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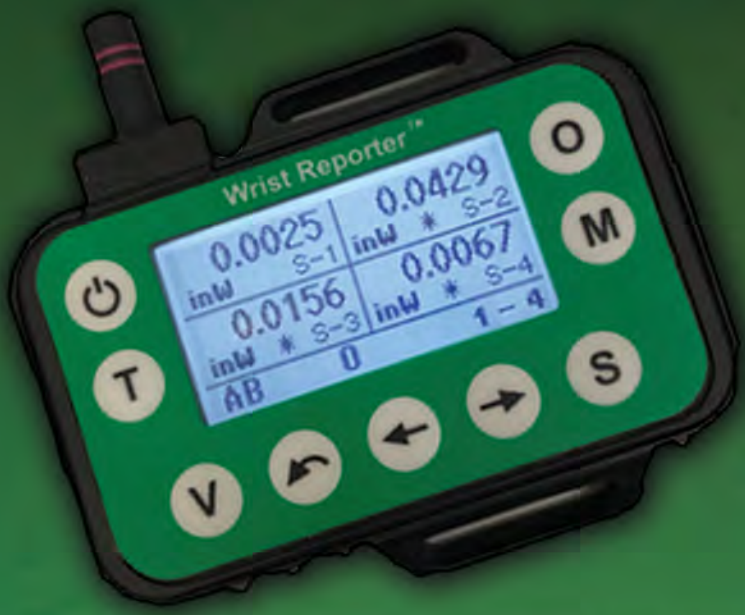

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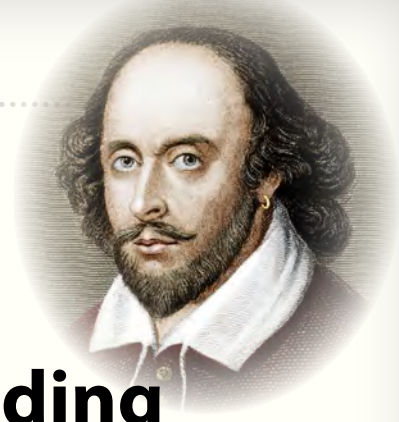
National Comfort Institute, Inc.

DECEMBER 2024 VOLUME 8 NUMBER 12

HIGH-PERFORMANCE HVAC TODAY™

DEPARTMENTS

By Mike Weil



Who is the Brand?
A Shakespearean View on Branding

Mike Weil is editor-in-chief and director of communications and publications at National Comfort Institute, Inc. Contact him at ncilink.com/ContactMe.

To brand, or not to brand? That is the question. OK, Shakespeare never wrote those words. Industry colleague and friend Matt Michel did 15 years ago in another trade magazine I used to work for.

I was reminded of the famous line from Hamlet the other day when my eldest son was talking about going to see a modernized rock-music version of the play this summer.

And though Shakespeare's slings and arrows have nothing to do with HVAC, Hamlet's famous "To Be or Not To Be" line reminded me of Matt's article on branding.

I have always supported the idea that HVAC contractors are the brand that face customers, and they should promote what makes them unique over promoting whose equipment they carry.

For those High-Performance HVAC professionals who read this magazine, your entire approach to testing and measuring sets you far ahead of most other contractors. It is part of your brand.

After all, without testing, without measuring, without data from those tests and measurements, competitors cannot truly provide customers with the comfort and efficiencies promised.

Whether you believe it or not, high performance is a strong brand. The question is how you share it with your community.

Here is a thought: Branding is not peripheral to your business — it's the essence that defines a company's relationship with customers. By investing time and effort to create a strong brand, you position yourself for long-term success. Embracing the power of branding is not just an option; it's an imperative step towards building a thriving HVAC business.

Over the years I've spoken to a lot of contractors about branding and even today many of them aren't sure the *juice is worth the squeeze* as friend and colleague John Garofalo used to say. He also said your brand is the guiding light that shapes every aspect of your business.

BRANDING TAKES WORK

Matt Michel wrote, "*Contractors who brand on their own must also develop marketing on their own. Manufacturers won't help promote brands they don't own or license.*"

In this month's article on re-branding by Ronald Amaya of Cool Techies (Punbar) in Houston, talks about how they decided to change their brand and their name to attract more customers and to become even more recognizable than they were previously.

The new brand targeted their high-performance approach to HVAC and simplified it so consumers could understand what it all means and how it benefits them.

Was it easy? Was it worth the squeeze? Read Ronald Amaya's article on page 6 of this issue to find out.

Furthermore, Contractor Mike Greany provides insights on how servant leadership is a big part of his brand, especially after recently starting his own High-Performance HVAC contracting firm.

What is servant leadership and why can that separate you from others in your marketplace? Read Mike's article on page 15.

Branding your company first makes a lot of sense. Manufacturers provide components. You, the contractor, use your own creativity and expertise to uniquely design and install complete comfort systems. Why not promote THAT brand over anyone else's?

To brand or not to brand isn't really the question. Why not work your brand, expertise, and your system approach to better the lives of your customers, employees, and your company?

Written by HVAC Professionals for HVAC Professionals

JobLink Instruments and Apps

The **Fieldpiece JobLink instruments and apps** have been going through an ongoing evolution to provide the HVAC industry with a more available and cost-effective platform for technicians to diagnose and measure HVAC system performance effectively.

The **JL3RM wireless flex psychrometer probe** is an excellent device, but it does have some learning curves identifying problems or limitations.

Probe and smartphone app operation has improved, leading to the addition of other JobLink instruments. All are part of a **JobLink Kit** that contains two JLR3RN probes, two wireless JL3LC pipe clamps, and two JL3PR pressure probes. The kit itself is not for standalone use; there is a complete family of JobLink tools that you should use together to obtain critical diagnostic information.

I believe more can be done to help technicians better understand these tools. For example, many techs don't know that the tools can be used as data loggers, as analyzers for the operating coil, line set, and total superheat (rather than focusing on just total superheat).

