



The Sage Report

A Monthly Newsletter of Insights, Projects, and Productivity



Celebrating Thirty Years of Sage Engineering Associates

On January 1, 2026, Sage Engineering Associates will reach its thirtieth anniversary. The firm began in 1996 when Evan Walden, P.E., Dohn Sims, P.E., and John Edwards, P.E. joined forces to form a focused MEP consulting practice built on technical depth and close client relationships. The partnership grew out of Evan Walden, P.E., where Evan and Dohn were already collaborating. Evan led industrial projects across multiple sectors, Dohn built the electrical department drawing on decades of experience including serving as Chief Electrical Engineer for Disney's EPCOT Center, and John established the mechanical department while expanding Sage's institutional and commercial portfolio with agencies such as OGS and SUCF and with a growing network of architects.

Delphi Automotive became the firm's largest client during these foundational years. The relationship grew from Evan's early career at General Motors, where he developed long standing ties that carried forward into the formation of Sage. Delphi relied on the firm for industrial ventilation and process engineering services at battery manufacturing facilities in the United States, Mexico, China, and Saudi Arabia. These assignments established Sage as a capable partner for large scale industrial work and helped drive early growth.

The day-to-day operation of the office in 1996 looked very different from modern practice. Sage leased space on Palisades Drive in Albany and later relocated in 1998 to 1211 Western Avenue where the firm remained for more than twenty years. The move to 9 Columbia Circle in 2019 provided the firm's current home.



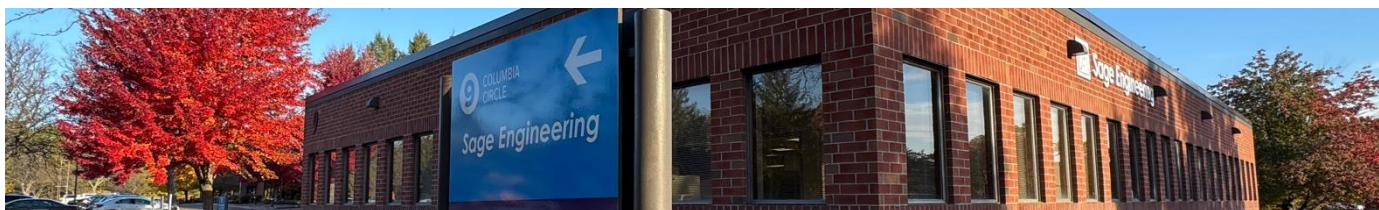
Original Partners Dohn Sims, Evan Walden and John Edwards (pictured left to right)

Technology shaped the pace and character of work in those early years. AutoCAD R13 was the sole drafting platform. Revit was still far in the future. Access to the internet was limited to a few desktop computers and it had not yet become a routine business tool. Field documentation relied on printed photographs that were often taped together by hand to create larger composite images. Pen plotters and ammonia blueprint machines handled all drawing production. Manufacturer catalogs filled the office library and were updated in person by sales representatives. Submittals arrived by mail or fax and each copy received a physical red review stamp with hand written or typed comments. Email existed, but the land line telephone and the fax machine remained the primary means of communication with clients.

From the beginning Sage operated with a culture that is still evident today. The firm grew from the original three partners to a ten-person team in its first year. Even as responsibilities expanded, the founders avoided rigid hierarchy and unnecessary bureaucracy. The goal was to maintain an environment where engineers could focus on producing good work without being slowed by excessive meetings or procedural formality. That approach encouraged collaboration, flexibility, and efficient decision making across disciplines.

That same culture continues to guide the firm. Employees receive updates on company financial health, project awards, and marketing initiatives at monthly lunch meetings. Open communication is a core value. Staff are encouraged to ask questions, share ideas, and take ownership of their work without navigating layers of management. The structure remains intentionally simple. The priority is clear communication, technical rigor, and responsiveness to clients.

Careful design, field verified decisions, and consistent client service were the foundation of the practice in 1996. Those principles remain central to the way Sage operates as the firm enters its fourth decade.





