Architects as Construction Managers

Smaller architecture firms are reclaiming control of the construction process.

Construction management, the intensive supervision of project delivery from predesign through completion, has long been the province of giant contracting firms. And while large architectural firms such as Ellerbe Becker, 3D/International, and the former CRSS have offered clients construction management (CM) for years, smaller architecture offices generally have stayed away from it because they see it at best as an enormously complicated sideline. Lately, however, a growing number of principals in smaller firms are venturing into construction management in response to rising client demand, as buildings, systems, regulations, and construction logistics grow more complex.

In a 1993 study of clients by the Roper Organization for the AIA, 64 percent of clients reported that the ability to manage construction was "very important" in selecting an architect. Two kinds of owners generally retain a construction manager: Those who commission buildings infrequently, and those with major time constraints. "Owners are tired of getting steeped in construction projects because of all the disputes and lawsuits," asserts Marc Gravallese, the AIA's director of professional practice programs.

"Conventional methods [associated with design/bid/build] are waning in value because the owners get too involved. They want to bring on someone who can manage the entire design and construction process for them."

Construction management allows architects to take back control of the construction process. "I frankly got sick and tired of owners putting us in the same boat as contractors when there were problems on a project," remarks architect Lawrence Leis, principal of the Louis & Henry Group in Louisville, Kentucky, a 20-person firm that started offering construction management services this year. "If I'm going to take the rap for these problems, I might as well be in charge."

By providing construction management services, architects can also expand their profits. Architect Robert C. Mutchler, retired principal of 17-person Mutchler Bartram Wild (MBW) in Fargo, North Dakota, is known as the small-firm pioneer among architects in construction management. MBW first entered construction management in 1980, after Mutchler read the AIA's contract B801/CMa—the standard agreement between the owner and construction manager. "There isn't anything in there an architect can't do," Mutchler maintains.

In 1985, Mutchler established another firm, MBW Development Company, to manage construction projects. Most firm principals set up such separate firms for both liability and tax purposes. This strategy keeps CM fees distinct from architectural fee volume, on which liability insurance premiums are based. Mutchler Bartram Wild and MBW Development have provided construction management along with design services for more than $75 million worth of projects, attaining profits of up to 50 percent of gross billings. Mutchler now consults with archi-
tects who are prospecting the construction management field and report that relatively few principals consider it because they fear the added risk. "When they enter practice, architects hear that they're supposed to avoid liabilities," Mutchler observes. But in construction management, he adds, "the pay is so good, it covers the risk."

**Picking your risks**

Exposure to liability is a big concern for architects entering construction management, and the degree of risk they face depends on whether they act as a CM-agent or a CM-at-risk. The CM-agent plays an arm's-length, mainly advisory role for the owner, and the risk is relatively low. The agency CM handles the contracts, traffic decisions among design and construction team members, and keeps track of all the work and the payments. Cash flows only between the owner and trade contractors, not through the CM-agent. And the CM-agent also doesn’t furnish materials or labor and offers no guarantees as to the cost, time, or quality of construction. The CM-at-risk, however, assumes all kinds of guarantees, taking sole responsibility for the entire project, from programming and planning, to the bids, the permits, and the punch list.

Most humbling, the CM-at-risk makes a promise upon the schedule—and often guarantees a maximum project price to the owner before construction starts.

These types of guarantees are enough to spook liability insurers. The two major insurers of architects, Victor O. Schinnerer & Company, and the Design Professionals Insurance Company (DPIC), readily issue architects who perform CM-agency services, but do not cover CM-at-risk. "We encourage architects to gain CM-agency competence and go sell it," remarks Roger Brady, DPIC's director of loss-prevention services. "But a CM-at-risk crosses the line from professional services to general contracting," at which point the exposure encompasses the "means and methods" of construction as well as job-site safety. "As a CM-at-risk, your title implies to the courts that you're responsible for worker safety," cautions Paul Genecki, senior vice president of Schinnerer. "So you should consider having someone onsite who knows about safety, and they should have on their checklist that the workers appear to be complying with safety regulations."

