

# **HIGH-PERFORMANCE HVAC TODAY™**

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## **2024 COMMERCIAL HVAC MARKET TRENDS**

### **ALSO IN THIS ISSUE:**

- HVAC Product Innovations for 2024 and Beyond
- Lessons from the High-Performance HVAC Summit
- Contractor Spotlight: Robert B. Payne, Inc.

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# HIGH-PERFORMANCE HVAC TODAY™



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# It's NOT Only About the Products: *AHR Expo Goes All In On Education*



**Mike Weil** is editor-in-chief and director of communications and publications at National Comfort Institute, Inc. Contact him at [ncilink.com/ContactMe](mailto:ncilink.com/ContactMe).

**H**appy New Year and welcome to 2024. This month's focus is on the commercial HVAC market. Besides looking at the outlook for this marketplace ([ncilink.com/2024CommOutlook](https://ncilink.com/2024CommOutlook)), and the ever growing need for High-Performance HVAC Contractors to take advantage of the opportunities this new year brings ([ncilink.com/0124OMT](https://ncilink.com/0124OMT)), we would be remiss if we didn't recognize the industry's largest tradeshow and educational event: **The AHR Expo**.

Over the AHR Expo's 75 years, the focus was on the technology, products, tools, and services offered to all the value chains of the industry: manufacturers, distributors, contractors, and more.

That is still at the core of this gigantic event. However, over the last 24 years or so, the organization has developed a robust educational program that is worthy of every HVAC contractor's consideration.

Back in the early days, most of the education came from endorsing organizations like ASHRAE and were often held off-site from the main event. But AHR Expo recognized the need for an on-site open educational forum and, according to Kim Pires, the Expo's operations director, it has grown from a very small addition to the show experience to a robust program.

"We've seen the value of investing time and energy in mining topics that are important to our industry audiences over the years as the program has grown.

"Each year we pay close attention to our social media channels, industry media outlets, and conversations with the community in an effort to serve up the discussions that will address relevant topics," she says.

Pires adds that AHR Expo's endorsing associations continue to "do a phenomenal job of

coming to us with well thought out sessions, and from there we seek and source anything that may need supplementing."

She points out that one of many great success stories are the panel discussions that have become more prevalent. These panels (of which National Comfort Institute often participates in) aim to open the lines of communication to topics that have some effect on all areas of the HVAC value chain.


"Through this we've seen our exhibitors foster relationships with new communities, as well as our ability to support the wider growth of networking opportunities. In short, it's been well worth the effort and we are excited to continue on this path," she says.

The growth of their educational programming is something that Pires is very passionate about. In fact she has been at the heart of developing the programing.

"As a lifelong learner myself and as a servant of this industry, it just made sense to evaluate and secure a strong foundation for long-term success of our programming as we continue to build it in partnership with the industry."

Though AHR Expo is an annual event, Pires says no two shows are alike. Their investment in education also changes with the idea to build a bigger and ever-more complimentary knowledge sharing event side-by-side with the product showcase.

"The innovation, new products and technology, regulation updates, and the wealth of new information that changes so rapidly in our industry can be overwhelming. AHR Expo is an ideal opportunity to dig in and see what's ahead."

This year's event is in Chicago, January 22-24 at the McCormick Place Convention Center. You should plan to go, and while there stop by our booth (**S9043**) to say hello. 

## Written by HVAC Professionals for HVAC Professionals

### EVERGREEN TELEMETRY CH-15D BALANCING HOOD

In every balancing class I teach, I am always asked “which balancing (capture) hood should I buy?”

Because there are so many options available today, the choice can be daunting. My answer is always to consider the type of projects you usually work on, what other test instruments you own, and what are their limitations?

Why? Because you want a new capture hood that complements those instruments and compliments any other hood you already own.

The **Evergreen Telemetry CH-15D** or the 15" capture hood is particularly of interest. This hood sets itself apart from competitive products in several ways.

First, it is significantly lighter than

other products. You can use a standard painter's pole to extend the hood to elevated registers in ceilings and walls.

Also, Evergreen uses rare earth magnets on the opening frame of the skirt allowing it to attach to the register or grill in T-bar ceilings and metal registers.

Plus, they developed a wrist recorder that, when worn by the balancer, allows for quick and accurate balancing damper adjustments while the hood is at the register. The recorder can be worn on your wrist or can be mounted on the hoods base for different situations.

The manometer allows for a multi tool approach: it can be used as a manometer, and it can be attached to other flow measurement instruments that Evergreen offers.

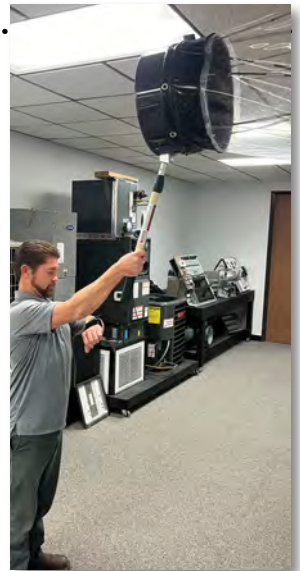
The wrist recorder and manometer can

also be paired with other temperature and humidity sensors that allow recording specific information while balancing a system.

There is a learning curve to assembling and setting up Evergreen Telemetry products. However, those initial difficulties wash away after you get comfortable using the CH-15D and its accessories.

Learn more about this hood at [ncilink.com/CH-15D](http://ncilink.com/CH-15D).

— By Jeff Sturgeon, NCI Southern California Training Center Manager, Trainer, and Coach 





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# Embracing Change by Doing What's Right for Customers

It's not every day that you meet an HVAC contracting firm that has been in business for 93 years and is still going strong. Located in Fredericksburg, VA, **Robert B. Payne, Inc.** has almost as colorful a history as its historical hometown along the Rappahannock River.

The company was opened for business by Robert B. Payne in 1930 as a residential wood and ice delivery service using horses and buggies. That led to the delivery of coal in the late 1930s.

In fact, according to Wes McKoy, service manager for the company today, the company purchased its first box car of coal on credit in the late 1930s, during the Great Depression.

Then, in the 1940s, the company expanded to deliver fuel oil.

