

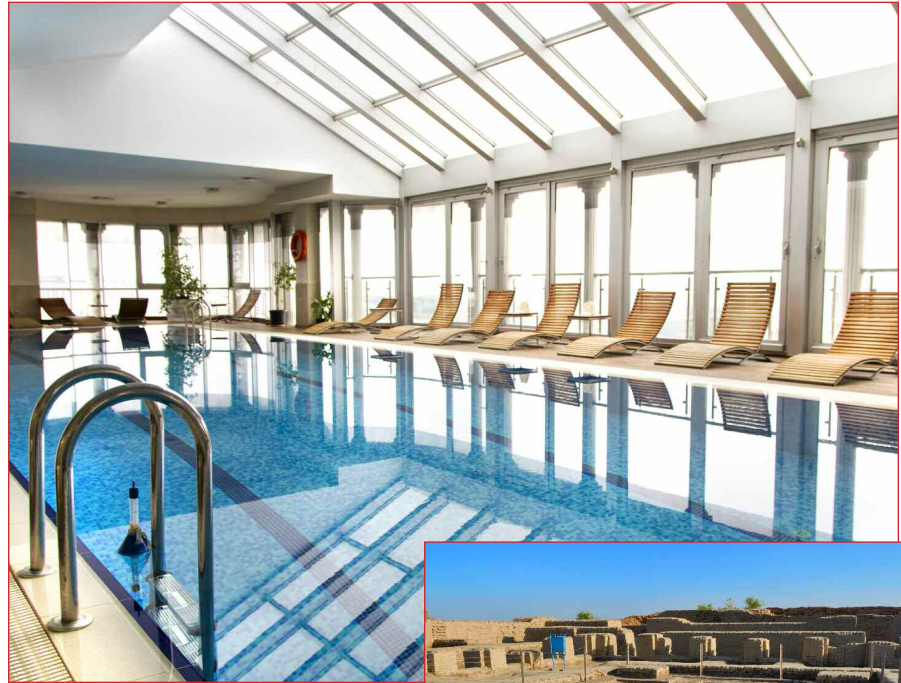
Indoor Pools

Indoor pools in general

Swimming pools are used for a variety of applications including recreational use for kids and adults, competitive swimming and also therapeutic use for faster recovery from injuries.

Unfortunately, the use of an outdoor pool is not possible all year round in most regions of the world. To overcome this issue the British National Swimming Society was among the first in the early 1800's to introduce man-made indoor pools in London.

As soon as the first natatorium was built, the issues resulting from having a large volume of water in a closed building structure appeared quickly.



*Modern swimming pool . . .
The "Great Bath" at the site of
Mohenjo-Daro in modern-day
Pakistan.*



Facts & Figures

- According to the Guinness World Records, the largest swimming pool in the world is San Alfonso del Mar Seawater Pool in Algarrobo, Chile. It is 1,013 m (3,323 ft) long and has an area of 8 ha (20 acres). At its deepest, it is 3.5 m (11.5 ft) deep!
- The "Great Bath" at the site of Mohenjo-Daro in modern-day Pakistan was most likely the first swimming pool, dug during the 3rd millennium BC. This pool is 12 x 7 m, it is lined with bricks and was covered with a tar-based sealant.

The continuous moisture load that swimming pools generate challenges the mechanical system and creates multiple opportunities for structural damage. The combination of humidity and chlorine not only attacks the building material, but also provides a breeding ground for mold and bacteria which can affect occupants' health and comfort. A sad example of a severe consequence was in May 1985 in Uster, Switzerland where the col-

lapse of the ceiling at a public indoor pool killed 12 people. One of the reasons for this tragedy was that the humid chlorine packed air condensed on the steel and entered micro-cracks in the stainless steel holding bows of the ceiling causing them to corrode. An accurately controlled HVAC system can help to prevent very high humidity levels and therefore reduce the risk of condensation.

continued

Why the need to measure humidity?

Humidity control

To help prevent condensation, protect the building from structural damage and provide a comfortable environment for swimmers, humidity must be carefully controlled. Maximum humidity levels within an indoor pool building should be held between 50 %rh and 60 %rh.

To maintain these levels, an indoor pool requires a means to remove water vapor from the building. This is usually done by a dehumidifier or by bringing in fresh outside air via a ventilation unit. In both cases a humidity sensor that can survive the high chlorine concentration climate is vital.

Temperature control

The air temperature is normally controlled at around 1°C warmer

than the water temperature. This reduces evaporation and improves swimmers' comfort as they leave the water. However, this raised temperature is not normally necessary when the pool is covered and the pool is "unoccupied". In that situation the usual "set back" temperature is normally between 23 °C and 24 °C and allows a significant amount of energy to be saved resulting in lower energy costs.