



Going Green: Arrow's Response to Environmental Concerns with Commercial Laundries

Arrow Linen Supply Company, Inc. was established in Brooklyn, NY in 1947 by Ambrogio Magliocco, who came to the US from Sicily at the age of 17. Supplying textiles to all industries such as food, hospitality, beauty & massage, physician offices, schools & camps, corporate offices and industrial establishments. The company developed a reputation for quality and personal service – at competitive prices. Ambrogio's son, John Ambrose Magliocco, took over in 1958 and remains active in the business as CEO.

Over 65 years later, Arrow Linen now has two plants with over 200 trained union employees and continues to have the personal service. Ambrogio's grandson John Anthony Magliocco joined the business in 1985 after graduating from college with a degree in engineering, with his brothers Ambrose and Salvatore. John Anthony Magliocco took over for his father in 1990 and implemented major operational improvements with state-of-the-art technology, which allowed Arrow Linen to handle significantly more volume and enhance quality standards. In 2005, John was named President and his brother Salvatore was appointed Vice President. A fourth generation of Maglioccos, Anthony, John and Joseph have joined the company to carry on Ambrogio's legacy. Having increased knowledge about environmental concerns and energy consumption in today's society, Arrow Linen is now one of the proudest supporters of eco-friendly business by reducing, reusing and recycling across its locations.

[See below for Arrow's responses to such environmental concerns.](#)

HEAT EXCHANGING RECOVERY

Heat Exchanging Recovery is the process of transferring thermal energy from one source to another. Arrow Linen has equipped both facilities with heat exchanging devices that allow this process to occur during its washing operations. Currently, Arrow recovers approximately 50°F of heat per minute from our tunnel discharge water that is then used to heat incoming fresh water. In most commercial laundries, heat is wasted and sent down the sewage drain. However at Arrow Linen Supply, the utilization of heat exchangers has allowed the company to reduce its gas consumption by 30%!

COMBINED HEAT AND POWER SYSTEM (CHP)

In addition to the heat exchanging recovery system, Arrow also invested in a Combined Heat and Power System (CHP) for its Brooklyn location. Such system utilizes the exhaust heat

467 Prospect Avenue, Brooklyn, NY 11215
Phone: 718-788-2000 Fax: 718-788-5374



615 South Street, Garden City, NY 11530
Phone: 516-246-8000 Fax: 516-246-8888

Visit us at: www.arrowlinen.com



from two 150 kW generators to heat the boiler's feedwater, once again helping to reduce the amount of gas used to heat the facility's water. Prior to system's installation, Arrow was operating at an energy efficiency level of 40%. Today, the company is proud to share that the CHP System has increased that level to 65%!

SOLAR POWER

This year, Arrow Linen's Garden City Facility has been equipped with a 480 KW solar panel system, consisting of 1745 photovoltaic panels with a total of 11 inverters. The system spans across the 72,000 square foot roof and is replacing 73% of the company's power requirements when combined with the LED lighting installation which took place in 2018. Furthermore, the two installations have also allowed the company to reduce carbon emissions by 578 tons annually.

LED TECHNOLOGY

In 2018, Arrow Linen converted the lighting in both its facilities to LED technology. Prior to utilizing LED's, all lighting was done using sodium halide and fluorescent bulbs, which are both high electric consumers and harmful to the environment when disposed. When becoming aware of such issue, Arrow reached to Centrica Business Solutions where energy experts identified a range of energy efficient opportunities, which, in combination, could deliver substantial environmental benefits. Additionally, an LED replacement lighting system was installed, along with Centrica's Panoramic Power wireless sensor technology, to monitor important machinery, equipment and systems in the building. The installation provided Arrow with the ability to use power more efficiently while keeping the environment safe. Now with LED lighting, Arrow has reduced its electricity consumption by 20%!

CERAMIC MICROFILTRATION AND REVERSE OSMOSIS WASTEWATER TREATMENT SYSTEM

Despite their extensive eco-friendly efforts, Arrow believed they could contribute even more to support environmental concerns. When further analyzing the plant's wastewater, Arrow became aware of its high levels in oil and grease which originate from the laundering of heavy soiled items such as bar mops. In January of 2020, the company has scheduled the installation of a Ceramic Microfiltration and Reverse Osmosis Wastewater Treatment System. This system will use a Ceramic Microfiltration System (CMS) to filter wastewater particles larger than .05 microns and is designed to treat up to 250 gpm (gallons per minute) of wastewater and produce up to 225

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gpm of filtrate (reusable water). This will ensure that the company's waste stream will be free from silicates, silicone oil, acrylics acrylates, resins, waxes, varnish and/or polymers of any kind which are harmful to the environment. In addition, the system's Reverse Osmosis (RO) feature will be used to further filter wastewater from harmful particles which were not initially caught by the ceramic microfiltration system, allowing the company to reuse 70% of its wastewater. Altogether, the harmful waste which has been filtered out will then be sent to CMF (ceramic microfiltration) tanks and safely disposed of by a waste management company.

ENERGY ACHIEVEMENTS AND RECOGNITIONS

As proud supporters of recycled energy, Arrow Linen is constantly searching for new ways to improve as a green company. In 2005, Arrow Linen was awarded the Energy Star CHP Award by the US Environmental Protection Agency and Department of Energy in recognition of the pollution-reduction and energy-saving features of the Combined Heat and Power (CHP) System installed in its Brooklyn Facility. In 2019, PSEG *Long Island* recognized Arrow as a "Green Business Leader for their efforts to save energy and help reduce greenhouse gas emissions on Long Island." With these achievements, Arrow hopes to influence more companies in becoming recycled energy users not only across the state of New York but also across the world. "Go green today so there will be a tomorrow."

