Newsletter January 2020 ● Volume 2 (2020-2021)

ASHRAE THAILAND CHAPTER

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President Message Newsletter #2 – 2020-2021

เรียน ท่านสมาชิก ASHRAE ประเทศไทย และเพื่อนๆ ทุกท่าน

วารสารฉบับนี้ เป็นฉบับที่สอง สำหรับวาระการทำงานของ ASHRAE 2020-2021 ครับ ณ ขณะนี้ สถานการณ์โควิดในบ้านเราก็เกิดการระบาดในประเทศแล้ว โดยพื้นที่ของการระบาดครั้งนี้ เกิดขึ้นที่บริเวณชายแดนของเราในหลายจังหวัดที่ใกล้กับประเทศเพื่อนบ้าน และล่าสุดก็พบที่จังหวัดสมุทรสาครซึ่งมาจากแรงงานต่างชาติ ซึ่งก็ใกล้กับกรุงเทพฯ มากขึ้นทุกที ดังนั้น เรื่องของการดูแลในเรื่องสุขอนามัยของตนเอง รวมไปถึงบุคคลในครอบครัวจึงเป็นเรื่องสำคัญมาก

สำหรับในช่วงเดือนที่ผ่านมา ทาง ASHRAE ประเทศไทย ก็ได้จัดกิจกรรมต่างๆ มากมาย สำหรับสมาชิก เช่น Virtual Webinar ในหัวข้อที่น่าสนใจและเป็นเทรนของโลกในขณะนี้ อาทิเช่น

- เรื่อง Airflow Management for Healthcare Facilities โดยวิทยากรคือ Mr. Kishor Khankari
- เรื่อง Net Zero Building .vs. Net Zero Distinct โดยวิทยากรคือ Mr. C.H. Leung
- เรื่อง Net Zero Hospital โดยวิทยากรคือ Mr. Frank Mills
- เรื่อง The Advance Energy Design Guide for Zero Energy Building โดยวิทยากรคือ Mr. Paul Torcellini
- เรื่อง Performance Buildings; except low rise residential โดยวิทยากรคือ Mr. Douglas Zentz
- เรื่อง Advanced energy design guide and system decision โดยวิทยากรคือ Mr. Michael Schwedler

และในเดือนมกราคม 2564 เป็นต้นไป เราจะมี Virtual Webinar อีก 3 เรื่อง ดังต่อไปนี้

- วันเสาร์ที่ 9 มกราคม 2564 : เรื่อง Energy Audits: The basics of setting up and executing energy audits in commercial buildings" และ Testing Adjusting and Balancing (TAB) – HVAC โดยวิทยากรคือ Mr. Michael Schwedler
- วันเสาร์ที่ 9 กุมภาพันธ์ 2564 : เรื่อง RCM (Reliability Centered Maintenance) in Maintenance and Design โดยวิทยากรคือ Mr. Richard H. Rooley
- วันศุกร์ที่ 5 มีนาคม 2564 : เรื่อง "Conducting a Commissioning Kickoff Meetingโดยวิทยากรคือ Mr. Dennis Knight

นอกจากนี้ ทาง ASHRAE ประเทศไทย ก็ยังมีกิจกรรมเพิ่มเติมอีก คือ

- วันอังคารที่ 23 กุมภาพันธ์ 2564 : Dinner Talk หัวข้อ "Post covid19 - a view from developer and designer"
- วันอังคารที่ 16 มีนาคม 2564 : Technical Visit โรงงาน New Bistol Factory
- วันพฤหัสบดีที่ 20 พฤษภาคม 2564 : สัมมนาครั้งที่ 3 "HVAC 4.0 with BIM and standards" โดยวิทยากรคือ รศ. ดร. พันธุดา พุฒิไพโรจน์ และคณะ

สำหรับวารสารฉบับนี้ ยังมีเรื่องราวที่น่าสนใจอีกหลายเรื่อง อาทิเช่น

- เรื่อง A Renewable Solution to keep cool in a warming World
- เรื่อง AHR Expo 2021 Innovation Awards Winners Announced
- เรื่อง New Alternative Care Site Guidebook Available to help respond to the rising need for hospital beds due to COVID19
- เรื่อง ASHRAE Learning Institute Release New HVAC Design Training Schedule

สุดท้ายนี้ ขอให้ทุกท่าน รักษาสุขภาพ และ ติดตามความคืบหน้าของสถานการณ์โควิดเป็นระยะ จนกว่าทุกอย่างจะคลี่คลาย ด้วยความปรารถนาดี จาก ASHRAE THAILAND CHAPTER

ท่านสามารถติดตามข่าวคราว ASHRAE Thailand chapter จะมีการจัดกิจกรรมต่างๆ ได้ที่

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ขอแสดงความนับถือ

ดร. รพีรัฐ ธัญวัฒน์พรกุล
Dr. rapeerat thanyawatpornkul
President 2020-2021 ASHRAE Thailand Chapter

INSIDE ISSUE

A renewable solution to keep cool in a warming world

Reprinted from International Institute for Applied Science System Analysis webpage

https://iiasa.ac.at/web/home/about/news/201019-Seawater_cooling_.html

Month-on-month, year-on-year, the world continues to experience record high temperatures. In response to this and exacerbated by a growing global population, it is expected that air-conditioning demand will continue to rise. A new International Institute for Applied Science System Analysis (IIASA)-led study explored the pros and cons of seawater air-conditioning as an alternative cooling solution.

