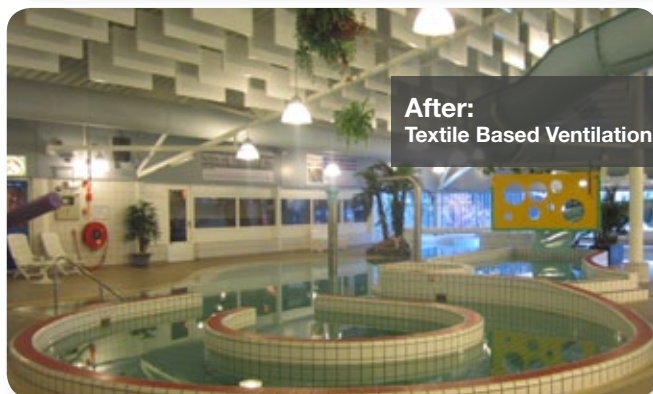


Case: Zwembad De Viergang te Pijnacker

Energy savings and an improved indoor climate



Before:
Steel Based Ventilation



After:
Textile Based Ventilation

KE-InJect® system. Outer ring and inner ring.

Before (Steel Based Ventilation)

- The fluctuation was between 41% RH and 70% RH from day to night
- Max. humidity at the windows was 75-76% RH at night time
- The vertical temperature gradient was approx. 3°C and the temperature was fluctuating between 27.5°C to 30.5°C at 1.8 m above floor level during 24 hours

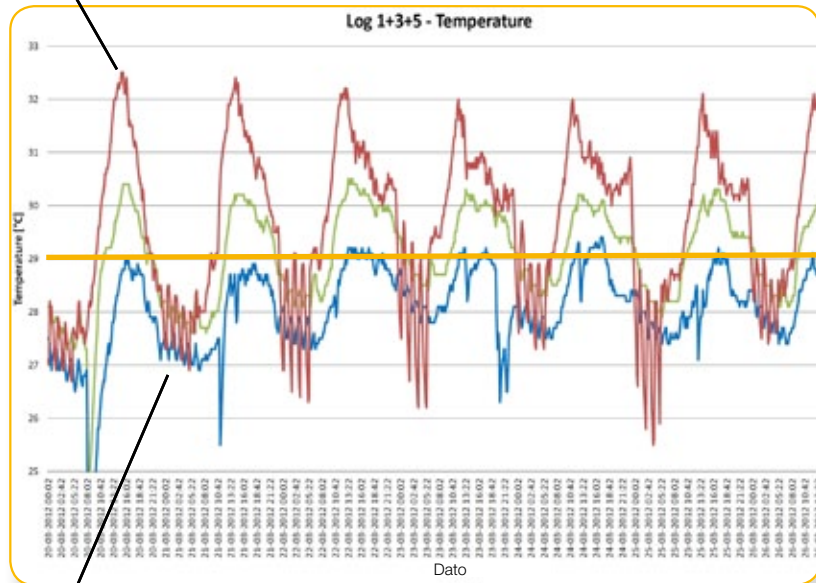
FACTS:

Contractor: Zwembad De Viergang te Pijnacker
 Consultant: Maarten Uiterwijk, Sportfondsen Nederland N.V.
 Installer: KE Fibertec NL

Now (Textile Based Ventilation)

- The relative humidity is fluctuating between 50% RH and 55% RH between ½ m and 5 m height
- Max. humidity at the windows is 55-56% RH
- The vertical temperature gradient from ½ m and up to 5 m is <0,8°C
- Significantly improved indoor climate
- The pool is now running with only 2/3 of the air volume
- Energy consumption is expected to be up to 25% lower. The whole sports facility is using 270,000 m³ of gas per year.

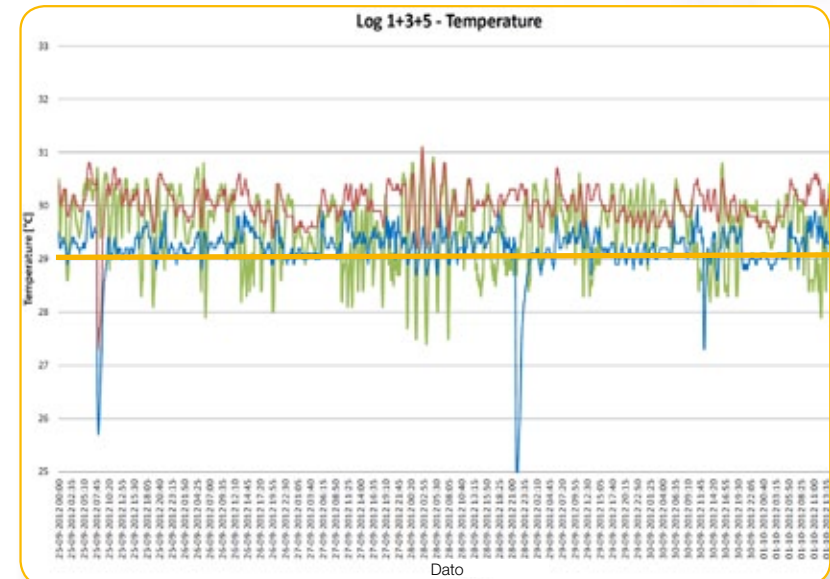
Day time Old Steel Based Ventilation layout (SBV)



Pool water temperature 29 °C

If the water temperature is above the air temperature it will lead to a great deal of evaporation of the pool water.

New Textile Based Ventilation layout (TBV)



Night time Low room temperature during night time

More stable temperature

In the old SBV-system the temperature at 1.800 mm above floor level had a variation from 27,5 °C till 30,5 °C during 24 hours. In the new TBV-system the temperature at 1.800 mm above floor level has a variation of less than 0,5 °C during 24 hours.

