

Introduction

Saturday morning, wildfire smoke pushing AQI into the “unhealthy” range, and the elementary wing is already getting complaints: musty smell, kids rubbing eyes, classrooms stuffy by 10 a.m. The maintenance shop has one box of mixed filters left—none of them the right size, none above MERV 8. The difference between getting school open on time and having to send everyone home? A supply house that actually understands indoor air quality, codes, and the reality of school maintenance.

Enter a real-world story. Mateo Kaczmarek (47), a facilities engineer for Poudre Learning Collaborative in Fort Collins, Colorado, was juggling wildfire smoke events, teacher complaints, and a board-mandated IAQ improvement plan. Home Depot had a shelf of consumer filters, but not a single correctly sized MERV 13 in stock. Ferguson asked for a contractor account and couldn't confirm delivery before the next school day. An urgent online order from SupplyHouse.com turned into a week-long “ships from manufacturer” delay. Mateo found Plumbing Supply And More (PSAM), and the game changed: verified in-stock inventory, immediate substitutions approved by an engineer on the phone, and same-day shipping from the nearest warehouse. Classrooms cleared, nurses' office reports dropped, and his callback log shrank to almost nothing.

Here's exactly how to tackle IAQ for schools with an HVAC supply partner that can deliver—literally and technically. In this list, we'll cover ventilation upgrades, filtration that won't choke your fans, portable and integrated air cleaning, controls and monitoring that inform real decisions, maintenance kits that keep gear humming, sensible classroom comfort retrofits, and the procurement/logistics backbone that prevents Monday-morning disasters. If you run an HVAC service business, manage a district, or oversee a campus, these seven moves separate wishful thinking from outcomes you can defend to superintendents and school boards.

Awards/Achievements you can count on from PSAM: 20,000+ professional-grade products spanning plumbing, **HVAC equipment**, hydronics, and tools; a multi-warehouse distribution network for real **same-day shipping** on in-stock items before 1 p.m.; **wholesale pricing** without gatekeeping; and licensed **technical support** that speaks code, design intent, and field realities. My name is Rick Callahan—decades on rooftops, in boiler rooms, and in procurement trenches—and these are the steps I advise districts to take, supported by a supply partner that won't flinch when you say “MERV 13 across 40 air handlers by Friday.”

#1. Ventilation Done Right – ERVs, Demand Control, and ASHRAE 62.1 Compliance

When classroom air gets stale, teachers notice—and so do CO2 monitors. The quickest IAQ wins often come from smarter ventilation: bringing in clean outdoor air efficiently, and controlling it by occupancy to avoid energy waste.

PSAM stocks the components and accessories that make school ventilation upgrades stick: energy recovery ventilators sized for classroom wings, **CO2 sensors** with real calibration data, low-leakage outside air dampers, and actuators that actually hit their setpoint. Whether you're retrofitting rooftop units or unit ventilators, design around ASHRAE 62.1 minimums, balance with a commissioning plan, and protect your fan curves with verified external static pressure.

Mateo Kaczmarek used PSAM's **technical support** to translate his CO2 data—averaging 1,500 ppm by midday—into a right-sized ERV strategy. Instead of a blind equipment swap, he integrated two mid-capacity ERVs with demand-control ventilation, shaving energy peaks while dropping CO2 into the 800–1,000 ppm range.

Specify the Right ERV for Classroom Loads

Classrooms fluctuate—25 students now, 10 during testing, empty after dismissal. An **ERV** sized to a fixed peak either wastes energy or fails during actual occupancy. PSAM provides performance curves, sensible/latent effectiveness tables, and frost-control strategies for your climate. Use enthalpy wheels where humidity management matters and plate-type cores where maintenance access is tight. Include outdoor air intake hoods with bird screens and specify low-pressure-drop filters at the ERV to keep system static within fan capability.

Demand Control Ventilation (DCV) with Real-World Tuning

CO₂-driven DCV is only as good as its sensors and programming. PSAM carries wall-mount and duct-mount CO₂ sensors with drift specs, BACnet/Modbus outputs, and field-replaceable elements. Set minimum ventilation (never zero), ramp based on trends, and include an economizer lockout above your particulate threshold during smoke events. Mateo tied new sensors into his existing BAS and documented a 15–20% reduction in over-ventilation energy at partial loads.