"That began to change a bit when, in the late 1950s and early 1960s, the company expanded into central air conditioning system installation and service," McKoy says.

"Shifts in technology have never been a problem for us," he continues. "Today, we are seeing a big move toward all-electric comfort systems. Though gas efficiency is still big around here, heat pump technology and efficiency are to a point where they can work well in our climate."

## ROBERT B. PAYNE TODAY

McKoy, who began working for the company in 1994 as a service technician, worked his way up to service

manager within five years. He says that today, Robert B. Payne, Inc. is an \$11 million+ company that does mostly residential work. They do some light commercial work as well.

"That has changed a lot since the 1980s when the company was more focused on commercial," McKoy explains. "Once we got into the residential service and replacement market in the late 1980s, we pretty much evolved over time to an intensely focused residential company."



Delivering fuel oil and servicing oil-fired HVAC systems remains a profitable business for Robert B. Payne, Inc.

## ON-THE-JOB SHEET METAL

The company has a sheet metal shop and fabricates most of its fittings and duct runs.

"In the past, we had a shop foreman who was our full-time sheet metal guy. Today, we operate differently. Our six installation teams operate the sheet metal equipment in the shop. We have a Vulcan sheet metal machine, some

Pittsburgh sheet metal forming machines, and some bending machines.

"Again, these are all operated by our installation department. They work as a team. There is no separate sheet metal crew," McKoy says. "They prefabricate return boxes in bulk as well as emergency pans before they go out on jobs. We also build our commercial ducting here. But we take things a step further.

"We have sheet metal machines on our trucks, enabling us to fabricate metal on the job site. Every installation vehicle has a Pittsburgh and a sheet metal brake.

"Our installation fleet includes large box trucks, and they have room for this equipment plus all the materials needed for the job. In other words, most of our fabrication happens in the field," he continues.

In addition to the HVAC work, the company continues in its original role as a fuel oil delivery service.

McKoy says, "In our area, delivering fuel oil is a service that is still needed for existing customers. This part of the business helps us take care of existing oil customers. We're a one-stop shop for them. We are one of the few companies still delivering fuel oil and servicing oil-fired equipment."

Robert B. Payne employs 19 service technicians (including McKoy). This team consists of four maintenance and 15 service technicians. They have 13 installers and a fuel oil delivery driver.

In total, they employ 51 people, including their office team, fuel manager, and salespeople.

## LONGEVITY IS A CORNERSTONE

Let's face it. Any HVAC company that

has been around for nearly 100 years has excellent longevity. McKoy himself has been with the firm for 29 years and says many others have been around even longer.

Why do people stick around so long?

"Robert B. Payne has great benefits, which certainly has a role," he says. "I often hear that people who work here love that management wants all of us to take pride and do excellent work to ensure 100% customer satisfaction.

"Doing things right is our commitment to quality and our customers. We've always believed that if you do the right thing, charge a fair price, and provide value, the money will come. They love this people-first approach that has existed through all three generations of Payne ownership."

Again, Robert B. Payne started the company in 1930. According to McKoy, Payne's daughter's husband, Cameron Thompson, is the second generation. The couple's children, Cameron Thompson III and Robert Thompson, run the company today.

McKoy adds that such consistency in management and philosophy is one key driver to the company's longevity. Another is their focus on training.

## TRAINING IS FOUNDATIONAL

"Training is the foundation of every-



Robert B. Payne installation teams fabricate much of the sheet metal for each job, onsite — a winning approach to better servicing their HVAC customers.

thing we do. People want to stay and work here because we invest heavily in it. We always have," he says.

At the time of this writing, the company had only been a National Comfort Institute (NCI) member for a month or so. But in that time, according to McKoy, they brought in an NCI instructor for a week to conduct an on-site training program.

"We also bought 15 carbon monoxide (CO) analyzers," he says. "We know that the investment benefits our customers and will pay for itself over time.



We have always tried to deliver a superior product to our customers and believe the system performance approach will allow us to better do that. We use analyzers to measure and test and now understand what those readings mean and how to apply that information to help customers. This approach sets us far apart from competitors.

"We can share real numbers showing customers how their systems operate before we do any work and after we finish. That's the key.

"Frankly, I believe our team loves the analytical side of HVAC, the sci-

ence behind it. With the NCI training and a high-performance approach to our work, we have evidence to back up what we tell customers is wrong with the system, what repair is needed, or why they

need to replace it," McKoy says.

He adds that they have seen "massive results from it in the short period since that training."

## TECHNICIANS LOVE THE HIGH-PERFORMANCE APPROACH

"In my opinion, the technicians using the new instruments have taken to them and are finding what NCI calls the invisible repairs we missed before."

McKoy says that as service manager, he reviews all the service tickets and sees the increases in work. He shares an example of how they recently replaced a fully functional water heater because they showed the customer how inefficient it was through testing and measuring.

"We compared her 18-year-old water heater's functional efficiency to today's standards, and she approved the purchase and installation without even asking about price," he says.

"Though that type of sale is rare, showing how a system performs plants a seed. Not everybody will do the repair or the replacement, but they know it's coming. So they can prepare."

## TECHNICAL TRAINING IS #1

According to McKoy, in a recent ACCA (Air Conditioning Contractors of America) MIX group meeting,

another MIX Group member – Clint Solliday from Jack Lehr Heating and Cooling of Allentown, PA- was very enthusiastic about the training they received from NCI.

“He strongly recommended we jump into High-Performance HVAC training. And we did. We did a CO and combustion onsite for our service team and now have our eyes on doing another onsite for our installers. We will include our sales team in that class as they work closely with our installation team.”

The company’s training focuses mostly on the technological side of the business. McKoy explains that as a Trane dealer, they always receive training on Trane products.

“We also carry some Carrier products and do a lot of work with ductless mini splits from Mitsubishi. So, we send our technicians to manufacturer-based training. In addition, our service department meets every other week on Wednesday,” McKoy explains.

“Sometimes that meeting focuses on specific product or equipment training. We’ll show specific training videos, or sometimes more generic ones like troubleshooting on low voltage issues.

“We also send techs out for training. In November, we sent two guys to an oil school in Pennsylvania. I can’t stress enough how strongly we believe in training. We spend so much money on it.”

