

Excerpts From: “Positioning for Growth” Conference

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Lee Evey Presentation



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Lee brings a personal commitment to design-build project delivery coupled with an extraordinary and varied background in both the public and private sectors. He has been an outspoken advocate of integrated project delivery, demonstrating the effectiveness of innovative partnering and teaming approaches.

Lee was most recently senior vice president of 3D/International, Inc., a design, management, and construction company that employs 600 professionals in 18 offices nationwide. While at 3D/International, he took a leave of absence to serve as senior advisor to the Iraqi Ministry of Housing and Construction in their rebuilding efforts. Before coming to 3D/International, Lee was the program manager for the 10-year, \$4 billion Pentagon Renovation Program. He was responsible for development and control of budgets, work schedules, acquisition strategy, and plans and programs for use of swing space and for coordination and control of all office movements within the Pentagon involving renovation activities. He served as the principal advisor to the Secretary of Defense and the Deputy Secretary of Defense for all matters relating to the Pentagon Renovation Program. In that capacity, Lee championed the use of design-build delivery, achieving significant cost savings and rapid project completion.

Lee was recently honored with the Presidential Distinguished Executive Rank Award for "sustained extraordinary accomplishment in management of programs of the United States Government and for leadership exemplifying the highest standards of service to the public, reflecting credit on the career civil service." He served as an infantry platoon leader and company commander in Vietnam, participating in numerous combat operations. Lee entered federal service in January 1974 as a member of the Air Force Copper Cap Training Program at Patrick Air Force Base. He is a member of the Senior Executive Association, the Air Force Association, and the National Contract Management Association.

The history of design-build is an interesting subject. We start with the earliest examples of design-build – the pyramids, continuing with such extraordinary splendors as the Taj Mahal and the Great Wall, and move to the growth of the “master builders” and the cathedrals of the Middle Ages. But the “master builder” and design-build itself were eclipsed with the advent of the industrial revolution, with its “job specialization” and

breakdown of work structure, into ever smaller, more isolated, more specialized tasks.

I have even heard some speak of the construction world – today – as one of ever-shrinking “turf wars,” where each element, each specialty (and perhaps each aligned industry association) fights to retain its independence and its autonomy – protecting its “turf.” Our industry is a world of fragmentation, of contractually defined

relationships, of rigid constraints and hierarchical interaction, where the architect and designer are often locked into a fight with the builder and constructor. This reflects a set of assumptions and a way of doing business, reflected at its worst in the design-bid-build approach, and the oversimplified “award to the low bid” “rip ‘em and read ‘em” techniques which have predominated over the last 100 years.

Starting 10-15 years ago, gifted, far-sighted people began to seek a better way of doing business. They took as their inspiration the “master builder,” but, in a necessary and wholly appropriate reaction to the complexity of the modern construction environment, began to develop what might be called the “master integrator.” The master integrator is the individual who recognizes that the key to dramatic improvement in the modern construction world lies in teamwork and cooperation, collaboration and mutual support, not in conflict and finger-pointing.

Let’s face it – our customers are tired of our little games. They no longer want to play with the three handmaidens of design-bid-build and low-bid awards: cost overruns, schedule delays, and litigation.

I have been talking with legislators. They are, with ever-increasing frequency, turning to

design-build in order to gain the services of the “master integrator” and to gain the advantages of design-build, with its flexibility, its speed, its superior problem solving, and its opportunity for faster, cheaper, and better construction.

This desire for change, much of it led by owners, has seen design-build project delivery grow from a miniscule fraction of the construction marketplace to approximately 40 percent of that marketplace in only 10 years. Estimates vary, but it appears that at some point over the next three to five years, design-build will exceed 50 percent of the construction market. In a conservative and slow-to-change market like construction, that rate of change is revolutionary. It represents a virtual explosion of design-build.

I believe that revolution is inevitable, with or without the existence of a DBIA, whether design-build is supported, or opposed, by AIA or CMAA or any other association. Design-build will continue its dramatic market penetration because the technological complexity, and the technological opportunity for improved construction and design techniques, reduced costs, faster performance, and higher quality will result in the owner/customer of the future demanding the services of the “master integrator” and using design-build techniques to secure them.