Key takeaway: Ventilation is not “more air is better”—it’s right air at the right time. PSAM gets you there with parts, data, and support.

#2. Filtration that Works – MERV 13, HEPA Add-Ons, and Static-Pressure Management

Upgrading to **MERV 13** <https://www.plumbingsupplyandmore.com/> or higher is the accepted baseline for schools, but throw that into a weak fan section and you’ll crush airflow and comfort. Filtration strategy must be married to fan capability, filter geometry, and maintenance budgets.

PSAM helps you select correct filter dimensions, media types, and pressure-drop profiles. For units with limited fan capacity, we’ll suggest deeper filter banks (2" to 4" to 6"), V-bank inserts, or pre-filter plus final filter combos to distribute load. Where central systems can’t carry higher pressure drops, deploy in-duct HEPA bypass modules or classroom-use HEPA cabinets to surgically target problem spaces.

Mateo initially tried buying MERV 13s from a home retailer and lost almost 20% airflow on two aging RTUs. PSAM re-spec’d pleated MERV 13 with higher face area and paired them with ECM fan upgrades. Airflow recovered; complaints dropped.

Pressure Drop and Fan Curves: Protect Your CFM

Every filter upgrade must consider system **static pressure** and fan curves. PSAM provides filter specs with initial and final resistance data, plus selection help to keep total external static within your blower’s capability. If your fan motor is fixed-speed, we’ll advise on sheave adjustments or ECM retrofits; if you’re already on VFDs, we’ll confirm safety margins to avoid motor overload. Don’t forget gaskets, tracks, and proper sealing—bypass air makes your MERV 13 behave like MERV “who-knows.”

HEPA Where It Counts—Without Breaking the System

Central HEPA often isn’t feasible on legacy units. Instead, add classroom HEPA cabinets with CADR sized to room volume and occupancy, or deploy in-duct HEPA bypass modules. PSAM stocks quiet-running units with PM_{2.5}/PM₁ indicators and replacement filter programs so you’re not scrambling mid-semester. In smoke-prone regions, pairing MERV 13 central filtration with targeted HEPA gives robust protection without nuking your energy budget.

Comparison: Home Depot vs. SupplyHouse.com vs. PSAM (Detailed)

- **Inventory & Availability:** Home Depot offers consumer-grade filters and limited MERV 13 sizes, often seasonal and inconsistent. SupplyHouse.com lists dozens of options but frequently fulfills from manufacturers, leading to 7–10 day waits during peak demand. PSAM shows real-time inventory of commercial-grade MERV 13/14 filters, deeper V-bank options, gaskets, and ECM retrofit kits—and ships same day from our nearest node.
- **Quality & Expertise:** Retail staff can’t model pressure drop or interpret fan curves. Online listings provide spec sheets but no system-level guidance. PSAM’s licensed pros verify media type, initial/final resistance, and compatibility with your blower and controls—and we’ll recommend pre-filter strategies that cut lifecycle costs.
- **Cost & Service:** Filters that collapse, starve airflow, or arrive late cost far more than their sticker price. PSAM’s contractor-grade media, immediate availability, and sizing support prevent callbacks—worth every penny.

Key takeaway: Filtration isn’t a SKU—it’s a system decision. PSAM keeps airflow, IAQ, and budgets in balance.

#3. Portable and Supplemental Air Cleaning – HEPA, UV-C, and Needlepoint Ionization That Passes the Sniff Test

Supplemental air cleaning bridges the gap between legacy infrastructure and today’s IAQ expectations. But gimmicks abound. Focus on proven technologies with measured outcomes: **HEPA**, **UV-C** in airstream applications with proper dosage, and ionization only where third-party data shows reduced particulate and no ozone.

PSAM curates durable HEPA cabinets with verified CADR, quiet dB ratings suitable for classrooms, and filter-change reminders that maintenance teams actually use. For AHUs, we supply UV-C racks with published $\mu\text{W}/\text{cm}^2$ at air velocity and lamp-life monitoring. If you choose ionization, our team will walk you through independent test data and best-practice placement.

Mateo outfitted nurse’s offices and high-density resource rooms with HEPA cabinets from PSAM, cutting PM2.5 spikes by over 50% during smoke days without generating a “wind tunnel” noise profile.

