilation code requirements for occupied and spectator seating operation.
- Energy recovery of exhaust air

## Benefits of the FreshAir Evacuator®

The FreshAir Evacuator® removes high concentrations of airborne chloramines in the area directly above the pool water surface reducing the smell of chloramines throughout your facility.

- The reduced chloramine concentration improves the swimmers ability to process oxygen which can translate into better performance by competitive swimmers.
- The FreshAir Evacuator® provides a much more desirable environment for patrons, competitive swimmers and facility staff. Seniors and patrons with respiratory issues enjoy the pools, rather than having to stay away due to the detrimental effects of excessive chloramines.
- The FreshAir Evacuator® reduces maintenance required for deck equipment and metal building components.
- The FreshAir Evacuator® greatly extends the life of “HVAC” equipment and the building components by preventing heavy chloramine-laden air from attacking system components which in turn reduces the reserves required for future capitalization for repairs and replacement of facility components
- The FreshAir Evacuator® does not just throw more energy costing outside air at the problem, it optimizes the where and how you use outside air to solve the problem at the lowest energy cost

## Bench FreshAir Evacuator® Features

The system is designed to exhaust air collected by a controlled entry plenum and can be installed on the deck or natatorium wall. The controlled entry plenum varies in length as required by the design engineer. The plenum has slotted ports for air entry with the entry orifices sized to provide a uniform entry of air from along the bench length. It is fabricated of corrosion proof fiberglass or PVC.

An exhaust fan is part of the system and is designed to handle chloramine laden air. The interconnecting duct should be constructed of any corrosion resistant such as aluminum, PVC coated metal or PVC.

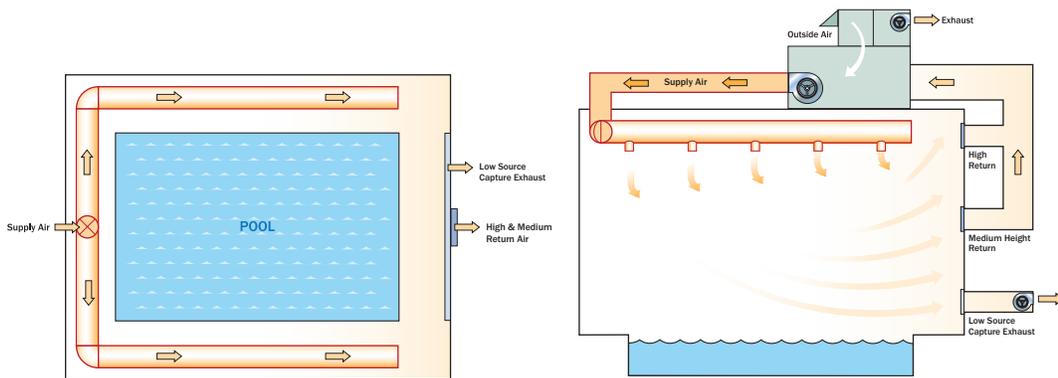


Figure 2 - Installation in Pool Facility

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## OPTIMIZING SOLUTIONS THROUGH SUPERIOR DEHUMIDIFICATION TECHNOLOGY

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