



July 2026

The Sage Report

A Monthly Newsletter of Insights, Projects, and Productivity

It's Not Just the Heat: How Humidity Affects Comfort

The recent hot and humid weather in Albany is a timely reminder that comfort is not based on temperature alone. When people say the air feels heavy, sticky, or clammy, they are usually reacting to the moisture in the air as much as the heat.

The body cools itself partly through evaporation. When sweat evaporates from the skin, it carries heat away from the body. When the air is humid, sweat evaporates more slowly because the air already contains a high amount of moisture. That is why a humid 85 degree day can feel much worse than a dry 85 degree day. The same concept applies inside buildings. A room can be 72 degrees and still feel uncomfortable if the humidity is high. The thermostat may be satisfied, but the space can still feel muggy because the air contains too much moisture.

To reduce humidity, an HVAC system must remove moisture from the air. This requires cooling the air below its dew point. The dew point is the temperature at which water vapor in the air begins to condense into liquid water. This is why water forms on the outside of a cold glass in the summer. Warm, humid air contacts the cold surface, drops below its dew point, and releases moisture as liquid water. A cooling coil works the same way. As warm, humid air passes across the coil, the air temperature drops. Once the air is cooled below its dew point, moisture condenses on the coil and drains away through the condensate system. That is how the system actually removes moisture from the building.

This is especially important for systems that bring in large amounts of outdoor air. Outdoor air is needed for ventilation, but during hot and humid weather it also brings a significant moisture load into the building. If that air is not cooled enough to remove moisture, the system may satisfy the thermostat without making the space comfortable. For many systems, effective dehumidification requires cooling the air to approximately 55 degrees or lower at the coil. The exact temperature depends on the outdoor air condition, airflow rate, equipment design, and indoor humidity target. The key point is that the air must be cooled below its dew point so moisture can condense out.

However, air that cold may overcool the space if supplied directly to the room. That is why many systems cool the air to remove moisture, then reheat it before delivery. On DX equipment, hot gas reheat is often an effective approach because it uses heat from the refrigeration cycle to reheat the dehumidified air. The system cannot simply deliver 65 degree air and assume the space will be comfortable. That air may be cool enough to satisfy the thermostat, but not dry enough to control humidity. The result can be a space that is technically cool, but still feels clammy.

During weather like Albany has experienced recently, humidity is often the missing piece of the comfort puzzle. The better question is not only, "What is the room temperature?" It is also, "What is the relative humidity?"





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Microsoft To Do Is a Powerful Tool



Microsoft To Do

Microsoft To Do is a personal task management app designed to capture, organize, and track everything you need to get done in one place. It is a running, living to-do list that stays with you across your computer, phone, and the web, always in sync.

Keeping a running to-do list is one of the most effective habits for personal organization and project management. When tasks live only in your head or are buried in emails, they create mental clutter and increase the risk that something important gets missed. Writing tasks down in a trusted system clears your mind, improves focus, and turns vague intentions into clear, actionable commitments.

For project work, running task lists are especially critical. Projects do not fail because of one big oversight. They fail because small follow-ups, decisions, and action items slip through the cracks. A structured task list breaks projects into manageable steps, improves accountability, and makes progress visible to both you and your team.

Getting Started at Sage

Every Sage employee already has access to Microsoft To Do. You can sign in using your Sage Microsoft Office credentials. No separate account is required. For best results, install Microsoft To Do on both your PC and your phone. There is also a web version that works well when you are remote or switching devices. All versions stay synchronized automatically.

To Do and Outlook Tasks

Microsoft To Do is not the same as the legacy Outlook Tasks interface, but they are connected. Tasks created in Outlook 2021 automatically sync to Microsoft To Do. This allows you to work in a modern, cleaner interface without losing compatibility if you like using Tasks in Outlook.

