

# The Hopes and Fears of Design-Build

**THIS METHOD OF PROJECT DELIVERY TEMPTS SOME ARCHITECTS WITH THE ROLE OF MASTER BUILDER WHILE THREATENING TO PUT OTHERS ON PAR WITH THE TRADES**

By Nancy B. Solomon, AIA

**W**hether architects like it or not, design-build is on the rise. According to the Design-Build Institute of America (DBIA), an association founded in 1993 to promote single-source project delivery within the design and construction community, about 40 percent of all nonresidential construction projects in both the public and private sector now use this approach, in contrast to fewer than 10 percent two decades ago. And, on average, the 98 companies responding to ZweigWhite Information Services for its 2005 *Design/Build Survey of Design & Construction Firms* indicate that, over the next five years, a larger percentage of their gross annual revenue will come from design-build projects. “Design-build is taking off,” says Dorwin Thomas, AIA, the current chair of AIA’s Design-Build Knowledge Community. He predicts that it will be the leading method of project delivery in North America by 2010.

Admittedly, many of these projects are not the kind that architects focus on. According to the same ZweigWhite survey, the responding firms were most likely to employ design-build in the market that includes industrial plants, refineries, and warehouses (48 percent of this work was reported to be done via design-build). But this is followed closely by commercial (46 percent), parking garages (44 percent), recreation (39 percent), and medical facilities (38 percent). And the list goes on to include hotels/multifamily residential (34 percent); schools, libraries, and museums (26 percent); and other public buildings (34 percent). “I used to think design-build was better for cookie-cutter types of projects, but you are now seeing more complex projects being done by design-build,” observes Harold Adams, FAIA, chairman emeritus of RTKL Associates and the current chairman of DBIA—the first architect to assume that post.

## One contract instead of two

Simply put, design-build describes a method of project delivery in which the client holds only one contract with the entity that will design and build the structure in question. This is in contrast to the so-called traditional project delivery method known as “design-bid-build,” in which the client holds two contracts: the first with the design firm that conceptualizes the project, generates the construction documents, assists the client in procuring a builder, and advocates on behalf of the client to ensure that the project is built according to the drawings and specifications; the second is with the builder. Architects who are proponents of design-build often liken

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The Buchanan Yonushewski Group of Denver provided design, construction, and development services to expand and convert a local historic warehouse into the WaterTower Lofts.

it to the process that was common before the 18th century, when edifices were typically shaped by a “master builder” rather than by a splintered group of architects, engineers, and contractors. Other supporters point out that some forms of design-build have long been popular in other countries, such as Japan and France.

Opportunities for architects in design-build, however, were in the United States during the first half of the 20th century. The AIA’s first Code of Ethics, adopted in 1909, forbade its members from participating in design-build projects due to a perceived conflict of interest in protecting the owner while at the same time profiting from the construction labor and materials. In addition, federal and state procurement laws were based solely on the design-bid-build method and therefore did not permit the use of a combined design-build contract.

Due to various and complex forces, the fate of design-build began to shift in the latter half of the century. AIA adopted a new Code of Ethics in 1986 that no longer forbade design-build; the federal government has gradually come to embrace the process; and—according to G. William Quatman, FAIA, a licensed architect and attorney with the law firm of Shughart Thomson & Kilroy in Kansas City, Missouri—currently all but six states have laws that permit some level of design-build for public projects.

Design-build proponents say these changes have occurred largely because, over the years, many more clients and industry members came to feel that the design-bid-build’s enforced separation fostered conflicts among the various parties holding separate contracts with the client, thus fueling litigation and increasing overall costs. “Owners are fed up with design-bid-build,” says Thomas. “They are demanding design-build



### University of Kansas at Lawrence

Recognizing the need for students to better understand the realities of construction, a few schools have nurtured design-build programs. The School of Architecture and Urban Design at the University of Kansas has offered a senior graduate design-build

studio since 1995. In the past two years, the studio has generated two affordable houses constructed from prefabricated modules: the Modular 1 House (opposite, left two and drawings, right) and the Modular 2 House (this page), both in Kansas City.



because it saves time and money and reduces conflict.”

