

climate control

MIDDLE EAST

KEY PERSPECTIVES ON THE REGION'S HVACR INDUSTRY

May 2022

PERSPECTIVES

WHY DOES IAQ MATTER IN REAL ESTATE?

Yousuf Fakhruddin, CEO, Fakhruddin Properties

QUANTIFYING OUTDOOR HEAT

Alan Wildes, Co-founder and CIO, and Mohamed Elmak, PMO and RnD Director, FortyGuard

MARKET FEATURE

ON OVERDRIVE?

Has the drives market been witnessing an uptick in sales?

Q&A

LOUISE COLLINS

Jones Lang LaSalle

GUEST COLUMN

KEEPING UP WITH HVACR REGULATORY CHANGES

Nabil Shahin, AHRI

POST-EVENT REPORT:
World IEQ Forum 2022

BUILDING TRACING

Why auditing and certifying buildings on their IAQ performance is crucial for infection control



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BUILDING TRACING

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IAQ and building tracing

AS early as September 2020, Jeremy McDonald, a professional engineer with New York-based Guth Deconzo Consulting Engineers, writing in *Climate Control Middle East* magazine, spoke of the need for a building tracing programme – essentially, an audit of the Indoor Air Quality (IAQ) performance of buildings. This was at the height of the outbreak of the pandemic, when contact tracing was an accepted strategy to control the spread of the disease, driven by airborne droplets.

McDonald suggested that in addition to contact tracing, authorities ought to undertake building tracing, with a view to identifying “specific buildings that suffer from low IAQ”. He saw this identification and certification process as the first step in taking remedial action involving HVAC-related interventions, including improving the quality of air circulation.

McDonald said that often, HVAC systems themselves are creating conditions for the spread of the disease in dense urban spaces, including low air circulation – often the result of designing buildings in a tight manner – which causes the build-up of the pathogen. Equally worrying, he said, is the fact that many buildings suffer from the absence of regular maintenance schedules or are groaning under the weight of aged HVAC equipment, as a result of which they are specifically struggling to achieve the recommended air changes.

All things considered, a building tracing and certification programme, based on evaluating and reviewing individual buildings, he argued, would not only help combat COVID-19 but also minimise the possibility of loss of human lives and economic destruction by future such pandemics.

The cover story of this issue focuses on this profoundly important topic of undertaking an IAQ building certification programme in the Middle East region. McDonald himself is one of the sources, and he joins others who are earnest and passionate about promoting better health through timely and robust HVAC interventions across multiple building types.

The topic is such that it is quite impossible to discuss all aspects at one go, so we urge and encourage you to share your feedback. It is essential to sustain the momentum and the increased awareness towards better IAQ.

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EMPANELLED COLUMNISTS

Dr Iyad Al-Attar
Independent air filtration consultant, writes on specific science and technology issues relating to Indoor Air Quality, including airborne particles



Nabil Shahin
International Technical Director – AHRI MENA, writes on regulation-related issues impacting multiple stakeholders in the building construction industry



Euan Lloyd
Senior Counsel, Construction & Infrastructure, Al Tamimi, writes on legal aspects of the building construction industry, including contractual obligations and payments



Krishnan Unni Madathil
Auditor, Bin Khadim Radha & Co., carrying out an analysis of the market, writes on business opportunities for the HVACR industry



Dan Mizesko
Managing Partner/President, US Chiller Services International, writes on issues relating to chilled water systems, including operation & maintenance



Alissa Paillé
Founder, careersbay.com, writes on career opportunities, including typical KPIs by HR teams, in the HVACR industry



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REGULATION ROUND-UP

AHRI writes a bi-monthly column on regulation-related issues in the GCC region, exclusively for *Climate Control Middle East*

KEEPING UP WITH HVACR REGULATORY CHANGES

The pressure manufacturers feel when confronted with new standards, and the essentialness of harmonising standards in countries with similar ambient conditions



Nabil Shahin

HVACR performance regulations in the GCC region are relatively new compared to existing regulations in the European Union and North America. HVACR equipment consume much of the electricity produced in the GCC region, owing to hot climatic conditions. Governments partially subsidise electricity in many countries in the GCC region. After the steep decline in oil prices in 2014-2015, oil-producing countries realised that HVACR energy efficiency regulations could effectively and swiftly reduce energy consumption. The measures taken in the last few years have yielded significant benefits to end-users as well as to governments and have positively addressed climate change policies by reducing carbon emissions. To quickly establish Minimum Energy Performance Standards (MEPS), regulatory bodies adopted existing and reliable international HVACR performance standards developed by organisations such as AHRI and ISO.

When launching or modifying standards, the authorities must carefully consider four areas:

- 1) Available technology: Existing multiple manufacturers can support new regulations.
- 2) Consumer access: The average cost increase of the new product is not out of reach of the average consumer.
- 3) Time: Adequate time for manufacturers to comply with new regulations.

4) Multi-path approach: allowing more than one global standard to be referenced or deployed. This will minimise trade barriers and pave the way for introducing more technologies and products, which will result in more competition and better prices and selections for end users.

The most frequently cited negative impacts of new regulations by manufacturers are financial cost and time. Most of the HVACR equipment sold in the GCC region are specifically manufactured for the region. They are designed to operate in rugged and high-ambient conditions. To meet those conditions, manufacturers often employ larger heat exchangers, add additional measures to cool electronics, use corrosion-resistant material and other measures. When a regulatory change occurs, manufacturers are required to either design new equipment or modify existing equipment to meet the new requirements. Product development is a lengthy process that includes research and development, design, testing, tooling, manufacturing, certification, registration and shipping. On average, the entire process takes 18-24 months from start to finish. Unfortunately, at the time of launching MEPS in the GCC region, though regulatory bodies took efforts to communicate about the MEPS, some manufacturers complained they were

not given enough time to comply with the new regulations.

In countries with a more mature regulatory process, manufacturers' associations, such as AHRI, usually get involved at an early stage with the regulatory bodies to help maintain regulatory stability by providing sufficient notice of changes. Indeed, manufacturer associations usually have access to local, regional and international manufacturers. They act as a voice of manufacturers and help ensure that the changes meet the aforementioned three criteria.

Regulatory authorities have increasingly begun working with manufacturers. The productive dialogue can alleviate many issues arising out of new regulations, such as product availability interruptions, price hikes, failure to comply, product rework and recalls, products being too costly to launch, shipment being held and rejected at the borders, and insufficient training of technicians. Manufacturers are experts in their field. HVACR industry standards, especially AHRI's, are developed by manufacturers and typically reflect the latest in testing, product feedback from users and government bodies, and HVACR technology.

The other challenge manufacturers face in the GCC region is the lack of harmonisation

of standards among the member countries. Although the climate and operating conditions are similar, each country has slightly different requirements or set of conditions that a product must be tested under, and all in a relatively small geographical region. These slightly different conditions can, for practical reasons, be made the same and work for all countries. For example, each country has its own unique energy label design that must be placed on the product. Some countries have different test conditions, requiring testing the product at different temperature test points. For manufacturers assessing whether to offer or sell their technologies and products in the region, complying with multiple countries' requirements is a major challenge. It often means developing and testing multiple unique models, one for each country. Doing that

requires employing additional personnel to handle the added work and registration requirements. It also means bearing the cost of having and warehousing additional inventory to support the different requirements. The situation often creates a disincentive to serve the region or spurs thinking along the lines of avoiding unique markets within the region.

The negative effect of this disincentive can cause, and may be doing so now, many local and international manufacturers not to offer their complete product portfolios but only the bare minimum to the region. All of this diminishes the potential impact and energy savings of each individual regulatory scheme. Organizations like the GSO (GCC Standardization Organization) are working to bridge the gap by promoting harmonised

HVAC&R standards and certification programmes that all GCC region countries can adopt.

The task of harmonizing the standards is a highly challenging one, as each country takes pride in what it has developed or established in terms of regulations. GSO is already making some headway, and we are starting to see more and more support and cooperation from the member countries in that direction. ccme

Nabil Shahin is International Technical Director, Air-Conditioning, Heating, and Refrigeration Institute (AHRI). He may be contacted at NShahin@ahrinet.org.

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BUILDING TRACING

Why auditing and certifying buildings
on their IAQ performance is crucial for
infection control

Story by Surendar Balakrishnan | Editor, *Climate Control Middle East*



IN May 2016, the Dubai Supreme Council of Energy launched a drive for Energy Intensity Mapping of buildings in the emirate.

The objective was to unify consumption and building data to find a method of analysing and monitoring consumption levels. Speaking on the occasion, H.E. Saeed Mohammed Al Tayer, Vice Chairman of the Council, said, "This will find a solution to limit Dubai's high levels of energy use, and supports the demand side management strategy to reduce overall demand by 30% by 2030."

In the same year, the Emirates Green Building Council and the Dubai Supreme Council of Energy resolved to undertake a 'Benchmarking Project' of 100 buildings in Dubai to assess their energy performance, under the Building Efficiency Accelerator (BEA) programme. The two bodies invited hotels, malls and schools to participate in the project, which they said would serve "as a referral point in driving forward the energy efficiency of buildings in Dubai". Speaking on the occasion, Saeed Al Abbar, the then Chairman of EmiratesGBC, said: "The Benchmarking Project is a major step towards mapping the energy use efficiency of existing buildings in Dubai. The findings will not only help in undertaking relevant retrofitting measures but will also support policy making in relation to sustainable buildings."

Cut to September 2020. In faraway New York City, Jeremy McDonald, a professional engineer with New York-based Guth Deconzo Consulting Engineers, raised a call for the need for building tracing to audit and certify the Indoor Air Quality (IAQ) performance of buildings. If at all anything, in 2022, in a world chastened by COVID-19, which though downgraded from a pandemic to an endemic and still threatens to cut loose and unleash its destructive potential, the call is still valid – to protect building occupants not only now but also during future possible pandemics. As Dr Iyad Al-Attar, Kuwait-based independent air filtration consultant, puts it, "The pandemic has proven that enhancing IAQ is not philanthropy, but is a core survival ingredient."

McDonald, reflecting on what he said in September 2020, says he would still strongly recommend building tracing for IAQ performance, and rating them



Dustine Stanley

accordingly for general public awareness. "Based on our experience, many building occupants would be horrified if they knew the state of their IAQ, and building owners would undoubtedly fix their systems. Dipak Shelke, Sales Manager - Energy Solutions, Daikin Middle East and Africa, sharing a similar sentiment, says an IAQ performance mapping would allow the UAE to achieve better visibility on the current levels of the indoor air environment in various building types across the country. "The outcome of IAQ mapping can be helpful in setting the benchmark for improvements and providing a clearer measure on Indoor Air Quality," Shelke says. "The process can help drive towards setting a local IAQ standard, or a certification process, which can be used as a KPI by healthcare facilities, commercial spaces, hotels and schools." Weighing in, Dustine Stanley, Chief Technology Officer, Netix Global, says building tracing and certification for IAQ is mission critical. "We are too late if we haven't done this yet," he says, adding that buildings need to be categorised based on air quality scores and the ratings need to be published, so that people are aware of the condition of the surroundings they live in, and property owners can take necessary measures to improve and maintain the air quality levels. This, he adds, will not only benefit the health and safety of the people but also maximise the real estate value.

Building tracing for IAQ is easier

said than done. It is widely believed the task is an onerous one. Given the layered structure of the building and MEP industry ecosystem, tracing and certifying require cooperation and coordination among stakeholders, in particular building owners. Indeed, the consensus is that getting a buy-in is not easy. Speaking from a US perspective, McDonald says: "We are seeing a shift, ever so slightly. Clients are definitely interested in the various technologies but are reluctant to invest actual capital dollars. Typically, this is because of uncertainty about the future and also scarcity of capital. Clients are mostly investing in low-cost or no-cost fixes, such as BMS optimisation, fixing dampers and improved filtration."

McDonald says there is definitely a greater understanding of the importance of IAQ. However, most clients feel improving filtration and making sure ventilation systems are "working" are enough. "There needs to be a recognition that IAQ needs to be an ongoing effort," he adds.

