CLEARWATER WASTE TRANSFER STATION

Project Spotlight

OWNER:
City of Clearwater, FL

ENGINEER:
Ardurra Group, Inc.
Tampa, FL

GENERAL CONTRACTOR:
Kokolakis Contracting
Tarpon Springs, FL

CONTRACTOR:
Cornerstone Construction Services
Orlando, FL

The City of Clearwater, Florida, built a waste transfer station in 1971 and through multiple floor repairs and the need to make the station more efficient decided to tear it down and build a better, larger facility.

The city had knowledge of the high maintenance areas on their old transfer station and strove to build a new, long lasting and larger facility. With the realization of how heavy duty floors wear, they decided to explore a high strength topping system for their new project.

The Situation

Originally built in 1971, the Clearwater, Florida-based Waste Transfer Station was in need of a major facelift to accommodate the amount of waste being moved across its floors daily. The aged facility faced numerous legacy problems and issues throughout its lifetime. After much consideration, it was decided that rather than fixing these withstanding issues, the existing transfer building would be torn down and a new, modern waste transfer station would be built in its place. Many deciding factors contributed to this decision. For starters, modern compliance with the government's regulations made repairing the old waste transfer station unviable. It was more effective and forward-thinking to tear down the old one while designing and preparing for the new transfer station. Additionally, building a new station would greatly benefit the city and wetland environment.

With construction set to begin in October 2018, the new facility was designed to be four times larger than the previous one. Since the previous 40-year-old facility was already at maximum capacity, the newer building would need to be designed to be in service for at least four more decades, so the extra space was crucial. The concrete walls inside the new waste transfer station were going to be massive. To put it in perspective, the inside space alone would be more than three and a half football fields long. Earl Gloster, MPA Director of Solid Waste for the City of Clearwater knew that he needed an efficient, effective and reliable team to give the transfer station the attention it required.

With a reputation for successfully completing many waste transfer stations, Jake Parker with Kokolakis Contracting was tapped to be the general contractor for the job. Thanks to his extensive background, Parker knew that a project of this magnitude requires a team with reputable experience and products to meet the high requirements. To meet these demands, he needed a key group of partners to work with — Cornerstone Construction Services (CCS) and LATICRETE.

Orlando-based CCS is a concrete contractor that has been subcontracted to provide concrete services at many of Central Florida's leading institutions, including the City of Orlando, Orange County Public Schools, Walt Disney World®, Sea World® and Orlando International Airport. The construction group also has more than 20 years of experience working in waste transfer stations and heavy-duty industrial applications.

The Challenges

- *Internal and External Considerations:* Unlike new construction projects, the original Waste Transfer Station left behind a handful of obstacles. For starters, buried under the building were concrete bumpers that needed to be extracted. As a result, the

team would need to account for an abundant amount of preloading and foundation work. In addition to moving these heavy structures, an entire park would also need to be dug out in order to ensure there was proper soil to meet the requirements. Once this was completed, the team would then build a wetland habitat in its place.

- *Working Around the Wetland:* The greatest challenge that the team would have to overcome was working with a building situated in the middle of a wetland. With the terrain resulting in mitigation offsite, upstream, downstream and swift mud, help from the Army Corp of Engineers would be essential for alleviation. These factors would also lead to the site needing to be completely elevated, helping with future storm water flow and excess rain and flooding.

A LATICRETE Solution

"Waste transfer stations contain some of the harshest chemical and abrasion conditions for a concrete floor one can find. After performing preliminary analysis work, L&M™ EMERYTOP 400™ made the most sense as a flooring solution to cap the floor," said Alejandro Luna, the LATICRETE Technical Sales Representative for southern Florida. "This product would extend the life cycle of the tipping-floors and save the City of Clearwater costs associated with downtime, rerouting trucks, demolition and repair."

EMERYTOP 400 is the best choice for any floor subject with high point loads, high impacting loads and high abrasion, perfect for the Clearwater Waste Transfer Station. The non-metallic, non-rusting EMERYTOP 400 topping is effective indoors and outdoors.

The product was specifically developed for the solid waste industry's transfer station tipping floors. Other toppings only address impacting loads and abrasion. They don't address one of the most important causes of early topping failure: Chemical Attack.

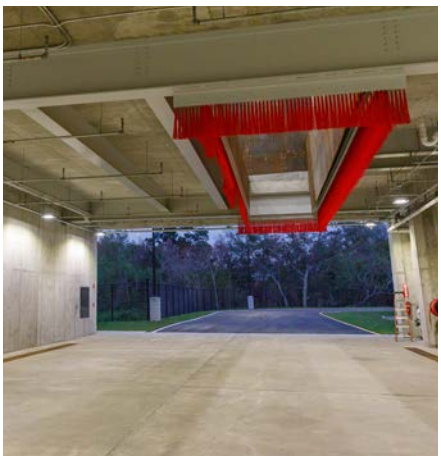
EMERYTOP 400 is chemically engineered to combat common chemicals that destroy the cement paste holding the aggregate in place. These include milk, vinegar, urine, animal fat and most household chemicals – the leachate found in all solid waste spaces. Once the cement paste is destroyed, the aggregate is lost. No other type of concrete floor needs the degree of abrasion resistance, impact resistance or chemical resistance as your transfer station tipping floor or heavy-traffic industrial floor.

Due to the fact that Parker and his team would be pouring more than 1,000 yards (914.4 m) of concrete, they broke the project up into sections to streamline assembly times and ease logistics. Before installing the tipping floors, the team had to make sure there were no gaps and seams in the plates, the pit brushes were aligned, there wasn't any trash or debris in the way and all of the steel was galvanized. Prior to installing EMERYTOP 400, the surface needed to be properly prepared. Armor plates and trench drains had to be accounted for. After this happened, the floors were ready to be topped with EMERYTOP 400.

Outcome

Today, the waste transfer station in Clearwater, Florida, pushes 350 to 400 tons of waste across its EMERYTOP 400 floors per day. This new facility now has the capacity to receive up to 700 tons (635,029 kg) per day.

"The teams all had a great choreographed installation," said Earl Gloster, MPA Director of Solid Waste for the City of Clearwater. "They showed up and did what they needed to do. The teams nailed everything we were looking for and were very responsive to our requests. The EMERYTOP 400 product looks great and will save us money in the long run. We expect the floor to last at least 10 years before we have to deal with patches or patchwork for the floor hardener topping."



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