The quality level offered by this method of delivery, however, remains a nagging concern to many. According to Adams, the federal government has embraced design-build because it believes that its detailed performance specs will ensure that its requirements will be met. But some clients still fear they will not get what they need if all the authority is placed within the hands of one design-build team. Adams contends, however, that all clients can get better quality design and products by having a contractor who knows construction techniques and installation costs on board from the start.

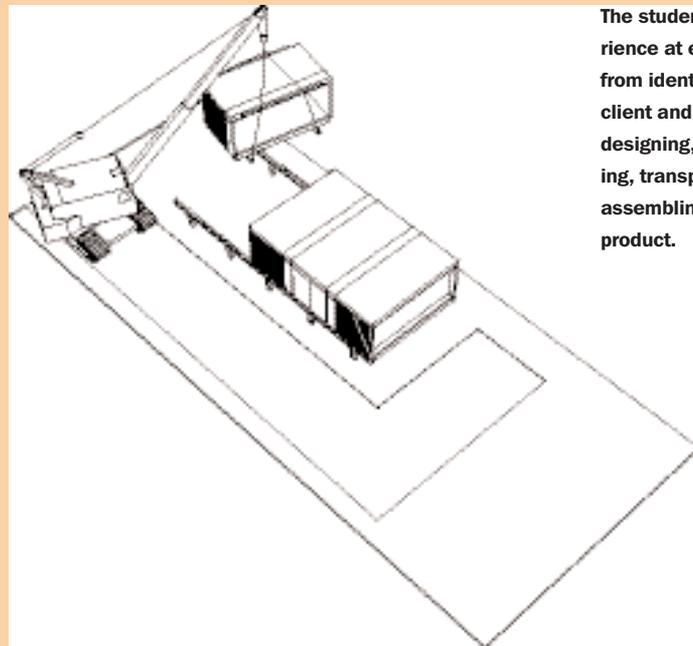
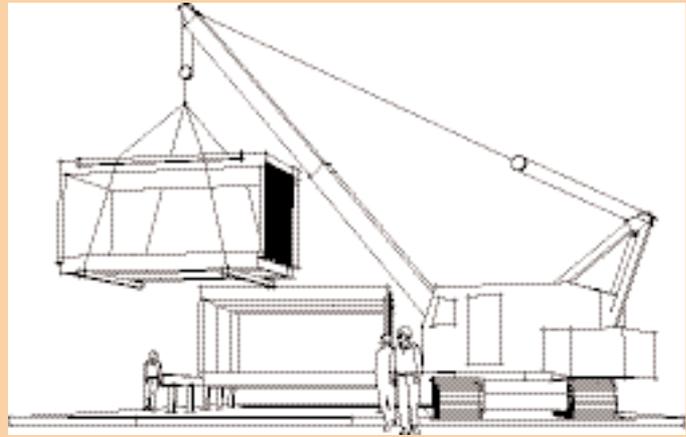
#### The many faces of design-build

Despite the ethical and legal changes over the past 20-some years, and the growing preference for a single-source delivery method on the part of many owners, only 20 percent of AIA-member firms responding to the institute's 2003 firm survey indicated that they were offering design-build services of some kind at that time. Nonetheless, interest does seem to be growing among practitioners: With more than 8,000 members, the AIA's Design-Build Knowledge Community is the fourth largest of AIA's 25 interest groups. During his tenure as DBIA chair, Adams is encouraging other architects to get involved and learn more about design-build.

One of the first things architects need to understand is that there are many permutations of design-build. The service, for example, can be provided by a project-specific joint venture between an architecture firm and a contracting company, a single company that has both designers and builders on staff, or an individual developer, builder, or architect who subcontracts the other necessary expertise and skills for a given project. Thomas reports that even businesses with no historical connection to construction—such as accounting firms—have gotten into the act, serving as brokers by hiring all the other players.

