



MINTELLIGENT FEED CASE STUDY

Béton Chevalier

Béton Chevalier is a family-owned business that started in 1992 with a single plant in Stoneham, Quebec. Since then, the company has steadily expanded its reach across the province, driven by a commitment to quality products and services.

The Challenge

Béton Chevalier, a leading concrete producer in Quebec, faced challenges with variations in batching accuracy across its 8-plant operation, which produces 330,000 yd³ of concrete annually. The batching automation system could not adapt to ever-changing plant conditions (material moisture, temperature, load sizes, mechanical conditions, material levels in storage units..., etc.).

This had a significant impact on materials' free fall and batching accuracy. As a result, out-of-tolerance and deviations from target recipes generated inconsistent concrete quality, a common scenario in the industry. Benoit Lemelin, Béton Chevalier's Director of Production and Sales, overdesigned Béton Chevalier's mix recipes to compensate for these variations and ensure minimal strength requirements were always met. The drawback was the corresponding additional costs for raw materials (sand, gravel, cement) observed daily by Mr. Lemelin. Not to mention the CO₂ emissions coming from wasted cement production.

The Solution

Béton Chevalier implemented the AI-powered MIntelligent Feed solution to optimize batching accuracy and improve production consistency across all their plants. By doing so, Béton Chevalier aimed to eliminate these added material costs while producing the same quality concrete to increase profitability.



LOCATION
Sherbrooke



PROJECT TYPE
Ready Mix



RESULTS
Batching Precision

The Result

When David Chevalier, Béton Chevalier's owner, first mentioned the MIntelligent Feed to Mr. Lemelin, the Production Director initially expressed skepticism. In early 2023, the hype around what Artificial Intelligence can do to benefit businesses was only kick-starting. The actual positive and tangible benefits were still unclear. A product demo presenting the potential gains the MIntelligent Feed could deliver to the Béton Chevalier plant overcame his initial doubts. "When you're the production director and keeping track of your business, you see money wasted at the end of every day. So, reducing out-of-tolerances and deviations got my attention," says Lemelin. Between production speed and batching accuracy, the Production Director's strategy was definitively focused on the latter to reduce production costs and improve product quality. "My concern was that it would slow things down – which it does at the beginning, because the system adapts by learning from the different equipment in the plant. Eventually, operations speed back up, your target becomes more accurate, and you improve material savings."

"The team responsible for implementing the MIntelligent Feed was easily reachable and responsive to ensure that we could see the improvements made the next day on the reported situations"

For the activation of MIntelligent Feed across Béton Chevalier's plants, Lemelin opted for a cascading activation with a 3-week delay between plants. His goal was to facilitate supervision of the implementation while having time to familiarize himself with the system. "If you want it to work, preparing batchers for this change is crucial. We told our teams that it's okay to lose a little productivity initially because it's a necessary step towards our goal of cost reduction," says Lemelin. "The team responsible for implementing the MIntelligent Feed was easily reachable and responsive to ensure that we could see the improvements made the next day on the reported situations."

The production pace quickly returned to its previous level. "This made it much easier to adopt this solution internally. After initial disbelief, our plant managers and batchers finally trusted it." The solution analyzes real-time data from the batching process to identify and dynamically adjust for deviations in real-time, ensuring a precise concrete mix with every batch. "I was initially impressed by the batching precision achieved with the MIntelligent Feed," says Lemelin. "We were always below the targets. I also appreciate the increased mix stability, improved consistency of concrete strengths, and the reduction in the standard deviation of performance." All these benefits paved the way for Béton Chevalier's mix design optimization. The Production Director also points out these benefits:

- By optimizing the required number of jogs, the MIntelligent Feed reduces equipment wear and tear.
- When equipment breaks, the system can identify what is broken based on live data from the production equipment.
- If an experienced batcher were to leave, Béton Chevalier could recruit a replacement with less knowledge.

With the MIntelligent Feed, Béton Chevalier operates according to new industry batching precision standards. This visionary company pushes the entire industry forward by adopting this cutting-edge technology to drive its success.



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