THE HISTORY OF Design-Build

By Katus Watson
FSAWWA Contractors Council

The design-build delivery method often cites the original “Master Builder” model used to build most pre-modern projects. Under the Master Builder approach, a central figure of the architect held total project accountability. From inception to completion, the master builder was the key organizational figure and strictly liable to the owner for defects, delays, and losses.

The design-build project delivery method is a return to some of the fundamentals of the Master Builder approach. For nearly the entire twentieth century, the concept of design-build was classified as a non-traditional construction method in the United States, which is the last country to still embrace the old standard of design-bid-build.

Design-Build Overview

The goal of the design-build process is to maximize the ability to meet the client’s needs. One of the most important distinguishing features of design-build delivery is its single point of accountability for design and construction.

The second distinguishing fact is that design-build utilizes a single contract between the owner and the design-builder, whereas the conventional design-bid build process entails two contracts. The first contract is with an engineering firm to design the project; the second is with a builder to construct the project as designed.

A third distinguishing feature of design-build is that major equipment procurement and construction can begin before design is complete.

The rapid increase in the use of design-build around the world is a testament to the benefits of this project delivery system. Single-point responsibility for cost, schedule, quality, and risk gives the owner an opportunity to receive early and firm commitments for total project cost and more efficient project delivery—while at the same time lowering the potential for disputes and change orders.

Is design-build, however, the best choice for your project? The process is not a cure-all for everything that can go wrong on a project. The success of a design-build project depends on all parties fully understanding the process, the benefits, and the limitations.

When the issues that lead to significant problems in a design-build relationship are understood, you can better determine if this is the best delivery system for your project. One should also remember that project success is not be determined by which project delivery system is employed, but by how the overall project is managed and administered.

Drivers for Using Design-Build

- Schedule (by far the most common reason)
- Regulatory compliance
- Population growth
- Derailed or otherwise delayed project
- Need for innovation/potential cost savings
- Industry input on treatment process/technical solutions
- Challenging problems that invite competitive solutions
- Avoiding low bid quality
- Bad experience with change orders, poor quality contractors
- Looking for a procurement method to select qualified contractors
- Internal visionary that wants to try something new
- Large projects that would overload an internal procurement system

Benefits of Design-Build

Some of the potential benefits of the design-build project delivery method include:

- Single point Accountability for cost, schedule, quality, & risk – This is one of the most important benefits of having the designer and builder on the same contractual team. As a natural consequence there is less finger pointing because as ideas are generated, all team members make decisions with a cooperative approach.

Continued on page 52
This means greater efficiency, cooperation instead of conflict, and a better project for the time and money invested. When this team approach works well, it fosters an enjoyable, mutually beneficial way of doing business for the client and the Design-Build team of professionals.

**Time and Cost Savings** – Overall time to design and build the project is substantially reduced because design and construction activities overlap. The contractor can proceed with early procurement of critical materials, schedule labor and subcontractors for greater effectiveness. This means the project can be on schedule sooner. There is additional potential to reduce project costs through early procurement, a compressed schedule, and the early integration of design and construction.

**Early knowledge of total costs** – Design-build water and wastewater projects are typically lump sum or guaranteed maximum price, which includes design and construction. This price is typically determined early- or mid-stage of the design effort.

**Best value selection** – In design-bid-build, the builder is typically selected solely on the basis of price. In design-build, you can specify a range of criteria in addition to low price when awarding the contract. Factors such as design-builder experience with similar projects, project delivery approach, innovative ideas, and the ability to work in a collaborative environment.

**Enhanced communication** – Because the design parameters of a project are being developed along with the budgetary goals, construction methodologies, and budget conditions being weighed simultaneously, a project is more likely to be realized than with a pure design approach. The owner has greater access to the project “team” as the project is being developed. This efficiency is not a negative “short cut,” but rather the keystone to the success of the design-build model.