Some of the probes can let you measure equipment and system capacity. I think some things that should be automatic require techs to adjust within the app, which techs don't do as often as needed.

With all instruments, easy setup and proper use is the secret to obtaining accurate information. There is ongoing collaboration between Fieldpiece, NCI, and other industry partners to accomplish this and build confidence in the results. For more information, go to **ncilink.com/JL3KH6**.

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

By Ronald Amaya

Embracing Change: Why We **Rebranded Our HVAC Company**

Rebranding is a marketing strategy that involves changing a brand's identity to create a new image in the minds of customers and other stakeholders. The goal is to increase brand awareness and loyalty, and ultimately drive business growth.

Here at **Punbar LLC**, we very recently began our own rebranding process. We changed our name to ***Cool Techies***.

From the start, this wasn't just about changing a name or a logo; it was about redefining who we are and what we stand for. The process was really challenging. We learned a lot. Let me walk you through this journey.

THE IMPORTANCE OF BRANDING

Branding, as I've come to realize, is crucial for any business. When we first started Punbar, we were focused solely on providing top-notch HVAC services.

Our name, Punbar, was a combination of two cities in Venezuela. It was unique but didn't communicate our expertise or services. As we grew, it became clear that our brand needed to evolve to reflect our values and attract the right customers.

We are headquartered in the highly competitive Houston market, so we needed a brand that would set us apart. We wanted to communicate not just what we do, but how we do it — including our commitment to quality, comfort, efficiency, and innovation. This led us to the realization that rebranding was necessary.

THE INITIAL STEPS

We made the decision to rebrand in 2023. We wanted a name and image that would resonate more with our customers and reflect our focus on cutting-edge HVAC solutions. The name "Cool Techies" was chosen to highlight our technical expertise in cooling systems, a crucial requirement in Houston's hot climate. The name itself has a fun, almost nerdy spin, making it memorable and appealing.

We didn't just stop at the name. We worked on a complete overhaul — a new logo, new color scheme, new everything. We partnered with a branding company called **KickCharge**, that helped us through the process.

KickCharge conducted a thorough market analysis and worked hard to understand our target audience. They came up with the idea of using a polar bear as our mascot, symbolizing coolness and intelligence, which fit perfectly with our vision.

We also partnered with a marketing expert and co-founded a company called **WiseX3** to implement the online marketing process for rebranding and lead the current marketing strategies.

IMPLEMENTING THE CHANGES

Implementing the new brand was a huge undertaking. We had to update our vans, uniforms, online presence, and our marketing materials. Each van now proudly displays the Cool Techies logo, with "Cool" on top and "Techies" below, which, in my opinion, makes a bold statement on the road.

The online transition was perhaps the most challenging part. We had to ensure that our

existing online presence with Punbar didn't just vanish. It needed to transition smoothly to Cool Techies. This involved search engine optimization (SEO) adjustments, updating our website, and making sure Google recognized the change.

This next thought is important: We kept the Punbar domain and website with the purpose of later on redirecting traffic to Cool Techies. This ensures we do not lose any potential leads. Cool Techies must first catch up to Punbar with online traffic and recognition before the full transition.

CUSTOMER REACTION

Customer reception has been overwhelmingly positive. Initially, there were concerns and confusion. Loyal customers wondered if we had sold the company or if there were new management changes.

We made sure to communicate clearly through emails, social media, and direct conversations that while the name and look changed, our core values and commitment to quality remained the same.

Cool Techies owners Ronald Amaya (left) and Diego Guerrero (right)

The new branding also helped us to attract new customers. The polar bear mascot wearing sunglasses became a talking point, and our colorful vans stood out in the sea of generic HVAC service vehicles. It was clear we were not just another HVAC company but one that brought a fresh and innovative approach to service.

THE FINANCIAL INVESTMENT

Rebranding requires a significant investment. From the cost of new vehicle wraps to redesigning marketing materials, investing in SEO, and investing in online marketing, the expenses added up.

However, we see this as a long-term investment. The goal is to create a more recognizable and trusted brand, which in turn will drive growth and profitability.

MARKETING STRATEGIES

With the new brand, our marketing strategies have also evolved. Today we focus heavily on social media, creating informative and engaging content rather than just promotional posts.

Platforms like ***Instagram***, ***Facebook***, and ***LinkedIn*** became our primary channels for connecting with our audience. We also implemented targeted direct mail campaigns, reaching specific neighborhoods and potential customers.

We took the latter one step further: we place advertisements on shopping carts in local supermarkets, to also help increase our visibility.

One of the most effective new strategies to come out of our rebranding efforts is our customer referral program.

By incentivizing existing customers to refer new ones, we tapped into a trusted network of word-of-mouth marketing. In my opinion, nothing is stronger than word-of-mouth reputation building.

OVERCOMING CHALLENGES

Let's face it. Change is hard and rebranding represents significant change. Change creates challenges and we did face several of those.

One unexpected challenge involved our polar bear mascot graphic. There was some complexity involved in separating the original polar bear from the wrench in its hand so we could use it in our marketing videos and 3D model campaigns. These minor details required creative solutions and added to the timeline.

Internally, there also was some resistance to change. Our technicians and staff had grown accustomed to the old brand, and the transition required a cultural shift within the company. Training sessions and open communication helped ease the transition. Soon everyone embraced the new identity.

THE ROAD AHEAD

Our journey of rebranding is ongoing. While we've made significant strides, there is still work to be done. Our goal is for ***Cool Techies*** to be synonymous with expert HVAC solutions in Houston. We aim to fully transition our online presence and continue building our reputation.

The key takeaway from this experience is that branding is not just about a name or a logo. It's about the story you tell, the values you stand for, and the connection you build with your customers.

Rebranding Punbar to Cool Techies was challenging but also rewarding. It has renewed our sense of purpose and positioned us for future growth.

As we move forward, we are excited about the opportunities that lay ahead. With a strong brand, a dedicated team, and a clear vision, Cool Techies is set to make a lasting impact in the HVAC industry.

