

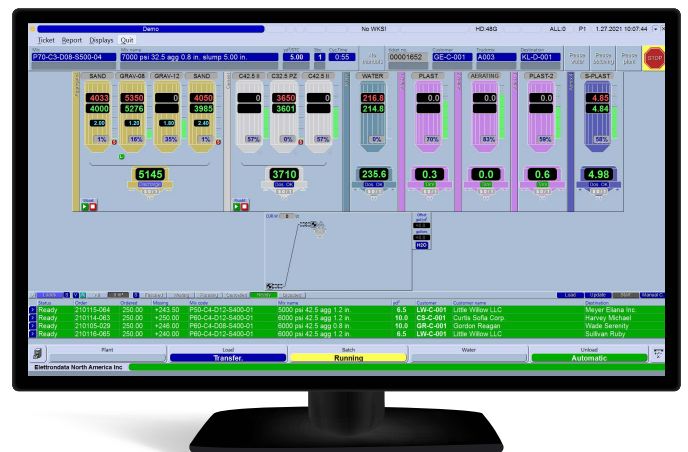
Elettrondata's eBATCH Precast Improves J&R Precast Plant Operations



Municipal infrastructure relies on a wide variety of precast concrete products, from barriers that keep road construction workers safe to water drainage structures that transport rain runoff to the blocks used in retaining walls. The manufacturer's concrete must meet the correct specifications, which are different across the variety of products used in utilities and other infrastructure projects. Those communities that do not have sewer systems means that residents and businesses must rely on septic systems that use precast concrete components to handle their wastewater needs.

J&R Precast is an agile producer of these precast products. In partnering with Elettrondata, J&R Precast is finding that they can produce high-quality products reliably and on time, across the varieties of concrete mixes used in products that make customers' projects successful.

Within a short time of upgrading their production system to Elettrondata's eBATCH Precast automation, J&R Precast began seeing more efficient plant operations.



“We expected automation would help our production, and Elettrondata's eBATCH Precast automation system increased our concrete production by 25%.”

— **Bob Katon, Jr.**
CEO, J&R Precast



The system *must* increase volume and reduce waste without sacrificing quality.

The Client

Since the mid-1950s, family-owned and operated J&R Precast has provided quality concrete infrastructure products throughout southern New England. The well-established, nimble producer of precast concrete structures partners with a wide variety of customers who have demanding standards. J&R Precast often adjusts its concrete mixes to meet these requirements to help projects meet their delivery timelines.

With their manual-based plant control system, J&R knew they could increase their production by upgrading to computer-controlled, automated production systems. With the plant in operations, they did not have immediate needs for upgrading, which allowed them to explore and evaluate many options that would meet their precast needs while being cost-effective for the small company. They found that Elettrondata provides a wide range of hardware and software systems that would support their business without breaking the proverbial bank.

J&R Precast, which operates its business in the southern part of Massachusetts, distributes precast concrete products throughout Massachusetts, Rhode Island, and southern Connecticut.

The Need

J&R Precast has an on-site concrete plant, and they needed to update the plant's batch system. Their system required users to press several buttons multiple times to load the expected amounts of components to make a concrete batch. J&R Precast knew that they could improve efficiency by automating the loading and mixing of "ingredients" into the concrete used in their precast products. J&R established the following goals to help them identify a system that would help them achieve their objectives of optimizing operations, reducing costs, and improving their products:



Improve the repeatability of mix consistency.



Increase concrete volume.



Reduce mix errors due to manual processes.



Eliminate waste of raw materials.



Provide a rock-solid, stable system.

J&R Precast selected Elettrondata's eBATCH Precast automation suite to provide the new brain for their system with the expected outcome of better concrete consistency and increased production while eliminating waste of raw materials.

Mix times



12 minutes
eBATCH Precast



20 minutes
Manual controls

The Elettrondata Solution

To facilitate the needs for J&R Precast, Elettrondata analyzed their existing plant and identified the necessary changes to their legacy system. Elettrondata and J&R Precast coordinated these enhancements to their active system. Elettrondata's eBATCH Precast system supports multiple bins that contain the raw materials used in the concrete products that J&R Precast manufactures. The site analysis confirmed that the systems that transport the components to the mixer, including weight indicators and moisture detectors, could integrate with Elettrondata's automation system. The unique flexibility of the eBATCH system allowed J&R Precast to minimize capital expenses while optimizing concrete production across the batch mixes used in the different precast concrete products.

One of Elettrondata's key benefits is the ability for eBATCH Precast to connect with and control much of the existing plant infrastructure. Elettrondata's controller facilitates an easy upgrade by connecting the eBATCH Precast system to the existing plant J-Box. Using programmable logic controllers (PLCs), the controller converts the instructions provided by the eBATCH Precast platform into electronic signals for sending to the corresponding components to manage the additions of raw materials. The system can control:



Six aggregates in one
or more scales.



Six admixtures.



Four cement types, including
fly ash and micro-silica in one
or two scales.



Three moisture components
for clean or recycled water by
volume and ice by scale.

In addition to improved capacity using the adaptable system, J&R Precast required a robust and reliable platform. They needed to increase production over their manual methods, but not at the expense of system downtime. With the variety of products from its customers, J&R required a system that did not require multiple maintenance tasks often needed for some platforms.

The Result

Elettrondata eBATCH Precast quickly proved beneficial to J&R Precast. The smooth, consistent operation experiences of the system have reduced their concrete mixing times significantly. eBATCH Precast optimized their per-batch production time by 1/3, attaining a dependable mix rate of 12 minutes per batch of consistently reliable concrete.

Elettrondata's eBATCH Precast system is delivering the expected improvements by producing the right concrete every time. These advances in technology from Elettrondata allow J&R Precast to improve their plant operational efficiencies while attaining highly consistent concrete mixes for use across their product offerings.

About Elettrondata

Elettrondata provides state-of-the-art hardware and software automation tools and management solutions that help ready-mix and precast plants achieve 24/7 production, gain unmatched operational flexibility, and deliver high-quality concrete every time on-time. With over 40 years of experience, Elettrondata has successfully implemented thousands of integrated automation systems for concrete producers globally and provided end-to-end customized solutions comprising feasibility analysis, technology design, software programming, installation, on-site testing, and after-sales support.

Elettrondata manufactures a wide range of hardware and software solutions including humidity probes, weight indicators, control panels, batch automation, quality control, quality assurance, slump monitoring, and dispatch management system. The portfolio provides plant operators with the utmost flexibility to modernize their system intelligently, get better visibility and controls that maintain high quality consistently, enhance production efficiency, and optimize business processes.



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