WILMOT
MODULAR STRUCTURES, Inc.
We Help Build Visions

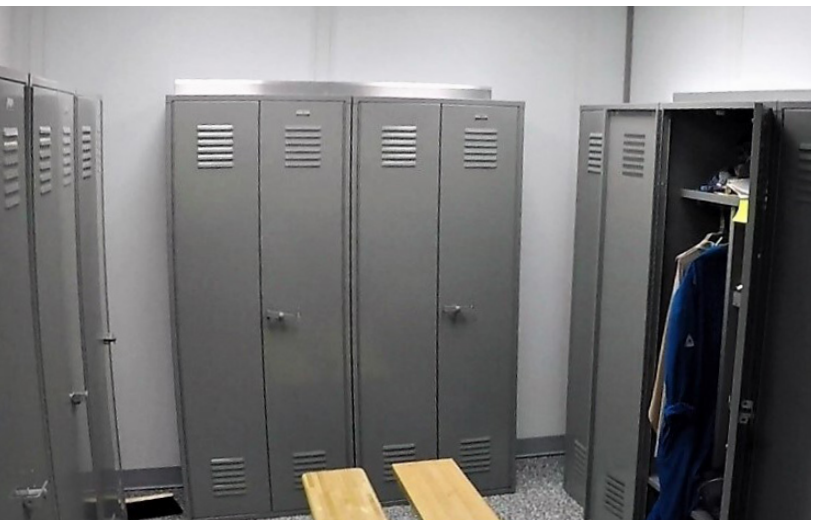
CASESTUDY

A Custom Panelized Structure for a Chemical Manufacturing Facility

Meeting Restrictions and Exceeding Expectations

1.800.966.8883 | www.wilmotmodular.com

CASESTUDY
Chemical Manufacturing Facility



Project Overview

Due to the nature of work within Chemical Manufacturing, the name of this company needs to remain anonymous, however, the details of this unique project are below. Wilmot Modular is dedicated to meeting any needs a client has, including privacy. For this facility in particular, we rose to the unique challenges presented. Because of the facility's remote location, stringent requirements for the employee shower facilities, and restrictions around the structure, this panelized shower room and restroom was no small feat!

PROJECT DETAILS

Length: 36'

Width: 32'

Materials: Gypsum, Steel, FRP Panels, Epoxy finished flooring

Features: Panelized Modular Walls, Interconnected Venting System, Manifold water & waste sewer service, Ejector/pump Tank, Minimal Site Disturbance, "Tankless" hot water system, Male & Female shower divisions

Here's the Short Story

The Problem

This chemical manufacturing facility current structure had crude partitioning between male and female showers and needed a locker room and restroom added adjacent to it. The facility ran on shifts during all hours which meant a constant supply of hot water was necessary to support multiple workers coming in and out. As is the case for most manufacturing facilities, there is an existing concrete floor. A typical panelized building can be installed easily on top of the concrete, however, in this case, the facility required a lot of plumbing connections without any alterations or cuttings into the concrete floor.

Unique Challenges

- Remote location
- All venting had to be interconnected to a central point
- Ability to keep required future maintenance internalized
- Strategic Waste Removal
- Concrete Flooring could not be altered or cut into

The Solution – A Custom Panelized Structure

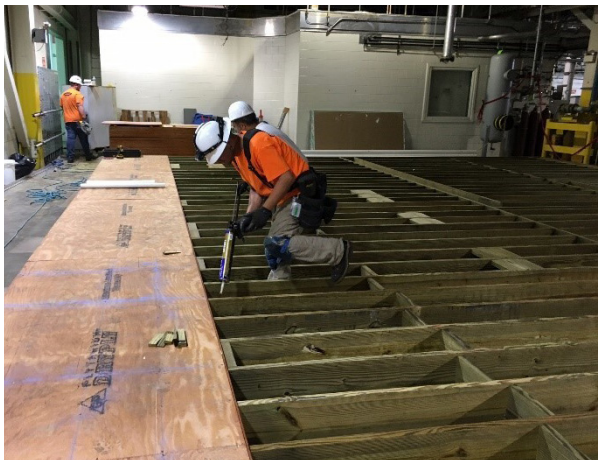
Features include:

- Multiple access points to keep future maintenance internal
- Restrooms and lockers were added adjacent to the showers for employee ease
- "Tankless" hot water system that did not alter the plant's current design and workflow
- Raised waste removal system above the shower and locker rooms
- Off site assembly of the structure for easy delivery to the facility's remote location
- Centralized venting

Every chemical manufacturing plant comes with specific requirements and restrictions, and Wilmot Modular's team rose to the challenge for them all.