If you're considering a rebrand or simply looking to strengthen your brand identity, my advice is to embrace the process fully. Understand your audience, stay true to your values, and don't be afraid to make bold changes. The results will be worth it. NCI

Ronald Amaya is one of the owners of **Cool Techies** (formerly Punbar). He focuses on the company's operations, sales, marketing and finance while partner ***Diego Guerrero*** focuses on training, technical support and planning. Both men have degrees in mechanical engineering and started the company in 2015 based on the tenet of **High-Performance HVAC™ Contracting**. Ronald can be reached at **ncilink.com/ContactMe**.

Here you can lean into new technology and see how we can make buildings better – HVAC is 40% of a building so it's important to stay in the know."

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By Adam Mufich

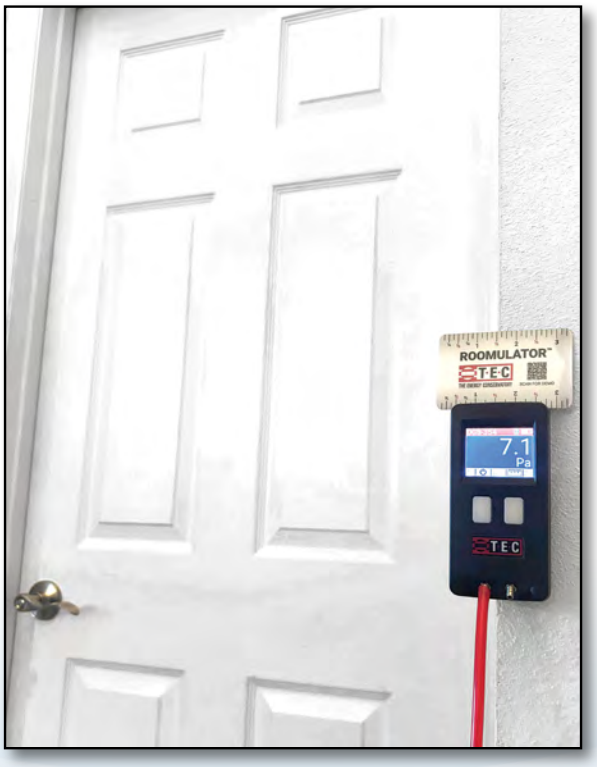
Don't Pressurize Your *High-Performance HVAC Customers*

A few years ago, my brother bought a new construction home near New Orleans, LA. He was nervous about the quality of his new home, but more specifically, the HVAC equipment and installed duct system.

There were news stories about homeowners suing local home builders because of mold issues. After his family moved into the house, he asked me if I could come down and analyze his HVAC system.

It just so happened that the Air Conditioning Contractors of America (ACCA) was having a conference in New Orleans that year, so I flew down and killed two birds with one stone.

When the conference ended, I inspected my brother's HVAC system. What I found surprised me. There was one central return in the hallway and no jumper ducts or transfer grilles in the bedrooms. Apparently, the installation contractor did not remember that one CFM in equals one CFM out.



Measuring room pressures with a DG-8 manometer

WHAT YOU SUPPLY, YOU MUST RETURN

Room pressurization issues can arise if a room has air supplied to it without a path for the air to travel back to the return. When I brought this to my brother's attention, he recalled something the builder said during his final walk-through of the home.

He was told, "Make sure you don't shut the bedroom doors at night." I couldn't believe the builder would suggest not using the bedroom doors. This statement blew my mind.

However, if you think about it, this suggestion makes sense. The builder must have learned from previous comfort complaints that by keeping the doors open, the complaints would go away. He stumbled across the fact that the building is part of the duct system, and the interior doors are the biggest dampers in the system.

This was good advice because the multiple supply registers and a lack of return air pressurized the primary suite.

A ROOM IS AN EXTENSION OF THE DUCTS

When you close a door to a room that has a supply duct and no return path, you take air from the main body of the house and dump it into an isolated portion of the home. That isolated room becomes pressurized.

Think of the room as a duct and the door as an endcap. In this scenario, the room could have measurable static pressure. The only difference is the scale used to measure room pressures.

Instead of using inches of water column, we use a smaller scale called pascals (Pa). To give you an idea of how small a pascal is, 0.1 inches of water column (in-w.c.) is equal to 25 pascals.

The goal should be to have no measurable pressure difference between a room and the rest of the house.

In the real world, three pascals have become a universal maximum pressure differential (ΔP). Although, there are times when three pascals is even too much of a ΔP.

A pressurized room could cause a reduction of supply airflow to it. This occurs because the door adds resistance to that supply duct. By adding resistance, it effectively creates an increase in the equivalent length of the supply duct.

This is why a closed door can reduce airflow to a room without a return. If a room is pressurized, some of that air is taken from the rest of the home. This situation leaves the main body of the house depressurized with reference to the outside. A house operating under negative pressure will suck in outside air. This action is known as infiltration. The HVAC system causes infiltration in this example.

Did you catch where I said, "A closed door **CAN** reduce airflow to a room without a return?" If the room has gaps, cracks, or holes connected to the outside, this can be a path for air to flow out of the room.

The problem is the air isn't flowing back to the equipment. Instead, it is forced outside the building envelope. If this occurs, the house will also become depressurized.

In this situation, there will be little or no measurable pressure difference between the room without a return and the rest of the house. This is another variation of HVAC-induced infiltration.

