



The VOICE

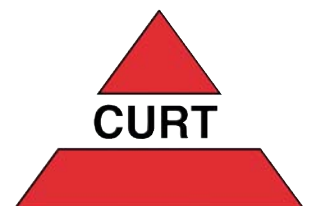
The official magazine of The Construction Users Roundtable
Winter 2006/2007

3XPT: Revolutionizing the Construction Industry

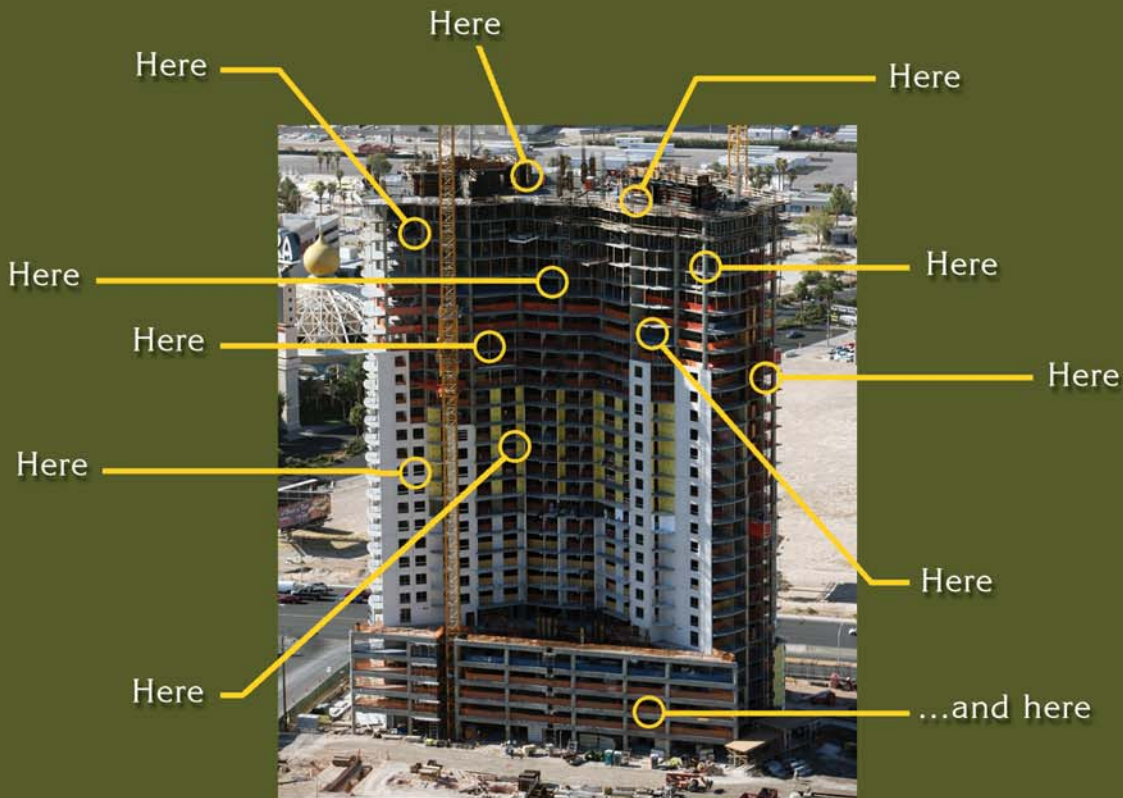
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- CURT Leads 3XPT Strategy Group, Driving Forward BIM Technology
- Workforce Crisis
- A Property Owner's Liability
- Procter and Gamble Profile
- About CURT
- Changing Workforce Attitudes

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On the Cover:

CURT takes a leadership role, bridging the gap between all sectors of the construction industry with the ground-breaking 3XPT Strategy Group initiative. See page 15 for the complete story.



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The Future is NOW

Given a place to stand, Archimedes is said to have boasted he could move the earth. I presume that the statement from the otherwise brilliant and innovative mathematician, physicist and engineer, was more philosophical than factual, for although it served to illustrate the great power of the Law of Moments which he had “discovered,” it ignored the fundamental need for a steady fulcrum and an immensely large and strong lever with which to accomplish the feat (not to mention a spacesuit and an adequate supply of oxygen).

Indeed, the statement has prevailed over generations not only as a hyperbolic illustration of mechanics, but also as a powerful analogy of the great things that can be accomplished if we only had the smarts, the determination and the right tools to get it done.

At CURT, our challenge today is not as grandiose as moving the earth, but it may be as daring. Our challenge is to move an ever increasingly insular design and construction industry towards fully integrated and highly collaborative teams that deliver capital assets in unprecedented speed, quality and value.

It is a challenge that seeks to incorporate emerging technologies, not to do old things in new ways, but newer things in better ways. This objective will require not only our imagination but just as importantly, our determination.

There are, of course, enormous impediments that stand in the way. The business models that we use today are dictated not only by custom and comfort, but also by risk allocation formulas that have been influenced by case law, insurance, surety and other external factors that predate all of us. Each presents real and serious issues that must be addressed if we are to be successful where Archimedes failed.

Fortunately for us, we have the fulcrum, the lever, and a place on which to stand.

Building upon the great work produced by the CURT A/E Productivity Committee and others, various industry groups have come together under the 3XPT Initiative to take on the task. Just as the bright red triangle that symbolizes CURT, the 3XPT Initiative will serve as the fulcrum. On one side, the design professions represented by the AIA, on another, the construction professionals and crafts represented by AGC, and at the base, the owner community integrated through CURT.

As lever, we will use the evolving technology that will enable us to integrate the manufacturing, design, and construction process into a seamless tool—a tool that will eliminate redundancies, reduce conflicts, and increase speed-to-market and value.

The collective vision of the stakeholders, that we can and must make the change, provides us with the firm common ground on which to stand.

As the engineers among us will tell you, all we need to do now is apply the right force. Archimedes should have been that lucky.

Our challenge is to move an ever increasingly insular design and construction industry towards fully integrated and highly collaborative teams that deliver capital assets in unprecedented speed, quality and value.

Ricardo Aparicio, AIA, Esq.
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Building Value in a Dynamic Construction Environment

Are you searching for a few golden nuggets to add value to your construction activities? The 2006 CURT National Conference held in Tucson, Arizona, November 13-15, at the beautiful El Conquistador Resort, is able to satisfy that requirement. In the diverse and challenging areas of the construction industry, the CURT National Conference is one of the most valuable networking and educational settings that exist for the attendees.

Owners, contractors and labor leaders will be in attendance as conference participants and presenters. These construction and corporate leaders, along with industry experts, will drill-down into various data processes, experiences and technology, and provide a vision that will stimulate our thoughts and actions to improve performance.

It's unlikely that many can remember where the construction industry has had this many broad-reaching concurrent challenges. Commitment and execution of large and complex construction projects is like planning for battle; there are opportunities for success and risk of losses on all fronts. Our construction industry service providers, not to mention stockholders, customers and the financial world, expect cost effective solutions and individual accountability. The National Conference will endeavor to inform and educate attendees from each segment of the construction industry to:

1. Add value at each step in the process;
2. Avoid losses detrimental to the success of the construction projects; and
3. Assess risk prior to the execution phase.

The National Conference Planning Committee is extremely excited to be able to consolidate this many outstanding topics and premier speakers into a two and half day conference, and still be able to provide time to network with peers, sponsors and exhibitors.

The agenda, distributed in early September, reads like a 'who's who' in experience and leadership in each area of expertise. The conference registrations always fill quickly and for those who cannot attend, let me touch on some highlights.

Opening speaker for the conference is Nido Qubein,

University President, Entrepreneur, Author, Business Leader and winner of the Horatio Alger Award for Distinguished Americans.

CURT member Executive Speakers include Tom Voss, Chief Operating Officer of Ameren Corporation; Jose' R. Leon, Vice President from ExxonMobil; Adrian Zaccaria, Chief Operating Officer of Bechtel Corporation; and Ricardo Aparicio, CURT President from General Electric Company.

Other Noted Presenters include, John Mitchell, Economist from US Bank; Peter Cockshaw, Publisher and National Labor Analyst; Chief Architect and Project Executives implementing the US Capital Improvement Projects; and Edwin Foulke Jr., the OSHA Director.

With 16 concurrent educational breakout sessions, the attendees are provided specific details and are able to ask questions in the areas of labor demand, union and merit shop workforce performance, panel discussions on safety, implementing the CURT published owner safety blueprint (OSB), contracting strategies and legal lessons learned, BIM and other technologies, and current global resource activities.

Lastly, there will be the exciting wrap-up to the conference with The Afterburner Fighter Pilots' motivational presentation on their Flawless Performance Execution Model and how it has application in every aspect of the construction business.

