

RSI Awarded 2010 \$500,000 PSE&G New Technology Grant

Toward the end of 2010 RSI in conjunction with Steven Winters Associates received a \$500,000 New Technology Grant from PSE&G for our Central Exhaust Shaft Retro-Fit Program. This Grant had some provisions in it for RSI to do R&D work since there is no equipment on the market that can be purchased to effectively seal Exhaust Shafts. However the bulk of the Grant was earmarked for RSI to prove the value of Central Exhaust Shaft Cleaning Sealing & Retro-Fitting as a viable Energy Savings Measure in two Multi-Family High Rise Buildings in NJ. The target shafts in these two High Rise Multi-Family Buildings include the kitchen & bathroom and trash room exhausts.

The 1st building “The Haddonview” located in Collingswood, NJ is a 16 story 240 unit apartment building that has 14 rooftop fans servicing 27 central exhaust shafts. Every kitchen, bathroom and trash vent entered the main exhaust shaft through snorkel type fire dampers that were at least partly clogged with dirt & debris. Access to each of the 27 shafts was achieved via a crawl space above the 16th floor. The 1st challenge was to build a catwalk system in the crawlspace for easier access to the shafts as well as to minimize the chance of damaging the pipes & Wires we had to work around. We then installed Duct Doors in each of the 27 shafts for access to clean and seal them. We also installed 2 additional access doors in the ceiling of the 16th floor Hall for easier access at each end of the building prior to the start of our actual Central Exhaust Shaft Retro-Fit work.

Our primary objectives were to:

- Video Inspect each of the 27 shafts.
- Clean & Seal the vents and snorkels in each apartment (480 in total) and install Constant Air Flow Regulators.
- Clean shafts & Remove blockages.
- Seal the interior of the shafts via a Robotic Mastic Head.

The 2nd building the “Lenox” in Union City, NJ is a 17 story 300 unit apartment building which has 40 rooftop fans each servicing a single exhaust shaft. Our 1st task was to identify and label the electrical breaker panel as to which breaker controls which fan. We then had to design a special roller system to reach the ends of the offsets that several of the shafts had directly under the fans in order to deploy our cleaning and sealing equipment, two of which were test shafts. All shaft Cleaning & Sealing was successfully completed from the rooftop.

Our primary objectives were to:

- Video Inspect each of the 40 shafts.
- Clean & Seal the vents in each apartment (600 in total) and install Constant Air Flow Regulators.
- Clean shafts & Remove blockages.
- Seal the interior of the shafts via a Robotic Mastic Head.

Both the Haddonview and the Lenox buildings showed Remarkable Results at the end of each project.

The Haddonview was an under ventilated building prior to the start of the Exhaust Shaft Weatherization Retrofit work making it a poor candidate for energy savings. In spite of this fact, some energy savings were achieved, and the exhaust system balancing resulted in substantial improvements in the buildings Indoor Air Quality.

Conversely the Lenox building was extremely over ventilated prior to the exhaust shaft weatherization retrofit making it an excellent candidate for energy savings. This building benefited tremendously in both energy savings as well as improved Indoor Air Quality. With savings in excess of \$27,000 / year on heat alone RSI’s success on this project speaks for itself. If the cost of air conditioning was factored in the actual savings would be substantially more.

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