

TRAP #1

THE DESIGN/BID/BUILD TRAP

HOW THE CONVENTIONAL DESIGN/BID/BUILD APPROACH INCREASES CONSTRUCTION COSTS AND PRODUCTION DELAYS FOR MANUFACTURERS

The Design-Bid-Build (D/B/B) or “spec-build” process—while used in many types of construction—has potential drawbacks when applied to construction for industrial process manufacturers.

GEM
PROCESS
SOLUTIONS

GPS

TRADITIONAL D/B/B MAY NOT MEET THE NEEDS OF PROCESS MANUFACTURERS

A major shortcoming of applying the traditional D/B/B construction method to process manufacturing is that the actual process requirements are often overlooked, resulting in added costs and delayed launches.

Instead of focusing on the process, and then designing a new structure to maximize productivity and economy for that process, the D/B/B method relies on traditional construction processes which don't always take into account the unique process workflow, plant and equipment layout, operation and maintenance needs, future expansion plans, or other time-sensitive aspects of the industrial process.

Trying to apply a traditional D/B/B construction approach to a process-driven construction project can often times lead to:

- 1 **Costs ballooning out of control due to inaccurate initial budget estimates**
- 2 **Delayed construction starts or elongated schedules**
- 3 **Unnecessary disruption of current production**
- 4 **A facility that does not meet the owner's goals of optimizing the process and maximizing savings on future plant expansion**

D/B/B PROBLEM #1:

COST OVERRAGES DUE TO INACCURATE INITIAL BUDGET ESTIMATES

- Inaccurate budgeting can come from overlooking the specific industrial process, or from minimal contractor input early in the design and preconstruction phase where opportunities for savings are the greatest.
- Flawed drawings and specifications cause cost overruns after construction begins, as change orders substantially increase cost and delay the schedule.
- **Some contractors, knowing they will make up the difference on higher margin change orders, submit low initial bids for individual parts of the project (site development, concrete, steelwork, electrical, plumbing, and mechanical).**

D/B/B PROBLEM #2:

DELAYED CONSTRUCTION STARTS OR ELONGATED SCHEDULES

- Inherent delays in the D/B/B construction process can translate into lost production for process manufacturers. The traditional D/B/B process can take months:
 1. The owner selects the architect/engineering (A/E) firm to create the design and a set of drawings for the project.
 2. The owner selects potential contractors and puts the project out to bid.
 3. Contractors are selected for the project based on lowest bid.
- **Approximately 8% of the entire D/B/B project cost is spent on the design prior to knowing the final cost estimate for the project. This means an owner may find out they can't afford the project only after spending a substantial amount on design.**

D/B/B PROBLEM #3:

UNNECESSARY DISRUPTION OF CURRENT PRODUCTION

- The traditional D/B/B construction method may not provide a flexible and constructable design that prevents major interruptions in the manufacturer's existing production activity.
- **The D/B/B method can therefore lead to costly shutdowns or rerouted production processes that may have been avoidable.**

D/B/B PROBLEM #4:

A FACILITY THAT DOES NOT MEET THE OWNER'S GOALS OF OPTIMIZING THE PROCESS AND MAXIMIZING SAVINGS ON FUTURE PLANT EXPANSION

Because the D/B/B method lacks a process-related approach to the construction project, the result may be a final project not ideally suited to the owner's process, and which may cause constructibility issues.

- The D/B/B approach may overlook opportunities to streamline the building owner's process in the new facility.
- The traditional D/B/B construction choices may end up introducing new problems, such as plant layout constraints that decrease production efficiency or add costs and time to equipment service and maintenance tasks.
- Opportunities to save costs and time on future plant expansion projects by modifying key areas of the new plant design, such as foundations, conduit runs, or wall structures, may also be missed.
- **Often these D/B/B shortcomings are discovered only after the plant has been built and is in operation.**

INTRODUCING AN ALTERNATIVE TO D/B/B FOR PROCESS CONSTRUCTION PROJECTS



The GEM Process Solutions (GPS) approach minimizes the cost, construction, and production risks for process manufacturers found in the traditional design-bid-build method:

- ⊕ The GPS approach can take months off your construction schedule by accelerating the design, budget, and initial construction stages, therefore getting your new plant into production—and profitability—sooner, increasing ROI.
- ⊕ With GPS, you get a guaranteed, firm price for your project, early in the design process, so you can determine the affordability of your project immediately, without production-killing delays.
- ⊕ GPS designs and builds the best and most cost-effective solution for your process, production, future expansion, and business needs by optimizing your building project around your process.
- ⊕ As a single point of contact for the entire project (including design, estimating, and construction phases), GPS maximizes cost savings and efficient scheduling opportunities to get your new plant in production, without cost overruns or costly construction delays.
- ⊕ GEM Process Solutions process-driven design/build system uses an in-house team of architects, professional engineers, and construction staff who work directly with owners to optimize the design of the new facility around the specific industrial process.

COMPARING CONVENTIONAL DESIGN/BID/BUILD WITH THE GEM PROCESS SOLUTIONS APPROACH

TRADITIONAL D/B/B	GEM PROCESS SOLUTIONS
<p>− INITIAL DESIGN DELAYS: Designs must be fully completed first, then sent out for bid to determine final project cost, resulting in months of lost production for plant owners</p>	<p>+ FASTER CONSTRUCTION STARTS BRING PLANT PRODUCTION ONLINE SOONER: Construction begins much earlier, before the design process is complete, getting production—and revenue—online months sooner</p>
<p>− HIGH UP-FRONT PLANT DESIGN COSTS: Building owners pay approximately 8% of the total project cost before knowing their final project cost; lack of focus on the owner's process may result in unaffordable final project cost, leading to project rework, cancellation or delays</p>	<p>+ COSTS CUT EARLY IN THE DESIGN PROCESS: Focus is on the owner's process, plus incorporating value engineering principles early in the design stage, facilitates an accurate final project cost and constructibility</p>
<p>− LIMITED PROCESS-CONSTRUCTION EXPERTISE: Important aspects of the owner's process requirements are often not incorporated into final design, resulting in higher building costs and below-optimum plant performance</p>	<p>+ PROJECT BUILT AROUND OWNER'S PROCESS: Optimization of the owner's process within the construction project is the primary goal of plant design, resulting in lower final project costs, lower ongoing plant maintenance costs, and lower costs for future expansion</p>
<p>− LACK OF SINGLE PROJECT MANAGER WITH DEEP PROCESS-RELATED AND CONSTRUCTION-ORIENTED EXPERIENCE: No single manager to totally integrate and assume responsibility for all aspects of project; lack of planning and coordination on-site increases potential for cost overruns, schedule delays and adversarial relationships</p>	<p>+ SINGLE PROJECT EXPERT WITH FOCUS ON ENTIRE SCOPE OF PROJECT ENSURES BUDGET AND PERFORMANCE REQUIREMENTS: Experienced multi-disciplined GEM GPS team led by a single project manager supervises entire process, from design through construction, to maximize work schedule and avoid construction delays</p>

To learn more about GEM Process Solutions, visit: RLGbuilds.com or contact Brandon Gartee, Business Development Manager at Brandon.Gartee@RLGBuilds.com or 419.720.2677.

