Design and Build in Overdrive

It has been a long while since any of us has had time for design-bid-build. Two years from board approval to startup is now considered a walk in the park. So if you need to ship product in less than a year, here are some of the key techniques.

Do not wait

A week lost at the beginning means a month lost at the end. Assemble the full team quickly, dedicate them to the project and plan on all-day, several-day meetings so that decisions can be made without delays early in the project. Streamline decision making by providing direct access to C-Level, rather than through layers of middle managers. Invest in design, commit to long lead equipment (with a cancellation clause) and start permitting and other tasks ahead of full board approval. Do things in parallel, not series.

Do not dither

Great word, "dither!" The most important guarantee of success on a fast project, indeed on any project, is a team led and supported by people who will make a decision and stick with it. Fast is better than perfect. Always.

Understand COGS

Know your product costs and how capital investments impact other costs. Capital decisions worth pennies of COGS can impact dimes of operating costs, capacity, or materials costs. The decision to spend more is easier and faster when there is sensitivity about how that additional capital reduces COGS.

Don't assume that renovating an existing building will save you time

Due diligence, unanticipated conditions, lack of documentation, and realty issues burn valuable time. A prepared pad in an industrial park, with storm water, water supply and sometimes power supply and waste water treatment already solved eliminate about 50% of your headaches.

Design in 3D…

But with a firm that has climbed their Revit learning curve. Design is faster, reviews are faster. The benefits of clash detection alone will save weeks of construction. The 3D model facilitates coordination of later packages with those already issued.

Design conservatively for what you don't know

Lock down the building grid and column loads two weeks after kickoff. Yes you can! Add 25% to the design basis live load for what might come up later. Similarly for long-lead equipment, underslab infrastructure and other early releases—do not wait until everything is known, rather design in some flexibility so that later decisions can be accommodated without rework or change orders.

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It's what you don't control that will hurt you—expedite approvals

Promises, signed agreements, political leverage--Don't rely on anything other than persistence in expediting jurisdictional approvals and scope provided by governments or utility companies.

Stack the trades

Design approaches, like interstitial spaces above production rooms, allow work to proceed on multiple levels concurrently. There are a variety of similar designs and bid package breakout techniques that accomplish this.

Acceleration

Structure your design, procurement and site management to anticipate the possibility of 10 -10s[1], even 14-10s for critical periods of the project. Implementing this type of acceleration unprepared can be very challenging.

Unit Pricing

Be prepared to shift work to unit price procurement—piling, foundation, site work, building, and perhaps other scopes--as a method to shorten procurement times and overlap design and construction activities.

Fix it next year

It is worth repeating: Fast is better than perfect. Of course, if you spend three weeks analyzing and estimating, one of those six options may turn out to be better, but usually not by much and you just lost three weeks. Pick what seems the best option, today, and make it work.

Solve field problems on T&M

When a field issue comes up, empower your site staff to fix it quickly, without requiring a lump sum approved change order. This requires that you have honest, sufficient staff in the field trailers and sufficient design oversight. You should have enough competency on site to allow a $10,000 per field order approval limit.

Use strong schedule controls

Experienced CPM schedulers with sufficient involvement in the job can identify slippage early enough to allow time to react. Labor tracking, progress measurement, earned value curves—these techniques save time and are worth the investment.

Good Luck. Amazing things have been accomplished on projects with a team that has experience with these techniques. Time is money, sometimes very, very big money. Lost sales, import duties, financing costs, roll-out advertising, first to market—these issues are sometimes not well understood by the project execution team but can mean millions per month of annualized cost. Do the math. And hurry up!

[1] 20 hours/week, five days/week