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What Every MEP Engineer Should Know About Asbestos

Part 1 – Testing Requirements and Mandatory Presumptions

Before any discussion of abatement, containment, or project size, every MEP engineer must understand a more fundamental issue: when asbestos testing is legally required and when materials must be presumed asbestos-containing by law. This is not a matter of preference, risk tolerance, or owner choice. It is a federal requirement that applies to nearly every commercial project Sage works on.

The Requirement Comes from Federal Law

The obligation to test or presume asbestos originates from the federal Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), issued under the Clean Air Act and enforced by the U.S. EPA and the DEC in New York State.

What NESHAP Actually Requires

Before any renovation or demolition, the building owner must determine whether asbestos is present in materials that will be disturbed. This determination must be made by one of only two legally acceptable methods:

- Sampling and laboratory analysis, or
- Presuming the material contains asbestos
- There is no third option.

For most materials, Polarized Light Microscopy (PLM) is used to determine asbestos content. Non-friable, organically bound materials, including roofing, floor tile, and mastics, can test negative by PLM yet still contain asbestos below PLM detection limits. In New York State, the Department of Health requires TEM analysis when PLM is negative and the material will be disturbed. If TEM testing is not performed or cannot be coordinated, the material must be presumed to contain asbestos and handled accordingly.

Documentation Is Not a Substitute for Testing

Under EPA guidance (and NYS DOL Confirmation) owners and design teams may not rely on:

- Building or equipment age
- Product cut sheets
- Manufacturer or installer letters
- As-built drawings
- Safety Data Sheets
- Statements that a building is “asbestos free”
- Prior renovation records that did not include comprehensive sampling

Unless a material has been properly sampled and tested, it **must** be presumed asbestos-containing.



New York State Rule 56 Does Not Eliminate the Federal Requirement

NYS Department of Labor [Industrial Code Rule 56](#) governs how asbestos abatement is performed once ACM is identified. It does not remove the federal obligation to test or presume materials under NESHAP.

Even where Rule 56 contains limited exemptions for certain structures or project types, those exemptions do not override federal law. EPA requirements apply statewide and take precedence. For MEP engineers, this means that every renovation or demolition project must address asbestos testing or presumptions, even if state abatement thresholds are not exceeded.

What “Presumed Asbestos-Containing” Means in Practice

If a material is presumed asbestos-containing:

- It must be treated as ACM for planning and bidding
- Abatement must be included in the project scope
- A licensed asbestos designer must define the abatement approach. At Sage, we typically employ Adelaide Environmental for this purpose.
- Costs and schedule impacts must be accounted for
- Presumption is not a loophole. It is a legal default when testing cannot be performed.

Testing Is Often Limited by Access

Certain materials cannot be tested without disrupting active systems. Common examples include:

- Boiler internal gaskets and refractory materials
- Electrical wire insulation
- Bus duct insulation

Testing these materials may require a mechanical contractor or electrician to temporarily dismantle equipment or disconnect energized conductors. Sage Engineering must often hire a contractor to assist with this effort if it cannot be performed by the facility personnel. If testing cannot be coordinated during the design phase, the material must be presumed asbestos-containing and included as abatement. If testing later occurs during construction and materials test negative, the abatement scope can be credited back to the Owner.

Looking Ahead

Understanding when materials must be tested or presumed asbestos-containing is the foundation of regulatory compliance. However, testing is only the first step. Once asbestos is identified or presumed, the role of the MEP engineer shifts to coordination rather than design of abatement. Part 2 of this article, to be published in next month's Sage newsletter, will focus on the MEP engineer's responsibilities when working alongside a licensed asbestos project designer, including proper scope delineation, drawing coordination, and how to avoid unlawful or uninsurable design actions.



Code Compliant Fan Replacement in Existing Buildings

Replacing a supply, return, or exhaust fan in an existing building is common. When a fan is replaced, designers are often asked whether the replacement fan must comply with current Energy Code fan brake horsepower (bhp) limits, particularly when most of the HVAC system remains unchanged. The short answer is **yes**. When a fan is replaced, the Energy Code fan bhp limits apply.