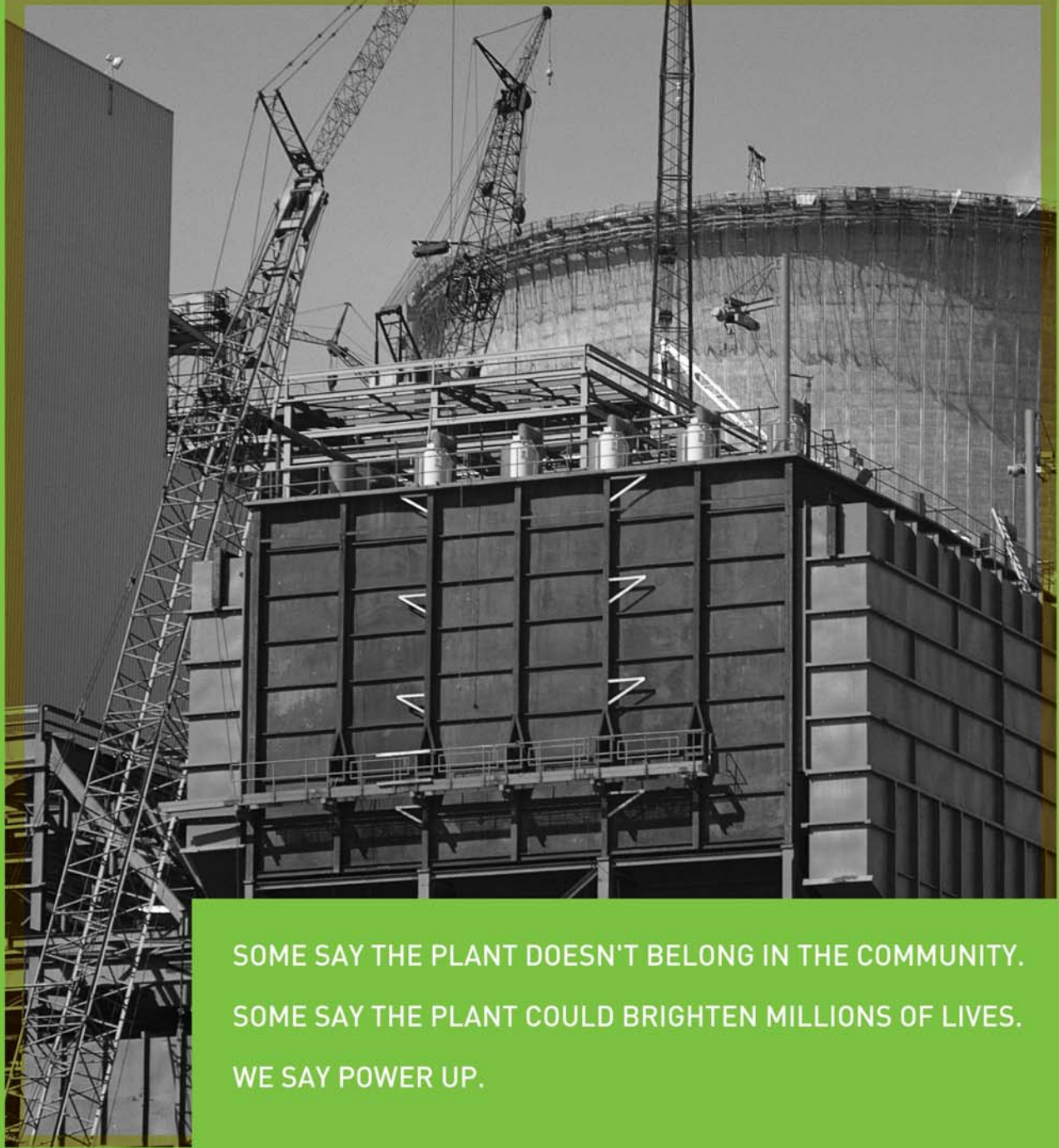
The annual National Conference is another example where the CURT members are committed to improving the industry and leading changes vital for our collective success in the areas of safety, quality, workforce development, technology, education and project management. The National Conference emphasizes present and future directions that can be used to support industry success as we all "roll up" our sleeves and commit to working together on all fronts.

Ken Kuechenmeister
Ameren
CURT National Conference Chairperson

Commitment and execution of large and complex construction projects is like planning for battle; there are opportunities for success and risk of losses on all fronts.

See page 40-41 for a conference agenda, event sponsors and exhibitors.

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Dramatic Changes, Fantastic Opportunities

CURT is about driving change, about giving voice to the owner community and about spurring innovation. As a result of our efforts, the old way of doing things is starting to evolve. Not only are owner organizations undergoing a tremendous metamorphosis, but the entire industry is on the move as we look for new and better ways to get projects completed while maintaining cost effectiveness.

Architects, engineers, and builders are no exception. They are now collaborating at a level never before seen on the industry landscape. One example of this is found in the use of a new generation of applications from vendors that support BIM, the Building-Information-Modeling and other technologies, in which databases manage multi-dimensional drawings and gigabytes of related project data.

Though some large companies like Bechtel Group Inc. have been exploring this technology for years, in part using internally developed systems, Building-Information-Modeling and similar technologies have been slow to catch on across the industry.

But perhaps no more.

In a groundbreaking new initiative CURT, AGC and the AIA announced the launch of the 3XPT Strategy Group to promote work across traditional industry stakeholder boundaries and leverage the use of multi-dimensional modeling and other intelligent technologies. 3XPT Strategy Group stands for *three* major industry groups engaging in project *process transformation* and we are excited to tell you more in this edition of *The Voice*.

Another sphere of dramatic change is in the workforce arena. Whether we realize it or not, a workforce crisis is

reality not only in the US, but also in Canada. Increased craft requirements fueled by a robust demand in the utilities sector, the petrochemical industry and heavy and highway construction cannot be met with the current availability. Both the merit shop and union sectors must reevaluate and change the way they utilize and deploy current training assets. Additionally, they must reexamine the way they recruit, the way they classify workers, the way they deliver training, the way they provide benefits and share common resources.

Not only is there a shortage of craft labor, but management and professional resources are lean as well. This predicament offers a perfect opportunity for academia to step up to the plate and work more collaboratively with the business community to meet current and future needs. Engineers, construction managers, technicians and the other similar degree programs have plenty of recruiting fodder with the current and future demand.

Finally, it may be time for the construction industry to take a look at an affirmative and unified position on immigration. In a letter to her daughter, Abigail Adams, wife of the first US President to live in the White House wrote, "To assist us in this great castle, and render less attendance necessary, bells are wholly wanting, yet not a single one is

being hung through the whole house, and promises are all you can obtain. ...surrounded with forests, can you believe that wood is not to be had, because people cannot be found to cut and cart it! We have, indeed, come into a *new country*." (Abigail Adams, Letter to her daughter, November 21, 1800)

You may also recall she resided in a city laid out by a Frenchman and she lived in a house designed by an Irishman and built by Scottish stone masons and African slave laborers.

Since the labor shortages of 1800, immigrant labor has often been used to supplement current capabilities of American construction workers. Nothing much has changed. Perhaps the time has come once again for an aggressive and collaborative position on immigration.

We are delighted to present you with this second issue of *The Voice*—an informative magazine, full of commentary, resources, new initiatives and product announcements. CURT is on the move and in spite of our challenges, the future is bright. Collaboration and cooperation among the players is at an all time high. Opportunity abounds! And CURT is proud to play a leading role.

Gregory Sizemore, Esq.
CURT, Executive Vice President

Whether we realize it or not, a workforce crisis is reality not only in the US, but also in Canada. Increased craft requirements fueled by a robust demand in the utilities sector, the petrochemical industry and heavy and highway construction cannot be met with the current availability.

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3XPT Transforms Industry

CURT leads a united front to strengthen America's construction industry

Construct: To make or form by combining or arranging parts or elements (Merriam-Webster Online Dictionary). *Construct* is the focus here. You are part of the *construction* industry. Your job is to *construct* facilities, whether you're an architect involved in the design, a supplier involved in obtaining the best materials, a contractor involved in the hands-on developing, or an owner involved in promoting excellence in all the previous steps. The bottom line is your everyday activities involve *constructing*.

Now, more than ever, *construct* has taken on a revolutionary new meaning. Beyond the physical act of constructing a building, CURT is leading the way towards a new form of construction that will inevitably and undoubtedly change the way in which the construction industry as a whole does business. It is the creation of a new partnership, aptly called the 3XPT Strategy Group. Involved are three of the industry's major players, the Construction Users Roundtable (CURT), the Associated General Contractors of America (AGC), and the American Institute of Architects (AIA) [3X for the three organizations, PT to symbolize the Process Transformation].