Conventional air-conditioning (AC) is the most common technology used for cooling and represents a considerable share of energy demand in warmer regions. An alternative that is not frequently considered, is seawater air-conditioning (SWAC) - a renewable alternative for cooling that involves pumping seawater from ocean depths of around 700 to 1200 meters and temperatures of 3°C to 5°C to the coast, where it exchanges heat with a district cooling system, and returns the warmer water to the ocean.

According to the study published in the journal Energy Efficiency, just 1 m³ of seawater in a SWAC plant can provide the same cooling energy as that generated by 21 wind turbines or a solar power plant the size of 68 football fields. The researchers developed a computational model and methodology to estimate the cost of cooling with SWAC around the world, and also evaluated the possibility of using this system as an alternative for energy storage from variable renewable energy sources like wind and solar.

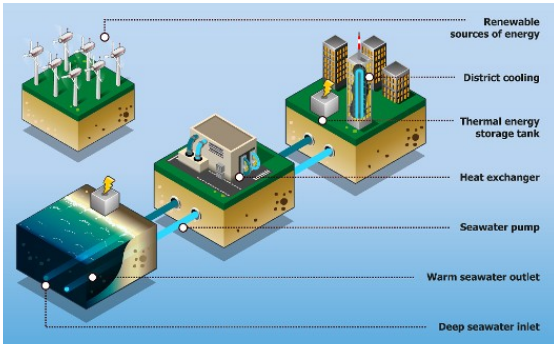
The results show that whereas conventional air-conditioning systems require a low initial investment cost but the energy costs to operate them are high, for SWAC systems the opposite is true - while it has a higher initial investment cost, energy costs to operate the system is low.

The main potential for SWAC is on small islands in tropical regions, where the distance from the coast to the deep ocean is small, energy costs are high, and warm average temperatures are common throughout the year. For example, in Puerto Plata where the electricity costs are $0.16/KWhe, the cost of conventional AC cooling is around $0.08/KWht. The SWAC solution would cost $ 0.042/KWht, which is 48% less than conventional technologies. In Nauru, assuming the same electricity cost, the SWAC solution would be $0.0185/KWht, which is 77% lower compared with conventional technologies.

While district cooling is usually less viable than district heating systems, the low cost of cooling with SWAC processes makes district cooling over short distances a viable alternative. Possible customers with high cooling demands to connect to SWAC district cooling systems include airports, data centers, hotels and resorts, governmental and military facilities, universities, and commercial buildings.

The findings further indicate that excess generation of electricity from variable renewable energy sources such as wind and solar energy can be balanced out with the variations in seawater flow in the pipeline of SWAC plants. This cold water would then be stored in thermal energy storage tanks to meet the cooling demand at any time. During months or seasons where cooling demand is low, the cold seawater can be used to increase the efficiency of a chiller to freeze sea or freshwater in the storage tanks. During the months when cooling demand is high, both the SWAC system and the energy stored as ice in the tanks can supply the cooling demand.

In addition to the above, the paper also suggests a modification to the normal design that can increase the efficiency of SWAC projects with long pipelines, while allowing for expansion to meet growing cooling demand. The proposal involves increasing the excavation depth of the seawater pump station, which allows an increase in the velocity and flow rate of the seawater inlet pipeline.



"We call this approach "High Velocity Seawater Air-conditioning". This design configuration allows such projects to be built with an initial cooling load and expand the cooling load modularly through smaller additional capital costs," explains study lead author Julian Hunt, who did this research during his postdoc at IIASA.

Other advantages of SWAC includes its reliability as a non-intermittent renewable source of cooling, reduction of greenhouse gas emissions from cooling processes, and the reduction of water consumption in cooling systems. In addition, it could serve as a cheap alternative for large-scale cooling in tropical countries where it could reduce the costs of food and grain storage, thus helping to lower the vulnerability of developing countries to climate change. Given the recent interest in hydrogen production and hydrogen-based economies, SWAC could even be combined with hydrogen liquefaction plants where it could help to reduce energy consumption in the process to liquefy hydrogen by up to 10%.

The researchers however caution that despite its potential and many advantages, this technology also has challenges. The return of the seawater should, for instance, be handled with extreme care to minimize its impact on coastal wildlife; retrofitting district cooling infrastructure and buildings could incur high capital costs; and there is a risk of thermal shock and increased nutrient loading in the deep seawater outlet.

"While it does have its challenges, seawater air-conditioning is an innovative and sustainable technology that has great potential for expanding into a benchmark system for cooling in tropical locations close to the deep sea and will help fulfill our cooling needs in a warming world," Hunt concludes.

Reference

Hunt J, Zakeri B, Nascimento A, Garnier B, Pereira M, Bellezoni R, de Assis Brasil Weber N, Smith Schneider P, et al. (2020). High velocity seawater air-conditioning with thermal energy storage and its operation with intermittent renewable energies. Energy Efficiency DOI: 10.1007/s12053-020-09905-0

ASHRAE Announces Move to New Net-Zero Energy Global Headquarters In Metro Atlanta

ATLANTA (November 5, 2020) – ASHRAE, a global society advancing human well-being through sustainable technology for the built environment, announced a move to its new global headquarters, located at 180 Technology Parkway, Peachtree Corners, Ga. The Society began renovations in January 2020 on an existing 66,700 ft2 building, originally built in 1978, on 11 acres of land. Located 10 miles north of its previous headquarters building, ASHRAE joins other innovation and sustainability-focused organizations based in the popular Technology Parkway corridor.

A short video on the new global headquarters can be viewed on ASHRAE's YouTube channel. Images are available for immediate download at ashrae.org/newhq.

