



The Sage Report

A Monthly Newsletter of Insights, Projects, and Productivity

Pick Up the Phone: The Value of Real Connection in a Digital World

Email has its place. It's efficient, convenient, and a necessary tool in our day-to-day work. But when it comes to building lasting relationships with clients, email alone falls short.

A strong client relationship isn't built in an inbox. It's built through conversation, through hearing a voice, reading body language, and establishing trust that goes beyond technical expertise. A quick phone call or a face-to-face meeting often communicates more than a perfectly worded email ever could. It shows presence, professionalism, and a willingness to engage on a human level.

Clients want to feel like they're working with someone, not just hiring someone. And in an industry where technical skill is a baseline, relationships are what set firms apart. There will always be another engineer who knows the codes and can run the numbers. But a client is more likely to return to the consultant who took the time to call, to meet, to listen.

At Sage, we pride ourselves on expertise, but it's how we communicate that builds loyalty. So, the next time you're about to send that third email in a thread, consider picking up the phone. You might find the conversation is more productive, and the connection more lasting.



THE SAGE BRIEFING

We're Number 7

We're excited to share that Sage Engineering Associates has climbed to #7 on the *Albany Business Review's* 2025 list of the largest engineering firms in the Capital Region, based on 2024 local billings. That's up from #10 last year!

This recognition follows what was our best year ever in 2023, and maintaining that level of performance into 2024, says a lot about the strength, stability, and quality of the work we deliver. We came in at \$11.2 million in local billings with a 36-person team, including 15 licensed engineers, all based right here in the Capital Region. We're proud to be one of the leanest firms in the top 10, and still outperforming many larger competitors.

A hard copy of the full list is posted in the break room, take a look and see how we stack up. It's a great reminder of what a focused, talented, and committed team can accomplish. Thank you all for being part of it!

THE SAGE BRIEFING

Welcome Our New Team Members Starting June 16

We're excited to welcome several new team members to Sage Engineering this June. Each brings a strong technical background and fresh energy to our mechanical, electrical, and structural groups:

- **Ryan Russell** (Mechanical, East Durham, NY) joins us as a full-time Mechanical Engineer. A recent graduate of Union College, Ryan was captain of both the track and cross-country teams. His senior thesis focused on graphene oxide sensors for energy storage, and he brings experience in CAD, FEA, and fluid mechanics. Ryan will be seated between Emily and Donaldo in the mechanical department and is looking forward to diving into building system design work.

- **Ella Middlebrook** (Mechanical Intern, Falls Church, VA) is a mechanical engineering student at Union College with experience in vibration modeling and sustainable energy systems. She recently completed a study abroad program in New Zealand focused on renewable energy and will be seated next to Ani in the mechanical group.

- **Brandon Mori** (Electrical Intern, Pasadena, CA) studies electrical engineering at Union College with a focus on embedded systems, control logic, and circuit design. He's led rocket electronics development, built smart home prototypes, and served as a TA in computer logic design. Brandon joins our electrical team this summer.

- **Elena Leslie** (Structural Intern, New York, NY) is a civil engineering student at Union College entering her second year. She's active in Union's ASCE chapter and has experience in AutoCAD, Revit, and environmentally friendly building design. Elena will be working with our structural group and is seated in the cubicle outside Kevin's office.

Sage Summer HVAC Class Kicks Off

We're excited to announce our Sage Summer HVAC Class, starting **June 18**, open to all staff, especially entry-level mechanical engineers and interns looking to build a strong foundation in HVAC design. Taught by our senior engineers and firm principals, the class will meet once or twice a week at noon, depending on interest.

Topics will include:

- HVAC system design from programming to construction
- Load calculations, psychometrics, and duct/pipe sizing
- Fundamentals of controls, electrical coordination, and spec writing

This is a great opportunity to sharpen your skills, get hands-on with tools like Trace 3D and Sage's duct/pipe sizing spreadsheets, and understand how HVAC systems are designed in the real world.



Duct Riser Penetrations and – Full Code Compliance Flowchart

Based on 2020 NYS Building and Mechanical Codes (2020 BCNYS & MCNYS)

Code requirements for ducts penetrating multiple floors are often confusing, with terms like “shaft enclosure” and “fire barrier” used interchangeably but having distinct meanings. A shaft enclosure, per BCNYS Section 713, is a fire-rated space that protects vertical openings like duct risers and must be continuous and sealed at all penetrations, including top and bottom. Architects typically use UL-listed shaft wall systems with 1-inch shaftliner panels, and mechanical designers must coordinate closely to ensure penetrations are properly framed, protected, and accessible for damper maintenance.