Classroom HEPA: Size to Room, Not Guesswork

Pick HEPA units based on room volume and target air changes—typically four to five room ACH supplemental in older buildings. PSAM maps CADR to cubic footage and occupancy, ensuring one or two cabinets deliver the outcome without creating noise complaints. Add pre-filter sleeves to stretch HEPA life, and stock replacements on a 6–12 month schedule depending on local air quality.

UV-C in AHUs: Dose, Dwell, and Safety

UV-C works when dose and dwell time align with coil face velocity. Our UV-C kits include lamp arrays designed for your coil size and airflow, plus ballast and door interlocks for safety. Benefits include coil biofilm reduction, improved heat transfer, and incremental pathogen inactivation. PSAM includes lamp life charts and a replacement calendar to avoid “dark rack” syndrome halfway through the school year.

Key takeaway: Choose supplemental tech you can defend with data and maintain without heroics. PSAM screens the noise for you.

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#4. Controls and Monitoring – CO2, PM Sensors, and BAS Integration That Drives Decisions

You can’t manage what you don’t measure. IAQ in schools hinges on reliable **CO2**, temperature, humidity, and particulate monitoring—tied into controls that act on the data without whipsawing energy use.

PSAM stocks BACnet/Modbus CO2 and PM sensors, trending-friendly thermostats, and room controllers that integrate with existing BAS. We’ll help you deploy a measurement plan: representative classrooms per wing, critical spaces like nurse’s and kindergarten rooms, and a few outdoor reference points for smoke days. The BAS logic should include demand-control ventilation with limits, smoke-event lockout strategies, and alarm thresholds the team can live with.

Mateo replaced mismatched sensor brands with PSAM-recommended units featuring documented drift and 2-point calibration. He immediately saw more stable DCV and fewer nuisance alarms.

Sensor Specs That Matter in Schools

Look for sensors with known drift rates, field calibration options, and network-friendly outputs. Avoid consumer CO2 gadgets that require phone apps and guess at ppm. PSAM helps you pick wall or duct mounts by application and balances cost with reliability across dozens of rooms. During wildfire season, use outdoor PM2.5 as a lockout variable for economizers and to trigger HEPA units in key spaces.

BAS Sequences: From Data to Action

PSAM's **technical support** will review your current sequence of operations and suggest IAQ enhancements: minimum ventilation floors, ramping strategies, economizer lockouts based on outdoor PM, and filter differential-pressure alarms. Don't forget that increased filtration changes fan speed and runtime; add maintenance alerts based on differential pressure to catch clogged filters before Monday morning.

Comparison: Ferguson vs. PSAM (Detailed)

- **Inventory & Availability:** Ferguson's regional variation and account requirements trip up school teams that don't hold contractor licenses or need faster-than-counter service windows. Sensors and integration components may require transfers, adding days. PSAM provides 24/7 online ordering with real-time stock across our **multi-warehouse distribution**—you'll see exactly what's available and from where before you click "buy."
- **Quality & Expertise:** Traditional counters aren't set up to advise on IAQ sequence tuning or cross-compatibility between legacy BAS and new sensors. PSAM's licensed pros can translate your control narrative into parts, addressing power requirements, network addresses, and calibration kits.
- **Cost & Service:** Account minimums and delays cost far more than the parts. With PSAM's wholesale pricing and configuration guidance, your first commissioning pass succeeds—worth every penny.

Key takeaway: Measurement plus responsive controls equals resilient IAQ. PSAM supplies the sensors and the smarts.

#5. Maintenance Kits and Training – Belts, Bearings, Gaskets, and Tools That Prevent Monday Chaos

Great IAQ on day one means nothing if belts glaze, filters bypass, and coil access gaskets shred. Schools need predictable maintenance kits and training that stick.

PSAM builds school-specific kits: matched belts, bearings, sheaves, coil cleaning agents, filter gaskets, DP gauges, and replacement access hardware. Pair those with maintenance documentation and simple checklists your team can execute during shortened in-service windows. We also stock the tools that make it painless—inspection cameras, leak detectors, and a curated "Rick's Picks" toolbox: **Milwaukee Tools** M12 inflators for quick checks, cordless lights for dim mech rooms, and torque-limited drivers to protect panels.

