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Industrial Facility Upgrades

6 Steps to Take Before The Project Starts to Save the Budget and Timeline

Industrial projects can be extremely complex yet, surprisingly, some design engineers may never visit the site before starting the project and some mechanical contractors dive right in without any on-site review. This lack of foresight can lead to future problems. When errors are discovered months or years down the line, the ability to do upgrades may be limited or costly.



Project delays caused by unforseen issues can create significant consequences for industrial and pharmaceutical companies. Every day that production lines are shut down can result in financial losses. Stakeholders who have invested months or years in research and development may have to wait for additional testing once the equipment is up and running.

With continuing, widespread supply chain issues, getting it right before a project starts is even more critical as projects are more commonly challenged with schedule compression and budget strain.

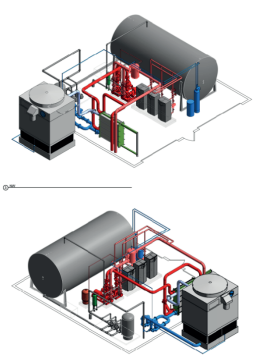
According to Jerry Baumann, an Industrial Account Representative for Integrated Facility Services (IFS), "Challenges on industrial projects can be particularly difficult due to the intense competition between clients to bring new products and processes to market. As the contractor, we are committed to finding innovative and effective solutions to ensure the project's success."

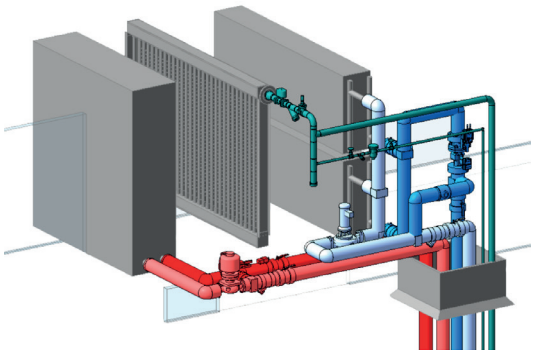
With over two decades of experience, Bauman leads IFS' St. Louis-region industrial projects. Project Engineer Anthony Silistria runs IFS' industrial team that serves Mid-Missouri from an office in Columbia, Missouri. This article outlines their acquired exprience for the stes industrial companies can take before a project starts to maximize success and minimize issues.

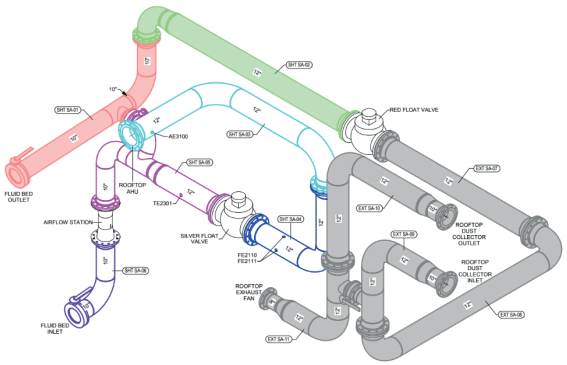
IFS is a top mechanical contractor serving both the St. Louis and Mid-Missouri regions. They have extensive experience providing a wide range of facility services, including medical research, food production, laboratory work, chemical plants, utility facilities, and pharmaceutical companies that produce COVID-19, animal and human products.

Six steps to take with your mechanical contractor before starting your next industrial facility project to stay on budget and timeline:

1) Convert flat drawings to three-dimensional







The first order of business to avoid unforeseen issues is to ensure that two-dimensional drawings are accurately translated into a three-dimensional rendering and the plans are reviewed on-site. Piping and Instrumentation Diagrams (P&ID) show all the components of a process system and the flow of piping through the facility. However, these two-dimensional, graphical representations don't provide the real-life, three-dimensional perspective.

Visualizing the project helps professionals better evaluate the system and can bring you, the client, into the discussion.

The time spent upfront to have your contractor prepare either hand-drawn isometric drawings onsite (a true art that is becoming a rare commodity) or computerized building information modeling (BIM) graphics at the office is a small investment for the potential benefits and peace of mind.

2) Review drawings on-site with your contractor

Standing at the site with your contractor to review the 3D drawings can prompt a valuable discussion that may reveal potential issues, conflicts with future upgrades, aesthetics, and even potential installation challenges while there is still time to shift plans.



"This process sometimes prompts changes once you can visualize the system. It can help work out any issues before we even start, as the owner has a perception of how things will look and be connected. This affects their bottom line by reducing costs and keeping projects on track, so you don't have to pay to redo it," said Baumann.

An on-site review process also expands the view beyond the installed system to reveal surrounding challenges that don't change the design but require advanced planning.