According to ZweigWhite's 2005 survey, 55 percent of the firms' design-build projects were headed by a contractor; 26 percent were led by an integrated firm, which has both design and construction expertise in-house; 11 percent were led by designers; 5 percent by joint venture; and 4 percent by developers. It should be noted that the staff of the design firms in this survey are dominated by engineers, so currently very few design-build projects are actually spearheaded by architects.

The roles and influence of the architect can vary greatly from team to team, even among those that are structured similarly in terms of who holds the contract with the owner. According to Adams, “DBIA is not pushing one version. We'd like to get the designer into design-build. The architect does not have to be the lead, but must be at the table all the time.”



The students gain experience at every stage, from identifying a real client and site through designing, manufacturing, transporting, and assembling the final product.

Architect Steve Coxhead, senior associate at David Owen Tryba Architects (DOTA) in Denver, agrees: “As long as the contractor is sensitive to the design philosophy and intent, the quality can be just as good in a contractor-led project. The quality really has more to do with the relationship between contractor and designer.”

DOTA’s first design-build venture began in 2000, when the architecture firm approached Hensel Phelps Construction to collaborate on a Request for Proposal disseminated by the City of Denver for a municipal building near the central business district. The RFP specified a single-point contract for architectural, engineering, and construction services. Their team was awarded the job. Hensel Phelps held the contract with the city. DOTA, a consultant to the contractor, served as the lead design architect and architect of record. The Denver office of RNL Design was brought on board as associate architect.

Coxhead admits the architects were initially fearful that the large contracting company would bully the smaller architecture firm through the process. Instead, he says, “We were pleased to learn that they were willing to work with us to understand our design philosophy and intent.” It was very much a team approach: “We worked very closely with Hensel Phelps to stick to the budget, while they were very design-sensitive,” he notes.

Coxhead highlights two strategies that helped the disparate

disciplines work well together. It’s critical, he says, “to establish the relationship before anyone starts worrying about the final design or the construction sequence, and then to nurture it through the process.” After their team was selected, the various players participated in team-building retreats to create an atmosphere of communication and cooperation. And to maintain this spirit of teamwork, architect, engineer, and contractor worked together in the same office adjacent to the site. Says Coxhead, “It made it easy to walk down the hallway to talk about the constructability and costs of a design idea.”

Given the short amount of time they had to work within, Coxhead can’t imagine accomplishing this particular project any other way: “We were awarded the project in January 2000; had a guaranteed-maximum-price set by May 2000; and started construction in July 2000.” The Wellington E. Webb Municipal Office Building was finished in August 2002, one month ahead of schedule and \$1 million under budget.

#### Well-known firms

These days, many nationally recognized architecture firms have some design-build projects in their portfolio. HOK, for example, currently has a contract with The Opus Group—a Minneapolis-based real estate development company with in-house expertise in architecture, engineering,

REVENUE GROWTH PROJECTIONS FOR DESIGN/BUILD				
		Integrated Design/Build	Design Services/ Consulting	Construction
What percentage of your firm's gross annual revenue do you expect will be derived from design/build projects in 3 years?	Lower Quartile	50%	6%	30%
	Median	70%	15%	40%
	Mean	65%	20%	44%
	Upper Quartile	90%	25%	55%
What percentage of your firm's gross annual revenue do you expect will be derived from design/build projects in 5 years?	Lower Quartile	50%	10%	35%
	Median	75%	20%	50%
	Mean	69%	24%	49%
	Upper Quartile	90%	25%	60%
What percentage of your firm's gross annual revenue do you expect will be derived from design/build projects in 10 years?	Lower Quartile	65%	16%	35%
	Median	80%	25%	50%
	Mean	73%	29%	52%
	Upper Quartile	90%	50%	60%

MARKETS FOR DESIGN/BUILD		
Category	All Work	Design/Build Work*
<b>Which markets do firms serve, and in which one do firms use design/build as the method of project delivery? (means)</b>		
Commercial	23%	46%
Industrial plants, refineries, and warehouses	14%	48%
Medical facilities	13%	38%
Schools, libraries, and museums	10%	26%
Environmental	8%	27%
Hotels/multifamily residential	7%	34%
Other public buildings	4%	34%
Roads, bridges, mass transit, and rail	4%	20%
Parking garages	3%	44%
Sports/recreation	3%	39%
Airports	2%	25%
Power/communications	2%	27%
Heavy marine construction	0%	**
Other	5%	47%