STEP 0: Identify Duct Type Before Proceeding

Before considering floor penetrations or damper placement, determine the function and classification of the duct system. Certain duct types require dedicated shafts, prohibit fire/smoke dampers, or have unique routing and termination rules.

Clothes Dryer Exhaust

- ◆ Fire dampers are prohibited (MCNYS 607.5.5 Exception)
- ◆ If penetrating more than one floor:
 - ✓ Use a dedicated shaft enclosure
 - ✓ Shaft must not be shared with other duct types
 - ✓ Each duct must be independently routed to the exterior
 - ◆ May share a shaft with other dryer ducts only if:
 - ✓ All ducts are smooth metal (min. 0.016")
 - ✓ Ducts are separated and routed independently to the outdoors
 - ◆ In Group B or R with sprinklers:
 - A subduct + continuous fan allows omission of smoke dampers (BCNYS 717.5.3 Exception) RARELY USED

Laboratory or Hazardous Exhaust

- ◆ Covered by MCNYS Section 510 and NFPA 45 / NFPA 91
- ◆ Fire/smoke dampers are prohibited
- ◆ Must be:
 - ✓ Gas-tight and liquid-tight, welded or listed product (Dura-Duct LXD)
 - ✓ Fully enclosed in a dedicated shaft if not listed
 - ✓ Routed directly to the roof (vertical only; no horizontal transitions)
 - ◆ May share a shaft only with other lab exhausts of the same hazard classification and verified chemical compatibility
 - ✗ Do not mix hazard types (e.g., flammable + corrosive)

Type I Grease Exhaust

- ◆ Governed by NFPA 96 and MCNYS Section 506
- ◆ Fire dampers are prohibited
- ◆ Duct must be:
 - ✓ Welded, continuous, grease-tight or listed prefabricated product
 - ✓ Enclosed in a 1- or 2-hour rated grease duct enclosure
 - ✓ Routed directly to the outdoors
 - ✗ Cannot share shaft with any other system—including other grease ducts

All Other Duct Types (General HVAC)

- Supply, return, toilet exhaust, general exhaust
- ◆ Proceed to Step 1

STEP 1: Are Any Penetrated Floors Fire-Resistance-Rated?

➤ NO

- ➔ How many floors are penetrated?
 - ◆ 1 or 2 Floors:
 - ✓ No shaft required
 - ✓ No fire damper required
 - ✓ Annular space at each floor must be sealed with approved noncombustible material (BCNYS 717.6.3)

◆ 3 Floors:

➤ You may avoid a shaft enclosure only if ALL the following conditions (from 717.6.1 Exception) are met:

- ✓ The duct is entirely contained within a wall cavity
- ✓ Constructed of min. 26 ga steel (0.0187")
- ✓ Opens into only one dwelling or sleeping unit
- ✓ Does not exceed 4 inches diameter
- ✓ Total duct area ≤ 100 in² per 100 ft² of floor area
- ✓ Annular space is sealed with tested material to block flame and gas spread, per ASTM E119 or UL 263
 - ◆ If any of the above are not met → Shaft is required

➤ YES

➔ How many fire-rated floors are penetrated?

- ◆ 1 or 2 Floors:
 - ✓ Shaft enclosure not required
 - ✓ Provide fire damper at each floor, or
 - ✓ Protect penetration using a UL-listed firestop system (per Section 714)
- ◆ 3 or More Floors:
 - ✓ Shaft enclosure is required (BCNYS 713)

STEP 2: If Using a Shaft Enclosure

Does the duct run uninterrupted from bottom to top (no side-wall penetrations or branches)?

➤ YES

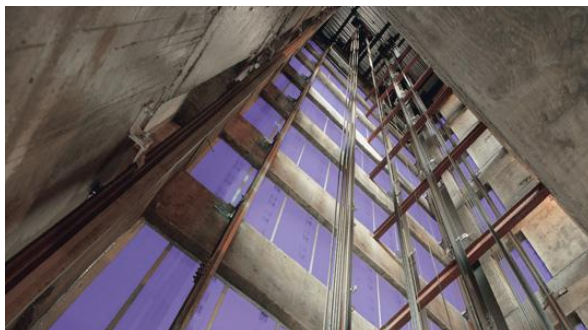
- ✓ No fire or smoke dampers required at intermediate floors
- ✓ At the base of the shaft, compliance with BCNYS 713.11 is required:

- Option 1: Enclose the base with a horizontal assembly matching the shaft's fire rating
- Option 2: Terminate into a room related to the shaft's use, with walls/floor/ceiling rated equal to the shaft
- Option 3: If only bottom penetrations exist, either:
 - Provide draftstopping using materials per 718.3.1
 - Or sprinkler the room the shaft discharges into

If the shaft base is a rated floor and a duct penetrates it, a combination fire/smoke damper is required unless exempted under 717.5.