Speaking from a GCC region and air filtration perspective, Al-Attar says air quality and filtration have experienced several challenges, ranging from shifting HVAC commitments, incomplete maintenance programmes, unfulfilled filter upgrades, broken guideline-adherence promises and lost objectives amidst the other built-environment challenges.

Some of the broad challenges McDonald addresses in a US context



Jeremy McDonald



Dipak Shelke

resonate strongly in the GCC region. The underlying message, as applying to the United States or to the GCC region, is crystal clear – there is a compelling need for a structured approach to building tracing and certification for IAQ, one that is all-encompassing.

For building tracing and certification to succeed, there needs to be a city-wide buy-in. In Dubai, home to over 120,000 existing buildings, for instance, every building would need to be audited and certified on IAQ performance in a homogeneous manner on the basis of established standards, to compel building owners to act and to provide options to occupants, if renting the property.

It is challenging to undertake building tracing and certification of 120,000 buildings for IAQ, though. Shelke says it would be good if the audit would at least cover heavily occupied facilities, such as schools, and healthcare and commercial spaces. McDonald opines that if a building has a sophisticated Building Management System, it would not be as difficult. “The key is to determine what variables need to be reported,” he says. “Obviously, the more data points, the more expensive the implementation will be. CO₂ monitoring can be quite affordable. Measuring ventilation on a space-by-space basis can be quite expensive.” For smaller buildings – for example, independent restaurants – the standard may have to be limited to make the implementation affordable, he says.

There are low-cost monitors on the market, he says, several under USD 1,000 each, which can be networked into a kiosk.

But prior to implementation, it is important, even essential, to make a business case. Circling back to the need for buy-in, it is important to present a viable business model, to establish funding mechanisms for a resource-heavy task as building tracing and certification for IAQ. McDonald says the best business case is creating a desirable place to work, live and enjoy life. No one wants to go to work or a leisure activity and get sick, he says.

says is crucial for the success of a building tracing programme. Shelke wonders if regulations can mandate every building to obtain a certification assuring an acceptable IAQ level and ensure a periodic validation of these certificates. Echoing the two views, Dr Al-Attar says it is important that GCC region governments legislate appropriate laws and regulations to raise the bar on air quality and the relevant maintenance practices, which would ensure built-environments are sustainable. “The government can seek advice from experts concerned and technical entities to

“ An investment of USD1-USD2/sq ft can drastically improve IAQ. Recognising the cost of most buildings – USD100-USD1,000/sq ft, depending on use and complexity – a few dollars a square foot seems reasonable, recognising how destructive the pandemic is, and improvements associated with improved air quality

McDonald believes that as far as funding is concerned, the government needs to get involved. “I believe in carrots and sticks,” he says. “There should be basic funding for upgrades – that is, an allotment for air-cleaning technologies and IAQ monitoring that can be partially funded based on rebates and incentives.”

McDonald raises an important point – of government intervention, which he

establish the expressive terms to legislate on how to attain better air quality, not just keep it within acceptable limits,” he says.

McDonald says there are laws on the books that need to be enforced, or perhaps slightly adjusted. For example, in the United States, he says, buildings are required to demonstrate they meet minimum ventilation code at the time of occupancy. However, there is no ▶

Q&A:

JLL ON BUILDING TRACING

‘BETTER IAQ CAN PRESENT HUGE SAVINGS WITH MINIMUM INVESTMENT’

Louise Collins, Head of Project & Development Services UAE and Head of Engineering & Energy MENA, Jones Lang LaSalle (JLL), in conversation with Charmaine Fernz of *Climate Control Middle East*, about the importance and effectiveness of building tracing in the region

WHAT WOULD IT TAKE TO UNDERTAKE A BUILDING TRACING PROGRAMME IN THE GCC REGION?

Building tracing programmes would need to be conducted on the back of a legislative programme that enforces the right usage of air within buildings. This could be done as an incentive or compliance programme. With a lot of GCC region countries having heavily subsidised power, the energy savings reductions alone would not be incentive enough. If there was a star-rating programme, wherein residents could report the IAQ against occupancy and building type, building owners would be forced to operate at an optimum level.

WHAT PERMISSIONS WOULD BE NEEDED TO AUDIT BUILDINGS FOR BUILDING TRACING? IS ACCESS LIMITED OR DENIED? IF SO, WOULD THE EXERCISE HAVE TO BE GOVERNMENT-MANDATED?

There would be mandated permissions required to make it effective. In the case of older and less efficient buildings, regionally owners and operators would generally not comply with a good level of IAQ.



WHAT WOULD IT COST TO AUDIT THE BUILDINGS? WHAT WOULD IT COST TO IMPLEMENT CHANGES IN THE BUILDINGS?

JLL recently carried out some surveys at a very low cost to building owners and found some small changes that can help build efficiency. It is noted that up to 30% of the conditioned air can be lost through unsealed buildings, as it is not mandated to smoke-test buildings to ensure low infiltration. Other issues, such as air control, air recovery and good commissioning of buildings can present huge savings to clients for minimum investment.

HAVE TECHNOLOGIES EVOLVED TO SUCH AN EXTENT THAT IEQ CAN BE IMPROVED WITHOUT IMPACTING THE QUEST FOR GREATER EFFICIENCY?

The technology certainly exists, and there is an initial CAPEX for installation of these systems. However, payback periods are more likely within 3-5 years than anything longer. IoT systems, including sensors, BMS and occupancy systems controlling how air is efficiently controlled and monitored is already in use in some of the most efficient buildings in the region. All that is needed is to demonstrate the value.



Dr Lyad Al-Attar

Continued from page 11

requirement, post initial occupancy of the building. “Perhaps if there is a requirement for yearly testing and demonstration of minimum standards, then buildings will be compelled to meet the intent of the law,” he says.

McDonald says a case could be made for significant government funding. “In our efforts with clients, even an investment of USD1-USD2/sq ft can drastically improve IAQ,” he says. “Recognising the cost of most buildings – USD100-USD1,000/sq ft, depending on use and complexity – a few dollars a square foot seems reasonable, recognising how destructive the pandemic is, and improvements associated with improved air quality.”

When it comes to implementation, the consensus is that data that is collected – be it minimum reporting of ventilation, CO₂ levels or VOCs – should be in native form and auditable. Speaking from an air filtration point of view, Dr Al-Attar says it is important to quantify the air quality our respiratory system is exposed to. “Aerosol monitoring is a perfect tool and an ideal start to quantify what we are up against both outdoors and indoors,” he says.

Though specific guidelines are available to report on ventilation, CO₂ and VOC levels, the task of reporting itself is challenging, and here’s where the government could consider outsourcing the work of measuring and certification

to third-party private agencies.

McDonald recommends a model that is similar in nature to an ESCO model. “The government should develop the measurement standard and allow the private sector to implement,” he says. Seconding McDonald’s recommendation, Shelke says he, too, would place his faith on the ESCO model. “We have seen the development of the energy performance contracting market in the UAE,” he says. “Various ESCO companies accredited by Dubai RSB are contributing towards building energy optimisation.”

It is believed that when it comes to specifics of implementation, monitoring for variables is difficult. McDonald believes the measurement model ought to be based on monitoring for technologies that would work in relation to ventilation, CO₂ and VOCs and other primary variables based on what the building is trying to accomplish. “Ventilation is key, and I consider this the base improvement,” he says. “Filtration is also quite rudimentary. Humidification and dehumidification are also important but can be costly. Recognising how deficient our infrastructure is, air-cleaning technologies, such as bi-polar ionisation and UV may be the most cost-effective improvement option for a number of buildings.”

Physical monitors for measuring, McDonald says, are reasonably priced, and most monitors have an IT output. Dr Al-Attar points to how handheld

devices and desktop devices are inexpensive to acquire. The consensus is to recommend a standard kiosk for reporting, so users can recognise the data, which should be reported in real time, along with trending from previously defined intervals, perhaps a few days to a week, McDonald says. Taking the IT route further, Stanley speaks of the availability of automation and intelligence to control the ventilation in occupied spaces, of sensors to monitor the quality of airflow and of AI for actions based on feedback. These, he adds, provide visibility to our smartphones or handheld devices about the quality of the space while being away from the location. Dr Al-Attar adds that it is essential to follow up on harvesting the data in a structured manner. “The name of the game is what we do with the readings and data acquired from these devices,” he says. “Feeding air quality data to an adaptive HVAC system would help respond to the variation of the inlet air quality and make the best decisions possible.” Stanley says the route exists to act on the data. There are a few third-party recognised certification standards, such as WELL, UL and ISO 14001 related to air quality and environmental status, he points out. Many property management firms are either already certified or pursuing these certifications, he says, adding that IT platforms are capable of providing real-time visibility to the air quality from the sensors on site. Data collection, he says, is easy for auditors to inspect and provide the necessary approvals for certification and also continuously monitor and control the quality using condition-based algorithms and AI feedback to assets.

Building tracing and certification for IAQ performance is not a straightforward shoo-in. It comes with its complexities and the formidable challenge of never having been tried before. “Certainly, it’s challenging,” Shelke says. “However, every initiative towards IAQ monitoring is a step closer towards the objective of a pollutant-free indoor environment and a healthy community. The current advancement in building controls and remote monitoring capabilities, prove that it may be possible to achieve it.” [ccme](#)

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'WE THE MANUFACTURERS'

Surendar Balakrishnan, Editor, *Climate Control Middle East*, presents Part 2 of the continuing coverage of the World IEQ Forum 2022...



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THE sixth edition of the World IEQ Forum, on March 16, was an occasion for the HVAC industry to do a deep dive into Indoor Air Quality issues, which in the aftermath of the height of the pandemic, spawned multiple avenues of discussion.

In Part 1, doctors, public health officials, MEP consultants and standards bodies discussed the need for re-defining IAQ across building types with future possible pandemics in mind. Participants focused on the new-normal of tackling extremely contagious bio-agents,

which are placing the burden on IAQ technological solutions for protecting lives in the built-environment.

In this, the second part, manufacturers, primarily, hold court on issues relating to innovation in design, manufacturing and installation, among others. ▶

The quest for extraordinary IAQ

A panel discussion aimed at understanding the viewpoints of the manufacturing community...

MODERATOR



Omnia Halawani
Co-CEO & Founder, GRFN, UAE



Bill McQuade
Vice President, Industry Sector Services, and Industry Sector Lead, Applied and Refrigeration, AHRI



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Dr Stephanie Taylor
CEO, Building4Health, Inc., USA



Tobias Zimmer
Vice President, Global Product Management & International Standards, Camfil

OMNIA HALAWANI: What innovations would you like to see in design, construction, installation and equipment for unprecedented IAQ?

DR STEPHANIE TAYLOR: I would start with designs and create space for proper mechanical systems. We need to bring together silos of engineering and medical professionals. We need to bring in silos of building materials.

TOBIAS ZIMMER: The biggest impact will be in the design stage. Maintenance, of course, has a major impact. As Iyad (Dr Iyad Al-Attar, independent air filtration consultant) mentioned, we are stuck with low-cost washable filters to save first cost. So, we need basic filtration solutions. If we look at energy, which is the main argument, when you wash a filter it clogs, and then energy consumption is

tremendous. So, with washable filters, there is a lower first cost, but you pay a high energy cost.

MORTEN SCHMELZER: Having high efficiency filters with lower energy consumption is not contradictory. You do have these.

HALAWANI: Other than filters, what are the energy consuming equipment. How can we convince the market on the importance of IAQ?

SCHMELZER: We need to start with legislation. You need to improve the ground condition. In the industry, you need a push. In Europe, you have the Ecodesign Framework, and with push it is being applied. It starts with legislation, and it needs to be enforced, as well.

BILL McQUADE: A lot of technologies exist already, and they have existed as options. But there was no driver. Once the pandemic goes back, people will go back to low-cost solutions and not paying attention to IAQ. When it comes to energy, the more efficient the filters, the more energy they use. There is opportunity to use lower-level filtration, UV lighting and standalone air cleaners. So, there is an opportunity to use a hybrid-type system, which can be incorporated in existing AHUs.

YASMINE SKANJI: We definitely have to find the right balance between IAQ and energy efficiency. We are providing many solutions, and in the future, we must focus on many solutions that are available and on being totally connected to BMS in buildings to provide best maintenance.