Never before in the industry has such a partnership been established. As William Tibbitt, a former CURT President and 3XPT Strategy Group Co-Chair notes, "We have joined together to work with the industry as a whole to help shape the future. We'll be exploring

new ways of using and maximizing technology, collaborating to the fullest extent possible."

Coming together

Ricardo Aparicio, President of CURT, is brutally honest when he explains the obvious difficulties of the partnership. While all existed in the same broad industry, each had been focused on their own priorities, own member's needs and own initiatives. "It was a paradigm shift to the truest extent," he recalls. "We had to redefine our relationships, both with each other and within our individual organizations."

The origin of the strategy dates back more than two years. During these two years, CURT, the AIA and the AGC had led discussions on a number of issues, all focused on industry transformation. In August 2004 the shared drafting of the White Paper 1202 *Collaboration, Integrated Information and the Project Life Cycle in Building Design, Construction and Operation* got the ball rolling. Next

3XPT at a glance Group Charter

Be a credible voice representing the collaboration of constructors, designers and owners on matters regarding industry process transformation.

Group Vision

A transformed and sustainable construction industry, where each project is designed, developed and delivered to optimize value across its life cycle.

Group Mission

Create transformational strategies and develop implementation frameworks that:

- *Define* value sets or criteria
- *Engage* all stakeholders
- *Promote* open sharing of information
- *Communicate* benefits of transformed industry processes.

up was White Paper 1003 *Optimizing the Construction Process: An Implementation Strategy*, written in 2005 (and recently published). Then, the jointly hosted AIA/AGC Construction Industry Summit, held in Washington, D.C. in May 2006 sealed the deal. A feeling of change was now in the air.

Charles Hardy, Co-Chair of CURT's Productivity Committee recalls the Summit in May. "There was a general feeling of excitement. I think everyone realized that this was going to revolutionize the industry. After all, in the past we had worked to better and grow our own entities. Now we were working together as a united front, ready to tackle outside forces. The collaboration is much-needed and a long-time in coming."

To transform the industry

Aparicio puts it best: "Change is inevitable. Growth is optional."

Could three major associations, long used to working towards their own objectives, join forces to drive such growth? Yes, he confirms. "Most people are on board; architects, engineers, contractors. We've traveled around the country. We've heard concerns and we've listened to those concerns. The feedback is positive. Without everyone on board, success would be impossible."

Tom Weise, Past President of CURT, was also heavily involved (and still is today) with the formation and organization of 3XPT. He admits that yes, there still are pockets of resistance but that is to be expected. More importantly, "This is the tipping point. Rather than waiting for change to happen and then reacting, we're being proactive. We're realizing that technologies such as building information modeling (BIM) are here now. Other countries are using them and if we want to play on an international field and lead on an international field, we have to work together to be as streamlined and organized as possible. We have to change how we act, how we work together. It's not a matter of wanting to work together, we NEED a more collaborative environment."

The necessity is obvious. In the spirit of

that need, a number of initial plans have been created to address a wide-range of issues:

1. Define the balance—what is optimum value in regards to interactive pre-planning, asset operation, and total cost of ownership;
2. Align delivery strategies, roles and responsibilities with new model contracts and values;
3. Eliminate linearity (promote collaboration and early contributions of expertise);
4. Define a sample RFO (request for offering) process for integrated delivery models; and
5. Define protocols for sharing digital information.

"The group has set a high standard for itself and the industry," acknowledges Doug Pruitt, AGC Vice President nominee and 3XPT Co-chair. "It has adopted a vision that calls for, 'A transformed and sustainable construction industry, where each project is designed, developed and delivered to optimize value across its life cycle.'"

Tackling technology

Learning is about more than simply acquiring new knowledge and insights; it is also crucial to unlearn old knowledge that has out lived its relevance.

~ Gary Ryan Blair

Technology is here to stay. It's obvious in the Blackberries that are pulled out at every meeting, the emails that are often preferred over face-to-face meetings and the ability to track down pretty much any information, with the click of a mouse. But the construction industry is one that is steeped in history. It is, after all, one of the oldest professions. While it no doubt has made leaps and bounds in technology and practices, some were fearful it just wasn't keeping up with the times.

"BIM will be used wide-spread within three to five years. Is the industry ready? Not yet," says Hardy. "We need information going into the computer programs to be as complete as possible if it's going to be anywhere near accurate. The architects have to feed in the designs. The engineers have to enter their data. The suppliers have to input their costs. If we can't work together,

er, there's no way that the final product will be accurate in terms of prices and scheduling. That means we're no further ahead. So what's the point?"

More and more, though, the benefits of BIM and virtual design and construction are becoming clear, and, if used to their full capacity, ...says Hardy, "they can foster growth and lead to revolutionary new designs."

Weise agrees. Although, he notes, "Technology on its own is useless. It's only as good as the data that's put into it and the people who run it. But collaboration will allow everyone to align needs, to be able to input the best data which will generate the most accurate building plans."

This, stresses Weise, is why it is absolutely paramount that the three groups work together.

The next step

For Weise, one of the most important steps towards creating success is to demonstrate success, in itself. "We need to demonstrate some wins," he says. "If people see success, more people will jump-on-board. CURT has the weight to drive this success, to make sure that now, in the beginning, everyone gets along and looks towards more wins for the entire industry in the future."

Hardy agrees that small steps and demonstrating success is vital to the overall success. "The separateness and fragmentation is what got us here and it is our challenge to overcome. Effective collaboration to deliver assets is needed and where better to start than at the strategy level, to ensure all voices are heard and all issues are addressed? Once we've demonstrated that this is a good idea and that it will work, we'll be able to target more areas of change, develop more strategies and better plans, and above all, ensure that our industry as a whole can keep up with the ever-advancing capabilities of technology."

The 3XPT Strategy Group will report to the industry on current activities and specific future plans on November 15 at the CURT 2006 National Conference. For more information, go to www.curt.org, www.aia.org and www.agc.org. ●

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Workforce Crisis

Exploring industry solutions



In 2002 CURT asked their members just how serious were the workforce shortages. The answer: **CRITICAL** and retention of craft workers is the highest priority on the list of concerns. According to the resulting White Paper 401, *Confronting the Skilled Construction Workforce Shortage* which detailed the survey answers, members noted that recruitment, education, and retention of craft workers is high on the list of issues. In fact, the paper noted that estimated growth indicates that the construction industry must recruit 200,000 to 250,000 new craft workers per year to meet future needs. However, both demographics and a poor industry image are working against the construction industry as it tries to address this need.

The crisis is not new but solutions being explored by the Construction Users Roundtable and other industry organizations are new. They have to be. After all, workers sustain the industry. Without the skilled individuals needed to do the work, the job will come to a standstill, prices will soar and projects will roar to a screeching halt.

The problem

The statistics speak for themselves. According to the Associated General Contractors of America, the percentage of skilled construction workers aged 25 to 34 has declined from 37.5 percent to 28.5 percent, between 1988 and 1997. Furthermore, the average age of a construction worker in America is 47.

Yet it's not like becoming a construction worker is a dead-end career choice. Far from it, actually. Along with an increase in the demand for skilled workers, there has been an increase in wages. In fact, according to an article in the *Sacramento Building Journal*, the average California construction worker earns about \$24 an hour and many journeymen earn up to \$70,000 annually. Similar numbers are being recorded across the country and according to the U.S. Bureau of Labor Statistics, construction jobs across the nation pay 23 percent more than private-sector jobs, overall.

So, what's the problem? According to Don Whyte, President of the National Center for Construction Education and Research (NCCER), the list is long and complicated. He attributes the bulk of the problem to a number of factors all coming together in 2005, escalating an already underlying problem to the state of crisis. In his paper *The Skilled Workforce Crisis* (co-written by Steve Greene, NCCER), Whyte outlines two major causes, including:

A recovering industrial market that was already burdening the available workforce with increased project numbers; and Hurricane Katrina, which completely destroyed 350,000 homes, damaged 180,000 homes and tore the roofs off 77,500 homes. In addition, seven hospitals were ruined, as well as a number of schools.

Hurricane Katrina, in particular, has devastated not only the Gulf Coast, but impacted the industry's workforce as well. According to the paper (Whyte and Greene), implications of it include the loss of experienced journeymen to demolition and cleanup crews for premium wages, extreme recruitment incentives to come to the area, recruitment of foreign nationals to supplement the crews, widespread wage increases and higher overtime costs, bids and budgets.