Thus, whether a CM-agent or CM-at-risk, the architect acting as construction manager needs to be a good communicator and know a lot about administration. Mutchler observes that when 20 to 30 trade contractors are acting as multiple primes, the volume of paperwork is tremendous. Thus, he counsels that design architects with no interest in construction cannot simply turn into construction managers. The architect needs a strong aptitude for logistics to orchestrate these multiple prime contractors for the owner. "You start to have problems when you lack a team environment," maintains Oscar L. Harris, president of 70-person Turner Associates Ar-
 architects and Planners, and OH International, his 12-person construction management firm in Atlanta. "If that happens, you risk coming up with an incomplete scope of work, premature awards of bid packages, and poor coordination of contract documents."

Where Interests Collide

Are architects trained to provide construction management? Most general contractors, naturally, say no, contending that architects' interests collide when they supervise the construction of their own designs. Ralph W. Johnson, senior vice president of Turner Construction Company, the nation's largest general contractor, asserts that construction management "can only be properly executed by a contractor." While the Associated General Contractors of America has developed construction management contracts jointly with the AIA, they cover contractors, not architects, as construction managers. The AIA developed its own contracts for architects acting as CM-agents. (See "Construction Management," ARCHITECTURE, May 1993, pages 147-151, for details on the AIA's contracts.)

Architects, on the contrary, report that they have been doing a lot of the work associated with construction management for years and simply haven't been getting paid for it. And architects say general contractors have a conflict of interest of their own when they double as construction managers. Contractors have a reputation among architects, deserved or not, of ratcheting down cost at the expense of quality. "You've got two priorities as a construction manager," contends Christopher Widener, partner of 10-person Widener Posey Architects in Springfield, Ohio, which began construction management this year. "You've got to get materials to the site, and get them installed. But when you've got a site superintendent working for the general contractor, his main job is to get the GC's work done," Widener contends. "If he's got concrete coming at 1 p.m., he's got to get the forms up and doesn't have time to get answers to the electrical and plumbing subcontractors." But with a third-party construction manager, Widener adds, "the contractor can get the formwork done, and the CM can answer questions."

Managing one's own work is one issue, but how does a design architect feel about another architect managing construction? "They like having a sympathetic and similarly educated construction manager," Widener says. "As a CM, I can relate a whole lot better to the trades in the field because I see what the design architect is trying to do."

Most important is how clients feel about an architect—often employed by the same firm as the design architect—serving as construction manager. Some clients indeed harbor qualms about the potential conflict of interest. "One of our clients thought it would eliminate checks and balances in the process," Widener recounts. But his reply is that the client's interests are actually better covered when the architect takes over because the
chain of command changes. The bids go out to trade contractors who become multiple primes rather than subs. Absent is the general contractor, to whom the subs are ordi-
narily beholden. "We have 12 bid packages; so in effect we have 12 checks and balances as opposed to one," Widener explains. "We're getting expertise twelftow from people who have a direct line to the owner. We make a point to the trade contractors before bidding and before construction, that if there's anything that can save the owner dol-
ars, they should bring it up right away. If they were subcontractors working for the general contractor, they'd be a lot less likely to bring up problems than when we act as the construction manager."

The construction manager also needs to act as referee to solve problems trade contrac-
tors create for each other. If one trade's negligence costs another trade money—say, if the millwork isn't prestained as ordered and costs the painter extra time—Widener Posey docks the millworker and gives the money to the painter, Widener says. "We have never felt like we've been in more control."

Back to the master builder
In fact, when architects manage construction projects they've designed, they are returning to the idea of the master builder, asserts Randolph J. Collins, principal of Collins & Scov-ille Architects in Albany, New York. An architect with the design firm is probably the best person to manage construction, Collins says, because "the architect will know from programming what was important to the owner. There's a lot of room for that to get lost in translation," Collins adds, "but construction management brings the process full circle." Architects, as Collins suggests, should bring in their resident construction manager as soon as possible in the design and con-
struction process, ideally during program-
ning. At that stage, the manager can get to know the owner's program requirements, scrutinize the budget, and make sure there's enough money for the design to be changed while there's still a chance to contain costs, explains Brian H. Gracey, senior vice presi-
dent of the development firm Carter in At-
lanta. "In the conventional process, the drawings are finished and decisions are made when you put the project out to bid," Gracey points out. "If it comes in over bid, you don't have the opportunity to control costs. You
take off the last things that were put on—the landscaping, the wall coverings—and you
never get to the real culprit, which may be
the structure, because it's too late to start
over."

