



Most Innovative Plant

Northeast Building Products

Philadelphia, Pa.

Since its founding in 1975, Northeast Building Products has grown from a small 1,800-square-foot jalousie and glass block basement window manufacturer to a full-service fabricator and distributor of vinyl, wood and aluminum windows and doors. Today, the company serves 9,000 customers including distributors, dealers and contractors, and produces a quarter of a million units per year. The company's present day 165,000-square-foot facility houses more than 200 employees and is the scene of a recent innovative redesign of the company's operations into a lean and efficient, state-of-the-art plant.



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In 2007, Northeast Building Products embarked on the first stage of a complete organizational overhaul, with the goal of improving operational efficiency, employee productivity and workplace safety. All of the company's objectives were met, and by the time the process was completed, it had increased its productivity by more than 25 percent, reduced its costs by more than 15 percent, decreased downtime and defects, increased employee satisfaction, and even freed up plant space to allow for future growth.



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In 2008, Northeast Building Products continued with the second stage of its organizational redesign, and implemented new programs that have further increased the company's efficiency, product quality, customer satisfaction, and employee productivity, contributing to record growth at a time when many others are scaling back. The growth has been so dramatic that it has had to move to an A/B team structure, and now operates 12 hours a day, seven days a week, with an increase in throughput of more than 100 percent and overall productivity improvements of more than 20 percent.

In the first stage of the operations redesign, the company instituted a work cell based 5-S lean manufacturing program (Sort, Set in order, Shine, Standardize, and Sustain) and Kaizen continuous process improvement

system to reduce inefficiencies while streamlining the production process.

In stage two, the company underwent a complete work cell redesign, which further streamlined its operations and instituted a standard work sheet program.

Northeast continued with its Kaizen improvement process by establishing a formal Perpetual Improvement or PI system, in which each employee continuously seeks to improve every system, process, and procedure, as well as her/his performance in the manufacturing unit. One of the key innovations in stage two was the integration of the PI system with a "Touchpoint" TQM program that recognizes that customer satisfaction can only be obtained by providing the highest quality product, and that the continuous improvement of the quality of the product is the direct result of continual process and systems improvement. The result was that the Touchpoint program in combination with the PI system created a true TQM mindset within the organization, leading to record company growth and the highest levels of product quality and customer satisfaction.

For example, the manufacturer instituted a "Quality Sheet" that accompanies each product being manufactured as it moves throughout the work cell. Each Quality Sheet details the customer's information, product specifications, and all other pertinent data. At every "touchpoint" along the way, each team member reviews the Quality Sheet to ensure that the product meets all specifications and that the highest quality standards are being met. As a result, the company now enjoys final product quality yields of 99.99 percent, and customer satisfaction, the true metric, has reached almost 100 percent.

The technology innovations began with the company's information systems. In order to increase customer sales support and to streamline the ordering process, Northeast developed a proprietary online dealer ordering system named NECOS (Northeast Camelot Ordering System). The company then integrated the NECOS system with the Friedman Frontier Solution software package for complete back office functionality, as well as the PMC Lineal Mate software for optimization, and the GED WIN IG software package. The result was increased information sharing between departments, better information processing and analytics, and supply chain communication efficiencies.

From an equipment standpoint, Northeast installed two custom designed Sash Systems Automated Vertical Sashlite lines and is currently the only manufacturer in the world to have this type of equipment in place. The state-of-the-art equipment has enabled Northeast to triple its vinyl window production while reducing the amount of plant space.

Other equipment implementations include: an Ingersoll-Rand "Simple-Air" air handling system which carries air throughout the building for easy pneumatic access at any point in the plant; new auto feed pneumatic screw guns; seven four-point Greller welders; seven GED/Sampson CNC and multi-head corner cleaners; and an Anderson CNC router for cutting head, seat and jambs for bow and bay style windows.

The cornerstone of the organizational redesign was the implementation of innovative employee safety, satisfaction



Northeast is the only manufacturer in the world with automated vertical Sash Systems lines for producing Sashlite integrated sash units.

and productivity initiatives. The project began with a personnel safety program using the Dupont STOP system (safety training observation program). STOP is an innovative training program that teaches workplace safety skills and reinforces safe work practices. To increase employee satisfaction and productivity, Northeast implemented an innovative Pay for Performance program and has enhanced a profit sharing plan that's been in place for more than 20 years. Other initiatives include an employee survey and a one-on-one focus group program whose results have helped decrease employee absenteeism and have led to increased productivity.