Why Energy Code Fan bhp Limits Apply to Replacement Fans

The Existing Building Code of New York State explicitly directs alteration work to comply with the Energy Code.

EBCNYS §708.1 (Alteration Level 1 – Energy) requires that Alteration Level 1 work comply with the Energy Conservation Construction Code of New York State as it relates to new construction.

EBCNYS §809.1 (Alteration Level 2 – Energy) contains the same requirement for Alteration Level 2 work.

These sections do not create technical requirements themselves. They establish that **energy performance requirements are governed by the Energy Code**, even for alterations.

Within the Energy Code, Chapter 5 applies Energy Code provisions to altered work while limiting scope to the altered components.

ECCCNYS §C503.1 (General) states:

“Alterations shall conform to the provisions of this code as those provisions relate to new construction without requiring the unaltered portions of the existing building or building system to comply with this code.”

When a fan is replaced, the fan is the altered component. The Energy Code provisions that apply to fans in new construction apply to the replacement fan, not the other unaltered portions of the system such as ductwork. However, if other methods to ensure compliance with fan power limits cannot be included, ductwork may need to be modified.

Fan Power Limits

Fan brake horsepower is regulated directly by the Energy Code.

ECCCNYS §C403.7 – Fan Power Limitation states:

“Fans shall comply with the fan power limitation requirements of this section.”

This section establishes maximum allowable fan brake horsepower based on system airflow. There is no exemption for replacement fans, nor an exception based on the age or configuration of the existing system. As a result, **a replacement fan must meet the applicable fan bhp limits**, regardless of whether the project is classified as Alteration Level 1 or Alteration Level 2 under the Existing Building Code.

Demonstrating Compliance

Fan power compliance is typically demonstrated using COMcheck, which incorporates ECCCNYS fan power calculations and allowable adjustments under §C403.7. COMcheck is a relatively easy way to confirm code conformance and should be completed early in the design phase to avoid scope changes later in design.

Practical Ways to Reduce Fan Brake Horsepower

Compliance is based on brake horsepower, not motor nameplate size. Common strategies include selecting higher-efficiency fan wheels, changing fan type, converting from belt-drive to direct-drive, using fan arrays, reducing required airflow by verifying ventilation rates, and making targeted duct improvements such as modifying short high-loss segments or replacing limited fittings with lower-loss alternatives.

Bottom Line

When a fan is replaced in an existing building, the replacement fan must comply with Energy Code fan brake horsepower limits. Compliance is evaluated at the fan and is typically demonstrated using COMcheck. Designers have multiple fan-focused and limited system optimization strategies available to meet the bhp limits without expanding the scope of work beyond what is necessary.





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UPCOMING LIVE WEBINARS AND SEMINARS

This month's lists of free live webinars and seminars are 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 ASPE in-person meeting on January 15 has a cost of \$50 reimbursed by Sage for Sage employees.

Date	Event Name	Host / Organization	Time (ET)	Registration
January 7	Fundamentals of Lateral Earth Pressures Every Engineer Should Know	NoonPi	12:00 PM	Register Link
January 7	Fundamentals of Lateral Earth Pressures Every Engineer Should Know	NoonPi	12:00 PM	Register Link
January 14	Offshore Wind Energy Generation	NoonPi	12:00 PM	Register Link
January 15	AI in Fire Protection Engineering – Joint Meeting with SFPE (<i>In-Person</i>)	ASPE Capital Region NY Chapter (Joint with SFPE)	11:30 AM	Register Link
January 19	Variable Speed PTAC and VTAC With Inverter Technology	NoonPi	12:00 PM	Register Link
January 20	Beyond Bond Strength: How Installation Impacts Performance (BB001)	Hilti Engineering Center	12:00 PM	Register Link
January 21	Understanding Firestop Specifications for Design Professionals	Ron Blank & Associates	12:00 PM	Register Link
January 22	Quality Control Review of Firestop Installations (FS104)	Hilti Engineering Center	12:00 PM	Register Link
January 27	Beyond Bond Strength: Temperature Considerations for Adhesive Anchors (BB002)	Hilti Engineering Center	12:00 PM	Register Link
January 29	An Overview of Façade Design for Architects (FAC101)	Hilti Engineering Center	12:00 PM	Register Link

