THE VALUE OF EXPERIENCE cannot be underestimated. And the people of Fucinaro Excavating can bear witness to that particular fact of life. This Omaha, Nebraska-based firm had a lot of experience when it came to excavation, tear-out work, and grading. The company was formed as a family-owned business almost 40 years ago in 1963. Tony Fucinaro founded the company. Several years later, his brother Don joined the firm. And in the early 1980s, Tony's son, David, and Don's sons, Mike and Ron, also came to work for Fucinaro Excavating. This group of second-generation Fucinaros would work to meet a growing need that the company faced: concrete and pavement recycling. But even though they had an extensive background in the craft of excavation, they were not hesitant to admit that they knew little about the ins and outs of the crushing and processing of pavements for recycling.

So they set out to learn the hard way: by trial and error. They formed a new and separate company called “Conreco”—which is short for Concrete Recycling Company—to serve as a base for their new operation. And six years later, they will readily tell you that real-world experience proved to be invaluable. “When we started out, we didn’t know anything about crushing,” said Dave Fucinaro during a recent interview. “There were no other recyclers here in the Omaha area to learn from. Consequently, all we knew was what a lot of crushing-equipment salesmen told us.”

According to Ron Fucinaro, the original business plan for Conreco involved setting up a mostly mobile, custom-crushing company that would handle the concrete and asphalt rubble that the family’s excavating company produced, as well as some rubble produced by other area contractors. After some research and a lot of input from equipment salesmen, the Fucinaros elected to set up an all-in-one crushing plant on a semi-permanent recycle yard in Omaha. The location’s close proximity to a major Interstate highway quickly proved to be a big advantage, providing a convenient place for the contractors in the metro-Omaha area to bring their materials to be recycled and to purchase their fill material and aggregate. The firm’s original plan of having a mostly-mobile crushing operation was soon changed. The growing level of activity at the location caused them to convert it to a permanent crushing operation.

Conreco’s first six years in business taught them several lessons...including the fact that an “all-in-one” crushing plant is not always the right approach. Today, the company is operating a Kolberg-Pioneer system that was specifically structured to meet their daily needs, as well as their annual business expectations. 

Their initial success was somewhat overshadowed by problems that developed with Conreco’s all-in-one plant. The Fucinaros found adjustments and additions to the initial plant set-up were a necessity. “What looked great in the beginning proved not to be the best long-term solution,” said Dave. “We thought the single impact crusher, with the promised high-reduction rations, would satisfy our needs. But in fact, production costs and rates were not what we had expected.”

In addition to the single-impact crusher, Conreco opted for harder blow-bar metallurgy. They hoped that the higher chrome content in these blow bars would reduce wear and thus reduce production costs. Instead, the harder bars proved to be too brittle, especially when handling large feed sizes. “We found out the hard way that most everything the contractors
brought in was too big to allow for the use of the hardest bars,” said Dave. “We broke a lot of bars, so we had to switch back to a softer blow bar.”

But replacing the brittle, hard bars with a softer bar did not solve all of Conreco’s problems. The softer bars could not handle the strain of crushing the large feed material, resulting in the need to flip or replace the blow bars about once a week. In addition, the oversized pieces of material often became lodged before reaching the crushing chamber, which further slowed the plant’s production rates.

“Another problem with the all-in-one plant was the main under-crusher belt conveyor,” said Mike. “With all the rebar and wire in our feed material, we were tearing and puncturing the belt almost daily. That meant downtime for picking out the impaled rebar and more downtime while we patched the belt to prevent material spillage. Our belts were only lasting about two months.”

After about six years of problems with the all-in-one plant—adding equipment and making modifications—the Fucinaros knew it was time to come up with a long-term solution. They began a year-long research project that involved speaking with the leading recycle-crushing equipment manufacturers in the country. Conreco’s goal was to work with a manufacturer to develop a plan to meet their tons-per-year objectives—not just the manufacturers’ advertised production rates. Six years of experience had taught the Fucinaros a lot about purchasing equipment.

“We knew that if the plant design was optimized to take care of the nuisance problems, then the productivity would be there,” said Dave. “Some of the crusher salesmen would have preferred to sell us a standard plant design, or just what they had in stock. But we knew what we needed based on real-world experience.”

After speaking with numerous manufacturer representatives, Conreco found a company that was willing to work with them to optimize their existing plant set-up, not just sell them a completely new plant. That company was Kolberg-Pioneer, an equipment manufacturer located in Yankton, South Dakota.

“We met with Kolberg-Pioneer’s territory manager, plant-design engineer, and product manager,” said Dave. “Their approach to maximizing production rates while minimizing wear costs was to put a large jaw crusher in front of our existing impactor. The more we thought about it, the more it made sense.”

The team from Kolberg-Pioneer installed a Pioneer 2854 jaw crusher with wide peak-to-peak—but deep peak-to-valley—jaw dies, in front of the impactor Conreco already owned. This configuration tolerates large, slabby materials and eliminates the lodging of oversized materials that Conreco had been experiencing with the all-in-one plant. The use of a compression-style crusher would also reduce wear costs on the jaw manganese.

To handle rebar and wire, the Pioneer 2854 was modified to include a side-discharge vibrating-pan feeder under the jaw. Rebar exiting the jaw drops onto the vibrating pan and is transferred to the main discharge conveyor belt where a magnet removes the metal from the aggregate.

“After nearly a year of operation,” said Dave recently, “there has been no damage to the main discharge conveyor belt due to rebar punctures or tears!”

To ensure the clean product that Conreco’s customers demand, the Pioneer 2854 was equipped with a 50 in. x 20 ft. (1.27 m x 6.1 m) vibrating feeder and a 6-ft. (1.82-m) grizzly section that allows the separation of fines and dirt contamination prior to the crushing cycle. The extended side-discharge cross-conveyor under the grizzly moves this filtered material to a separate stockpile where it can be offered for sale as miscellaneous fill material, with minimal handling costs.

The changes Kolberg-Pioneer was able to help Conreco make to its existing plant have resulted in the high-production rates they wanted, accompanied by low-production costs. For example, those hard blow-bars are now usable because the Pioneer primary crusher ensures a consistent feed size.

“We have increased production from about 600 tons (544.3 tonnes) per day with the all-in-one plant to about 1,200 tons (1,088.6 tonnes) per day with the jaw-and-impactor combination,” said Ron. “And the maintenance costs on our plant are down, too.”

The plant’s increased productivity led to the need for improved aggregate-handling procedures. Six Kolberg stacking conveyors are utilized to transfer and stockpile Conreco’s aggregate and fill production. Also, the company had to invest in a larger loader to keep up with the higher output.

In the nine years that Conreco has been in the recycling business, its owners have learned a lot and gained a lot of experience. Dave said that the key to the company’s current success, however, was turning to a reliable manufacturing company that could offer even more real-world experience.

“The opportunity to work with Kolberg-Pioneer’s design engineer and product manager was instrumental in our decision to work with that manufacturer,” said Dave. “While other equipment manufacturers listened to us, some didn’t seem eager to try new ideas for the plant we wanted.”

“We’ve been very pleased with Kolberg-Pioneer. Plus, their local dealer continues to support us—long after the sale!”

FOR INFORMATION
contact George Schlemmer at Kolberg-Pioneer:
800-542-9311
Fax: 605-665-8858
E-mail: georgeschlemmer@kolbergpioneer.com

The Pioneer 2854 jaw plant has a 50 in. x 20 ft. (1.3 x 6.1 m) vibrating feeder with a 6-ft. (1.8-m) grizzly that separates fines and dirt contamination prior to the crushing cycle.