

SPECIAL ISSUE:
National Conference Re-cap

The

VOICE

The official magazine of The Construction Users Roundtable
Spring 2008

Balancing BIM: An Owner's Guide to the Benefits (and Obstacles) of 3D, 4D and BIM Design

INSIDE:

- 3XPT: Group Takes Process Transformation to the Next Level
- ACE Gets an A+ ● Design and Construction in a Digital World
- How to Start a New LUC ● CURT Member Profiles

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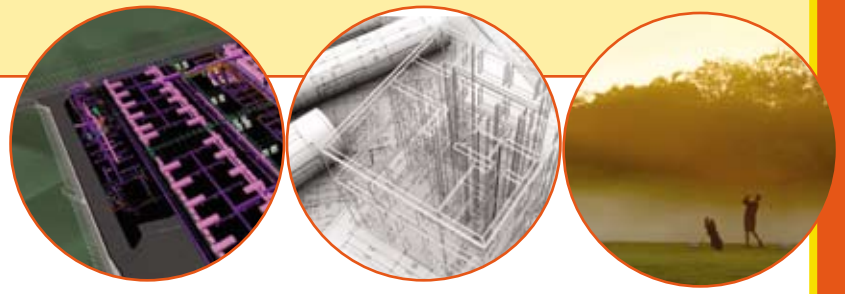


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On the Cover:

In August 2008 the Walter Cronkite School of Journalism and Mass Communication, located at Arizona State University, will move to a state-of-the-art journalism education complex in the heart of downtown Phoenix. The project, which has employed BIM technology to keep the project on time and on budget, is 6 stories high, 110-feet tall and 223,000 square feet. For more on how new technologies are revolutionizing the way projects are built, see our cover story on page 18. To read more about the Walter Cronkite School of Journalism and Mass Communication, check out the sidebar on page 25. Photo courtesy of Mathew Chaney of Steven Ehrlich Associates.

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Exceptional Leadership Marks Conference and CURT

They've done it again! This time, under the leadership of Conference chair Doug Graham of Boeing Corporation, and Conference co-chair Jocelyn Scott of Dupont, the CURT National Conference was a great success.

Forgoing the tempting lure of the warm Florida sunshine in November and the gentle Gulf breezes of the nearby beach, over 500 conference participants, speakers and exhibitors engaged in two and a half days of intense discussions on the future direction of the design and construction industry.

From the insightful, if not pretty picture of the current state of the industry presented by Ed Merrow, to Dow Chemicals' best practices presented by Margaret Walker, all the way to the concluding remarks on leadership by Sam Donaldson, the Conference afforded us all the opportunity to learn, teach and share our experiences, our success, and our lessons learned.

In the process we were able to greet and hear organized labor and listen to the recently elected President of the Building and Construction Trades, Mark Ayers, as well as the President of the International Brotherhood of Electrical Workers, Ed Hill. As always, their frank and honest presentations were warmly received by the participants.

We also received an update on the economy, the 3XPT Strategy Group, and a host of other important, if not critical, issues and challenges that we all face. And within all of the hard work, we still took time, as always, to celebrate the industry's accomplishments in safety, work force development and technology over the past year.

But as successful as this Conference was, it held for me, a particular sense of loss. For two retiring founding members

of the Construction Users Roundtable, both past presidents of the organization, this Conference probably marked their last official one as members of the Board of Trustees.

To say that Bill Tibbitt, of Johnson and Johnson, and Tom Weise, of Intel, have been exceptional leaders in their profession and in the industry may be accurate, but it does not begin to describe the indelible mark they leave behind. The capital assets that they help manage and deliver for their respective businesses span the entire world. And still,

throughout their professional careers, they each have taken the time and interest to help build better processes and relationships in order to improve the delivery of capital construction projects globally for the rest of us.

Together with a small group of colleagues from the recently disbanded construction committee of the Business Roundtable, these visionaries put into motion an idea that, some seven years later continues to blossom as the premiere voice of the owner to the construction industry. And for that we will always be indebted.

More importantly for me, however, I have gained greatly from their leadership skills and keen insight. And my life has been enriched enormously by their friendship.

I know that both Bill and Tom will continue to be engaged with CURT, both in an advisory role, as well as hands-on with anything we request of them.

In the meantime we wish them both well, joy, health and success. They sure deserve it.

Ricardo Aparicio, AIA, Esq.
General Electric Company
CURT President

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The Best of the Best

"The conference agenda continues to be one of the best in the industry". This was one of the comments from an attendee at the 2007 CURT National Conference that was held November 5 to 7, 2007 in Naples, FL. The event was organized around the event theme *From Collaboration to Transformation: Solutions for Today's Construction Industry*, and attracted over 500 attendees from the United States and Canada.

Post Conference reports confirm that CURT continues to deliver one of the most valuable networking and educational opportunities in the construction industry today. Conference critiques have been partially reviewed and many comments echo the feelings of the Conference Planning Committee. These include:

- Plenary and breakout sessions nailed the theme;
- Outstanding speakers, timely statistics and excellent insight;
- Presentations that appealed to a broad audience;
- Break-out sessions that addressed solutions relevant to all attendees; and
- Opportunities for value added networking with others in the industry.

It would be impossible to mention all of the speakers or summarize their messages so let's review some of the highlights. Ed Merrow led off with an outstanding presentation offering a global view of an industry in crisis from the unique perspective of Independent Project Analysis. He was followed by Maggi Walker who framed the issues from an owner's perspective. Walker reminded us that we, as owners, must be proactive and drive innovation, and she also demonstrated how LEAN tools and personal project ownership result in breakthrough project delivery.

In addition to this speech, CURT member executives shared their corporate expectations and vision in the areas of process transformation, LEAN success, craft training, safety, technology, collaborative agreements and the financial future. Much of this was tied to the CURT subcommittee charters and the five year mission of CURT.

The Planning Committee has already begun planning this year's event, under the leadership of Jocelyn Scott, of DuPont. I am extremely confident the 2008 event will be even bigger and better than last time!

Doug Graham, The Boeing Company
CURT Outgoing National Conference Chairperson

The VOICE presents a conference re-cap:

- Go to page 45 for comments from CURT's Board of Directors.
- Go to page 46 for a synopsis of the conference's major speakers.
- Go to page 50 for an overview of the winners of the Safety Awards and the Workforce Development Awards.
- Go to page 55 for a re-cap of the 13 concurrent educational breakout sessions.
- Go to page 57 for a snapshot of the fun and excitement the golf tournament evoked.
- Go to page 58 for photos from the exhibit hall.



Think November!

What are you looking forward to in November? The end of the political campaign ads everywhere you look? A delicious Thanksgiving meal with family? Well, how about the 2008 CURT National Conference—set to begin November 10th in beautiful Rancho Mirage, CA.

Each year we work hard to bring better value for your time, and, judging by last year's stellar lineup, topping it will be a tough challenge. However, the Conference Planning Committee is hard at work synthesizing a theme that will be relevant to the trends and events that impact your work and your ability to bring productivity to your company.

We will look over all the Conference feedback we have received from the 2007 Conference, and feel free to send Greg Sizemore or myself any ideas or topics you'd like to see at the 2008 event.

The Conference location has just been announced...The Westin Mission Hills Resort and Spa, Rancho Mirage, CA (near Palm Springs)!

Jocelyn Scott, DuPont
CURT Incoming National Conference Chairperson



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Our Passion for Success Comes from our People

In this issue of *The VOICE*, we recapped our CURT National Conference, addressed several committee initiatives and explored emerging tools and changing paradigms that will propel our industry forward. What is often overlooked by the outside observer, however, is CURT's most valuable asset—its people. Great people. Committed people.

In his recent book, *The Eighth Habit, From Effectiveness to Greatness*, Steven Covey says, "Find your voice and inspire others to find theirs. This is the roadmap to success for individuals at any level of an organization. The goal is to maximize their fulfillment and influence and inspire any team and the broader organization to do the same." He goes on to define "voice" as that process of coming to understand your true nature and then manifesting, with intelligence, a personal vision, discipline and passion. By doing so, each of us can live a life that makes a difference and empowers change. Throughout history, people who have found their voice and who have discovered their purpose and passion, have always made the difference.

Each December our Board of Trustees re-evaluates our entire organization. We collaborate with our staff and our committee leadership to assure that each initiative is aligned with our mission and vision. As we went through this process last December, I took particular notice of the character traits of our leaders, our people with passion. The leadership team is comprised of our board, committee chairs, staff, task force chairpersons and effective alliance partners. I noticed that they all have different skill sets, but many common character traits. Let me share a few of the characteristics of CURT's "people of passion."

First, they maintain an open door management philosophy. The one common denominator each of our leaders share is a willingness to listen and stay available. They are industry aware; they know our organization's mission and vision; they crave feedback and have a leadership style that welcomes constructive and innovative suggestions.

Second, they are committed to being and staying mission driven. Without a doubt, the CURT leaders are mission driven. They can articulate where CURT is headed and know clearly their role in helping achieve its vision. The ticket to organizational success is a group of leaders who know the vision and can develop challenging but achievable objectives, then guide others to achieve them.

Third, they keep an eye on the future. Our leadership teams—board, committees and task forces—are remarkable at anticipating what lies ahead for the owner community and creating a variety of

strategic ideas. They are sensitive to the potential for new programs, publications, training events and initiatives.

Fourth, the CURT leaders each excel at one unique purpose. Distinctiveness is important in our organization and our leaders have successfully identified a specific niche or subject area that has a potentially high return of value to owners and they become dedicated to filling it.

Finally they are committed to doing the right thing. Organizations that the industry admires most are sincere, enthusiastic and open to new and fresh ideas that can help improve the culture of the organization and the industry it represents.

Finally, CURT leaders know how to celebrate. Celebrations abound at excellent organizations, acknowledging the success and accomplishments of individuals, teams and the entire organization. When one succeeds we try to let the entire organization to know it. After all, our members need to know that the people who direct the work and the volunteers who help them are committed in spirit and not merely to performing a functional task.

As we celebrate our successes, let's always remember and recognize the people who make it happen. When you find solid evidence of committed, hard working, visionary people, you can be sure that working with that organization will be a good investment.

Gregory Sizemore, Esq.
CURT Executive Vice President



Join CURT in California!

As the Executive Vice President of CURT, I'd like to invite each and every one of you to the spectacular Westin Mission Hills Resort in Rancho Mirage, CA for the 2008 National Conference. Each year has proven to be a bigger and better success and while it seems impossible, I have no doubt the 2008 event will be even more spectacular. Stay tuned to *The VOICE* and to the CURT website for more information.

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Membership Categories

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Construction Owner: Any industrial or major commercial user of construction or maintenance services who spends at least \$75 million annually as a corporation. The company must be represented by at least one high ranking corporate policy maker usually the vice-president or corporate manager of construction or engineering.

ASSOCIATE MEMBERSHIP

Contractor, Subcontractor, Specialty Contractor, Supplier, Service Provider: From time to time the Board may create a number of Associate Members positions. Provided space is available, Associate Members may be recommended by an Owner/Member and the recommendation must be accompanied by two letters of recommendation and be approved by a 2/3 majority vote of the Board.

ASSOCIATION ASSOCIATE MEMBERSHIP

Any not-for-profit national trade association, research organization, or educational organization that provides services to the industrial or commercial construction industry may be eligible for membership in CURT and submit an application to join, provided they meet the Association Associate Membership requirements established by the Board of Trustees and an opening in this category of membership becomes available.

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Balancing BIM:

An Owner's Guide to the Benefits (and Obstacles) of 3D, 4D and BIM Design

"Imagine for a moment all of the individual actors in all of the phases of a facility's lifecycle. Imagine that all of the actors, working in familiar ways within their own specialty areas, are able to gather information, explore options, assemble, test and perfect the elements of their work within a computer-based model before committing their work to be shared with or passed on to others, to be built, or to be operated.

Imagine further that when it becomes necessary to share or pass a bundle of information to another organization, which may or may not be using the same tools, or to move it on to another

phase of work, it is possible to safely and almost instantaneously (through a computer-to-computer communication) share or move just the right bundle of information without loss or error and without giving up appropriate control.

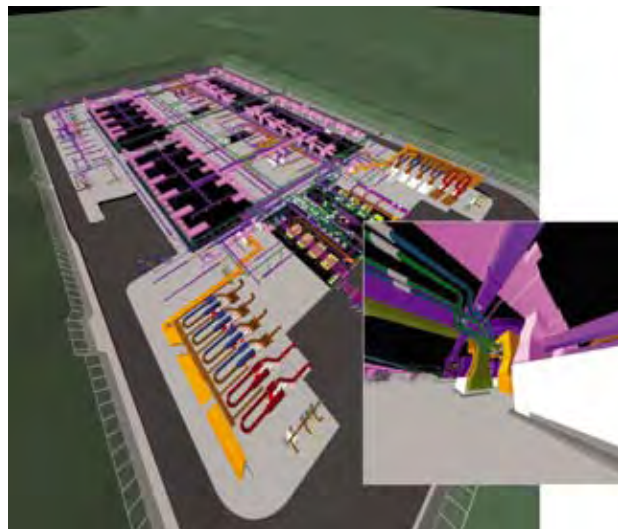
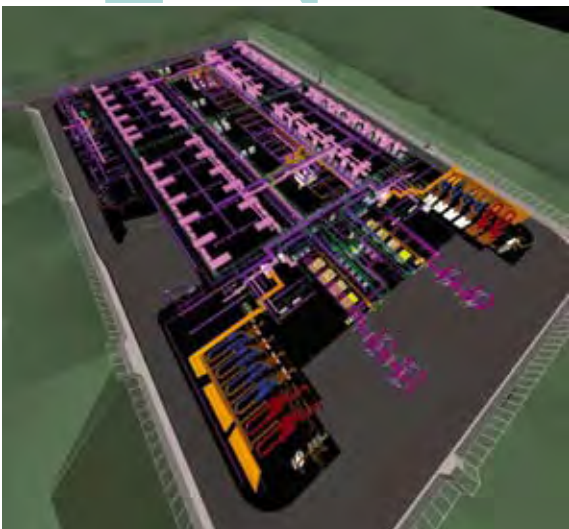
Finally, imagine that for the life of the facility every important aspect, regardless of how, when, or by whom it was created or revised, could be readily captured, stored, researched, and recalled as needed to support real property acquisition and management, occupancy, operations, remodeling, new construction, and analytics."