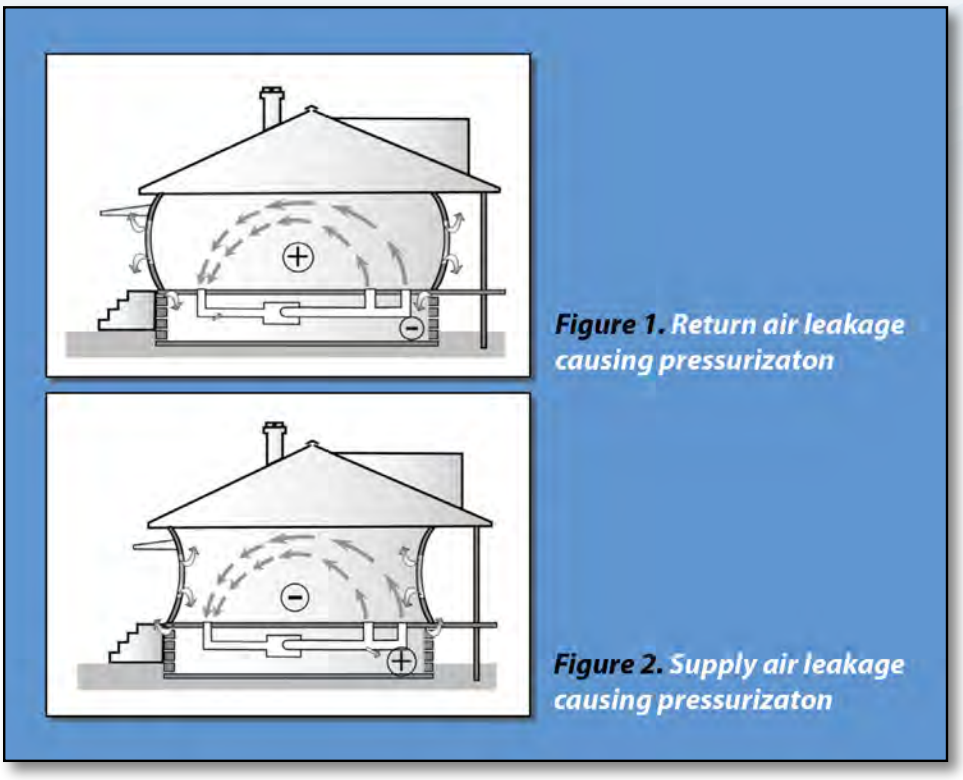


Figure 1 shows ductwork in the crawlspace ***leaking return air,*** which causes a house to become pressurized. **Figure 2** depicts ductwork in the crawlspace ***leaking supply air***, which causes the house to become pressurized.

BUILDING PRESSURES IMPACT IAQ

Air leaking into the home from outside won't always come from ideal areas. It can leak in from dirty areas like a crawl space or an attic, which could hurt the home's indoor air quality.

Infiltration can also cause high humidity in a house by sucking in humid outside air. Understanding building pressures can help a technician solve IAQ issues by stopping the problem at its source.

SAFETY BECOMES A CONCERN

My brother's laundry room, which shares a wall with the garage, became depressurized if the door was closed while the dryer was running. The dryer depressurized the room in two different ways. The dryer sucks air out of the room through its exhaust.

He has a natural gas dryer, which requires a fuel-air mixture to complete the combustion process.

The air in that mixture must come from the laundry room, which lacked an air path for the dryer. This can lead to a dangerous situation. Air leaking in from the garage could contain fumes from chemicals, gasoline, or even worse, carbon monoxide from auto exhaust.

My brother also has a tankless water heater installed outside next to his condenser. I am from the Chicagoland area, and our winter climate would

Sizing a passive return with the Roomulator.

never allow for this installation approach. Removing a gas-fired appliance from a home makes things a little easier.

In the Midwest, it is common to see laundry rooms with a natural draft water heater installed next to the garage. If the builder had done so in my brother's home, the room's negative pressure could have caused a natural draft water heater to backdraft and spill carbon monoxide.

RETURNS BLOW, AND SUPPLIES SUCK

My brother's furnace and ductwork are in a vented attic, so combustion air for the equipment wasn't a concern. However, when you consider duct leakage, that's another story.

A leaky return duct installed outside of the envelope is sucking in outside air, which can lead to the house becoming pressurized. When this occurs, there is too much air in the home, and it is forced out through gaps, cracks, and holes. This is called exfiltration.

If a supply duct leaks outside of the envelope, air meant to stay inside the home is forced out. Supply duct leakage can depressurize a house; another form of HVAC-induced infiltration.

Ductwork inside the building can be just as bad depending on where it leaks. In Chicago, most duct systems are in basements. There is a misconception that duct leakage inside the envelope doesn't matter.

Well, it does matter.

The first thing to consider is air leaking into or out of the basement. If this happens, the air doesn't move into or out of the room as intended. At a minimum, this could create a comfort complaint.


Pictured above: a jumper duct (passive return) in an attic. Photo credit to ***Michael Cianfrocco.***

Leakage inside a home can cause room pressure issues that can increase infiltration and/or exfiltration. In the worst-case scenario, the pressures can interact with the draft of a gas appliance and create a dangerous environment by introducing carbon monoxide into the home.

WHAT'S THE SOLUTION?

Furthermore, my brother's blower motor speed was set too high, thus moving too much air. By reducing the fan airflow, I reduced room pressurization issues. He still needs to install a return duct in his primary bedroom, and I suggested he install jumper ducts for the smaller bedrooms and the laundry room.

Sizing a jumper duct or transfer grille can be tricky. Last year, I wrote an article for **HVAC School** called "***What Airflow Goes Around Has To Come Around***."

In this article, I examined different methods of sizing transfer grilles and jumper ducts. Since that article's release, **The Energy Conservatory** created a product called **The Roomulator®**. It is a card that gives guidance on passive return sizing.

The card instructs you to measure the room pressure and then slowly crack open the door until you reach an acceptable ΔP, then measure how much the door is open. This is enough data to size a passive return properly.

A QR code on the front of the card links to a video with detailed instructions on how to use it. You will need a

micro-manometer like the DG-8 that measures pressure in pascals.

The Roomulator will help you size passive returns but will not address combustion air issues or duct leakage. I recommend attending National Comfort Institute's Carbon Monoxide training to learn more about combustion air.

A technician begins testing for house pressurization using a TEC Duct Blaster®.