Joining forces

In response to growing demand and growing concern, a Business Roundtable Initiative was formed with one goal in mind—spur construction training and recruitment. With Gulf Coast businesses, construction trade groups, including the Construction Users Roundtable, labor unions, academic institutions and federal, state and local governments all on board, their target of 20,000 new skilled construction workers by 2009 in the Gulf Coast area might just be do-able.

According to Charles O. Holliday, Jr., Chairman and CEO of

DuPont and also Co-Chairman and CEO of the Development Initiative, working together is imperative because, “the Gulf Coast region is a key component of a strong national economy. This landmark public-private partnership will train the workers that will be needed to rebuild the area. The Business Roundtable, an association of 160 CEOs of the nation’s leading companies, have committed up to \$5 million for critically needed funding to coordinate the training and assist in recruiting participants.”

Riley Bechtel, Chairman and CEO of the Bechtel Group, Inc. and Co-Chairman and CEO of the Development Initiative notes that, “The regional demand for construction labor significantly exceeded supply even before Katrina and Rita. That has obviously been accentuated by the recovery and occurs in the context of a growing national shortage of construction labor.”

In August 2006 the Business Roundtable launched the Gulf Rebuild: Education, Advancement and Training—or GREAT—campaign. Participants in the pilot program will enroll in a four-week course that gives them entry level skills to enter construction jobs. Future initiatives hope to offer options for advanced workshops and apprenticeships.

“The initiative is a positive first step in resolving the anticipated construction labor shortage,” explains Tim Horst, Program Manager of the Gulf Coast Workforce Development Initiative. “It is not, however, intended to be a complete answer. Construction industry training and education is highly fragmented but by supporting construction education materials issued by the National Center for Construction Education and Research, we hope to encourage the industry to move toward adopting standard education modules that are transportable from one region to another and from one industry segment to another.”

A “LEAN” alternative

Lean construction is a relatively new term in the industry. While new, though, it is gaining recognition and popularity as some of America’s biggest companies jump on board the lean bandwagon. A

production management-based approach to product delivery, lean changes the way work is done, maximizing value while minimizing waste. The results have been nothing short of revolutionary as facilities and their delivery processes better serve customer needs, waste is reduced (both in terms of time and supplies), costs are reduced, and planning and control systems are improved.

According to Gregory A. Howell, Co-founder and Chief Operating Officer of the Lean Construction Institute, a shift in how projects are designed, carried out and delivered can and will ultimately benefit the industry and the labor shortage. “Maximizing how a project is executed will ultimately maximize each and every person working on the project. If we maximize how we organize and use labor, projects will be able to utilize each and every worker to their full capacity. They’ll need less employees to do the same amount—or more—work than traditionally achievable.”

In order to do this though, Howell notes that there needs to be a synergy between off-site and on-site jobs. So, for example, when a roof is ready to be erected, all the supplies should be there so that workers are not sitting around, waiting for the necessary supplies to complete tasks. Then, if they can complete tasks on schedule and on-time, they’ll be able to move on to other projects quicker. In order for this to happen though, Howell says that, “There needs to be predictability as to when projects will be ready for completion, but, in most cases right now, the coordination between on and off-site isn’t ready. People are still too out of synch and until they can better work together to predict what happens when, and what’s needed when, projects won’t run efficiently.”

Joe Gionfriddo, Chair of CURT’s Lean Construction Committee notes that some industry leaders are on the way towards, “starting the lean journey. In a way, they’re like explorers who are identifying the gains in well-researched scheduling, safety, production, quality and organizational effectiveness. It’s a cultural change for companies who have run business in a

completely different manner for years, so leaders have to be passionate in dealing with that change.”

The construction workforce crisis is not new but new approaches to solving it should help to provide relief to the sector and those needing its services. Investing in the industry now with programs such as GREAT and being open to revolutionary new ways of doing business, such as lean construction, will hopefully help to quell the crisis. The industry depends on it. ●

Industry solutions

Fixing the problem will require dedication from all industry groups. They must:

- Develop industry programs that enhance the image of construction as a career.
- Foster educational programs targeting parents, teachers, and others who influence the decision-making of the nation’s youth. Emphasis should be placed on partnering with local school districts to develop programs that emphasize the opportunities available in construction and communicate to each student the basic education standards required for the training program.
- Enhance industry and company programs designed to improve retention and continuing education of skilled craft workers.
- Invest in training curriculum and programs, to ensure that a qualified, skilled workforce is available to meet industry needs.
- Establish training delivery methods to actively train and certify craft workers in all geographical areas.
- Support the NCCER initiatives as one approach to standardizing training curriculum, performance standards, and certification in the open-shop sector.

Source: *Confronting the Skilled Construction Workforce Shortage*, WP-401

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Rights and Responsibilities

A property owner's liability to an injured construction worker

By Deborah E. Arbabi, Esq.,
Crowell & Moring LLP

When a construction worker is injured during a project, the property owner that contracted for that work may face a claim by the worker. The property owner is especially at risk for this type of claim when the construction worker's employer is insolvent, or where worker's compensation does not adequately compensate for the worker's injuries.

The laws that govern the degree of the owner's liability vary from state to state. But generally, under the law of premises liability, a property owner's duty to a construction worker is limited only to making the property reasonably safe for the performance of the worker's duties. *See, e.g.,* Restatement (Second) of Torts § 343 (1965). However, if an owner somehow controls the manner in which the contracted work is performed, the property owner then owes an independent duty to exercise that control in a way that prevents injury to a construction worker. *See, e.g.,* Kinsman v. Unocal Corp., 37 Cal. 4th 659, 670 (2005). This rule is often referred to as the "retained control" exception. *Id.*

In addition to premises liability, property owners have sometimes been held liable under a theory of vicarious liability. Essentially, vicarious liability allows a claimant to hold one person responsible for the negligent actions of another. In recent years, however, the rise of worker's

compensation has prompted courts to limit use of this theory of recovery against property owners. As a result, the trend in most states leans toward holding property owners liable only when their own negligence has contributed to the worker's injury in some affirmative way.

In accordance with this trend, a survey of significant recent legal developments from the past two years reveals that most cases have declined to expand the liability of property owners and that relatively few cases have increased owners' liability to injured workers.

Cases expanding potential owner liability

Two cases, both coming from California, have recognized expansions on existing theories of premises liability, but at the same time follow the legal trend of imposing liability only in scenarios where the owner's negligence has somehow contributed to the worker's injury. A third case, from New York, recognizes that federal immigration laws do not preclude illegal aliens from recovering lost wages from property owners in state courts.

a) Failure to warn of concealed condition

In the first case recognizing an extension of an owner's premises liability, Kinsman v. Unocal Corp., the California Supreme Court expanded an owner's general duty of care to make a property reasonably safe. 37 Cal. 4th at 664. This case recognizes that a property owner may be liable for injury to a construction worker where the injury was caused by a dangerous condition in the property that was known or knowable to the owner and unknown to the contractor and its employees, if the owner fails to warn the contractor about this dangerous condition. *Id.* In this case, a worker who was exposed to asbestos sued the property owner for his injuries. *Id.* Even though the responsibility to protect workers from obvious hazards can be legally delegated to a contractor, the court reasoned that a failure to disclose information about a latent danger is essentially an incomplete delegation of responsibility. *See id.* at 674. As a result, the court decided that a property owner should be responsible for a negligent failure to warn contractors of latent dangerous conditions. *See id.*

b) Owner's violation of safety regulation

In the second California case expanding an owner's potential liability, Barclay v. Jesse M. Lange Distributing, Inc., the California Court of Appeal recognized that an owner may be liable for injuries to a contractor's employee if the owner's violation of a safety regulation affirmatively contributed to the employee's injury, regardless of whether the owner had retained control of the project. 129 Cal. App. 4th 281, 301 (2005). In Barclay, a construction worker injured by exploding gas tanks was allowed to sue a property owner for failure to adhere to a Fire Code provision. Id. at 286. The worker had presented evidence that compliance with the Fire Code provision would probably have lessened the severity of his injuries. Id. at 299. For this reason, the court permitted the worker to seek damages from the owner regardless of "retained control" analysis. Id. at 301.

c) Recovery of lost wages by injured undocumented workers

Finally, in an additional case of significance, Balbuena v. IDR Realty LLC, The Court of Appeals of New York decided that federal immigration law does not prevent undocumented aliens, injured while working on a construction site, from recovering their lost wages in state court. 845 N.E.2d 1246, 1260 (N.Y. 2006). The court reasoned that this result was consistent with federal laws and that deciding otherwise would encourage dishonest employers to intentionally hire undocumented workers, knowing that they could violate safety laws without any potential liability. Id. at 1257-58.