Now imagine these impossibilities are possible... today.

This quote, written by Alan Edger, Assoc., AIA, Chair of the National BIM Standard Executive Committee¹, outlines a futuristic scenario that would make any Star Trek fan proud. However, while Captain Kirk is beaming up Scotty in a fictional world of aliens and intergalactic

battles, building information modeling (BIM) is here now—and it's revolutionizing the way projects are built.

It used to be that contractors would use 2D drawings overlaid on a light table. Potential problems were eyeballed—which isn't exactly the most precise method of finding clashes—and if problems were found they were fixed. If they weren't found, however, glitches were



Photos courtesy of Citi and Holder Construction Company.

corrected on site, meaning costly rework and time delays.

BIM is changing all that.

By creating three and four-dimensional, computer-assisted drawings, BIM is sailing past 2D right into the virtual world. Now project teams can quite literally step into their design and explore everything that is essential for its success. Not only can it provide intricately detailed plans for mechanical, electrical, plumbing, fire and structure systems, it also enables the design contracting team to view and work out conflicts virtually before moving the project to the real world.

However, the technology is new; meaning that while some companies are jumping in head-first, others are only splashing around in the wading pool, and others still are just wiggling their toes in the water.

GSA experiences major BIM benefits

The General Services Administration (GSA) is one group that has taken the plunge. In July 2003, through its Public Buildings Service Office of Chief Architect and Capital Construction Programs (OCA-CCP), GSA established The National 3D-4D-BIM Program. Since then their BIM team has led over 30 pilot projects in its capital program, and is assessing and supporting three-dimensional (3D), four-dimensional (4D) and BIM applications in over 35 ongoing projects across the nation.

"The power of visualization, coordination, simulation and optimization from 3D, 4D and BIM computer technologies allow GSA to more effectively meet customer, design, construction and program requirements," explains Charles Matta, FAIA, who is the Director of Federal Buildings and Modernizations for the OCA-CCP.

As one of the largest public owners in the world, GSA has actually mandated a minimum requirement for BIM on all their projects. In order to make this happen, collaboration with architects, BIM-authoring vendors, BIM-analysis vendors, and other organizations involved in the planning and implementation of the project is a must. Matta says that, "Like in all organizations some people will oppose change, whether change occurs as part of a promising technology or a new initiative. The BIM team piloted actual on-going projects and showed the value of the BIM technology, and based on the early findings, was able to convince the leadership to adopt BIM."

However, implementation was not without obstacles. Matta explains that, "If we prematurely mandated BIM without sufficient support and reliable technologies, GSA would have risked failure in realizing the long-term benefits." In order to mitigate this risk, GSA was very strategic in its approach, weighing the risks of adopting it to the risks of maintaining status quo. "Relying on over 20 pilot projects to test the value of BIM applications, we adhered to a business and

result-driven approach toward introducing BIM. After pilot projects proved valuable and reliable, we proceeded towards agency-wide adoption."

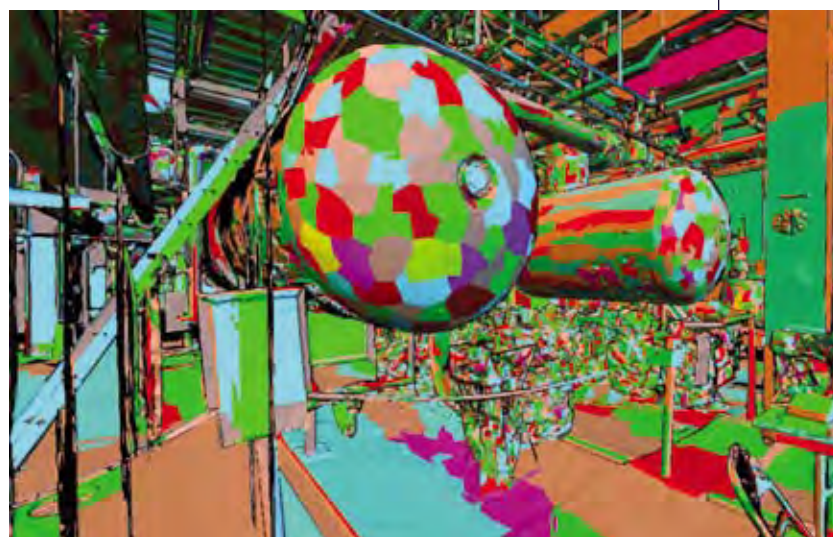
While GSA still faces some challenges with BIM—for example, data exchange is not perfect yet—they have experienced considerable efficiency gains, due to BIM. For example, because of the GSA's requirement for a spatial program, BIM enables them to automatically validate space measurements in minutes, as opposed to weeks. This is one reason why BIM spatial data validation was required on all projects funded for design in fiscal year 2007...and beyond.

BIM has been used on over 70 GSA projects to date, and this number will only keep growing. "BIM technology is advancing rapidly with new capabilities," says Matta. "Firms on the design side and on the construction side are adopting BIM and training key delivery staff in the use of this technology in order to deliver projects more accurately and more efficiently and therefore, is allowing them to be more competitive."

Laser scanning accurate within a quarter of an inch

Grab a ruler and measure a quarter of an inch. Now imagine that every single project you have planned—big and small—can be accurately pre-planned to this precise detail. Well, with laser scanning technology, this possibility is a reality.

Intel Corporation has been using the



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technology for over six years. As Dan Hodges, Program Manager of Technology Integration for Intel explains, the company was looking for an accurate method to capture as-builts of existing infrastructure.

They tried sending people into the field to gather the measurements however they found the field data was not accurate and, in addition, measurements could be off by inches or even feet. "Trying to capture

the sheer volume of components was an impossible task," he says.

That's when they tried laser scanning technology. For Intel the results have, "Met all our expectations," according to Hodges.

A contractor's perspective

In January 2005 Turner Construction Company embarked on the journey towards using BIM. Spurred on by Turner management and their clients—both of whom recognized the value in organizing information about their products and buildings in a structured and consistent way—Turner initiated some small scale pilot projects which quickly allowed them to identify areas in which BIM created value.

According to Jan Reinhardt, Program Manager of Building Information Modeling for Turner Construction Company, the greatest benefit of BIM was the improvement in team collaboration. Secondly, "The ability to easily identify and discuss potential clashes in the coordination process between the disciplines and trades has significantly increased the trust in the coordination effort. As a result, subcontractors increase the level of pre-fabrication, move work processes from the field to the shop, install their work product more efficiently and eliminate scheduling conflicts."

Implementing BIM, however, was not without risk. Reinhardt explains that because BIM is a new technology that has been introduced to a mature industry with little tolerance for risk, "Convincing all team members was initially a challenging task. Once we could show first successes and tangible results the initial skepticism quickly disappeared. As always there are early adopters and skeptics, but I would say that the introduction of BIM has become a true success story."

Success, indeed. To date Turner has 40 ongoing or completed BIM projects to the tune of \$6 billion. In 2008 they are planning to increase that number to 120 projects for a cumulative contract value of \$12 billion.

"Ultimately we see BIM being used on all projects, independent of type and size," says Reinhardt. "BIM projects generally have a higher degree of coordination, planning and hence, have cost and schedule reliability. These are attributes that certainly speak to owners. We envision that owners will demand BIM on most of their projects in the near future."



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"There is certainly no comparison when it comes to accuracy. We've found it to be extremely beneficial, particularly when it comes to moving equipment in and out of an already existing space. We're able to first laser scan the area involved and then lay the 3D imagery over those scans. From that, we get an accurate idea if something is going to fit and if not, what needs to be done to make it fit."

Cost, however, is one issue that may be inhibiting owners from implementing this

technology. As Hodges points out, though, it is imperative to look beyond the initial numbers. "The fact that a per-scan price can be as much as \$150 and that it can take several hundred scans to complete a large project can scare some people. However, if they look at the other options that are available that can quickly and accurately capture the as-built conditions, they'd see that in the end, the initial output is definitely worth it."

In order to prove this point Intel has

completed a few side by side comparisons. In one, they sent a team of 11 people into the field to gather measurements on an existing project. Three weeks later, they completed the task. The field collected data was missing components, and where the accuracy was questionable they had to send the team members back to the field to collect more data. A laser scanning team of three people was sent in to the exact same area. Scanning was completed a day and a half later. All of the components were captured and accuracy was within a quarter of an inch. Beyond the dollar and time figures—and arguably more important—the 3D modeling contractors were able to take those scans and immediately lay them together with their design to start looking for potential problems.

Hodges cautions that owners should ask themselves when and how often they plan on laser scanning. "Your first inkling is to scan absolutely everything but this can get expensive. Think more about what is absolutely necessary to complete the design. Once the scanning and other design elements are combined, keeping the model current throughout the project eliminates having to go back and rescan an area. Rescan only when significant changes occur."

Hodges says that first and foremost, owners need to understand that laser scanning technology will work and can be easily integrated with other CAD design tools. "The technology is solid. The nuclear power industry has been successfully using it for almost a decade, and, most importantly, when details and accuracy count laser scanning delivers."

A tale of three "Citis"

Terry Mick, Senior Project Manager for the Holder Construction Company has noticed a definite increase in owners at the very least, asking about BIM. "Whereas two or three years ago there were very few owners who were even aware of the technology, I think there is now an increase in knowledge because everyone is hearing about it at various conventions."

One such convention was the 2007 CURT National Conference, at which



"Just three years out of school and I'm already changing the infrastructure of NYC."

Barbara Moses, Engineer, Skanska in New York

As a participant in Skanska's mentorship program Barbara Moses gets to work on six job sites in three years. "I wanted to be out in the field – and here I am," she says. So far she's worked as an estimator in the main office, as a field engineer on a water treatment plant and now she's a cost engineer on the FDR expressway. Throughout the program she receives mentoring support from VP Mike Cobelli. "It's great to have someone I can talk to about my work and my career," she says. But what Barbara appreciates the most is the wide variety of people she's encountered: "Everyone knows so much and they're all willing to pass it down." Read more about the mentorship program and the different projects Barbara has worked on at:

www.skanska.com

SKANSKA

Mick and numerous colleagues made the presentation *A Tale of Three "Citis": It was the Best of BIM...It was the Worst of BIM* to a standing room only crowd. The presentation outlined three Citi projects (Cornerstone in North Texas, Buckeye in Central Ohio and Lonestar in Central Texas) which all used BIM, to various degrees.

Mick explains that, "After we completed the Cornerstone Project in 2005, Steve Lane [Vice President of Citi] requested that we complete an analysis on items in which Citi could have saved money if we had used a BIM model."

Lane explained during the presentation at the Conference that, "We asked ourselves, could we do better? Could we apply different technologies to build better projects? We, as an owner, were starting to learn what BIM was and what it could do to increase collaboration and increase the success of our projects."

Once Holder completed the requested analysis, the team discussed the results with Citi, and then, shortly after beginning work on Buckeye another presentation was made, asking to utilize BIM on the remainder of that project and the next one up, Lonestar. With the late start at Buckeye, BIM was not utilized to its full capabilities. That, however, changed with Lonestar, where BIM was used from start to finish.

"The Buckeye model was a significant undertaking," explains Mick. "We had two engineers in our Atlanta office working full-time on the project for several months. The number of man hours then dropped off with the Lonestar model because we had already completed much of the conversion from 2D to 3D. The end result was definitely worth the work on the front end."

Mick says that both Citi and Holder were impressed with how BIM was able to help coordinate with the subcontractors. "We were able to sit in the conference room and review problems in the model before they became issues in the field," he says.

Both were also impressed with its ability to detect clashes, of which there were hundreds. "We were able to resolve most of these prior to installation," says Mick.

There were downfalls to using BIM, however. First and foremost, Mick says that keeping the model updated was a job unto itself and something that they had not planned for. Secondly, he says that, "We found that the owner expected that there would not be any coordination issues on the project because we were using BIM. BIM does not solve every problem...at least not yet."

In the opening quote from Alan Edger, he asked readers to imagine a world

where project teams are able to gather information, explore options, assemble, test and perfect the elements of their work within the safety of a computer-based model.

Well, open your eyes because the time for imagining that scenario is over. The time for BIM is now. ●

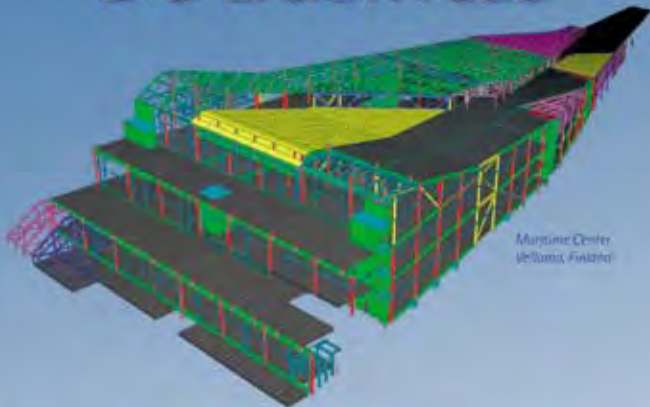
Reference:


1 Taken from *the Introduction to the National Building Information Modeling Standard™ Version 1 - Part 1: Overview, Principles, and Methodologies*. Published by The National Institute of Building Sciences. December 2007.

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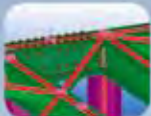
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3XPT Strategy Group: Different Teams, Different Jerseys, One Game

Group takes process transformation to the next level

For Bill Tibbitt, Executive Director of Worldwide Engineering Services for Johnson and Johnson, and 3XPT Strategy Group Committee Member, building information modeling (BIM) is an obvious asset on any project. "The benefits are compelling," he told a captive audience during a presentation at the 2007 CURT National Conference. "Many current projects demonstrate 25 to 30 percent waste. BIM is the tool that can lessen that waste and increase productivity."

Striving to educate the industry on BIM's capabilities is the 3XPT Strategy Group (3X symbolizing the three groups involved, and PT symbolizing process transformation). Comprised of individuals from the Construction Users Roundtable (CURT), the American Institute of Architects (AIA) and the Associated General Contractors of America (AGC), this group first met in June 2006 where they outlined their vision to ensure that each project is designed, developed and delivered to optimize value across its lifecycle.