Prioritizing With Hashtags

A simple but powerful technique is using hashtags directly in task titles to define priority:

- #1 → Priority 1 (Do now)
- #2 → Priority 2 (Schedule)
- #3 → Priority 3 (Minimize / batch / delegate)

Because hashtags are clickable, this creates an instant filtering system that lets you view only what matters most at any given moment.

Start Every Day With “My Day”

Each morning, use the “My Day” view as a focus filter. Pull in only the tasks you realistically plan to work on that day. This keeps your full task list from becoming overwhelming and forces intentional prioritization instead of reacting to whatever email arrives next.

Turning Emails Into Tasks

Microsoft To Do works especially well with email.

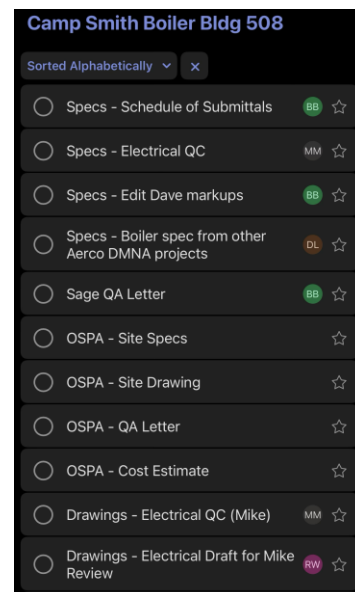
In the To Do mobile app or web version, emails can be sent directly into To Do to create tasks by hitting the To Do check mark icon. In Outlook 2021 desktop, an email can be dragged onto the Tasks icon. That email will immediately appear as a task in Microsoft To Do on your desktop and phone. This is an effective way to turn emails into action items instead of letting them sit indefinitely in your inbox.

Simple Project Management With Shared Lists

For project tracking, create a folder and a task list for each project. Tasks can be assigned to specific team members, and the list can be shared so everyone sees updates in real time. This approach works extremely well for simple project coordination, internal workflows, and keeping teams aligned on next steps.

Why This Matters

Microsoft To Do provides a simple, consistent system for managing commitments, follow-ups, and projects. By maintaining a running to-do list, you reduce mental clutter, improve reliability, and increase follow-through. Used consistently, it becomes one of the most effective tools for staying organized and keeping work moving forward.





Ventilation Occupancy: Occupancy Sensors Are Now a VAV Control Issue

Variable air volume systems are common because they improve comfort and reduce energy use by matching airflow to space load. That includes traditional VAV air handling systems with zone terminal boxes, fan-powered VAV boxes, and variable-zone DOAS systems with ventilation terminal units. The 2025 ECCCNYC adds an important control requirement for many of these systems. If a ventilation zone serves certain common space types and has automatic zone airflow control, the system must include occupied-standby controls. That makes occupancy sensors an HVAC control item, not just a lighting control item.

1. Start with the zone

The code defines a zone as a space or group of spaces with similar heating or cooling requirements that can be maintained by one controlling device. See 2025 ECCCNYC C202, Zone. For this requirement, think of the ventilation zone as the room or group of rooms controlled together for airflow and ventilation. The requirement applies by ventilation zone, not necessarily by air handling unit, floor, or building.

2. Understand occupied-standby mode

The code defines occupied-standby mode as the mode where an HVAC zone is scheduled to be occupied, but an occupant sensor indicates no occupants are in the zone. See 2025 ECCCNYC C202, Occupied-Standby Mode. In plain language, the building schedule says the space is occupied, but the sensor says the zone is empty.

3. Check which spaces are covered

Per 2025 ECCCNYC C403.7.8, occupied-standby controls are required for each ventilation zone serving:

- Postsecondary classrooms, lecture rooms, and training rooms
- Conference, meeting, and multipurpose rooms
- Lounges and breakrooms
- Enclosed offices
- Open-plan office areas
- Corridors

This is not just a ventilation-only DOAS issue. It also applies to traditional VAV systems that provide heating, cooling and ventilation.