You can measure duct leakage with either a TEC Duct Blaster® or by taking a known airflow measurement at the equipment and subtracting the measured airflow at both the grilles and registers.

The difference between the two measurements is live duct leakage.

When you start to think of a home as part of the system while considering its pressures, diagnosing safety, health, comfort, and efficiency issues becomes much easier.

Measuring is always the first step to identifying HVAC-related problems, including building pressure issues.

Learn to solve these problems and unlock another revenue stream within your business to put you one more step ahead in your marketplace of your ***former*** competition. NCI

Adam Mufich serves the HVAC industry as a curriculum developer and instructor for ***National Comfort Institute, Inc.*** (NCI). NCI specializes in training that focuses on improving, measuring, and verifying HVAC and Building Performance.

If you're an HVAC contractor or technician interested in learning more about air sealing benefits, contact Adam at ncilink.com/ContactMe. NCI's website www.nationalcomfortinstitute.com is full of free information to help you improve your professionalism and strengthen your company.

By Mike Greany

I'm from the High-Performance HVAC™ Industry: How Can I Help?

I was honored and surprised as a recipient of the **Rob Falke Servant Leadership Award** from National Comfort Institute (NCI) in 2023. This prestigious award, named in honor of my mentor, Rob Falke, was a moment of great personal significance. He had an uncanny ability to provide clarity and calm in our conversations, and his influence on my career is profound.

The recognition for my efforts to give back to the HVAC industry was a tribute to the many lessons I learned from Falke and the broader NCI family.

I didn't initially identify with the concept of **servant leadership**. But upon reflection, I realize it encapsulates my approach to the industry. For me, being a servant leader means contributing to the industry that has given me everything.

Robin Falke (second from left) joined David Richardson (left) and Dominick Guarino (right) to present the inaugural ***Rob Falke Servant Leadership Award*** in honor of her late husband, NCI President Rob Falke. The winner was Michael Greany (second from right).

It's about helping fellow contractors and fostering community and mutual growth.

"How can I help," is a mantra I live by – for my customers and colleagues.

WHY IS SERVANT LEADERSHIP SO IMPORTANT?

To me, servant leadership is crucial. It emphasizes the importance of supporting and developing others, creating a culture of collaboration and continuous improvement.

The sense of pride and obligation drives me to continue helping others succeed faster by sharing my experiences and insights.

This approach has always been at the heart of my work, whether mentoring a young professional at one of NCI's High-Performance HVAC™ Summits or assisting a peer in troubleshooting a challenging job.

STARTING OVER FOCUSED ON TRAINING AND EDUCATION

I recently started my own HVAC company, and that process provided me with fresh context for applying these principles. With over 35 years in the industry, I believe learning and training are lifelong pursuits. Regardless of their experience level, everyone has something valuable to offer.

This mindset contrasts with the traditional hierarchical structure of many companies, where employees often feel like numbers. My company focuses on empowering employees, appreciating their contributions, and providing continuous training. This empowerment, in turn, ensures they take care of customers. And that fosters a cycle of mutual growth and success.

One of the most fulfilling aspects of my career is watching former co-workers and employees start

their own successful businesses.

For instance, one former colleague established his own HVAC company nearby. We don't view each other as competitors but as colleagues, each contributing to the industry's overall health.

This perspective on competition and collaboration has been a cornerstone of my professional philosophy.

SERVANT LEADERSHIP'S TANGIBLE BENEFITS

Running a business grounded in servant leadership has tangible benefits. It creates a work environment where employees feel valued and supported, leading to higher retention and job satisfaction.

For our customers, it means receiving exceptional service from a team committed to their well-being. The principles of servant leadership — prioritizing others, focusing on growth, valuing teamwork, and coaching — align perfectly with my approach to business.

When I think about it, I realize that servant leadership has always been about building a legacy. It's about making a positive impact on others, whether it's through direct mentorship or fostering a culture of continuous improvement.

Running a business grounded in servant leadership has tangible benefits.

The annual NCI summit is a testament to this, where discussions and shared experiences help everyone grow. Meeting new, talented professionals and exchanging ideas keeps the spirit of servant leadership alive.

The future of my company is bright, with ambitious goals and a commitment to excellence. We're focusing on effective marketing and using technology to enhance our services.

Despite being a small operation currently, with just one truck and a close-knit team, our vision is to grow significantly, aiming for substantial revenue growth in the coming years.

THE HIGH-PERFORMANCE APPROACH

Our business model emphasizes providing options to customers and focuses on system performance rather than just equipment replacement. This approach differentiates us from other HVAC contracting firms and ensures long-term customer satisfaction. We turn satisfied customers into our best advocates by consistently delivering high-quality service and maintaining strong relationships.

The HVAC industry is challenging. Over the years, I've interviewed countless employee candidates, many lacking the practical experience or resilience needed for the job.

The reality is that this industry requires a unique blend of technical

skills, problem-solving abilities, and a genuine desire to serve others. Those who thrive often embrace these challenges and are willing to learn and adapt continuously.

SERVICE LEADERSHIP AND STRONG PARTNERSHIPS

One of the key strategies I've employed is leveraging solid partnerships with suppliers like **R.E. Michel**. Creating such partnerships ensures we have the best materials and equipment and allows us to focus on what we do best — serving our customers.

By not haggling over prices but instead focusing on service and reliability, we've built strong relationships that benefit our business and clients.

As I look ahead, the goal is to continue growing while maintaining the principles of servant leadership. To achieve these goals means investing in our team, providing ongoing training, and fostering a culture of collaboration and mutual support.

It's about building a company where everyone feels valued and empowered to contribute to our success.

When people come to me – whether they are co-workers or customers – and ask questions, I answer with a question: '*How Can I Help*?' That, in my opinion, is the backbone of a servant leader.

These attributes come from my father, Ed, who taught me and my siblings about work ethic and service.

Servant leadership is about recognizing the value in every individual, fostering a culture of support and development, and always striving to provide the best possible service to our customers.

