1. Air conditioner units (HVAC) on a roof of an industrial building

HIGH ON HVAC

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) SYSTEMS ARE CHANGING TO ENCOMPASS ANTI VIRAL AND GREEN TECHNOLOGIES TO INCREASE THE COMFORT LEVEL OF INDOOR SPACES.

BY BINDU GOPAL RAO

The coronavirus epidemic has led to an increase in demand for improved air quality across the world. With employees returning to work after the epidemic and adapting to the new normal, it has become critical to enhance air quality in workplaces and buildings.

DO THE NEW

The pandemic has led to a massive shift in consumer behaviour, bringing health and value for money to the forefront. Consumers are looking for ACs that offer a focused and better filter option along with the energy efficiency ratio (EER) model. With the Government's push towards 'Self-reliant' India, consumers are open to purchasing Indian brands over imported brands for their differentiated and innovative features. Despite COVID -19 related lockdowns in the country, Godrej Appliances has kept up impetus on offering consumers the latest in technology by launching 30 SKUs in the Air Conditioner category last year. "We have also launched a new range of R290 Refrigerant based Inverter Split Air Conditioners in March 2021. This year, the coming summer will see a host of new ACs from Godrej offering great cooling which has been our strength, along with new features in health, IoT enabled smart controls, efficiency, durability, and superior aesthetics. Although rising temperatures year-on-year has been an ongoing challenge for consumers, Godrej ACs are renowned for its powerful cooling, and we continue to offer it with lower derating technology that enables our ACs to perform optimally, even during harsh summers when regular ACs fall short," says Santosh Salian, Product Group Head – Air Conditioners, Godrej Appliances. Lloyd, as a part of Havells, has strong consumer loyalty owing to its alignment with the 'Make in India' program. Besides above, Convertible AC is another feature in which a customer can shift modes / capacity of the AC as per his / her requirements or ambient temperature or heat load in the room and enjoy economy at the same time.

2. The bare skin ceiling shows roof structure and air condition system

3. Santosh Salian, Product Group Head AC, Godrej Appliances

ANTI-VIRAL TECHNOLOGIES

The pandemic has brought about a greater focus on health and hygiene aspects in any product that consumers purchase. With employees returning to work after the epidemic and adapting to the new normal, it has become critical to enhance air quality in workplaces and buildings. The building owners are implementing Advanced filtration systems in HVAC to preserve air quality and prevent viral infection transmission, providing a safer environment for the individuals within. In the building management business, new requirements for secure HVAC systems are growing. Gaurav Burman, VP & APAC President, 75F, India says, "IoT has played a significant role in HVAC technology and will continue to do so in the foreseeable future. It has transformed the HVAC industry, making it easier to connect devices and allow them to communicate with one another. Automation has increased with the implementation of IoT and has lessened a significant amount of manual labor. Machine Learning and IoT are now being used to achieve things that were previously only theoretically feasible, such as perfect air and temperature balance and remotely operated HVAC systems. 75F's solution is far more efficient than standard building controls systems because it is equipped with IoT and cloud computing capability. Facility managers are becoming more aware of the relevance of building conditions for employee productivity, as well as the benefits of sustainable energy utilisation in terms of cost savings and environmental friendliness."

TECH TALK

A Plant System Manager (PSM) can be used to automatically control multiple chillers and related peripheral equipment based on the air conditioning load requirement. PSM is designed to provide optimized management over the entire chiller plant. "The PSM collects data as per system performance & historic data trends and optimizes the system to perform efficiently with minimal manual intervention. Be-


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4. Gaurav Burman, VP & APAC President, 75F, India

5. Chirag Baijal MD India, Commercial HVAC, Carrier

6. Rakesh Tripathi, VP - Commercial Air Conditioning, Voltas Ltd

7. Godrej ACs are renowned for its powerful cooling, and come with lower derating technology that enables ACs to perform optimally.

8. IoT has played a significant role in HVAC technology and will continue to do so in the foreseeable future. Courtesy 75F

sides this across our two brands of Carrier & Toshiba- our VRF portfolio is cutting edge on efficiency and controls to program, schedule and manage comfort and safety in equal measure," says Chirag Baijal MD India, Commercial HVAC, Carrier. Another opportunity for hotels is to manage hot water requirements with partial chilled water.

