



The Sage Report

A Monthly Newsletter of Insights, Projects, and Productivity

Designing for 2026? New Building Codes are Coming Soon

If you're working on a building that may be permitted in 2026, it's time to pay close attention to New York's draft 2024 Building Codes. The All-Electric Buildings Act begins phasing in on January 1, 2026, and this updated code lays the legal groundwork for compliance.

Key Trigger: Permit Filing Date

- New buildings 7 stories or less **must be all-electric** if the building permit is filed on or after Dec 31, 2025.
- That means no fossil-fuel furnaces, boilers, water heaters, or cooking equipment.
- Larger buildings (>100,000 SF commercial/industrial) follow in 2029.

Design Impacts to Consider Now

- Projects targeting permit in 2026 will be reviewed under the new code.
- Mechanical designs should account for electric heating and hot water systems in new buildings.
- Coordinate early on electric service sizing, as loads will increase significantly.

Also Notable: Refrigerants and ASHRAE 15

The new mechanical code will reference ASHRAE 15-2022, which is a welcome improvement for working with low-GWP A2L refrigerants like R-32 and R-454B. ASHRAE 15-2022 provides clearer guidance for A2L refrigerants, including:

- Proper ventilation requirements.
- Safety group classifications.
- System charge limits and detection thresholds.

Where to Find the Draft Codes

The code is posted on the NYS Department of State's official rulemaking site: dos.ny.gov/notice-rule-development

Final Code Name? TBD

Although it's referred to as the 2024 code throughout the Department of State web site, the final version will be issued in 2025, and the official name may change. Either way, expect enforcement by the end of this year to support the Jan 1, 2026 electrification mandate with a likely issue date of fall/winter 2025.

Action Items for Sage

- Flag any projects that may submit for permit in 2026.
- Plan for all-electric mechanical systems where required.
- Watch refrigerant selections and ventilation code alignment.
- Stay tuned. We'll share a final summary when the code is out.

THE SAGE BRIEFING

Spotlight on Roles: The Job Captain

At Sage Engineering, our best-run projects share a common trait; someone takes clear ownership of the drawing set, coordinates closely with the team, and keeps the design process organized from start to finish. While we haven't always referred to this person as a Job Captain, that's the role they've been filling.

Starting now, we are formally adopting the practice of assigning a Job Captain to every project. This small shift will improve our quality, consistency, and efficiency across the board.

Why It Matters

The Job Captain (JC) is the central technical organizer for the project. They work closely with the Project Manager and Project Engineers to set up the drawing set, manage documentation, and maintain coordination throughout design. They don't just "do markups"—they manage the structure of the project documents.

This isn't a new idea. It's something we already do, successfully, on many projects. By naming it and making it official, we ensure that every team benefits from that same clarity of responsibility.

What the Job Captain Does

Based on the updated roles from our project management standards, the Job Captain is responsible for:

Setting up project documentation

Establish project server folders, email structure, CADD files, and spec files

Managing document coordination

Maintain drawing backgrounds, cover sheets, submittal schedules, and the spec table of contents

Supporting technical coordination

Coordinate with Project Engineers on spec requirements, sheet list development, and CADD file consistency

Working directly with the PM

Ensure updates and progress are aligned with project direction

The Job Captain is essentially the administrator of the design documents, ensuring the whole team is working from a clean, updated, and coordinated base.

Flexibility on Smaller Projects

On smaller jobs, it's entirely feasible for one person to hold more than one role; Project Manager, Job Captain, and Project Engineer. What matters most is not the title, but the responsibility. Someone must always be assigned to "own the set" and lead coordination. The role may also be shared among team members in some cases.

What to Expect

Project kickoff meetings will now include formally assigning the Job Captain, alongside the PM and other key roles. This will be noted in kickoff documentation, internal tracking systems, and communicated across disciplines to support better project flow.

Final Thought

When someone clearly owns the drawing set, quality improves, meetings run smoother, and teams stay better aligned. By making the Job Captain role standard on every project, we're reinforcing what already works—and giving every project a better foundation for success.





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The Importance of Writing a Project Summary

Why we absolutely need to make this part of every job we start

Let's be honest: too many projects kick off with a few conversations, some good intentions, and not nearly enough written down. Then a few weeks in, we're asking:

- Did we send the drawings to the estimator?
- Who's coordinating with the asbestos consultant site inspection?
- Wait, do we need structural support for that RTU?
- Who's drafting the demo plan?
- Do we know what the electrical load is?