As I continue to build my company, these principles will remain at the core of everything we do, driving us towards a future of sustained success and positive impact. NCI

Mike Greany owns **ASAP Plumbing, Heating, and Air Conditioning** in Corona, CA – a company he founded in 2024. Before that, Greany was the service manager for All Pro Heating in Ontario, CA, and then the residential service manager for Air Rite Air Conditioning and Refrigeration in Huntington Beach, CA. He also owned a small plumbing company before that. To reach Mike, click on **ncilink.com/ContactMe**.

By David Richardson

Seven Essential Steps You Need **to Optimize a Duct System**

A frequently asked question we get at National Comfort Institute (NCI) is, "What skills do we need to optimize a duct system the right way?" To shed some light on this question, here's an overview of seven essential skills I believe you need.

As you read, you'll notice not all the skills listed are technical. While in no specific order, both technical and non-technical skills play an equal role in Duct Optimization.

Unless you account for these skills, your chances of success diminish.

Photo above shows how an air balancing hood works. This is one of the essential tools necessary for you to do duct system optimization work.

PURCHASE TEST INSTRUMENTS AND ACCESSORIES

Duct Optimization is based on measurements, not assumptions and guesses. So, before you can optimize a duct system, take an inventory of your test instruments.

It's likely you already own some or all of the items you need. Some are more expensive than others and require an investment. The items you need are:

- **A static pressure test kit**
- **Digital psychrometer probes**
- **Digital TrueFlow® Grid**
- **Anemometer** (hot-wire and/or rotating vane)
- **Air balancing hood**
- **Report options** (to capture results).

If you're unsure where to begin, start with a static pressure kit and get comfortable with it before making a big investment.

MASTER AIRSIDE TESTING AND DIAGNOSTICS

Before any testing begins, you need to gather basic system information, perform a visual inspection, and install test ports. If you haven't yet mastered these skills, start now.

Everything from this point depends on correctly performing these tasks. There's no reason to delay with apps like **measureQuick®** that simplify the process.

Static pressure measurement is the first airside testing skill you need to know how to perform. Start with **total external static pressure (TESP)** since it indicates overall system health.

Additional pressure measurements, such as filter pressure drop, coil pressure drop, and duct pressures identify restrictive duct system component(s). The highest measured pressures

are where you want to focus your attention.

Once your static pressure measurements are complete, add fan airflow to your skill set. You have two options depending on the test instruments you own.

The first and easiest option is to estimate fan airflow with a fan table. You can get this reading quickly with the operating fan speed and manufacturer's fan table for the air-moving equipment.

The second and most accurate option is a direct fan airflow measurement using the Digital TrueFlow Grid.

At this point in testing, the customer has a decision to make. If they want to proceed with Duct Optimization, you'll need more information to further diagnose the duct system like delivered airflow and temperatures into the living space.

Do not perform this type of assessment for free or as part of a sales call. The customer should pay for this service and be fully involved in the testing process.

If they decide to go with further testing, you'll need to measure delivered airflow into and out of each room. You'll need an air-balancing hood and anemometer for these duct measurements. Make sure you know how to use these test instruments and understand the factors that influence them.

It's also a good idea to compare supply register and return grille temperatures to those measured at the equipment. This diagnostic test helps identify missing or inadequate duct insulation.

USE BEST PRACTICES FOR DESIGN AND VERIFICATION

Before you optimize any duct system, make sure the equipment is sized correctly. Unless you enjoy owning nightmare jobs, I recommend you avoid Duct Optimization on oversized equipment. If the equipment is oversized (and it usually is) this is a great time to recommend upgrading to the proper size.

This is also a great time to make sure you understand and can apply the principles found in **ACCA Manual D**. It's the HVAC industry standard for duct design.

Start in the appendix for some great information to understand important duct system principles to ensure you meet equipment design specifications.

When sizing an existing duct system, few contractors have the free time they need to reverse engineer an existing installation.

Experience shows that field installation conditions rarely result in a well-performing duct system. If the duct system design was bad from the beginning, it needs an upgrade.

Test the system once work is complete to verify that your **design methods** work. That's where the rubber meets the road. It doesn't matter how good your design skills are, unless you verify with measurements, you're just guessing.

FOCUS ON INSTALLATION DETAILS

It's easy to forget that your installers control airflow. They're the ones in

This illustration depicts a technician installing ductwork.

tough conditions who ultimately determine how well a duct system performs. Make sure they understand why duct sizing, fitting construction, and proper sealing are so important.

When you add duct installation best practices to those principles, they can expand their skills.

You can also help them see the importance of their work with a balancing hood measurement. It blew our guys away when they saw the huge difference that having proper flexible duct support and removing the extra inner core made.

We would take balancing hood readings on an existing duct and let them see the resulting airflow. Then, we removed the bunched up inner core and added support to the flexible duct and re-tested using the hood.

These changes often resulted in airflow increases of 30 to 60 CFM (cubic feet per minute) on a six-inch duct. Minor details make a big difference.

LEARN THE ART OF SALES

You might be the greatest technical mind in our industry, but if you can't sell, you will go hungry.

"***Nothing happens until somebody sells something.***" – Arthur H. "Red" Motley

Sales is a skill you can learn, just like measuring airflow. Two important traits to develop are the how to carry on a conversation and how to really listen and understand what a customer tells you.

One key part is asking good questions that prompt thought from your customers about their system. If your questions only receive a yes or no answer, you may not learn what you need to know to best help the customer.

Consider crafting your own questions with some of the following sentence starters to get more in-depth responses.

- What do you like about...?
- What is one thing you would improve about...?
- What would you change about...?
- Why is that important...?
- How would you like to...?

Once you ask a question, listen to what the customer says and take notes. It shows you're listening and provides you with documentation about what's important to them.

Don't assume what they want. Ask instead. Remember, you should be listening twice as much as you talk.