Owners want a greater variety of choices in selecting both systems and materi-
als before they are locked into any specifics, Collins maintains. Often, he says, a general contractor acting as the CM offers too few alter-
 natives, and too late.

Dovetailed schedules
The hardest part, and the most crucial, is when the time comes to devise the construc-

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<table>
<thead>
<tr>
<th>DELIVERY METHOD</th>
<th>Owner/Architect Client Relationship</th>
<th>Who Protects Owner</th>
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<tbody>
<tr>
<td>CONVENTIONAL</td>
<td>Architect is owner's agent, with one to three primes contractors</td>
<td>Architect, part-time</td>
<td>Before start of construction</td>
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<tr>
<td>DESIGN/BUILD</td>
<td>Architect and CM both act as owner's agent, with potential for conflict; One prime or multiple contractors</td>
<td>Both architect and CM, part-time</td>
<td>Before or during construction</td>
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<td>CONSTRUCTION MANAGEMENT</td>
<td>Architect/CM is owner's agent and coordinates all contractors</td>
<td>Both architect and CM, full-time</td>
<td>Before or during construction</td>
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<th>Time Required</th>
<th>Construction Schedule</th>
<th>Costs to Owner</th>
<th>Income to Architect</th>
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<tr>
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<td>Contractor prepares schedule; owner's approval is needed</td>
<td>Costs controlled by competitive bidding</td>
<td>Standard compensation</td>
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<tr>
<td>Same as design build</td>
<td>Contractor prepares schedule for each trade; owner's approval is needed</td>
<td>Competitive bidding; owner's approval is needed</td>
<td>Standard compensation, without cost of adversarial relationships</td>
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Dramatic results

That time saved is a bonus on top of the cash firms can generate with construction management. Mutchler provides the figures on a $2.5-million clinical office building in North Dakota, for which construction lasted one year. The architectural fee was 7 percent, or $175,000. The CM fee at 5 percent came to $125,000. With reimbursable expenses of $15,000 added in, the total gross income came to $315,000. The net income totaled $100,500, or 31.9 percent net to gross, compared with a likely 10.6 percent for both conventional and design/build. "We were quick to realize we could get nearly as much for managing construction as we do for design, with one more person and a secretary," Mutchler recalls. And clients still typically pay the same or less than they would for design/build or conventional delivery with a general contractor. "Most people don't believe me when I tell them how much money you can make." — Bradford McKee
Net Effect

More than 150 Internet firms are jockeying for control of the $100 million extranet business revolutionizing construction management. Andrew Cocke previews the shake-out.

Computers Venice wasn’t built in a day. Far from it. It took The Stubbins Associates of Cambridge, Massachusetts, more than two years to complete the $3 billion Venetian hotel and casino that opened in last year in Las Vegas (August, page 68). With its replicas of the Grand Canal, Doge’s Palace, and the Campanile, a hotel of this magnitude (some 50 separate offices contributed to design and construction) could have easily dragged on for years. But the architects managed to meet a punishing schedule by employing an extranet, a high-tech tool revolutionizing architectural practice. “We could never have done it otherwise,” says associate Chris Leary. “It’s not just that it saved us time. It’s an entirely different paradigm. I don’t even know how to make the comparison.”

Today’s extranets are private computer networks run across the public Internet. Unlike intranets, or local area networks hardwired within the boundaries of a single company, extranets extend from one office to the next. Easily accessed with a standard Internet connection, they allow architects, engineers, contractors, and subcontractors to stay connected while saving on conference calls, bundles of blueprints sent by overnight mail, and endless travel. The Stubbins Associates, for example, zapped CAD drawings to engineers as often as five times a day. Extranets speed the building process, reduce litigation by creating a virtual paper trail, and promote communication by allowing all the players to view CAD drawings, update schedules, and hold on-line conferences. Even the most complex blueprints can be changed or approved on the spot.

By 2004, some $141 billion of the construction industry’s overall business will be conducted on-line, according to Forrester Research, an e-commerce analyst. More than 150 vendors are swarming like sharks around the $100 million extranet business. There’s more than revenue at stake: Whoever prevails will exercise disproportionate control over the $3.6 trillion architecture, engineering, and construction industries. “We firmly believe this is a winner-takes-all play,” Bidcom founder Daryl Magana told Red Herring magazine. “The opportunity is to create an industry standard, and that requires gaining 70 percent of the market.”

