

Why design-build works

Lower construction costs, faster construction time and faster overall project delivery are the biggest advantages of the single-source approach



Crossroads Christian Church in Grand Prairie, TX, was built using the design-build delivery method.

There is a parable that talks about a wise man and a foolish man who each built a house. The wise man built his house upon a rock. The foolish man built his house on the sand. One was destroyed in a storm and one stood firm.

If the foolish man had used a more efficient contract and delivery method, his house might still be standing.

But in today's world, with so many choices for church architecture and delivery methods, it's easy to become confused when determining which one is right for your situation.

I have found that the design-build approach is often the most effective for dynamic, fast-growing churches.

Known as "turnkey" or "single-source responsibility," design-build is a system of contracting under which one entity performs both architectural/engineering design and construction.

From concept to completion

In a "traditional" contracting approach, an owner commissions an architect or engineer to prepare drawings and specifications, then separately selects a construction contractor or construction manager to handle the physical production of the facility.

A design-build team, on the other hand, is closely involved from start to finish in producing a product that meets the congregation's needs rather than merely acting as professional advisors. The church's building committee deals with a unified design-construct team working together on its behalf.

Single-source design and production of industrial and consumer products, both large and small, have long been the

norm in our economy. Now design-build has moved to the forefront of the construction industry.

Ironically, the so-called "traditional" approach of contracting separate design and construction teams is quite nontraditional from a historical perspective. For centuries, master builders served as chief architect, engineer and builder molded into one. Classical Greek structures, the great pyramids of Egypt, the Theatre of Dionysus, the Parthenon and even the Brooklyn Bridge and the Pentagon are all structures designed and built under single-source responsibility. These master builders accepted full responsibility for their projects, integrating conceptual design with functional performance.

While the practice faded somewhat following the Industrial Revolution of the late 1800s, there has been a strong resurgence of the approach beginning in the 1960s. Design-build delivery methods have captured more than 70 percent of nonresidential construction activity in Europe and Japan and is rapidly growing in the United States. Cost and time factors, along with reduced potential for litigation compared to the traditional method, have driven this growth from an owner standpoint. Practitioners see these benefits too and welcome the challenge of accepting full accountability for all aspects of facility design and construction.

The Construction Industry Institute, in conjunction with Pennsylvania State University, presented data in the National Project Delivery System Study. This study analyzed and evaluated three project delivery systems — including design-build, construction management-at-risk and

By Greg Barron

design-bid-build — comparing total cost, schedule adherence and quality. The study produced quantitative evidence that the design-build system is the most economical, efficient delivery system. The design-build method was calculated at least 4 percent less than other methods.

Some customers are choosing design-build over design-bid-build because it offers one-point responsibility. By having both design and construction working proactively at the beginning of a project, there is opportunity to enhance value engineering at the most strategic part of the process. The system also eliminates the role of a mediator and disputes that can develop between designers and contractors. This dramatically reduces the quantity of change orders compared to the traditional system.

The design-build method is a single source contact for the customer, who contracts with the design-build firm for all services and in most cases the whole package. The only real disadvantage is not having what historically would be called a “checks and balance” system. However, most seasoned design builders employ some form of open book concept which mitigates risk on both sides.

Getting a project on track

Numerous times over the past few years, ministries have called our firm after trying a historically traditional approach called design-bid-build. Presently, the G. L. Barron Company

has two ministry facilities under construction where, in both cases, the church spent in excess of \$100,000, only to find that the facility couldn't be built because it exceeded budget and the design didn't meet the needs of the ministry.

Our company was able to salvage much of the initial work, but initially, we were faced with a frustrated staff and a project well behind schedule. We employed the integrated, single-source method we call design-build and brought the projects back on track both in budget and on time.

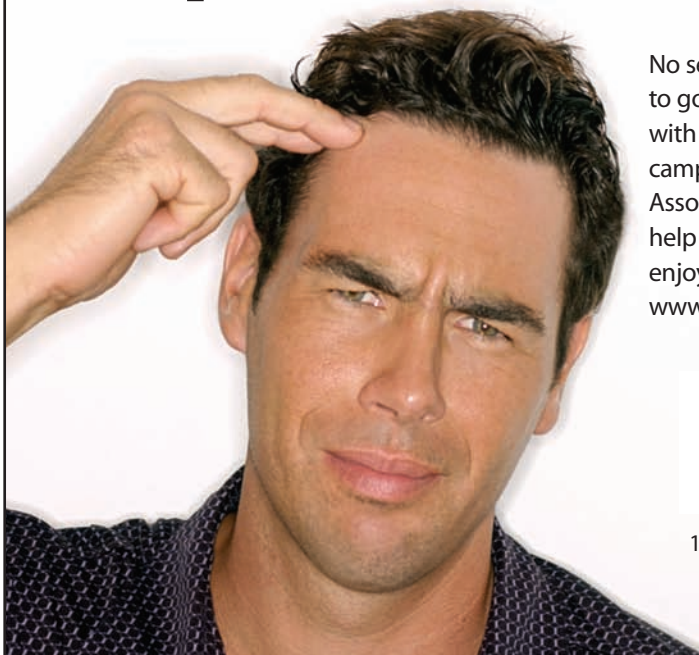
Using the Design Workbook, a resource published by the National Association of Church Design Builders, the churches first evaluated their ministry needs and space needs, considering quality and quantity. Items such as attendance and growth trends were evaluated. These needs were then transposed into quantitative space requirements using current space trends and placed into a formula that was calculated into the space's total square footage.

