



ISHRAE Speaks

ACREX India 2020, South Asia's Largest HVAC&R Event, promises to build sustainable future



Mr. Anoop Ballaney
Convenor - ACREX India 2020

Message from Mr. Anoop Ballaney, Convenor - ACREX India 2020

ACREX India proudly comes to the National Capital Region of India to celebrate its grand 21st edition. The event brings together the entire HVAC & R Universe to the city with a highly integrated participation of over 25 countries including Belgium, China, Czech Republic, Egypt, France, Germany, Italy, Japan, Korea, Malaysia, Saudi Arabia, Singapore, Spain, Switzerland, Taiwan, the Netherlands, UAE, UK, Ukraine and USA.

ACREX India 2020 promises to provides to the industry, a wonderful platform for all connected to the HVAC&R industry to reach out to the largest group of stakeholders and decision makers.

The spectrum of exhibitors will cover the complete range of the HVAC&R and allied services industry like Chillers, DX Unitary Systems, VRF Systems, Air Distribution Systems, Water Distribution and Treatment Systems, Electrical related and many more state of the art and current technologies and dedicated pavilions for niche segments like Building Automation and Indoor Air Quality products. The exhibition will definitely exceed the expectations of what an HVAC&R stakeholder looks for.

ACREX India 2020 is presented to the industry by ISHRAE – Indian Society of Heating, Refrigerating and Air Conditioning Engineers, a revered society of high credibility that houses a mammoth figure of approximately 25000 members. ACREX India is the flagship event of the Society and ensures that it meets the core objectives and mission of the Society.

With the support of every International and Domestic Society related to the industry, ACREX India 2020 would witness one of the greatest footfalls in terms of a very high quality of profile of visitors - architects, designers, consulting engineers, owners, developers and end users, project management and facility management professionals, service professionals.

ACREX India 2020 will also present a live exhibit titled "Shudh Vaayu Deergh Aayu" (translated to English as: Clean air, long life) on IAQ which shall focus on advanced techniques of designing new homes that now feature mechanical systems that support and accentuate natural ventilation. Some of these designs include energy-efficient heat recovery ventilators, also known as air-to-air heat exchangers. The exhibit will demonstrate that how, through mechanical means and through HVAC systems, one can remove or dilute indoor airborne pollutants coming from indoor sources; and how it reduces the level of contaminants and improves the IAQ.

Insightful Seminars & Workshops will be held for all visitors at ACREX India 2020 by industry experts from widespread fields. There shall be interactive lectures and moderated discussions on topics ranging from energy efficiency, healthy buildings, indoor air quality, refrigerants, to IoT.

Additionally, there would be highly engaging sessions by international associations like U.S. Green Building Council, REHVA (Federation of European Heating, Ventilating and Air-conditioning Associations), CEEW (Council on Energy, Environment and Water), AAR (Association of Ammonia Refrigeration), IAQA (Indoor Air Quality Association) & ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).

ISHRAE, connected through its presence in 42 locations across the country and a very strong membership fraternity, continues to bring the highest quality technical excellence for every stakeholder of the industry. Block the date of ACREX India 2020 and witness the grandest show of the year for the field of HVAC&R at India Expo Mart (IEML), Greater Noida on February 27-29, 2020.



Exhibitor Update

Underfloor cooling systems by MAINCOR

The history of MAINCOR Rohrsysteme GmbH & Co. KG starts in 2004 when the company was founded by Mr. Dieter Pfister. MAINCOR's manufacturing facility is in Knetzgau, Germany which started its operation in 2005. In 2007, a new facility was established to supply a high-quality plumbing system and an underfloor cooling and heating solution in Schweinfurt, Germany.



MAINCOR's factory in Knetzgau

With two business divisions, Building Solutions and Industry, the company's core objectives of high-quality products, customer service, innovation and clean environment are driven by the strong team. All products are DVGW and ISO certified which ensure high quality to the customers.