HALAWANI: How can we combat airborne diseases?

DAVID SCHURK: At the end of the day, when it comes to pathogens, it boils down to everything in the air. If we can effectively remove those particles from the air, they cannot hurt us. So, it is about making ventilation and filtration efficient. And maybe they have not been maintained properly, not operated properly not commissioned properly. So, if we use them effectively to remove particles, we can create much healthier buildings.

HALAWANI: Stephanie, you are a clinical practitioner and architect? Where do you see the main drivers coming from?

DR TAYLOR: In my experience, one of the issues that has been perpetuated in IAQ is the disconnect between who is responsible for the building and who uses the building. In commercial buildings, the building owner might not want to put too much money. I think somehow, whether tenant, parent, child or employee, they need to be able to see what is happening. So, removing the disconnect is important.

HALAWANI: From an IAQ perspective, the technology is there, but is it being adequately used and maintained?

SCHMELZER: The technology is already there but is not being fully utilised. Here, we focus on cooling aspect and recirculation aspect. COVID has given a push on this subject, but we should make sure we don't lose this momentum.

SCHURK: From a manufacturer's perspective, efficiency can be maintained, as can be the opex from energy consumption and lifecycle cost of maintenance. Maintainability of product is largest overall and is based on lifecycle. If equipment lasts for 25 years, then the end user should take all his costs into consideration.

ZIMMER: There is a disconnect between the user and those responsible for the building. If you look at the total building from a maintenance point of view, it does not cost much but reduces the energy bill, because if you maintain the filter, it will save energy.

MCQUADE: I think that is a very good point. You have capex and opex. So, the good stick is regulation and mandatory standards. The operating budget is there, and this is true with energy efficiency, too. If there isn't the institutional will to maintain the system, you are not going to be fully effective. So, make the operating budget folks accountable.

MEMBER OF THE AUDIENCE: Dr Stephanie, you mentioned cost centre silos. There is a different entity that makes the building and the ones that maintain the building. What is the short-term and long-term approach to building management? If you look at the long term, the building may be repurposed. Are we looking at repurposed buildings?

HALAWANI: We rarely see designers revisit a building they have worked on.

ZIMMER: In Germany, we have similar issues. Regulation just looks at how it is built. More standardised the system, the easier is the maintenance. How do you maintain it, if completely wrong dimension?

SCHURK: In the healthcare market, we are not only tasked with building hospitals. Hospitals are tasked with providing resiliency and responsiveness, so they can respond when the next pandemic comes.

MEMBER OF THE AUDIENCE: How can we see IAQ of a particular office so that we can rent it? I am speaking about visibility? Are we near or far from that? Are dashboards available quantifying IAQ?

SKANJI: You are speaking about the future of the subject. COVID has increased visibility. But part of our work is educating our customer first. For the future, we need specific points to have 11 pollutants. And we need to provide good information for best predictive maintenance of buildings.

DR TAYLOR: We can see what is in the air. We have the ability to measure human beings. We have data points. We are pretty much there, and figuring out a model for buildings is not very expensive. That's my dream – an endocrine system for buildings!

VOICES

Insights and observations heard during the Forum...

Coordination of cross-sector stakeholders is required.

Fatima Hammadi, Head of Air Quality Section, UAE Ministry of Climate Change & Environment

The role of your sector is very valuable to achieve energy efficiency and Indoor Air Quality... We strongly believe in the role of the private sector to allow radical improvement of Indoor Air Quality. The World IEQ Forum is an important platform for the government and private sector on how to improve Indoor Air Quality through collaboration.

Fatima Hammadi, Head of Air Quality Section, UAE Ministry of Climate Change & Environment

To have traction with any endeavour, we need to have a business model. Unless you do so, it is very hard to bring about change.

Dr Stephanie Taylor, CEO, Building4Health, Inc

We need some organisms to live. Buildings also have a microbiome. We need to decrease the bad germs but do not want to annihilate the good ones.

Dr Stephanie Taylor, CEO, Building4Health, Inc

Occupant health impact should be the epicentre of all building-related decisions.

Dr Stephanie Taylor, Building4Health

Ventilation is important, filtration is important, but if you ventilate to dilute and have low Relative Humidity, it is really hard to bring down the count in the air, so don't look at filtration and ventilation in isolation.

Dr Stephanie Taylor, Building4Health

The problem in the Gulf is high humidity than adding more humidity. Oversizing of cooling equipment leads to humidity. People want 22 degrees C and lower. So, the problem is a bit different here in the Gulf.

Member of the audience

Let's vent together. It's time to place ventilation and IAQ at the forefront of sustainable HVAC.

Morten Schmelzer, Group Technical Marketing Director, Head of Public Affairs, Systemair

Achieving fresh air indoors with minimal energy use is not contradicting itself.

Morten Schmelzer, Group Technical Marketing Director, Head of Public Affairs, Systemair

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ON OVERDRIVE?

Has the drives market been witnessing an uptick in sales, induced by greater awareness on IAQ, and the general call for greater energy efficiency in the HVACR industry? **Surendar Balakrishnan** has the story...



Moaz Al-Ibrahim



Ravindran A Poduval



Sandeep Chaudhari



Thomas Zirk

It won't be quite off the mark to say the pandemic has stirred things up in the drives market in the GCC region. With greater awareness on Indoor Air Quality (IAQ), matched by intent to implement IAQ-related interventions in certain building types, the drives market has seen a boost, with an uptick in sales, in the view of most in the market.

Moaz Al-Ibrahim, Business Development Manager, Danfoss Drives Segment for TMA region, should know. Post pandemic, we noticed an increase in the use of VFDs for achieving energy efficiency and Indoor Air Quality, he says. "Due to the pandemic, Indoor Air Quality became one of the biggest concerns, in addition to sanitisation," he says. "Today, this is a priority among institutions, such as schools and hospitals and offices. They want to do their best to prevent the spread of COVID-19. We are faced with an increase in energy prices across the globe, which made energy efficiency even more relevant."

VFDs have traditionally presented a compelling argument for saving energy, Al Ibrahim says, given their ability to let HVAC equipment run at a partial speed, if confronted with a situation of a partial load, thus preventing extensive use and using the equipment at 100% capacity all the time. And as Ravindran A Poduval, Head of Sales, GI TECH, puts it, currently there is no better way to control the operating point than with a VFD.

Leave alone the pandemic, the sales of drives, generally speaking, has been on the upswing in the GCC region, as it has been in the past few years. Whilst some are effusive, some are measured in their assessment. Thomas Zirk, Managing Director, AuCom Global Solutions, in Germany, says that in the two decades he has been in the HVAC market, he is seeing a slight increase in requirement of VFDs, with a view to improving energy efficiency. This increase, he adds, is slightly 10-20% of total requirement. His colleague, Sandeep Chaudhari, Managing Director ▶

– Middle East & India, AuCom, qualifies this by saying: “We are seeing slight increase in demand of low- and medium-voltage VFDs. The increase is due to the progress of technology and more focus on improving plant energy efficiency.”

Broadly speaking, Chaudhari says that drives are a very important component, especially in the infrastructure business, which is one of the leading trends in projects across the GCC region. “Water scarcity and better planning for utilising the existing sources are playing a fundamental role in the development of this region,” he says. “We are seeing more enquiries for cost-effective solutions, which includes soft-starters and drives across the GCC region and different market segments.”

Poduval says he anticipates greater demand for VFDs after the effects of the pandemic dissipate further. We need to see a number of new projects, as there is no denying the fact that the pandemic has created the work-from-home culture, which will have an effect on new township investments. But this is a temporary scenario.

All said, the positive trajectory of the sales of drives is a fact; and it is in no small measure to the growing awareness of their relevance for not only new buildings but also for retrofitting and changing old installations without VFDs, with VFDs, Al-Ibrahim says. There is consensus that the demand for drives is increasing, following growing awareness on their ability to not only lower energy use but also minimise mechanical stress. Indeed, VFDs have earned plaudits for their ability to reduce startup shock from the inrush of current and to ensure smoother changes in fan speed. Broadly speaking, there is considerable value being placed on drives for their ability to reduce maintenance through lower wear and tear, which increases the life of the fan motor and, generally speaking, increases the lifespan of HVAC equipment.

Yet another trend blowing in favour of VFDs is the spurt in growth of the variable refrigerant flow (VRF) systems market. As Zirk puts it, generally, VRF technology is “familiar in low voltages, which is surely increasing the requirement of low-voltage drives applications”.

It is widely believed that VFDs are an ideal fit for controlling the operating speed of the compressor in a VRF system to match the load, which helps in reducing energy use

in part-load conditions. “We need VFDs if we want to control the compressor’s operation and speed,” Al-Ibrahim says. “It is usually used to manage the speed of the electric motor, which controls the compressor’s speed. When we control the compressor’s speed, we can reduce the speed to match the part-load demand. By doing this, any reduction in the speed will result in substantial energy savings. The relation between the speed of the motor and the energy consumption is proportional to the power of three. Even with a slight decrease in speed, we can notice significant energy savings.”

Yet another positive trend in recent times is the greater demand for VFDs in the residential market. The demand specifically is for variable air conditioning units, as discussed, or booster pumps even in small households. Chaudhari vouches for that when he says AuCom is definitely seeing that new residential buildings are designed with VFDs.

In addition to the residential market, VFDs are making their presence felt in the commercial real estate market in more ways than one. Pre-pandemic, sales of VFDs in commercial properties

system run all the time at the designed cooling capacity, it will consume a lot of energy. Here, VFDs can be used to save energy by optimising the overall process of the system to keep the required temperature and optimise the energy at the same time and, ultimately, the cost.” Weighing in, Chaudhari says a flexible scenario tells us that a more controlled energy system means better and more efficient energy use and consumption.

Another driver of the drives industry is the trend of manufacturers of HVACR equipment incorporating VFDs in their systems, which does not necessitate retrofitting them. Poduval says this has opened up the market for manufacturers of drives. “OEM-driven VFDs is on the increase, and we will see more manufacturers branding for OEMs in the future,” he asserts.

The VFDs market has seen greater use of electronics and controls technology, giving rise to smart VFDs, which are also driving sales, as they give an option to building owners to integrate them in their facilities, given the fact that IAQ is improved, as controls respond to better control temperature, humidity, pressure and carbon

“ We have the Fourth Industrial Revolution (Industrial IoT). The VFD is an excellent enabler for it. If we integrate VFD into the overall control system of the building and use its artificial intelligence functions, it can give more functions to the end-user and the operator.

was driven by their ability to reduce energy use and mechanical stress. With the pandemic and the work-from-home culture it engendered, commercial real estate facilities began suffering from lower occupancy rates, highlighting the indispensability of VFDs with general preparedness for future possible pandemics in mind. “VFD plays an essential role when it comes to lower occupancy,” Al-Ibrahim says. “If we have lower occupancy in the building, the cooling capacity is designed and sized for total capacity. This means we have a bigger cooling capacity. If we let the

dioxide levels in buildings. “Automation and Cloud are the future of VFDs,” Poduval says. “The trend has already started, with most VFDs requiring IP for monitoring and control.”

A further boost to the VFD marketplace is the strength behind the talk of doubling their use as smart sensors in HVACR applications. AuCom, though, does not quite see it that way. Chaudhari says that as motor control manufacturers, AuCom always guides its customers to the best optimisation of existing resources with the help of its long experience in the field. “Doubling the use of VFDs is not a feasible

solution, and predictive maintenance can be achieved by the existing features of the latest model of our equipment without increasing the unit's number," he says. Speaking from a Danfoss perspective and offering a rather contrarian view, Al-Ibrahim elaborates on how the company sees the future of drives as being used as a smart sensor to optimise the overall system efficiency and control and not only the equipment. "For example, we are using artificial intelligence and Edge Computing for preventive maintenance and condition-based monitoring," he says. "This is our unique feature that does not require an Internet connection and which end-users prefer over cloud computing, because they don't need to store their data on the cloud. Another benefit of condition-based monitoring is preventive maintenance. The drive can learn about the behaviour of the equipment and the system, and when it notices an abnormal condition, it can generate an alarm at an early stage. So, the operator will have the time to check

it physically on the system, schedule maintenance and shut it down on time." Otherwise, Al-Ibrahim says, if it comes to a sudden shutdown, it can be costly and time consuming to repair it. Scheduled shut-down can give time for maintenance. Plus, it is possible to inform residents to expect maintenance at the said time. So, it's saving the equipment and the cost of maintenance while ensuring convenience for the end-user, Al-Ibrahim says.