In addition to residential HVAC training, Robert B. Payne, Inc. trains its team in the technology behind geothermal products.

“We sell, install and repair Water-Furnace geothermal systems as well,” McKoy says. “We never hesitate to

learn more about technology and products.

## MARKET CHALLENGES

The city of Frederickburg once was a central hub for commerce and an important port in Virginia during the colonial era. In the early 20th century, it was less important as a port but grew as a bedroom community for Washington, DC, and Richmond, VA. McKoy, who grew up in the Frederick area, says it was mostly a rural area with a solid population.

“But over the years, it has become more of a suburb for Washington, D.C. as well as Richmond. People move here to get military jobs and commute to both cities. Military families usually move out in five years. We’ve had to adapt our marketing for that. Only 25 years ago, 90% of the town knew the Robert B. Payne Company. But that’s not the case anymore.

“With so many people moving in, we must continually establish who we are because the newer residents don’t know us the way the older community did in the past.”

To battle this, the company uses many vehicles like radio, TV, digital, direct mail, and social media – particularly Facebook – to build its brand. They continue to sponsor area sports affiliates, including the Frederickburg Nationals minor league baseball team.

“Even so,” he adds, “we are heating and air conditioning professionals, not professional marketers. So we try to enlist the help of different vendors. But now, as we get more adept at



Robert B. Payne, Inc. service technicians take part in the company’s first NCI combustion class with Casey Contreras (center) as the instructor.

High-Performance HVAC contracting, we see how that can differentiate us, and we want to make that a part of our marketing message.


“This approach helps us show real value to our customers. In the world of testing and measuring, we can start engaging in that conversation, which impresses customers.”

## WE ARE JUST GETTING STARTED

McKoy says he can’t stress enough how real and intense NCI training is.

“Our technicians sense that and love it because it has everyday application. It makes them better and helps them help the customer more than anything else. As a team, we feel we are much better off than before taking the NCI combustion class.”

It is so interesting how excited and driven the Robert B. Payne, Inc. team is in testing, measuring, and proving what they say is true. They are new to the High-Performance HVAC approach, and in Wes McKoy’s words, they are just getting started.

For these and many other reasons, **High-Performance HVAC Today** shines its January spotlight on **Robert B. Payne, Inc.** Congratulations to Wes McKoy and the entire team. 



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National Comfort Institute, Inc.  
Chris Hughes, The Energy Conservatory

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National Comfort Institute, Inc.  
Adam Mufich, A-Team Heating  
and Air Conditioning

**Tuesday, January 23 • 9:00-10:00 am**

### Benefits of Modern-Day Combustion Safety Testing: Real-time vs Steady State

Speakers: Casey Contreras,  
National Comfort Institute, Inc.  
Tyler Nelson, Sauerermann Americas

**Tuesday, January 23 • 10:30-11:30 am**

### Climate Resilient HVAC: Where the Rubber Meets the Road

Speakers: Ben Lipscomb, P.E.  
National Comfort Institute, Inc.  
Bill Spohn, P.E., TruTech Tools

**Wednesday, January 24 • 9:00 -10:00 am**



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# Eight Trends for the Commercial HVAC Marketplace in 2024

**A**s the sun rises on New Year's Day, the commercial HVAC industry faces several challenges and opportunities. I am no Nostradamus, but the various trade associations, industry-focused economic reports, and general news point to eight trends that will impact the marketplace.

The good news is that as High-Performance HVAC contractors, these trends can play into your hands if you continue testing and measuring system performance and offering your commercial customers choices that will see them through 2024.

In a press release from GlobeNewswire, Mordor Intelligence says that the HVAC industry is on fire. According to an article on the **Service Business Evolution (SBE)** [website](#), HVAC companies

generate \$150 billion in annual revenue and employ over 1.5 million people in the U.S.

SBE says, "The HVAC industry is expected to continue to grow at a compound annual growth rate (CAGR) of 6.1% from 2021 to 2026."

They add that this is due to the U.S. HVAC Industry replacing more than three million air conditioning systems.

This growth isn't only due to the typical economics that has impacted the industry in years

past – but rather to the significant transformations driven by innovation and a commitment to sustainability and efficiency.

With that in mind, here are some trends to watch out for.

## DEMAND FOR BETTER ENERGY EFFICIENCIES

Efficiency demand isn't new, but smart technologies play an even more significant role than in years past. Integrating smart technology into commercial HVAC systems is more prevalent than ever because it offers commercial building customers improved energy efficiency, remote monitoring capabilities, and predictive HVAC maintenance opportunities. Add into that a by-product of the COVID pandemic, the surge in focus on indoor air quality

which continues growing.

Energy efficiencies tie into sustainability as well. The HVAC industry is making big moves toward more eco-friendly materials and practices. I am talking about the push to re-



place existing refrigerants in favor of A2Ls, sustainable building design, [deVAP HVAC](#) (Desiccant-Enhanced eVaporative HVAC), as well as increased focus on solar HVAC systems, geothermal, and more.



DeVAP HVAC systems, according to SBE, are being touted as the “future of air conditioning.” These systems use evaporative cooling, where desiccant in liquid form and evaporative coolers work together to cool a room or an area of a building. These systems are already commercially used but are now beginning to appear in residential applications.

### **ELECTRIFICATION AND INCREASED DEMAND FOR HEAT PUMPS**

Undoubtedly, the electrification movement has taken hold as part of broader efforts to reduce carbon emissions and transition to cleaner energy sources. This push toward electrification means the HVAC Industry is seeing a more significant emphasis on using heat pumps.

Because of improvements in heat pump technology, they are seeing greater use not only in the warmer

regions of the country but also in the north, where, when combined with dual-fuel systems, they can be a great alternative to gas-only appliances.

This growing preference for heat pumps transforms the HVAC sector by fostering sustainable practices and improving energy efficiency. As more get installed across the country, we should see decreased energy consumption and progress toward greener heating and cooling methods.

### **REDUCED HFC PRODUCTION AND USE**

Much has been written in the trade press on the reduction in hydrofluorocarbon production, a move mandated by the American Innovation and Manufacturing (AIM) Act.

The AIM Act directs the U.S. Environmental Protection Agency to phase down the production and consumption of HFCs in the United States by 85% over the next 15 years. Why?

