



AcornVac Vacuum Plumbing

Course Name: Vacuum Plumbing & A Sustainable Future: Healthcare, Commercial & Industrial Applications

- AIA/CES Learning Units: 1.00 LU/Health Safety Welfare hr. Course #: 1AV22A
- 1 AAA Core Learning PDH
- 1 AIBD CE Hour
- 1 GBCI General Hour for LEED Professionals
- 1 OAA Structured Learning Hour
- 1 SAA Core Learning Hour
- 1 ASPE CE Hour

Description: This course will help you learn more about the benefits of Vacuum Plumbing in addition to being water conserving, vacuum also addresses the following construction concerns and can become a valuable solution for plumbing waste design in buildings that have:

- Structural limitations
- Restrictive site issues
- Embedded contaminants in the existing flooring – such as asbestos tile
- Vacuum systems are Self-venting, which eliminates the need for vent stacks and roof penetrations
- Vacuum systems typically require smaller diameter piping and fittings, allowing waste lines to fit into smaller space restricted areas.
- Vacuum piping can be routed vertically or horizontally which provides a unique tool for challenges with waste line layout.
- The ability to route waste lines both vertically and around obstacles in horizontal pathways always helps to facilitate “open architectural” design and environment

Learning Objectives:

1. Understand the benefits of Vacuum Plumbing as compared to traditional gravity plumbing and when it would apply.
2. Explain how vacuum plumbing systems benefit the environment.
3. Explain how Vacuum Plumbing can help buildings become LEED certified.
4. Explain how Vacuum Plumbing systems can reduce the spread of infection.



San Jose International Airport,
Food court plumbing had to be installed on a floor over TSA equipment. Vacuum plumbing installation was completed with no disruption to the floor below



Pier A Harbor House, Battery Park
Originally built in 1886 is the only Victorian Pier left in NYC. Deemed unusable real estate Vacuum routed waste at a lower level ceiling height from the various bars, kitchens and bathroom areas across the length of the pier to grease interceptors and sanitary sewer lines on land



Froedtert Hospital, Milwaukee
Remodel needed about a busy ER. Would have cost hospital upwards of 1m to close for a renovation. Vacuum prevented disruption to the ER



Pier A Case Study

Challenges

The existing bathrooms and plumbing on the land side of the building, while adequate for previous tenants, would not accommodate planned occupancy of the new restaurant. Additional bathrooms throughout the building and plumbing for the kitchen and bars would have to be added. However, the Department of Environmental Protection would not allow HPH to run waste pipes under the pier or over the river. Any and all plumbing would have to be contained within the building.



Given those restrictions and the length of the building, getting first floor wastewater out of the building was impossible, and the second floor would not be much easier.

STRUGGLE TO FIND A SOLUTION

The architect suggested raising the floor. That would allow for an eight-foot drop to accommodate the slope required to move the wastewater 400 feet to the sewer connection on the land side.

ACORNVAC: THE SOLUTION

The architect considered the design of cruise ships and airplanes. Just like the situation with Pier A, a plane or ship's plumbing must be contained within the structure. That thinking led him to AcornVac.

With vacuum plumbing, gravity is no longer a part of the equation. You can simply lift the wastewater up and out of the building. The ability to move wastewater horizontally and vertically allows more adaptability in plumbing fixture layout and design.

RESULTS:

HPH and Green Light Architecture turned a run-down historical landmark into a 28,000 square foot food, beverage, and entertainment destination without compromising the original beauty of the building or the environment.

Should the owners want to make any renovations to the interior layout of the building in the future, the sky is the limit as far as the plumbing is concerned. Moving or adding a bathroom can be done easily without having to shut down the complex and turn customers away.

Presented by:

Karen Begley for Neo-Metro

kbegley@neo-metro.com

626-421-9265

Neo-Metro