The ASHRAE HVAC APPLICATIONS MANUAL States:

> *"Pool and spa areas should be maintained at a negative pressure of 0.05 to 0.15 in. of water relative to adjacent areas of the building to prevent moisture and chloramines odor migration. Active methods of pressure control may prove more effective than static balancing and may be necessary where outdoor air is used as part of an active humidity control strategy. Openings from the pool to other areas should be minimized and controlled. Passageways should be equipped with doors with automatic closers to inhibit migration of moisture and air."*

We have all experienced walking into the lobby of a hotel to check in, and smell chlorine. You haven't seen the pool, but you know one is in the building somewhere. This is due to the pool room not being maintained under a slight negative pressure, therefore allowing moisture and chlorinated air to migrate into other areas.

Second, humidity is nature's water pump where moisture tends to "pressurize" into the walls and ceiling in pool environments. You may see drywall sagging or wet, ceiling tiles falling down, ceilings caving in, etc. due to moisture saturation of the building materials and structure. Using negative pressure along with dehumidification will prevent these problems.

Negative Pressure is accomplished by Installing an exhaust fan pulling air from the pool area space and discharging it to the building exterior. This fan should be sized to exceed the fresh air make up by 35%.

- **IMPORTANT:** Fan noise must be considered prior to installation. If possible, the fan should be installed in the mechanical room close to an exterior wall and connected to a grill in the pool space with insulated flex duct.
- **NOTE:** If installing the negative pressure fan in an attic or any area other than the mechanical room, the fan should be as far away from the pool space as possible to reduce fan noise. Insulated flex duct is recommended for noise reduction.
- **FIREPLACES:** Although fireplaces in pool rooms are generally not recommended, special considerations are applicable.
    - **RULE #1**: When not using the fire place, the damper **MUST BE CLOSED**. If open, it renders the negative pressure fan useless.
    - **RULE #2:** When using the fireplace, the negative pressure fan **MUST BE SHUT OFF**. If left on, the air will be drawn down the flue causing the smoke and gases from the fire to be pulled into the room.

- **A SIMPLE TEST:** To test for negative pressure, turn both the negative pressure fan and the DRY-AIR fan to ON. While standing on the outside of any pool room door, light a match or candle, crack the door open ¼", hold the flame close to the crack. The flame will point to the space that has negative pressure established. It must point to the pool room space to pass the test.

IMPORTANT: Areas, living spaces, offices, etc. that are non related to swimming pools should and must be maintained separately from the pool room or the potential for moisture damage, mold, mildew, water damage, and pool chemicals damaging these areas is greatly increased.