4. Apply the required occupied-standby sequence

Per 2025 ECCCNYC C403.7.8.1, within 5 minutes after all spaces in the zone enter occupied-standby mode, the zone controls must:

- Set the active heating setpoint back at least 1°F
- Set the active cooling setpoint up at least 1°F
- Shut off airflow to the zone whenever the space temperature is between the active heating and cooling setpoints
- Apply the multiple-zone system controls in C403.7.8.1.1

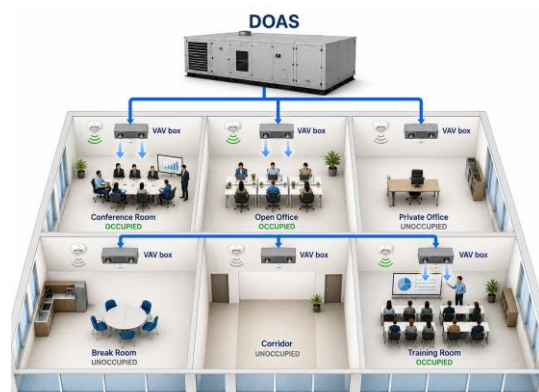
This is a major VAV change. Traditionally, a VAV box often stayed at its occupied minimum airflow during occupied hours to maintain ventilation. Under the 2025 code, if the occupant sensor shows the zone is empty, the zone no longer has to maintain its normal occupied ventilation minimum. If the space temperature is satisfied between the active standby setpoints, the box can fully close. If the space temperature is not satisfied, the box can still operate as needed for heating or cooling.

5. Do not forget DCV

Demand control ventilation or DCV still applies in large, densely populated spaces required by C403.7.1. When the zone is occupied, the normal DCV sequence still operates to reduce ventilation in a space based on CO2 measurement. In occupied-standby mode, the empty zone is no longer treated as needing occupied ventilation, so the standby sequence effectively overrides the occupied DCV ventilation requirement until the zone becomes occupied again.

6. Reset outdoor air for empty zones

Per 2025 ECCCNYC C403.7.8.1.1, multiple-zone systems required to automatically reset the effective minimum outdoor air setpoint under C403.6.6 must reset based on a zone outdoor air requirement of zero for zones in occupied-standby mode. This does not mean the whole air handler or DOAS shuts off. It means the empty zone is removed from the outdoor air reset calculation. For a traditional VAV system, that reset must occur at the air handler, while the zone terminal responds to its own standby temperature logic. Practical takeaway This is a major change for VAV control design. Designers need to coordinate occupancy sensing, VAV box control, DCV, zone temperature control, and air-handler outdoor air reset. The big change is that occupied minimum airflow is no longer automatically required just because the building is in occupied mode. The controls sequences of operation become quite complicated. Examples of control sequences that meet these new code requirements can be found [here](#) for both DOAS and traditional VAV systems.





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UPCOMING LIVE WEBINARS AND SEMINARS

This month's lists of free live webinars and seminars is below. Each offers at least one PDH and qualifies as a *Course of Learning* – a format that includes traditional classroom-style courses or live webinars with real-time interaction with an instructor. As a reminder, New York State requires that 18 of the 36 total continuing education hours for professional engineers be completed through *Courses of Learning*.

All webinars listed below are free. The ASHRAE and ASPE meetings are in-person and have a cost of \$50 reimbursed by Sage for Sage employees.

