FOR IMMEDIATE RELEASE

Contact:
REHAU Communications Department
Susanne Martin – sue.martin@rehau.com
Corrie Neukirchner – cordula.neukirchner@rehau.com
(703) 777-5255

REHAU Radiant Systems Combined with Dedicated Outdoor Air Systems Lead to Zero-Net Buildings

Education and on-site support can provide engineers and contractors peace of mind when installing this hybrid solution

ATLANTA, Jan.14, 2019 – Building owners and facility managers are looking for solutions that bring their commercial buildings closer to net-zero. REHAU, a manufacturer of highly engineered and innovative building solutions, is encouraging engineers and contractors to take a closer look at hybrid radiant-DOAS systems for upcoming projects.

REHAU hydronic radiant heating and cooling systems when combined with a dedicated outdoor air system (DOAS) can reduce HVAC energy consumption while increasing thermal comfort and air quality in commercial buildings.

"The thermal comfort of radiant heating and cooling is widely recognized, and its ability to contribute to a building's energy efficiency is well-documented," says Ryan Westlund, senior manager, radiant heating and cooling with the building solutions division at REHAU. "Building airflow is also a major concern for specifiers, and DOAS is capable of achieving much higher indoor air quality than traditional HVAC."

By skillfully combining these two proven technologies, HVAC system designers can not only optimize building energy efficiency and sustainability, but can also create indoor spaces that are more conducive to occupant health and performance.

"The main hurdle we're seeing in the market is wide adoption and acceptance by building design teams," adds Westlund. "Through providing educational resources and on-site support, REHAU is working closely with customers to help them better understand the integration of DOAS with our radiant heating and cooling system."

As experts in hydronic radiant technology, REHAU offers a variety of both online and human resources to help customers better integrate radiant with building HVAC systems. This includes design services and software, classroom and online training through the REHAU Academy as well as jobsite support and consultation.

-more-

Why are radiant and DOAS technologies so compatible?

Hybrid radiant-DOAS technology is the optimal choice because it controls the most human comfort variables as defined by ASHRAE 55. By separating dehumidification (latent load) from temperature conditioning (sensible load), HVAC system designers can independently and precisely control each of these variables, significantly improving indoor climate and building efficiency.

Radiant heating and cooling systems add an important dimension to comfort by adjusting the surface temperatures using fluid circulating through a network of PEX pipes hidden in the floors, ceilings or walls. When the fluid being circulated through the pipes embedded in the building structure is warm, heat is gently radiated from the floor panel, elevating the temperature of the surfaces and objects in the room and surrounding the occupants with warmth. When the circulating fluid is cool, the cooled surfaces evenly absorb heat energy, cooling the space to a comfortable temperature. By controlling the mean radiant temperatures of a space – a thermal comfort variable not influenced by forced-air alone – radiant systems provide even, gentle heating and cooling that measurably increases comfort, which can lead to improved productivity and wellbeing in applications from schools to health care to retirement communities.

In addition, due to the superior energy efficiency of hydronic energy transfer, radiant systems are one of the most sustainable HVAC technologies. When used as a building's primary heating/cooling system, they can lower energy consumption by up to 30 percent. Using multiple zones, radiant systems can easily be designed to target energy very accurately within a building or even within an individual room.

DOAS provides a dedicated supply of 100 percent fresh outdoor air, which is crucial to occupant health and comfort. By separately conditioning the outdoor ventilation makeup air and the return air from the conditioned space, a DOAS system achieves superior control of humidity and ventilation air temperature relative to conventional forced-air systems. Since the primary function of a DOAS system is to provide dedicated ventilation, rather than ventilation as incidental part of indoor air cooling, it eliminates the tendency to over-cool a space in order to achieve desired humidity levels. Over-cooling not only wastes energy, but also detracts from occupant comfort.

-more-

DOAS also reduces energy demands by recovering the energy from the exhaust air to pre-warm or pre-cool the incoming fresh air. This makes it more likely that the radiant system can handle the full heating/cooling load of the building. Duct and fan systems for circulating air can be downsized allowing the required floor-to-floor height to be reduced.

"Putting it simply, radiant is very good at dealing with sensible loads and DOAS is very good at dealing with latent loads," said Westlund. "It just takes a little more planning to integrate the two systems for a best-of-both solution."

"With advances in control systems, integrating multiple HVAC systems is getting easier every day. Hybrid radiant-DOAS systems give HVAC system designers many more options for customizing to different climates," adds Westlund. "It's no longer just a single box on the roof, regardless of temperature or humidity, from Atlanta to Calgary."

REHAU radiant heating/cooling has been successfully combined with DOAS in numerous projects throughout North America including Sheridan College Davis Campus (Brampton, Ont.), Loyola University Information Commons (Chicago) and the National Museum of the U.S. Army at Fort Belvoir in northern Virginia.

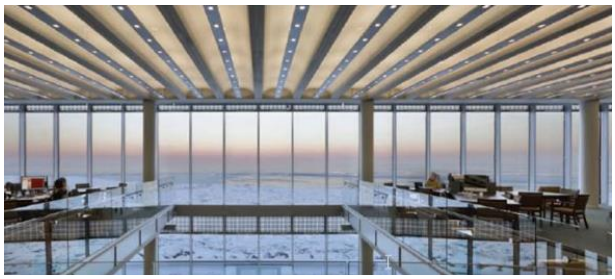
For additional information, visit **AHR Expo booth B3853** or contact REHAU, 1501 Edwards Ferry Rd., N.E., Leesburg, Va., 20176. Phone: 1.800.247.9445. Fax: 1.800.627.3428. E-mail: rehau.mailbox@rehau.com. Web site: http://na.rehau.com/mp.

REHAU is the premium worldwide brand for polymer-based innovations and systems in construction, automotive and industry. The company generates continuous growth through its expertise and innovative capabilities in materials development, systems design and surface technology. Approximately 20,000 employees at more than 170 locations around the world ensure success of the independent, privately held company.

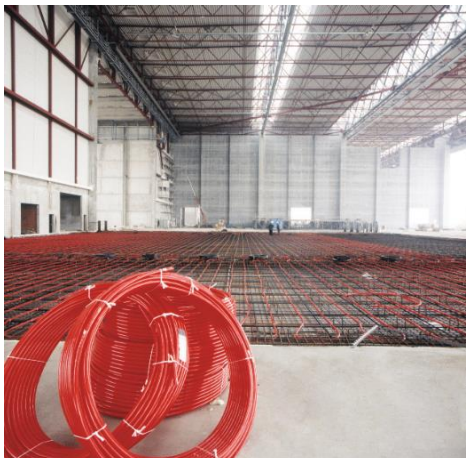
-# # #-

TO THE EDITOR: Please do not convert REHAU or PEXa to lowercase. Thank you.

Sheridan College Davis Campus (Brampton, Ont.):
This REHAU radiant heating/cooling system is especially unique in that it is connected to a tri-generation plant, which produces electricity, heating and cooling in one process. The radiant system supplies primary heating/cooling reducing the amount of ductwork and rooftop air handlers, while DOAS provides fresh air ventilation and humidity control.
Image upon request



Loyola University Information Commons (Chicago):
The combination of REHAU radiant heating/cooling and DOAS reduced the thickness of floor structures in this see-through building.
Image upon request



864-K039-06_01
REHAU radiant heating/cooling concentrates temperature conditioning on the occupant level in this expansive commercial facility
©REHAU