ENCON

ENERGY CONSCIOUS INNOVATION

ENCON at the Freedom Tower

Company dramatically reduces down time and cost of waste disposal.

The Project:	Freedom Tower waste concentration
The Solution:	ENCON Thermal Evaporator system
Project start date:	November 2009

A challenge for all high-rise construction projects is to minimize demand on the equipment that is assisting with the construction process. One such piece of equipment that is always in high demand is the crane that lifts the steel beams as the structure climbs higher and higher. The same crane that lifts the steel beams that make up the skyscraper is also used to raise and lower various worker support infrastructure as well as the various waste products that are generated during construction. On the highest of towers, a single waste hauling trip might take up to an hour of crane time—each way.

With this in mind, Clivus Multrum, who was tasked with designing and providing waste treatment facilities for the steel erection phase for the new Freedom Tower at 1 World Trade Center Blvd in NYC, contacted ENCON to help. The goal was to reduce or eliminate crane-time required to empty the waste that was generated by the 150-person crew. The Clivus design was housed in nine steel shipping containers stacked in groups of three, set side by side. All nine were welded into a single unit. As the Freedom Tower structure was erected, the group of shipping containers housing the restrooms and the waste treatment equipment was raised at the same rate. A second group of nine shipping containers was also created to house a Subway restaurant, including all the equipment typically found in such an operation. This allowed the 150-person crew to eat and use the restroom without making trips down to the ground.

Within the Clivus structure were toilets and sinks as well as composters to receive toilet waste. The composting systems allowed Clivus to eliminate the need to bring solid waste down during the construction phase, but they still needed a solution for reducing the compost liquid and the wash water from the sinks. In addition, Clivus was tasked with reducing the volume of wastewater from the Subway operation, including all water for food preparation and liquids such as discarded coffee or soda. The solution to the wastewater problem was the ENCON Thermal Evaporator.

Clivus installed 2 ENCON Thermal Evaporators that were each capable of evaporating 8 gallons per hour. The systems were powered by electricity and the water vapor was vented to the atmosphere. One of the evaporators reduced the volume of compost liquid and hand wash water while the second system reduced the volume of the wash water coming from the restaurant. The evaporator systems provided a practical method to reduced the volume of the liquid waste by over 90%. The design included relatively small holding tanks for evaporator residue, which resulted in the elimination of crane time for wastewater disposal for the entire period of the steel erection. The ENCON Evaporators also eliminated the expense of hauling the wastewater to a sewer discharge point or treatment facility.

If you are interested in solving your wastewater challenges, give ENCON a call at (603) 624-5110. Our Sales Engineers will work with you to design environmentally acceptable solutions to meet your unique wastewater disposal needs. If you'd like to learn more about Clivus Multrum or want to hear more of their success story, feel free to contact ENCON's Sales Engineer on the project, Jason Rouba at (978) 358-7412 or jrouba@evaporator.com.