HFCs are commonly used in refrigerants with high global warming potential, making them not-so-green. Replacing them requires a lot of science and creativity – something this industry is well known for.

Today, the HVAC industry is in the throes of pivoting towards alternative A2L refrigerants with lower environmental impact. Systems using these refrigerants require less than their HFC-based cousins and may perform better in low ambient conditions.

### **DECENTRALIZED HVAC SYSTEMS**

There is a growing popularity for decentralized HVAC systems for improved zoning control and energy efficiency in commercial buildings. In an article published in [Facilitiesnet.com](https://www.facilitiesnet.com), author David Callan says that centralized systems are popular because the HVAC equipment is locked away from public view.

Still, he writes, “The downside of

doing this is that buildings with overly large central air handling units (AHU) systems, monolithic boilers, and large single-compressor chillers tend to perform poorly during partial load conditions and off hours. As a reminder, a typical building will operate at part load more than 99% of the year.

“Instead, the more modular or decentralized systems perform better in varied use cases. Decentralization provides the flexibility to operate various portions of the building at different times.”

He also says the modular or decentralized approach, when done correctly, naturally provides a level of redundancy that can protect a building if there is a failure.

Adopting modular or scalable HVAC systems offers your commercial customers flexibility, scalability, and even easier maintenance.

### INDOOR AIR QUALITY

You can't get away from this one. Covid-19 brought about heightened awareness and emphasis on indoor air quality (IAQ). HVAC systems play a crucial role in IAQ to maintain healthy and safe indoor environments.

Strategies to address IAQ issues include using advanced filtration systems, maintaining proper airflow throughout the building, maintaining appropriate humidity levels, and using ultraviolet light technology to disinfect air streams.

Innovations in IAQ are leading toward developing more sophisticated HVAC systems that can provide better air quality without compromising energy efficiency. The trend will

likely gain momentum as commercial building owners and their tenants become more health-conscious, and regulations around IAQ become more stringent.

### COMMERCIAL OFFICE SPACE

Since the outbreak of the pandemic and the subsequent move to “home officing,” the commercial office market has declined. With the recession, building owners and operators have seen continued downward trends in occupancy and revenue over the last two years.



However, with the recession being less lengthy than predicted and employment growth continuing, the NAIOP Research Foundation's [Office Space Demand Forecast](#) predicts a gradual rebound in leasing activity starting in 2024.

The NAIOP research also shows that as current tenants' office leases expire, they are trading space for quality – leasing smaller spaces in newer buildings with better, modern amenities to help draw workers back to the office.

They also found that though new construction has slowed, projects begun in earlier years continue to reach the market, and will through 2024.

The Federal Reserve's inflation-fighting interest rate hikes seem to have the desired effect. According to their report, inflation has been trending down since peaking in June 2022.

So, this **could** be great news for Commercial High-Performance HVAC contractors who serve the office building market. Refitting office spaces to accommodate returning workers will mean upgrading HVAC systems to meet new standards in efficiency, IAQ, and more.

However, in an article published by [Deloitte Center for Financial](#)

[Services](#), a study of their clients shows only a 36% forecasted increase in revenues in 2024 compared to last year. That report says, “With revenue expectations muted for the second straight year, real estate CFOs who participated in our survey plan to continue **reducing** expenses. Two years ago, only 6% planned to make expense cuts; in 2023, 6% said they'd be cutting. Now, **40%** say they plan to further reduce spending into 2024.

“The primary functional areas targeted by respondents for expense reduction will likely be talent (49%) and office space (46%).

According to a report by [Richard Barkham, Global Chief Economist at CBRE](#), commercial real estate investment activity will likely pick up in the second half of 2024. He says the normalization of hybrid working arrangements will continue to limit the growth of office demand.

That and the uncertainty that still surrounds interest rates, at least according to a 2024 commercial real estate report written by [Al Brooks](#)

### from J.P. Morgan.

From an apartment supply standpoint, Barkham says, the most significant wave of new apartment supply in decades will temper rent growth and improve affordability for renters in 2024.

Barkham also says that the news isn't great from a hotel industry standpoint. That industry will still struggle in 2024, especially with growing competition from alternative lodging sources and a slower economy. However, that will be tempered a bit by fewer Americans traveling internationally, instead redirecting their spending to the domestic market.

Barksdale also sees demand for new data center development attracting more institutional investment in 2024 as investors re-allocate their capital from the office sector to real estate alternatives.

### RESILIENCE AND RELIABILITY

With weather conditions across the U.S. becoming more severe every year, HVAC Systems are more exposed than ever. Commercial customers want more resilient HVAC systems to withstand extreme weather events and ensure continuous operation in critical environments.

Commercial contractors should consider weather conditions as they install and service mechanical equipment. For example, consider the El Nino impact on our country. According to the National Oceanic and Atmospheric Administration (NOAA), an El Nino typically brings above-normal temperatures to the Northern U.S. and wetter conditions in the South.

This year, meteorological groups like Accu-Weather see El Nino creating

severe weather nationwide through April 2024.

While above-normal temperatures in some parts of the U.S. could mean less work for HVAC companies, El Nino could cause increased use of heating systems in places like northern Arizona, northern New Mexico, southern Utah, and southern Colorado.

The bottom line is that severe changes in weather impact not only the use of comfort systems in commercial buildings but also contractors and their teams who work on those buildings and systems.

### LABOR SHORTAGES CONTINUE

The commercial and residential sectors of the HVAC Industry continue to suffer from workforce shortages. According to the Associated Builders and Contractors (ABC), the construction workforce shortage topped half a million in 2023. They say the overall construction industry needs to attract more than 546,000 workers on top of the average pace of hiring to meet labor demands.

In a [Malco Product blog post from November 2023](#), the author writes, "Many [HVAC Contracting] companies are struggling to complete jobs and attract enough skilled workers, which means the next


decade is going to have quite the labor gap, even as the job outlook for HVAC technicians is expected to increase by five percent by 2031.

"With consumer demand growing and contractors competing for fewer and fewer trade pros, businesses are looking for any way to get more bang for their buck, do things more efficiently, and attract the best talent. All of that comes down to quality. To attract quality projects, they need quality people and quality tools."

