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Deep-collection systems provide environmental and economic benefits

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Deep-collection for waste management is a garbage-containment revolution that could drastically improve the way in which garbage is dealt.

In place of ugly containers hidden in the back corner of a property or the unsightly dumpster, deep-collection systems can be prominently displayed in common areas and incorporated into site design. They can be used for many kinds of developments, including commercial, industrial, institutional and residential as well as in parks or other public spaces. They are an effective crime prevention tool, provide both environmental and economic benefits, can be easily installed on virtually any site and are aesthetically pleasing.

The concept of the deep-collection system takes advantage of the laws of nature: earth temperature and gravity. Two-thirds of the eight-foot container is installed below grade, keeping garbage cool in the summer, virtually eliminating odor. In winter, the ground's insulating effect prevents freezing.

The small surface area (relative to the depth of the container) and its cylindrical shape allow gravity to naturally compact the garbage, increasing capacity of the container by 1.5 to 2.5 times its actual volume. Compaction leads to less frequent pickups. And, since the well is rotation-molded from a single piece of polyethylene plastic, it's entirely leak-proof, so soil and groundwater are protected from contamination.

The units are available in different sizes, in a variety of above-grade finishes to suit any development, and for a variety of refuse such as mixed waste, recyclables, cardboard and even organics and cooling oil.

The City of Kitchener's initial interest in deep-collection started about 10 years ago in the multi-residential sector where systems were installed in low-rise apartment complexes.

Since then, the systems have gained popularity and now more than 80 per cent of site-plan applications submitted to the city use deep-collection systems as their preferred choice for waste management.

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Kitchener planning staff was impressed with this unique solution and has supported this trend by using the deep-collection system at city facilities, parks and has installed 40 units along King Street when the downtown area was revitalized.

The aesthetic benefits of these units on the city's main street are many. No longer are businesses piling bags of garbage on King Street seven days a week. Now, waste is conveniently contained in the units. Garbage pickup has been reduced from seven days a week to between three and four days a week.

With the increase in public events and festivals in the downtown, the deep-collection units have met the needs of event goers without having to place portable garbage cans on the street.

Deep-collection units can be located virtually anywhere, resulting in greater flexibility of site-plan layout. The space savings versus traditional garbage enclosures allow for more amenity space or landscaped areas on a site. On small properties, they make it easier to meet regulatory requirements for set back and parking. With the increasing demand for in-fill development on older, small properties, the system can make the difference between being able to redevelop or not.

Traditional dumpsters are limited in their placement by the way they're emptied, requiring a straight-on approach by a garbage truck, which typically results in additional paved surfaces. The deep-collection unit, on the other hand, uses a reusable lifting bag that's raised by a knuckle boom crane that can reach a wider variety of places. When emptying a unit, the release mechanism on the bottom of the bag is opened and the garbage falls neatly into the truck whereupon the emptied bag is returned to the unit.

As the units protrude only three feet (0.9m) above grade, they are user friendly and easily accessible by persons with disabilities and children alike.

With evolving municipal garbage and recycling-separation requirements, the number of containers required on site has increased. Unfortunately, existing garbage enclosures typically cannot accommodate additional containers resulting in them being placed outside of the original enclosure. In some cases, these additional containers are being located in required parking spaces or being placed in landscaped areas, creating unattractive and potentially unsafe sites. Alternatively, additional deep-collection containers have a much smaller footprint and avoid the need for an enclosure, making source separation relatively easy.

With the city's focus on safety, from a "crime prevention through environmental design" perspective, the deep-collection unit is an excellent alternative to traditional garbage enclosures. They can be prominently displayed on a site, serving as an activity generator, creating opportunities for natural surveillance, eliminating the risk of entrapment or ambush, and naturally discourage graffiti because of their shape and exterior finish. In addition, the units are virtually fire and blast proof, making them an effective tool in the war against terrorism.

For more information on the deep collection system, contact Lisa at lisa.thompson@kitchener.ca or Brian at brian.page@molokna.com.

Brian Page has recently retired from the City of Kitchener as the supervisor of site development and is now employed with Molok North America Ltd. as the vice president of municipal affairs. Lisa Thompson is a planning technician with the City of Kitchener.