"3XPT has gathered some of the most experienced and most learned individuals in the industry," says Tibbitt. What 3XPT members are looking at are ways to educate

the construction industry on the benefits and implementation of BIM. Tibbitt explains, "Simply put, what 3XPT is working on and is focused on is not changing the day to day lives that we lead and it's not establishing the use of technology. 3XPT is using those technologies and using the efforts from the best and brightest from each of our organizations to transform the process. BIM technologies afford us the opportunity to do that in a new and different way. It affords us the opportunity to implement and enable the changes that we've all talked about."

Workshop provides opportunity to discuss process transformation

An Integrated Project Delivery Workshop (IPDVV) held in July 2007 in Chicago, IL provided an opportunity to further discuss BIM and its role on the job. In attendance were four cross-functional teams comprised of owners, architects, contractors, specialty contractors, attorneys, sureties/insurers and industry consultants. The teams, selected by the 3XPT Strategy Group, were given the task of creating a "roadmap" for the design and construction industry that would drive the rapid adoption of integrated project delivery

concepts and practices throughout the entire industry.

"The workshop," as Tibbitt explained at the CURT Conference, "was designed to explore opportunities for optimal integration. Each team addressed integration issues for a specific delivery model: design-bid-build; CM at risk; design-build as a point of departure; as well as a new evolving paradigm one might call project alliance."

Facilitated by Martin Fischer, from Stanford's Center for Integrated Facility Engineering, the Strategy Group's goal was to engage stakeholder participants in a workshop setting to reach an agreement on and define as many critical elements of integrated project delivery as possible within the four project delivery types. In order to meet this objective, the workshop focused heavily on the delivery of capital assets and improved project outcomes using traditional and integrated project delivery concepts.

Were those objectives met? Yes, is the resounding answer from all groups involved with the workshop. According to Greg Sizemore, Executive Vice President of CURT, the attendees were, "Able to identify key elements that are integral to improving processes, communications and collaboration, **delivering more cost effective projects with a win-win-win outcome for the stakeholders.**"

The participants, recalls Sizemore, "Were excited by the truly intellectual challenge of thinking through how the industry might better function to produce improved project outcomes, and they were driven by the need

For more information:

- *Integrated Project Delivery: A Guide* found on the AIA website, www.aia.org/ipdg
- *McGraw Hill's Smart Market Report on Interoperability*. To purchase, call (800) 393-6343.
- The National BIM Standard (NBIMS) is an offshoot of the National Institute of Building Sciences, dedicated to the study and implementation of BIM. Visit www.nibs.org for more information.
- The AGC BIMForum found at www.bimforum.org.
- *The Contractors' Guide to BIM: Edition 1* can be purchased from the AGC website, www.agc.org.

BIM in action

For a project—any project—to finish on time and on budget is highly unusual. But this type of outcome is exactly what's happening with the Walter Cronkite School of Journalism and Mass Communication, a state-of-the-art journalism education complex currently under construction in the heart of downtown Phoenix, AZ.

Doug Pruitt, Chairman and CEO for Sundt Construction, Inc. gave an overview of this highly successful project to an impressed audience at the CURT National Conference. Expected to open its doors in August 2008, he explained that the 7 storey, 242,000 square foot building had a budget of \$57,500,000 million...and not a penny more. "The city was very clear we could not go over budget so it was our responsibility to work as a design/build team to make sure this didn't happen."

According to Pruitt, all design build projects Sundt does are modeled and in this case, the use of 3D was not owner-driven, but, in fact, sub-trade driven. "BIM gave us the ability to 'move inside the building' long before it was even built. In the first seven weeks, during the design phase, we could see visually how different elements were going to interact and we could ask ourselves, 'does this meet our client's needs?' This enhanced our ability to make decisions."

"Moving in" before construction even began also allowed the team to analyze the model on a bi-weekly basis. These coordination meetings gave everyone the opportunity to see potential clashes—of which there were thousands—and fix them in the meeting room where costs are nominal, versus fixing them on-site with huge costs and delays.

Pruitt explained that all stakeholders had access to an online website that featured the most current model of the building, as well as all the relevant documents. "Everyone on the team had viewing access of the collaborated model, but only the people responsible for each discipline had the ability to change their portion of the model. As each portion of the model was posted to the website, email blasts were sent alerting everyone on the team that a change had been made."

In order to fully take advantage of all BIM could do, the project had a few other unique elements that helped ensure its success. This, explains Pruitt, included the ideas that,

to identify those elements that comprise a roadmap, both understandable and practical in implementation."

Barbara Price, Principal of Jacobs A/E Practice and Chair of the AIA Integrated Practice Discussion Group believes that excitement about change is a key element to change actually happening. Price, who presented alongside Tibbitt at the CURT Conference, noted during her speech that, "One of the most important things

an owner can do to ensure success is to encourage project delivery strategies so the team can define success, know where they are in a new workplace strategy, and clarify their individual roles and responsibilities."

She continues, "This process is a major shift from what we used to be doing so owner's leadership in establishing this process and mapping it to other organizations and teams is critical."



Photo courtesy of
Mathew Chaney of Steven
Ehrlich Associates.

"Everyone had to leave their egos and their personal agendas at the door, everyone had to co-locate (meaning that from the onset absolutely everyone on the team shared the same working location, which enhanced communication) and, most importantly, people had to be impeccable with their word. If they told us they were going to do something, well then they'd better actually do it."

The benefits to this, and BIM in general, were increased collaboration with the team coming together for the betterment of the project, better information sooner, faster decision making, better control over time and budget, and according to Pruitt, the list goes on. "BIM enhances our ability to build better projects," he says. "We as owners, architects and contractors culturally have to change how we do things though. BIM is a tool. Change using this tool is the answer to achieve great things."

At the time of press the Walter Cronkite School of Journalism and Mass Communication is still scheduled to finish on time... ahead of budget.

This project's team was comprised of:

Design Builder: Sundt Construction, Inc
Architects: HDR, Steven Ehrlich Associates
Structural Engineering: Caruso, Turley, Scott
MPE Consultants: HDR

For many, integrated project delivery holds the promise of improved projects that are designed better, built better, perform better, and come in on time and on or under budget. The 3XPT Strategy Group is working hard to get this message out, while striving to meet its objective to create a transformed and sustainable construction industry, where each project is designed, developed and delivered to optimize value across its lifecycle. ●

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ACE Gets an A+

By Pamela R. Mullender, President, ACE Mentor Program of America, Inc.

Will there be enough architects, contractors, engineers and skilled laborers to meet the growing crisis in the construction industry? According to the U.S. Department of Labor, there will be more than 1 million job openings in the construction industry by 2012. Surprisingly, even those numbers may be low. The construction industry is faced with an aging workforce—for every five individuals who retire, only one enters and today's high school students do not yet recognize the opportunity the industry offers!

The Architecture, Construction, Engineering (ACE) Mentor Program of America has been addressing this issue for over a decade. Recognizing the dilemma, Charles Thornton, co-founder of the engineering firm Thornton Tomasetti, created a program that would introduce students at the high-school level to the construction industry. Today, the ACE Mentor Program of America, Inc. is the fastest growing mentoring program in the United States.

ACE has a presence in 106 cities in America and it is still growing; 71 additional locations are eager to start a program. By the end of 2007, over 35,000 students had an opportunity to explore the construction industry through ACE.

"We decided early on to be unique in our approach to mentoring," said founder Charles H. Thornton. "ACE is the only program that allows students to explore the many facets of the industry, professional and skilled labor tracks."

How does ACE work?

Students are recruited from both public and private high schools, with special efforts made to reach those who might otherwise not be aware of the challenges and rewards of careers in the design and construction industries. Students selected for the program are divided into teams. They work under the guidance of mentors. Mentors represent all facets of the industry, from owners, architects, construction managers, engineers (mechanical, electrical, civil and structural) and skilled laborers.

Rather than creating a career-day atmosphere, teams meet at least fifteen times during the course of the school year in an after-school program. Initial meetings involve visits to the offices of the involved firms where their activities are discussed and a tour of the facilities is conducted. Each team then selects a design project that may require site acquisition, as well as the drawing of plans, the building of models, and other related activities. Students go through the entire design process, with the tasks they perform for their "clients" modeled on the real-life activities of their mentoring firms. Among the skills they learn are drawing to scale and estimating the cost of a job—skills that their mentors utilize in performing their daily professional duties.



Photos courtesy of the ACE Mentor Program of America.



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"Meeting at the mentors offices gives the first opportunity for many students to see what we do up close," commented Thornton. "Then, at the end of the school year, there is a major culminating event at which all teams present their projects, much as actual design teams would present to their clients."

The importance of the owners

Owners are a great asset to the start-up of an ACE Mentor Program. Because each ACE team is comprised of those that make up a "project team", the mentoring team needed to start an ACE program in a community is already in place. Here are examples:

- The Hospital Corporation of America (HCA) needed an outreach program for diversification. They pulled together many of the companies that work for them and started the ACE Mentor Program of Tennessee. HCA is now involved with ACE in many cities where they own facilities.
- The New Indianapolis Airport Authority

For more information: Do you want to get involved? It's easy. The ACE Mentor Program is now well established. It provides a mechanism for owners to address the issue of labor shortages by getting students excited about career opportunities in the industry. Best practices and how-to manuals are readily available to jump-start a program.

If you are interested in building an ACE program around one of your projects, please contact Pamela Mullender, President of the ACE Mentor Program, at pmullender@acemmentor.org or (203) 323-8550. Visit the ACE website at www.acemmentor.org for more information.

was instrumental in bringing the ACE program to its community and used the new airport project as its "living laboratory". Students' final projects are on display each year in the main terminal.

- Cleveland's University Hospital, along with Gilbane Building Company, is bringing ACE to its community. A program will be in place for the spring of 2008.
- ACE is a great success. Any student who wants to learn about the construction industry is welcome to join. Furthermore, 82 percent

of those who apply are minorities, 50 percent are young women and 92 percent of participants enter the program to prepare them for further work in the industry.

Since its beginning, more than 30,500 students have enjoyed the exciting projects, informative field trips and other fun activities that make up the ACE experience. Last year alone there were 7,459 students and 2,100 mentors from over 90 cities across the United States participating in various projects. 2008 has just begun...let's grow those numbers and interest in our exciting industry!

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Doing it Different to Make a Difference

Doing business better is the name of the game for Ken MacDougall, Business Manager and Financial Secretary for Local Union #380 (part of the International Brotherhood of Electrical Workers), located in the suburbs of Philadelphia, PA. With almost 1,000 members, his mantra of, "Meeting the customer's needs," has helped him and his members win contract after contract of electrical work in the Montgomery County area.

MacDougall, who himself started as an apprentice more than 20 years ago, has always strived to do a good job. However, when elected Business Manager of Local #380 in 2003, he wanted to do more—he wanted to bring something different to the table.

And that's exactly what he's done.

In the same year he was elected as Business Manager, MacDougall was able to bring a multi-million dollar Merck project to his members. One of the draws to Local #380 was the adoption of the International Brotherhood of Electrical Workers' (IBEW) Code of Excellence (COE), which is designed specifically to satisfy the needs of electrical customers.

The Code of Excellence explains MacDougall, "Is a guarantee to the end-user. It is our pledge that the project will be completed on time and on budget."

While the Code of Excellence was being used extensively in the western part of the United States, Local #380 was the first IBEW union on the east coast to implement it. "The

IBEW thought we were the right local to bring the Code of Excellence to the east," explains MacDougall.

"The COE was successfully adopted by our local union because our members knew that there had to be a new path and a new direction. They were looking for leadership and someone to say, 'This is the direction we need to go, we've talked to our end users, we've talked to our customers, and this is a program that's going to help us build a better relationship with our clients,'" says MacDougall. "And it has. We feel strongly that the COE brings value to the end-user's dollar."

Part of the drive towards the successful implementation of the Code of Excellence is the fact that MacDougall read a number of CURT publications, including the *CURT Tripartite Study on Absenteeism in Construction*. While on a job site, he tracked absenteeism and found that 90 percent of the journeyman and 87 percent of apprentices worked a full 40 hours a week. After consulting with other project managers, who thought that zero percent absenteeism was the only acceptable number, MacDougall made sure the Code of Excellence outlined exactly who is accountable for what, on any given project.

"Everyone knows their positions up front," he explains. "It is spelled out. On a COE project, before a member is sent out to the job site they're given a letter by me stating exactly what the conditions of the

job entail. For example, 'you start at seven in the morning. You take your ten minute coffee break at nine. At ten-to-twelve you wash up for lunch, etc.' If you can't live by it, you're not working at this job site. That's the discipline we're now implementing on our job sites."

MacDougall says that they're trying to get 100 percent of the membership on board with these core values, noting that change starts at the top, as in, with his own leadership. "As a local union leader, I set the core values: attitude, appearance and customer service. But before our members jumped on board, they had to see that I was committed to the same values. Once they saw that I was getting results with these values—winning projects, obtaining work and getting contracts that we weren't necessarily expected to get—our membership came around to the belief that this crazy man might be right."

"To be forward thinking takes a certain amount of courage because if the ideas don't work, you're the one who will be out there all by yourself. Conversely, if you cannot recognize that a problem exists and you continue 'selling' the status quo, it is akin to trying to sell someone a 1978 pickup truck in 2008; it's not likely going to work that well. As an organization, we know the industry, know that there was a problem and, by implementing the Code of Excellence, we have taken the correct steps for future success." ●

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How to Start a New LUC

The Lower Delaware Valley Construction Roundtable shows it's possible

By **Connie DesRochers, Executive Director,**
Construction Roundtable of New Jersey

In the United States there are about 23 Local User Councils (LUCs). Each year, usually around the time of the annual CURT National Conference, we meet under the leadership of Robert Volkman. In 2003 we asked, "What efforts are being done at the national level to start new councils?" Everyone agreed that creating new LUCs was a good idea so I decided to volunteer to ask my officers for permission to investigate the feasibility of beginning a council that would attract members from along both sides of the lower Delaware River.

We hope that after the second meeting we have fully demonstrated the value of our LUC as a "voice to the industry" for the local owners.