What are those capabilities, and what are those complexities that the “proto-owner of the future” will seek? Let me disregard for a moment many of the emerging materials and processes and take as an example just one area – software. There is software available today with capabilities which far exceed our imagination, to date, in using it. There is software with the capacity to turn our design and construction worlds upside down, if only we have the will and the courage to step up to its use. The advent of 3D and 4D design software will revolutionize our designs, our construction processes, and our ways of working together. Already, software firms are locked in competitions developing capabilities that our industry has not yet begun to consider or exploit. The successful design-build teams of the future will begin to learn these techniques soon. They will begin to position themselves for the cultural and technological revolution that is hurtling toward us at ever-increasing speed and that will be mastered by the “master-integrator design-builder.”

Already it is possible to accomplish 3D and 4D design, integrating within one platform the structural, mechanical, electrical, and plumbing designs, depicting them in extraordinary detail, with previously unheard-of accuracy, and to depict them with striking clarity, making communication between team members faster and easier than ever before. With a touch on a screen, all of this detail

will be available for display. We will move the commissioning process away from the back end of construction up to the front end of design, where it can do the greatest good, where decisions can be made, and changes implemented, by moving electrons, not by demolishing concrete and steel.

Customers will tour finished spaces before construction begins. The software will identify primary interferences in design (where a duct passes through a beam) and the software will identify secondary interferences in design (where there is insufficient open space around a device to allow for cost efficient operations, maintenance, and repair) – all with the push of a button. Automatically.

Layered onto these powerful software platforms will be maintenance schedules, data operations manuals, test sequence and start-up operations, systems manuals, equipment diagrams, part numbers, re-order automation capability, trouble-shooting guides, and other data that we have scarcely begun to consider, because we never had the means to consider them before. Imagine the wonder on a customer’s face when you walk them through a 3D sequence that identifies and depicts a 3D rendering of the building, then the floor of the building, then the utility area, then the air handler that is experiencing a problem, then explodes the air handler and identifies the offending

part, then identifies the part number, checks its availability on-site, re-orders the part, and tells you what day and time it will arrive.

Most important, all of this capability is available today. It may not yet be available in our industry. But precisely all of these capabilities are operating as analogs to our construction processes – the capabilities I described earlier – in other industries today. Unfortunately for design-bid-build builders, the power of these and similar techniques accrue only to the design-builder. To accomplish the elegance of design outlined earlier requires teamwork and early decision-making not attainable under design-bid-build. An elegant design that can utilize 3D capability to integrate that air handler into that 3D design, to commission it early, to accomplish primary and secondary interference analysis, to incorporate all the maintenance and operations data, and all of the other information I described earlier – all of that work, all of that elegance, all of that data, all of that capability – comes to nothing if the job is bid out and the construction contractor decides to select a different company's air handler because there is a short-term cost advantage in a cost-driven “rip ‘em and read ‘em” low bid award environment.

Better technology and increased capability will demand better, earlier decision-making that will operate in a design-guild environment. The

most significant determining factor in this forthcoming transformation is that all of this increased capability will be available at a lower cost than the 2D product we are delivering today.

In all of this future activity, where does the future of DBIA lie? Many people are surprised when I say that “design-build” has almost nothing to do with designing and building. DBIA can stand for “Design-Build Institute of America.” It can also stand for what the four elements of design-build are: “Designing, Building, Integrating, and Acquiring.” On the design-build side there isn't much new that DBIA brings to the party. We have no special tools, no special software, no special equipment, no special materials that revolutionize a design-build project. If you look at workers laying up block on a worksite, you can't tell if they are working on a design-bid-build job or a design-build job. Their tools, equipment, and materials are the same. It is the ability of design-build to revolutionize people that is our strength.

I have had people tell me that some in AIA don't like DBIA because we might want to change design or force differences in technique onto architects. Nothing could be farther from the truth. AIA has all the expertise in design. DBIA, on the other hand, is all about the I and the A in DBIA. Design-build is all about Integration and Acquisition.

Integration is the process by which large groups of people with diverse skills and capabilities, with different roles to play in the design and construction process, are brought together and formed into effective teams that can work together cooperatively to achieve our design-build goals. Integration is the process which pulls together all the players – the designer, the constructor, the subcontractors, the manufacturers, the suppliers, the people who operate and maintain, the customer who will use the finished space, the security personnel, those who are responsible for building repairs, for sustainability – and melds them into a team which solves the owner’s problems and challenges in the most eloquent manner. It is not just talking about the need for these people to work together effectively. It is understanding how to make it happen. It means learning about matrix management, about how to do the process of integration, about integrated teams, about multiple relationships among the team members, how to form and focus human behavior in challenging environments to accomplish incredibly complex tasks.