We scramble. We send last-minute emails. We forget someone's waiting for a task. It's avoidable, and the fix is simple.

A Project Summary doesn't need to be complicated. It's just a simple write-up that includes:

- A quick description of what the project is
- Client contact info, project location and schedule milestones
- Fee and time allotted for major tasks (like drafting)
- Who's doing what (PIC, PM, Job Captain, Designer, Electrical Lead, etc.)
- Drawing list and spec requirements
- What trades are involved (mechanical, electrical, plumbing, structural, asbestos)
- A bulleted list of scoped tasks, by discipline, that helps us stay proactive about coordination

We plan who's doing what, and we map out what needs to happen and when, especially with other consultants or trades. This helps us avoid forgetting things like structural supports, giving the estimator what they need on time, or following up with the abatement designer.

This isn't extra paperwork. It's the opposite.

It's the **bare minimum structure** we need to run a job well.

And it's also a tool for training.

When interns or young engineers sit in on this process, or help write the summary, they learn how to think like a project manager.

They start to see the full arc of a job, not just the task in front of them. That's how they grow.

We always have junior staff ready to jump in. If we've done our homework, the Project Summary gives us a live list of things they can help with: markups, background tracing, detail sheets, spec formatting. It keeps them moving and it keeps more senior staff from getting bogged down.

Tip: Record the kickoff meeting.

Use the Project Summary Template as your agenda, and record the conversation. Then use AI to generate a clean, structured summary from that recording.

Tip: Already have a program report or proposal?

Use AI to convert that into a bullet-pointed scope of work. It saves time and gives everyone a quick way to get up to speed.

You can find an example template of a Project Summary here: [Project Summary Template](#). Remember to save the completed version in the *Project Management* folder within the project job folder.

Questions? – Ask Dave, John or Greg. We're happy to join in on any kickoff meeting and help create a project summary.



Designing Domestic Hot Water Systems with Anti-Scald Protection and Code Compliance

Designing domestic hot water (DHW) systems today means walking a tightrope between Legionella prevention, anti-scald safety, and energy code compliance. For most commercial and institutional buildings, storing hot water at 140°F is recommended or required to reduce the risk of bacterial growth, but that high temperature must never reach a user-facing fixture. This article outlines how to correctly implement central mixing valves, meet code requirements, and avoid common pitfalls with low-flow fixtures, recirculation, and valve selection.

Storing Hot Water at 140°F - Why It's Necessary

ASHRAE and CDC guidelines recommend storing domestic hot water at 140°F to control Legionella. While effective, this temperature poses a scalding risk and must be tempered down before distribution. For reference, water at 140°F can cause third-degree burns in under five seconds.

Mixing Strategy Overview

Tempering is achieved using a combination of:

- Master Mixing Valves (ASSE 1017): Control hot and cold-water blend for distribution.
- Shower Valves (ASSE 1016): Required at each shower and tub/shower unit; must be pressure-balancing, thermostatic, or combination type, with a max outlet temperature of 120°F.
- Point-of-Use Anti-scald Mixing Valves (ASSE 1070): Required at lavatories, bidets, and other handwashing fixtures with a max outlet temp of 110°F. Options include under-sink devices or faucets with integral ASSE 1070 compliance (e.g., from Chicago Faucet).

Central mixing valves do not replace fixture-level protection. The 2020 Plumbing Code of New York State ([PCNYS §607.1.2](#)) is explicit: ASSE 1070 anti-scald valves **MUST** be used for temperature control at individual fixtures.