Given the benefits of VFDs and the wide scope of application, there still are numerous instances of under-utilising their capabilities. One reason is improper commissioning of VFDs, leading to situations of not getting the maximum out of them. Poduval attributes the situation to contractors. "As long as it is contractor market, this trend will continue," he pithily says. Zirk says the situation can be resolved if experts take over. "We do see the need of more experts in this sector, who really are experts," he

says. "Due to this gap, we still see a lot of uncommissioned and even wrongly commissioned systems."

Another reason is the lack of proper awareness on the extent of the capability of VFDs. Al-Ibrahim says: "Unfortunately, not all of the features are known to the end-users, thus they are not utilising the VFDs optimally." While VFDs can help save energy, they can give protection functions, such as protecting the overall system, optimising the process and serving as a sensor for protective maintenance, he says, adding that it is important to build awareness in the market. "Of course, energy efficiency is the most important topic, but equally, we have the Fourth Industrial Revolution (Industrial IoT)," Al-Ibrahim says. "The VFD is an excellent enabler for it. If we integrate VFD into the overall control system of the building and use its artificial intelligence functions, it can give more functions to the end-user and the operator." **ccme**



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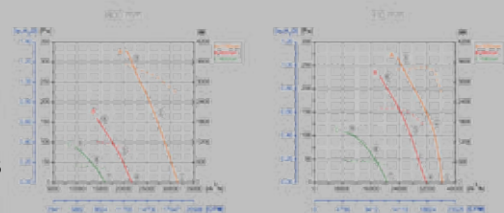
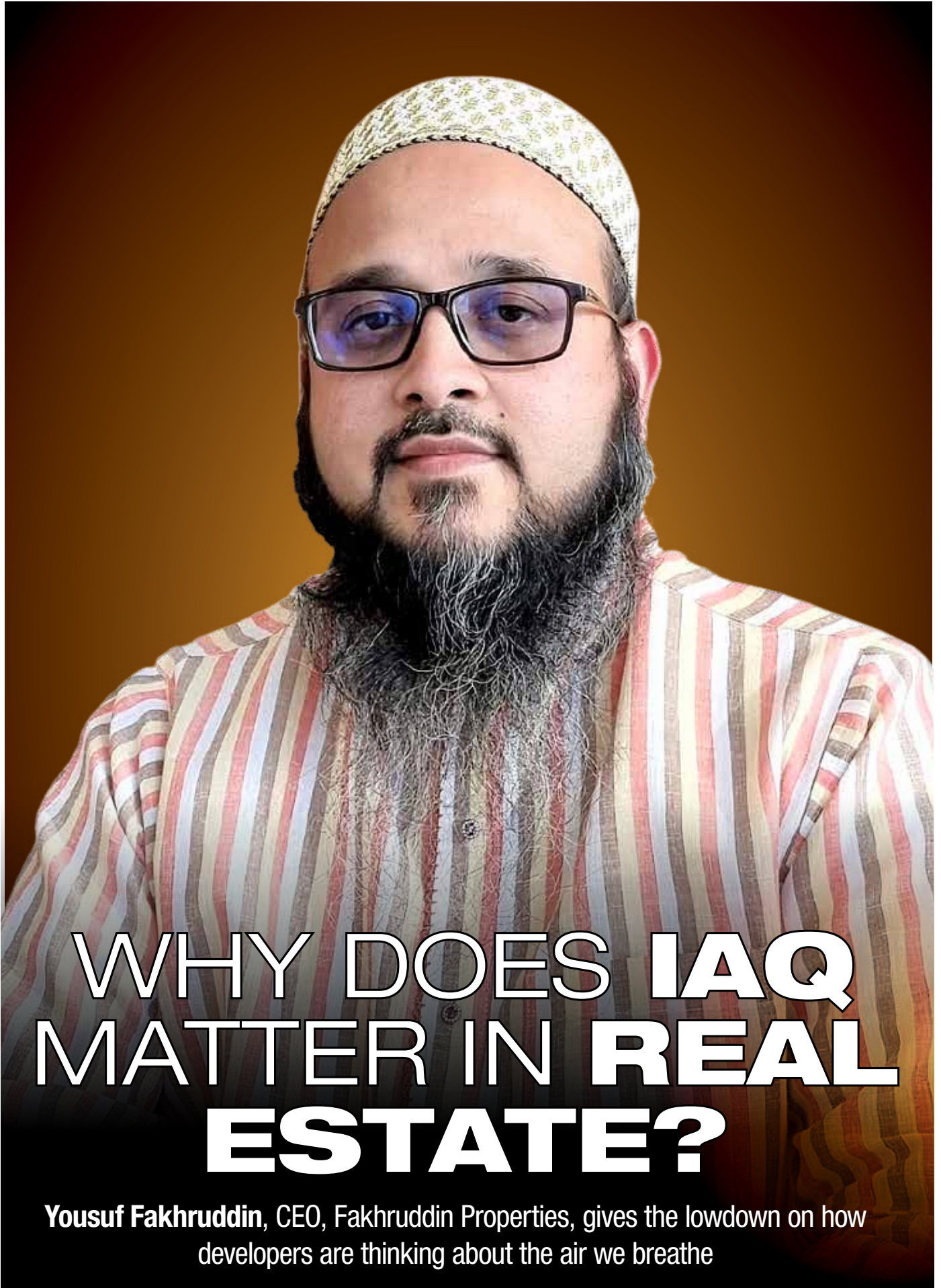


Fig.2020 Data:
Efficiency Range: 34.5%
Efficiency Range: 34.5%~50%

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Efficiency Range: 34.5%
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WHY DOES IAQ MATTER IN REAL ESTATE?

Yousuf Fakhruddin, CEO, Fakhruddin Properties, gives the lowdown on how developers are thinking about the air we breathe

AN overwhelming majority of people in this world are breathing polluted air, so much so that studies indicate over seven million annual deaths are caused due to poor air quality. That's not all – poor Indoor Air Quality (IAQ) is rapidly becoming one of the most perilous environmental risks to human health, as consequential changes in lifestyles and work habits have dramatically inflated the amount of time people spend indoors.

Within the indoor environment, be it home or office, people are not only exposed to pollutants in the outdoor air, whenever a door or window opens, but also many more contaminants specific to the indoor environment. Allergens, such as dust, pet dander, mould, particles released from burning of coal in barbecues, smoke from cigarettes, burning of wood, gas-based cooking, lighting of candles, and chemicals released from paint and flooring are a few examples. Unsustainable construction techniques, lack of competent ventilation provisions, harmful cleaning products and procedures only add to further degrading the IAQ. With the potentially dangerous health consequences from regular exposure to Volatile Organic Compounds (VOCs), dust, particulate matter and other air pollutants becoming well known, air quality within residences is conspicuously becoming a priority for building owners and occupants. This change in attitude towards everyday health and wellbeing is making identifying and dealing with IAQ problems irrefutable for developers and real estate companies.

People spend most of their lives indoors, and even more so since the pandemic. This has propelled public awareness towards Outdoor Air Quality (OAQ) and IAQ and has driven home the message that without preventative strategies, pandemics and infections can spread more rapidly and have a catastrophic impact on human life and global economies due to poor IAQ. Increased knowledge of Sick Building Syndrome and its effects have without a doubt transformed the way people think about IAQ and the risks that come along with it. Incommensurate ventilation and parsimonious approach to the maintenance of the ducts in residential and commercial developments allow

for a build-up of virus-laden aerosols that render any environment ripe for the rapid spread of a disease. Even offices are full of potential sources of VOCs with an ever-increasing number of computers, printers, scanners, fax machines and photocopiers, since most of the population has started working from home, further impacting the IAQ of homes. Urgent attention needs to be given to the detrimental effects of poor Air Quality Index (AQI), as the impact on health and wellbeing are aplenty and pernicious, to say the least. Studies suggest that poor IAQ, coupled with growing CO₂ levels and low ventilation rates, can dull cognitive ability and make people less alert. Prolonged exposure to poor IAQ has a negative impact on occupant well-being. It can cause coughing, shortness of breath, aggravation of asthma, ENT-related irritation, eye infections, headaches and allergic reactions. Clearly, health is progressively becoming a priority for many home buyers, and the correlation between health and air quality is a proven fact. It is only opportune for developers to offer accurate air quality information and solutions alongside other major selling points. As developers, it is our endeavour to ensure the monitoring and optimising of air quality within our developments. Not only that, our future developments will come installed with air quality monitoring systems and enhancing technologies, serviced by optimising energy consumption costs through use of natural resources and smart technologies.

We are currently developing a technology to improve the air quality of the entire structure and promote a healthier lifestyle in our future homes by managing the HVAC system's FAHU and lowering CO₂ levels through a filtration technique known as HEECO2R (Health Energy Efficiency Carbon Reduction); it helps us achieve energy savings and healthy buildings. The technique eliminates Sick Building Syndrome and helps people live a healthier lifestyle and workstyle while lowering energy consumption, and operating and maintenance expenses. HEECO2R ensures our air quality is healthy as a result of the numerous filtration and purification processes that take place, which minimise Sick Building Syndrome and energy usage in our traditional cooling system.



As a property developer, we understand the importance of implementing strong methods to preserve a healthy IAQ as a crucial step in creating and developing healthier places to live, work, learn and leisure. Our air purifier, was one of the pioneering technologies that we brought to the retail Air Quality market in 2013. Today, almost a decade down the line, an air purifier has become a basic requirement for every household. Our current outdated HVAC systems foster high-risk environments, necessitating superior ventilation and air purification technologies along with indoor green spaces. Environmental forecasting technologies, which can monitor IAQ and OAQ and optimise environments by taking necessary steps to make the IAQ ambient, are presenting huge growth opportunities for real estate developers that were not even conceivable just a few years ago. Now, with emerging technologies and artificial intelligence helping us understand the air quality, and its impact on human health, the quality of indoor air requires priority attention and consistent improvement for the collective wellbeing of all major cities. By laying augmented focus on occupational hygiene and occupant wellbeing through investment in systems to manage IAQ in buildings, developers can not only reduce their long-term liability but also increase the performance, property value and the return on investments in real estate. [ccme](#)

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RHEEM CONDUCTS PRO PARTNER CONFERENCE

High-energy event in Las Vegas draws elite Pro Partners from the GCC region countries and across the United States



Mike Branson

RHEEM hosted its 2022 Pro Partner International Conference on March 8 in Las Vegas, in the United States for the company's most valued contractors to gather for education and celebration. Pro Partners are part of a premium loyalty program built on the cornerstones of enhanced consumer experience, motivating HVAC contractors with incentives, empowering partners with marketing and business support and industry-leading training programs.

Rheem's President of Global Air, Mike Branson, opened the conference and set the tone, elaborating on the conference theme. Branson said the theme of the event, Pro Powered, illustrates how Pro Partners are the fuel for everything Rheem does. He emphasized that Rheem is committed to investing in the Pro Partner program to help grow their respective companies, employees and communities. Branson took the opportunity to thank the company's elite Pro Partners for their trust in, and alignment with, Rheem's culture of reliability, integrity and innovation.

GLOBAL GROWTH

Branson spoke about the conference and about how Rheem overcame supply chain challenges in the pandemic and about the company's exemplary drive towards sustainability.

Commenting on Rheem's focus on the Pro Partner program, Branson noted that the 2022 event was the largest to date, with more than 5,000 participants. Rheem and RUUD Pro Partners attended from the United

Arab Emirates, the Kingdom of Saudi Arabia, Kuwait, Qatar, Oman and Bahrain, and from every state in the United States and Canada. Branson said: "Over the last decade, the Rheem Global Air business has experienced tremendous growth, outpacing the market. This has been achieved by investing, innovating and delivering on commitments – following our success formula." Investments in the Middle East continue to be a key success driver. Most notably, Rheem opened a fully owned and operated, state-of-the-art air manufacturing facility in Dubai in November 2021 to further advance its growth and serve the region.