"ASHRAE's new global headquarters is a prime example of how we are helping to pioneer a movement that many expect will ultimately make net-zero energy the 'new norm' in sustainable design and construction," said ASHRAE Building Ad Hoc Committee Chair Ginger Scoggins, P.E. "Although new construction of net-zero energy buildings make a lot of headlines, reuse of existing structures is a basic tenet of sustainability – the energy performance of existing buildings must be addressed to substantially impact the 40% of primary energy consumed by buildings."

"ASHRAE's goal for this project was to renovate a three-story 1970's era, cheap energy period building into a high-performing net-zero-ready facility in a cost-effective way that can be replicated in the built environment industry," said Technical Advisory Subcommittee Chair Tim McGinn, P.E.

The photovoltaic (PV) system design is currently in progress. The building will be on its way to fully net-zero energy by March 2021 upon the completion of the PV system installation.

Focusing on the Society's 2020-21 theme, "The ASHRAE Digital Lighthouse and Industry 4.0," the headquarters building incorporates several digitally connected solutions such as remote monitoring and analysis of building performance, with online dashboarding for transparency and advanced Building Automation System (BAS) integration with other systems, such as ASHRAE's meeting reservations systems. Other solutions include a digital twin and Building Information Model (BIM), innovative mechanical systems visible through open ceiling around radiant panel clouds and advanced conferencing systems designed to serve as a "digital lighthouse" teaching resource.

"ASHRAE's first-of-its-kind headquarters building was designed as a living showcase of what's possible through technology integration to increase efficiency, protect people and property, and enhance the occupant experience," said 2020-21 ASHRAE President Charles E. Gulledge III, P.E. "In addition to supporting ASHRAE's technical standards, innovative product integrations from our generous donors also provide a scalable and repeatable model for a net-zero energy building design."

Examples of technical features include:

- ☐ Radiant ceiling panel system: This is used for heating and cooling & dedicated outdoor air system for outdoor air ventilation with enthalpy heat recovery.
- ☐ Overhead fresh air distribution system augmented with reversible ceiling fans in the open office areas and displacement distribution in the learning center.
- ☐ Six water source-heat pumps (WSHPs): There are four on basement level and two on upper level atrium that will be used to condition these spaces.
- ☐ Demand Control Ventilation (DCV): This will be used for high occupancy spaces in the meeting and learning center. Air distribution is constant volume in office areas and provided by fabric duct, reducing diffuser count and duct branches.
- ☐ Modeling Energy Use Intensity of 17 kBtu/sf/yr.
- ☐ On-site electric vehicle charging stations available for guests and staff.
- ☐ Roof-top and ground mounted photovoltaic solar energy system planned for installation March 2021.
- ☐ 18 new skylights and reconfigured window/wall ratio.
- ☐ Useful daylight illuminance (>300 lux) at the work plane Window Wall Ratio (WWR) 79.9% Existing – New WWR east/west 33.5% - north/south – 41.9%.

Prior to the COVID-19 pandemic, ASHRAE had already planned to provide 30% more outside air to the building than the required minimum ventilation rates from ASHRAE Standard 62.1 - Ventilation for Acceptable Indoor Air Quality and will implement other applicable guidance that has been developed by the ASHRAE Epidemic Task Force (ETF) for commercial office buildings.

The building is located in a forest setting, close to hotels, restaurants and walking trails. A large deck overlooking a lake adjacent to meeting rooms can be fully enjoyed on sunny days. ASHRAE's headquarters is 12 minutes and 6.2 miles from the Doraville MARTA station for easy access to Atlanta Hartsfield International Airport. The Society's approximately 110-person staff officially moved into the building at the beginning October.

"This move represents another significant milestone for ASHRAE," said ASHRAE Executive Vice President Jeff Littleton. "In addition to showing our commitment to building occupant health and comfort, our new headquarters building will enable us to provide industry-leading support and service to our global volunteers, while driving innovation that will push our goal of sustainability in action forward."

A team of ASHRAE volunteers led a highly successful building campaign to garner support for the renovation project. Thirty-one corporate donors committed more than $9.7 million in monetary support and gifts of equipment and services. ASHRAE thanks the following industry partners for their high-level support of the new global headquarters renovation project: NIBE, Cisco, Arkema, Daikin, Price Industries, Belimo, Climate Master, ClimaCool, Bell & Gossett, Big Ass Fans, Victaulic, Uponor, Mitsubishi Electric Trane, NTT and PlaceOS. Donors to the building campaign will be listed online and recognized in a special new headquarters commemorative magazine to be published in January 2021.

Additionally, ASHRAE members have given over $500,000 to date. In total, ASHRAE has received over $10.2 million from generous stakeholders, making a strong statement about their commitment to ASHRAE's mission and to a shared vision of a healthy and sustainable built environment for all.

"ASHRAE's new global headquarters is an example of an effective built environment that fully considers the importance of effective operations by installing the systems and equipment in a manner that facilitates operation and maintenance," said 2019-20 ASHRAE Presidential Member and Building Ad Hoc Committee Member Darryl K. Boyce, P.Eng. "We are grateful to our donors for their generous support and partnership. It is this support that not only shows our donors' alignment with ASHRAE's sustainability goals, but helps us to address the challenges of designing and operate buildings in a technology driven environment."

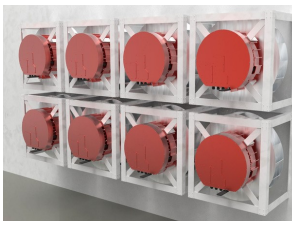
To learn more about ASHRAE's new global headquarters building and download photos for immediate use, visit ashrae.org/newhq.