\*Percentage of work in each market performed using design/build  
 \*\*Based on a sample too small to yield meaningful values

GROWTH PROJECTIONS				
		Integrated Design/Build	Design Services/ Consulting	Construction
In the next 5 years, do you think the use of design/build as a project delivery method will ...	Increase	98%	65%	83%
	Remain the same	2%	31%	17%
	Decrease	0%	4%	0%
Do you think that there will be an increase in the use of design/build in the public sector within the next 5 years?	Yes	95%	73%	93%
	No	2%	23%	7%
	Unspecified	2%	4%	0%

NOTE: Due to rounding, percentages for some questions do not total 100.

The survey excerpted above is the **2005 Design/Build Survey of Design & Construction Firms**. The data from this report were collected in November and December of 2004. ZweigWhite Information Services published the survey in partnership with the Design-Build Institute of America (DBIA).

and construction management—to provide design services for the Social Security Administration Southeast Payment Processing Center in Birmingham, Alabama. The 587,000-square-foot, eight-story office building is expected to be completed at the end of 2007.

The most successful design-build projects that William Hellmuth, AIA, president of HOK, has been associated with are those that are selected through a competition in which the submissions are judged on value, not just the lowest price. “Design-build can work very well where there is a documented desire for design quality, and the judging of the buildings is based on design quality within a given financial framework,” reports Hellmuth. “The ability to bounce things back and forth within the cost framework—to have real-time feedback—is enormously helpful. The contractor may respond, for example, by saying, ‘It will be all right if you do this, but if you just change this one thing, you can still get what you want and it will be easier to construct, so there will be extra money left over for a great lobby.’”

Like Coxhead, Hellmuth believes that it is the nature of the relationship between team members and the value placed on design that is most critical in affecting the quality of the final outcome in a design-build competition, no matter who is ultimately in charge. “If architecture is valued, the architect leads the effort, although the contractor may have the fiduciary responsibility,” he says.

#### Architect-led teams

Nonetheless, there are those in the industry who would like to see more architects take full charge of the process. Observes lawyer/architect Quatman of Shughart Thomson & Kilroy, “Builders jumped up early to take the lead. Architects are signing on to be subcontractors to the 50 percent that are contractor-led.” In this scenario, he fears that many of those architects are placed on par with the plumbers and electricians and have no direct contact with the owner. He firmly believes, however, that the current expansion in design-build affords the architectural profession a pivotal opportunity to take much greater responsibility in the design and construction fields—and reap the many potential benefits.

One practitioner who long ago took the helm is Brad Buchanan, FAIA, a founder and principal of the Buchanan Yonushewski Group (BYG) in Denver. After earning a degree in architecture, Buchanan worked for traditional architecture firms in Denver for about five years before setting out on his own. One of his first commissions was a small-town firehouse. In a meeting with the local building-committee chair, the young architect indicated that it was time to speak to the person who was going to build the project. “After a long pause,” recalls Buchanan, “the chair responded with, ‘You are the architect, aren’t you going to build it?’ He just assumed that’s what we did, and I said, ‘Sure.’”

Buchanan ended up crafting a construction management relationship in which he was paid hourly to design, draw, procure materials, and manage the building process. Through this experience, he discovered that only about one third of the drawings were relevant. Much of the design was done during construction—often through sketches done on the reverse side of the blueprints lying on the hood of his pickup truck. Through this process, Buchanan came to believe that “design and construction are one process. And without understanding that whole process, I don’t think you can fully serve.”

Today, Buchanan and his partner, John Yonushewski, run a 45-person design-build firm that aims to satisfy the myriad facility needs of its clients—from design and construction to overall development. “When my client has a problem, I see it as an opportunity to expand my business,” says Buchanan. “We become a trusted partner, so the client calls us instead of three separate companies. BYG is a one-stop shop.”