Cases declining to expand a property owner's potential liability

Although the few cases described above have expanded an owner's liability

in the past few years, most cases have declined to make such an extension. Specifically, recent decisions have limited the scope of premises liability, duties of care, and the extent of damages that a worker can recover from a property owner.

a) Limitations on scope of premises liability

In a decision limiting the scope of premises liability, the Nebraska Supreme Court decided that damages for injuries resulting from defects in equipment provided to construction workers cannot be sought under a premises liability theory, since such defects are not defects in the land. Semler v. Sears, Roebuck & Co., 689 N.W.2d 327, 333-34 (Neb. 2004). The court stated that defects in equipment did not implicate an owner's duty of care to make a property reasonably safe, and that recovery from the property owner was not proper in this situation. Id. The scope of premises liability was also limited by the Indiana Supreme Court in PSI Energy, Inc. v. Roberts. In PSI, the court decided that where a worker's injury is caused by the dangerous condition that the contractor was hired to remedy, the worker cannot recover from the property owner. 829 N.E.2d 943, 948 (Ind. 2005). To come to this conclusion, the court reasoned that a property owner hires a contractor with an expectation that the contractor has the necessary level of expertise to perform a certain task. Id. at 961. As a result, the court concluded that an owner with no superior knowledge is reasonably entitled to rely upon the contractor's expertise to perform the work skillfully and safely. Id. With this decision, the court prevented the counterintuitive result of exposing a property owner to liability for making a responsible decision to fix a dangerous condition on its property.

b) Duty of care

Recently, courts have also made decisions concerning the respective duties

of care owed by both owners and construction workers. In Laico v. Chevron U.S.A., Inc., the California Court of Appeal declined to extend an owner's duty of care beyond a responsibility to keep a property reasonably safe, and concluded that an owner's duty of care does not include overseeing the safety practices of those working on a property. 123 Cal. App. 4th 649, 666 (2004). In addition, the Supreme Court of Wyoming decided that under the state's comparative fault scheme, which permits juries to divide blame for injuries by percentages, a worker also has a duty to exercise due care, and cannot recover from a property owner where the worker's fault exceeds fifty percent. See Parrish v. Groathouse Constr., Inc., 130 P.3d 502, 505-06 (Wyo. 2006).

c) Retained control exception

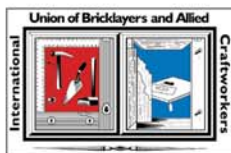
The most active area of development has been in the arena of the retained control exception, which requires claimants to prove that the property owner retained control of the manner in which the construction work was performed and exercised that control in a way that affirmatively contributed to the worker's injuries. Recently, courts have reaffirmed this rule, extended its scope, and further clarified the meanings of "retained control" and "affirmative contribution." In Pelak v. Indiana Industrial Services, Inc., the Court of Appeals of Indiana rejected an injured worker's argument that a property owner retains control over a property by virtue of ownership, and reaffirmed the retained control rule. 831 N.E.2d 765, 771 (Ind. Ct. App. 2005). The court stated that an owner has no duty to ensure worker safety beyond the general duty to maintain a property in a reasonably safe condition, particularly when there is no evidence that the owner had any control over the manner or means in which the contractor conducted its work. Id. The court emphasized that public policy did not

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support holding a property owner responsible for protecting construction workers from risks that were solely within the control of the contractor. *Id.* at 770.

In addition, two cases decided by the California Court of Appeal have expanded the scope of the parties to which the "retained control" rule applies. The first case, *Michael v. Denbeste Transportation, Inc.*, decided that independent contractors, who are hired by subcontractors in place of traditional employees, must also meet the requirements of the retained control exception before they can recover from property owners. 137 Cal. App. 4th 1082, 1086 (2006). Further, in *Ruiz v. Herman Weissker,*

Inc., the court decided that an owner's agent was also protected under the retained control exception, meaning that a worker must prove that the owner's agent retained control of the manner or means by which the contractor performed its work before recovery from the owner is possible. 130 Cal. App. 4th 52, 61-62 (2005).

Recent developments in this area of the law have also provided a clearer picture of the meanings of key terms in the retained control exception. Generally, an owner has "retained control" where the owner controls the manner or means by which the construction work is performed. Following this rule, a Utah appellate court rejected the argument that an owner had "retained control" over the construction project where the owner merely controlled the desired result of the construction. *Smith v. Hales & Warner Constr., Inc.*, 107 P.3d 701, 705 (Utah Ct. App. 2005). The court explained that the retained control exception requires the owner's "active participation in the method or operative detail of the injury-causing activity in order to impose liability." *Id.* Another key term of the retained control exception, "affirmative contribution," was further limited in *Ruiz*. Generally, an affirmative contribution can arise from an omission or failure to act. *Ruiz*, 130 Cal. App. 4th at 65. For example, if a property owner promises to undertake a particular safety measure, the owner would be liable for an injury resulting from a failure to fulfill that promise. *Id.* However, the court in *Ruiz* decided that a failure to exercise a mere ability to correct an unsafe work practice did not constitute an "affirmative contribution" to a worker's injury. *Id.* As a result, an owner will probably only be liable for a failure to act when the owner has promised to act or has controlled some aspect of the safety procedures being observed during the project.

d) Damages

Finally, the Kentucky Supreme Court recently decided that, under the state's worker's compensation laws, the amount of damages recoverable from a property owner may be limited. In *Krahwinkel v. Commonwealth Aluminum Corp.*, the court decided that where a property owner is liable to a construction worker, the amount of recovery is not limited to worker's compensation benefits; however, the worker's judgment against the owner should be reduced by worker's compensation benefits actually paid to the employee, in order to prevent double recovery. 183 S.W.3d 154, 157-58 (Ky. 2005). So, depending on a state's worker's compensation laws, the amount of damages recoverable from a property owner may be limited.

Conclusion

In the past two years, courts have addressed a number of issues affecting liability of a property owner for construction worker injury. Although courts have made some decisions resulting in an expansion of an owner's duties and potential for liability, these cases are generally a reflection of the legal trend towards holding a property owner responsible only where the owner's conduct somehow contributed to the injury. Most of the recent developments in this area have declined to extend a property owner's responsibilities for the safety of construction workers. Overall, the rule generally remains that an owner is required only to make a property reasonably safe for visitors; however, if the owner controls the manner in which construction work is performed, then the owner has an additional duty to exercise that control in a way that prevents worker injury. ●

The author would like to thank Thy Bui for her insightful contribution of research and assistance in preparation for this article.





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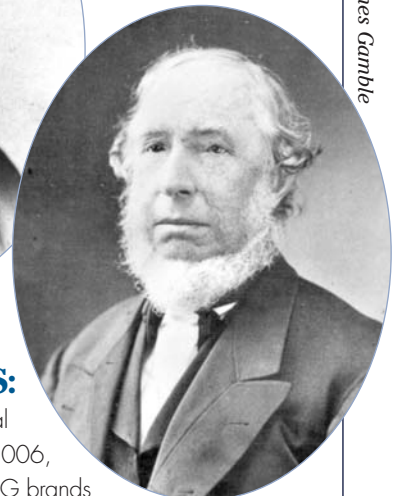
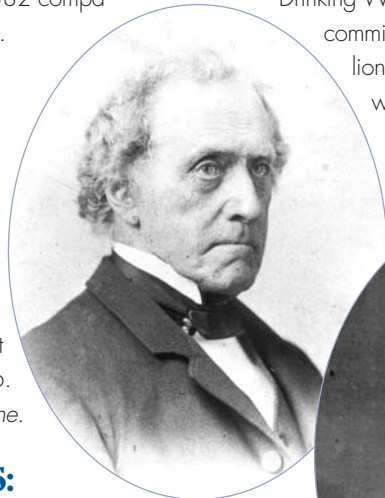
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effects that ingredients in their products have on the environment. They are one of the first companies in the world to actively study the environmental impact of high-volume ingredients in consumer products.

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THE AWARDS:

- **Global Most Admired Companies**, Number 3 for 2006. Number 1 in its industry of Household and Personal Products. *Fortune Magazine*.
- **America's Most Admired**, Number 4 in 2006, out of 582 companies. *Fortune Magazine*.
- **Best Companies to Work For**, Top 100, Number 66 in 2005 (2006 results available in December). *Fortune Magazine*.
- **100 Best Corporate Citizens**, P&G has appeared on the list every year, 2000-2006. *Business Ethics Magazine*.



THE HEADLINES:

October 10, 2006: P&G's Lafley Tells Shareholders 'We Are Now Focused on Delivering a Full Decade of Top and Bottom Line Growth'—Chairman of the Board, President and Chief Executive, A. G. Lafley, addressed The Procter & Gamble Company shareholders at its annual meeting today. Lafley said, “We are now focused on delivering a full decade of industry-leading top and bottom line growth. We have the strategies, strengths and the structure to continue to transform our company in the face of unrelenting change and competition.”...