Mateo standardized his three most common RTU models with PSAM's kits, slashing filter bypass incidents by 80% and eliminating "can't find the right belt size" scrambles.

Seal the Bypass: Gaskets and Tracks

A MERV 13 filter is worthless if air bypasses the rack. PSAM supplies adhesive-backed high-density gaskets and metal track retrofits sized to your frames, with self-tapping hardware and installation guides. Add DP taps across the filter bank with clearly labeled ports. Teach techs to verify differential pressure after every changeout—it's a five-minute habit that saves air quality all semester.

Belts, Bearings, and Fan Health

Glazed belts and tired bearings add heat and noise, slow fans, and drag IAQ down. PSAM's belt-and-bearing kits come matched by RTU make/model with sheave size guidance and tension specs. We include laminated torque and deflection cards, plus links to quick videos. Pair with non-rinse coil cleaners to keep fin surfaces breathing and biofilm at bay.

Key takeaway: Maintenance makes or breaks IAQ. PSAM turns "we should" into "we did" with kitted parts and job aids.

#6. Classroom Comfort Retrofits – Mini-Splits, Unit Heaters, and Hydronic Upgrades That Play Nice with IAQ

Some rooms never balance. Short-throw diffusers, hot/cold spots, or ancient unit ventilators that howl like leaf blowers. Targeted retrofits tame these without gutting buildings.

PSAM supports classroom comfort with **mini-splits** for supplemental cooling and filtration, hydronic upgrades using smart circulators and valves, and low-sound unit heaters. If your school still runs on **boilers**, we'll help you modernize terminal units and pump strategies. We carry **Taco** ECM circulators and zoning solutions that cut energy while stabilizing comfort—critical for IAQ since consistent temperatures curb humidity swings and mold risk.

Mateo fixed a chronically hot science lab by adding a low-ambient mini-split head with washable pre-filters and a quiet indoor unit. PSAM sized linesets, verified mounting clearances, and shipped vibration isolators—all in one order.

Mini-Splits in Schools: Sizing, Sound, and Serviceability

Classroom mini-splits must balance capacity with noise criteria (NC 25–35). PSAM recommends indoor units with low dB ratings, washable pre-filters, and service access that doesn't require ceiling demolition. We size line sets to minimize oil traps and provide wall sleeves, drain routing, and surge protection. For security, we include lockable line-set covers and cages where needed.

Hydronic Tuning: Pumps, Valves, and Coil Performance

Stable hydronics equal stable IAQ. Oversized constant-speed pumps waste energy and fight control valves. PSAM's **Taco** ECM circulators with delta-P control keep coil flows steady, reducing temperature drift and preventing condensation surprises. Add smart control valves with proper authority and insulate piping. For older wings, we'll help you choose low-lead fittings, and—if the project expands—our **PEX plumbing** options keep pipe runs fast and clean with fewer joints.

Key takeaway: Comfort equals IAQ. PSAM delivers the components and details that make retrofit wins reliable.

#7. Procurement & Logistics – Real-Time Inventory, Same-Day Shipping, and Pro Accounts That Keep Schools Open

IAQ plans collapse when parts don't show. Period. The difference between the right supply partner and the rest is logistics muscle plus technical depth.

With PSAM, you see what's in stock—before you order. Our **multi-warehouse distribution** moves product from the closest node with **same-day shipping** on in-stock orders placed before 1 p.m. You can place orders with **24/7 online ordering**, coordinate campus deliveries, and access **free shipping** on \$150+ orders. Your pro account tracks BOMs by school and wing, bundles filters per quarter, and sets reminders for UV-C lamp changes or DP gauge calibrations.

Mateo now runs a quarterly IAQ kit delivered automatically: filters, gaskets, DP media, and spare belts, all labeled by building. No more Monday panics, no more wild goose chases.

Comparison: SupplyHouse.com and Home Depot vs. PSAM (Detailed)

- **Inventory & Availability:** SupplyHouse.com lists millions of items but often fulfills from third parties, adding days or weeks to critical IAQ improvements. Home Depot is built for retail peaks, not district-wide MERV 13 standardization or specific UV-C racks, leading to seasonal stockouts. PSAM ships from owned warehouses, shows real-time inventory, and consolidates IAQ kits per building so you're never short a gasket.
- **Quality & Expertise:** Online-only retailers deliver spec sheets, not system design. Big box staff can't advise on static pressure or BAS sequences. PSAM's licensed support engineers vet compatibility, code requirements, and commissioning steps for schools—and we stick to your approved brands and models.
- **Cost & Service:** Expedite fees, returns, and downtime destroy budgets. PSAM's wholesale pricing, consolidated shipments, and emergency response prevent closures—worth every penny.

