

Recotherm

How can spectators be best kept comfortable in an indoor pool hall environment?

A great many local authority and school pools have spectator areas, usually consisting of seats or benches on terraces within the pool hall. Usually this area will have a few mums, dads, grannies and granddads watching members of their family swimming. However, on occasion, it could have a couple of hundred or more vocal school children, loudly cheering on their friends on a school Gala Day. So how do you deal with this area, keeping it at a comfortable temperature and humidity for the spectators, but without affecting the pool hall conditions or increasing the running costs?

In the majority of commercial indoor pools, to reduce the amount of evaporation, the pool hall temperature is kept on or around (usually slightly above) the temperature of the pool water. The humidity needs to be controlled to prevent condensation on the windows and to make the conditions comfortable for the swimmers when they exit the pool covered in water at 30°C. This gives a pool hall condition, commonly found in modern installations, of 30°C, 50%-60% RH (relative humidity), to prevent condensation. This is also comfortable for the bathers in or around the pool. However, it most certainly isn't comfortable for the fully clothed customers sitting in the spectators gallery.

So how can we overcome this problem? We can't drop the temperature of the entire hall just for the benefit of a few people sitting in the spectator area, as this would then be unpleasant for the bathers. We can't air-condition the spectator area because it is within the pool hall with no physical barrier between it and the rest of the hall. The two systems would just end up fighting against each other and running up some unpleasantly high energy bills! Because the issue is seemingly insurmountable, in the majority of designs the problem is just swept under the carpet and the engineer works out the required air volume based on evaporation rates and heat losses, and the system supplies this air into the entire hall via a single supply duct. The air that is supplied has to be at a higher temperature than the pool hall in order to offset the heat losses for the hall. It will usually be supplied at temperatures approaching 40°C! If this air is blown over the spectators it only increases their discomfort further.

However, there is a solution that is both practical AND cost-effective. The Recotherm solution is a dual duct two heater system. One duct carries the majority of the air to the main pool hall, the other a smaller amount of air into the spectator area. Each duct has its own heater battery and separate temperature controls. This can be achieved with two separate air-handling units, but with Recotherm it can be achieved by just one, saving considerably on costs. How does it work? Under normal operating conditions, the main pool duct carries the air to heat the hall to the required temperature, usually supplied between 35°C and 40°C. However, the spectator area duct carries air at the set point of the pool hall. Therefore, if the pool hall is set for 30°C, the supply air temperature to the spectator area will be at 30°C. This doesn't actually cool the spectator area, but on the other hand, it's not being overheated, as it would be with supply air for the main pool hall. What's also happening, crucially, is air movement over the spectator area - which has a cooling effect - at a temperature that will not affect the pool hall temperature; and, as the air contains the same amount of moisture as the air supplied into the pool hall via the main duct, the dehumidification effect is not compromised!

On Gala days when you have a large number of people in the spectator area and only a few people actually swimming at any one time, your emphasis can change from looking predominantly at the comfort of the bathers to making the spectators feel more comfortable. To achieve this, we switch the control of the heater battery serving the spectator area from a duct mounted sensor to a sensor mounted in the spectator area. This way, we can provide cooled ambient air to the spectators which may or may not have been heated in the air to air heat recuperator, depending on the outside air temperature. We would also recommend lowering the pool hall temperature to 26 oC and switching the unit over to full fresh air which will have the effect of also lowering the relative humidity and making the conditions more comfortable for people who are fully-clothed. This can all be done from the flick of one 'GALA DAY' switch which can either be a software programmed switch, or a hard wired physical switch.

Recotherm

It's an extremely elegant, effective and, importantly cost-effective solution to the problem!

This way costs can be controlled as low as possible by only using one air handling unit, but still provide conditions that are comfortable for both bather and spectator when appropriate.