## Social Security Administration, Birmingham, Alabama

The U.S. General Services Administration is increasingly relying on design-build competitions to procure new facilities. The agency recently contracted with a single-source provider, The Opus Group of Minneapolis, to replace an existing Birmingham facility with a modern office building for the Social Security Administration. Although technically working for Opus, HOK Architects led the design process.



Buchanan shares the concern many practitioners have about the quality of design-build projects led by contractors who do not truly value the role and expertise of the architect. But he feels that architects can avoid this problem altogether by leading the design-build project themselves: “BYG is doing what we do because it allows the design to be part of the entire process. We are in charge of the entire quality from first to last day. There are so many decisions being made in the field. I don’t know how else to accomplish this without the architect being the contractor as well.”

### Risk: architecture’s bogeyman

One of the biggest fears architects have about leading a design-build project is the increased risk associated with construction. While the tasks traditionally associated with architecture are insurable, work occurring on a construction site is not. There is, however, a huge opportunity for architects who take that risk because, explains Buchanan, the profit on the construction fee will be six to 10 times greater per dollar volume than that on the architectural fee. Risk, therefore, is not managed by insurance but by significantly higher profits that can be used to correct any defective work that may occur in the field.

For Buchanan, there are scenarios in design-bid-build that are

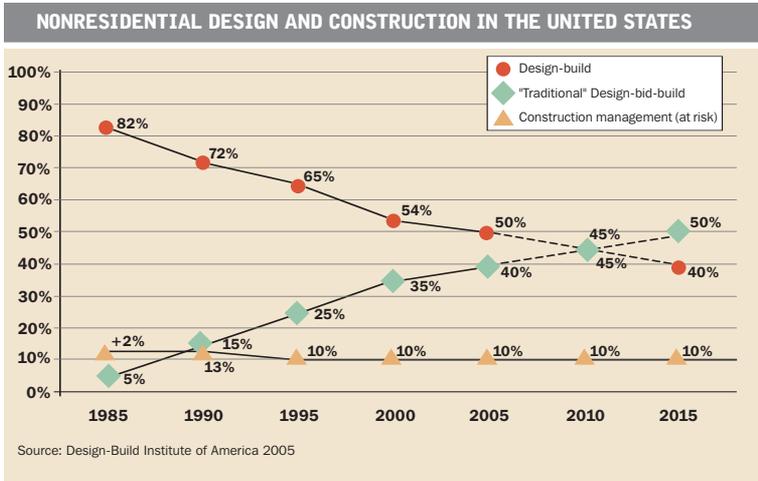
much riskier: “The only time I have ever had a threat of legal action was when I was the architect for a project that was being built by a general contractor who wasn’t qualified—now, that is scary.”

In contrast, Buchanan feels that he is in the best position to come up with the best solutions when problems do arise because he knows his designs so well and because there is only one company involved. “If there is a problem in the field, it’s our problem. There is not this do-si-do where everyone gets into a defensive mode—making sure the blame lies elsewhere—but no one is looking for a solution. We go into ‘fix-the-problem’ mode right away, because that’s what the client wants.”

Buchanan also believes there are additional safeguards inherent to running a firm with both design and construction services: During the inevitable vagaries of business cycles, one side is often able to keep the other side afloat.

### One method doesn’t suit all

Supporters of design-build do not suggest that every project must be done according to this method of delivery. Quatman indicates that design-build is most useful when a project is driven by cost and schedule. And Hellmuth believes that it is best suited to a project whose program is well defined from the start by the client. Nor do they believe every archi-



tect has the personality to lead a design-build project. “The world of construction is urgent and in your face, and things don’t go as planned. It’s not for someone who prefers to have all his or her ducks in a row months ahead of time,” warns Buchanan.

But for those interested in getting started in some capacity, there are a host of resources available. Quatman’s own book, *Design Build for the Design Professional*, published by Aspen Law & Business, offers an encyclopedic reference for virtually all aspects of this delivery method, including chapters on insurance, bonding, and contracts. Practitioners are encouraged to attend seminars hosted by AIA and DBIA on the subject. And, perhaps the most common piece of advice given on this topic, architects should begin networking with builders that they know and trust. ■

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