Extranets were the only game in town at last June’s AEC Systems trade show in Washington, D.C. Carnival-barking extranet marketers assaulted visitors at every turn. From e-Builder’s coveted booth close to the entrance of the convention hall, cofounder and CEO Jonathan Antevy earnestly told attendees that his company alone allowed real-time collaboration—a claim duplicated by nearly every vendor on the floor. Meanwhile, Bentley Systems hawked its new Viecon extranet with vague platitudes, flashy videos, and lots of prizes. It’s not surprising. With precious few unique features to distinguish any of the extranets from the herd, marketers used whatever gimmicks they could.

For architects, the battle for domination holds grave consequences. While every extranet company claims to make all players equal partners in the construction process, in reality the products reflect their manufacturers’ biases. Bidcom, for example, is backed by GE Capital’s real estate division and Gerald Hines’ development company. While it incorporates tools for architects, it would more likely be the product of choice for big construction clients. In fact, both Trammell Crow and Hines use it. So architects—who have grumbled for years about the CAD industry standard—might not like living in a Bidcom world.

The construction industry is much larger and more profitable than architecture. It’s not surprising, then, that most extranets are adding features useful to contractors (Webcams on construction sites, RFI tracking) while disregarding architects’ needs (videoconferencing, redlining on-line). Contractors have also embraced extranets more readily than architects. “The extranet is stronger among contractors because efficiency is more directly tied to their payment,” says industry guru Joel Orr, editor emeritus of Extrapolated World.

The good news for architects is that Buzzsaw, the architect-friendly Autodesk spinoff, is an industry contender with 15,000 projects now under management. Autodesk’s AutoCAD software—widely used by architects—makes it easy to integrate design and architectural drawings into the Buzzsaw site. “Given our deep roots with Autodesk, we are committed to architects and engineers and we know that they are at the headwaters of the whole process,” says Buzzsaw cofounder Anne Bonaparte. But will Buzzsaw’s allegiance hold up over time?

In most cases, architects pay upwards of $1,000 a month per project
Cephren chairman Jas Dhillon predicts that within a year one extranet product will dominate 80 percent of the market.

for extranet hosting and collaboration on a subscription basis, determined either by the project’s size, the number of users, or some combination of the two. Even Buzzsaw, which has generated considerable interest with its free hosting for projects that consume less than 100 megabytes (enough to store a handful of drawings) charges a considerable fee for projects of even moderate size.

Architects might assume that thriving e-commerce on extranet sites will eventually reduce the need for subscription fees. Think again. Ian Howell, Cephren’s vice president of product management, predicts that as owners come to value extranets for bringing efficiency and accountability to the hurly-burly building process, prices for collaboration tools will inevitably rise. And that price increase presents a hardship for architects. “The larger design firms like Gensler and HOK are prepared to pay substantial money because it’s a proven return on investment,” Howell says. “But it’s difficult for smaller architecture firms. Increasingly, owners are becoming our customers rather than architects and engineers.”

The cost of extranets may be a bitter pill for architects already burdened by increasingly thin profit margins. But if architects pass the cost along to clients, they will lose proprietary control over what site they use and, more importantly, what’s on those sites.

Buzzsaw cofounder Anne Bonaparte hopes her firm’s association with AutoCad software will make it the extranet of choice among architects.

As a result, architects are increasingly forced to complicate their offices by running different extranet systems imposed by various clients. “Each one represents a separate area into which you have to go look for your stuff,” says Cesar Pelli associate-principal Phillip Bernstein. “It’s part of the proliferation of messaging options that’s making life more complicated rather than less.”

Analysts expect only a handful of the more than 150 extranet companies (backed by $1 billion in venture capital) to survive the coming year or so. Bidcom is a likely survivor because of its deep-pocket real estate support. Buzzsaw should also fly. Bentley System’s Viecon has an established base among the 300,000 users of Bentley’s Microstation, the second most prevalent drafting program. A share of the spoils will also go to Cephren (formed in January by the merger of eBricks and Blueline On-line). Add to the list general-use extranets like e-Room which according to Joel Orr are becoming increasingly sophisticated. Though there may not yet be a clear choice among the extranets, the field is quickly narrowing. One thing is clear: These companies have seen the future and it’s on-line. “It’s more of an evolution than a revolution,” says Cephren chairman Jas Dhillon. “I see confusion in the short run, clarity in the long run.”