AHR Expo 2021 Innovation Awards Winners Announced

The 2021 AHR Expo Innovation Award Winners and finalists were selected in ten industry categories, including building automation, cooling, green building, heating, indoor air quality, plumbing, refrigeration, software, tools and instruments, and ventilation.

1. BUILDING AUTOMATION

Winner: Infinitum Electric – Infinitum Electric IEq, a High-Efficiency Silicon Carbide VFD



Innovation: Infinitum Electric's IEq is an alternative solution to replace 30 year old insulated gate bipolar transistors (IGBTs) based VFDs. The high-efficiency silicon carbide (SiC) VFD offers a smaller, smarter, cooler and more efficient motor controller with integrated IoT capabilities in one single unit.

Introduction of VFDs allowed both commercial and industrial applications the ability to vary the speeds of fan, pump, or compressor applications. This led to a step-change improvement in the industry's overall energy consumption. However, one limiting factor remained — the VFDs efficiency stagnated at ~88–94%.

Infinitum's new Silicon Carbide IEq delivers the latest step-change improvements to motor control efficiency, size and packaging enabling OEMs and End-Users to deploy the technology in more varied environments. Additionally, it includes tightly integrated IoT sensors, for vibration, temperature, power, etc., a microcontroller and a one-way "data diode" IoT cellular modem gateway, which enables OEMs and end-users overseeing multiple facilities to more easily aggregate this data across thousands of installations, enabling deeper insights into the performance and reliability of their application. The on-board controller analyzes the high-speed IoT sensor data in real-time to provide immediate predictive analytics back to end-users. This innovation allows a wide range of OEMs to rethink how they deploy VFDs in new ways not previously available.

Finalists in this category include: BrainBox AI – BrainBox AI Solution; Emerson – Verdant ZX Series Energy Management Thermostat

2. COOLING

Winner: Emerson – Copeland™ ZPK7 Fixed Speed Scroll Compressor

Innovation: The Copeland™ ZPK7 scroll compressor developed by Emerson is the most efficient fixed speed compressor ever produced in the 100 year history of Copeland. The innovative next-gen Copeland compressor, now in its 7th generation, is available in 1.5–5 ton and can be applied in both residential and commercial applications. What's more, it supports the HVAC industry with optimized efficiency by providing up to 5% efficiency improvement at the SEER2 B rating point condition and key HSPF2 part load operation conditions. With regulation-ready performance, the compressors are optimized for use with R410A refrigerant, but will also offer a lineup optimized for low GWP refrigerants, such as R32 and R454B.

This innovation provides improved efficiency and reduced variability, which will allow OEMs to effectively meet the 2023 efficiency standards while also delivering comfort and energy savings for homeowners and building owners.

Finalists in this category include: MRCOOL – MULTI-ZONE/DIY Series Ductless Mini-Split Heat Pump; Smardt Chiller Group Inc. – Smardt V-Class Water-Cooled Chiller Range

3. GREEN BUILDING

Winner: Advanced Cooling Technologies - Pump-Assisted Split Loop Energy Recovery Heat Exchanger

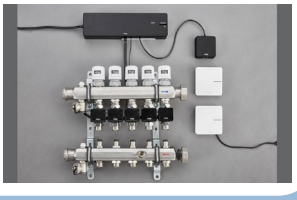
Innovation: Advanced Cooling Technologies' Pump Assisted AAHX recovers energy from either the exhaust or supply air stream during all seasons, allowing AHUs to consume less energy. It works by combining traditional air-to-air heat pipe technology with pumped two-phase systems that take advantage of both operational modes. In passive mode, which activates when the warmer air stream is physically below the cooler air stream, the heat exchanger operates as a heat pipe with no electrical input required. When the seasons change and the relative temperature of the two air streams is reversed, a small pump is utilized to maintain the transfer of energy. Since the method of heat transfer inside of the heat exchanger utilizes the latent heat of the working fluid, the amount of flow rate required to transfer larger amounts of energy is a fraction of an equivalent glycol loop. The combination of passive operation for at least half of the year and very minimal energy consumption during active operation for the other half of the year enables such high overall energy recovery from this product.

The heat exchanger is compatible with large systems or distance. Additionally, optional active control valves and pump controls allow the heat exchanger to provide relatively precise temperature control and defrost capabilities without the need for volume inefficient bypass. This innovation solves some of the HVAC's industry's issues such as: allowing for clean air with no cross-air contamination; it is highly-efficient and has high-performance ratings using two-phase heat transfer; and it has added reliability through redundancy and fluid selection. It also removes the restrictions on hardware placement that current system designers struggle with, therefore also removing the need to trade off system packaging and energy recovery. This innovation will free up designers to develop new system layouts for better building air distribution and return, as well as allow for the optimization of air flow in their application without having to sacrifice energy efficiency.

Finalists in this category include: ebm-papst Inc. – RESET® Certified RadiPac Air-Mover; Enginuity Power Systems Inc. –Enginuity Quadra-Gen

4. HEATING

Winner: Viega LLC – Radiant Auto-Balancing System (RABS)

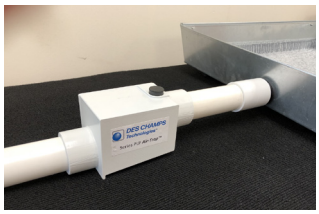


Innovation: The Radiant Auto-Balancing System (RABS) introduces the ability to monitor the temperature of every return circuit in a radiant system. Coupled with the monitoring of each zone's air temperature via wireless thermostats, the control actuates flow of conditioned water to each loop using a learning algorithm to increase the efficiency of a radiant installation. Circuit lengths no longer need to be designed to be similar lengths or manually balanced using flow controls on the manifold. Even though designing similar length circuits is still best practice, designs rarely account for furniture and temporary floor covering. The system maintains set temperatures through changes in these variables without user input, giving designers more flexibility without loss of efficiency.