October 9, 2006: A UNA-USA Campaign, Team up to Help Educate Teens About HIV/AIDS in Africa—The United Nations Association

of the United States of America and the Procter & Gamble Web site, Beinggirl.com—a site created for teen girls, by teen girls—have joined forces to chronicle the stories of eleven teens that volunteered to spend one month in Africa. The effort was part of UNA-USA's HERO campaign, a program that strives to improve the lives of school-aged children affected by the HIV/AIDS epidemic.

Procter & Gamble and PSI Announce Commitment to Provide Safe Drinking Water in Africa—

Procter & Gamble joined the non-profit organization Population Services International at the Clinton Global Initiative to announce a new commitment to provide safe drinking water in Africa. Working with PSI and a variety of other partners as part of their focal philanthropy program, the Children's Safe Drinking Water program, P&G committed to providing 35 million liters of safe drinking water to more than 1 million children.

THE FACTS:

- In fiscal year 2006, 16 P&G brands had sales between \$500 million and \$1 billion.
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About The Construction Users Roundtable

The history of CURT:

The Construction Users Roundtable was formed in the summer of 2000 by construction and engineering executives representing major corporations that are among the largest consumers in the construction industry. The formation of the association was prompted by a desire to continue the 30-year effort of the Construction Committee of the Business Roundtable. The objective in the new organization is to have broader owner representation and increased owner input on industry issues.

CURT's mission:

The mission statement of the organization captures the essence of who we are and why we exist: "The Mission of The Construction Users Roundtable (CURT) is to create strategic advantage for construction users. CURT will accomplish this by providing aggressive leadership and focus on business issues that promote excellence in the development and execution of engineering, maintenance and construction projects."

What can CURT do for your company:

CURT is a value-based association that ultimately seeks to increase total shareholder return in a company. CURT exists:

- To help you improve quality and cost effectiveness in your company's construction and maintenance projects;
- To provide the "owners voice" to the industry and to provide the owners direct involvement in national construction issues;
- To provide a resource for sharing best practices among owners companies;
- To provide a forum to address mutual owner issues especially safety, labor relations, productivity improvement and other cost reduction strategies;
- To provide an opportunity for owners to network on domestic and international issues;
- To promote work force education and training as well as effective construction planning and practices;
- To influence public policy when necessary and seek improvement in laws or regulations that may adversely affect construction or maintenance costs;
- To provide a repository for owner resources so that owners can become more effective decision makers;
- To collectively communicate and interact with contractors and contractor associations to assure that the owners voice is heard and understood;

CURT IS:

An autonomous organization that provides a forum for the exchange of information, views, practices and policies of various owners at the national level. Similar groups, called Local User Councils, function at the local level and seek to address problems of cost, quality, safety and overall cost effectiveness in their respective area.

CURT STANDS FOR:

Improvement. It stands for improving overall cost effectiveness. It stands for improving the way construction is planned, managed, accounted for, regulated and executed. It stands for improving the way workers are motivated, supervised and work. CURT also stands for change; changing and improving what owners permit, require and accept responsibility for.

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- To improve existing and create new strategic alliances with both open shop and unionized sectors of the industry;
- To develop industry standards and owner expectations with respect to safety, training, worker qualifications; and
- To empower and enhance the effectiveness of Local User Councils throughout North America.

CURT initiatives:

CURT has developed several initiatives that it feels will improve construction cost effectiveness. In addition, members and associates actively participate in regular meetings, conferences and seminars. Special reports and publications will also be distributed on a regular basis. Each year a National Construction Owners Conference will be held to highlight and showcase the latest industry developments affecting construction cost effectiveness from the owners' perspective.

CURT initiatives include:

- Safety Improvement and Safety Excellence Recognition;
- Work Force Development and Craft Training;
- Industrial Relations With Associations and Labor;
- Local User Council Support and Development;
- Sponsorship of the National Construction Owners Conference; and
- Industry Communications and Technology Deployment. ●



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Membership Categories

REGULAR MEMBERSHIP

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 make 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.

CURT Members 2006

(Current as of November 2006)

OWNER MEMBERS

ABBOTT LABORATORIES
AIR PRODUCTS & CHEMICALS, INC.
ALSTOM POWER INC.
AMEREN
AMERICAN ELECTRIC POWER
AMGEN INC.
BAXTER HEALTHCARE CORP.
THE BOEING COMPANY
BP PLC
CATERPILLAR INC.
CISCO SYSTEMS, INC.
CITIGROUP
CONOCOPHILLIPS
DAIMLERCHRYSLER CORP.
THE DOW CHEMICAL COMPANY
DTE ENERGY
E.I. DuPONT de NEMOURS & CO.
EASTMAN KODAK COMPANY
ERNST & YOUNG
EXELON CORPORATION
EXXONMOBIL CHEMICAL CO.
FIRSTENERGY CORPORATION
FLORIDA POWER & LIGHT
GENERAL ELECTRIC COMPANY
GENERAL MILLS, INC.
GENERAL MOTORS CORPORATION
HCA HEALTHCARE CORP.
HERCULES, INC.
HONDA OF AMERICA MFG., INC.
INTEL CORPORATION
JOHNSON & JOHNSON
KANSAS CITY POWER & LIGHT CO.
THE MCGRAW-HILL COMPANIES
MEADWESTVACO CORPORATION
MERCK & COMPANY, INC.
ONTARIO POWER GENERATION
PFIZER, INC.
THE PROCTER & GAMBLE CO.
PSEG POWER, LLC
ROHM AND HAAS
SALT RIVER PROJECT
SHELL GLOBAL
SOLUTIONS (U.S.), INC.
SOUTHERN COMPANY
TECO TAMPA ELECTRIC CO.

TENNESSEE VALLEY AUTHORITY
TOYOTA MOTOR MFG.
NORTH AMERICA
TYCO INTERNATIONAL
THE UNIVERSITY OF CINCINNATI
U.S. ARMY CORPS OF ENGINEERS
U.S. GENERAL SERVICES
ADMINISTRATION
WALT DISNEY IMAGINEERING
WEYERHAEUSER

CONTRACTOR ASSOCIATE MEMBERS

ALBERICI GROUP, INC.
BE&K
BECHTEL
EGIZII ELECTRIC, INC.
FLUOR CORPORATION
GILBANE BUILDING CO.
JACOBS ENGINEERING GROUP, INC.
RUDOLPH/LIBBE COMPANIES
THE SHAW GROUP INC.
TETRA TECH EC INC.
TURNER CONSTRUCTION
WASHINGTON GROUP INT'L

ASSOCIATION MEMBERS

ABC (Associated Builders & Contractors)
AGC (Associated General Contractors)
AIA (American Institute of Architects)
MCAA (Mechanical Contractors Association of America)
NACA (North American Contractors Association)
NCCER ((National Center for Construction Education and Research)
NEA (The Association of Union Constructors)
NECA (National Electrical Contractors Association)
SMACNA (Sheet Metal/Air Conditioning Nat'l Association)

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William P. Hite, Gen. Pres.
United Association
of Plumbers, Pipefitters &
Sprinklerfitters



Edwin D. Hill, Pres.
International Brotherhood
of Electrical Workers



Michael J. Sullivan, Pres.
Sheet Metal Workers
International Association

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International Association of
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and Asbestos Workers



Joseph J. Hunt, Gen. Pres.
International Association of
Bridge, Structural, Ornamental
and Reinforcing Iron Workers



Dana Brigham, Gen. Pres.
International Union of
Elevator Constructors

2006-2007 Board of Trustees



Ricardo Aparicio, AIA, Esq.
President

GENERAL ELECTRIC COMPANY
Contracts Manager Project Services
Birmingham, AL

"During my time as CURT's President, my main goal will be to develop the 3XPT Initiative, collecting data and working with all the groups involved to prove that there is a true advantage to integrating the industries. This will redefine relationships and how business is done—it is truly cutting edge."

Aparicio is in-house Counsel and Contracts Manager for General Electric's Corporate Properties and Services Operation. Aparicio holds a Bachelor of Architecture and Juris Doctor degrees from the University of Miami, Florida and is a certified specialist in Construction Law in the State of Florida, where he holds concurrent professional licenses to practice architecture, interior design, construction and law.



Egon J. Larsen
Vice President

AIR PRODUCTS AND
CHEMICALS, INC.
Global Construction Manager
Allentown, PA

"CURT's major accomplishments for 2006 are many—the Lean Initiative, working with outside organizations such as the Business Roundtable, the American Institute of Architects and the Associated General Contractors on such issues as labor availability, engineering documents and contract language, and growing the membership and industry influence. Goals for the upcoming year include working on productivity, measure and improvement, and solidifying the organization around a five-year growth plan."