Minimum Flow and Recirculation—A Common Design Oversight

While most master mixing valves can accurately deliver flows as low as 0.5 GPM, they require much more to remain thermally and hydraulically stable. The required recirculation flow rate is typically between 3 and 10 GPM, depending on the valve size and manufacturer. That means a system with only one 0.35 GPM lav operating can fall below the valve's control threshold unless there's a proper recirc loop. To address this:

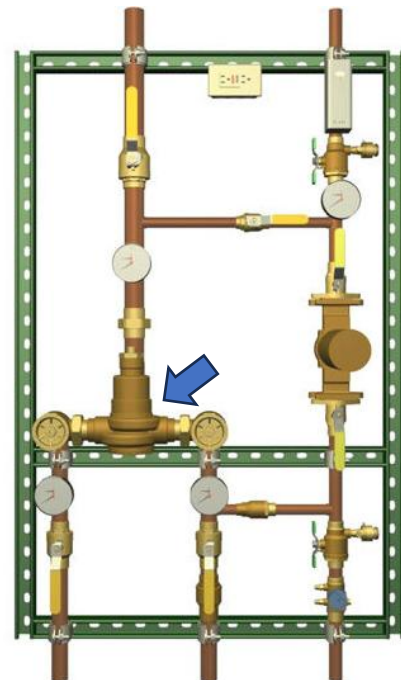
- Provide a constant, low-flow recirculation loop through the mixing valve.
- Avoid aquastat-controlled recirc, which cycles the pump on and off based on temperature. This creates dead zones, unstable valve performance, and potentially unsafe outlet temperatures.
- Use a small, continuous-duty bronze circulator, sized to meet the valve's required flow, not just loop volume.

Code Challenges and 2024 Energy Code Updates

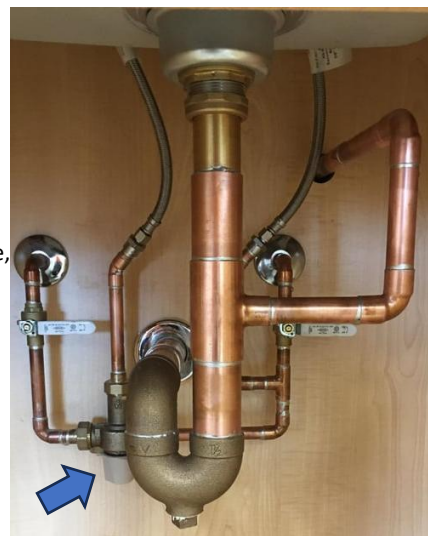
The current 2020 ECCCNY Section C404.6 requires demand-controlled recirculation, typically interpreted as an aquastat. This creates conflicts with mixing valve performance, especially for electronic systems and low flow valves that require constant flow. The proposed 2024 revision (C404.6.1) addresses this issue. It allows time-based or control-sequenced recirculation, giving engineers more flexibility to meet both safety and efficiency goals.

Takeaways for Engineers

- Store domestic hot water at 140°F for Legionella control.
- Use ASSE 1017 master mixing valves to temper distribution, but **always protect fixtures with ASSE 1016 or 1070 devices.**
- Provide constant recirculation flow through the mixing valve, typically 3 - 10 GPM.
- Avoid aquastat-based pump control. Instead, use continuous low-flow operation.
- Watch for the 2024 ECCCNY update, which allows scheduled recirculation logic more compatible with safe DHW designs.



Pre-Piped ASSE 1017 Master Mixing Valve



Lavatory ASSE 1070 Point-of-Use Mixing Valve



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UPCOMING LIVE WEBINARS – July 2025

This month's list 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*.

Electronic Locking Devices for Access Control

Host: Dortronics Systems, Inc. / AEC Daily

Date: July 2, 2025 | Time: 1:00 PM ET

Format: Webinar | Credits: 1 AIA LU/HSW | Cost: Free

[Register Here](#)

Electric Infrared Heating Systems: Creating Long-Term Sustainability

Host: AECDaily/Infratech

Date: July 2, 2025 | Time: 1:00 PM ET

Format: Webinar | Credits: 1 AIA LU | Cost: Free

[Register Here](#)

Engineering Ethics: Professional Ethics for Engineers

Host: NoonPi

Date: July 9, 2025 | Time: 12:00 PM ET

Format: Webinar | Credits: 1 PDH (Ethics, NYS-accepted) | Cost: Free

[Register Here](#)

Predictive Design with CFD in Architecture

Host: BNP Media CE Center (Architectural Record/Price Industries)

Date: July 10, 2025 | Time: 2:00 PM ET

Format: Webinar | Credits: 1 AIA LU | Cost: Free

[Register Here](#)

Air Tightness Testing, Requirements, and Options

Host: Siplast / BNP Media CE Center

Date: July 15, 2025 | Time: 2:00 PM ET

Format: Webinar | Credits: 1 AIA LU/HSW | Cost: Free

[Register Here](#)