Branson emphasized that Rheem continues to focus on improvements in products and processes and on training contractors and plumbers to dramatically reduce the impact on the environment, while empowering its customers to live sustainably. "We are 100% charged for growth by investing in Pro Partners through innovative products, talented people, smart processes and business-building programs," he said.

PRODUCT FOCUS

Rheem is focused on offering GCC region value-based tiered products, based on customer requirements. In 2020, Rheem launched an entirely new range of air conditioning products, which include high-efficiency decorative products and ducted units in both top-discharge and side-discharge configurations. Rheem's wide range of products include the award-winning SAVR-C

Series ("Manufacturer of the year (VRF category)") at the 2021 Climate Control Awards, and the Comfort Master Series ("Manufacturer of the year (Standalone DX category)"), again at the 2021 Climate Control Awards.

As for water-heating products, Rheem launched its point-of-use EP series and a Solar Thermosiphon series. Overall, since 2019, Rheem has won a total of seven awards for innovations relating to sustainable air-conditioning and water-heating products in the GCC region market.

In October 2021, Rheem launched a MEA version of its highly successful North American Pro Partner Program. Speaking on the occasion, Brian Hempenstall, Managing Director, Rheem MEA, said: "As an industry leader, Rheem believes in empowering Pro Partners by offering business and marketing support. With this unmatched support, the quality of communication with the consumer is at the next level. Our Pro Partner program is going to be the ecosystem of our go-to-market strategy for the next decade, and I can confidently say that this program is going to revolutionize the HVAC industry in the Middle East region. The program is committed to providing world-class training for our Pro Partners. Hence, we have collaborated with 'North American Technician Excellence' to provide NATE-certified trainings. Pro Partners and the technicians trained here will also receive Rheem- and NATE-branded e-Certificates."

Speaking on the new manufacturing facility in Dubai, Hempenstall said it manufactures US-designed commercial

rooftop units for the Middle East market. "The factory follows Rheem's global quality standards whilst keeping in mind the regional visions and sustainability goals," Hempenstall said. "The products

manufactured are highly energy efficient and offer above-the-call-of-duty performance."

Rheem said it also prioritizes training for air conditioning service engineers

and mechanics aspiring to enter the HVAC service sector through its Rheem Innovation Centre, in Dubai, which it launched in July 2020, in partnership with Leminar Air Conditioning Company, UAE. [ccme](#)

CUSTOMER TESTIMONIALS

Here's what some of the Pro Partners that attended the Las Vegas event had to say about the conference...

Salah Shousha, Owner, Focus Arabia for Industrial Services, Al-Khobar, Saudi Arabia:

Attending Rheem's Pro Partner International

Conference on the 8th of March in Las Vegas was an experience I value very highly. During my 35 years of working in the HVAC field, I haven't attended a conference close in matching the caliber, quality and character of Rheem's. It was an excellent space for networking and meeting Rheem's international partners, which all made the conference immensely diverse, and rich in ideas and experiences. I am honored to have been invited to the conference, representing my company Focus Arabia for Industrial Services in Al-Khobar, Saudi Arabia. Thank you for your invitation to the Conference. We hope to continue doing successful business with Rheem.



Salah Shousha

in Las Vegas. Rheem's passion for quality, innovation and sustainability increased my confidence in aligning my business with the best manufacturer in the industry. Great breakout sessions guided attendees on the business, profitability and upcoming products. Industry-leading training programs, social media programs and success stories of Pro Partners from all over the world inspired me to grow the business as part of Rheem Pro Partner Program.

Anwar Basha, MEP Department Head, Contracting Division, Al Jaber Group, UAE:

It has been a privilege to be associated with a distributor/company like Leminar and a brand like Rheem for more than 15 years. Over the years, I have developed a strong relationship with Leminar; I feel like we are of the same organization. It is up to that extent that we share a bond of reliability and trust with each other. Right from their sales team to their top management and their aftermarket support, Rheem and Leminar have stood by Al Jaber like a pillar throughout the years that I have worked with them. I recently attended their Pro Partner Conference in Las Vegas, and I felt honored to have been invited to such a mega event. This was my first visit to the USA, and I have never witnessed such a larger-than-life kind of event organized by an air conditioning brand. The event was a delightful one, with magic shows, Hollywood stand-up comedians,



Anwar Basha

famous motivational speakers/authors and workshops on making maximum profitability with Rheem's product range. The event also proved to me how big a name "Rheem" is as a global air conditioning manufacturer. I look forward to working harmoniously with Leminar and Rheem in the years to come and will keep promoting the sales of Rheem ACs. Proud to be a Rheem Pro-Partner!

Yahya Alzeir, Managing Director, Yahya Alzeir Electromechanical Works LLC, UAE:

As a Rheem Pro Partner, I wish to express my happiness to be associated with such a great brand, top-of-the-line product range and an excellent distributor like Leminar. Leminar has been providing me with great sales support on Rheem products, along with world-class training facilities for my sales and technical team for the past several years that I have been associated with them. Rheem's MEA team has also been very supportive whenever I have reached out to them. Recently, I attended the Rheem Pro Partner conference, in Las Vegas, and I must say the experience was amazing. I witnessed a massive crowd of young and experienced Pro Partners similar to my business model in the UAE, which gave me a proud feeling that Yahya Al Zeir Electromechanical Works is one among the elite. The sessions that Rheem's USA team conducted gave me an insight into the benefits of being a Rheem Pro Partner. I will continue to give my best towards the sales of Rheem air conditioners in the UAE and look forward to attending the Pro Partner event in 2025.



Yahya Alzeir

Adeel Tufail, Owner, Adeel Tufail Est for AC, Saudi Arabia:

I have been traveling with many well-known brands for years, but the Rheem visit experience was amazing. As a Pro Partner, we will make this our first-priority brand for our clients, as they deserve to get the best.



Adeel Tufail

Geemon Baby, Star Cool LLC, Oman:

It was a once-in-a-lifetime experience for me attending the Rheem Pro Partner Conference 2022



Geemon Baby

QUANTIFYING OUTDOOR HEAT

It is possible to correlate impacts to indoor energy usage to outdoor heat, say **Alan Wildes**, Co-founder and CIO, and **Mohamed Elmak**, PMO and RnD Director, FortyGuard



THE Urban Heat Island (UHI) effect impacts 400 cities the world over, and the number is increasing, in line with global urbanisation. One problem with urban heat is the absence of quantification methods for outdoor temperatures, which makes the issue more difficult to address or even baseline. Indeed, companies and asset owners do not have data for outdoor temperatures, and cannot correlate impacts to indoor energy usage to outdoor heat. All of this results in compounding costs to CAPEX, OPEX and, most important, human health.

In this context, it is now possible to provide a turnkey heat visualisation solution for a city by providing a digital heat baseline without placing additional infrastructure on the road, therefore without contributing to congestion or pollution. A single stream of data that combines, cleanses and aggregates multiple sources is the solution to making accurate decisions on the ground. Organisations cannot make real-time decisions with disparate data sources. The heat data of outdoor temperatures needs to be informed by local events or micro-climate data, or surface temperatures and how pedestrians are behaving around those temperatures.

It is feasible to utilise city data gathered by an analytics system, which is focused on the granular human-level experience – the point where the population experiences heat on a daily basis. This remote method of collection enables a heat map development to

identify high-risk zones within the asset for city managers or property owners. The process will provide detailed measurements to visualise thermal readings with up to a one-square-metre granularity and near real-time monitoring. That way, consumers can select their coolest routes for their next walking distance; and public and private enterprises can receive guidance that can help them map out strategies on cooling outdoor spaces.

At this stage of the climate crisis, cities are under enormous pressure to develop new strategies and adopt new solutions that will make their infrastructure, economies and communities more resilient to the most serious impacts of climate change, whether that is rising sea levels off coastal cities or the urban heat island effect, among numerous other challenges. The technology is there, whose objective falls perfectly into local federal strategic directions and the National Climate Change Plan of the United Arab Emirates, which serves as a roadmap to bolster nationwide actions for climate, and urban heat island mitigation and adaptation in the UAE until 2050. Through this Climate Plan, the UAE will further strive to be at the frontline of global efforts to prove that climate action can go hand in hand with continuous economic development. The drive that this country puts into emerging markets, the environment and technology offer the ideal platform for government support and deployment regionally.

By building on national policies for green growth and sustainable development – particularly the UAE Green Agenda 2015-2030 – and reflecting on valuable inputs received from stakeholders in the public, private and non-governmental sectors, the Climate Plan is envisaged to strengthen the momentum of the UAE. This is not a stand-alone policy – rather, it serves as a complementary plan of action that specifically addresses climate change. This is a living document and will be updated periodically according to the progress made. That said, the available technology – a heat resilience system, which is adaptable from city to city and supported with data analytics, will serve as a decision-making tool for municipalities battling environmental heat stress. By testing the technology in the uniquely adapted urban environment of the UAE, which is simultaneously digitally enabled and environmentally challenged, it is possible to stress test the system before exporting to the other 400 heat-impacted cities across the globe. [ccme](#)

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Samsung equips Museum of the Future with VRF systems

Designed to circulate continuous flows of cooling vertically, the VRF systems are set to provide higher energy efficiency, individualised control and installation flexibility, company says

By CCME Content Team



SAMSUNG Gulf Electronics said it equipped the Museum of the Future with Variable Refrigerant Flow (VRF) systems. VRF systems deliver world-class energy efficiency and an unmatched Energy Efficiency Rating (EERa), and actively support the national sustainability goals by acting as the backbone of the recently opened museum, the company said.

According to Samsung, its VRF systems were implemented across the operation area in the building with connected individual thermostats and building management system (BACnet) to facilitate and hasten cooling deliveries in real-time. As well as being the largest and most compact DVM systems, they are powerful and highly energy efficient, the company claimed. They can, therefore, save costs and space while providing more reliable coverage, the company added.

Samsung said the VRF systems evoke cutting-edge capabilities, all at the benefit of the environment, and offer better conditions for large areas through their extensive piping and cooling design. Samsung said it keeps reimagining new ways of bridging smart solutions with daily needs, for the individual and wider community, and the brand's collaboration with the Museum of the Future is a true token to that commitment.

Taqeef announces helping ENOC station earn LEED Platinum

Company says its HVAC solutions supported ENOC's Service Station of the Future in earning top certification from the US Green Building Council

By CCME Content Team



TAQEEF said it supported ENOC's Service Station of the Future at Expo2020 in achieving LEED Platinum certification with its sustainable cooling solutions.

According to Taqeef, the project is the first Leadership in Energy and Environmental Design (LEED) Platinum-certified service station in the world, with the design inspired by the ghaf tree, endemic to the UAE. Taqeef said it fitted 12 indoor units and three outdoor units of the new-generation O General Variable Refrigerant Flow (VRF) technology to cool 300 300 ft² of space at the ENOC facility.

Taqeef pointed out that Platinum is the highest possible rating under LEED, the most widely used green building rating system, globally, and a mark of excellence for highly efficient, cost-saving sustainable design and construction.

H.E. Saif Humaid Al Falasi, Group CEO, ENOC Group, said: "As the first service station in the world to obtain a LEED Platinum certification, this is a prestigious recognition for us. Energy efficiency, sustainability and cost efficiency were some of the key factors taken into consideration whilst designing the Service Station of the Future, and Taqeef's HVAC solutions played a vital role in helping the station to earn its certification."

Tariq Al Ghusein, CEO, Taqeef, said: "Taqeef has been at the forefront of championing air-conditioning technologies that achieve increasing levels of energy conservation beyond the referenced standard to reduce environmental impacts associated with excessive energy use. We are proud to have played a significant role in supporting ENOC in fulfilling its vision

of a sustainable and technologically advanced concept.

"HVAC plays an integral role in earning the LEED certification, as the two key scoring categories within the rating system are pertinent to HVAC. Through the innovation of our product partners at O General and that of our talented technical team, we were able to deliver a project that will go down in history as the first of its kind, inspiring more project owners to make greener choices for their HVAC systems."