Here's the Deep Dive

The requirements of this Chemical Manufacturing Plant were like no other project Wilmot Modular took on. There are countless codes, restrictions, and potential hazards that have to be taken into account when anything in their current space is changed for the purpose of safety and meeting industry standards. Here are the solutions we came up with and how each of them was implemented.



Shipping to Remote Locations

This plant facility was in a remote location, making it difficult for traditional construction methods to be executed efficiently. The panelized modular wall system design was instrumental because of the facility's remote location. The structure's building materials were inventoried and maintained in a controlled environment off-site. When everything was ready to be configured, the building materials were shipped and staged onsite in a palletized fashion. Waste debris were disposed of in a controlled manner and helped with daily cleanup throughout completion.

Creative Water and Waste Line Solutions

Despite the many plumbing connections required, Wilmot Modular had to find a way to run water and waste lines from the panelized structure outside of the building, without running those lines through the flooring. The new building's 2x12 floor system allowed for the shower and restroom's water and sewer services to be manifolded and interconnected into central locations on the building footprint, without altering or engaging any concrete flooring.

Consistent Supply of Hot Water

With employees coming in and out of their shift, the showers were being used throughout all hours of the day and a concern rose regarding the hot water supply being consistent. Wilmot Modular designed a "Tankless" water system and allowed the male and female sides to operate efficiently and independently from one another. This design approach was instrumental for the facility - the system used was installed inside a small closet. This meant using traditional and multiple large water heaters was not necessary.

How was the saved space used?

The saved space was redistributed to maximize efficiency of an extremely limited buildable footprint. The recharge rate of the hot water heaters could not meet the high demand for the facility's usage in addition to the electrical requirements for them to be used.

Removing Waste from the Site

An ejector pump/tank system was incorporated into the design which allowed the waste to be pumped up and out of the plant facility. This design saved time, money, and helped avoid additional disruptions in the plant's daily operations. The ejector pump was installed simultaneously with the building's installation. The concrete floor did not have to be excavated and improved, like typical ground work would have to be done, so the ejector pump scenario was the most cost effective and efficient for this project.

Venting Discharge Away from Work Areas

All of the venting was interconnected to a central point and extended over 50 ft. to the exterior of the plant facility. This helped avoid fume discharging into the plant facility working areas.

Minimal Site Disturbance During and After Implementation

It was important that the operation and site be minimally disturbed so that site productivity could continue and safety during chemical engagement was not compromised. The creative solution was building a raised floor, manifold the lines and hook them up to an ejector pump. This solution not only saved time and minimized disturbance of the operation and site, but also saved money and time for the facility.

Future Maintenance Cost Optimization

Maintenance costs are a big consideration for facility managers running a large plant. The panelized structure was comprised of gypsum, steel and FRP panels, as well as an epoxy finished floor. All of those features ensure longevity and help reduce future maintenance costs.

Above and Beyond Solutions

From the "Tankless" hot water system to the complex installation of a panelized building, there's no question of how many details went into the structure.

This Chemical Manufacturing Facility was required to upgrade their current shower facility and add an adjacent restroom and locker room as well. Wilmot not only built a new shower and restroom facility but also did so within all the manufacturing industry requirements.

Over a period of 8 months, the panelized structure was designed, built and assembled. The team collaboration Wilmot Modular put forth was seamless and evident when considering the many elements this project required: building size, points of egress, occupancy levels, footprint restrictions in the plant … the list goes on and was completely fulfilled.

WILMOT
MODULAR STRUCTURES, Inc.
We Help Build Visions

Contact Us today to learn about our Customizable Modular Structures