Larsen is responsible for Air Products and Chemicals, Inc.'s construction activities totaling approximately \$700M annually. This includes locations in the America's, Europe, Asia and the Middle East. With over 25 years of experience in managing projects and construction, he has been instrumental in numerous capital project initiatives and development programs.



Tom Weise
Past President

INTEL CORP
Director of Facilities,
Materials & Services
Chandler, AZ

"Without a doubt, CURT has stepped forward to take the lead on the 3XPT Initiative. CURT has the weight to make it happen—both the short-term plans and the long-term successes." Tom Weise is currently responsible for the acquisition and supplier management of Intel's global construction business. He has received numerous Intel Recognitions such as; "Contribution to Materials Training and Career Development," "Development of Intel's Supplier Continuous Quality Improvement Process," and "Development of the Intel Advanced Total Cost Method."



Larry Wargo,
Secretary/Treasurer

FIRSTENERGY
Consultant, Contractor Services
Akron, OH

As well as acting as CURT's Secretary/Treasurer, Wargo co-chaired the Workplace Attitude Sub-Committee. He says, "the committee is working hard to identify and address issues within the workplace, such as what attitudes may exist in the workplace and why they are that way. We'll continue to work on this into 2007, ultimately developing a CURT Code of Mutual Understanding as well as some kind of training series on communication."

Larry Wargo has been with Ohio Edison and FirstEnergy Corp. for over 30 years. Over the years, he has held a number of management positions in fossil generation and, most recently, is a consultant for contractor services. In addition to his duties with FirstEnergy Corp., Wargo serves in a variety of capacities with a number of different associations. These include CURT's Industrial Relations Committee, National Tripartite Committee, Overtime Sub-Committee; the Northwest Ohio Great Lakes Construction Alliance; the Boilermaker National Conference Planning Committee; the Ohio Construction Coalition-Absenteeism Committee; and judge for the NMAPC Zero Injury Safety Awards Program.

At Large Board of Trustee Members



William P. Tibbitt

JOHNSON & JOHNSON
Executive Director, Worldwide
Engineering Services
New Brunswick, NJ

"CURT continues to lead innovation and outside-the-box thinking in the construction industry. Whether the issue is workforce, 3XPT, BIM or any number of other strategic initiatives, CURT and its members are consistently out in front. Once in a while, an organization manages to successfully blend wisdom from the past with practical insights of the present to guide its members and the industry into a better future. CURT is that organization. I encourage every owner with a significant construction program to get involved. It's an excellent investment."

In his present position, Bill Tibbitt and the group he leads are responsible for the project management of all of Johnson & Johnson's major capital projects worldwide. Tibbitt has served CURT in several capacities including President and most recently, as Co-Chair of the 3XPT Strategy Group and Board Member.



Steven B. Satrom

AIR PRODUCTS AND
CHEMICALS, INC.
General Manager Engineering &
Construction Americas
Allentown, PA

"The industry today is faced with ever increasing shortages of skilled people, this goes from the executive level to project manager. The regional imbalances created by last summer's hurricanes in the Gulf Coast and the volume of work in Alberta have served to bring this to the forefront in those areas. With such growth and demand, safety continues to be a topic of intense focus."

Satrom was the first President of CURT and one of the eight founding members. He was instrumental in establishing the initial focus for the organization, creating a viable entity and gaining the industry acceptance and recognition necessary for it to become the "Voice of the Owner".



Allen Bunner

TYCO INTERNATIONAL
Director Engineered Systems
Bath, OH

"Every worthwhile task in life is accomplished with the valuable help of many talented individuals—and the development of CURT is no exception. Our goal at Tyco is to deliver shareholder value. Using tested and proven approaches, CURT promotes construction industry cost effectiveness in a way no other owner organization is able to do. As a result, cost effectiveness always enhances shareholder value. I commend CURT and its leaders and urge every owner to become actively involved as we forge ahead. The collective voice of the owners in today's industry is invaluable."

Bunner has had more than 30 years of mechanical and electrical contracting background, specializing in fixed fire protection systems, including more than 20 years focused in Special Hazards systems, and 15 years experience with International contracting and exportation of fire protection technologies.



Curtis Ashley Baker, P.E.

SOUTHERN COMPANY GENERATION
Vice President, Environmental Projects and
Construction West
Birmingham, AL

"CURT's proactive leadership has filled a void that has existed in the construction industry for most of my career. CURT offers excellent products and services, diverse networking opportunity and a voice for all members to help shape the future of construction projects. CURT is quick to address emerging issues during a time that arguably represents the most challenging for our industry."

Newly elected to the CURT Board, Baker is currently responsible for the implementation of Southern Company Generation's environmental projects in Alabama, Florida and Mississippi, with project estimates totaling approximately \$3 billion. He has twenty-eight years experience in Project Management and Construction in the Utility industry. Baker participates on the CURT Tripartite Initiative and the CURT Katrina Response Committee.



Michael G. Conley
DUPONT
Engineering Manager
Wilmington, DE

"As a new Board Member I hope to help shape the direction for CURT and to help expedite progress towards our goals. The construction industry is a large, fragmented one. Without a central owners' voice, needed improvements across this fragmented industry will be much more difficult—and much slower."

Michael G. Conley has over 25 years of construction and engineering management experience. His career has spanned the United States and Europe, and includes construction, design, project controls, project management and business engineering management. He currently manages the DuPont Project Engineering Center, a unique organization whose goal is project execution excellence and the renewal of engineering skills within DuPont.

In 2002, he became DuPont representative to the Construction Users Roundtable (CURT). He has served as co-chair of the CURT open shop subcommittee of the workforce development committee. Conley has also served on the board of trustees for the National Center for Construction Education and Research (NCCER).



Gregory L. Sizemore, Esq.,
Executive Vice President
THE CONSTRUCTION
USERS ROUNDTABLE
Cincinnati, OH

"In a groundbreaking new initiative CURT, AGC and the AIA are pleased to announce the launch of the 3XPT Strategy Group to promote work across traditional industry stakeholder boundaries and leverage the use of multi-dimensional modeling and other intelligent technologies. This may likely result in a revolutionary new way to do business."

Sizemore has over 25 years of construction industry and association management experience. For eighteen years, Sizemore has been the Executive Director of the Construction Owners Association of the Tri-State (COATS) in Cincinnati, Ohio, and, in 1989 Sizemore started Sizemore & Company, a construction industry association management and consulting firm. He was instrumental in the startup of CURT and has been the Executive Vice President of CURT since its inception. Sizemore serves on various industry and civic boards including the University of Cincinnati's Industrial Advisory Council, the Advisory Committee to the Albany Technical College, the West Virginia Construction Coalition Conference and the ACE Mentor Board.

We Salute Our Champions of Safety



Cherne Contracting Corp.
East Kentucky Power Cooperative
Central Kentucky BTC

786,824
Work Hours

Cherne Contracting Corp.
Sunoco, Inc.
United/Southern New Jersey BTC

779,096
Work Hours

Superior Construction Company Inc.
BP Products North America Inc.
Northwestern Indiana BTC

526,000
Work Hours

**We salute these, and our other
150 award winners who
collectively totaled 9.9 million
injury free work hours.**

NMAPC
NATIONAL MAINTENANCE AGREEMENTS POLICY COMMITTEE, INC.
ImprovingPlantLife.com

2006-2007 CURT COMMITTEES

Education and Implementation Committee



Lennart K. Antell, Chairman
MEADWESTVACO CORPORATION
Director of Engineering
Dayton, OH

CURT would like to thank Lennart K. Antell for all of his time and dedication, participating in CURT and the construction industry. As Chair of the Education and Implementation Committee, he focused heavily on driving the industry forward, working towards the acceptance of new initiatives such as lean construction, and developing guidelines for owners on the many different issues the industry throws at them. Thank you Lennart for all of your time and dedication, both in growing CURT and the industry as a whole.



Lean Construction Committee



Joe P. Gionfriddo, Chairman
PROCTER & GAMBLE COMPANY
Corporate Engineering-Global
Construction
Management Process Owner
West Chester, OH

"My two proudest achievements of 2006 are the kick-off and chartering of the LEAN Project Delivery Task Force, and the LEAN Team Diversity & Collaboration, which is comprised of key industry leaders from the auto, health, consumer good, petroleum, power company leaders and academia. Above all, the Lean Team deserves full recognition for all their hard work. I am just one part of the team."