### THE COMMERCIAL HVAC MARKETPLACE IS STILL STRONG

It's essential to keep in mind that commercial HVAC services represent the second largest part of the market, with more than 30% of total HVAC sales (residential is the largest). Industrial HVAC services account for 20% of total HVAC sales.

So the opportunities are there. The key is to stay on top of providing quality education to your field service teams.

It's imperative for commercial High-Performance HVAC contractors to continue training their teams in testing, measuring, and diagnosing total system performance issues while staying on top of industry issues and trends, some of which we've outlined here. 



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# HVAC Product Innovations *for 2024 and Beyond*

Innovation is the root of advancement in technology, products, and services. As High-Performance HVAC™ Contractors, you represent the root of Innovation in ensuring systems operate to the best of their design.

Ultimately, your strength is the ability to measure and test systems, discover what may prevent them from operating to their full potential, and then provide commercial and residential customers with solutions that fit their budgets and needs.



To accomplish all these things, we talk about the need for training. Training means ensuring your team knows how to collect and interpret measurement data. But it goes beyond that. Innovation also requires state-of-the-art tools and products and the know-how to apply them correctly.

With that in mind, consider that every year, the HVAC Industry gathers at the AHR Expo (International Air-Conditioning, Heating, Refrigerating Exposition) to see the latest product innovations and share ideas. This gathering has been going on since 1930.

There have been 75 AHR Expos since the inaugural launch in Philadelphia. In 1947, AHR Expo brought in ASHRAE as an endorsing partner, and in the early 1970s, AHRI joined as well.

As part of this major event, AHR Expo holds a competition among all its exhibitors to pick out the year's most innovative products.

Ten products in 10 categories are selected as **Innovation Award** winners before the show opens, and then one among them is chosen as the Innovation of the Year winner during the event.

Winning products represent what AHR Expo Show Manager Mark Stevens calls the most innovative products and technologies in the market.

## THE 2024 INNOVATION AWARDS

"There's no shortage of innovation in HVAC right now," Stevens says. "To be recognized as an award winner is a true honor and an indication that we as an industry are responding to real problems with creative solutions."

Stevens adds that the Innovation Awards draw hundreds of manufacturers to enter breakthrough designs for new and never-seen solutions or improvements upon existing products and technologies.

Two of this year's finalists fall into the tools and instruments category and are of interest to High-Performance HVAC Contractors.

## TWO OF THE WINNERS ARE ...

The first instrument is called the **FLUE-Mate™ combustion analyzer** from Inficon and will be showcased in their booth (#N2934) at the AHR Expo.

According to the manufacturer, the instrument is equipped with an integrated manometer, thermometer, CO (carbon monoxide) test, cracked heat exchanger test, and provides draft analysis. It displays efficiency, O<sub>2</sub>, CO<sub>2</sub>, CO, and flue gas temperature readings on one screen, which helps techs get the job done quicker.



Pictured here is Inficon's FLUE-Mate test instrument with a probe.

The FLUE-Mate analyzer can generate a QR code you scan with your smart device for a quick analysis report. No Bluetooth connection is needed. All your readings and other information gathered are put onto your smart device with a quick scan of the code. A free, downloadable app allows the user to save and share reports.

FLUE-Mate's water trap and filter assembly is always designed to be

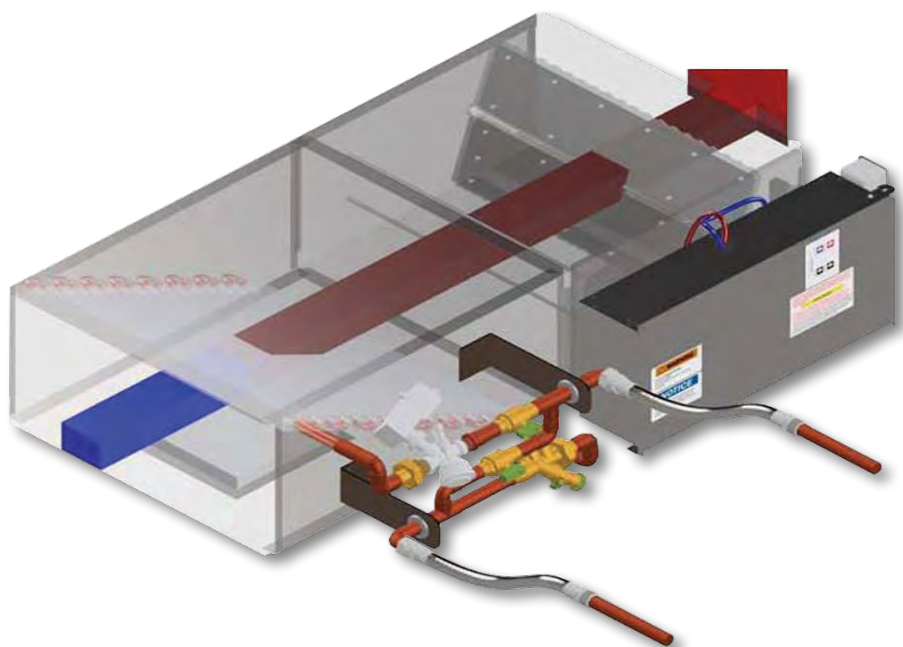
upright and easy to see, so you always know when to change the filter or empty the trap and keep your FLUE-Mate protected.

The automatic pump shut-off feature stops flow when a high level of CO is detected, saving the CO sensor from being poisoned and saving customers an expensive repair bill.

For more information on [Inficon's FLUE-Mate instrument](https://ncilink.com/FlueMate), go to [ncilink.com/FlueMate](https://ncilink.com/FlueMate).

Another of the 10 Innovation Award Winners is a company called HVAC Manufacturing and Technology Inc. for their **SAV® - Smart Air Valve**. You can see this product on display at AHR Expo in booth S9220.

The SAV-Smart Air Valve is a commercial product that can provide an economical self-commissioning air control solution. It features a 100-to-1 turndown and has a precision airflow accuracy within a few CFM, operating as low as .03-in. WG.



HVAC Manufacturing and Technology Inc. is the manufacturer of the SAV® - Smart Air Valve, which won a 2024 AHR Innovations Award.