Engineering Ethics: The Willow Island Cooling Tower Collapse

Host: NoonPi

Date: July 16, 2025 | Time: 12:00 PM ET

Format: Webinar | Credits: 1 PDH (Ethics, NYS-accepted) | Cost: Free

[Register Here](#)

SDI Tech Notes Live

Host: Steel Deck Institute (SDI)

Date: July 16, 2025 | 1:00 PM ET

Format: Webinar | Credits: 1.5 PDH | Cost: Free

[Register Here](#)

Corrosion and the Behavior of Materials Used to Protect Against It

Host: Hilti North America

Date: July 16, 2025 | 11:00 AM ET

Format: Live Webinar | Credits: 1.0 PDH | Cost: Free

[Register Here](#)

Quality Control Review of Firestop Installations

Host: Hilti North America

Date: July 17, 2025 | 11:00 AM ET

Format: Live Webinar | Credits: 1.0 PDH | Cost: Free

[Register Here](#)

AI in Architecture Practice

Host: D5 Render / BNP Media CE Center

Date: July 17, 2025 | Time: 2:00 PM ET

Format: Webinar | Credits: 1 AIA LU | Cost: Free

[Register Here](#)

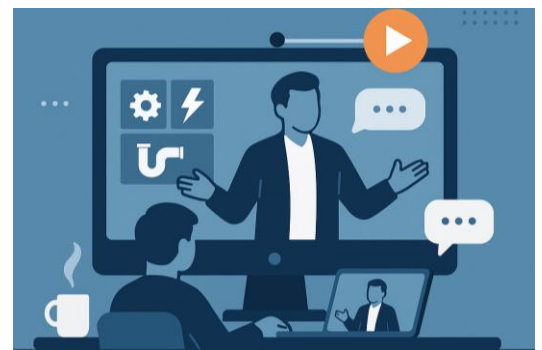
Fan Coils 101

Host: Price Industries

Date: July 22, 2025 | 12:00 PM ET

Format: Webinar | Credits: 1 PDH (presumed) | Cost: Free

[Register Here](#)





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Phinney Design Group

Sage Team: Mike, Jim T, Marcus, Dave, Mark

504 Broadway

Troy, NY

The 504 Broadway project is a transformative redevelopment of a 1960s-era two-story brick masonry building in downtown Troy into a high-performance, four-story Net Zero Energy facility targeting LEED Platinum certification. The renovated structure will retain its original footprint and exterior walls, with a new mass timber frame introduced inside to support the third floor and create an expansive glass-enclosed upper level. The finished building will house a ground-floor restaurant and lounge, apartments on the second floor, and the headquarters of Phinney Design Group on the third floor, totaling approximately 19,760 square feet.

Sage Engineering is providing full mechanical, electrical, and plumbing (MEP) design services. In collaboration with Aztech Geothermal, a compact but highly effective ground-source HVAC system was developed, consisting of six 800-foot-deep boreholes, three of which are angled to maximize spacing on the constrained urban lot. This approach enabled geothermal implementation where traditional layouts would not have been feasible.

Key sustainability features include:

- Geothermal water-source heat pump system for space conditioning, with a central geothermal domestic water heating plant.
- Daikin variable-speed heat pumps with electronically commutated motors.
- Swegon ultra-efficient energy recovery ventilator (ERV) with demand-controlled ventilation and VAV zone control across all levels.
- Aaon geothermal kitchen makeup air unit capable of operating at -20°F ambient temperatures without electric resistance backup.
- Super-insulated envelope and high-performance glazing to minimize heating and cooling loads.
- Rooftop solar PV system designed for Net Zero Energy performance.
- All-electric mechanical systems to align with the State's electrification and carbon reduction goals.

Sustainable Building Partners of Fairfax, VA is providing LEED certification services and energy modeling. The design team is targeting an Energy Use Intensity (EUI) in the low 20s, meaning the building is expected to consume no more than 20–25 kBtu/sf/year, a performance level rare among mixed-use buildings and consistent with best-in-class energy-efficient design.

The project received multiple grant awards and is expected to secure additional state and federal green building incentives. Permit drawings were issued in June 2025, with construction anticipated to begin shortly thereafter.

