

The Challenges of Renovating an Existing Facility Into a Food Plant

Renovating an existing facility seems faster and cheaper than going with a greenfield site — but when it comes to a food plant, that might not be the case.

David Dixon, President, davidcdixonLLC (Q4 2021)

Jeffrey Counsell's article in Area Development, "Siting a New Production Plant: A Challenge Intensifies", was an excellent discussion of a new dynamic in food plant site selection: avoiding second-generation food plants solely due to the potential risk of pathogens. I also teach this tactic of risk management. Early in my career, I saw projects where second-, third- or fourth-generation food plants were seen as a bargain, because their square-foot costs were very low. They were on the market because they had been closed down by the previous owner due to microbiological contamination! The new buyers were thrilled that they snagged a facility at such a low price.

Jeff is one of the few real estate executives with deep knowledge of the tradeoffs involved in renovating existing buildings into food plants. Rather, it is the norm that corporate real estate directors and real estate brokers tasked with finding properties view them through the lens of a long and successful career in corporate real estate: unit cost, comps, incentives, taxes, and perhaps demographics. Too often, the technical fit-for-use issues described in Jeff's article are analyzed later in the game, after investment expectations are already set. [RELATED LINKS](#)

The belief that finding an existing facility is faster and cheaper than greenfield remains firmly entrenched. This overview assumes the target building has no risk of pathogen contamination. It doesn't talk about rarer problems like previous freezer floor heaving or corroded under slab drainage and washouts you could drop a refrigerator into. It sidesteps the obvious that can be identified by a competent existing conditions survey, i.e., remaining life of mechanical equipment or roof leaks, etc. My goal here is to highlight the most critical, yet often missed, challenges to renovating an existing building into a food plant.

Speed to Market

First, is it faster? Maybe. The existing new building built on spec with an abnormally strong roof structure and no floor yet? Absolutely faster, but very hard to find. An existing clean building acquired early enough to begin renovations before the onset of winter, most likely faster. Anything else, it's a toss-up. Start tearing up half the floor slabs, start reinforcing roof trusses, stub your toe on a few "unanticipated conditions," and your schedule advantage evaporates.

Is it cheaper? Unlikely. The market is tight for good properties, and competing sectors have more ready cash than the food sector. Try to find the perfect building in a state with recently legalized adult use cannabis! Add the cost of bringing in a larger water line, larger electrical service, and replacing many of the floor slabs to get proper pitch and drainage and your cost advantage vs. greenfield narrows. And don't forget, these are building investments that are depreciated over 20+ years. They translate to pennies on cost-per-case. Don't step over dollars to pick up dimes.

Too often, the technical fit-for-use issues are analyzed later in the game, after investment expectations are already set. **Tactics to Consider**
The Floor: A wise man once said, "If you have a dollar to spend, spend it on the floor!" The equipment layout, the wall and door locations, and how the room is operated and sanitized dictate the floor pitches and drain locations. In a smaller room, you can create the floor pitch by spending more on the polyurethane floor topping. You can trench in additional drains, but you need to pay attention to under-slab drain piping slopes. You can squeegee to a dish spot drain. But you can't live with an existing floor pitch that flows water toward a wall. Sometimes it takes time to advance the preliminary process and architectural design sufficiently to finally conclude that the floor slab needs to be replaced. Hit these topics first. And don't get me started on an existing five-inch floor slab with a single layer of wire mesh!

The Roof: A wise man also once said, "The building is an umbrella that keeps rain off my process!" When analyzing an existing building, it takes a while to ascertain remaining available roof load needed for your 10,000-lb. hygienic air handlers (RMAU), the 50 lb./square foot needed for IMP ceilings, and the other superimposed or suspended loads. The tactics to consider here are many:

- Strip off a ballasted roof and replace with a fully adhered membrane to free up structural capacity.
- Position the RMAU across a beam, not in the center of the bay, and address this positioning with additional ductwork.
- Add stub columns to four building columns and support a galvanized platform above the roof onto which you place that RMAU. This one is quite common, but each of these structures can cost over \$100,000. And if you are very unlucky, you will be setting all this with a helicopter!
- Sidestep the issue by shifting those loads to column support or floor support. It is common for finished case conveyors, pneumatic or disc conveyors, or pipe racks, for example, to be knee-braced off a column. As a last resort, run columns to the floor, but be ready to

hear the howls from process planners and operations folks after they realize how much of the floor is impeded by those columns and the protective bollards.

- Lastly, and most annoyingly, maneuver additional trusses into existing bays or reinforce trusses with new metal and welding — tricky and not risk free...nor cheap...nor fast.

Start tearing up half the floor slabs, start reinforcing roof trusses, stub your toe on a few “unanticipated conditions,” and your schedule advantage evaporates. Vertical clearance: Finally, that same verbose man also said, “All mistakes are made in section, few in plan!” A paraphrase of Spock’s criticism of Khan failing to think in three dimensions, it nevertheless is true — and often missed. Just some Fermi math for three-high racking in a cooler: six feet tier-to-tier with first pallet off the floor, 32 inches from top of stack to sprinkler head; another foot to the ceiling and a six-foot interstitial space, and you will need 28 feet clear to first obstruction. Few available buildings are that tall. Miss this one and expect your contractors or maintenance staff to drag themselves forward under beams to get to a connection or caulk a penetration. Good luck! But here also, we have some workarounds for tight spaces:

- Run utilities in open joists or trusses. In the right direction, laterals can be run between joists, but don’t create a pocket in liquid utilities by diving under a solid I-beam. And drilling a hole through structural web to pass a sprinkler main through? Here be dragons!
- Carefully plan any horizontal ductwork so that there are no crosses in the interstitial space that create further impediments in an already tight space. Better yet, avoid any horizontal ductwork runs in the interstitial.
- Locate as much as you can in the higher section of the roof peak and run laterals to the sides — feasible on a two-pitch roof, more difficult with a more complicated roof layout.
- Carefully coordinate evaps with the racks inside coolers and freezers, and please let everyone know you will lose top-tier pallet positions on both sides.
- Always install lighting suspended from the IMP ceiling. When you flush mount fixtures you have more need to access the box created from inside the interstitial space.
- It is good practice in any case, but the less going on in the interstitial space, the better — less need for access. Avoid pumps, electrical panels that need access, etc.

None of this is easy. 3-D design helps greatly. It takes time and it forces decisions by all disciplines earlier in the design process. And if this article has dissuaded you from renovating an existing building into a food plant, see my article from last year for suggestions for shortening the process of finding and building on a greenfield site!

Next up: tricks for designing under a sale-leaseback scenario where the shell is owned by a developer.

All contents copyright 2021 Halcyon Business Publications, Inc.