Pro Accounts, Jobsite Delivery, and Documentation

Set up a PSAM pro account to unlock volume pricing, purchase histories by building, and delivery windows that fit school schedules. We attach installation guides, compatibility charts, and link your orders to maintenance calendars. If you need a spec letter for the board packet, we'll help assemble it.

Key takeaway: Logistics is the quiet hero of IAQ. PSAM's procurement backbone keeps classrooms learning.



FAQ: Your HVAC Supply House Questions Answered by Rick

1) What's the difference between a professional supply house and big box stores like Home Depot? Professional supply houses like PSAM stock contractor-grade parts across complete systems—filters with documented pressure drops, UV-C kits with lamp-dose data, BACnet-capable sensors, and coils engineered for your air velocity. Big box stores focus on consumer items and common sizes, often lacking the specialty components and documentation schools require. When Mateo needed MERV 13 filters in multiple nonstandard sizes plus DP gauges, Home Depot had neither the inventory depth nor the technical guidance. With PSAM, he saw real-time stock, verified pressure-drop data, and got same-day shipping. Bottom line: if you're managing IAQ for classrooms, you need parts that integrate, last, and support commissioning—plus support staff who can speak ASHRAE and BAS. That's the difference.

2) Can homeowners buy from professional supply houses or are they contractor-only? PSAM sells to both contractors and capable DIY customers. Many districts use in-house technicians and maintenance leads who don't carry trade licenses; they still get wholesale pricing and access to professional-grade components. If a homeowner wants a high-quality filter setup, or a small private school needs help with classroom HEPA units, we provide the same authentic brands and verified specs. A traditional counter might gatekeep orders or require accounts; PSAM welcomes qualified buyers and backs them with installation guides and compatibility charts. The goal is correct parts, shipped fast, with support that prevents callbacks—whether you're a licensed contractor or a school maintenance supervisor.

3) How does PSAM's pricing compare to Home Depot, Ferguson, and online retailers? PSAM's wholesale pricing typically lands 20–40% below retail while delivering contractor-grade quality. Against Ferguson, our lack of account minimums and real-time inventory often shortens timelines and reduces costly change orders. Compared to online retailers, PSAM's owned inventory and multi-warehouse network avoid long manufacturer lead times and surprise backorders. Mateo saw the value immediately: fewer expedited shipments, no partial deliveries, and no paying twice due to wrong-spec parts. When you factor in zero callbacks and on-time openings, PSAM's total cost of ownership wins.

4) What makes contractor-grade materials superior to consumer-grade products? Contractor-grade components carry verified materials, performance ratings, and durability built for daily use and commissioning. For filtration, that means consistent media, rigid frames, and documented initial/final resistance. For sensors, drift specs and BACnet/Modbus outputs. For tools, battery platforms and torque controls that survive real job sites. Consumer-grade parts might "fit," but they rarely maintain performance

under school operating hours and maintenance intervals. In Mateo's case, consumer MERV 13s collapsed and spiked static; PSAM's filters held up, protected airflow, and kept IAQ stable. That's the difference.

5) How can I verify I'm getting authentic products and not counterfeits? PSAM buys directly from manufacturers and authorized distributors; models and serials trace back to the source. We provide installation docs, spec sheets, and warranty terms matched to the product you receive. Counterfeits often lack consistent labeling, have missing documentation, and fail early. If you're sourcing UV-C, HEPA, or sensors, authenticity matters for both safety and IAQ outcomes. Ask for proof of origin—PSAM provides it. For Mateo's UV-C racks, we included lamp-life curves and ballast IDs tied to the manufacturer database.

6) Do professional supply houses carry better brands than big box stores? Yes—supply houses like PSAM stock professional brands and system-level accessories that retail doesn't carry. You'll find commercial-grade filters in nonstandard sizes, BACnet sensors, UV-C racks for AHUs, **Taco** ECM circulators, and **Milwaukee Tools** that hold up to district maintenance schedules. Big box shelves are designed for homeowner turnover; PSAM's catalog is built for contractors, school districts, and facility teams who can't afford failures.

