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Shaw Brick paves path to future with new plant

While most of the world continues to wrestle with a global recession of historic proportions, Canada's Shaw Brick, based in Nova Scotia, has invested in the future by commissioning a modern concrete products production plant that leverages an existing "vintage" building along with its aggregate bins and silo infrastructure.

Founded in 1861, Shaw Brick is the original member of the Shaw Group, one of Eastern Canada's leading manufacturers of products for the construction industry. In early 2008, Shaw Brick reached a critical point with respect to operations at two key production facilities in Nova Scotia: Windsor and Lantz.

Challenges

Both Shaw plants relied on production equipment employing aged technology: "Beyond very, very old," notes Brady Hawley, Shaw Brick manager of production and sales. "The equipment was 1980's vintage and market share was at risk should

product quality decrease. The freeze/thaw cycle in this area is severe and our product has to be the highest quality to ensure durability and avoid product failure. The aged systems also impeded our ability to innovate, which is equally vital to our survival."

After several years of study and evaluation, Shaw determined that the only economically viable approach was to reuse existing infrastructure at its main production center in Lantz and equip it with the best available new production systems. The plan, approved in the summer of 2008, called for the consolidation of operations to Lantz and the closure, late this year, of its

Windsor operations, located about 40 miles away.

"The Lantz location offered compelling advantages, including reduced transportation costs due to its close proximity to our main markets," Hawley explains. "Our market and financial analysis showed us that capital required for both a new building and new equipment would be prohibitive. We determined that we could make cost-effective repairs to one of our buildings in Lantz and make the bulk of our investment in state-of-the-art production systems."

Solution

Hawley and the rest of the Shaw Brick selection team, which included general manager Terry MacDow and production supervisor Phil Langille, looked at all the available options in their search for the ideal new paver production plant. They seriously considered proposals from Hess Machinery and Advanced Concrete Technologies (ACT), as well as other well-known vendors. Ultimately, Shaw selected the Hess/ACT proposal and negotiated a contract with the two companies in the fall of 2008.

"Our Hess paver production system in Windsor had served us well for many years, so that experience definitely gave them an edge," Hawley comments. "We had heard many good things about ACT batch plants, so the combination of ACT and Hess was very appealing. Their proposal was the most comprehensive and, ultimately, offered the best price as well. Additionally, we also had confidence that ACT and Hess had our best interests in mind in the plant they proposed."



Shaw Brick production supervisor Phil Langille stands in front of the controls for the firm's new concrete products plant in Lantz, Nova Scotia, Canada. The centralized controls for the plant's ACT MobilMat Mo80 concrete batching plant and Hess Multimatic RH 1500-2 paver production system deliver fully automated operation for high output, quality assurance, and flexibility.

Shaw selected the Hess Multimatic RH 1500-2 heavy duty, high output paver and retaining wall production system. This well-established big board machine produces pavers and retaining walls on 1400mm by

control system provides fully automated operation, including automatic calls for concrete from the ACT batching and mixing system.

The ACT MobilMat batch plant features three discharge hoppers below the mixer, allowing automatic mixing of three different colors for color-mix production and greater mix flexibility, producing value-added products. The ACT PCS computer control system allows fully automatic, unattended operation simply by recalling a programmed product code. The ACT Hydromat microwave water metering system uses a microwave moisture probe in the HPGM 2250 mixer to automatically maintain the targeted water/cement ratio. An ACT Hydrotester moisture probe, installed in the sand bin, automatically maintains batch yield even as the aggregate moisture varies.



Shaw Brick's ACT MobilMat Mo80 batch plant features the HPGM 2250 high shear planetary counter-current mixer (shown above on raised platform) equipped with the ACT Hydromat microwave water metering system for consistent water/cement ratio adherence.

1100 mm production boards. The Hess RH 1500-2 also features the patented Vario-tronic vibration system for improved product density and highly accurate mould filling operations. This vibration system allows independent programming for different products to assure high density strengths and quality finishes while maintaining fast cycle times.

In order to optimize the available plant layout space, Hess recommended a draw plate cuber so automated product cubing could be performed in the most efficient method. The Hess design provides a cycle time balance between the production (wet) side and the handling and packaging (dry) side. This operational balance achieves maximum output performance for a range of products at the highest possible quality and the lowest unit production cost.

The plant also features an advanced safety system with integrated controls. All machine functions are controlled and managed by a Siemens S7 operating system. A diagnostic program assists the operator in monitoring critical functions, and an interface program connects the diagnostics to the Hess technical team for 24/7 support. All new product molds and mold adaptors for existing molds for the RH 1500-2 production machine were fabricated by Hess Machinery.

The Hess system is supplied by an ACT MobilMat Mo80 turnkey concrete batch plant featuring the Wiggert HPGM 2250 high shear planetary counter-current mixer and the Würschum COM 70-3 granular color pigment metering system. The Hess RH 1500's Siemens S7 programmable



The ACT MobilMat Mo80 turnkey concrete batch plant (in orange) supplies the Hess Multimat RH 1500-2 paver production system (foreground) at the Shaw Brick facility in Lantz, Nova Scotia. This new plant investment was made economically attractive by housing it in a "vintage" building that was given a cost-effective makeover.