Heat recovery systems perfectly apply to Hotel Buildings which run 24x 7 and consistently require both hot water (domestic use) and chilled water (for cooling load). Heat Pumps eliminate the need for conventional diesel/ gas fired boilers and simultaneously boost the cooling load of the HVAC system, thus improving system efficiency leading to energy savings. There are many types of HVAC systems available in the market today but choosing a system that is low on capital as well as running cost requires good HVAC expertise and this could pose a big challenge. Rakesh Tripathi, VP - Commercial Air Conditioning Business, Voltas Ltd. says, "the newer technologies that are being incorporated for better and efficient HVAC systems include ubiquitous sensor network for Smart cooling, App control of ACs using smartphones, Dual inverter technology with acoustic jackets, energy recovery systems to improve energy efficiency, virtual stimulation models helping to design the system with optimum efficiency and much more. The smart HVAC designs come along with sensors which talk to one another like Perimeter Cooling. This means that buildings have different systems that communicate."

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NEW TRENDS

Higher internet penetration and increased access to smartphones has revolutionised consumer behaviour, and the pandemic has increased digital familiarity by leaps and bounds, therefore improving demand and acceptance of IoT enabled devices. IoT enabled Smart ACs that have wi-fi connectivity, with smartphone and voice enabled capabilities with features like remote monitoring, scheduling, and control from anywhere are the new trends in the space. Shashi Arora, CEO, Lloyd says, "Lloyd air conditioners are equipped with Automatic Humidity Control through Intelli-Sensors to support optimum humidity levels on a real-time basis. To ensure cleaner and healthier air while using air conditioners, the range comes with Plasma Protective Shield (in 5-star segment) that can clean air up to PM 0.3 and offers a 99.9% reduction in bacteria/virus/ fungal infection. In addition to that, the Triple Air Filtration provides Anti-Viral Filter + HEPA Filter + Activated Carbon Filter (in 3-star segment). In addition, Lloyd will be launching its 2022 range of ACs another unique feature "Puro Air Ionizer with PM 2.5 Sensor" where Ionizer plays its role by reducing harmful particles in the room through negative ion generation and PM 2.5 sensor indicates the actual level of PM 2.5 of the room (post reduction) on the indoor panel of AC, giving its customer purer & cleaner air experience."


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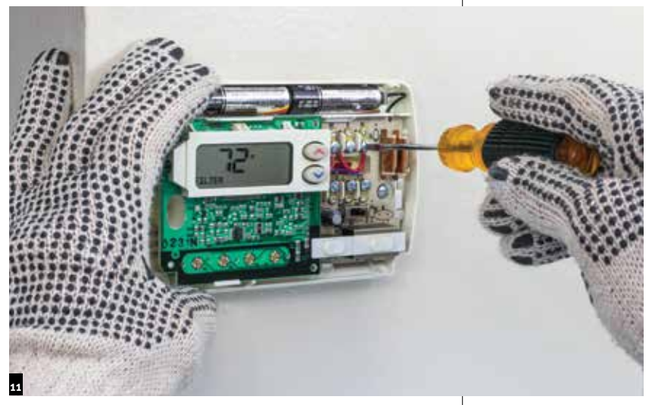
GOING GREEN

Buildings today are built in a different manner. Architects and builders are now adopting green building technology, which has resulted in an increase in the installation of smart meters, thermostats, and sensors to assist reduce energy expenses. Not only can building owners manage the temperature, but they can also control the humidity and circulation. "To take things a step further, software-enabled HVAC systems collect data and compile it into reports to detect consumption trends, system status, and prior performance, which can be used to advise preventive maintenance and identify the source of a problem for faster repairs. Some new software-enabled HVAC systems can self-diagnose, allowing HVAC technicians to quickly remedy problems and reduce downtime," says Burman. Geothermal heating and cooling systems are also becoming more popular, which eliminates the need for petroleum-based electricity. Instead, these heat pumps collect energy from the ground and water sources, such as ponds, to heat and cool buildings. Some buildings use a combination of gas and solar energy, allowing owners to effortlessly switch between the two to control electricity bills. Thermally driven ACs are already in the works. It is not just residential customers who are feeling the pressure of high energy costs. "Commercial buildings have more square footage to heat and cool, all year round. And not just homeowners, but businesses are also actively looking for ways to minimise their carbon footprint. At Voltas, our current focus is on energy efficiency through technology and green refrigerants," adds Tripathi. A&I



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9. Convertible AC is another feature in which a customer can shift modes/capacity of the AC as per his/her requirements or ambient temperature or heat load in the room and enjoy economy at the same time. Courtesy Lloyd

10. HVAC heating and air conditioning residential units or heat pumps.

11. HVAC Technician repairing digital heating and cooling thermostat.

12. Shashi Arora, CEO, Lloyd


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