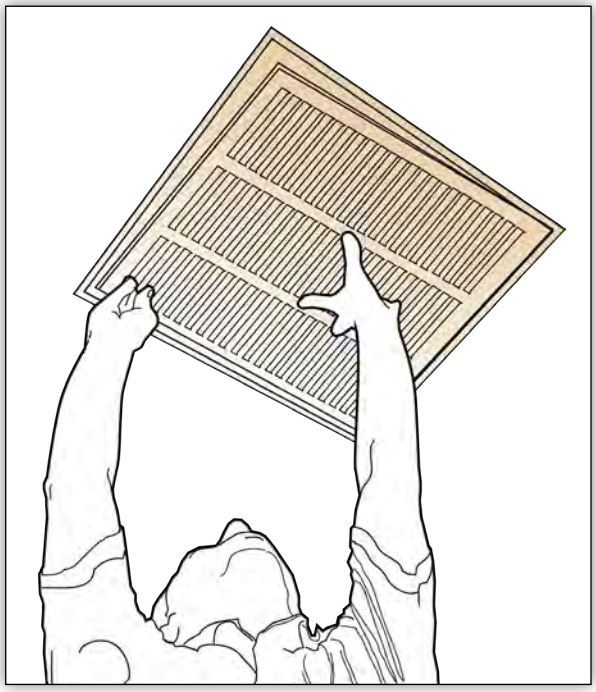
If you struggle with sales or think it's a cuss word, go to your local bookstore or Amazon and order, "***How I Raised Myself from Failure to Success in Selling***" by Frank Bettger. It's an older book with timeless lessons.

If you study and apply them, the results will surprise you — both personally and professionally.

PRACTICE CLEAR COMMUNICATION

Duct Optimization isn't a project placed in the hands of one individual. It's a company-wide effort where clear communication is essential. Everyone needs to understand and fulfill their role to the best of their ability.

Most Duct Optimization projects run into problems because of a lack of communication. There is a break in the handoff between departments. When that happens, your team makes assumptions to fill in missing details.



Installation technician is depicted in this illustration placing a register.

Some key questions to consider in preventing a communication problem are, "*Who is doing what by when?*" and "*Who is the next person in line and what are they doing by when?*"

Addressing these questions during a Duct Optimization project is one of the most important skills you can master.

To start with, consider all the interconnecting roles in a company and how they should work together. It helps to use a large whiteboard and capture all company roles from service technicians to dispatchers.

Identify what each role must do to ensure a successful project and how they should work together. Once you nail down the roles and hand-offs, capture your process digitally for everyone to see.

START WITH THE END IN MIND

For the best chance of success, it's a good idea to define **WHY** you want to add Duct Optimization to your business. Once you write out your motivation, it's easier to outline what your unique product is and how you plan to implement it.

If you can see how Duct Optimization fits into your daily operations and build a contextual framework for the team, you can create a step-by-step plan to achieve your goals and ensure everyone understands why their role is important.

Remember, both technical and non-technical skills make a difference.

I suggest you use this article as a general roadmap to determine where you currently are. As with any roadmap, the more you zoom in, the more details you'll see.

Duct Optimization works in the same way. As you progress, you might be farther down the road than you think. I hope this overview offers ideas that help you solve your customers' problems and provide solutions that exceed their expectations.

David Richardson serves the HVAC industry as vice president of training for ***National Comfort Institute, Inc.*** (NCI). He joined NCI in 2010 as a curriculum developer and instructor. David has been involved in the High-Performance HVAC Industry since 2001, and holds all NCI certifications as well as other industry certifications from HERS, BPI and others. You can contact David at ncilink.com/ContactMe.

Summit 2025 Early Registration is Open!

National Comfort Institute's (NCI) ***High-Performance HVAC™ Summit 2025*** will be held in Austin, TX September 9-12th.

The 2025 event will be headquartered at the **Kahalari Resort and Waterpark** and promises to be one of the largest Summit events ever.

The theme is ***"Navigate Your Path to High Performance,"*** and all the educational content will help you no matter if you are just starting out or are well on your way to full high-performance implementation.

But Summit also promises to be a fantastic spot to bring your family and make a working vacation out of it. Why? Because this park was voted as the top indoor water park in the country with 350,000 sq. ft. of waterpark fun, amazing dining options, and all kinds of entertainment available.

By booking your reservations there, you get access to the park itself, as well as all kinds of activities, live entertainment, and more.

That is the vacation part. The education part is that Summit will deliver the amazing peer-to-peer networking opportunities, top quality workshops, and tremendous access to NCI's vendor partners.

Plus, by locking in your reservation now you can take advantage of NCI's early bird pricing. Also, if you bring more co-workers, you save even more. NCI members get additional savings as well.

So why wait? Head toward the **goto-summit.com** web page to learn more and sign up today.

You can book your rooms at Kalahari today as well. Lock into the NCI special room rate of only $175/night by **clicking here**.

Team NCI: Meet Jeff Sturgeon

This month we spotlight one of our California instructors, Jeff Sturgeon. Jeff has been with National Comfort Institute (NCI) since 2013 and is the Southern California training center manager in Los Alamitos, CA.

Jeff has more than 30 years of residential and commercial HVAC and refrigeration field experience. He works with hundreds of contractors and their field personnel to help ensure successful implementation of **Southern California Edison's Workforce Education and Training** programs.

He got his start in the HVAC industry by attending UTI (**Universal Technical Institute**) in Phoenix, Arizona. Throughout his career, Jeff installed and serviced residential, light commercial, commercial, and industrial HVACR systems.

He also worked for an HVAC controls manufacturer, where he was responsible for engineering, designing, building, and installing control panels for a variety of applications.

Besides earning many HVAC certifications from manufacturers and organizations such as NCI, NATE, and IHACI, for more than 10 years Sturgeon has also been involved in numerous **Southern California Edison Energy Efficiency** programs.

Introducing Airflow Testing Diagnostics 3.0

In a recent update, new advancements were introduced to streamline National Comfort Institute's (NCI) **Airflow Testing and Diagnostics** class, particularly focusing on Air Upgrades™.