We set out to investigate

Our investigation showed that there was a local safety council on the Jersey side and the usual labor jurisdictional organizations both sides of the river. We called on several firms to assess their views. One idea we had was to find a similar group that had similar goals and suggest that they join the Construction Users Roundtable (CURT). There were none that seemed appropriate.

How to get started

We noted that some of the Local User Councils conduct seminars. After a little brainstorming, we had the idea that we could both offer seminars to our own

members and in a location that would attract the firms along the river.

My board approved a trial program of four seminars, which were spread out over a year. Thus, it was a benefit for our organization to attract new members and to CURT to help start a new council. Now we needed a good mailing list. Some of our associate members, contractors and engineering firms were very helpful and offered input. One member, Ken Keogh of On-Board Engineering was particularly helpful with the task of creating a solid mailing list. One of the active CURT members, DuPont—which has a home base in Delaware—also gave us encouragement, as did the building trade groups. We were even invited by John Connors of the South Jersey MCA to speak at one of their joint meetings.

Now, to find a suitable location

With a map of the area, we plotted all the potential owners and picked a central location that was convenient

and a short drive for both the seminar attendees and our own existing members.

We arbitrarily selected a working name for the new council, The Lower Delaware Valley Construction Round Table. We trust the future council officers will select their own name.

Next were the program agendas

We stole a lot of ideas from what worked at our meetings and what worked at CURT. Labor availability was important, construction management was critical, technology, construction cost reduction; all were included as possible seminar topics. Local issues were also included. In addition, our members like a portion of a meeting to be set aside for networking. Owners like networking; they can quickly get important answers to their questions. Finally we needed a keynote speaker with a good subject, and who would attract a crowd.

We selected a program agenda of three short presentations beginning at 10:00 am followed by networking and lunch with a key note speaker.

Goals of the New Jersey LUC

- Organize construction users and encourage cooperation to control building industry costs;
- Provide access to The Business Roundtable and encourage adoption of the recommendations of the Construction Industry Cost Effectiveness (CICE) and Construction Industry Institute (CII) task forces;
- Encourage apprenticeship and training programs, especially among minority groups, to ensure the availability of qualified craftsmen;
- Educate our members about current and future trends and issues including new technology in the construction field; and
- Provide opportunities to visit operating plants.

Thus, in early 2007 we selected four dates

Our first two meeting on August 9, 2007 and January 10, 2008 were a success with 32 and 25 attendees,

respectively. Our own Steve Mongiardo of Merck was the key note speaker at the August seminar.

After that first meeting, we again improved the mailing list with the help of

our associate members. We also pulled from our past experience—that we must place personal phone calls to explain our goals, otherwise we are just junk mail!

We hope that after the second meeting we have fully demonstrated the value of our LUC as a “voice to the industry” for the local owners. We will seek several owners to volunteer to act as officers and to set up their own organization, rules, agendas and format. We will continue to help the new group with the next seminars on March 6 and May 8, 2008, and support them in any way we can.

We’ll keep you posted on the on-going results. Stay tuned!

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SPECIALTY CONTRACTORS

Design and Construction in a Digital World: Collaborate and Integrate or Perish

By Leah A. Rochwarg, Esq., LEED® AP, and
Emily R. Donovan, Esq., Seyfarth Shaw LLP

In many respects there have been few changes over the past two centuries in the way traditional construction projects have been procured, designed, constructed and delivered. Traditional projects are comprised of owners, design professionals, contractors and subcontractors, each of whom are legally, practically and functionally separate from one another. While exceptions do exist, (i.e. design-build, partnering and alliancing) traditional project frameworks and industry standard form contracts are not conducive to concepts of full collaboration, integration and teamwork.

Rather, traditional project arrangements and contracts often discourage the free exchange of updated project information and documents, offer no incentives to software vendors to integrate data and information standards into their systems, bring about claims, fail to link schedule and cost data, lead to tremendous inefficiencies and delays, result in excessive project costs and overruns, and end up in acrimonious

behavior between and among project participants.

Interoperability: breaking new ground in the construction industry

Over the past several years owners have grown increasingly impatient with the construction industry's failure to remotely approach the achievements enjoyed by the computer, automobile and aircraft industries, which have successfully integrated design and manufacturing, exploited automation technology and implemented electronic standards to replace paper for many types of documents. Many experts agree that efforts to improve integration and automation in the construction industry in general have lagged significantly behind other industries due to the lack of available information needed to quantify the costs associated with a lack of interoperability.

Determined to find answers, the National Institute of Standards and Technology (NIST)

commissioned a study and, in August 2004, released a report entitled *Cost Analysis of Inadequate Interoperability in the U.S. Capital Facilities Industry* which estimated that annual efficiency losses in the U.S. capital facilities industry resulting from inadequate interoperability among computer-aided design, engineering and software systems were \$15.8 billion in 2002.¹

The report defines interoperability as, "The ability to manage and communicate electronic product and project data between collaborating firms' and within individual companies' design, construction, maintenance and business process systems." The NIST report found that nearly two-thirds of these total estimated costs, \$10.6 billion, are borne by owners and operators which incur most of these costs during the operation and maintenance of the completed facility. The report further attributes interoperability problems in the capital facilities industry to the highly fragmented nature of the industry, the industry's continued paper-based business

practices, a lack of standardization and inconsistent technology adoption among the stakeholders. The NIST report concludes by proposing recommendations on ways to improve interoperability and reduce waste in the construction industry.²

Integration and collaboration in the steel industry

A virtual pioneer in this area, the structural steel industry has been a construction industry leader in the development of interoperability standards and software which have allowed structural steel designers and fabricators to facilitate the management and communication of electronic data between collaborating firms. In a White Paper prepared by the American Institute of Steel Constructors (AISC) entitled, *Interoperability and the Construction Process*, the AISC explains that the structural steel industry has fostered a standard for interoperability of its design and construction software in an effort to eliminate information and labor redundancy. According to the AISC, the seamless exchange of electronic data has resulted in reduced project costs and schedules related to the structural steel frame. The AISC urges owners and operators to mandate the continued development and use of interoperable technology for all stages of their projects by all designers, contractors, specialty contractors and suppliers.³

Transforming and optimizing the construction process

To optimize the construction process, the Construction Users Roundtable (CURT) suggests that owners must: (1) Change the organization of projects and teams; (2) Change ineffective behaviors; and (3) Demand that project teams use technology to its fullest. CURT has described this paradigm shift in a project's environment as "process transformation" and outlines the benefits to owners, including: better value through improved delivery times; higher-quality relationships, processes, communications, documents and construction; safer workplaces; and less waste of time and dollars.⁴

In theory, optimizing the effective use of

information technology can lead to improved integration and collaboration of design, construction and operational processes and result in a shift from widespread use of paper to capture and exchange information and data between and among project participants to the use and development of building information models (BIM).

Barriers to process transformation

As of this writing, design-bid-build remains the most frequently used project delivery method. Increasingly, however, many enlightened owners prefer methods that support greater collaboration between key project participants and promote enhanced communication from project inception. Although statutory restrictions still impede the use of project delivery methods other than design-bid-build on public projects, there is a growing trend among legislatures and local authorities to permit the use of alternative project delivery methods.

Technology risks and rewards

Countless examples illustrate how advancements in technology have dramatically altered the landscape of our daily lives. Without question, developments in technology have the potential to significantly improve efficiencies in communication, data collection, data storage, and information sharing and management. As pioneers of new technology quickly discover, their willingness to be among the first to adopt and employ new products and ideas, and to use the latest software application or computer hardware, exposes them to risks and challenges. Having the wisdom and resources to assess potential pitfalls and traps for the unwary is vital to the identification, management and allocation of such risks in order to overcome related challenges.

One emerging technology which has gained increased attention and use over the past several years, and possesses the potential to revolutionize the way projects are procured, designed and constructed is building information modeling. BIM models are multi-dimensional databases capable of furnishing information in two or three

dimensions, with the option of expanding to include cost and scheduling information (4D and 5D), and may very well replace computer aided design (CAD) the way CAD replaced hand drafting in the 1980s. The National Building Information Model Standard Project Committee, a committee of the National Institute for Building Sciences (NIBS) Facility Information Council (FIC), defines BIM as:

A digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition.

A basic premise of BIM is collaboration by different stakeholders at different phases of the life cycle of a facility to insert, extract, update or modify information in the BIM to support and reflect the roles of that stakeholder.⁵

Theoretically, the use of BIM on projects may significantly advance CURT's concept of process transformation, leading to the optimization of time, cost and quality when used on construction projects.

The ConsensusDOCS—facilitating process transformation

Several organizations, including CURT, worked collaboratively to develop ConsensusDOCS. The ConsensusDOCS are a unique set of construction contracts and forms in that they represent the perspectives, concerns and positions of all sectors of the industry. Two documents, *ConsensusDOCS 200.2, Electronic Communications Protocol Addendum* and *ConsensusDOCS 300, Standard Form of Tri-Party Agreement for Collaborative Project Delivery* warrant discussion in the context of Process Transformation.

ConsensusDOCS 200.2, Electronic Communications Protocol Addendum

The 200.2 document, designed to be used as an addendum to a contract and incorporated by reference into agreements between all contracting parties to a construction project, sets forth the conditions

upon which parties may rely on digital data. The terms of 200.2 govern over other individual contracts in the event of a conflict and identify project documents to which they apply. Among other things, the 200.2 addresses parties' respective license rights and sets forth detailed requirements for a relatively advanced and comprehensive digital data administration system. The 200.2 includes numerous provisions for allocation of risk and expressly contemplates the use of a building information model for the project. However, it fails to adequately address concerns raised by emerging technological issues in BIM.

The 200.2 also encourages the parties to agree on technical protocols, including permitted file formats, hardware/operating system requirements, software requirements, transmission/access requirements, security/encryption requirements and test protocols. The 200.2 contains provisions relating to indemnification for damages relating to nonconformance with project requirements. Although the 200.2 contemplates the use of a building information model and addresses several of the issues raised by electronic data exchange, collaboration and multi-party arrangements and processing and administration of digital data, it is a work in progress and falls short of addressing the unique intellectual property and liability issues which must be considered on all projects using BIM.⁶

ConsensusDOCS 300, Standard Form of Tri-Party Agreement for Collaborative Project Delivery

The 300 is a single agreement among the owner, contractor and designer pursuant to which the parties are encouraged to engage in integrated and collaborative practices, information exchange, incentives and risk sharing, and modified dispute resolution procedures. The 300 also mentions BIM as an option for the collaborative process.

The AIA's digital data documents—one step toward collaboration and integration

Primarily driven by concerns of inaccuracy, misuse and liability, designers, whose primary work product consists of

drawings depicting the technical and aesthetic design for the project, have consistently tried to control their distribution and use through contract language. For years it has been standard industry practice, particularly for designers concerned with misuse and infringement, to include detailed disclaimers, exculpatory provisions and limitations on use when transferring and sharing electronic or digital files relating to a project. Typical contract language included provisions, among other things, expressly restricting or prohibiting reliance on any documents or information exchanged electronically. In the event of a discrepancy between electronic files and hard copies, hard copies governed. Improvements in information technology have led to the delivery, in digital format, of massive volumes of project drawings and other documents. At the same time, project documents and data are often copied onto CDs and DVDs for distribution and archiving or posted on FTP sites and extranets.

In April 2007, the American Institute of Architects (AIA) introduced two new documents which were developed to address concerns arising out of electronic transfer in design and construction contracts: *AIA Document E201-1997, Digital Data Protocol Exhibit ("E201-1997")* and *AIA Document C106-2007, Digital Data Licensing Agreement ("C106-1997")*.⁷ Neither the E201 nor the C106 contain the sort of disclaimers or indemnity language which had become standard in the industry to address concerns relating to electronic data transfer. However, while these documents also serve as a starting point for negotiations in their current form, they are less well suited than even the ConsensusDOCS to use BIM or other collaborative processes in which each member of the design and construction team contributes data and information to one or more relational database, which are modified and improved by the parties' contributions, and used by each of them to carry out their respective contractual obligations.

AIA Document E201-1997, Digital Data Protocol

The E201, an exhibit to the *Owner-Architect Agreement*, requires that each

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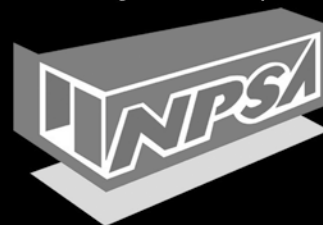


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party incorporate by reference its provisions into any other agreement for services or construction for the project. Left unchanged, this provision creates the obligation for both the owner and the architect to incorporate the terms and conditions of the E201 into all agreements for the project, both pre-existing and subsequent. Both the E201 and the C106 define "digital data" as, "Information, communications, drawings, or designs created or stored for the project in digital form." Unlike the C106, the E201 contains a Project Protocol Table which permits the parties to limit the documents to which the terms of the E201 apply. Among other things, the table permits parties to specify data format, transmission method and permitted uses of various types of documents and contemplates the addition of other parties as the project proceeds. By its terms, in the event of a conflict, the E201 governs over any agreement into which it is incorporated by reference.

AIA Document C106-2007, Digital Data Licensing Agreement

The C106 provides a form of agreement which facilitates the exchange of electronic files between and among parties who otherwise lack privity of contract, such as architects and contractors. It serves as a stand alone agreement and neither refers to nor incorporates by reference other agreements.

It is important to understand that, although these documents encourage the exchange and integration of digital data in the communications and work product of a project, they fail to address all potential issues raised by the transfer of digital information and data. For example, neither the E201 nor the C106 contain provisions specifying operating system requirements, security requirement, or test protocols. Both documents contain provisions relating to copyright and transmission of digital data. However, while the C106 creates a nonexclusive license right to use the digital data for project purposes, the E201 does not create any license rights at all. Neither the E201 nor the C106 address the risk of translation errors resulting from the use of incompatible computer hardware, software or operating systems. Other provisions which should be reviewed

with qualified legal and insurance counsel include indemnification, confidentiality, fees, insurance requirements and termination. ●

This article provides general information stakeholders should consider when evaluating the impact of technology on projects under consideration. This discussion is not meant to provide a comprehensive picture of any particular situation and you are strongly encouraged to seek professional advice.

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Emily R. Donovan, Esq., is an attorney in the Boston office of Seyfarth Shaw LLP where she focuses on construction law and litigation, dispute resolution, and risk management. She can be reached at (617) 946-4935 or edonovan@seyfarth.com.