➤ NO

- ✓ Provide combination fire/smoke dampers at every duct penetration of the shaft wall (717.5.3)





June 2025

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UPCOMING WEBINARS AND SEMINARS – June 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*.

The Future of Building Integration Could Be Old Wiring

Host: Honeywell

Date: June 3, 2025 | Time: 2:00 PM – 3:00 PM ET

Format: Webinar | Credits: 1 PDH (Certificate of Attendance) | Cost: Free

[Register Here](#)

Green Building Through Sun Control Design

Host: GreenCE

Date: June 4, 2025 | Time: 12:00 PM – 1:00 PM ET

Format: Webinar | Credits: 1 PDH (AIA HSW, GBCI) | Cost: Free

[Register Here](#)

Current Trends in Healthcare Plumbing to "Future-Proof" Your Design

Host: Morris Group International

Date: June 4, 2025 | Time: 8:00 AM PDT (11:00 AM ET)

Format: Webinar | Credits: 1 PDH (AIA HSW) | Cost: Free

[Register Here](#)

Electronic Locking Devices for Access Control Systems

Host: Dortronics Systems, Inc.

Date: June 4, 2025 | Time: 1:00 PM ET

Format: Webinar | Credits: 1 PDH | Cost: Free

[Register Here](#)

Building Science and Moisture Management

Host: Quest Climate

Date: June 10, 2025 | Time: 11:00 AM ET

Format: Webinar | Credits: 1 PDH | Cost: Free

[Register Here](#)

Understanding Firestopping EJ's

Host: Specified Technologies Inc.

Date: June 10, 2025 | Time: 1:00 PM ET

Format: Webinar | Credits: 1 PDH | Cost: Free

[Register Here](#)

Smoke Containment Strategies for Elevator Hoistways

Host: Ron Blank & Associates, Inc.

Date: June 13, 2025 | Time: 1:00 PM – 2:00 PM ET

Format: Webinar | Credits: 1 AIA HSW LU / 1 PDH |

Cost: Free

[Register Here](#)

Decarbonization of Ventilation Systems

Host: NoonPi

Date: June 17, 2025 | Time: 1:00 PM ET

Format: Webinar | Credits: 1 PDH | Cost: Free

[Register Here](#)

Revolutionizing Smart Buildings Using Just Two Wires

Host: Alerton (ASHRAE Journal Supplier Webinar Series)

Date: June 18, 2025 | Time: 11:00 AM CT (12:00 PM ET)

Format: Webinar | Credits: 1 PDH (Certificate of Attendance) | Cost: Free

[Register Here](#)

Door Interlocks: Applications and System Design

Host: Dortronics Systems, Inc.

Date: June 8, 2025 | Time: 1:00 PM ET

Format: Webinar | Credits: 1 PDH | Cost: Free

[Register Here](#)

Engineering Ethics: The Great Boston Molasses Flood

Host: NoonPi

Date: June 25, 2025 | Time: 1:00 PM – 2:00 PM ET

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

[Register Here](#)



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@Mentions in Outlook

Use **@mentions** in emails to call someone's attention directly. Just type @ followed by their name (e.g., @Brandon) while writing your message. Outlook will highlight their name in the message and automatically add them to the "To" field if they're not already included.

Why use it?

It's a fast way to flag action items, assign tasks, or make sure someone doesn't miss a key point, especially in long threads or group emails. Recipients can even filter messages where they were mentioned, making follow-up easier.

Quickly Email a Server File Path Using Ctrl + L, C, K, V

If you need to send a file path or folder location from a server, not the actual file, but the location, there's a quick, reliable way to do it using just your keyboard:

Step-by-Step Shortcut:

Ctrl + L

Focuses the address bar in Windows Explorer (aka File Explorer).

Ctrl + C

Copies the full path to the selected folder or file.