This product matches the ventilation rate to the hazard risk, featuring advanced Demand Control Ventilation & low energy use intensity with a single unit size. The SAV® uses Variable Orifice Plate Technology to solve the complex problem of measuring a fluid accurately over a wide dynamic range.

This innovation allows control companies/system integrators to supply and warranty zone-level devices as part of their scope of work, optimize their software/network architecture with self-balancing flexibility, eliminate garbage in garbage out data, and mitigate risk for the life cycle of the building.

The manufacturer says the SAV-Smart Air Valve transforms infrastructure into a user-centric, healthy, flexible space without mechanical infrastructure upgrades.


For more information, visit HVAC Manufacturing and Technology Inc.'s website at [ncilink.com/Sav-Smart](https://ncilink.com/Sav-Smart).

If you'd like to learn more about the other eight winners of AHR Expo's 2024 Innovation Awards, go to [ncilink.com/AHRInnovation24](https://ncilink.com/AHRInnovation24).

Innovative tools and instruments such as these can help as you walk your company and team down the path to High-Performance HVAC contracting.

Learn more about them and many other great products and services by coming to Chicago for the AHR Expo, which will be held from January 22 to 24 at the McCormick Place Convention Center.

For more information, go to [ahrexpo.com](https://ahrexpo.com). If you're interested in registering for this event, [click here](#).

While there, stop by the **National Comfort Institute booth S9043**. We hope to see you there. 



# CUTTING-EDGE TRAINING

## From The Industry Leader In High-Performance Contracting™

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### UPCOMING NCI TRAINING: JANUARY - FEBRUARY 2024

#### PUBLIC LIVE TRAINING

##### **Airflow Testing and Diagnostics**

January 16: Waller, TX  
January 16: Kissimmee, FL  
January 23: Lawrenceville, GA  
February 27: Tampa, FL  
February 27: Phoenix, AZ  
February 27: Salt Lake City, UT

##### **Duct System Optimization and Residential Air Balancing Certification Program**

January 16-18: Austin, TX  
February 6-8: Union City, GA  
February 27-29: Hillside, IL  
February 27-29: Glen Burnie, MD

##### **Duct System Optimization Certification Program**

January 17-18: Waller, TX  
January 17-18: Kissimmee, FL  
January 24-25: Lawrenceville, GA  
February 28-29: Phoenix, AZ  
February 28-29: Tampa, FL  
February 28-29: Salt Lake City, UT

##### **High-Performance HVAC Design and Redesign**

January 30 - February 1: Austin, TX

##### **Residential HVAC System Performance and Air Balancing Certification Bundle**

January 30 - February 1: Richmond, VA  
February 6-8: Denver, CO

##### **Combustion Performance and Carbon Monoxide Safety Certification Program**

January 23-25: Glen Burnie, MD  
February 13-15: Austin, TX

##### **Commercial Air Balancing Certification Program**

February 20-22: Morristown, TN

##### **Commercial Air Balancing Certification Program**

February 20-22: Morristown, TN

#### PUBLIC ONLINE LIVE TRAINING

##### **Combustion and Carbon Monoxide Recertification - ONLINE LIVE**

January 9-10

##### **Residential HVAC System Performance Certification Program - ONLINE LIVE**

January 16-17: *Part 1*  
January 23-24: *Part 2*

#### \*SCE SPONSORED LIVE TRAINING [ncilink.com/SCESchedule](http://ncilink.com/SCESchedule)

##### **Commercial Air Balancing Certification Program**

January 9-11: Anaheim, CA

##### **Duct System Optimization and Residential Air Balancing Certification Program**

January 16-18: Anaheim, CA

##### **Airflow Testing and Diagnostics**

February 6: Anaheim, CA

##### **Refrigerant-Side Performance Certification Program**

February 7-8: Anaheim, CA

##### **Combustion Performance and Carbon Monoxide Safety Certification Program**

February 27-29: Anaheim, CA

#### \*\*TECH CLEAN CALIFORNIA TRAINING [ncilink.com/TECHCleanCA](http://ncilink.com/TECHCleanCA)

##### **Airflow Testing and Diagnostics**

February 6: Hayward, CA

##### **Refrigerant-Side Performance Certification Program**

February 7-8: Hayward, CA



\* NCI training sponsored/subsidized by Southern California Edison (SCE) for qualified local contractors.

\*\* NCI training sponsored by TECH Clean California for qualified local contractors.

Visit **[NCIlink.com/ClassSchedule](http://NCIlink.com/ClassSchedule)** to view the latest schedule.

# Lessons Learned from the High-Performance HVAC Summit

In 2013, I was facing burnout. I had run my mind and body into the ground.

First, some background: I started my first HVAC company in the early 2000s (Whitey's Heating and Cooling) and spent eight years growing my business as a sole proprietorship with the occasional cash helper friend working with me.

My clientele grew by leaps and bounds. My ability to connect with humans on a level of personal comfort restoration became a foundational legacy that has me where I am today.

From the beginning, I was surrounded by mentors who fed my thirst for knowledge and taught me what it takes to succeed.

I spent many years working with Kent. I stayed stagnant in my education and grateful to be alive. Kent provided a comfortable environment to be average. His company had a crew of four people, and we did about \$700,000 worth of business in our best year.

Five years ago, Kent tragically lost his son in a car crash and then lost his father to a sudden massive heart attack in one 90-day period. These tragedies rattled the entire company and sent us into a 2.5-year tailspin. The following year, I met my lovely future wife, Sara.

When I shared my joy with my boss, he said he hoped to sell the business to my coworker

Dustin and me. This was our opportunity. In April 2021, Dustin Wood and I purchased the assets and phone numbers of Kent Borota and started our brand, [Honest Heating and Cooling Inc.](#)

## NEW BEGINNINGS

Starting out again, I found the challenges of a brand new business were mighty! But with the help of our distributor (Heating and Cooling Supply) and our equipment supplier

(Daikin Amana), I received training and got back into the game.

I was invited to attend training in Texas at the Amana manufacturing facility. This opportunity provided me with a steady stream of growth and opportunities. It's where I met David Holt from National Comfort Institute (NCI).



John Whitehead (far right) was one of eight "first timers" to receive a scholarship to the 2023 NCI High-Performance HVAC Summit in Branson, MO.