This innovation will offer a desirable solution to customers seeking high efficiency radiant. The system also incorporates more digitalization of plumbing for monitoring by end users, something that is sought after more and more by customers looking to have more interesting and useful data related to their system performance. Additionally, this system will save installers valuable time when balancing a radiant system. Once the system is connected to a manifold and the web application, the customer has the ability to make changes and monitor temperatures.

Finalists in this category include: Ecoer HVAC – Ecoer Home Comfort Systems with IoT Technology; Burnham Boilers – U.S. Boiler Co. – Alta Combi

5. INDOOR AIR QUALITY



Winner: Des Champs Technologies – Des Champs Technologies Series PLP Air-Trap™

Innovation: Des Champs Technologies Series PLP Air-Trap™ offers a new concept in condensate trap design that permits condensate removal from AC or other condensing equipment while blocking airflow all year and requires only 2 7/8" height for positive 0–40" WC pressure. The trap can never "dry out" or freeze because it does not depend on water to seal, only fan pressure.

The innovative PLP trap is the first AC condensate trap to use air pressure developed by the AC fans to prevent conditioned air from entering or leaving the unit. For a hundred years the P-Trap, a carryover from use on toilets and sinks, has been used on AC equipment to prevent air loss. Unlike the P-Trap, the PLP was designed specifically for HVAC equipment and does not require standing water to prevent air leakage. AC equipment produces condensate mostly during summer. The remainder of the year little or no condensate is produced, and the P-traps are dry most of that time. When they do have water, the bottom of the trap is prone to develop sludge and growth.The PLP operates dry when no condensate is being produced and uses a levered, horizontal pancake designed float-valve with a mechanical advantage about a pivot point.

Finalists in this category include: EffectiV HVAC Inc. – PLAY-UV Adjustable UV Diffuser for High-Efficiency Filtration and Ventilation; TSI Inc. – Q-Trak™ XP Indoor Air Quality Monitor

6. PLUMBING

Winner: Caleffi Hydronic Solutions – AngleMix™ Angle-Style ThermoStatic Mixing Valve

Innovation: The Caleffi AngleMix™ 520 series thermostatic mixing valve accurately controls mixed water temperature in residential and commercial domestic hot water systems. It is the industry's only thermostatic mixing valve with an angle-styled body. This geometry minimizes the number of elbows required which reduces overall installation cost. Additionally, AngleMix is the industry's only thermostatic mixing valve that can close off its hot and cold ports at 100% tightness, preventing temperature creep or droop.

The innovative Caleffi AngleMix™ 520 series easily mounts at the tank-type, or tankless type water heater outlet and the angle-style body mixed temperature outlet is in line with the water heater outlet. This facilitates straight-line piping which reduces pipe elbows and overall space required for installation. The AngleMix has a lockable set point adjustment knob and includes a temperature gauge on the mixed temperature outlet for instant verification of temperature. The precision engineered anti-scale internal components minimize service requirements, assure smooth operation and long life, and compensate for temperature and pressure fluctuations of the incoming hot and cold water. Available in a wide

variety of end connections, the angle style body design is compatible with all common pipe types and connection styles from ½" to 1" sizes. AngleMix is certified to ASSE 1017 standard for point of distribution domestic water systems.

Finalists in this category include: GE Appliances, a Haier Company – Electronic Water Heater with Smart Integrated Mixing Valve; Uponor – Uponor PP-RCT Pipe and Fittings.

7. REFRIGERATION

Winner: Officine Mario Dorin Spa – CD600 Range

Innovation: Officine Mario Dorin Spa's CD600 Range is the largest CO2 transcritical compressor platform available worldwide. The CD600 Range features UL and CSA approvals. Based on a 6 cylinders design, this platform includes models up to 100 hp and 2200 cfh with utmost efficiency levels and premium reliability standards.

This new range of compressor is unique in the market because it nearly doubles the refrigeration duty deliverable with a single compressor. This often leads to a lower number of refrigeration racks and allows for a smaller required footprint for machinery. What's more, the limited footprint and height allow for a decrease in installation and building costs when compared to an ammonia solution.

Finalists in this category include: ebm-papst Inc. – AxiEco Protect Axial Fan; Emerson – Copeland™ Digital Outdoor Refrigeration Unit, X-Line Series

8. SOFTWARE

Winner: Willdan – NEO Net Energy Optimizer® Energy Modeling Software

Innovation: The Willdan NEO Net Energy Optimizer® is a SaaS platform that provides customized, real-time energy and financial ROI analyses in seconds. The energy modeling software streamlines whole building analyses of HVAC systems and energy conservation measures for commercial buildings with the versatility to support product comparisons, existing building energy audits and new construction from early design through construction. NEO uses default inputs from vetted industry standards (ASHRAE, COMNET, RS Means) to automate the modeling process. All inputs are customizable where additional details are known. NEO supports 40+ commercial building types (including mixed-use and multifamily) and 250+ operational and capital improvement measures coupled with automated ASHRAE Standard 90.1 and IECC baselines. NEO performs HVAC life-cycle cost analysis to help users make faster, more-informed HVAC decisions and rating analyses to empower users to evaluate the ROI of energy conservation measures to assist with specifying, designing and maintaining higher-performing buildings. NEO increases efficiency of product selection and design decisions by providing both energy savings and ROI information. NEO graphically reports results, generates downloadable input/simulation files, and creates CSV and MS Word documents detailing key model inputs and outputs. NEO is web-based, touch friendly, and requires no software installation.