Taqeef said VRF systems are sustainable, cost-effective HVAC systems that offer many benefits, including energy savings, increased comfort, design and installation flexibility, lower maintenance costs and quiet operation. Through these benefits, Taqeef added, VRF technology offers the ability to obtain a significant number of points toward LEED certification.

Empower commences district cooling services to Tower B of 'Aykon City'

Project involves supplying a total of 4,513 RT to Tower B and Tower C of the development, utility company says

By CCME Content Team

EMIRATES Central Cooling Systems Corporation (Empower) announced the commencement of providing Tower B of 'Aykon City' with its district cooling services for a total cooling capacity of 2,465 Refrigeration Tons (RT) from its Business Bay plant. Empower also announced that the service to Tower C of the project, with a capacity of 2,048 RT, will commence by the end of May.

One of the mega projects under development on Sheikh Zayed Road, the 'Aykon City' is located in close proximity to Dubai's vibrant and vital facilities, most notably the Downtown, City Walk, Dubai International Financial Center, and other prominent tourist, residential and leisure destinations, Empower pointed out.

Ahmad Bin Shafar, CEO, Empower, said: "We spare no effort in serving leading real estate projects, and we aim

to provide all sectors, and residential, commercial and leisure facilities in Dubai with world-class and sustainable district cooling services to support the Emirate's leading efforts to reduce carbon emissions, in line with the directives of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai."

Bin Shafar explained that modern district cooling systems not only contribute to advancing environmental sustainability but also play a pivotal role in enabling companies to maintain their space cooling systems, where operations, production, distribution and maintenance are carried out remotely in a highly controlled technical environment that ensures continuous improvement of the service levels and security and safety procedures.

Bin Shafar stressed Empower's constant keenness to cooperate with



strategic partners in order to make huge and innovative projects in Dubai a success. He praised the tireless efforts made by developers of various residential, urban and other projects to ensure social, economic and environmental sustainability, affirming the importance of district cooling systems as a mainstay for prolonging the life cycle of buildings.

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Empower says its district cooling network grew 33.2% in four years

Exceeding more than 369 kilometres in length, it is 446 times the length of Burj Khalifa, the tallest building in the world

By CCME Content Team



EMIRATES Central Cooling Systems Corporation (EMPOWER) said that the total length of its district cooling pipeline network across Dubai has exceeded more than 369 kilometres by the end of 2021, with a growth of more than 33.2% during the period between 2018 and 2021. The new total length of the district cooling network in Dubai, Empower said, is 446 times the length of Burj Khalifa, the world's tallest building.

The network expansion in 2021 is attributed to the new projects added to its portfolio, most notably the Marsa Al Arab, and the expansions of Dubai Healthcare City, Dubai Land Residential Complex (DLRC), Business Bay and the expansion of DIFC to provide the company's district cooling services to Wasl1 and others, Empower said.

Ahmad Bin Shafar, CEO, Empower, said: "The expansion of our district cooling network is driven by the increasing demand for environmentally friendly district cooling services, on

the one hand, and on the other hand, it reflects Empower's tireless efforts to develop an infrastructure that help achieving the goals of Dubai sustainable development plans."

Bin Shafar pointed out that the expansion is also attributed to the continuous and increasing urban development process in Dubai, stressing that "the network expansion operations are implemented using cutting-edge technologies that ensure uninterrupted delivery of services to our customers".

He added, "Empower is always keen on developing its infrastructure and using the most advanced technologies to deliver the best district cooling services, in line with the latest international standards."

The CEO stressed that Empower has actively contributed to the implementation of the various government strategies that support the adoption of clean energy, including the UAE Energy Strategy 2050, which aims to



Ahmad Bin Shafar

increase the contribution of clean energy in the total energy mix from 25% to 50% by 2050 and reduce carbon footprint of power generation by 70%, the National Climate Change Plan 2017-2050, and the Long-Term National Initiative to build a green economy in the UAE under the theme, 'Green Economy for Sustainable Development'.



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Leminar Group recognised as “Second-Best Place to Work” in the UAE

Earns gong from Great Place to Work®

By CCME Content Team



The Leminar team with the award, in the presence of GPTW representatives

THE Leminar Group, comprising Leminar Air Conditioning Company and Leminar Industries, which manufactures ductwork and provides acoustic solutions in the GCC region, received the second ‘Best Place to Work’ across the UAE from Great Place to Work®, Middle East.

Leminar said US-headquartered Great Place to Work is built on a solid foundation comprising three decades of pioneering research. It recognises the best workplaces across the world through confidential survey data assessing employee experiences of trust, innovation, company values and leadership, and through extensive examinations of the best workplaces around the globe, Leminar said. The institute and ‘Best Workplaces’ list bring together over 12 million employees from myriad enterprises, industries and divisions across more than 60 countries, Leminar highlighted.

Leminar said to be recognised by the global institution as a high-trust performing organisation from among 20 companies in the industry stands as a testament to its commitment to safeguarding the wellbeing of its employees and its efforts toward creating and sustaining an environment that provides opportunities for collaboration and growth, where each Leminar employee can express themselves with the knowledge that their voice will be heard and acted on.

Commenting on the win, Pramodh Idicheria, Chief Operating Officer, Leminar Global, said: “We are honoured to be recognised by the renowned global authority as the second most coveted organisation for employment across the UAE. Leminar’s journey to becoming the most trusted name in the region has been due to the exceptional individuals who make up the organisation. As such, rooted in a commitment to safeguard and

nurture our greatest asset – our people – Leminar has implemented best practices, protocols, and initiatives designed to aid the growth and development of every employee.”

Kartik Raval, General Manager, Leminar Air Conditioning Company, said: “Leminar Air Conditioning Company has striven to ensure that each Leminar team member feels seen, heard and valued. As the world grappled with the worst pandemic of the century, Leminar’s initiatives to safeguard the health and happiness of its employees remained undeterred through efforts that ensured the wellbeing of their families and support structures as well.”

Quresh Motiwala, General Manager, Leminar Industries, said, “We are proud to be recognised as one of the top workplaces in the UAE. We remain committed to fostering a culture that builds on our collaborative work structures, open lines of communication, respect for all and pride in the job.”

Leminar Air Conditioning Company, AEG Power Solutions ink deal

Company says distribution agreement with AEG marks its foray into the power generation industry while enhancing its data centre services

By CCME Content Team

LEMINAR Air Conditioning Company signed a distribution agreement with AEG Power Solutions, a global provider of power supply systems and solutions for critical applications. Making the announcement through a Press release, Leminar said the agreement marks its foray into the power generation industry while enhancing its data centre services through the addition of another esteemed partner to its diverse portfolio.

According to Leminar, AEG Power Solutions ensures the continuous power availability and the safe operation of critical applications through a wide portfolio of power supply systems and services. AEG designs and delivers solutions for secure power supply through offerings such as AC and DC UPS, battery chargers, rectifier systems and customised UPS systems as well as

solutions for the energy transition, like battery energy storage and hydrogen production processes, Leminar said.

Commenting on the partnership, Frédéric Salon, Vice President Sales, AEG Power Solutions said: "AEG Power Solutions' partnership with Leminar Air Conditioning Company will enable it to ensure the continuous availability of power and the safe operation of critical applications in the global market. The alliance will fortify our presence in the Middle East, enabling us to further expand our market reach through Leminar's extensive network and distribution channels."

Kartik Raval, General Manager, Leminar Air Conditioning Company, said: "Leminar's partnership with AEG Power Solutions will allow it to offer innovative solutions spanning the oil

L-R (sitting): Kartik Raval and Frédéric Salon; standing: team members from Leminar and AEG Power



& gas operation, power generation, transportation, data and IT sectors. The agreement will enhance Leminar's ability to meet the growing requirements of the HVAC industry, specifically regarding the provision of data centre solutions, while expanding AEG Power Solutions' market reach for their commercial UPS systems through Leminar's extensive distribution channels."

Utico signs water purchase agreement with Oman

Ras Al Khaimah-based private utility company to develop desalination project to supply 20,000 m³/d potable water in Muscat Governorate at the lowest water tariff ever in Oman

By CCME Content Team

UAE-BASED private water and power company, Utico signed a Water Purchase Agreement (WPA) with the Oman Water and Wastewater Services Company (OWWSC) following the winning of a contract to develop an independent desalination project in Ghubra in the Muscat Governorate.

Making the announcement through a Press release, Utico said the Ghubra project will supply 20,000 m³/d potable water to OWWSC at the lowest water tariff ever in Oman.

"The winning of the Ghubra desalination project in Muscat is a milestone for Utico and a clear evidence

of the company's ability to achieve sustainable returns for its shareholders, in addition to achieving efficiencies in long-term government concessions," said Hussain Allawati, CEO, Global, Utico.

He said the Ghubra desalination project also pointed to the UAE-based company's appetite to expand its investments and operations across the region, which has been made possible thanks to Utico's innovative approach and integrated model that includes all elements in the value-chain in sustainable water generation and supply.

Utico said it will deploy innovative, strategic and sustainable production practices in the development of the

Oman project in an environmentally friendly manner with the use of green electricity.

Utico said it will develop the Ghubra project at a highly efficient and affordable economic scale with optimal use of renewable energy. The company said it is also aligning with the Oman government's long-term strategy by supporting Oman's 2040 vision through investments into diversified base of projects in the utilities sectors, including IWPs, ISTPs, sustainable IPPs and related infrastructure projects.

Utico said its aim is to add value to the Omani water sector in a sustainable manner, in turn leading to knowledge transfer and contributing to the Sultanate's social and economic progress.

Ali Al Darwish, CEO Utico, Utico, said: "Winning the Ghubra project emphasizes Utico's growth and expansion strategy across the region and beyond the UAE. Over the years, Utico has been able to create a niche for itself in the utility sector as a full-spectrum entity with an end-to-end industry perspective and services spanning from production to transmission and distribution with a customer-centric focus."

Ziehl-Abegg reports record sales of EUR 716 mn

Manufacturer of electric motors and fans announces growth of 11.9%

By CCME Content Team



Thomas Späth assembles a fan at the Ziehl-Abegg production site in southern Germany



The PCB manufacturing process at Ziehl-Abegg is an example of vertical integration at the company. Evelin Fazekas assembles a PCB for an EC motor

ZIEHL-ABEGG reported record sales of EUR 716 million in 2021, compared to 639 million euros in 2020. Making the announcement through a Press release, the manufacturer of electric motors and fans said the figure posted in 2021 represented a growth of 11.9%.

Peter Fenkl, CEO, Ziehl-Abegg, describing 2021, said, “In view of the problems with global supply chains, we took a cautious approach at times and, ultimately, managed to do pretty well in terms of sales.” The company said it was equally heartening that the number of employees worldwide rose to 4,700, compared to 4,300 in 2020.

Fenkl described the earnings situation as “more than difficult”, as the supply chain problems not only had an impact on delivery times but on pricing, as well. “Some suppliers had already increased prices so quickly towards the end of 2020 and then repeatedly in 2021 that we were

unable to pass these on to the market on a 1:1 basis,” he said. Based on the experience in the first quarter, the manager knows that this situation will become more acute in the current year. “I’ve never experienced anything like this before,” Fenkl said. It is relevant to highlight that Fenkl has been at the helm of the family-owned business for more than 20 years.

Ziehl-Abegg said it is regarded as a company with a high level of vertical integration. “We now want to expand this even further,” Fenkl said. However, growth at the headquarters in Hohenlohe is problematical, as there is a serious shortage in the availability of the necessary additional workers there, the company said. The intention, therefore, is to expand existing production facilities and establish new production sites, it added. Fenkl said: “Additional production sites will bring us closer to our customers.”

The company said the 11.9%

growth in sales last year provides a good base for further growth. Ventilation systems were the sales driver in the year just past, contributing EUR 637 million to the overall result, the company said. Fenkl said he held no illusions about the challenges that lie ahead. “Work shifts are currently being repeatedly cancelled because of a lack of components – how can you realistically plan and how are you supposed to satisfy your customers?” he said.

