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DESIGN-BUILD



Solutions

ESI specializes in food processing and distribution center design and construction.



How to Renovate a Dry Warehouse for Cold Food

THE SEARCH FOR LAND and buildings in the Greater Boston area began in 2011. US Foods wanted a more modern and efficient food distribution center to better serve its 3,000 New England-area chefs and restaurants.

"There were few buildings that fit our requirements in terms of size and truck parking and even fewer sites available for purchase containing over 40 acres of land," says Sandy Raine,

vice president of corporate real estate for US Foods, Inc., Rosemont, Ill.

That's why US Foods acquired a former water bottling storage and distribution facility in Seabrook, N.H., and converted it into a refrigerated food distribution center.

"Over the course of 2-plus years, US Foods literally looked at every available building in excess of 300,000 square feet with sufficient

truck parking for our fleet in the Greater Boston market," says Raine. "We also looked at any available land sites, including developer-controlled sites in excess of 40 acres. The Seabrook site offered us (a) sufficient building size, (b) adequate auto and truck parking, (c) room to build a maintenance and fueling facility for our fleet, (d) location remote from heavily populated residential areas and (e) local and state officials that were inviting and professionally assisted us as we worked through the entitlement issues inherent in any project of this size and complexity."

Because the site was not equipped to store and distribute food products, US Foods tapped ESI Group USA, Hartland Wis., who converted the nearly 500,000-square-foot facility into a temperature-controlled food distribution center, on time and under budget.



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State-of-the-art food product evaluation center.

"Our facilities have unique functional requirements, so finding existing modern refrigerated facilities for sale that fit our needs rarely happens," says Art Roman, director of design and construction for US Foods. "Similarly, in many highly developed urban areas such as Boston, it is hard to find suitable developable Greenfield sites. The next best approach is to find a facility that is easily convertible and has a history of being well maintained."

Building for energy efficiency

Since US Foods is pursuing LEED certification, the Seabrook location underwent a series of enhancements, including updated energy efficient lighting, a cascade refrigeration system that uses CO2 and ammonia, a dedicated fleet fueling and truck service center and a state-of-the-art food product evaluation center.

It also entails a dry dock, perishable dock, a battery charging and repair station, an electrical compressor room, a storage mezzanine, a guard house, a truck fueling and service center, 2-story administration offices, 1-story operations offices, a 70,162-square-foot freezer and a 61,375-square-foot cooler.

Sustainable design features include insulated metal panels at warehouse areas, ESFR fire protection system, shrinkage-compensating floors and LED fixtures with occupancy sensors in refrigerated areas.

"We used 20-50% recycled materials through the 15 construction divisions. We used low energy usage fixtures such as LED lighting in cold areas, occupancy sensors on warehouses and office area fixtures, variable frequency drives on refrigeration condensers, compressors and air units and select HVAC equipment," says Dan Rousseau, project engineer at ESI Design Services.

The pros of converting an existing site vs. building from scratch is that the walls, roof, structure, dock doors, levelers and site pavement are already in place, Rousseau adds.

"The cons are that it was an existing dry warehouse. The column spacing wasn't built for typical storage rack spacing, and the existing structure wasn't designed for cold storage floors, walls, ceilings and refrigeration unit weights," he says.

Converting an existing facility into one that

can store and distribute cold food products is no easy task. But, good up-front planning executed by a skilled and dedicated team proves that any plant can be converted into a temperature-controlled one.

Go to <http://bit.ly/1PLctQ2> to watch the conversion in process. **ESI**



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New mechanicals above ceiling in interstitial space.

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