Finalists in this category include: Distech Controls – Builder; Lennox International Inc. – CORE Service App

9. TOOLS & INSTRUMENTS

Winner: INFICON – D-TEK® 3 Refrigerant Leak Detector

Innovation: INFICON's D-TEK 3 Refrigerant Leak Detector is the latest in a line of time-saving service tools for HVAC/R. This leak detector provides industry-leading sensitivity to find the smallest leaks for all common refrigerants, maximum uptime from its long-life, quick charging lithium ion battery, and unmatched versatility from the ability to use multiple sensors. D-TEK 3 is designed to use INFICON's next generation infrared sensors, allowing it to search for leaks from classic refrigerants, CO2, and flammable refrigerants with just a quick sensor change.

For even more versatility, D-TEK 3 is equipped with 4 sensitivity levels to help search for different leak sizes and two operating modes. Pinpoint mode works like a traditional leak detector and automatically zeroes to the background refrigerant. Manual Zero mode will not zero to the background until the user presses a button, allowing for more control in the leak checking process.

D-TEK 3 will help technicians find even the smallest leaks quickly and reliably.

Finalists in this category include: Alert Labs – Sentree A/C Monitoring System; H2O Weld LLC – Oweld Water Gas Generator

10. VENTILATION

Winner: Aldes – CAR3® – Next Generation in Precise Airflow

Innovation: The CAR3® constant airflow regulators by Aldes feature a state-of-the-art design with industry exclusive dual-side airflow adjustability and greater airflow ranges for a variety of applications. The patent pending airflow technology allows you to set or change the airflow quickly, in supply or exhaust applications, without removing the CAR3 from the duct.

The technology is capable of maintaining constant airflow within +/-10% of the scheduled flow rates, within the operating range of 0.12 to 1.2 in. w.g. differential pressure for low-pressure models (CAR3-L), or 0.4 to 2.8 in. w.g. with high-pressure models (CAR3-H). CAR3 solely operates on duct pressure and requires no external power supply or sensors, and will be rated for use in air temperatures ranging from -25°F to 140°F (-32°C to 60°C). CAR3 must be equipped with a double lip gasket to provide a secure, leak free installation into rigid round duct, take-offs, collars, etc. Each regulator features a dual-side adjustment dial to allow for changes in airflow setpoint while installed in either the supply or exhaust direction without removing the regulator from the duct. Regulator is classified per UL 2043 and carries the UL mark indicating compliance. The constant airflow regulator is enhanced with antimicrobial, anti-static, and flame retardant additives for increased durability and safety, and covered under warranty for a period of no less than seven years.

Finalists in this category include: ebm-papst Inc. – AxiEco Perform Axial Fan; Kingspan Insulation LLC – KoolDuct

New Alternative Care Site Guidebook Available to Help Respond to the Rising Need for Hospital Beds due to COVID-19

Guidebook Developed by a Joint Task Force Established by the ASHRAE Epidemic Task Force and the U.S. Army Corps of Engineers

ATLANTA (November 19, 2020) – As many communities are setting up alternative care sites (ACS) in response to spikes in COVID-19, the ASHRAE Epidemic Task Force announced the availability of the Alternate Care Site HVAC Guidebook, which was developed by the ASHRAE Alternate Care Sites Task Force.

The task force was convened upon the request to the ASHRAE Epidemic Task Force from the U.S. Army Corps of Engineers to provide engineering recommendations, solutions, and guidance to address the HVAC systems for ACS.

ASHRAE Epidemic Task Force healthcare team member, David Eldridge, PE, BEAP, BEMP, HBDP, GGA, LEED AP, and Alexander Zhivov, Ph.D., FASHRAE, with the U.S. Army Corps of Engineers Construction Engineer Research and Development Center, co-chaired the ASHRAE Alternate Care Sites Task Force.

"Our work over several months has resulted in a guidebook that will be useful in current and future efforts to address the demand for additional hospital beds in combatting COVID-19," said Eldridge. "This has been a collaborative initiative from the start and we want to thank the U.S. Army Corps of Engineers, as well as military and private engineering experts who came together to develop this timely resource."

"This guide was developed in response to the growing need for flexible patient care space to be deployed in locations where permanent hospital beds are insufficient for the number of COVID-19 positive patients needing care," said Zhivov. "The guidebook provides recommendations for applying standards which are used for permanent facilities to temporary sites under less than ideal conditions or with time, budget and technical feasibility constraints."

The ACS HVAC guide is primarily applicable to host sites with large open spaces such as convention centers and other large spaces. It is also applicable to the conversion of smaller facilities with open areas such as school gymnasiums.

Specific recommendations include guidance for design requirements, air flow, filtration, space conditions and methodology for identifying which mechanical system approaches may be pursued knowing that most ACS must prioritize certain features due to limited time, budget, and site characteristics.

To view the complete Alternative Care Site HVAC Guidebook and other COVID-19 resources, visit ashrae.org/COVID-19.