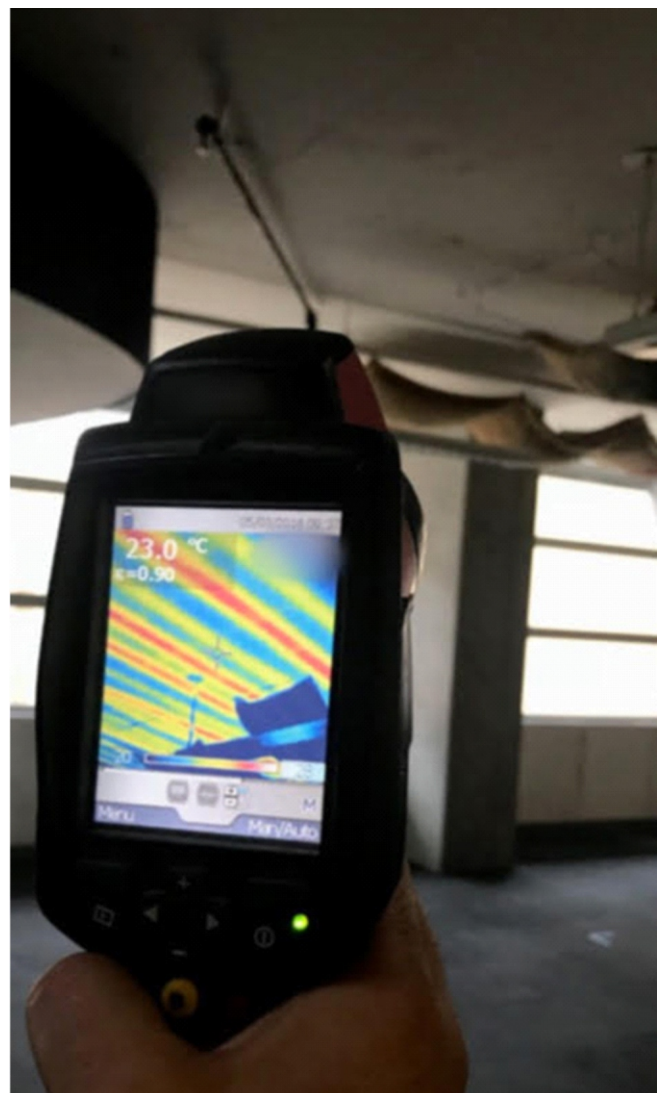


MAINCOR PE-RT pipes being manufactured in Germany

Rethink energy savings with radiant cooling technology

One of the solutions from MAINCOR is the radiant cooling technology, or commonly known as underfloor cooling system which offers great saving for an end user. The radiant technology is an easy way to install pipes either

inside the slab or in the screed during the construction of the building. The required chiller water temperature (16 degrees) is higher than the conventional cooling (7 degrees) and thereby helps increasing efficiency of the chiller and consumes less energy. It acts as a heat exchange which is spread out in 80-90% of the building space and carries back the load of the building easily. High cooling load requirements can be addressed with less power inputs. A radiant cooled building brings down the operational cost by about 40-45% and helps improve the Green ratings of the building.



Infrared camera picture of a radiant cooled building



Partner Preview

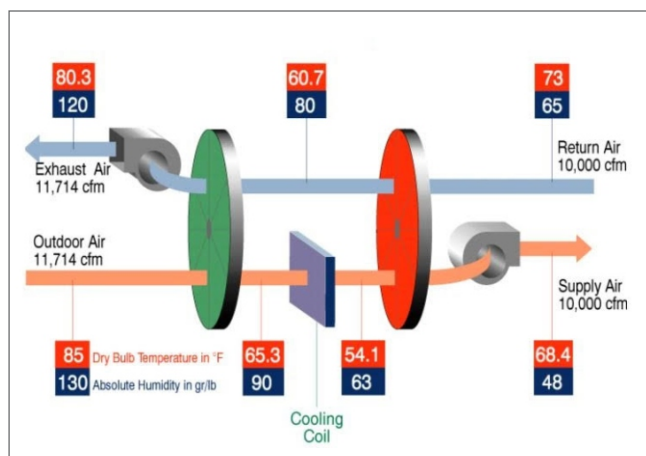
A simple and innovative solution for the best possible indoor climate with the least possible environmental impact



Mr. Devraj Singh
Managing Director, FlaktGroup India

FlaktGroup Solutions introduces the Green Agenda, designed to give you low energy choices, whether you need natural ventilation, mixed mode, energy recovery, variable air volume or the efficient delivery of air, we have the solution.

In our urbanized civilization, people spend most of their time indoor and they deserve the best possible environment. FlaktGroup is committed to providing energy efficient Air Climate Solutions to combine the best indoor climate with the best cost and energy efficiency thus reducing the environmental impact.



The in-depth research and long experience has helped identify the key parameters to designing optimal cooling and heating systems in buildings: Energy Efficiency, Reliability and a small Environmental Footprint.

The FlaktGroup's 'Twin Wheels' and 'Controls package' is helping specifiers gain significant energy savings from air handling units. In any application with a high density of occupation within rooms, dew-point temperature control can now be achieved using the FlaktGroup Wheels and Controls package to maintain room conditions. This has the dual effect of reducing the cooling load on the cooling coil and eliminating the requirement for reheat on the heater battery during the summer cycle, thus contributing to significant energy savings.

