

# MACHINEX:

## MRF DESIGN CHALLENGES

Machinex partnered with Veolia Environmental Services to design a C&D processing facility in Quebec City, Quebec.

Capacity was a primary concern when Veolia Environmental Services (ES) sought to equip its material recovery facility (MRF) for construction and demolition debris in Quebec City, Quebec. The company selected technology for the facility based

### LOOKING INSIDE

Video of the Veolia Environmental Services C&D MRF, featuring a processing line designed by Machinex, can be viewed at [www.machinex.ca](http://www.machinex.ca).

on its high processing capacity and its ability to produce quality material streams, says Gaetan Blouin, president and CEO of Veolia ES Matieres Residuelles, Quebec, Canada.

Veolia and Blouin first started working with Plessisville, Quebec-based Machinex in 1993 on a MRF to sort curbside recyclables. Based on that experience and the success of this first facility, the company again selected Machinex for its C&D processing facility.

### FIELD EXPERIENCE

Within its existing solid waste transfer station, Veolia designed a building to house its new C&D processing facility. The site's space restrictions necessitated making the best use of all of the available land.

Once Veolia had designed the building to house its C&D processing line, the company brought in Machinex to consult on how best to equip the building, Blouin says.

"They are field people," Blouin says of Machinex' staff. "They know what they are talking about."

In addition, Machinex has partnerships with equipment sup-

pliers that can provide specialized equipment to increase a facility's productivity and versatility, Blouin says.

Machinex offered a number of design options to meet Veolia's needs, which included an average daily processing volume of 400 metric tons. Materials targeted for recovery included wood, ferrous metal, nonferrous metal, plastic, mixed rock and fines.

In addition to regular meetings with Machinex staff, Blouin and the staff at Veolia talked with other Machinex customers and toured similar facilities engineered by the company during the design process.

### WORKING TOGETHER

Ten months after Veolia placed its order with Machinex, the company began processing material at its new C&D facility in June of 2007, Blouin says. As with most facilities of this type, fine tuning was needed, and Machinex and Veolia worked together on solutions, which included water treatment issues and additional equipment to reduce rejects and fines, he adds. The project has been a team effort between Machinex and Veolia since its inception.

Veolia's C&D MRF recycles nearly 85 percent of incoming materials, including wood, ferrous and nonferrous metals, mixed rock, mixed plastic, cardboard and gypsum.

Veolia's processing line includes a pre-shredder, a pre-screener, a water floatation tank, a wood shredder, an eddy current and electro-magnets, each of which are capable of processing from 40 to 60 metric tons per hour, Blouin says. After pre-



## INSIDE THE C&D MRF: VEOLIA ENVIRONMENTAL SERVICES

**LOCATION:** Quebec City, Quebec

**STARTUP DATE:** June 2007

**CAPACITY:** 95,000 metric tons per year

**RESIDUE RATE:** 9.4 percent

Veolia ES recovered 79,900 metric tons of recyclables in 2010, including wood chips, wood fines, ferrous metals, nonferrous metals, cardboard, mixed plastic, gypsum, mixed rock and fines for landfill daily cover.

shredding, material is conveyed to the pre-sort area, where hand sorters remove cardboard and other unwelcome materials, such as carpeting. Material is then sorted by size, with the fraction measuring less than 2.5 inches advancing to the fines line. Material greater than 2.5 inches in size passes through a suction system that removes the light fraction, which includes plastics, paper and polystyrene. The next step is the water filtration tank, which sorts the wood from the denser materials. This process recovers nearly 98 percent of the incoming wood, according to Veolia, which is then reduced to a particle size of 2 to 4 inches using a shredder.

Veolia is especially proud of the high quality of the wood the system produces using the water float tank, Blouin says. Wood chips account for 19,500 metric tons, or nearly 25 percent, of the company's yearly production.

The water used in the facility's floatation system is filtered and recycled back into the system, helping to reduce the environmental impact of the system as well as the cost.

"As with any recovery facility, year after year we need to improve our operation and increase the percentage of recovered material," Blouin says. "At the beginning of the year, we added a screener after the first screener and we are looking to add one more, so we will have three screeners to process fines."

He adds that Veolia's goal is to reduce fines production by 50 percent and be able to recover the small wood from this material. Currently, fines for daily cover account for roughly 24 percent of the facility's yearly output, while wood fines account for nearly 5 percent.

Based on the company's experience in working with Machinex to fine-tune its C&D MRF, Blouin says Veolia would not hesitate to use Machinex for future projects. He cites Machinex' industry knowledge, experience and competitive pricing as key factors. "I am not afraid to recommend Machinex to any company," he says. "For any future project, I would like to work with them." **M**

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