Ziehl-Abegg employs 2,600 people in Germany, 200 more than a year ago. The number of employees worldwide rose from 4,300 to 4,700. Since employees of the baby boom era in Germany are now increasingly reaching retirement age, this is having a direct impact on the available workforce potential. “Companies must, therefore, openly target Generation Z, the post-millennials,” Fenkl said. “We mustn’t persist with old ways of thinking but instead take the wishes and needs of young people seriously.”

Danfoss breaks ground for ‘supermarket of the future’

Facility, at its Danish headquarters, will be connected to a district heating plant, to which it will be able to supply surplus heat

By CCME Content Team

ENGINEERING firm, Danfoss recently hosted a groundbreaking ceremony for the construction of what it described as one of the world’s most energy-efficient supermarkets.

Making the announcement through a Press release, Danfoss said the supermarket, scheduled to be ready in mid-2023 and spanning an area of 1,500 square metres, is situated next to Danfoss’ headquarters, in Nordborg, and is expected to lead the way for supermarket chains around the world to develop climate-friendly and sustainable stores with technologies that already exist today.

Built with energy-efficient refrigeration and heating technology, solar roof panels and charging points for electric cars, the Smart Store supermarket will capture and reuse heat produced by cooling cabinets and freezers to provide heating for the supermarket and local community through district energy, Danfoss said. The supermarket will be connected to the Nordals Fjernvarmeværk district heating plant and will be able to supply it with surplus heat, Danfoss added.

The cooling system in the new supermarket will also run on carbon dioxide, as a natural refrigerant, which helps to reduce the overall climate impact.

Kristian Strand, President, Refrigeration & A/C Controls, Danfoss Climate Solutions, said: “The origins of this project go back a long time, but the new energy-efficient Smart Store supermarket that we are starting to build today has only grown in relevance. The goal of the project is to show how easy and profitable it is to decarbonise our economy and ensure reliable and sustainable energy use. Heating and cooling are the largest energy consumers in supermarkets. The solutions we are building here today represent the core of Danfoss



solutions and will showcase how we can approach zero-energy use in food retail, together.”

According to Danfoss, the site will also serve as an Application Development Centre, where the company will work together with partners to co-develop new technologies and explore interfaces in the energy system surrounding energy storage.

Jürgen Fischer, President, Danfoss Climate Solutions, said: “The supermarket will be the focal point for a new part of our campus, where all buildings will be energy-efficient and meet special sustainability requirements. Our aim is to boost the green transition with concrete evidence of how far we can go with energy efficiency. We want to demonstrate to customers and partners how energy-saving solutions work in real life. We want to show the greenest energy is the energy we don’t use or reuse.”

According to Danfoss, BALS, Brugsen for Als and Sundeved, Denmark’s largest independent supermarket association, will rent the building from the company and install a COOP 365 discount supermarket. BALS, which works together with COOP, has a total of 13 stores in the area around Sønderborg in Denmark and, since 2015, has consistently reduced the consumption of energy in its stores. So far, it has cut 44% of its total CO₂ emissions, Danfoss said, adding that it was, therefore, a natural next step that BALS became a partner in the project.

Danfoss said it is establishing a showroom in a part of the supermarket building, where all installations are visible to visitors and customers. It said visitors will be able to experience its solutions for heating and cooling, such as CO₂ as a refrigerant, heat recovery and the interaction between installations, once the building is in operation.

Rheem, Ruud host Pro Partner 2022 Conference

Event draws more than 5,000 attendees, Rheem says

By CCME Content Team

RHEEM and Ruud, part of the Rheem family of brands, hosted the 2022 Pro Partner International Conference from March 7 to 10 in Las Vegas. Making the announcement through an April 26 Press release, Rheem said more than 5,000 key partners from the HVAC industry participated in the event at the MGM Grand in Las Vegas.

According to Rheem, the conference ran under the theme, Pro Powered. The company's Global Air Division spearheaded the event, which brought together the HVAC industry's key partners, products and keynote speakers in an action-packed week, which celebrated the HVAC industry and community, Rheem said. Both Rheem and Ruud Pro Partners enjoyed special appearances by major celebrities along with live entertainment, dynamic breakout

sessions and an action-packed product and program expo, Rheem said.

With conference agendas led by industry experts, the event spanned two-days for Ruud and two-days for Rheem. Featured topics included training, innovation, networking and tools for growing a successful HVAC business. Rheem said attendees drew inspiration to learn more about increasing their profitability through a variety of insight-packed sessions, which covered everything from new product innovations to making the most of digital marketing tools. The goal was to provide Pro Partners with real, actionable takeaways, Rheem said, adding that the Ruud and Rheem product development teams also shared insights on the latest HVAC product portfolio for the Gulf Countries, including the reimagined Plus Ones, with features technicians will appreciate and the comfort and performance their



customers are seeking. Attendees left the conference armed with knowledge on new regulations, tips for future-proofing business and tips to enhance profitability, Rheem said.

"This is a dynamic time for our industry," said Mike Branson, President, Global Air, Rheem. "And we continue to be fully committed to making sure our partners are not only prepared to succeed in the short term but grow stronger for the future. This conference certainly helps accomplish that."

According to Rheem, the Pro Partner International Conference will return in 2025.

MARKETPLACE

Dunli introduces X-Pro axial fans

Company says the fans are equipped with the latest rear guide vane and three-dimensional flow impeller

By CCME Content Team

DUNLI introduced X-Pro axial fans, which it described as equipped with the latest rear guide vane and three-dimensional flow impeller. They are ideal for HVAC and refrigeration applications, the company added.

Making the announcement through a Press release, Dunli said the fans come in a wide range of impeller diameters, including 500mm, 630mm, 710mm, 800mm and 900mm. The maximum static pressure efficiency is up to 56%, and air volume is as high as 35,000m³/h, the company said. In terms of noise

control and range – throw distance – they perform significantly better than equivalent fans in the motor fan industry the world over, the company claimed.

Highlighting what it called the energy-saving characteristic of the fans, Dunli said an 800mm X-Pro axial fan working at 13,500m³/h at 160Pa, can save more than 17,000 kilowatt-hours in five years, compared to traditional equivalent fans in the market.

The fans can be used in a variety of HVAC equipment, such as air coolers, air-cooled heat exchange modules, heat



pumps and cooling towers, Dunli said, adding that they are reliable, easy to install and maintain and convenient to control.

Frascold, Solid Energy in district energy initiative

The manufacturers of semi-hermetic compressors and renewable energy-powered heat pumps, respectively, say they are collaborating to execute projects in Denmark

By CCME Content Team


DISTRICT heating systems could be a key technology in achieving the international climate mitigation goals, both those laid out in the Paris Agreement and the more stringent ones set by the European Green Deal. Saying so, Frascold, which manufactures semi-hermetic compressors for the industrial refrigeration and air conditioning sectors, said it has combined with Solid Energy, which specialises in heat pumps powered by renewable energy sources, to contribute to the diffusion of district heating and pave the way to an ecological transition by signing up to numerous projects in Denmark.

Amongst the most recent partnerships, upgrading the Galten plant in the Scandinavian country stands out, Frascold said. The plant has been in operation since 1964 and is capable of powering approximately 2,130 homes, Frascold highlighted. The collaboration between Frascold and Solid Energy for the Galten facility began in 2019 with the creation of a system able to produce 45,000 MWh per year, obtained from 6 Frascold CXH screw compressors, suitable for use with HC, for 3.5 MW of overall power. The subsequent expansion, in 2021, saw the addition of 12 CXH compressors for an increase in power of 7 MW, Frascold said. The installed air-water heat pumps absorb heat from the outside air with 34 air coolers for a total of 3,215,000 m³/h and cover 98% of the district heating system's power consumption – that is, 44.343 MWh – with a SCOP (Seasonal Coefficient of Performance) of 3.11, Frascold said. The plant provides a discharge temperature of 70 degrees C with a return of 38 degrees C, thus achieving a COP of 3.4 calculated by considering an outside air temperature of 8 degrees C, which is the annual average in Denmark, Frascold said.

“We think HC heat pumps are ideal for helping reduce the comfort sector's environmental impact,” said Karsten Pedersen, Technical Director, Solid Energy. “Cascade systems with R290 and R600a guarantee the best balance of lowering direct and indirect consumption, flexibility of use and costs. So, for this project, we relied, once more, on Frascold, which has supported us throughout each phase, and thanks to the constant dialogue with the Competence Center team, we have designed the ideal system to respond to the three challenges: Sustainability, performance and efficiency. The partnership with Frascold is also based on the certified reliability of its wide range of hydrocarbon solutions: It is, in fact, the only manufacturer on the market with compressor sizes around 1,000 m³/h, which are perfect for our project and comply with ATEX directives for use in zone 2.”

Fabrizio Diotallevi, Frascold Sales Area Manager, North Europe, said: “Denmark is one of the most advanced countries in terms of district heating, and approximately 1.7 million homes, or 64% of the total, are powered by these systems, of which 61% already

use energy from renewable sources. A continuous improvement process is in line with the objective to completely eliminate fossil fuels in the segment by 2030. With the numerous plants brought online with Solid Energy, we are proud to contribute to this ambitious project, which we hope will be replicated in other countries. This new success story with Solid Energy is another example of our expertise in building heat pump compressors, which we have gained through years of international partnerships using this technology that, in the near future, will be the basis for virtuous heating and zero environmental impact.”



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JCI: Investments in sustainability have rebounded to pre-pandemic levels

Company's Annual Energy Efficiency Indicator Survey reveals more organisations are planning investments in buildings; however, funding and access to technology is a barrier

By CCME Content Team

JOHNSON Controls (JCI) announced findings from its 15th annual Energy Efficiency Indicator Survey, which revealed that 62% of organisations surveyed expect to increase investments in energy efficiency, renewable energy or smart building technology in 2022, indicating a return to pre-pandemic levels.

JCI said the latest report by the United Nations Intergovernmental Panel on Climate Change advised that global scale transformation is urgently needed to combat climate change; however, its Energy Efficiency Indicator Survey found that organisations are still facing challenges to accelerate their sustainability efforts in key areas. Almost two-thirds of survey respondents say they struggle to scale sustainability initiatives across buildings, geographies or business units.

"In the face of the multiple and continuous shock waves of the last two years, it is very encouraging to see that building owners and operators are driving forward the kinds of investments that deliver the resilience needed to grow their business and attract and retain the best talent," said Katie McGinty, Vice President & Chief Sustainability and External Relations Officer, JCI. "Whether it is the damage delivered by climate-charged destructive natural events, or the health threat of the pandemic, or now, the stark demonstration of the insecurity of world energy supplies, it is clear that taking action to cut energy demand while decarbonizing and cleaning the air are core strategies for companies, governments and institutions to not only survive but to thrive. Our innovative technologies in heat pumps and our OpenBlue digital platform, plus our Net Zero as a Service partnership offering, are exactly the right tools at the right time for leaders determined to stay well ahead of challenges and deliver new opportunities for their business or organization."

JCI said the survey revealed that

planned investment in energy generation or storage has grown significantly over five years, likely in response to the global focus on decarbonisation, and as part of that effort, electrification. More than a third of respondents plan to replace fossil fuel heating equipment with heat pump technology in the next year, which is seven per cent more than what was implemented in the year prior, the company said. Notably, thermal energy storage jumped from 27% to 42% in the last five years, the company said. More than half of respondents implemented electric energy storage in the past year, the company added.

JCI said the survey also found that the United States and Europe still lead the way in every metric of green building planning. The United States had the most respondents who had already achieved green building certification and expect to have a net-zero-energy or carbon building in the next 10 years, JCI said. Europe had the most respondents planning to attain green building certifications and the most respondents who have established public energy or carbon-reduction goals, with United Kingdom leading with 46% established goals, JCI added.

Compared to its global counterparts, significantly more respondents in the United States plan to implement measures, such as building controls improvements, onsite renewable energy and energy management process, such as ISO 50001, JCI said. Of the countries surveyed, the United Kingdom, France and Japan have the most respondents who expect to increase investment in energy efficiency, renewable energy or smart building technology over the next year, the company said. Still, to reach global sustainability and environmental goals, the world must work collectively to plan for a more energy efficient future and make investments today for the generations to come, it added.