7) What kind of technical support can I expect from a professional supply house? At PSAM, licensed professionals answer the phone. We size ERVs, validate filter pressure drops, review fan curves, assist with BAS sequences for demand-control ventilation, and provide commissioning checklists. If your CO2 readings look suspicious, we'll walk you through calibration steps. Need an alternate filter media due to static constraints? We'll propose options with data. Mateo leaned on PSAM to write a simple filter DP monitoring plan—no PhD required, just reliable steps that work.

8) How quickly can I get parts compared to ordering online or visiting retail stores? With PSAM's real-time inventory and **same-day shipping** on in-stock orders placed before 1 p.m., your boxes move immediately from the nearest warehouse. Retail stores often show stockouts or limited sizes. Online-only retailers may list items but ship from third parties, causing 7–14 day delays—brutal when you're trying to open a wing Monday. PSAM's **multi-warehouse distribution** keeps school projects on schedule and classrooms in session.

9) Do I need a contractor license or special account to buy from PSAM? No license required. PSAM welcomes school districts, property managers, contractors, and capable homeowners. A pro account is optional but highly recommended: it unlocks volume pricing, campus-specific BOMs, job site delivery coordination, and detailed purchase histories that make audits and board reporting straightforward.

10) What are the benefits of setting up a pro account vs. Ordering as needed? Pro accounts with PSAM mean volume discounts, saved carts by building, scheduled shipments for quarterly filter changes, and direct line access to our **technical support** team. You'll also get consolidated billing and warranty support—no mystery serials, no chasing paperwork. Mateo's pro account triggers reminders for UV-C lamp replacements and ships a pre-kitted box per school, right on time.

11) How can a supply house help me avoid buying wrong parts or incompatible components? A true partner validates compatibility before you buy. PSAM reviews your RTU make/model, filter racks, fan curves, and BAS capabilities. We catch gotchas like filter bypass, undervalued power supplies for sensors, or UV-C racks that won't clear coil supports. That's how you avoid Monday-morning failures, finger-pointing, and return lines. Our documentation library—install guides, compatibility charts, technical bulletins—helps your team do it once, do it right.

12) What should I look for when choosing between multiple supply house options? Look for owned inventory with real-time visibility, multi-warehouse logistics with same-day capability, licensed technical staff, and contractor-grade brands. Evaluate whether they support schools directly (no license gatekeeping), provide complete system solutions (from filters to sensors to UV-C), and honor a no-substitutions policy. PSAM checks each box and adds **free shipping** on \$150+ orders—keeping procurement simple and IAQ reliable.

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Conclusion

Indoor air quality for schools isn't solved by a single box on a pallet; it's the sum of ventilation, filtration, supplemental cleaning, controls, and—most critically—reliable sourcing and support. Mateo Kaczmarek turned chaotic smoke-season responses into a repeatable program because he had parts he could trust, data he could act on, and a partner who shipped what he needed when he needed it. That's what Plumbing Supply And More delivers: contractor-grade products, licensed guidance, **same-day shipping**, and a no-nonsense stance on getting schools open and keeping them healthy.



Ready to standardize IAQ across your district? Build your PSAM plan—filters sized to racks, ERVs matched to classrooms, sensors wired to smart sequences, and a quarterly maintenance kit that just shows up. For contractors, property managers, and facility teams who can't afford callbacks, PSAM is the HVAC supply house that keeps learning on schedule—worth every penny.

Rick's short list to get started today:

- Send us your top three RTU model numbers and filter sizes; we'll spec MERV 13 with acceptable static.
- Identify five representative classrooms for CO2/PM monitoring; we'll map sensors and BAS inputs.
- Pick two spaces for supplemental HEPA; we'll size CADR and set a filter-change plan.
- Ask about our pro account—lock in pricing, campus labeling, and quarterly auto-shipments.

PSAM: Your complete professional supply house for plumbing, **HVAC equipment**, hydronic heating, tools, and contractor solutions—whether you search “HVAC supply house,” “plumber supply house,” “pex supply house,” “supply house electrical,” “supplyhouse,” or simply “the supply house that gets IAQ right.”