

## MAPEI FRP System Strengthens Recycling Structure

In Montreal, Quebec, residential recycling is an important part of the city's environmental efforts. Five companies collect and deliver 125-150 truckloads of recycled materials to Rebutts Solides Canadiens (RSC) each day. On the first floor of the recycling center, RSC sorts the paper, metal, plastic and other materials into separate piles, using conveyors, sorters and other heavy equipment. Once the materials have been sorted, they are dumped via openings in the concrete floor into one of 25 different tunnels on the lower floor. Here the materials are compacted, bailed, and readied for shipment to companies that re-use the recycled objects.

The RSC plant was originally part of another building before it was transformed into a recycling plant. To form the entrance holes to the lower levels for the recycled materials, workers cut directly through the existing concrete slab, including the rebar used for structural strengthening. Because heavy equipment was operating on the upper level, they needed to keep those floors stable and strong. They could not support the upper floor with posts or steel beams placed around the lower floor, because the loaders had to be driven into the tunnels to collect and compact the materials from each tunnel. To resolve this problem, RSC decided to put fiber-reinforced polymer (FRP) around the entrance holes.

SA Construction, of Ste. Catherine, QC, was selected to perform the first phase of the structural strengthening. They completed work on six of the 12' H x 20' W 100-foot long tunnels, using *Carboplate E70* in the 2-inch and 4-inch sizes, *Mapewrap 11* and the *Mapewrap Primer 1* from MAPEI's line of FRP Composite Systems. The work was done from midnight to 7 a.m. on Friday and Saturday nights over three consecutive weekends so that work at the recycling plant was not interrupted.

There were also pits in the walls of the tunnels, which had been caused by contacts with the loaders. SA Construction made repairs to these areas with MAPEI concrete restoration products, including *Planitop X*, *Planitop 23*, *Planitop FD*, and *Planigrout 712*, as well as *Mapefer 1K* corrosion-inhibiting coating.

SA Construction's work was very successful, and the company has now bid on the second phase of the project, which will continue the tunnel repairs this next year.