But ultimately, it was too much. The stress and pressure of being a sole proprietor took its toll. Looking for a way out, I sold my phone numbers and assets to my closest competitor, Kent Borota, and went to work for him. I took over duties as lead service, technician, secretary, salesperson, and more.

# lessons learned



During our conversation, Holt invited me to attend NCI's 2023 High-Performance HVAC Summit in Branson, MO. **I applied for a scholarship, which I was granted.** That changed my life. I reserved my room, and the rest is history in the making!

## BECOMING PART OF A COMMUNITY

Let's face it: when you live and work in an area, you are part of a community. What you do with that "membership" can make all the difference. I wasn't always a big "joiner." But from the moment I got to Branson, I discovered that the High-Performance HVAC community was (and is) unlike any other one I've been part of.

I wasn't a member of the organization, but I was treated like one. From the fantastic staff, who all seemed uniquely placed to augment my experience, to the other contractors who made me feel like I belonged there, I felt part of something big and important, and it fired up my excitement to be in this industry.

Even the program's format differed from other training seminars I've attended. It focused on how, as a collective community mind, we could all work together to further the industry. Plus, the group format allowed me to start relationships with other contractors from around North America.

The NCI Summit format divided attendees into groups so we could experience Summit together. All group sessions were led by NCI instructors who facilitated brainstorming discussions. My group members immediately connected and collectively shared our hearts and minds throughout this journey. I developed lifelong friend-

ships with the people I was fortunate to be paired with in my group.

## MY "AH-HA" MOMENTS

As a potential brand-new NCI contractor member, I opened my eyes to the many principles and fundamentals that have fallen by the wayside in our trade. That is what NCI teaches and then takes it to the next level. The light bulb went off as I realized that anyone hungry for the best and willing to put in the work could become a high-performance contractor.

From measuring and testing carbon monoxide safety to financing, Summit sessions covered enormous amounts of excellent subject matter that we could take home and apply directly to our business model. The transformation that our business experienced as a direct result of the Summit has been amazing.



Then there are the vendor partners. Yes, that is what NCI calls the manufacturers and suppliers who showcased their products and services during the tradeshow. Spending time with them introduced me to the importance of using the right tools and instruments to succeed as a high-performance HVAC contractor.

For example, spending time with

the team from **Sauermann** caused a definite shift in my consciousness around CO safety. Learning about Sauermann's current offerings helped us move flawlessly into our current heating season with the right tools to ensure our customers' safety and health.

The next life-changing vendor I met was Jim Bergmann with **MeasureQuick**. Our company had recently started using MeasureQuick, and meeting Mr. Bergmann and his team solidified our commitment to measuring to the next level.

Meeting the **TruTech Tools** folks helped us better understand the investments in the instruments that will alter our company. It was a great experience.

Every vendor we met was top-notch and added to our growing list of "ah-ha" moments.

## NETWORKING BECAME REAL

From the general sessions to the breakouts, I discovered how easy and fun it was to draw upon the collective and individual experiences of some of the HVAC Industry's most innovative and successful contractors. Hearing other attendees' input into what could change the face of our business has proven to be invaluable.

I have attended other events, but they were not as open and free-flowing as this Summit event. For the first time in my life, **networking** became real.

## HOOKED ON HIGH-PERFORMANCE

My experience at the NCI High-Performance Summit 2023 got me hooked. I left Branson fired up and excited. When I got home, I spoke with our team about the fantastic possibilities I had learned about, and we immediately began implementing high-performance processes.

We have jumped on as much of the NCI training as possible in the nine or 10 months since Summit. Honest Heating and Cooling hosted our first airflow class taught by NCI's Jim Ball. I also attended a three-day CO training class in Minneapolis with Mark Hunt.

Since Summit, we've outfitted five service trucks with all the equipment


and instruments necessary to test and measure HVAC and duct systems properly. So far, we've ordered Sauer-mann Combustion analyzers and run CO analysis with the NCI worksheet on every maintenance call. We are now proud dealers of the NSA 6000 CO monitor as well.

Knowing that our measurements are impacting lives is changing everything for our company. We look forward to continued growth through our partnership with NCI as we educate our team on testing and diagnosing complete HVAC systems.

I know one other fact: I will NOT miss any [High-Performance HVAC Summits](#) if I can help it.

I recommend that anybody on the fence about whether to consider the

high-performance approach should stop shortchanging themselves. Look in the mirror and know the impact you have on the world.

Imagine having the measurements and actual data to back up everything you promise your customers. Anything is possible for those who are willing! 



**John Whitehead** is co-owner of **Honest Heating and Cooling Inc.**, Marshalltown, IA. The company specializes in residential and light commercial HVAC service and installations, including in-floor radiant heating, boiler service and repair, and more. He attended his first NCI Summit in 2023 and has become a strong advocate for the High-Performance HVAC Contracting approach. You can contact him at [ncilink.com/ContactMe](https://ncilink.com/ContactMe).

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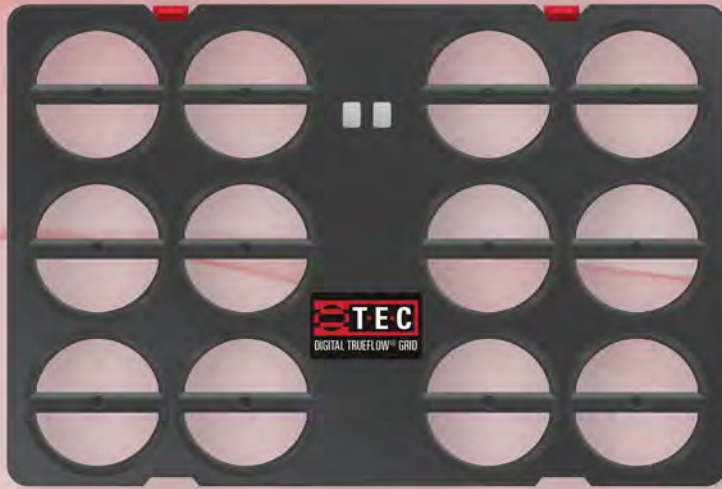
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## Late-Breaking NCI Summit 2024 News



If you haven't already done so, mark your calendars for the National Comfort Institute (NCI) **High-Performance Summit**, which is coming to you in September 2024. The dates are September 10 - 13 in Asheville, NC.

