

Milestones of a Construction Project:

What to Expect in Every Major Phase of Facility Planning

The design and construction process can be a lot of things: fun and exciting, invigorating and thrilling, and overwhelming.

Every construction project is made up of two distinct phases—design and construction—and within those phases, there are a series of milestones that must be accomplished before moving on to the next thing.

Think of your project as having a series of gates you must pass through to get to the end. As you pass through each one, it is important to acknowledge the completion of that particular milestone and then set your sights forward onto the next milestone in line.

Let's take a closer look.

DESIGN PHASE				CONSTRUCTION PHASE	
Conceptual Design	Schematic Design	Design Development (DD)	Construction Documents (CD's)	Construction	Project Closeout
<ul style="list-style-type: none"> • Rough Sketches • Conceptual Budget • NoGo/Go Decision Gate 	<ul style="list-style-type: none"> • Refining project concepts • Review codes & specifics of design • Site plan, floor plan, elevations & roofing plan • Finalize the layout 	<ul style="list-style-type: none"> • Solve the specific technical engineering problems presented 	<ul style="list-style-type: none"> • Design team creates fully detailed working drawings for permitting and construction use • Permit process • Competitive bidding (either subs or GC) 	<ul style="list-style-type: none"> • Building construction in full swing • Owner/architect/contractor meetings • Designated owner's representative 	<ul style="list-style-type: none"> • Operations manuals • Product and installation warranties • Owner training • Facility as-built documents

FIGURE 1: CONCEPTUAL MODEL OF MILESTONES FOR A CONSTRUCTION PROJECT.

Milestone 1 – Conceptual Design

Now is the time to dream big—like really-go-for-it big! Consider all of the possibilities and the what-ifs. You can expect to see a lot of very rough designs and ideas some of which you'll lean into and discuss further and others you'll throw away completely. Architects like to describe the early phases of design as "iterative," and essentially, it's where the specifics are sorted and the magic happens. You might see preliminary hand drawn sketches or partial computer-generated drawings with blocks of color representing building massing and

occupant flow. See Figure 2. The timeline for this phase varies a lot, spanning a few days to several months. Different programs with different names—like a “design charrette,” a “blue sky” session or a “design lab”—are used to expedite this phase but the outcome is the same: an overall master idea. The end of this phase is typically marked by documents known as “deliverables,” which include a master site plan, preliminary floor plan, preliminary building elevations and massing, and possibly a computer-generated, very realistic artistic rendering. The deliverables are also crucial in getting leadership buy-in and congregational support in order to move onto the next milestone.

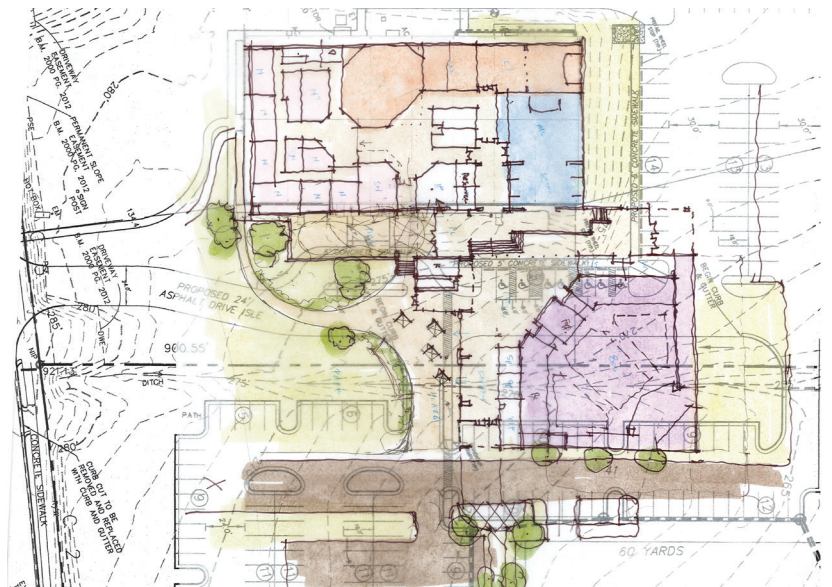


FIGURE 2: ARCHITECT'S HAND SKETCH OF POSSIBLE RENOVATION AND EXPANSION PROJECT OVER EXISTING BUILDING AND PROPERTY SURVEY. IMAGE COURTESY OF EQUIP STUDIOS

Milestone 2 – Schematic Design

This is when things start to feel a bit more serious. Some people even experience what behavioral economists refer to as the “sunk cost fallacy,” meaning they feel emotionally and financially invested and perhaps past the point of no return (i.e., changing their mind or totally abandoning the project). That’s why it’s absolutely imperative that the church leaders and eldership discuss the financial feasibility of the project before moving onto the schematic design phase. The schematic design phase is not as exciting as the concept phase. In fact, you may not even know it exists. During this phase, the design team is working behind the scenes to refine the project concepts and review the relevant codes and specifics of the design like the

site plan, floor plan, elevations, and roofing. They may even begin some early conversations with your local building authorities to determine any possible design constraints. The goal is to finalize most, if not all, of the layout, so that the consulting engineers (civil, mechanical, electrical, and plumbing) can begin plans for the working systems of the building. Hot tip: Once the consulting engineers begin their work, any design changes may result in additional design fees.