This 3.0 class update integrates the Quick Test from **measureQuick®** and NCI's AirMaxx™ workflows from TEC. By being based on NCI testing principles, these apps embed industry-standard practices into the training.

The **TEC Digital TrueFlow Grid** simplifies the testing process for both "test-in" and "test-out" air upgrades, allowing HVAC sales professionals to obtain necessary data efficiently. The streamlined process is now a part of a pre-packaged solution that offers flat rate duct repairs, addressing common issues related to equipment airflow and static pressure.

This update is based on extensive feedback from students over the years. Be sure to watch for the new Airflow Testing and Diagnostics 3.0 class in January 2025. Meanwhile, the 2.1 version runs in December.

For more information, call the NCI Customer Care line at **800/633-7058**.

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Go to ncilink.com/ContactMe with your comments and questions.

By Dominick Guarino

What Did You Gain in 2024?

Dominick Guarino is publisher of ***High-Performance HVAC Today*** magazine and CEO of National Comfort Institute, Inc. He can be reached at ncilink.com/ContactMe.

It's a good idea for any business owner to have goals for 2025 and make plans to achieve them. But it's equally important to look at the past year to get perspective on your accomplishments, and to see what worked and what didn't.

I believe it's actually more beneficial to focus on successes rather than failures. There's a great book titled, **"The Gap and the Gain,"** written by best selling authors Dan Sullivan and Dr. Benjamin Hardy that examines this approach.

In this introspective tome the authors describe how most successful, driven people tend to be unhappy because they measure successes based on goals that are always just out of reach.

While it's important to look forward, if we continually measure ourselves against a future "ideal," we are always in the **Gap**.

When we take the time to look at where we are and what we have accomplished, both in the short and long term, we're in the **Gain**."

The authors further explain that our mental well-being can greatly benefit from being in the Gain, and celebrating our successes on a regular basis.

TAKE SOME TIME TO REFLECT

As you look back at 2024, be sure to recognize and celebrate your successes. Don't just think about them in a passing moment or two. Set aside some time to think deeply about what really worked, how it benefited you and your company, and how it made you feel.

It might sound corny, but if you take ample time to reflect and savor your wins, it is good for you psychologically. It can also put you in a more productive state of mind later on when you switch gears and spend time looking forward at the tasks and projects ahead.

EXPAND YOUR THINKING

As a leader in your organization, consider extending these concepts beyond yourself. Imagine what it could do for your team's morale and state of mind when you share the company's "**Gains**" with everyone!

What if you listed specific successes your business experienced in 2024, and used this list to set up companywide recognition highlighting each of these measurable **Gains**?

This could be done in a number of different ways, ranging from a formal letter to your team, to an all-out party that recognizes both team and individual wins.

STAY IN THE GAIN

A word of caution: When you're celebrating your company's **Gain**, don't talk about future goals in the same venue. Save that for another meeting or communication.

Allow your team to savor the moment, just as you hopefully have done yourself as you reflected on your **Gain**. Think about memorializing the biggest gains. Maybe create some posters displayed around the office, or screensavers on company computers.

For example, if your **Gain** was a 20% increase in revenues, showcase that increase along with the reasons you experienced the growth.

If your Gain is related to a significant reduction in installation callbacks, create a chart showing year-over-year comparisons, and maybe the top three crews with the fewest number of installs that needed a return visit.

If you decide to try this, maybe at your holiday party, we would love to hear about it. I wish you and yours a very happy and safe holiday season, and a joyful and successful 2025!

CUTTING-EDGE TRAINING

From The Industry Leader In High-Performance HVAC™ Contracting

Think you know airflow? Think you know carbon monoxide safety? Think you know how to solve your customer's comfort issues? Be sure. Don't guess. Find the training and expertise you need from the National Comfort Institute (NCI). Only at NCI will you find certification courses like Duct System Optimization and Combustion and Carbon Monoxide Safety, taught by leaders and innovators in the HVAC industry. Find out why NCI says, ***"If You Don't Measure, You're Just Guessing!™"*** Visit the link below or call **800-633-7058** to find classes near you.

UPCOMING NCI TRAINING: DECEMBER 2024 - JANUARY 2025

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Duct System Optimization and Residential Air Balancing Certification Program
January 7-9: Salt Lake City, UT
January 14-16: Tampa, FL
January 14-16: Hartford, CT
January 14-16: Albuquerque, NM
January 28-30: Phoenix, AZ

Residential HVAC System Performance and Air Balancing Certification Bundle *(cont.)*
December 3-5: Centennial, CO
December 10-12: Austin, TX
December 10-12: Burlington, NJ
December 17-19: Kissimmee, FL
January 28-30: Troy, MI

Airflow Testing and Diagnostics
December 3: Houston, TX
December 3: Mentor, OH

Duct System Optimization Certification Program
December 4-5: Houston, TX
December 4-5: Mentor, OH

Commercial Air Balancing Certification Program
December 10-12: Roswell, GA
January 7-9: Monroeville, PA

Combustion Performance and Carbon Monoxide Safety Training Program
December 17-19: Somerville, MA
January 14-16: Eagan, MN
January 21-23: Morristown, TN

PUBLIC ONLINE LIVE TRAINING

Airflow Testing and Diagnostics - *ONLINE LIVE*
January 7-8

Commercial System Performance Training Program - *ONLINE LIVE*
January 14-15 - **Part One**
January 21-22 - **Part Two**

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Commercial System Performance Training Program
December 3-4: Anaheim, CA

Test & Certify Ventilation Systems and Economizers Certification Program
December 11-12: Tulare, CA

Duct System Optimization and Residential Air Balancing Certification Program
December 17-19: Anaheim, CA

Commercial Air Balancing Training Program
January 7-9: Anaheim, CA

Residential HVAC System Performance and Air Balancing Certification Bundle
January 21-23: Anaheim, CA

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