



CASE STUDY

Genesee County Digestion and Dewatering Facility | Michigan

Customized BILCO Roof Hatch Solves Installation Challenge in Michigan Project

A county in Michigan took an important step toward addressing regional health concerns with wastewater management by retrofitting a building with new dewatering equipment and using a BILCO roof hatch to solve a complex installation challenge.

The Genesee County Drain Commissioner – Division of Water and Waste Services (GCDC-WWS) installed two dewatering centrifuges to process a combination of primary waste and digested sludge. The three-year, \$9.5 million project to construct the Genesee County Digestion and Dewatering Facility included retrofitting a building by removing vacuum presses associated with obsolete incinerators and installing the centrifuges, which are capable of processing 250 GPM of sludge. Each centrifuge weighs a staggering 18,500 pounds.

The wastewater treatment agency transitioned from sludge disposal via liquid land application to landfill disposal. "The sludge dewatering improvements provide an efficient means of preparing the sludge for landfill disposal while also significantly reducing the volume of sludge requiring disposal. The need to install sludge dewatering equipment arose from a shift in sludge disposal practices," according to the GCDC-WWS.

Biosolids derived from sewage sludge treatment have been widely used as a valuable and cost-effective organic fertilizer and soil conditioner on farms. In recent years, fears of contamination have forced many communities to dramatically reduce the use of biosolids.

Contamination from "forever chemicals" known as PFAS – per- and polyfluoroalkyl substances – are found in many consumer products, such as food wraps, carpeting and clothing. Some of those chemicals are associated with health problems, including cancer, liver damage and decreased immune response to vaccines. One report claims nearly 70 million acres of U.S. farmland could be contaminated by forever chemicals, and that about 18 percent of all U.S. agricultural lands could be using biosolids as fertilizer.

The dewatering process adopted by Genesee County will significantly reduce the amount of sludge transferred to landfills, thereby reducing exposure to forever chemicals.

One of the challenges facing Sorenson Gross, the general contractor for the project, involved the installation of the centrifuges.

The centrifuges are 18.75 feet long and 4.66 feet wide, which made them unusually difficult to install, especially on the fourth floor of a 51-year-old building. Workers used heavy operating equipment to



lift and lower the centrifuges into the building through a custom sized roof hatch manufactured by BILCO. The large roof hatch was equipped with engineered lift assistance to afford safe, and easy one-hand operation and will allow the centrifuge to be easily removed if it ever needs to be repaired or replaced.

"BILCO was selected as the basis-of-design manufacturer of the roof hatch by the design engineer," GCDC-WWS said. "It is understood that this selection was based on previous experience and overall product quality. The hatch met the project requirements of providing unobstructed access to and watertight closure of the roof penetration that was necessary to install and maintain the new equipment."

"Every seven years or so, they will need to swap out the center portion of the drum. It's easier to access the centrifuges in the building through the hatch," added Project Manager for Sorenson, Alex Summers.

Sorenson Gross procured the hatches through BILCO's manufacturer's representative, HMG Group in Farmington.

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