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The ACT MobilMat Mo80 batch plant (in background) features a Wiggert HPGM 2250 mixer feeding three concrete metering hoppers, allowing automatic mixing of three different colors for color-mix production and flexibility. Finished cubed pavers can be seen in the foreground.

The Würschum COM 70-3 color metering system provides precision color metering and pneumatic dispensing from three separate conveying vessels to the mixer. The closed loop system provides dust-free operation. The system is supplied by

suspended labor-saving “super sack” color pigment bags.

The pre-existing facility in Lantz was updated with reinforced equipment foundations in late 2008. Various roof

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repairs and other fixes were completed in January 2009. The ACT concrete batching and mixing platform was installed in March and the Hess paver production system was installed in April and May. The finished plant was commissioned and began producing saleable product right from the start in late May, one month ahead of schedule.

"The entire layout and installation of the new systems went very smoothly," Hawley says. "It was an engineering tight fit to be sure, but the technicians from both ACT and Hess worked with our crew to get it done ahead of schedule, which is always appreciated."

Results

The high-speed, computer controlled production system from Hess and ACT far exceeds the combined production output of both of the plants it replaces, making it at least 100 percent more efficient. At the same time, the system delivers the superior

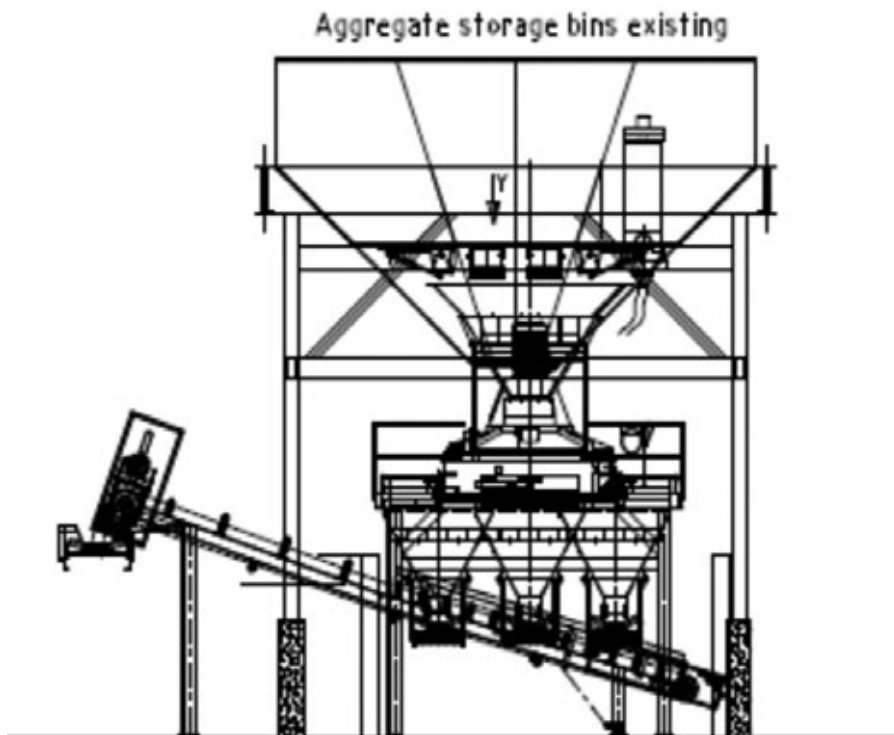
quality that Shaw Brick demands. The new system is used to manufacture pavers, segmental retaining wall units, and other value added innovations now in product development.

"What we used to do with 20 employees we now do with just 10," Hawley explains. "Our guys are very excited about this new system and learning a lot - employee morale is way up. Best of all, our customers are really taking notice. One of our top customers told us recently that these are the best pavers we've ever made."

Shaw confirms consistent quality through daily compression and absorption testing. "It's a good feeling to know that we're delivering product that has the highest possible quality," Hawley says. "Our color system used to be a guy standing over the mixer, manually adding powdered color. He did the best he could, but it wasn't ideal. Now, we get reproducible color and the flexibility to try new colors and capture those recipes for instant recall anytime."

Shaw is also saving manpower when it comes to mold changes. The new Hess RH 1500 enables the firm to change product molds and mix designs from product to product in under 15 minutes. This capability also gives Shaw the ability to react quickly to market demands and to more efficiently manage inventory.

"This reinvestment was essential to our survival," Hawley concludes. "Our new capabilities will not only enable us to protect the market share we have, but open up new opportunities going forward. We are well positioned for the future; we can easily respond to new market demands and develop new products and colors to create exciting possibilities." ■



The ACT MobilMat Mo80 batch plant features a Wiggert HPGM 2250 mixer feeding three concrete metering hoppers, allowing automatic mixing of three different colors for color-mix production and flexi-bility. The cost-effective new paver production plant also includes a Hess Multimatt RH 1500-2 paver production system and re-cycles an existing building, including its pre-existing aggregate bins and cement silos.

FURTHER INFORMATION



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