



K-Five Selects Plant Automation

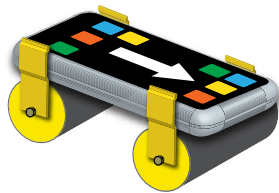
by AsphaltPro Staff

William J. Newman and George Krug had their own construction companies back in the early 1900s. Then their kids, Josephine Newman and young George Krug got married in 1941 and formed the foundation of K-Five Construction. According to the K-Five Construction, Lemont, Ill., website, "Today, all five of Josephine and George's children are directly involved in the corporation."

That small family business that performed residential paving is now a large, unionized, heavy-highway paving corporation that employs more than 500 people during these tough economic seasons, posts annual sales in excess of \$100 million, and uses full-scale automation at each of five asphalt plants around the Chicago area. The company has distinguished itself as an industry leader in a variety of construction industry practices and is a member of the Illinois Road Builders Association (IRBA), the Illinois Asphalt Pavement Association (IAPA) and the Concrete Pavement Association (ACPA). They have a centrally located hot mix asphalt (HMA) drum plant in Lemont, Ill., where the main office is, and other drum plants in Chicago, Elmhurst, Markham and Naperville that all operate from 6:30 a.m. to 3:30 p.m. Monday through Friday—Saturdays and Sundays upon request.

With all that plant power, K-Five is one of the largest suppliers in the Chicago-land area, but their private sales also include dumping services for concrete and asphalt. For general contracting, K-Five separates its successes into private and

public work. In the private sector, they have performed projects from subdivisions to the United Center, completing jobs on time and on budget. A few of their projects in recent years have included Cominsky Park, Menards Distribution Center and Home Depot. Their public clients include the Illinois Department of Transportation; Illinois State Toll Highway Authority; O'Hare International Airport; City of Chicago; and Cook, DuPage, Will and Kane Counties; as well as various



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municipalities and railroads.

K-Five also serves as subcontractor in the residential and commercial sector, and for large municipal and state agencies. It all comes down to good project management. Owners state on the K-Five website: "We pride ourselves on going the extra mile for our customers. To fulfill our client's needs, K-Five has assembled an exceptional team of managers and engineers, eager to go the extra

mile. Our team provides the overall coordination of scheduling, budgets, quantitative analysis of all materials and specifications, the very latest in construction and computer technology, as well as constant assessment of the client's changing needs."

When it comes to construction and computer technology, the company puts automation to the test. All five plants employ the DrumTronic™ system from Minds, Inc., Boisbriand, Quebec, which has the capacity to control all facets of a plant system, right down to site lighting. For K-Five's needs, Plant Manager John Sullivan spelled out something a little simpler. First of all, the number of available screens ranges from one to four, and it comes with a "zero console" option, but K-Five didn't need all that on all five plants. The DrumTronic is an industrial grade computer with security and redundancy features. It runs on Microsoft Windows® via a communication driver, RTX from IntervalZero, and uses one or more unique I/O boards, depending on the plant complexity, over a real-time TCP/IP protocol.

"We have five of these units," Sullivan reported. "Four have three screens and one has four screens. We only have the DrumTronic controlling the plant. One DrumTronic controls the burner air/fuel ratio."

The K-Five owners decided to go with this level of control with an automated system in 2001. Sullivan explained.

"This was one of the first controls in 1999 to use Windows operating system instead of DOS oper-



The DrumTronic system allows plant operators the option of one to four screens that display bar graphs, plant configurations, charts, and more to give a quick and easy snapshot of the plant's status.

ating system. An old-timer in the controls, Wayne Martin and Ron Heap sold us the first three systems. I thought it was time to move away from DOS. In 2001, we switched to Minds. Minds worked with Wayne on our first three systems."

As it turned out, learning the Windows-based program went pretty smoothly.

"The plant operators seem to learn this system quickly," Sullivan explained. "We use numbers backed up by bar graphs. Our screens show mostly numbers. The feeders have nice bar graphs. These bar graphs allow the operator to run a feeder manually if needed by matching the two bar graphs."

The operator remains in control with the DrumTronic, even though

the system is running the plant. As the Minds, Inc., website details, the operator can stop and resume the process at any time and have direct control of motors. The software can control silo storage, including complex conveying layouts, to ensure a precise change of silo following a mix change. The software can be linked to additional users through the eRoutes™ platform, providing totals, consumption and inventory usage. But K-Five elected to put more control in the operators' hands.

"We do not allow the DrumTronic to choose which silo to fill," Sullivan reported.

"The operator chooses the silo. The DrumTronic will stop the plant 20 tons after the silo reaches a high limit if we do not change silos."

With well-trained operators and easy-to-manage controls, K-Five has a set-up that's made for versatility. "We use operators from one plant to operate any of the five plants," Sullivan said.

"Dennis Devitto is vice president in charge of asphalt plants. Jay Patel works under Dennis and is in charge of QC/QA. Jay has a manager at each plant. We can bring a plant crew in from one plant to run a second shift at another plant. The plant operators can help trouble-shoot another plant using the same controls. Each DrumTronic has its own mixes. We are not linked

together. Also, not all plants share the same material sources."

Not all plants have the same capacity, either, which makes an automated control a nice backup in any operation. The Chicago plant has three 200-ton silos and two 150-ton silos; the Elmhurst plant has five 200-ton silos; the Lemont and Markham plants have five 300-ton silos; and the Naperville plant has five 200-ton silos.

"The DrumTronic is an easy control to operate and trouble-shoot," Sullivan said. "In the past 10 seasons, it has performed well and produced a good quality mix."

"The plant operators seem to learn this system quickly." — John Sullivan