These are skills which can and must be taught, because design-build is not a panacea, it is a process. It unleashes human innovation and creativity, and can make us unbelievably productive

when done properly. It can make us unproductive when done wrong.

Then there is the “A” in DBIA – Acquisition. Acquisition is the business approach used to support integration. I call it “the Big A,” meaning it is expansive, it covers all of the business, procurement, and contracting techniques used to support and reward members of our team when they team effectively. Design-build gives us the flexibility to utilize new and better acquisition techniques. If we are successful in developing integrated and mutually supportive teams, but fail to use acquisition techniques which reinforce and reward cooperative behavior, and which fail to support those teams in their quest for the most innovative and creative solutions, then we will only achieve a small percentage of the potential for improvement that design-build brings to the design and construction environment. Pulling together these techniques and implementing them effectively requires a new and different approach by the most overlooked and important team member of all – the owner.

The best thing that can ever happen in a construction and design project is an informed owner. The owner who ...

- is knowledgeable about the design and construction improvements possible under design-build,

- who understands how to create, through the use of appropriate acquisition tools, an environment which will allow the magic of design build to happen,
 - who is motivated by “enlightened self interest,” and
 - who therefore knows that effective leadership is demonstrated by results
- ... is our best ally.

An informed owner is one who understands tools such as ...

- Performance specifications
- Build to budget
- Multi-phase source selection
- Design stipends
- Award fees
- Incentive features within contracts
- Matrix management
- Integrated product teams
- Product teams responsible for cost, schedule and performance, and
- Functional teams responsible for process and training

... and many other cutting-edge processes available, which are used best only within the design-build world.

To achieve these goals will require less management and more leadership. Management – planning, organizing, coordinating, directing, and

training – is only the price of admission. Leadership is what will make us the best. Leadership is:

- Having a vision
- Having the courage to implement that vision
- Having the ability to communicate that vision
- Having the skill to organize people to achieve that vision
- And being able to motivate people so they WANT to achieve that vision.

When we combine the mechanical skills of the excellent manager with the knowledge of how to integrate and acquire, and add leadership skills which can be taught within the design-build envelope, we have a formula for success which simply cannot be matched by any other delivery system – for cost, schedule, or quality.

So, how can companies “position themselves for growth?” Let’s walk into the future a little and look at the environment we will find there.

First, owners will express their requirements, not issue drawings. Owners will enter the design and construction world with a short list of their needs, broken out in a hierarchy of needs – reduce 3,500 pages to 16 pages. They will give you the parameters of the budget and of time, and will try to communicate what they see as their

needs. They will expect design-builders to enter the process as skilled managers and leaders with established track records. Owners will expect to see design-builders who are accustomed to quickly forming teams, having fluid working relationships, being able to rapidly assess complex problem environments, and to add or shed organization structure to respond to those environments.

They will expect to see design-build teams who have members educated, certified, and/or designated in a variety of programs and skills that didn't exist just ten years ago. They will expect AIA educated, CMAA trained, LEED certified, and DBIA designated team members. Owners will investigate past performance and team member experience. They will expect design-build teams to exhibit creativity and innovation to a marked degree. Owners will be accustomed to design-build teams who have strong relationships with manufacturers and suppliers and who are therefore knowledgeable about the very latest materials and construction methodologies. The owners will expect proposed design solutions to be reflected in superb 3D and 4D designs which are of such elegance that they almost eliminate the need for subsequent revisions and "as-built" drawings. Owners will expect to be part of the team throughout the process, and that includes design. They will not be satisfied any longer with 35, 65, 95 percent reviews. Owners will expect design-

builders to pull them into the process, making them partners throughout every step – requirements determination, planning, design, commissioning, construction, and operations and maintenance.

Owners will expect design-builders to understand constructability and sustainability review, and will expect to be included. Owners will understand, only too well, that for every one dollar spent in initial construction, a building will cost ten dollars in operations and maintenance over its lifespan. They will expect design-builders to understand that too, and will expect the design implications with respect to energy costs to be backed up by energy modeling using DOE energy models.

For our part, design-builders should expect that owners will become much more sophisticated than at present. We should expect that owners will seek "best value," that owners run professional and high quality competitions which allow us to demonstrate our capabilities, our creative solutions, and our innovative approaches, and to be evaluated fairly and with an even hand. We will expect that owners, if they want to benefit from creativity and innovation, will write contracts that reward those characteristics.