ASHRAE Learning Institute Releases New HVAC Design Training Schedule

Registration now open

ATLANTA (November 16, 2020) – Registration is now open for HVAC Design and Operations training through ASHRAE Learning Institute (ALI). The training will run from December 2020 through June 2021.

"As technology continues to change, the need for training that incorporates the latest building performance solutions will become critical," said 2020-21 ASHRAE President Chuck E. Gulledge III, P.E. "ASHRAE's HVAC Design training offers comprehensive professional development that is useful in addressing the today's industry challenges."

HVAC Design: Level I – Essentials provides intensive, practical training ideal for recent technical or engineering school graduates and engineers new to the HVAC field. Developed by industry-leading professionals selected by ASHRAE, the training provides attendees with the fundamentals and technical aspects of HVAC design, installing and maintaining HVAC systems, that can be put to immediate use.

HVAC Design Level II – Applications provides instruction in HVAC system design for experienced HVAC engineers and those who have completed the HVAC Design: Level I – Essentials. The training covers the technical aspects of design and methods to increase energy savings through innovation in HVAC design.

In light of COVID-19 and the safety of ASHRAE course participants, the HVAC Design trainings will be held online.

The schedule is as follows:

ASHRAE HVAC Design Training

December 7-11, 2020 Level I – Essentials
Instructors: Julia Keen, Ph.D., P.E., Fellow ASHRAE, HBDP
Joel Primeau, Eng., ASHRAE Member, HBDP LEED® AP

December 14-18, 2020 Level I – Essentials
Instructors: Donald Brandt, Life Member ASHRAE BEAP, CEM
Julia Keen, Ph.D., P.E., Fellow ASHRAE, HBDP

January 11-15, 2021 Level I – Essentials
Instructors: Julia Keen, Ph.D., P.E., Fellow ASHRAE, HBDP, BEAP
Donald Brandt, Life Member ASHRAE BEAP, CEM

January 20-22, 2021 Level II – Applications
Instructors: Julia Keen, Ph.D., P.E., Fellow ASHRAE, HBDP
Joel Primeau, Eng., ASHRAE Member, HBDP LEED® AP

February 1-5, 2021 Level I – Essentials
Instructors: Donald Brandt, Life Member ASHRAE BEAP, CEM
Dennis Wessel, P.E., Fellow/Life Member ASHRAE, LEED® AP

February 15-19, 2021 Level I – Essentials
Instructors: Joel Primeau, Eng., ASHRAE Member, HBDP LEED® AP
Charlie Henck, P.E., Fellow/Life Member ASHRAE, CEM, LEED® AP

March 8-12, 2021 Level I – Essentials
Instructors: Donald Brandt, Life Member ASHRAE BEAP, CEM
Dennis Wessel, P.E., Fellow/Life Member ASHRAE, LEED® AP

March 15-19, 2021 Level I – Essentials
Instructors: Joel Primeau, Eng., ASHRAE Member, HBDP LEED® AP
Charlie Henck, P.E., Fellow/Life Member ASHRAE, CEM, LEED® AP

March 29-31, 2021 Level II – Applications
Instructors: Donald Brandt, Life Member ASHRAE BEAP, CEM
Charlie Henck, P.E., Fellow/Life Member ASHRAE, CEM, LEED® AP

April 5-9, 2021 Level I – Essentials
Instructors: Donald Brandt, Life Member ASHRAE BEAP, CEM
Dennis Wessel, P.E., Fellow/Life Member ASHRAE, LEED® AP

April 12-16, 2021 Level I – Essentials
Instructors: Joel Primeau, Eng., ASHRAE Member, HBDP LEED® AP
Charlie Henck, P.E., Fellow/Life Member ASHRAE, CEM, LEED® AP

April 26-30, 2021 Level I – Essentials
Instructors: Donald Brandt, Life Member ASHRAE BEAP, CEM
Dennis Wessel, P.E., Fellow/Life Member ASHRAE, LEED® AP

May 10-14, 2021 Level I – Essentials
Instructors: Julia Keen, Ph.D., P.E., Fellow ASHRAE, HBDP
Charlie Henck, P.E., Fellow/Life Member ASHRAE, CEM, LEED® AP

May 17-21, 2021 Level I – Essentials
Instructors: Donald Brandt, Life Member ASHRAE BEAP, CEM
Dennis Wessel, P.E., Fellow/Life Member ASHRAE, LEED® AP

May 20-24, 2021 Level I – Essentials
Instructors: Julia Keen, Ph.D., P.E., Fellow ASHRAE, HBDP
Charlie Henck, P.E., Fellow/Life Member ASHRAE, CEM, LEED® AP

June 2-4, 2021 Level II – Applications
Instructors: Donald Brandt, Life Member ASHRAE BEAP, CEM
Dennis Wessel, P.E., Fellow/Life Member ASHRAE, LEED® AP

June 7-11, 2021 Level I – Essentials
Instructors: Julia Keen, Ph.D., P.E., Fellow ASHRAE, HBDP
Charlie Henck, P.E., Fellow/Life Member ASHRAE, CEM, LEED® AP

June 14-18, 2021 Level I – Essentials
Instructors: Donald Brandt, Life Member ASHRAE BEAP, CEM
Dennis Wessel, P.E., Fellow/Life Member ASHRAE, LEED® AP

June 21-25, 2021 Level I – Essentials
Instructors: Julia Keen, Ph.D., P.E., Fellow ASHRAE, HBDP
Charlie Henck, P.E., Fellow/Life Member ASHRAE, CEM, LEED® AP

To register, visit the HVAC Design and Operations page on ashrae.org.