Word Tip: Generate a Complete List of Keyboard Shortcuts Automatically

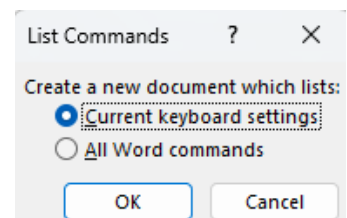
Microsoft Word includes a built-in macro that can generate a **complete list of all keyboard shortcuts**, including both default and customized commands. This is an excellent reference for power users and anyone looking to work faster in Word.

How to do it:

1. Open **Word**
2. Go to **View**
3. Select **Macros**
4. In the macro name field, type: *listcommands*
5. Click **Run**

When the dialog box appears, click **OK** with “**Current keyboard settings**” selected

Word will then create a new document containing a full, organized list of every command and its associated keyboard shortcut. **You save this or print it for future reference!**





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Aboveground Heating Distribution System

Lakeview Shock Incarceration Facility, Brocton, NY

Sage Team: Dan Breen, Alva C, Dave L, Brandon B, Kevin L, Charles Z

Sage Engineering served as lead engineer for the campus-wide replacement of the underground heating and domestic hot water distribution system at the Lakeview Shock Incarceration Facility. The project replaced a deteriorated buried piping network with a fully accessible aboveground primary hot water (PHW) distribution system serving buildings throughout the campus. Construction was completed between 2022 and 2025, with a total construction value of approximately \$14.5 million.

Sage designed a new looped **aboveground PHW distribution system totaling approximately 4,700 linear feet**, supported on steel pipe racks and stanchions and routed around the campus. The system consolidated heating and domestic hot water loads into a single supply

and return PHW loop, with branch connections serving individual buildings. The looped configuration allows localized sections to be isolated while maintaining service to the remainder of the facility. Routing required detailed coordination with buildings, roads, utilities, and perimeter security features. Where overhead routing was not feasible, including at the Central Heating Plant and fence crossings, the design incorporated limited segments of prefabricated underground piping and directional boring. Alternate routing options were evaluated during the program phase, including a reduced loop configuration of approximately 3,100 linear feet to balance redundancy, constructability, and cost.

At the Central Heating Plant, the PHW loop was integrated with the existing boiler plant. Primary hot water is generated by three dual-fuel boilers and distributed by two 100-horsepower vertical split-case pumps, each rated at approximately 1,400 gpm. The program confirmed that the existing boilers and pumps could support the combined heating and domestic hot water loads while maintaining redundancy. Domestic hot water production was decentralized as part of the project. The scope included removal of the centralized domestic hot water heaters in the heating plant and installation of **semi-instantaneous domestic hot water heaters in fourteen buildings**, each supplied by the PHW loop. This approach eliminated long DHW distribution runs and improved temperature control.

Within the buildings, the design included replacement of **plate-and-frame heat exchangers in sixteen buildings**. The work included building circulation pumps, piping, valves, expansion tanks, and associated accessories. New DDC components were specified and integrated with the existing building automation system.

Structural engineering addressed pipe rack layouts, foundations, and thermal expansion for long overhead runs. Phasing was a key element of the design, allowing new sections of the overhead system to be installed and placed into service while the existing underground system remained operational.

Sage Engineering led the multi-disciplinary team and provided mechanical and structural engineering design. The completed project demonstrates Sage's experience delivering large-scale overhead heating distribution systems that replace failing underground infrastructure with durable, maintainable solutions in active, secure campus environments.



Aerial View of Facility with New Overhead Piping Visible Throughout



Overhead Piping Installation



Typical New Instantaneous Water Heater