Taking one of the ministries, for example, once all the departments had given their input, the space was grossly over budget for the church. We then began the difficult task of ministry focus and shifting, taking into consideration excess space, future vision of ministries and, of course, budget. Working backwards, the design team determined that a typical sanctuary with educational space in the southwest region of the United States historically runs at \$110 per square foot. This facility's budget was \$3,300,000.

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He studied Hebrew, but when it comes to reading the blueprints for the new sanctuary, it's all Greek.

[A theology degree can't prepare you to build a new building, but we can.]




No seminary course could prepare you for what it's like to go through a major building campaign. Interfacing with architects and builders or overseeing a capital campaign can be overwhelming. But the National Association of Church Design Builders (NACDB) can help make the whole process more manageable and enjoyable. To discover how, call us or visit us at www.NACDB.com. You'll find we speak your language.



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Artist's rendition of the Living Word Family Church, a design-build project in Naples, FL.

4 good reasons to use design-build

Better control of costs, schedule and quality of workmanship. Studies show that projects that use the master builder approach (or design-build) can be built in less time, with better quality and lower pricing than contracting with an architect and builder separately. This is because your architect and builder are working hand-in-hand from the very beginning of the project. Together they can evaluate different building materials and methods that will save time and money on the project. You also eliminate a lot of the time spent in the bidding process and redesign of a traditional project — which means you can start using your new facility sooner.

Good stewardship of time. Your

time can be spent on determining your church's needs, instead of coordinating between the architect and builder.

A more peaceful experience. Studies published by the American Institute of Architects show that there are significantly fewer disputes and litigation issues with a master builder team. The single point of responsibility eliminates finger pointing and increases the incentive to get the problems solved.

In 1999, 97 percent of architecture firms surveyed said they had never been involved in a lawsuit on a master builder project. Another study in 2004 by CAN/Schinnerer found that there were an average of 15.6 claims per 100 insured firms for master builder projects,

compared to 23.2 claims per 100 firms for traditional projects.

Guaranteed construction costs. Since the architect and builder are working hand-in-hand, you get a firm estimate of the costs. This gives you the information you need to make “go, no-go” decisions during design. It also gives you one person to hold responsible for maintaining the budget.

Information provided by SPARKS, a full-service architectural, engineering and interior design firm. Founded in 1986, the company has offices in Tulsa, OK and Oklahoma City. For more information about SPARKS go to www.sparks-aei.com.

On Nov. 6, 1997, at the Design-Build Institute of America's annual conference, the Construction Industry Institute — an independent organization dedicated to research of the construction industry — in conjunction with the Pennsylvania State University, presented findings from the National Project Delivery System Study. This study analyzed and evaluated three project delivery systems — design-build (DB), construction management at risk (CM), and design-bid-build (DBB) — comparing total cost, scheduled adherence and quality on 351 projects. The study provided quantitative evidence that the design-build system is the most economical and efficient project delivery system.

STUDY RESULTS

Unit Cost	Design-build at least 4.5 percent less than CM and 6 percent less than DBB.
Construction Speed	Design-build at least 7 percent faster than CM and 12 percent faster than DBB.
Delivery Speed	Design-build at least 23 percent faster than CM and 33 percent faster than DBB.
Quality	Design-build exceeded quality expectation at all levels.

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Therefore, the total project, including seating, financing costs, interest carry and pro-rata development fees, could not run over 30,000 square feet.

In the process of completing the design, our team priced the facility in benchmark stages, using local subcontractors and supplier costs, adjusting along the way until the final project was compatible with the church's financial capabilities. To keep accountability high, G.L. Barron utilized an "open book" approach to construction. In this case, each line item was reviewed by the church and approved before initial construction began. A guaranteed maximum price was agreed upon and any savings under this amount was credited back to the church.

This process saved the church months in the remaining design process and contributed towards a trusting relationship. It truly offered the best of both worlds in the often contentious arena of commercial design and construction.

Greg Barron is president of the National Association of Church Design Builders and founder of G.L. Barron & Co., one of the leading design-build architecture and construction firms in Texas. For more information, visit www.glbarron.com.