References

1. Although the focus of the study was on capital facilities, the findings are relevant to the entire construction industry.
2. The full study report, including recommendations, can be accessed at the NIST website at www.bfrl.nist.gov/oa/publications/gcrs/04867.pdf.
3. The complete White Paper may be accessed at: www.aisc.org/Content/NavigationMenu/Steel_Solutions_Center/My_Project/Utilizing_CIS2_Interoperability/Interoperability_white_paper11_29.pdf.
4. For more information on process transformation, CURT's website may be accessed at www.CURT.org.
5. Visit www.facilityinformationcouncil.org/bim/faq.php#faq3.
6. ConsensusDOCS can be accessed at www.consensusDOCS.org.
7. A thorough discussion of the legal issues relating to the AIA's Digital Practice Documents exceeds the scope of this article.

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THE WEBSITE:
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THE HISTORY:
Established in 1949 to help manage and support the basic functioning of federal agencies, the General Services Administration (GSA) is an independent agency of the United States government. It supplies products and communications for U.S. government offices, develops government wide cost-minimizing policies, and provides transportation and office space to federal employees, among other tasks.

The GSA's stated mission is to, "Help federal agencies better serve the public by offering, at best value, superior workplaces, expert solutions, acquisition services and management policies."

GSA Regional Offices are located in Boston, New York, Philadelphia, Atlanta, Chicago, Kansas City, Fort Worth, Denver, San Francisco, Auburn (Washington), Washington, DC.

THE RIGHT NOW:
GSA serves as a centralized procurement and property management agency for the federal government. The agency manages more than one-fourth of the government's total procurement dollars and influences the management of \$500 billion in federal assets, including 8,600 government-owned or leased buildings and 208,000 vehicles. GSA also serves as a steward of more than

425 historic properties, and as manager of USA.gov, the official portal to federal government information and services.

GSA's mission to provide superior workplaces, expert technology solutions, acquisition services, purchasing and E-Gov travel solutions and management policies, at best value, allows federal agencies to focus on their core missions.

THE FUTURE:
GSA has quickly made a name for itself, with its use and implementation of 3D, 4D and building information modeling (BIM). While many are just now learning of these capabilities, GSA established the National 3D-4D-BIM Program in 2003, through its Public Buildings Service Office of Chief Architect (OCA). OCA has led over 30 projects in its capital program and is assessing and supporting 3D, 4D and BIM applications in over 35 ongoing projects across the nation.

According to David Winstead, the Commissioner for the Public Buildings Service (PBS), "Public owners like Senate Properties of Finland and GSA share similar business challenges, responsibilities and influences on the design and construction industry; both organizations have demonstrated a strong commitment to a strategic and incremental adoption of BIM based on open standards. We are currently collaborating on developing and publishing BIM requirements and guidance in a specific area of BIM implementation. This joint BIM project enables us to start exploring the power of synergy and knowledge sharing with a group of international experts in the field."

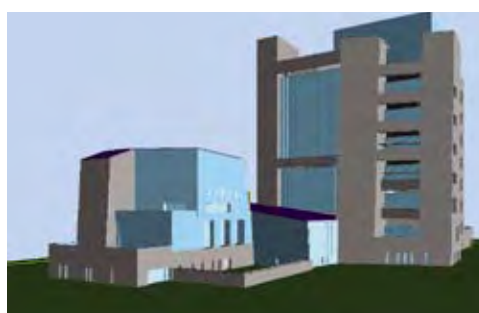
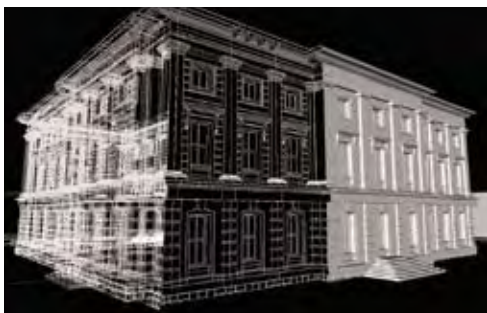
All major GSA projects in Fiscal Year 2007 and beyond required spatial program BIMs be the minimum requirements for submission to OCA for Final Concept approvals by the PBS Commissioner and the Chief Architect.

THE SOCIAL COMMITMENT:
GSA must strive to meet its client agencies' real estate needs in ways that also support community development goals. Their Urban Development/Good Neighbor program helps to make this happen. Because GSA facilities are located in more than 2000 urban communities nationwide, it is vital that the organization acts as an integral member of the community and, most importantly, a good neighbor. This happens through community partnerships, openness to the public, and good location/design decisions.

As David Winstead, Commissioner of GSA's Public Buildings Service, explains, "GSA has the responsibility, as the government's premier acquisition agency, to align our real estate portfolio with the needs of our customers, our communities, and our taxpaying citizens. It is this ability to leverage our investment so that what starts as a commitment by GSA and the federal government becomes the catalyst for growth and neighborhood vitality."

THE AWARDS:

- In September 2007 GSA was ranked ninth in Buildings Magazine's annual "A List" of top 25 organizations to watch.
- CoreNet Global, in honoring the best and brightest in the industry, awarded GSA the 2007 H. Bruce Russell Global Innovator's Award presented to PBS for its 3D-4D-BIM Program.
- In March 2007 GSA honored 18 projects for excellence during its Design Awards ceremony. The list of award and citation winners included the U.S. Courthouses in Fresno, CA, and Cleveland, OH; the Land Port of Entries in Murrieta, CA, and Blaine, WA; and the new Oklahoma City Federal Building. ●



GSA used BIM on both the Pioneer Courthouse seismic base isolation in Portland, OR, and the El Paso Courthouse in El Paso, TX.

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THE HISTORY:

Founded in 1902 by Henry C. Turner, the company quickly built a reputation for integrity, teamwork and commitment. Turner Construction Company is recognized as a leading general builder in the U.S., ranking first or second in major segments of the building construction field. The company's 5,800 employees perform work on over 1,500 projects each year with 70 percent of the work awarded by repeat clients.

THE RIGHT NOW:

According to Nicholas T. Makes, Senior Vice President of National Sales in 2007 Turner Construction completed an impressive \$9.5 billion in construction projects around the world. A sample of those currently underway include:

- The Burj Dubai, which upon completion in 2009 will be the tallest building in the world (located in Dubai, UAE);
- The \$328 Million Miami Intermodal Center (MIC) at Miami International Airport;
- The Yale New Haven Hospital, a client of Turner's for more than 20 years; and
- The New Yankee Stadium in the Bronx, New York.

THE FUTURE:

For many, the future of construction includes some capacity for providing green alternatives. Turner Construction Company was ahead of the game on this, offering green solutions long before the matter entered the mainstream. As Michael Deane, Operations Manager of Sustainable Construction explains, "Turner believes 'green' buildings are not only good for the environment,

but they also provide immediate and long-term benefits for developers, building owners and occupants."

Enthusiasm for sustainable construction has resulted in more than 300 Turner employees becoming LEED Accredited Professionals by the United States Green Building Council. Deane notes, "We expect the green building market to increase by 25 percent in 2008 over 2007 and our clients are also choosing to build higher levels of green. In fact, Turner's 6th LEED Platinum project was recently certified by the USGBC—The Verdesian, a 26-story residential tower in the Battery Park City neighborhood of New York City developed by the Albanese Organization."

THE SOCIAL COMMITMENT:

Turner Construction Company is committed to supporting communities in the areas where it does business, remaining faithful to the principles and core values of teamwork, integrity and commitment first set forth by founder Henry C. Turner.

In 2008, Turner will celebrate the 40th anniversary of its formal community affairs program. Hilton O. Smith, Senior Vice President of Community Affairs explains that, "Turner was the first major builder to create a community affairs department and has received more than 100 awards for its community affairs efforts."

One such effort is the ACE Mentor Program (see story on page 27). Smith explains that, "To address the issue of the insufficient number of students entering the construction industry, every one of Turner's 46 offices currently is involved in either YouthForce2020 or the ACE Mentor Program. Last year, Turner was active in 180 schools, employed 700 interns and granted 50 scholarships to students across the country.

THE AWARDS:

- Turner Universal was honored for safety by the U.S. Army Corps of Engineers with a total of four awards including Safe Contractor of the Year from both the Mobile District and the seven-state South-Atlantic Division of the U.S. Army Corps of Engineers.
- Turner was selected as #1 Ideal Employer in the Construction Industry; the second year in a row Turner has won this award from Universum Communications.
- Turner was named a 'Building STAR' company by the North Carolina Department of Labor's Occupational Safety and Health Division. 'Building STAR' is North Carolina's highest level of recognition for construction companies with best-in-class safety programs.
- Turner was honored with the 2007 Corporate Leadership Award by the National Minority Supplier Development Council, for its significant support of minority business development. ●

Turner Construction Company recently completed Phase II of the Von Braun Complex, a \$38 million, 222,000 square foot building that holds administrative areas, high security areas, and computer and simulator areas for the Missile Defense Agency.



THE COMPANY:
THE NATIONAL CENTER
FOR CONSTRUCTION
EDUCATION AND
RESEARCH

THE WEBSITE:
WWW.NCCER.ORG

THE HISTORY:

The National Center for Construction Education and Research (NCCER) is one of the most recognizable workforce development organizations in the industry. In 1996, industry leaders representing contractors, trade associations, manufacturers and academia came together to establish a standard training and credentialing program for the industry. Their efforts resulted in a non-profit education foundation, NCCER, which is headquartered in Gainesville, FL and is affiliated with the University of Florida's Rinker School of Building Construction.

According to NCCER President Don Whyte, "NCCER was created to address the skilled workforce shortage facing our industry and to build awareness of the industry's career opportunities by providing a structured

career path through standardized curriculum with portable credentials."

THE RIGHT NOW:

NCCER is currently working on a number of initiatives this year that will provide assistance in recruiting, training, and qualifying the construction workforce.

- The Build Your Future career awareness and recruitment campaign, which includes the National Careers in Construction Week, October 13-17, 2008. This campaign was designed to increase awareness of construction careers and build partnerships between schools and contractors across the country.
- The implementation of a contractor workforce development verification system based upon the recommendation of the 2006 CURT publication *Construction Labor: Craft Employee Training Evaluation Tool*.
- An aggressive curriculum development and revision schedule to address the industry's training needs, including an online construction language series — *Construction English for the Spanish Speaker*. This series is designed to improve communication

between Spanish-speaking and English-speaking employees.

- Automated National Registry (ANR) allows contractors and owners to view training records online via a "virtual" wallet card.

THE FUTURE:

NCCER will continue its commitment to the industry by focusing on initiatives to help address the skilled workforce challenges throughout 2008

and beyond. This includes enhancing and developing additional curriculum for Contren® Connect, an interactive online tool for construction education, the release of curriculum revisions such as Electrical, Carpentry, and Project Management; and the release of the newly developed *Industrial Coating Applicator Training and Certification Program*, in partnership with NACE International, to meet the training standards for industrial coating applicators.

Whyte explains that another of the most exciting initiatives to launch in 2008 is the "Cornerstone of Craftsmanship" campaign. He says, "This campaign will focus on elevating the concept of craftsmanship in the industry. It will reveal the fulfillment and pride shared among craft professionals for their profession."

THE COMMITMENT:

NCCER is committed to the industry by continuously improving its products, programs and services. As Whyte points out, "Our most critical challenge as an industry is to build a safe, productive and sustainable workforce of craft professionals. NCCER has taken on this challenge as our mission, and through the ongoing support of our customers and stakeholders, will provide the industry with a comprehensive workforce development solution."

THE AWARDS:

NCCER has been awarded:

- A Nova Award (Construction Innovation Forum), 1997;
- A Gold Addy Award for the Build Your Future campaign, 2000-2005;
- A CURT Workforce Development Award for the Build Your Future Campaign, 2006;
- A Silver Addy Award for the NCCER Web site, 2006; and
- A Silver Addy Award for the NCCER Career Web site, 2006.



The NCCER National Registry provides transcripts, certificates, and wallet cards to students who successfully complete the Contren® Learning Series curriculum through an NCCER Accredited Sponsor.

CURT Leaders Declare Conference a Major Success



From Left to Right: Curtis Ashley Baker, P.E.; Steve Mongiardo; Ricardo Aparicio, AIA, Esq.; Allen Bunner; William P. Tibbitt; Steven B. Satrom; Tom Weise, Michael G. Conley; Larry Wargo; Gregory L. Sizemore, Esq., (missing: Egon J. Larsen).

Each year the National Conference Planning Committee goes above and beyond the call of duty to put together an educational and memorable event. The CURT Board agrees! Here's what some members had to say.

"At one level, the National Conference is a unique opportunity for the most influential representatives of all sectors of the construction industry to meet face-to-face and openly discuss the most pressing issues affecting us today. More importantly, however, the National Conference is a forum to find common ground and identify practical solutions and best practices that each of us can immediately take back to our individual companies and put into practice. So, not only are we working collectively to create a better future for all of us, we are also improving our individual ability to deliver capital assets today."

Ricardo Aparicio, AIA, Esq.
CURT President
Contracts Manager Project Services
General Electric Company

"The construction industry is very complex and far reaching with many opinions on problems and potential solutions. The intent of the Conference and of CURT is to focus the industry on leading issues that will enable change. When everyone meets to discuss problems, white noise is reduced, the industry has direction, and the topics for change are focused, and from that will

come timely results. We need to continue to eliminate the white noise of the industry and focus on team-centric results between the owner community and the industry participants."

Tom Weise
CURT Past President
Director of Facilities, Materials & Services
Intel Corporation

"The CURT National Conference has quickly become the premier construction event for the owner community. The Conference content has continued to expand, offering insights and a breadth of knowledge that is not available at any other conference setting. The continual quality improvement and relevance is the conference's greatest accomplishment.

The construction industry has many facets, as well as diverse interests. It is difficult for all of these interests—owners, contractors, labor and suppliers—to share their vested perspective to a broad audience. The CURT National Conference is a venue where these perspectives can be shared in an open and professional setting. There is no better value (i.e. investment of time/money versus the return) out there."