"I like to look at each set of drawings with fresh eyes and always try and consider other options as opposed to what is drawn to see if another way suits the customer better," said Silistria.

Real Project Example: IFS modernized the process equipment for long-time client ELANTAS PDG at their manufacturing facility in Downtown St. Louis. Placing the 3,600-pound chemical condenser inside the early 20th-century building was no small feat. The team had to innovate a complex solution to install the heat exchanger onto an angled support frame and navigate it up to the third floor of the building using a rollable carriage. Due to the advance planning that happened at the early stages of the project, the installation was completed within a scheduled 10-day maintenance shutdown to avoid disruption to operations.

3) Evaluate material lead time early. Consider alternate solutions to circumvent project delays

External factors, such as the continuing material and equipment delays, should be considered and discussed at this stage. Your contractor should know the lead times of primary equipment and be able to share any impacts to the project timeline. In the best of circumstances, precise scheduling is required for complex industrial upgrade projects to keep work crews and your operations aligned. It is important to have a precise daily planning process that involves your in-house point person, the contractor, and any other trades working on the project in order for it to be effective.



If plans call for equipment that will stall the entire project, an innovative contractor may have alternate design or equipment recommendations to achieve the same goal.

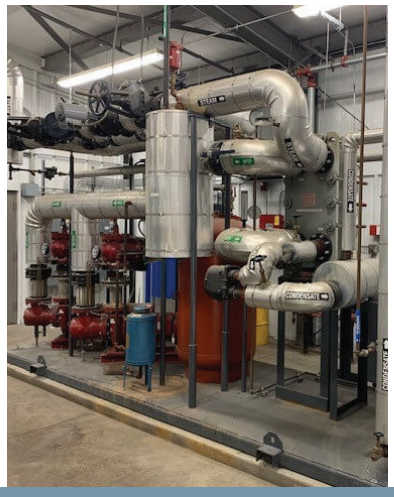
Real Project Example: David Petelik, facilities manager at Huvepharma, who has experience working with IFS at Huvepharma Inc. and Virbac, shared how the team faced a challenge when an air handler part failed and had a long lead time for replacement.

IFS suggested the solution of replacing the entire fan with a fan wall. This workaround was a success as it allowed for a quicker recovery without waiting for the lead time. The IFS team designed, procured, and installed the equipment, and the customer was pleased with the outcome.

4) Consider value engineering options to accomplish the same goals

If the budget is strained because of rising equipment costs or other factors, your contractor may be able to offer value engineering solutions, such as streamlining ductwork or piping that can accomplish the same goal at a reduced cost.

"We leverage ourselves by thinking outside the box and offer alternate material, choices and equipment choices that can bring down the cost," said Baumann.





5) Seize the opportunity to address other facility issues.

The design engineer could be unaware of challenges or issues that are unique to your facility. By reviewing plans at the work site, you can discuss and explore potential solutions that could be efficiently incorporated into the project.

Real Project Example: Virbac, an animal pharmaceutical company, wanted to improve the process for keeping its cooling tower clean from cottonwood and dust that inevitably ends up in the tower basin. IFS developed a solution to filter and refill the water as needed based on water contamination levels.

"When IFS comes out to bid capital projects, they'll have ideas and suggestions on a better way to do things or how we can improve the process. That's been very beneficial," said Mike Bynum, P.E., Construction and Facilities Manager at Virbac.



6) Check your confidence in the contractor

There is a direct value of consulting with a contractor early. Another benefit is that this process can give you valuable insights into their strategic thinking and level of expertise.

It is important to pay close attention to any indications of the contractor's lack of experience in your specialized project, particularly if your facility has stringent requirements. After developing a trusted reationship with a reliable contractor, seeking their advice before bidding on a project can prove to be highly beneficial.

BONUS TIP: The End is Not the End

Maintaining systems is critical to keeping equipment operating efficiently in the long term. Avoid thinking, 'We've done a capital project and put in all this new equipment, so now we are done and can just walk away.' Ongoing commissioning, inspection, and maintenance are needed to make sure your system stays at peak performance.

Industrial companies share common pressures to get projects done within a tight timeline, on budget, and within strict requirements to keep production flowing. But don't get lured into hitting the "easy button." Due diligence at the onset of a project has many critical benefits, such as identifying issues early, uncovering installation challenges, strategizing value-added options, and avoiding equipment delays. This can save a project's timeline, budget, and your facility's long-term strategy.

"We've heard that a building never runs as good as the day that it was started up. You're fighting this uphill battle if you don't maintain your systems. How you sustain the building beyond that initial investment is a good business decision," said Chris Ruth, IFS' Building Controls Mid-Mo Manager.

For more information about IFS' Industrial sector experience and capabilities, visit intfs.com/industrial

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