



CASE STORY:

RESTORATION OF MONTREAL SQUARE-VICTORIA UNDERGROUND SUBWAY STATION PROJECT

DESCRIPTION

The construction firm QMD was granted in 2013, the contract to renovate the interior of one of the subway stations in Montreal, Victoria Square, which was built in the 60s. The project involved the demolition and rebuilding of concrete and ceramic walls and floors. The challenge lays in the evacuation of a large quantity of concrete and ceramic waste, nearly 220 tons over two floors and that, in the absence of lift system. The contractor had to go a long distance on the flat surface and climb 150 steps of concrete on two levels.

STUDIED METHODS

- 1) Use of conveyors is impossible for reasons of material type (small concrete block rolling on the carpet) and time of assembly and disassembly of the conveyor.
- 2) Transport of residues with two containers that can hold 9 kg each performed by workers in stairs.
Both solutions were eliminated for safety reasons and for the significant amount of workers required to perform the job (estimated at 10 workers).

CHOSEN METHOD

The Contractor decided to use the new handling system GreenGO. The system is battery operated and is designed specifically to perform construction or demolition works that are carried either inside or in stairs. The works took place over a period of 45 days for a total of 955 loads and this, with one equipment and two hoppers. On average, 22 loads were made daily. The capacity of the hopper allows the handling in stairs of about 230 to 275 kg of material of any kind. This material, once emerged of the entrance of the subway station, was placed in a concrete container to the surface. In total, nearly 19 containers of 16 cubic meters were used for a total of residues extracted from the site of nearly 220 tons. To allow the equipment to work on long period of time, about 14 hours, the equipment was provided with 2 supplemental batteries in addition to a battery replacement kit on hold with extra charger.

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CONCLUSION

The benefits identified by the contractor to have used GreenGo system for this important project were:

Flexibility The traction system allows the equipment to work in any type of condition either flator in stairs and the removable hoppers significantly reduce material handling by handling only once.

Versatility The system was then used to get the new material (ceramic and cement) on the site.

Liability Very little equipment failure during operations.

Major costs decreasing Reduction of labor costs (2 men were sufficient to move the residues)

Safety The staff did not have to carry the material in the stairs. No accident occurred during construction.

PROJECT SUMMARY

- Montreal Subway Square-Victoria station
- Demolition and rebuilding of concrete and ceramic walls and floors
- 1 machine and 2 hoppers were used to carry the works
- 45 working days
- 955 loads
- Approximately 22 loads/day
- 230 kg to 275 kg of material handled by load
- 19 containers of 20 m3 were filled
- 220 tons of displaced residues
- 10 men would have been required to accomplish the same work