Allen Bunner
CURT Board of Trustees Member
Director Engineered Systems
Tyco International

"In an industry as large and diverse as construction, real progress is only made by a committed and driven owner group with the full support and participation of

the other stakeholders. The CURT National Conference is the premier forum in the United States for that interaction. The Conference serves to focus industry attention on the major issues facing the industry today: workforce recruitment, development and retention, implementation of best practices, the need for innovation, and the continued drive to make our worksites models of our owner safety blueprint rolled out at the Conference."

Steven B. Satrom
CURT President Emeritus
Vice President of Engineering, Energy
Businesses, Air Products and Chemicals, Inc.

"Construction is often referred to as a fragmented industry due to the very large number of people and organizations involved in it. CURT helps to mitigate this fragmentation by providing industry focus based on input from a large group of owners. This is helpful for all those involved across the industry because CURT can identify areas for improvement, initiate action to address these areas and help participants realize benefits from this work.

By participating in the CURT National Conference, people can get a better understanding of the major issues facing the industry and their impact, what is being done about them, and also take back to their companies the tools they learned, to make improvements in their own businesses."

Michael G. Conley
CURT Secretary
Manager, DuPont Project Engineering
Center, DuPont Engineering

Speaking Out:

What the Major Speakers Had to Say



GENERAL CHARLES WILLIAMS

Director & COO, U.S. Department of State, Bureau of Overseas Buildings Operations
Leading Change in Construction: The U.S. State Department Strategy

In the past 6 years the General Charles Williams has helped build safe structures for over 15,000 Americans, worldwide. How have he and the U.S. Department of State, Bureau of Overseas Buildings Operations achieved this? According to Williams, collaboration has been the key to their success.

"Collaboration is value generation," he told attendees at the National Conference. "It promotes competition not between people but between the ideas that people bring forward."

Collaboration also makes way for better projects. As Williams' noted, up until the year 2000 his department built only one building a year. After going through a lengthy process of change, though, in 2006 a total of 15 compounds were built around the world, with 12 completed in 2007. This year there's expected to be eleven completed.

The process for change began in 2004 when the organization started using the six-sigma concept for organization and structure. From there a Strategic Management Plan was established, an Industry Advisory Panel was put into place, private sector best practices were implemented, new ways to think and build were encouraged, the Williams 20 (20 carefully crafted concepts that fine tune project execution processes) guided projects, LEAN management was used, a Building management Information System was brought in, and building information modeling was explored.

"Change just doesn't happen," explained Williams. "It's actually very difficult. But we knew we needed to change and we knew it would be worth it."

According to Williams, 110 new compounds (since 2004) will be complete by the end of 2008, proving that change is, indeed, worth it.

MARK AYERS

President, Building & Construction Trades Department

ED HILL

International President, International Brotherhood of Electrical Workers

What the Organized Trades are Doing to Staff our Projects: An Example from the IBEW

"Success and prosperity will always be realized with the sustainability of a skilled workforce," Mark Ayers told the audience during his speech. "In many markets our industry is entering into an unprecedented construction boom while at the same time we have an accelerated number of retirements among our own members. We have to seriously address how we train and recruit the workforce of tomorrow—something which we have already taken proactive steps to address."

Ayers, who noted one of his current goals is to develop solutions that foster collaboration between unions and owners, unions and contractors, and unions and members, is intent on turning the current workforce challenge into an opportunity to train new workers with world class apprenticeship training.

Ed Hill is also committed to establishing training centers across the country in order to ensure that his members can meet the needs of the owners. He told the audience though, that other changes are taking place in order to meet this objective. "We've brought much of our difficulties on ourselves through complacency and believing things would always go our way. However, with that belief we lost sight of the primary rule—to take care of you, the customer."

That's why in 2004 unions from the United States and Canada met to discuss change, which Hill says was, "Fundamental to our survival." Empowering the membership was one way to make change happen and, as Hill notes, "Our customers are seeing a genuine difference in the performance of our members. This has led to significant new opportunities for them because they understand that it was their willingness to change to meet the customer's needs that has brought on this new business."

Hill concluded, "Only by accepting change and the need for change, will we have success."



RICARDO APARICIO

In-House Legal Counsel and Contracts Manager, General Electric; CURT President

CURT: How Owners are Transforming the Industry Through Effective Leadership and Collaboration

For Ricardo Aparicio, the purpose of CURT is to, "Do better what we are already in charge of doing." However, he was quick to point out that, "In order to drive change the owner needs the

entire construction industry on board."

CURT, explained Aparicio, is intent on bringing industry leaders together, sharing view points and learning from each other the ways to improve and move the industry forward. He added, "And we do need to move this industry forward."

For CURT's part, he vowed that the organization will, "Accomplish this by providing aggressive leadership from the owner community."

Three areas where CURT will continue to focus its energy in 2008 will be workforce development, safety and process transformation. Of the first Aparicio noted, "We need to make it personal. We need to reach out and bring people into the industry and reach out across racial, ethnic and gender lines. We can't do it alone."



MARGARET WALKER

Vice President Engineering Solutions, The Dow Chemical Company
Technology, Innovation and the People Who Make it Work: A New View on Solutions for the Construction Industry

"It's your choice," Margaret Walker told the audience during her speech at the National Conference. "The sobering remarks made here about the construction industry should lead to opportunities—but it's up to you."

Walker said in a world where supply and demand are greatly at odds, there has been minimal action. "At Dow, we've been talking about ways to fix the problem since 2003 but there hasn't been enough actually done to solve it."

That is why, Walker implored, "We have to make it personal," noting that personal ownership is exactly what has been working at Dow, where there are over 43,000 employees and countless collaborators. The ability to expand when many other companies are unable to find enough workers, she said, comes down to Dow's equation for success, "The right technology plus the right plan plus the right environment. With the labor shortage we have to be more efficient and technology allows us to achieve this. LEAN construction is an example of technology. But, if we implement just the technology, that is not enough. We have to integrate both people and technology to achieve success."

And that's exactly what The Dow Chemical Company has done.



JOHN MITCHELL

Principal, M&H Economic Consultants

Into 2008: What's Next for the Economy

"From an economist's point of view, it doesn't get much more exciting than this," proclaimed John Mitchell at the onset of his speech. "Folks are losing their jobs. There's the subprime debt fiasco. Oil prices are up."

Overall though, Mitchell was quick to point out that the world economy looks pretty good, as does the economy in the United States. He points to the fact that consumer spending is growing, as is the non-residential construction market. He also stated that in spite of the negative headlines and the obvious turmoil in the residential housing market, most states are experiencing employment growth.

He cautioned though that, "The subprime implosion has not yet run its course," and that there are other things to watch out for in 2008. This includes:

1. How is the subprime housing dilemma going to play out and what are the implications for consumers, local governments, forestry products and real estate?
2. What is going to happen in the credit market? How will risk tolerance change and will it spill over into non residential building?
3. What will the federal government do?
4. Will the strength in trade and investments offset additional declines in housing and slower consumer spending growth?

Only time will tell.

RIC CARTER

President, Fluor Constructors International

PAUL GOODRUM

Professor, University of Kentucky School of Engineering

JOBY FRAME

Construction Logistics Manager, Southern Company

RANDY TOMLINSON

Senior Piping Engineering Technologist, The Dow Chemical Co.

DON WHYTE

President, National Center for Construction

Education and Research Construction Craft Training: Generating Big Cost Savings for Owners

"Show me the money," exclaimed Randy Tomlinson during his portion of this presentation. And, that's exactly what Research Team 231 did.

Their objective, to make a business case for craft training in the construction industry, was achieved by site visits to both open and

closed shops across the country. Along the way they asked, "What's your biggest risk?" The answer, explained Ric Carter, was construction and the quantity and quality of labor. "When we looked at the finer details we found that projects are behind schedule and above budget. This, in part, is caused by a lack of skilled labor."

A quick poll of the audience, asked "Does your company invest in training?" Ninety percent answered yes, to which Carter responded, "Some of you are really in trouble." The business case for training, he explained, is evident in the numbers. "We found that an investment in craft training will reduce your costs because a 1 percent investment in training will increase productivity by 11 percent, reduce turnover up to 14 percent, reduce absenteeism by 15 percent, reduce the cost of rework by 23 percent, and reduce injury costs by 26 percent."

So, asked Tomlinson, "Why aren't owners training workers? He offered possible reasons such as a lack of interest, conflicts with work, lengthy training, a lack of finances and a lack of instructors.

However, he implored the owner community to, "Take off your blinders because if you want a trained workforce you have to step up and train them." Ultimately owner's will pay later if they don't pay for training now," concluded Carter.

ED MERROW

President, Independent Project Analysis

A Global Industry in Crisis: A Perspective from IPA

According to Ed Merrow's father, his job as a preacher was to, "Comfort the afflicted and afflict the comfortable." That, said Merrow, was also the intention of his speech as he implored owners to take notice because, "These are really difficult times in the global construction industry. I consider there to be a crisis in industrial projects around the world. We're looking at the most difficult time to do a project since at least WWII."

This crisis, he explained, started in 2003 and currently, there's no real end in sight. He said, "I think barring a global economic slowdown we've got a long way to go before this is over." He points to unprecedented ongoing spending into the next decade, including \$1.5 trillion, mostly on infrastructure, being spent from 2006 to 2012 in the Middle East.

So, who's to blame? Well, according to Merrow, it's the owner community. "There was a generation where there was an oversupplied market in most places in the world. During this period owner's downsized, outsourced and 'dumbsized' to the point of being reasonably incompetent. As the owners did this, contractors had to do the same. No one hired for 10-15 years. Now we have a demographic nightmare."

How do we cope? Merrow was adamant that, "This problem can only be fixed by the owner community. They created the mess and only they can see our way out."

**PETER DAVOREN**

President & CEO, Turner Construction Company

From Collaboration to Transformation: A Contractors Perspective

For the last 30 years Peter Davoren has noticed the same criticism on projects—ill planning and ill managing. He reminisced during his speech about a time when he was part of a project

in which everyone was on-site, including owners, architects and engineers. When he had a question, he went to the building where everyone was working and walked out with an answer a short time later.

"That degree of collaboration has been lost over the years," he told the audience, "But we now have the opportunity to collaborate and coordinate again. It's the key to future success."

Davoren asked the team leader of that project why it achieved such success. His answer was simple, "It worked because we wanted to be one team. We knew if we created a team approach to the project that everyone would share in the project's success."

"What makes a great project?" asked Davoren. His answer: collaboration. "I've seen the good and the bad but if I were to calculate all of our bad projects in the past ten years, every one had the same characteristic—there was no collaboration. That means lost money, a bad reputation and no future repeat business."

"But, if the owners are happy, they'll hire us again. And in order to keep them happy, we must collaborate. It's paramount for success."

JERRY THEIS

Group Manager WFG Capital Projects, General Motors Corporation

HAROLD HELLAND

Manager Project Engineering, Abbott

RUSTY FANNIN

Global Construction Safety Supervisor, Air Products & Chemicals

LEAN Projects from an Owner's Perspective: Lessons Learned

"LEAN is a journey," Harold Helland told the audience. "You're not going to go home today, change a few things and all of a sudden discover you're doing LEAN construction." The process, he said, "Is going to generate greater value with less waste, provide a more predictable outcome, and improve quality, productivity and safety...but it will take time."

However, the benefits are worth it. Helland pointed to examples from industry leaders such as GM—which reduced construction time by 27 percent on the Flint Engine Plant by using 3D modeling, just-in-time delivery and value stream mapping; and BMW Constructors—which realized a 31 percent increase in piping productivity through work flow control.

"We're all in this to save money and if you can get everyone on board (owners, contractors, suppliers, etc.) you'll see extensive savings that will continue to grow rapidly," said Helland. This means eliminating project waste, such as moving a piece of equipment several times before it's set in a final location, traveling back to the shop to pick up something left behind, and design changes after a project has began.

"Collaboration is really the key to LEAN success," said Jerry Theis, who described some of the reasons why General Motors decided to implement LEAN practices. These included intense competition and a challenge from management.

"Overwhelmingly it looked like a good thing to do," he says. The results speak for themselves: cost savings, schedules that were kept, improved quality and increased safety. General Motors uses LEAN on 100 percent of its projects now.

BILL TIBBITT

Executive Director of Worldwide Engineering Services, Johnson and Johnson

DOUG PRUITT

Chairman & CEO, Sundt Construction, Inc.

BARBARA PRICE

Principal, Jacobs

3XPT Strategy Group: Different Teams, Different Jerseys, One Game

"If this was easy we wouldn't need to be doing it," Bill Tibbitt told the audience at the National Conference. "It isn't easy to get all of us on the same page and certainly establishing a common base of understanding isn't the simplest task either."

However, the three groups involved with the 3XPT Strategy Group forged ahead anyway to establish a way to build projects where the owner, designer and contractor work in a collaborative manner in an open and sharing environment, referred to as process transformation.

The group, which first met in 2006, came together again in July 2007 for the Integrated Project Delivery Workshop, designed to reach out to those who have practiced process transformation. "We wanted to listen to what they had to say and to learn from their experiences," explained Tibbitt.

One benefit of integrated project delivery that was discussed was the ability to streamline events through concurrent design. Barbara Price explains that for example, "We bring the entire team, including the sub-trades, into an early design workshop to allow the teams to take advantage of the collective knowledge of things like constructability and current cost analysis, to encourage and enhance predictable outcomes for the entire team."

For more information on the 3XPT Strategy Group, the Integrated Project Delivery Workshop and Doug Pruitt's success story, see the feature article on page 24.

**SAM DONALDSON**

Veteran Washington Correspondent, ABC News
Sam Donaldson Looks at Leadership

As a final treat for Conference attendees Sam Donaldson dazzled the audience with stories from the field, all the while exploring the qualities of good leadership. He explained that a good leader has to be ready and willing to change, and must have a plan to carry out that change. However, he cautioned

that the best leaders are also flexible when implementing that plan.

"True leaders can give and take," he said. "They have to know when to stand up for their ideas, even when others don't agree, and they have to know when to give in if other better ideas come in from elsewhere."

And the Award Goes to...

SAFETY AWARDS

The Construction Industry Safety Excellence (CISE) Constructor Awards recognize those contractors, owners and LUCs that exemplify the value of safety in their everyday work practices. They were presented by Bob Krzywicki, CURT Safety Committee Chairman and Contractor Safety Practices Manager, DuPont.