As the name implies, this system uses both a hygroscopic

thermal wheel and a non-hygroscopic thermal wheel with a cooling coil in between. The non-hygroscopic wheel reheats the air from the cooling coil, eliminating the need for a reheater. At the same time, it cools the extract air. This cooled extract air goes onto the hygroscopic wheel and this provides enough cooling recovery to reduce a typical cooling load by half.

FlaktGroup demonstrates this commitment to providing excellent indoor air quality, whilst still ensuring lower carbon output and reduced operating costs, through products, which significantly reducing running costs and carbon dioxide emissions, and makes a positive contribution to decreasing the impact of climate change.

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ACRO News Feature

How to optimise your HVAC appliances at home?

Energy-saving Tips for Homes



1. Routine maintenance

A proactive maintenance program for your HVAC system will ensure that your appliances are operating at most efficient settings and that parts or components are in good working order.

2. Optimum and stable temperatures

The thermostat temperature you set is a matter of personal comfort, but many systems have optimum temperature ranges that ensure they're using energy efficiently. Consult owner's manual or read online to find out the most energy-efficient temperature range. Avoid fluctuating temperatures too frequently, as this can make your HVAC system work harder and less efficiently.

3. Seal cavities

Any air leak in your home robs your HVAC system of efficiency since that heated or cooled air is lost. Ensure that all windows are shut and that doors have good weather seals before turning on the HVAC system.

4. Correct installation

Inadequate insulation can lead to losing heated or cooled air from the HVAC system. Ensure that the appliances are installed in the correct way.

5. The thermostat

Setting the thermostat to highest temperature you find comfortable in summers can seem like a small step, but the energy savings can be substantial and can save you 5 to 15 percent in bills each year.

Additionally, use a programmable thermostat, that can go a long way in to help reduce energy use when you're not home. The less your HVAC system has to work to maintain comfortable temperature levels that aren't necessary because no one is home, the more savings you'll see on your heating or cooling bill.

6. Regular filters change

Changing your HVAC system's air filters as directed by the manufacturer, helps ensure your system has smooth, uninterrupted air flow. New filters can help your system work more efficiently, saving you money in the process. For example, new filters in your air conditioner can account for an energy consumption savings of 5 to 15 percent.

7. Cover windows to help control temperature

Window coverings can have a big effect on your home's heating or cooling load.

In cooler months, harness the sun's free warmth by keeping curtains, blinds or drapes open on south-facing windows during the day to allow sunlight in.

Close them at night to add an extra layer of insulation between the glass and your home interior. In the summer, keep window coverings closed during the day to reduce temperatures.





Exhibitor Update

Rajco Company

Rajco Metal Industries Pvt. Ltd., an ISO 9001 certified company is a leading manufacturer of copper-based products.

They manufacture copper tubes & fittings for air conditioning and refrigeration industries, in Deoxidized High Residual Phosphorised (DHP) grade for a wide spectrum of the heating, ventilation, air conditioning, refrigeration, medical gas, piped natural gas and cooling industry.

HV-AC&R copper tubes & fittings are made from phosphorus deoxidized copper, Alloy C.106 or UNS No. C.12200 with minimum copper purity of 99.9% and phosphorus content of 0.015% to 0.040%, with strict dimensional tolerances as per ASTM B:251 / JIS-H-3300 to ensure the highest standards.

Rajco's HV-AC&R copper tubes & fittings are bright annealed, having uniform grain size, controlled hardness, elongation, tensile and yield strength. These copper tubes can be easily bent, fabricated, manipulated, soldered and brazed. The sizes manufactured range from 4" OD to 1/8" OD and thickness from 10 SWG to 32 SWG.

Rajco also manufactures 'PEX B' flexible pipes with 'Press Fit Fittings' for the plumbing industry. PEX B pipes and EVOH PEX pipes (with Oxygen Diffusion barrier) are suitable for hot & cold potable water applications, manufactured as per specification ISO:15875 with NSF & Intertek Certification.

For more information, you can write to rajco@rajcogroup.com or visit www.rajcogroup.com

ACRO News Feature

Did You Know?

Some fun facts about the industry



The HVAC&R industry comes forth with some interesting facts you never thought were true. Read on these points to ponder:

Fun Fact #1: The first fully air-conditioned home was built in Minneapolis in 1913 by Charles Gilbert Gates. The mansion took up three city lots, had gold plumbing and a full ballroom

Fun Fact #2: The Romans were the first to use a heating system. This heating system was called a "hypocaust". It sent heat through the floors and walls of the homes of rich Romans.

Fun Fact #3: Willis Carrier came up with the idea for the air conditioner while working at a publishing company. The heat was causing paper to wrinkle and ink to run.