This year's Summit focuses on the rapid rate of technological change in the HVAC Industry. The theme is **"Outperform Your Competition in a Rapidly Changing World."**

Sessions will focus on the following technologies that will impact your business and your customers' lives:

- A2L Refrigerants
- Inverter Technologies
- Heat Pump Conversions
- Electrification
- ASHRAE Standard 221
- RESNET/ACCA Standard 31
- Inflation Reduction Act
- And more.

Join your fellow High-Performance HVAC Contractors at NCI's Summit to delve into these and other essential topics as you set your priorities for 2025 and beyond.

Learn more at [gotosummit.com](https://gotosummit.com). Be sure to register at [gotosummit.com/summit-registration](https://gotosummit.com/summit-registration) today and take advantage of early bird rates. Remember, you can use your NCI Bucks to help reduce registration costs. You can also earn NCI bucks on whatever fees you pay.

And don't forget to book your rooms at the [Crown Plaza Asheville Hotel](#). Be sure to mention NCI to get our low room rate.

If you have any questions, call the NCI Customer Care line at **800/633-7058**.

## 2024 NCI Training Schedule



As you prepare for your team's training needs in 2024, check out National Comfort Institute's (NCI) classes. Our 2024 schedule of online live and in-person training is available online at [ncilink.com/2024Schedule](https://ncilink.com/2024Schedule), with more classes being added over the next few weeks.

Classes currently scheduled include:

- Airflow Testing and Diagnostics
- Commercial Air Balancing
- Commercial Air-side Recertification Online Live
- Commercial System Performance Online Live
- Combustion Performance and CO Safety Certification
- Combustion and Carbon Monoxide Recertification Online Live
- Duct System Optimization and Residential Air Balancing Certification
- High-Performance HVAC Design and Redesign
- Residential HVAC System Performance and Air Balancing Certification
- Refrigerant-Side Performance
- Residential System Performance Online Live.

Keep checking back for schedule updates, class additions, and more information. If you have any questions, contact our Customer Care line at **800/633-7058**.

## NCI Training Maiden Voyage at New Facility


This summer, [National Comfort Institute relocated from Cleveland, OH, to Morristown, TN](#). It's taken some time to get the offices and facilities renovated and ready to hold live classes there, and despite one or two setbacks, the building is now ready.

In fact, the first in-person class held at the 11,000 sq. ft. facility was [Airflow Testing & Diagnostics](#), led by David Richardson, NCI's vice president of training, on November 30, 2023. Contractors and technicians nationwide joined David and were eager to learn about static pressure and airflow.


Long-time NCI member Jason Nikkel, a contractor from JN Electrical Temperature Control, Bowersville, GA, attended and said, "This was an awesome training class. Thank you to David Richardson and the rest of the NCI team for striving to keep the HVAC trade professional and rewarding."



Dominick Guarino, NCI's CEO, says that upgrades continue to be made to build out the company's live-fire labs. The plan is for this lab to house six or more permanent HVAC systems of different types, including boiler and hydronic systems.

"We hope you will come to visit us for the training and stay for all the awesome amenities this area offers," Guarino says. 


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# Commercial Buildings Need Your Help!



**Dominick Guarino**  
is publisher of  
**High-Performance  
HVAC Today** magazine  
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**B**ased on feedback from thousands of National Comfort Institute (NCI) students, we know HVAC systems in most small to medium commercial buildings are a mess. In fact, most have never been properly tested or balanced.

Even if a system was tested after construction, years, even decades of poor maintenance and “Tenant Improvement” work often made that building uncomfortable and inefficient.

Large commercial buildings have a better chance of working because they were probably balanced by certified TAB (Testing & Balancing) companies. But these buildings make up less than 10% of our commercial building stock.

The bulk of U.S. buildings are conditioned by 20-ton and under packaged HVAC systems, and in many cases have **never** been tested or balanced. Even if they were initially tested, most were never tested again. The result is a huge percentage of poorly performing buildings, both in terms of comfort and energy efficiency.

## AN UNTAPPED OPPORTUNITY

What do High-Performance HVAC service businesses call this? INVENTORY! Companies that invest in the tools and training to improve, balance, and verify system performance are building significant profit centers around these services.

NCI has been teaching these practices for decades in both the residential and commercial sectors, and we have trained and certified thousands of techs and salespeople in these disciplines. But I think we are just scratching the surface.

The exciting thing about small and medium commercial buildings is they are a lot easier to diagnose, correct, and balance than the average home. Equipment typically lives on a roof so it’s relatively easy to get to and test. Air distribution systems typically live just under the roof or under

each floor of a building, above a drop ceiling. This means they are accessible with minimal disruption or damage to the structure.

While this may sound like a “no-brainer” for a commercial service company, most of them still never address major causes of unsafe, unhealthy, uncomfortable, and inefficient systems.

This means tremendous opportunities for High-Performance HVAC companies. If you are a residential company, could you see transferring your knowledge and skills to light commercial – specifically to solve existing problems on the huge inventory of poorly performing buildings?


If you’re already in commercial, have you thought about marketing your company as one that can fix poorly performing buildings?

## CUSTOMER EDUCATION IS THE KEY

Poorly performing buildings desperately need your help. With proper education, many owners will invest in improving their building’s comfort systems. The key is **customer education**.

Unfortunately, most building owners have learned to live with poor performance, and just don’t think about it anymore. As a High-Performance HVAC professional you can help bring these issues to light, and **teach** people about their buildings and why they don’t have to live with such deficiencies.

In many cases, they also have old equipment, providing opportunities to both replace that equipment and upgrade their entire system.

Take a look at this inventory through new lenses, and you’ll see an opportunity to become the go-to HVAC service company in your market. As a High-Performance contractor you can sell profitable solutions that will help you build a substantial, loyal customer base and get valuable referrals for years to come. 



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Prevention is the key to avoiding Carbon Monoxide hazards in the home. Each year thousands of people in the United States become ill or die from CO poisoning. Without full combustion performance and CO safety training, there is no way of knowing whether a system is safe or efficient.

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