Bob Krzywicki, Dick Teater (President & CEO), Greg Sizemore (CURT Executive Vice President).

CLASS: Contractor Safety Award

CATEGORY: 100,000 to 500,000 man hours/year

NAME: Big J Enterprises, LLC

ABOUT: For Big J Enterprises, LLC, safety is a value and a way of life—not just a program. A mechanical contractor that specializes in process piping systems in the semiconductor and research sectors, this company delivers toxic chemicals and gases to the facilities they serve. As such, a systems approach to workplace safety was implemented, rather than using broad and general regulations. Safety procedures were broken down into manageable parts that allow detailed planning an analysis. For example, all new hires are acclimated to the controlled fabrication shop prior to being assigned to actual construction sites.



Bob Krzywicki, Terry Buza (Division Safety Manager).

CLASS: Contractor Safety Award

CATEGORY: 500,000 to 2,000,000 man hours/year

NAME: L-CON Constructors

ABOUT: For L-CON Constructors anything more than zero accidents and injuries is unacceptable. That is why management, who are committed to providing a safe working environment for all employees, established a *New Worker Mentoring Program* where all newly hired craft workers, regardless of past experience, are assigned an L-CON Constructors mentor who has a proven safe work history. Using a checklist, this worker communicates job knowledge to the new worker and progress is communicated to the superintendent on a weekly basis. This ensures every single person working on site is properly trained in the company's safety policies.



Ralph Riley (Safety Manager), Bob Krzywicki.

CLASS: Contractor Safety Award

CATEGORY: Greater than 2,000,000 man hours/year

NAME: S&B Engineers & Constructors, Ltd.

ABOUT: S&B Engineers & Constructors' key ingredients for safety success include a clear policy on safety that is exemplified throughout the company and includes absolutely everyone. Both Principals of the company demonstrate this belief through their active involvement in setting and enforcing policies and a safety culture. These policies include open budgets for safety, pre-task analysis on macro and micro levels, and weekly reviews and analysis of safety performance. Most importantly, employees who have an outstanding safety performance record are recognized within the company, promoting further safety diligence.



Bob Krzywicki, Pat Cook (Corporate Safety and Compliance Manager), Greg Sizemore.

CLASS: Contractor Safety Award

CATEGORY: Greater than 2,000,000 man hours/year

NAME: Protherm Services Group, LLC

ABOUT: Establishing safety performance goals for each manager—including site audits and mandatory safety meetings—has ensured involvement by all levels of management, supervisors and craft employees in developing a safety first culture. Also used with much success has been a behavioral observation process to create a culture of caring and respect, and a scanning system that allows the company to scan audits and immediately sort the data into real time reports. This has given Protherm the opportunity to bring about change in the field based on unsafe behavior and acts, rather than accidents.



Bob Krzywicki, Bill Bobo (Executive Director).

CLASS: LUC Safety Award

NAME: Houston Business Roundtable

ABOUT: For the last two decades the Houston Business Roundtable has been recognizing local industrial contractors for their outstanding safety performances. The HBR Safety Excellence Award process begins with contractors being nominated by their clients (owners) and culminates in the recognition of contractors in seven award categories. As contractors achieve "Best in Category" status, they become mentors to other contractors in the area, leading change through example and helping others achieve distinction with their safety programs.



Bob Krzywicki, Tom Roscetti (Project Management SHES Consultant), Joe Danek (Senior Safety Coordinator), James Bohuslav (Turnaround & Majors Department Manager), Greg Sizemore.

CLASS: Owner Safety Award

NAME: Exxonmobil Chemical Co.

PROJECT: Baytown Chemical Plant

ABOUT: The Baytown Chemical Plant implemented the *Operations Integrity Management System* on this project, which includes detailed requirements for leadership, and commitment and involvement from both Exxonmobil and the contractor. Placing emphasis on several key elements, including job safety analysis, a work permit system, job hazard analysis, and a last minute risk assessment and hazard elimination system, helped this project achieve a 75 percent reduction in the contract workforce TRIR from 2004 to 2006.



Greg Sizemore, Tom Roscetti (Project Management SHES Consultant), Ricardo Aparicio, Bob Krzywicki.

CLASS: Owner Safety Award

NAME: Exxonmobil Chemical Co.

PROJECT: AES WVV-8 ZSK-160 Expansion Project

ABOUT: The WVV-8 Expansion Project applied ExxonMobil Corporation's documented project management and execution procedures contained in the *ExxonMobil Capital Management Project System* (EMCAPS). They used site specific orientation by the prime contractor's safety manager, combining the hazard recognition process with the work permit process, recognition/reward programs based on performance, and periodic cold eyes audits by corporate safety professionals. As a result, this project achieved zero injuries in 315,000 work hours.



Bob Krzywicki, Greg Landis (Director-West Point Regional Engineering), Art Limper (Global Manager, Construction Safety), Steve Mongiardo (Senior Director, Infrastructure), Greg Sizemore.

CLASS:	Owner Safety Award
NAME:	Merck & Co. Inc.
PROJECT:	Global Engineering Services INSB Project
ABOUT:	The foundation of this 8-month modification project's excellent safety record—which boasts 146,000 hours with only one recordable injury—was based on safety planning and procedures, extensive safety training of all team members, close monitoring, and implementation of corrective action when necessary. During this self managed project, Merck project team members worked directly with the contractors, participated directly in the implementation of the safety program and routinely prioritized safety ahead of other project priorities. The team emphasized the importance of pre-project planning, raising the craft worker's level of awareness of hazards around them, and changing unsafe behaviors.



Front row: Carlos Lange (FruCon Operations Manager), Bob Doose (P&G Folgers), Joe Gionfriddo (Corporate Engineering-Global Construction Management Process Owner). Back row: Bob Krzywicki, David Cyrulik (FruCon Operations Manager), Dan Nordhill (P&G Global Construction Manager, Household Care), Stan Yarrish (P&G Global Technology Leader), Jim Sexton (P&G Global Construction Manager, Baby Fem Care), Greg Sizemore.

CLASS:	Owner Safety Award
NAME:	P&G New Orleans
PROJECT:	The Folger Coffee Company
ABOUT:	After Hurricane Katrina, this P&G facility faced numerous challenges in achieving a 0.73 TRIR for the three year period of 2004 to 2006. However, challenges didn't lead to cut corners. Instead, the management team implemented the <i>Behavior Observation System</i> , which allowed for behavior observation and timely feedback for safe and at-risk behavior. This system allowed team members to discuss work methods and worker body positions that have injury or mishap potential. This proactive approach ensured communication with each other and corrected at-risk behavior as well as reinforced positive action/behaviors at the same time.



Front row: Laurie Reinen (P&G Wildfire Project Manager), Rick Bilotto (P&G Wildfire Construction Manager), Joe Gionfriddo (Corporate Engineering Global Construction Manager). Middle row: Andy Donnell (FruCon Construction Vice President Construction), Steve Vandenhuevel (Spirit Construction), Stan Yarrish (P&G Global Technology Leader), Jim Sexton (Global Construction Manager), Greg Sizemore. Back row: Bob Krzywicki, Dan Nordhill (P&G Global Construction Manager).

CLASS:	Owner Safety Award
NAME:	P&G Family Care
PROJECT:	Green Bay Wildfire Project
ABOUT:	This three year papermaking expansion project at the Proctor & Gamble Green Bay, WI facility achieved true world class performance by working 715,000 hours without incurring a single recordable injury. Setting the project goal at zero safety incidents at the beginning of the project clearly established the expectations for the project. This practice by leadership set the example and communicated that safety was everyone's responsibility. Positive reinforcement for good safety behavior strengthened the continuous safety communications and proactive safety culture for this project.

WORKFORCE AWARDS

Developed to recognize both national and international examples of extraordinary and innovative training programs, winning a Construction Industry Workforce Award is truly a prestigious honor.



Gerry Sprentall (Workforce Development and Industrial Relations Committee), Kevin Ward (Director of Operations, CEFGA), Greg Sizemore.

PROGRAM:	CEFGA – Construction Education Foundation of Georgia
PROJECT PROFILE:	"Success Stories" are valuable tools in promoting a long-term view of employment in construction. As such, CEFGA found that the best way to connect with students and promote construction as a viable career was to show them examples of other young people enjoying a career in construction. This is done through their Career Expo and the Summer Internship Program, both of which introduce students to member companies. The results are stunning: In 2006, 2,236 graduating seniors went to work or continued training in a construction-related career in Georgia.



Andrea Bills (Work Paths Director), Gerry Sprentall.

PROGRAM: Central Dallas Ministries, OAI, Inc. & Construction Education Foundation

PROJECT PROFILE: The Central Dallas Ministries program openly targets a sector of the population generally excluded from consideration for training opportunities—the non-traditional, inner city and minority population. Their goal is to create opportunity through access to training and work that will allow all people to build long term careers in construction. In recruiting candidates for the program, local community and faith-based organizations are contacted and meetings are held to help educate them on the benefits of the program and careers in the construction industry.



Gerry Sprentall, Jose Canossa (Shaw Group, Initiative Partner), Ed Allison (DuPont, Initiative Partner), Tim Horst (Bechtel, Initiative Program Manager), Skip Layne (Washington Group International, Initiative Partner), Don Whyte (National Center for Construction Education and Research, Initiative Partner), Greg Sizemore.

PROGRAM: Gulf Coast Workforce Development Initiative

PROJECT PROFILE: As of May 2007 more than 8,800 individuals have completed or are currently enrolled in construction training programs across the Gulf Coast. One of the drivers has been the Gulf Coast Workforce Development Initiative. GCWDI and its partners are providing Gulf Coast residents with the opportunity to learn a craft and to build a professional career while helping rebuild their own communities. Placement rate of these new craft professionals in entry-level construction positions or advanced training is 85 percent.



Gerry Sprentall, Gary Bambauer (President), Greg Sizemore.

PROGRAM: Mississippi Construction Education Foundation

PROJECT PROFILE: While the foundation's School-to-Work initiative began with only 7 high school vocational centers in 1996, this program has grown today to 98 out of 100 centers participating, throughout the state of Mississippi. This industry led effort has garnered great results with approximately 67 percent of program participants now working full-time in construction, or they have continued their construction training in community colleges.



Gerry Sprentall, Jeff Scroggins (Director of the CHOICE Program), Matt Clark (Dean of Construction Technology Institute), Ed Coleman (Principal, Crestview High School, Okaloosa School District), Greg Sizemore.

PROGRAM: Okaloosa School District - CHOICE

PROJECT PROFILE: The Choice program demonstrates the need and success of collaboration among the private and public sector, encouraging participation of construction contractors with public education. Approximately 600 students have participated in the construction institute, with about 60 percent of graduates continuing their studies at a technical school, community college or university.



Ricardo Aparicio, Greg Sizemore, Alvin M. Bargas (President of ABC's Pelican Chapter), Brent Boe (2007 Chairman of ABC's Pelican Chapter), Gerry Sprentall.

PROGRAM: Pelican Chapter, Associated Builders & Contractors, Inc.

PROJECT PROFILE: The ABC Pelican Chapter is an example of how new alliances, collaborative efforts, outreach programs and grant-sponsored craft training can make a difference. The program objectives are aligned to achieve the goal of developing a consistent approach to recruiting, training, and retaining a skilled and productive Louisiana craft workforce. In the Lake Charles area, 38 high schools with more than 4,000 students are impacted by this programs support.



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Break-out Sessions, Revisited

The educational break-out sessions at the CURT National Conference once again featured a wide-range of topics and an extremely high caliber of presenters. Each session was designed to educate, inform and update the attendees on everything from solutions to the workforce crisis, how to improve job site performance, getting creative with contracts and using BIM with amazing results.

Stay tuned to the CURT website for updates on all the great sessions planned for the 2008 Conference.

Realities and Remedies for the Construction Workforce Crisis by **Bob Gasperow, Executive Director, Construction Labor Research Council; Pamela Mullender, Executive Director ACE Mentor Program of America; and Gerry Sprentall, CSC Construction Manager, Intel Corporation.**

As this session ended attendees grouped around Pamela Mullender, asking specifically, "How can I be involved?" What caught their attention was Mullender's presentation on the ACE

Mentor Program, designed to increase the awareness of high school students to career opportunities in architecture, construction and engineering, through mentoring. In its first year 320 students were involved, now, 10 years later, there are over 7,000 participating. For more on this program, see page 27.

Creative Contracting: Highlights of the ConcensusDOCS Collaborative Agreements by **Bill Ernstrom, Vice President, The Walsh Group.**

In this presentation Bill Ernstrom asked, "Why is ConcensusDOCS so important?" The answers, he noted, includes the fact that it has streamlined successful project ideas, it has created an industry-wide forum to explore new frontiers and approaches, and the use of these documents today will lead to industry change tomorrow.

Moving Toward Integrated Project Delivery
Session I – BIM Usage Survey Results by **Markku Allison, Resource Architect, American Institute of Architects; Mike**

Kenig, Vice Chairman, Holder Construction Company; Chuck Hardy, Deputy Director, General Services Administration; and John Kunz, Executive Director, Center for Integrated Facility Engineering at Stanford University.

Session II – A Tale of Three "Citis": It was the Best of BIM . . . It was the Worst of BIM by **Mike Kenig, Vice Chairman, Holder Construction Company; Wayne Bartlett, Director of Design and Construction, Citigroup; B.J. Butler, Vice President Sr. Asset Manager, Citigroup; Terry Mick, Holder Construction Company; and Brian George, Principal, Corgan Associates.**

These sessions were presented to an overflowing audience, full of attendees who were eager to learn about the tangible benefits of BIM experienced on a group of Citi projects. Three successive projects were described, each of which used BIM to a greater capacity, and with more impressive results. See page 25 for the full story.

Other presentations included:

Keys to Improving Safety Performance: The Best in Class from Award Winning Owners by Rusty Fannin, Global Construction Safety Supervisor, Air Products & Chemicals; Stan Yarrish, Corporate Engineering Business Support, Procter & Gamble; Joe Danek, Senior Contractor Safety Coordinator, ExxonMobil Refining; and Tom Roscetti, Project Management Consultant, ExxonMobil Chemical Co.

