

# Castcon Stone, Inc.

Saxonburg, Pennsylvania

Architect: Perkins Eastman

The driving force behind this new facility was two sisters with a vision: family, equality, respect, and a green dream. Their vision reinforced a commitment to a close-knit staff dedicated to making concrete. It defined their understanding of employee value in that every individual's role is equally important, resulting in a facility that builds employee bridges. This vision drove the planning and design, construction, and operating processes.

Located in an aging industrial facility, the company's growth was inhibited by space limitations and rapid growth. These factors compromised production efficiency because of cramped space; indoor air quality problems caused by an increased use of propane and diesel forklifts; and dust created from concrete manufacturing. The company wanted a facility that would position it as an industry leader and a cutting-edge manufacturer through the use of sustainable design principles and efficient "lean" manufacturing processes. Integral to the company's continued growth, this new facility provides the owners and employees with a healthier, well-planned environment that balances environmentally-sustainable goals and fiscal responsibility.

The design of this new facility challenges conventional approaches of "decorating" or applying ornament to industrial architecture as a way of resolving the brutality of the forms and materials. By embracing the simplest elements of this architectural prototype, the natural industrial vocabulary of siding, window openings, garage doors, mechanical vents, flues and conveyors come to life. By treating the office and manufacturing volumes identically, the juxtaposition of scale, roof forms and planar positioning



Photo Courtesy of Photographer Linda Jeub

bring a motion and vitality to this normally static building type.

The offices have energy efficient lighting, spectrally selective glass, an energy efficient HVAC system with heat recovery wheels, and occupancy sensors for light and heat controls. Many of the materials are produced and harvested locally and many have recycled content. The office furniture does not contain urea-formaldehyde and workstations were custom designed from environmentally friendly materials. The pre-manufactured shell was super insulated by spraying isonine onto the walls and ceiling already at an R-20 value. Batts were applied and held in place with a geotextile cloth and perforated metal panels. Roof water drains into a 2,500 gallon holding tank and is used for landscape watering powered by a solar pump. The parking lot has a bio-retention area and the site is landscaped with native plants.

The new facility offers an efficient layout with an employee services area that links the production facility to the office space and houses locker rooms, showers, and a lunch room. The employee services

area has significantly improved employee time management issues.

The space program allows for continual flow of workers from production to operations and estimating areas. The concrete corridor that connects the two main spaces has been extremely successful in maintaining and increasing communication between these groups.

While the office portion of the building has applied for a silver LEED® rating, there is not yet a LEED rating system for manufacturing facilities. However, the client is committed to making every attempt at sustainability in this portion. The space is heated by 99% efficient gas ceiling mounted heaters. Garage doors that open to the outside and three 56-inch exhaust fans provide cooling. Moving to a system of overhead cranes eliminated exhaust pollution that plagued the old site. The sandblasting operation was isolated to improve dust containment and air quality.

The energy model for this building shows that the energy-conservation features are creating savings of 60 percent compared to the amount of energy the building would consume if built to typical standards. Although three times the size of the old building, energy costs are essentially equal.



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