Date	Topic	Host	Time (ET)	Link
July 10	Specifying Devices in Classified Areas (1 PDH/CPC/CEU)	Electrical PE Review / OhmGurus	1 - 2 PM	Register
July 14	Beyond Bond Strength: How Installation Impacts Performance (BB001)	Hilti USA	12-12:30 PM	Register
July 14	Performance & Cost Comparison of DHW Air-to-Water Heat Pumps Using R454B vs. CO2 Refrigerant (1 PDH)	Galletti	12 - 1 PM	Register
July 15	Engineering Ethics: The Great Boston Molasses Flood (1 PDH)	NoonPi	12 - 1 PM	Register
July 16	An Overview of Facade Design for Architects (FAC101) (1 AIA LU-HSW)	Hilti USA	12 - 1 PM	Register
July 16	Designing High-Performance Hospitality Spaces with Infrared Heating and Air Movement (1 PDH)	Schwank N. America	12:30-1 PM	Register
July 21	PROFIS Engineering Anchoring-to-Masonry Module for LRFD Design Method (0.5 PDH)	Hilti USA	12-12:30 PM	Register
July 22	Retaining Wall Failures and How to Prevent Them (1 PDH)	NoonPi	12 - 1 PM	Register
July 22	Post-Frame Construction in Low-Rise Commercial Buildings (AIA HSW/FBPE PDH)	Ron Blank & Associates	12 - 1 PM	Register
July 28	Airside Optimization: Improving System Performance, Efficiency and Reliability (1 PDH)	NoonPi	1 - 2 PM	Register
July 28	PROFIS Engineering Concrete-to-Concrete Module for Post-Installed Rebar Design (PROFIS-C2C) (1 PDH)	Hilti USA	12 - 1 PM	Register
July 30	Firestop: A Life Safety Issue (FS101) (1 AIA LU-HSW)	Hilti USA	12 - 1 PM	Register
July 30	Code Requirements for Fire Rated Doors and Hardware (AIA HSW/FBPE PDH)	Ron Blank & Associates	12 - 1 PM	Register





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Building 5 Cell Back Rehabilitation

Auburn Correctional Facility, Auburn, NY

Sage Engineering Associates, LLP designed the Auburn Correctional Facility Building 5 Cell Back Rehabilitation project, a major capital improvement project now in construction at one of New York State's historic maximum-security correctional facilities. The project includes comprehensive architectural, structural, mechanical, electrical, plumbing, and hazardous materials work in A and B Blocks, which together contain 610 inmate cells. Sage served as the prime consultant and provided overall project management, mechanical design, electrical design, and plumbing design. Azar Design Co. supported the project with architectural and structural design services, and Adelaide Environmental Health Associates provided hazardous material inspection and abatement design services.

The project was developed to address severe deterioration of the original steel cell backs, side walls, and ceilings. During design, destructive testing confirmed widespread below-floor corrosion, particularly behind plumbing fixtures and along shared cell walls. The final scope includes selective demolition and reconstruction of deteriorated cell wall sections using 3/16-inch steel plate, with structural steel replacement where required. The work also includes rust-inhibiting coatings, high-build epoxy floor finishes, and carefully phased construction to maintain facility security and operations.

Plumbing upgrades include stainless steel combination toilet and lavatory fixtures in each cell, replacement of domestic water and sanitary piping, removal of abandoned floor drain piping, stainless steel shower replacements, and an electronic plumbing control system that allows correctional staff to remotely control fixture operation. Electrical improvements include security-rated LED cell and catwalk lighting, cell receptacles, dedicated circuit breakers, and reinstallation of inmate audio connections. HVAC work includes a dedicated exhaust system for the shower areas to improve humidity control and air quality within the cell blocks.

The sheer size of the Auburn project is significant. With a construction value of approximately \$33 million and a multi-year phased construction schedule extending through 2029, the project represents one of the larger correctional facility rehabilitation efforts currently in construction.

This work builds on Sage's prior design experience with two similar OGS cell rehabilitation projects at Great Meadow Correctional Facility. Those projects addressed approximately 1,100 cells and included similar upgrades to security plumbing fixtures, utility chases, heating systems, ventilation, electrical distribution, lighting, and hazardous materials abatement. Together, the Auburn and Great Meadow projects demonstrate Sage's experience designing large, complex, phased correctional facility infrastructure projects where security, durability, constructability, and continuity of operations are all critical to success.