กรรมการสภาวิศวกรเข้าตรวจเยี่ยมสมาคมแอชเร่
เพื่อตรวจความพร้อมการเป็นแม่ข่ายการพัฒนาวิชาชีพวิศวกรรมต่อเนื่อง

กรรมการสภาวิศวกร ประกอบ ผศ. ยงยุทธ มหัจฉริยวงศ์ นาย มานิตย์ กู้ธนพัฒน์ นายลือชัย ทองนิล และเจ้าหน้าที่สภาวิศวกร นางลัดดาวัลย์ ศรีเมือง ได้เข้าตรวจเยี่ยมความพร้อมของสมาคมแอชเรในฐานะที่เป็นองค์กรแม่ข่ายการพัฒนาวิชาชีพวิศวกรรมต่อเนื่องและแลกเปลี่ยนความคิดเห็นกับกรรมการและที่ปรึกษาของสมาคมแอชเร่ เมื่อวันอังคารที่ 27 ตุลาคม 2563

Meet Our New Chapters

Members Council announced the charter of two new ASHRAE chapters: the Sudan Chapter located in Khartoum, Sudan and the Peru Chapter located in Lima, Peru. This brings ASHRAE's total number of chapters to 198 globally. Welcome Peru Chapter and Sudan Chapter!

กิจกรรมของสมาคมแอชเร่ และ ASHRAE Thailand Chapter ในวาระปี 2020-21

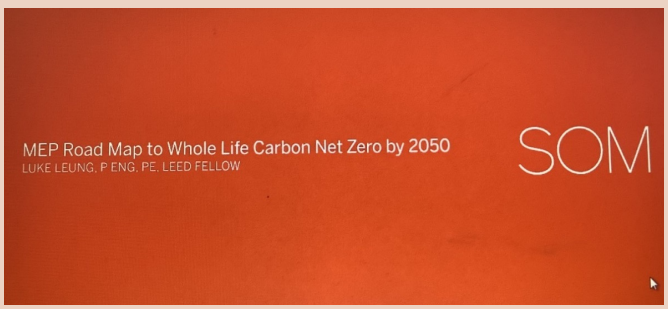
1. **การประชุม Chapter Regional Conference Virtual Conference ประจำปี 2021**
   ASHRAE Thailand chapter ได้เข้าร่วมประชุม Chapter Regional Conference Virtual Conference ร่วมกับ chapter อื่น 9 chapter ใน region 13 วันที่ 1, 8, 15 และ 22 สิงหาคม 2020 ผ่าน Gotomeeting application.

2. **การจัดสัมมนาครั้งที่ 1 Virtual Webinar**

   - วันเสาร์ที่ 7 พฤศจิกายน 2020 หัวข้อ "Airflow Management for Healthcare Facilities" โดยวิทยากรคือ Mr. Kishor Khankari

Dr. Kishor Khankari

   - วันอังคารที่ 10 พฤศจิกายน 2020 หัวข้อ "Net Zero Building.vs. Net Zero Distinct" โดยวิทยากรคือ Mr. C.H. Leung
   - วันพฤหัสบดีที่ 12 พฤศจิกายน 2020 หัวข้อ "Net Zero Hospital" โดยวิทยากรคือ Mr. Frank Mills
   - วันอังคารที่ 17 พฤศจิกายน 2020 หัวข้อ "The Advance Energy Design Guide for Zero Energy Building" โดยวิทยากรคือ Mr. Paul Torcellini
   - วันพฤหัสบดีที่ 19 พฤศจิกายน 2020 หัวข้อ Performance Buildings; except low rise residential " โดยวิทยากรคือ Mr. Douglas Zentz



3. **การจัดสัมมนาครั้งที่ 2 Virtual Webinar**
   - วันอังคารที่ 15 ธันวาคม 2020 หัวข้อ "Advanced energy design guide and system decision" โดยวิทยากรคือ Mr. Michael Schwedler
   - วันพุธที่ 16 ธันวาคม 2020 หัวข้อ "Advanced energy design guide and system decision" โดยวิทยากรคือ Mr. Michael Schwedler
4. **การจัด Virtual Webinar** วันเสาร์ที่ 9 มกราคม 2021 หัวข้อ "Energy Audits: The basics of setting up and executing energy audits in commercial buildings" และ Testing Adjusting and Balancing (TAB) – HVAC" โดยวิทยากรคือ Mr. Michael Schwedler
5. **การจัด Virtual Webinar** วันเสาร์ที่ 9 กุมภาพันธ์ 2021 หัวข้อ "RCM (Reliability Centered Maintenance) in Maintenance and Design" โดยวิทยากรคือ Mr. Richard H. Rooley
6. **การจัด Dinner Talk** วันอังคารที่ 23 กุมภาพันธ์ 2021 หัวข้อ "Post covid19 - a view from developer and designer"
7. **การจัด Virtual Webinar** วันศุกร์ที่ 5 มีนาคม 2021 หัวข้อ "Conducting a Commissioning Kickoff Meeting" โดยวิทยากรคือ Mr. Dennis Knight
8. **การจัด Technical Visit** วันอังคารที่ 16 มีนาคม 2021 เยี่ยมชมโรงงาน New Bistol Factory
9. **การจัดสัมมนาครั้งที่ 3** วันพฤหัสบดีที่ 20 พฤษภาคม 2021 หัวข้อ "HVAC 4.0 with BIM and standards" โดยวิทยากรคือ รศ. ดร. พันธุดา พุฒิไพโรจน์และคณะ

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