Ctrl + K (in Outlook)

While composing an email, this shortcut opens the "Insert Hyperlink" box.

Ctrl + V

Pastes the copied path directly into the link field.

Hit Enter

Done! You've now inserted a clickable link to the file or folder.

Why Use This?

It's faster than navigating through "Attach File" or browsing manually.

Keeps your emails cleaner, especially when you just want to reference a shared folder.

Ideal for linking to server-based files, project directories, or shared folders that you and your team access regularly.

Bluebeam Revu's Snapshot Tool

Ever needed to copy a section of a drawing or document without taking a full screenshot? Bluebeam Revu's Snapshot Tool lets you grab any portion of a PDF and reuse it anywhere, without losing clarity.

How to Use the Snapshot Tool in Bluebeam Revu

1. Open a PDF in Bluebeam Revu.
2. Click Edit → Snapshot (or **press G as a shortcut**).
3. Click and drag to select the area you want to copy.
4. Paste it into another PDF, email, Word document, or even Revu itself using Ctrl + V.

Bluebeam Revu's Snapshot (cont'd)

Why This is a Game Changer

- **Keeps Image Clarity** – Unlike basic screenshots, Snapshot keeps vector quality.
- **Quickly Extract Details** – Grab specific drawing details without exporting entire pages.
- **Works Across Documents** – Paste snapshots into markups, emails, or reports instantly.

Word Power Moves for Clean, Professional Documents

-  **1. Paste Without Formatting**
Ctrl + Alt + V → Unformatted Text

 Keeps your document's styles intact when pasting from websites, PDFs, or emails.

Bonus: In some versions, Ctrl + Shift + V does this too.

-  **2. Clear All Formatting Instantly**

Ctrl + Spacebar – Removes character formatting (bold, italic, font changes).

Ctrl + Shift + N – Resets the paragraph to the "Normal" style (including spacing and alignment).

 Use both together to fully nuke formatting.

-  **3. Format Painter on Steroids**

Double-click the **Format Painter** icon (paintbrush)

 Lets you apply formatting to multiple spots without clicking the icon each time.

-  **4. Set Line Spacing to 1.0 and Remove Paragraph Spacing**

- Ctrl + 1 = Single spacing
- Right-click > Paragraph > Set "Before" and "After" to 0 pt

 Clean and consistent spacing, especially after pasting from other sources.

To lock it in, save it as a **custom style**.

-  **5. Create a "Clean Formatting" Style**

- Apply **single spacing** and **0 pt before/after**
- Set font, size, and alignment
- Click **Styles → Create New Style → Name it "CleanText"**

 Apply it across your doc in one click for formatting consistency

Quick Tip: Make Divider Lines Instantly in Microsoft Word

Type one of the following character combinations on a blank line and hit Enter:

--- creates a thin single line

=== creates a double line

___ creates a bold single line

*** creates a dotted line

creates a thicker bold line

These shortcuts automatically apply a paragraph border—no clicking or formatting required.



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Replace Switchgear, Swan Street Building

Sage Team: George, Dan W, Jim T, Brandon

Empire State Plaza, Albany, NY

The project involves replacement of secondary network protectors on the secondary of four (4) substation transformers, busduct, and main switchgear at Substation O-P in the Swan Street Building at Empire State Plaza. Replacement of the emergency unit substation and all automatic transfer switches is also included. Sage Engineering led the design team and provided electrical, mechanical, and fire protection engineering, with Spring Line Design handling architecture and Adelaide managing hazardous materials inspection and design. The project addresses aging electrical infrastructure, originally installed in the 1960s, which had exceeded its useful life and contributed to system failures, including a significant arc flash explosion in 2016.

The upgrades included installing new switchgear with automated switching of multiple main and tie breakers, relay protection at the network protectors, remote operation capabilities, metering, and integration with the site's Honeywell Enterprise Building Integrator system. The design also improved safety by allowing remote monitoring and operation, enhancing redundancy, and implementing arc flash mitigation measures. Environmental controls in the substation spaces were upgraded, and a clean agent fire suppression system was installed in the switchgear room to protect critical equipment. Hazardous materials abatement was also performed as part of the project. Due to the critical nature of the substation, the project required careful coordination of complex phasing to minimize disruptions. Temporary switchboards were installed, and a temporary generator was provided

to maintain essential power during outages. The design will serve as a prototype for similar upgrades at other substations within the plaza. Project completion is slated for completion in 2026. The construction cost is \$7 million.