Continuing the Conversation . . . More Workforce Remedies for a Changing Industry by Don Whyte, President, National Center for Construction Education & Research; Kirk Pickerel, President & CEO, Associated Builders & Contractors; and Tim Horst, President, Becon Construction Company.

Recent Legal Developments Affecting Project Delivery by Deborah Arbabi, Counsel, Crowell & Moring, LLP.

Keys to Improving Safety Performance: Best in Class from Award Winning Contractors by James Slaughter, President, S&B Engineers and Constructors.

Legal Issues in a Collaborative Environment: What You Don't Know May Hurt You by Bill Geisen, Partner, Graydon Head & Ritchey.

Improving Productivity Through Effective Resource Management by Charles England, Chairman, Mechanical Allied Crafts; Steve Mongiardo, Senior Director, Merck & Co., Inc.; Steve Lindholm, Best Practices Coordinator, CURT; and Ashley Baker, Vice President, Southern Company.

Integrated Form of Agreement: A Relational Contracting Style That Works by Will Lichtig, Shareholder, McDonough Holland & Allen.

FMI 2007 Owners Comprehensive Survey: The Envelope Please by **Mark Bridgers, Consultant, FMI Corporation; Marise Mikulis, Senior Director, FMI Corporation; Jack Hallman, Director Capital Projects, General Motors Corporation; Steve Lane, Executive Vice President, Citigroup; Joseph**

Mansker, Director Construction, Dynegy Generation; and Tom Vaughn, President, BE&K Construction Co.

The objective of the Eighth Annual Survey of Owners was to better understand the owner's point of view and how the process of construction and collaboration between industry players is impacted by technology. The team spoke with 200 owners, agencies and

organizations, asking for their feedback on major industry issues such as aging infrastructure, global competition, attracting new workers, retaining baby boomers and investments in training.

Successful Collaborative Agreements and the Projects That Worked by **James Frey, Sr. Vice President, Alberici Group; Brian Barr, Vice President, Brasfield & Gorrie; Joe Territo, President, Territo Information Systems; Ned Parrott, Partner, Watt Tieder Hoffar & Fitzgerald, LLP.**

Collaboration can work and the speakers in this presentation proved it with numerous examples, one of which was the creation of the SSM Cardinal Glennon Children's Medical Center, in St. Louis, MI. This \$40 million project worked because all of the parties involved decided to create a different kind of contract that would lessen adversarial relationships and enable everyone to work together. The contract was negotiated with only one lawyer (the owner's) present and was based on a relational, not transactional, agreement. It also used innovative planning/scheduling techniques, defined required behaviors and incorporated theories on LEAN construction.

Technology That Results In Better Projects by **Dan Hodges, Program Manager Technology Integration, Intel Corporation; and Amadeus Burger, President, CSA, Inc.**

Presenting to another packed room, Dan Hodges and Amadeus Burger wowed the audience with their description, photos and video of laser scanning technology—a tool which has proved very beneficial for Intel. The technology, which is fully integrated with 3D design technology, provides fully accurate details of projects (+/- 1/4 inch) and enables workers to see potential clashes before equipment is installed or removed. For more on this technology, see the article that starts on page 18. ●

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The photos say it all!



Special thanks to Randy Bakel, Executive Director of the Florida Construction Users Roundtable, for coordinating this tournament.

The stunning golf course at Naples Grande Beach Resort. Photos courtesy of the Resort.



Congratulations to these expert golfers, winners of the tournament! Right to left, Wayne Blanchard, Washington Group International; Ron Donnal, GEM Inc.; Jim Peckham, DuPont; and Hollis Johnson, BP Oil. The group had a net score of 170, which is 46 under par!



Exhibit Hall Re-cap

The CURT National Conference featured some of the biggest industry associations and suppliers, all showcasing their organizations, products and technologies. They were:

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**By M. Kirk Pickerel,
ABC President and CEO**

The Value of Merit Shop Construction

Since it was founded 58 years ago, Associated Builders and Contractors (ABC) has been the national voice of merit shop construction. ABC represents nearly 25,000 contractors, subcontractors, material suppliers and related firms in 78 chapters across the United States, supporting the right of all contractors to bid for and be awarded any job regardless of their labor affiliation.

Today, according to the U.S. Bureau of Labor Statistics, merit shop construction workers comprise 87 percent of the industry workforce. This reflects quite a change from 60 years ago, when 85 percent of all construction employees worked with some union affiliation.

The success of the merit shop can be attributed to the team approach in construction. ABC contractors and their construction workforce join together to meet the needs of owners. This ensures projects are completed safely, on time and on budget. Merit shop employees take pride in the company for which they work and are rewarded for their contributions to the team. They are considered by many to be the best trained, most productive and safest workers in the world.

In contrast, union employees give their allegiance to the union instead of the contractor. Unionized construction jobsites often are marked by jurisdictional disputes,

work stoppages, bickering, delays and rising costs. These events can occur even if the unions sign a project labor agreement (PLA) pledging not to take such measures. In the end, it is the owners, the community and the taxpayers that suffer the consequences of the union's actions.

One of the unique differences between the merit shop and union workforces is that merit shop construction craft professionals may be skilled in a number of different construction trades and are able to use those talents in their daily jobs, creating greater efficiencies on the jobsite. Having the ability to use multi-skilled employees can reduce labor costs while increasing productivity. In contrast, union workers are strictly limited to the type of tasks they can perform on a jobsite under tightly drawn jurisdictional boundaries.

For merit shop employees, job training does not stop at the apprenticeship level. ABC provides craft, safety and management training through its national network of chapters. These chapters also provide continuing education to meet the requirements to maintain journeyman licenses in various construction crafts. In addition, ABC's training programs are registered with the U.S. Department of Labor and are supported by a curriculum through the nationally recognized National Center for Construction Education and Research.

Another area where the merit shop dominates the construction industry is the protection of local jobs. With fewer and fewer construction craft professionals joining unions today, unions are forced to hire workers from outside the local area to meet

the labor needs. However, because the vast majority of construction workers are not members of a union, merit shop contractors have the ability to reach out to a larger pool of potential employees in the community.

Merit shop firms seek to provide owners, whether they are private firms or public entities, with the best product at the best price. While labor unions seek to use political connections to limit competition and secure federal and state construction work at taxpayers' expense, ABC contractors support free-market principles and open competition to control costs.

The future of the construction industry depends on the continued adoption of open competition, free enterprise and the merit shop philosophy. In order for the construction industry to grow it must welcome competition and innovation. That is what merit shop construction is all about.

We at ABC believe the best days are ahead for this great and vibrant industry and we enthusiastically advocate a team approach to building America. ●

M. Kirk Pickerel, CAE, has served as president and chief executive officer of Associated Builders and Contractors (ABC), a national trade association of more than 24,000 construction and construction-related firms in 78 local chapters, since October 2000. As president, he directs a national staff of 80 professionals at the association's Arlington, VA, headquarters.

For more information:
www.abc.org

The opinions and ideas expressed in the BACK AT YOU SECTION are not necessarily those of CURT. If you would like to contribute to our BACK AT YOU SECTION please send topic ideas/completed articles to editor@matrixgroupinc.net for review.



**By Raymond J. Poupore,
Executive Vice President,
The National Construction
Alliance**

Finally, a labor organization that truly "gets it", that understands the needs and wants of contractors and owners, that knows partnering can be mutually beneficial and that can deliver the skilled manpower to get the job done—and done right the first time.

Welcome to the National Construction Alliance (NCA), comprised of the three largest basic trade unions in North America: the Laborers' International Union, the International Union of Operating Engineers and the United Brotherhood of Carpenters and Joiners of America. Together, they represent over 1.7 million skilled craftsmen and women.

Formed in the spring of 2006, the NCA is well aware of the realities of today's construction industry. With that in mind, it is focused on providing a new direction, a change of course in the way we do business, if you will.

The NCA is contractor and owner-friendly, understanding full well that your success is our success—and that our success is your success. We view contractors and owners not just as partners but also as our customers. As such, we strive for the opportunities to prove that we add value to your business, and that we are a definite asset to your product quality and your bottom line.

Of course, our mission is to create job opportunities for our members by increasing

Skilled, Safe and Productive Workers—Without the Hassles

our market share. We seek to do that by increasing our contractor base, our owner base, our membership base and our labor-management partnerships.

We get that contractors want skilled, safe and productive workers—with no hassles; we get that owners want their projects built on-time and on-budget—with no hassles. Satisfying those wants is how the NCA will maintain and increase its market share—and everyone wins.

We have tested policies and procedures that allow the NCA to deliver on its commitment at the jobsite. Testimony on just how smoothly the NCA works can be found on projects the Alliance has worked since its inception: the Woodrow Wilson Bridge, the McAlpine Lock Replacement, the Tacoma Narrows Bridge, Olmsted Dam, and, in a project just underway, the Hetch Hetchy Water project.

The NCA is able to deliver because we have a pro-active staff, with the experience and knowledge to assist in mapping out projects. Our network of local unions throughout the U.S. has the skilled tradesmen needed to man your projects. We have improved communications by eliminating layers of bureaucracy and scheduling regular meetings with our contractors and our local unions because we understand that direct, frank communication can prevent potential problems before they become real problems.

The NCA recognizes that the entire industry—owners, contractors and workers—are dependent on public investments for much of its work. That is why the laborers, the operating engineers and

the carpenters, individually and collectively as the NCA, are recognized leaders on Capitol Hill and in state legislatures in fighting for infrastructure funding for highways, bridges, water treatment facilities, power plants, locks and dams, transit, shipping, rail, airports and any other facet of infrastructure imaginable.

We do that because whatever successes we register means projects for you and jobs for our members. We work in concert with other stakeholders to achieve these legislative funding goals, including the Americans for Transportation Mobility, the Water Infrastructure Network, the Transportation Construction Coalition, the Waterways Council Inc. and other groups that support increased funding, as well as the necessary labor protections for workers such as Davis-Bacon coverage.

The NCA knows everyone has choices. NCA offers, first and foremost, a highly trained and skilled workforce that is productive and safe, and can get the job done right the first time; on-budget—without hassles. It also brings to the table a new attitude and commitment to the work it does.

NCA gets it. You should get NCA— together we will grow and prosper. ●

A 35 year veteran of the construction industry, Raymond Poupore is currently the Executive Vice President of the National Construction Alliance. Prior to this he served as Executive Director of the National Heavy and Highway Alliance beginning in November, 2001.

For more information:
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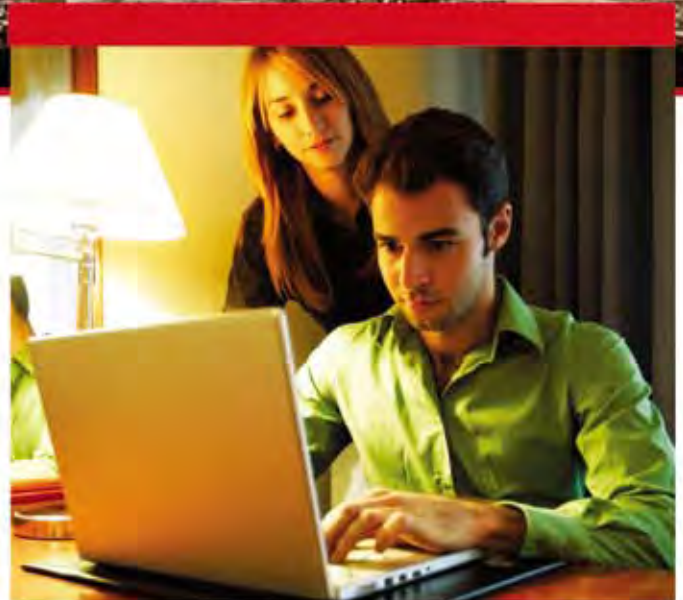


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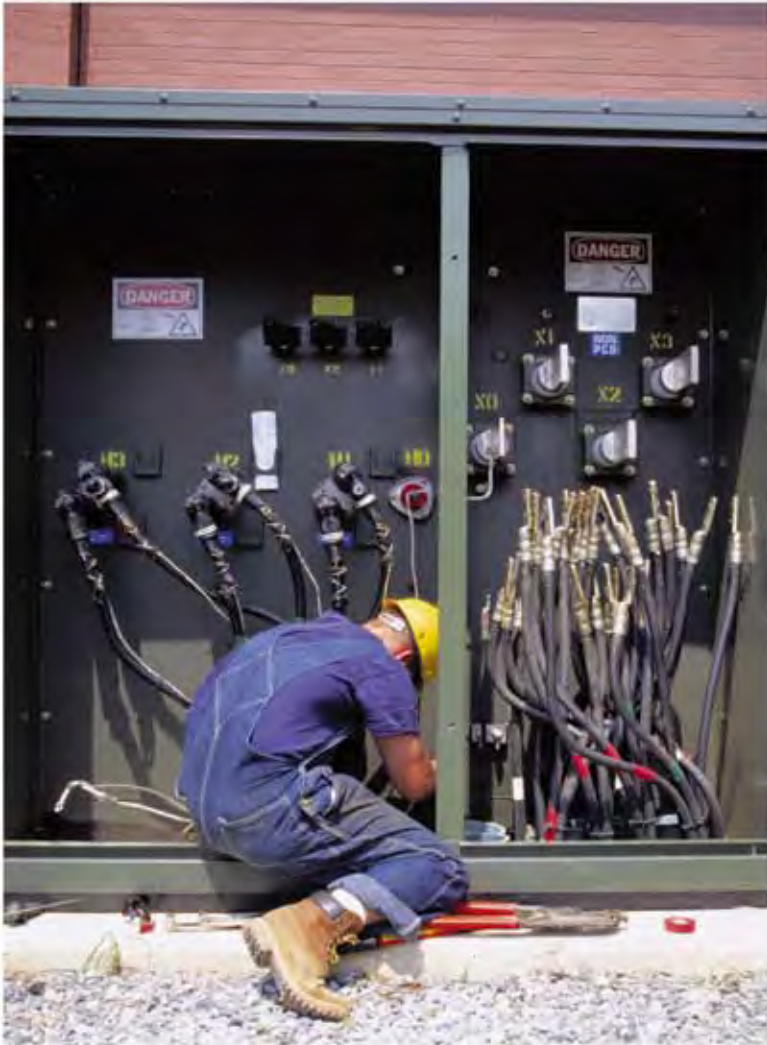


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