Fun Fact #4: The term "Summer Blockbuster" was in reference to Air conditioning systems. One of the first businesses to utilize air conditioning technology back in the early part of the twentieth century were movie theaters. In the 1930's, patrons flocked to theaters to enjoy the films – but also to enjoy the cool air during summer months (even to this day, in India!). Marketers took advantage of this trend and saved their big hits for summertime releases. Thus, the term "Summer Blockbuster" became a part of our vocabulary and going to the movies has never been cooler.



Fun Fact #5: Herbert Hoover was the first President to enjoy air conditioning in the White House. He spent \$30,000 to install the system in the oval office, just after the start of the Great Depression.

Fun Fact #6: In America, if you wanted to buy a basic AC unit in the 1940's, it would cost you approximately \$350. Translating that into today's price based on inflation, you would be paying almost \$3,500, or Rs. 2.5 Lac each!

Fun Fact #7: The first car with air conditioning was introduced in 1939 by the Packard Motor Company. It wasn't very popular due to its high cost and the fact that the system took up half the trunk space.

Fun Fact #8: Air conditioning in the U.S. uses the same amount of energy as it takes to power the whole continent of Africa, and that's just air conditioning alone! With such high-energy use, it's no wonder why the need for HVAC technicians are in such high demand!

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A large array of clean air products for the first time, exclusively at ACREX 2020.

The SVDA pavilion at ACREX 2020 comes at a very special price of Rs. 1,50,000 + GST onwards**

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Exhibitor Update

Carbon Dioxide as an Outdoor Air Quality Monitor

Some insights by Senseair by Asahi KASEI

The term “air quality” includes most aspects concerning health and the comfort of ambient air. When it comes to outdoor air, it is usually unhealthy substances (e.g. particles, nitrogen dioxide, hydrocarbons, carbon monoxide, or ozone) that are taken into consideration. Most of these originate from combustion sources, which also generate large amounts of carbon dioxide.

Not only is the local air quality dependent on temporary local emissions, but also on current ventilation, i.e. metrological conditions. In conditions with little air exchange, such as low wind, low convection, or inversion layers, “putting a lid” on top of an area allows for accumulation of polluting agents. Under such conditions, carbon dioxide also accumulates. Thus, there is a direct correlation between local carbon dioxide levels and pollution originating from combustion sources (e.g. traffic or industry).

It is, of course, possible to measure each polluting substance one by one using dedicated sensors. However, they are usually not maintenance free, low-cost or reliable. For instance, particle sensors need regular cleaning of the optics and are not known for being consistent in their reading. Nitrogen dioxide sensors are known to drift over time and need to be calibrated and replaced on a regular basis. Furthermore, all the polluting substances that you do not install a specific sensor for remain unmeasured.

Carbon dioxide sensors are known to be reliable and accurate, maintenance-free, and do not require calibration. They can be used to effectively measure the ratio between combustion related emission and local ventilation conditions, and thusly monitor the local air quality.

The correlation factor between the local carbon dioxide value and the specific pollutants are of course dependent on the source of pollution. For instance, diesel engines produce more nitrogen dioxide than gasoline engines. The correlation will, therefore, differ from city to city and also be somewhat different from season to season.

The exact correlation coefficients could certainly be locally monitored at one site in a city and be statistically used for estimates of polluting agents at all the places where only carbon dioxide is monitored. However, a high carbon dioxide reading is always a sign of high emissions in relation to the momentary air exchange and is thus an indication of high risk for pollutants. Similarly, a low carbon dioxide level close to the background level is proof that pollutants are not accumulated and is, therefore, a guarantee for fresh air.

Using carbon dioxide as a tracer gas is no novelty; it is the standard for indoor air quality measurements. In indoor air, viruses, volatile organic compounds, bacteria, odours, etc. are the problem areas. Sensors for all these different substances are not available as maintenance-free, reliable and low-cost products. Instead, carbon dioxide is used as the tracer gas, since it is a distinct portion of human's exhaled breath. A high indoor carbon dioxide level is a sign of insufficient ventilation, as well as an indication of Sick-Building Syndrome.

Carbon dioxide level monitoring can be used in the same way regarding the local outdoor air quality: as an effective, reliable, and instant measurement.

Facts

- Fresh-air contains about 400 ppm CO₂.
- The exhaust gas of combustion engine contains about 140,000 ppm CO₂.
- Human breath contains about 50,000 ppm CO₂.
- Indoor ventilation is well-balanced at a level of 1,000 ppm CO₂. Levels above 1,500 ppm are a result of insufficient ventilation.

For such articles on air quality can be found on their website <https://senseair.com/knowledge>



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We are soliciting content – news, views and reviews. We urge you to send in stories about the industry, energy saving, latest technologies, innovation and market discoveries. If you have anything that you would like us to cover in our forthcoming issues, please write to marketing@nm-india.com.

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