

SUPPLIER PARTNERSHIP DELIVERS IN RECORD TIME

See how a recycling systems OEM used automation to design and install complete greenfield municipal recycling facilities to ease sorting of recycled materials.

By Michael Gurney, Concept Systems Inc.

>> Requiring home residents to separate their recyclables into different bins for pickup at the curb is becoming a thing of the past. Modern municipalities are looking for ways to automate the trash sorting process into recyclable categories at receiving stations, allowing consumers to return to the good ol' days of mixing the items they discard.

At the forefront of the automation effort is Bulk Handling Systems (BHS) of Eugene, Oregon. BHS produces modular, turnkey Municipal Recycling Facilities (MRF) tailored to the needs of each customer.

Business Challenge

BHS has grown in personnel sixfold under the vision of owners Chris McGinnis and Steve Miller, who bought BHS in 2005.

Rather than simply automating bits and pieces of the recyclables sorting process, the partners saw that they could build a larger business and help municipalities more effectively by designing and installing complete greenfield recycling plants.

To do this competitively, however, would require bringing new levels of controls technology to the recycling industry.

Until a couple years ago, the recycling

industry was behind industry standards in terms of control-systems usage. Automated material transport was being incorporated into processing lines, but the recyclable sorting steps were disjointed. Typically, no centralized control and SCADA monitoring of the process existed.

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Some of the more progressive waste management companies began driving for better systems, and BHS knew that if they could incorporate the latest advances in control technologies, they would have a competitive advantage in their market.

Hurdles to Overcome

However, implementing a modular design and ensuring that the latest technologies are used effectively requires a technical team that keeps

current with the latest technologies. In addition to the technology, delivering custom-configured systems in the shortest amount of time to diverse recyclers required an agile quote, delivery and service capability.

BHS didn't want to build all the controls and logistics expertise themselves. Instead, they looked for industry partners. They selected Rockwell Automation; North Coast Electric, one of the United States' largest electrical distributors, Seattle, Washington; and Rockwell Automation Solution Partner Concept Systems Inc. of Albany, Oregon.

As part of the partnership arrangement, Rockwell and North Coast Electric would be responsible for maintaining product and spare parts inventories to shorten lead times for components and ensure that product updates are presented quickly and efficiently.

Concept Systems agreed to dedicate personnel to supporting BHS and understanding its market to ensure that BHS systems serve customer needs.

An important aspect of this is a continuous-improvement process that incorporates new technologies, improved designs and more effective project execution practices.



Rockwell Automation provides the hardware components that drive the Bulk Handling Systems equipment, including PowerFlex VFDs, programmable controllers and safety systems.

Technology Makes the Difference

The largest municipally owned recycling system in the United States was installed by BHS in California. It is capable of handling 50 tons of recyclables per hour. The sorting process involves both high-tech and low-tech elements.

At the high end, screens separate material by size, and optical inspection techniques incorporating spectral analysis are used to differentiate between types of recyclable plastics by identifying the polymers they contain. Optical sensors are also used to differentiate between two-dimensional waste — likely to be paper — and three-dimensional items.

Although as much processing as possible takes place untouched by human hands, inspectors grab and

discard the obvious contaminants before the automated screening begins.

The typical plant contains many conveyors. The system that BHS started up in San Carlos, California uses about 198 motors, and a new one being installed in the Los Angeles area has 187 motors.

Rockwell Automation provides the hardware components that drive the equipment — Allen-Bradley® PowerFlex® 750 or 755 variable-frequency drives (VFD), and Allen-Bradley CompactLogix™ or ControlLogix® programmable controllers, depending on the size of the system.

Rockwell Automation also supplies the safety systems, with smart overload controls to monitor electrical current and amount of energy used. This allows BHS customers to track the energy consumed by their plants.

New Way of Doing Business

The supplier partnerships enable BHS to respond quickly to customers with tailored solutions. If BHS had relied on the old vendor-customer view of the world that revolved around arms-length relationships and soliciting price and delivery bids from multiple vendors, it wouldn't be able to respond as quickly to changing customer needs.

Part of the arrangement involved the development of a “quick estimate” process for quoting new plant installations to municipalities. When a new customer needs a bid, BHS sales personnel can tick off items on a spreadsheet that enables its partners to do estimates in a few hours.

The old bid process could have taken weeks, and planning and



Some of the largest BHS systems are comprised of modular lines handling 50 tons of waste per hour and can be made larger to meet the growing demand.

implementing these systems under the old vendor-customer way of doing business used to be inefficient and stressful to all parties involved.

To keep the business relationships running smoothly, BHS and Concept Systems representatives meet weekly to discuss what's in the pipeline, review the continuous improvement process and talk about new issues. Once a month, Rockwell Automation and North Coast Electric representatives attend the meeting.

Greater Responsiveness, Better Efficiency

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They pack a lot of equipment into a small footprint to handle a huge amount of raw material that's all mixed up. By using close communications and advance planning, the team members can forecast better and smooth the project flow.

BHS now can respond to its customers more quickly.

Each of the parties derives specific benefits from the partnership. Concept Systems benefits by having

a steady flow of work and improved revenue forecasting, and by being able to leverage its engineering effort to serve multiple projects. North Coast Electric benefits by having improved forecasting and steady demand, and a consistent bill of materials to supply. Rockwell Automation benefits by being able to supply a consistent stream of products that are integrated into the machine mix easily.

BHS can grow smartly by responding to its customers more quickly with reduced risk. The ultimate beneficiaries are the recycling companies who can respond quickly and cost-effectively to the need to recycle their waste. **Concept Systems Inc.**
www.rockwellautomation.com/go/p-conceptsys

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