Expected energy savings of 25%

By switching over to the new TBV-system the pool is running with only 2/3 of the air volume. Consequently, the consultant expects that Zwembad De Viergang te Pijnacker will save up to 25% on their gas consumption, ie. app. EUR 40.000 per year.

TECHNICAL DATA:

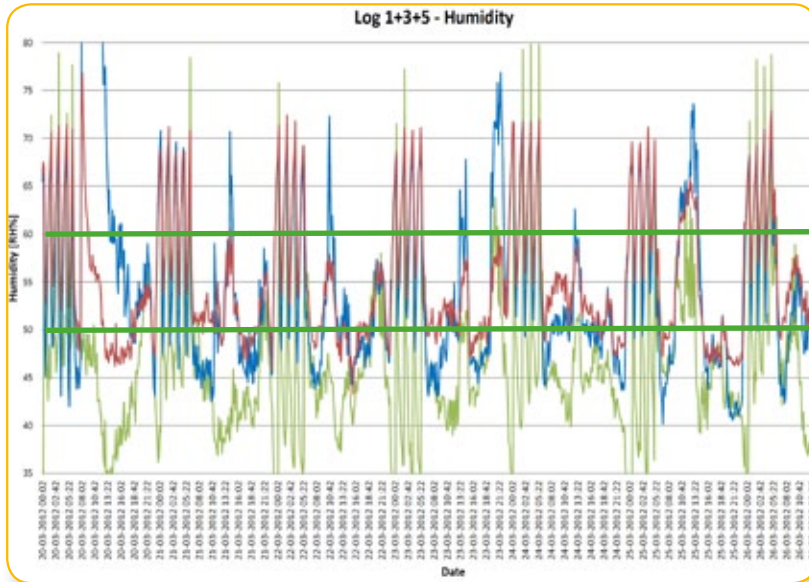
Year of construction: 2012
 Air volume: 27.500 m³/h
 KE Fibertec system: KE-InJect® system

Outer ring:
 Ø710 - Ø450mm
 132,7m of ducts

Inner ring:
 Ø450mm
 61,6m of ducts



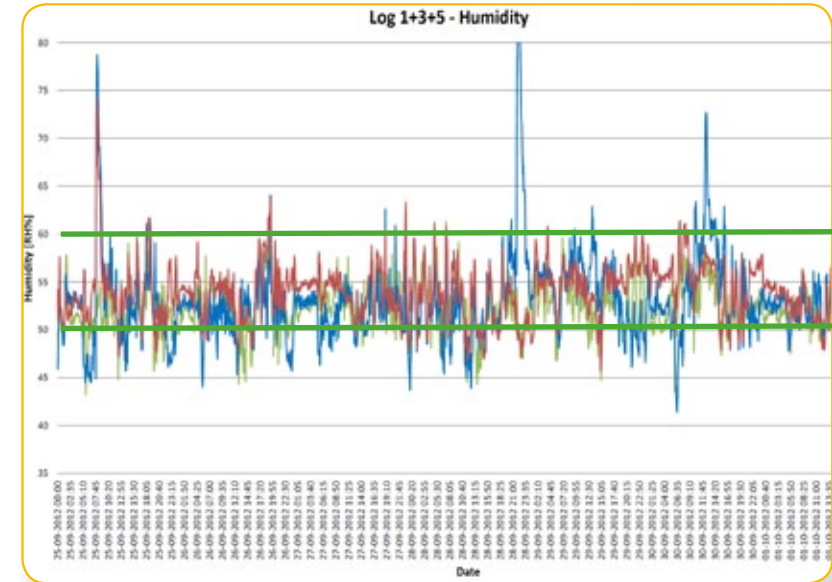
Old Steel Based Ventilation layout (SBV)



Ideal humidity for a swimming pool is 50–60% RH.

If the humidity is too high, it is not just uncomfortable for the users (swimmers), but will also damage the building with for instance mold and corrosion.

New Textile Based Ventilation layout (TBV)



Night savings are not recommended in swimming pools

The pool runs with a lower temperature during night time. This results in a higher humidity.

Conditions near window

We could see that condensation was going to be a problem during winter time. There is app. 5% RH higher humidity at the windows compared to the middle of the room. At -5 °C outside temperature the humidity must be below 60% RH to prevent condensation. Otherwise the windows have to be heated by warm and dry air in a separate heating system.

There was a condensation problem in the SBV-system but this is no longer an issue with the new TBV-system.

”

Maarten Uiterwijk, senior counselor installations at Sportfondsen Nederland N.V.

In our search for air conditioning plants in swimmingpools which can create an excellent climate and can be operated with less energy, this solution is almost ideal.

I am very pleased with the new layout and the co-operation with KE Fibertec. My customer gains numerous benefits from this such as an improved indoor climate and remarkable energy savings of up to 25%. I can only encourage others to explore the many possibilities with Textile Based Ventilation.



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Inner ring >> Non active duct with app. 1/3 of total air volume = 7.500 m³/h



Outer ring >> Active ducts with app. 2/3 of total air volume = 20.000 m³/h << **Outer ring**

KE Fibertec AS is market leader in Textile Based Ventilation. We create good indoor climate through our tailored textile ducts for installation in sports arenas, offices, laboratories, schools etc.



Textile ducts are customizable, easy to install, washable, hygienic, and come in all shapes and colours.

For more information please visit our website: www.ke-fibertec.com.

The system consists of an outer ring where the air volume is on 100% as long as the two inner ducts are functioning between 100% and 0%. This depends on the level of required relative humidity. If lesser air is required, the outer rings will also decrease to a level of 60%.

For more information, please contact:

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