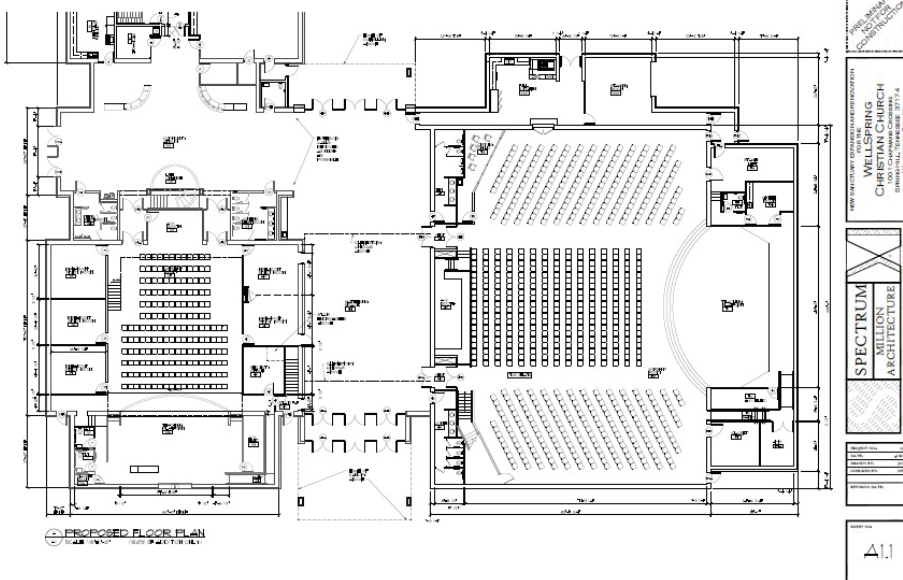


IMAGE COURTESY OF SPECTRUM CONSTRUCTION AND MILLION ARCHITECTURE

Milestone 3 – Design Development (DD)

By the time you enter the DD phase, the design team has already decided the main construction materials and methods and are now focusing on solving the specific technical engineering problems presented by your project. You may hear references to partially completed plans such as a “30% CD set” or a “progress set of construction documents.” Keep in mind, once you’ve entered this phase, the production of a working set of blueprints is in full swing and any changes will require the design team to redo the same work—and they’re not always happy about it. In my experience, this is when designers begin to have less patience and can get annoyed with major changes.



IMAGE COURTESY OF BGW ARCHITECTS

Milestone 4 – Construction Documents (CD)

First things first: Engineers and architects price their fee based on an estimate of the time required to complete the project design. Once you enter the CD phase, any decision to cut portions out of the project (“reduce scope” in project management terms) will likely cost you additional design fees, which may negate the money saved by cutting construction costs. At this point, nearly all the major design decisions have been

made and the design team is focused on producing a full and complete set of working construction documents—the blueprints—for the builder to use. They are also working to fulfill detailed requirements for the local building jurisdiction and reduce any design liability by showing as many specific design and installation details as necessary. Any major design changes at this point will cost you additional money (although if you really want to change something, it will probably be cheaper now rather than during the construction phase).

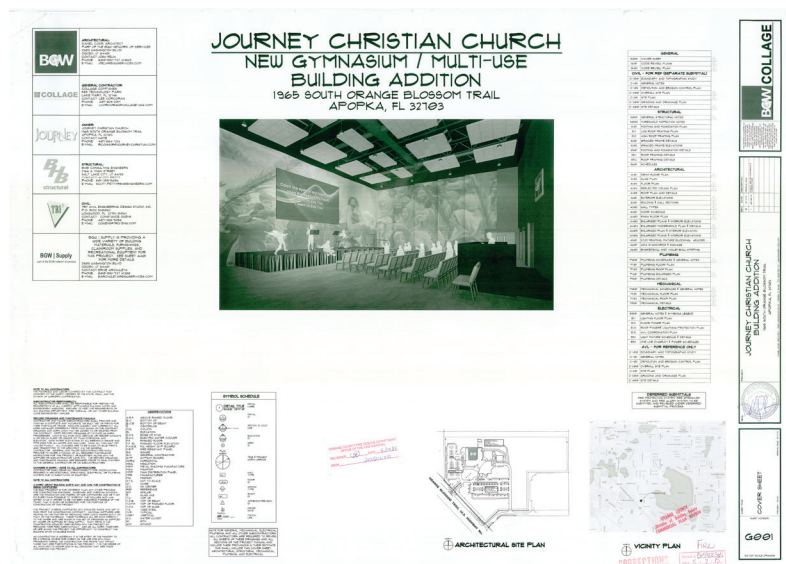


IMAGE COURTESY OF BGW ARCHITECTS AND THE COLLAGE COMPANIES

Milestone 5 – Construction

You are off to the races now! The building process is full steam ahead. You are communicating more often with your contractor and tradespeople than with your design team. (Stay tuned: In follow up articles we'll tackle what to look for during the construction process and the roles of the individual players). At this stage, changes are inevitable—and yes, they can be costly, irritating, and time-consuming. But remember, this is also a phase to be celebrated with your congregation and leaders.

Milestone 6 – Project Closeout

The finish line is in sight, but fair warning: Project closeout might be one of the hardest phases to complete in the project. You have now moved into the building, the builder is sending you final paperwork and billings, and you are transitioning from a “project” mindset to an “operations” mindset. Expect to receive operations manuals, product and manufacturers warranties, training on maintenance and operations of the facility, and advice on planning for future maintenance. We'll dive a little deeper on this topic in a future article.

Considering a project of your own? We're here to help if you need us. Call the CFR team today.

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