Although global-scale transformation is necessary to course-correct on climate

change, organisations are facing barriers to pursuing sustainability initiatives, JCI said. Almost half of the respondents surveyed say their top barrier to pursue energy and building technology improvements is either a lack of funding to pay for improvements (25%) or uncertainty in their return-on-investment (23%), the company said.

Additionally, more than half of respondents pointed to a lack of technology as one of the hindrances to scaling sustainability efforts, JCI said.

The pandemic has also prompted organisations to rethink their technology investment decision-making, JCI said. Protecting the health and safety of building occupants during the coronavirus pandemic was the second most significant driver of investments globally, it said. Additionally, 65% of respondents performed an indoor air quality assessment last year, it added.

Respondents to the survey also said improving occupant health and wellness overall and improving life safety and security were important decision-making factors, JCI pointed out. Over the next 12 months, almost 60% of organisations plan to invest in fire and life safety system and security system improvements to their buildings, it said. Long term, more than two-thirds of organisations believe data analytics and cybersecurity will have an extremely or very significant impact on the implementation of smart buildings over the next five years, it added.

The survey revealed that actionable policies are also important for progressing energy efficiency goals, JCI said, adding that 85% and 72% of respondents, respectively, reported that performance benchmarking, certifications and performance standards for energy codes are critical to improving energy efficiency efforts.

JCI said its Energy Efficiency Indicator Survey collected responses from 1,000 participants globally between November and December 2021.

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HVAC sector to drive demand for OEM insulation

Global OEM insulation market is expected to reach a market value of over USD 19.5 billion by the end of 2028

By CCME Content Team

WITH increasing urbanisation and industrialisation bolstering growth of developing regions, applications in automotive, consumer appliances and HVAC sectors have seen a rapid uptick, posing a direct impact on the demand for OEM insulation. According to a new research report by Future Market Insights, an ESOMAR-certified market research and consulting company and a member of Greater New York Chamber of Commerce, the global OEM insulation market is expected to reach a market value of over USD 19.5 billion by the end of 2028, growing at a CAGR of 4.5% during the forecast period.

There has also been a significant increase in the construction projects globally in residential and commercial sector, which depicts leading growth of HVAC systems in the global OEM insulation systems, Future Market Insights said. HVAC systems cover a major part of the demand for OEM insulations, it pointed out.

The sector holds a dominating position in the global market, owing to the cost advantage and energy efficiency, Future Market Insights said, adding that the need

for installation of HVAC systems has also called for considerable use of interior insulation systems to counter any external noise and adverse climatic conditions.

The rampant industrial requirements in developing regions, like Asia, shows a clear picture of the OEM insulation market's potential for progress in the upcoming years, Future Market Insights said. The key factors expected to drive growth in the region include rising public and private investments in industrial, energy, oil & gas, petrochemical and food & beverage sectors; increased focus of local governments on enhancing industrial output; legislation of incentives to jumpstart the manufacturing sector, such as, development of Special Economic Zones (SEZs), industrial corridors, and industrial clusters and provision of subsidies and tax cuts for manufacturing groups and industrial corporations, Future Market Insights added.

Among the leading countries in Asia, India is expected have a foremost role to play in the global OEM insulation market, Future Market Insights said. According to the regional forecast, India is expected to grow at a CAGR of 5.6% during the forecast period, it said. However, in terms of market value, North America being a

highly developed region, holds the largest market value by the end of 2028, it added.

The global market for natural and eco-friendly insulating materials is projected to have a highly lucrative market, Future Market Insights said. The move is in response to the upgradation of manufacturing techniques taking place. In order to gain competitive edge over the other and to reap the maximum benefits, market players are channelising their efforts to develop value-added products with increased efficiency, Future Market Insights said. Inclination towards the trend of eco-friendly insulation is one of such moves, it said, adding that many players are also a part of various collaboration activities, which enables the market player to adopt competencies and further drive the market.

Some of the players mentioned in the report are Rockwool Group, BASF, Evonik, Paroc Group Oy, Owens Corning Insulating Systems, Saint-Gobain, Armacell International, Johns Manville Corporation, ACH Foam Technologies, Henry Company, Shannon Enterprises of Western New York Inc., Styrotech, Inc. and NCFI Polyurethanes. According to Future Market Insights, the projections may reveal many more trends that companies may look forward to, in order to surpass their competitors and bolster growth.



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KEY PERSPECTIVES ON THE REGION'S HVACR INDUSTRY

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Wilo reports achieving record sales

Pumping systems manufacturer says it ended the fiscal year 2021 with sales of nearly EUR 1.7 billion

By CCME Content Team

THE Wilo Group reported that it ended the fiscal year 2021 with record sales of nearly EUR 1.7 billion euros. Despite persistently difficult conditions, the Group said, it increased its sales revenue by 13.8%.

Earnings before taxes (EBITDA) also reached an all-time high of EUR 181.1 million, the company said. This represents an increase of more than 30%, it added.

“The pleasing results speak a clear language: The Wilo Group is ideally positioned to achieve sustainable, profitable growth, even in difficult times and under unfavourable economic conditions,” said Oliver Hermes, President and CEO, Wilo Group.

Wilo said the unforeseeable situation in the middle of Europe and the Coronavirus pandemic, which has been ongoing for over two years, also intensified the global decoupling tendencies in the past financial year. Multinational alliances are being called into question, economic cooperation structures are being dissolved, supply chains are being subject to sanctions and embargoes are being imposed, it said. “More and more, German and European companies are getting caught between the fronts of geopolitical disputes,” Hermes pointed out. Wilo said it specifically has been encountering these developments for years and, to this end,



Wilopark

(Photo courtesy The Wilo Group)

further expanded its global presence in the past financial year. Among other things, Wilo said, it invested more than EUR 170 million in the construction and expansion of sales and production locations in the modernisation and expansion of production facilities, acquisitions and takeovers.

Wilo said that in line with the “region-for-region” approach, it strengthened the American market, among others. North America, in particular, has become one of the most important sales markets in recent years, it said, adding that the acquisition of QuantumFlo, Inc., a specialist in booster sets and intelligent pump systems, completed in fiscal 2021, consolidated its market position. In addition, new state-of-the-art production and administration buildings were, and are being, built in the United States, China and India, it said.

Today, Wilo said, it has a presence around the globe, through its global network of more than 80 production and

sales companies. Hermes said this is another reason for the robust success in the past financial year.

In 2021, Wilo said, it also received awards for its commitment to combating climate change. Among them are the German Sustainability Award 2021, the Ecovadis Sustainability Rating in Gold, and the title of “Climate Pioneer” (Handelsblatt), which it said, are proof of its innovation leadership. Wilo said it is regarded in the industry as one of the pioneers in climate protection and has set itself the goal of saving 50 million tons of CO₂ by 2025, thus making a substantial contribution to reducing emissions. Hermes said: “Wilo is also leading the way as a pioneer in the hydrogen era: As part of the implementation of our dedicated hydrogen strategy, the “H2 Powerplant” will be open at the Wilopark in Dortmund. This will serve as a self-sufficient, decentralized, and regenerative solution for secure energy supply.”

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{Quoteyard}

We bring you a collection of some of the most interesting quotes, extracted from articles in this issue. In case you missed reading, we recommend you flip back to take full advantage of the insights and remarks, in the context in which they have been presented.

“

Buildings need to be categorised based on air quality scores and the ratings need to be published, so that people are aware of the condition of the surroundings they live in, and property owners can take necessary measures to improve and maintain the air quality levels. ”

p10

“

We do see the need of more experts in this sector, who really are experts. Due to this gap, we still see a lot of uncommissioned and even wrongly commissioned systems.

p23

“

The available technology – a heat resilience system, which is adaptable from city to city and supported with data analytics, will serve as a decision-making tool for municipalities battling environmental heat stress.

p29

“

Regulatory authorities have increasingly begun working with manufacturers. The productive dialogue can alleviate many issues arising out of new regulations, such as product availability interruptions, price hikes, failure to comply, product rework and recalls, products being too costly to launch, shipment being held and rejected at the borders, and insufficient training of technicians.

p6

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As Fakhruddin Properties, it is our endeavour to ensure the monitoring and optimising of air quality within our developments. Not only that, our future developments will come installed with air quality monitoring systems and enhancing technologies, serviced by optimising energy consumption costs through use of natural resources and smart technologies

p25

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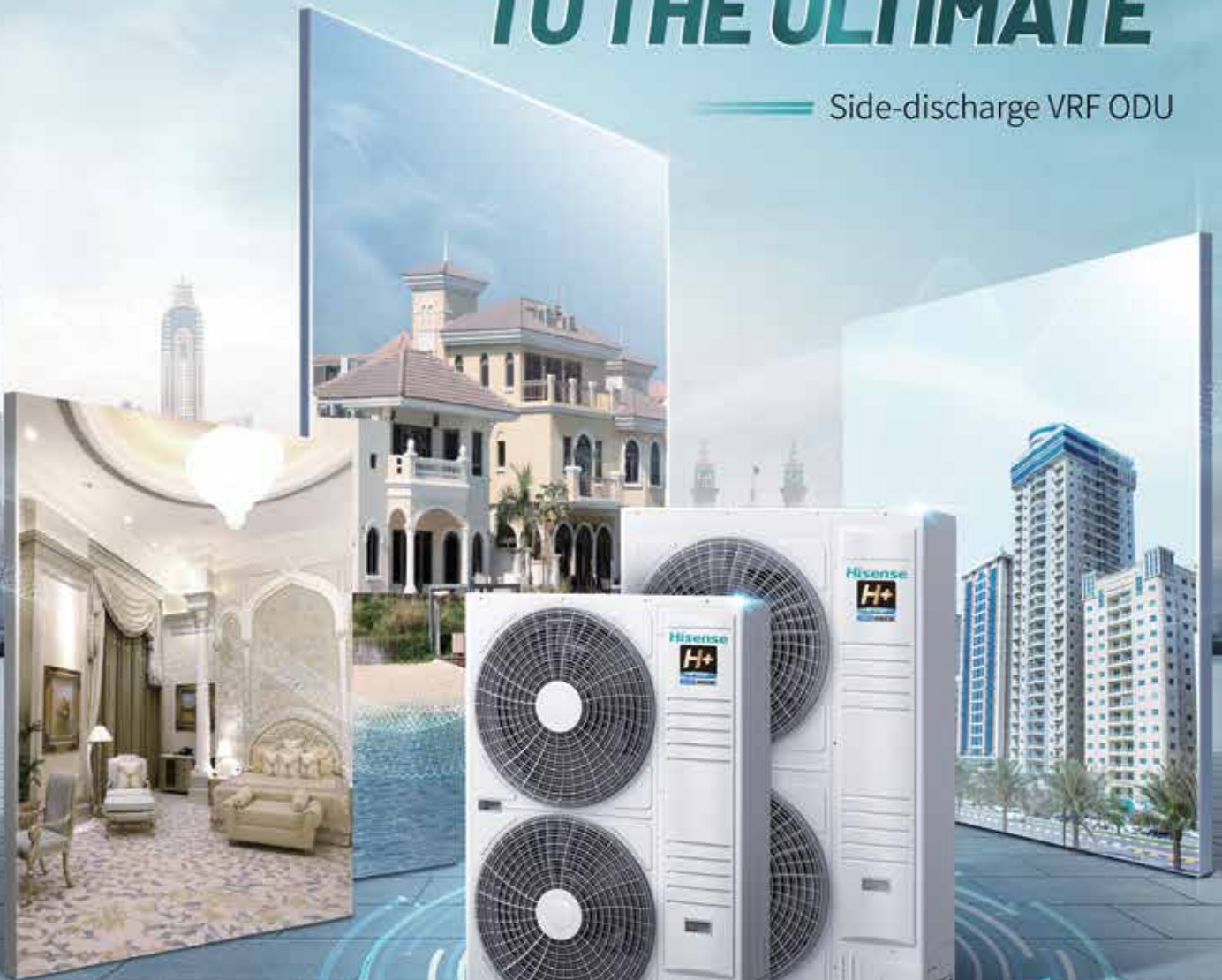
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