For the past 25 years, Gionfriddo has worked across six of the seven global business units within Procter & Gamble, holding various manufacturing and capital management roles. He is viewed as a capital management master in project/construction management, receiving one of their highest technical recognitions, the Procter & Gamble Capital Management Leadership & Mastery Award in 2002.

Productivity Committee



Charles G. Hardy, Co-Chairman
GENERAL SERVICES
ADMINISTRATION, CCM,
Director of Construction
Chicago, IL

"The next step for the productivity committee is to put together a strategy and plan for 3XPT. This includes targeting areas where we can start to drive change and move forward. The technology is here now...we have to implement the steps to make the most of that technology."

Charles G. Hardy is a registered architect, a certified construction manager and a nominee for the Miles Romney Innovation in Real Property Management. Before joining GSA in 1991, Hardy was an architect with architectural firms in Florida and Illinois practicing in the areas of real estate development and office design. Additionally, Mr. Hardy is an officer in the U.S. Air Force Reserve.



Safety Committee



Bob Krzywicki, Chairman
E. I. DUPONT
Contractor Safety Practice Manager
Wilmington, DE

"The Safety Committees biggest success in 2006 will be the production and release (at the National Conference) of the Owners Safety Blueprint Education Module. Another thing I am very proud of is the broad participation and involvement by the members of the committee. Not only do they show up for the regular meetings but they're willing to do the work in between for us to accomplish our goals. This collaboration has also fostered a lot of off-line networking whereby companies are helping each other."

Bob Krzywicki has 25 years of experience at the DuPont Company specializing in construction and contractor safety issues. As the Manager for this practice for DuPont Safety Resources, Bob leads a specialized consulting practice team and is responsible for marketing, sales, product development and delivery of services to clients worldwide.

Technology Committee



Michael S. Alianza, Chairman

INTEL CORP.
Senior Analyst
Chandler, AZ

"The Technology Committee has launched an exciting project to provide a web-based tool to match owner needs with existing technologies. As well, an AIA, CURT, AGC initiative to cooperate on a BIM endeavor is emerging and should prove to be beneficial for all involved. Looking ahead to 2007 we will continue to work on various projects and initiatives, and hope to align with other organizations that specialize in areas that are of interest to owners."

As the senior analyst to Intel Corporation's Corporate Services division, Alianza provides forward looking advice and implementation plans for new industry trends and technology within construction. With a career started by digging foundations by hand twenty-five years ago in the Philippines, Alianza has come to focus on practical user friendly construction solutions. These solutions range from practical new ceiling structure designs, revolutionary new facility designs, and operation software tools, which are the latest technologies in construction management.



Workforce Development/ Industrial Relations Committee



Steve Mongiardo, Chairman

MERCK & CO., INC.
Senior Director, Infrastructure,
Environmental and Office Projects
Lebanon, NJ

"In 2006 the biggest successes of the Industrial Relations Committee include the continued achievements of the CTI committee, CURT's Katrina initiative—organizing labor and contractors to address the impacts on labor due to Katrina, and completing a Productivity Demonstration Project for the Curt Tripartite Initiative. The project, a radio isotope laboratory, is a benchmark for how labor, owners and contractors can collaborate and create a win-win-win situation. We'll continue our success into 2007, addressing the shortage of skilled labor in the country and we will continue to pursue lean methodologies to save construction money."

Steve Mongiardo has been with Merck & Co., Inc. for 21 years and currently manages projects at domestic Merck sites including West Point, PA, Danville, PA and Albany, GA, Elkton, VA. In his position he is responsible for all major capital utilities/infrastructure projects which support new research and manufacturing facilities. These projects include new power generation facilities, high voltage distribution systems, water treatment facilities, office complexes, site development, parking garages, and chilled water distribution facilities.



National Conference Planning Committee



Ken W. Kuechenmeister, Chairman

AMEREN
Manager, Generation Construction and
Management Services
St. Louis, MO

"The main goal of the National Conference is to provide a forum for owners to hear from international speakers, labor leaders, technology pioneers and many others in search of answers to common and not-so-common problems facing the world-wide construction industry. The presentations are outstanding and the educational sessions afford everyone a great opportunity to get straight-forward answers to today's pressing issues."

Ken Kuechenmeister is responsible for major outage scheduling, construction supervision, contractor labor relations, project planning and contractor safety field compliance for Ameren's fossil power plants in Missouri and Illinois. Prior to that, Ken spent 4 years in the petro-chemical industry, 22 years at the Callaway Nuclear Plant and 3 years at Ameren's coalfired Meramec Station. ●

Awards

Next issue Stay tuned to The Voice for a report from the 2006 National Conference, where the Workforce Development Awards and the Construction Industry Safety Excellence Awards were presented.

Each year at the CURT National Conference, award winners are recognized and honored. The CURT Awards, Workforce Development and Construction Industry Safety Excellence showcase the best of the best. Congratulations to all the 2006 winners.



Representatives from ExxonMobil Baytown Complex accept their Workforce Development Award at last year's ceremony.

The Workforce Development Awards

Each year CURT presents the Workforce Development Awards to those organizations and companies that exhibit extraordinary, exemplary and innovative training and education programs that lead others to a career in the construction industry.

Applications are received from around the world, representing national trade associations, contractors, unions, local labor-management associations, owners, educational institutions and public school systems. Those who receive them achieve national and international recognition for their efforts in promoting the industry.

Without the hard work of the CURT Construction Industry Workforce Development Awards Committee (chaired by Roger Lane, Manager of Contracts, Labor and Services for DTE Energy in Detroit, MI and Jack Buttrum, Manager of Industrial Relations for Jacobs Constructors in Delaware City, DE) these awards would not be possible.

The selected winners for 2006 are: Albany Technical College; Associated Builders and Contractors, Inc.; Associated General Contractors of St. Louis; Building Trades Employers' Association; National Center for Construction Education and Research and the Wyoming Contractors Association.

The Construction Industry Safety Awards

Each year the Construction Users Roundtable presents the Construction Industry Safety Excellence (CISE) Awards to those in the industry that best demonstrate safety across the United States and Canada. The awards illustrate just how committed CURT is in working towards continued improvement in construction industry safety performance, which is one of its core initiatives. Both CURT and its members are committed to fostering improved construction safety performance through the recognition of those who have achieved success and proven effective work practices.

As Dr. Ron Prichard of Arcanum Professional Services and Chairman of the CISE Awards Committee says, "the benefit of recognizing achievement shows in the superior construction site safety performance demonstrated by those who participated in this year's program, and the lessons of leadership which can serve as an example for others in the industry. This year the tenants of the CURT Owner Safety Blueprint were emphasized in the program evaluation. The accomplishments of the owners, as reflected in the safety programs of all those competing, provide guidance that is worthy of emulation throughout the entire construction industry."

The 2006 award winners are:

The **CURT CISE Owner Safety Awards:** ExxonMobil Baytown and PSEG Fossil, LLC for *Owner Company Operating Entity*; ExxonMobil Beaumont and ConocoPhillips Company for *Specific US Construction Project 3-12 Months in Duration*; Air

Products and Chemicals, Inc. and Merck & Co., Inc. for *Specific US Construction Project 12 Months Duration* and Merck & Co, Inc., and Air Products and Chemicals, Inc., for *International Project*. The winners were selected from among dozens of applications.

CURT CISE Constructor Safety Awards went to contractors in various Standard Industry Codes (SIC) recognizing their outstanding safety performances over the past three years. Award recipients are:

SIC 15 (Building Construction: General Contractors and Operative Builders) – Bancroft Construction Company of Wilmington, DE and Gilbane Building Company of Providence, RI. Honorable mention goes to Blaine Construction Corporation out of Knoxville, TN.

SIC 16 (Heavy Construction Other Than Building Construction) – Triple "S" Industrial Corporation out of Lumberton, TX; BE&K Construction Co. from Birmingham, AL. Honorable mentions go to L Con Constructors of Houston, TX and S&B Engineers and Constructors, Ltd. also from Houston, TX.

SIC 17 (Construction Special Trades) – Harper Limbach LLC of Sanford, FL.

This is the fifth year that CURT has recognized a Local User Council for its safety initiatives. The winner was **The Greater Baton Rouge Industry Alliance, Inc. (GBRIA)**. This Council was one of twenty-five possible submissions from The CURT Local User Council Network located throughout the United States and Canada. ●



Representatives from Merck & Co., Inc. Merck Research Laboratories-Boston accept their CISE Award at last year's ceremony.

2006 NATIONAL CONFERENCE AGENDA

Building Value in a Dynamic Construction Environment

MONDAY MORNING, NOVEMBER 13

6:30 – 1:00 PM **Golf Tournament – The Canāda Course**
 6:30 – 10:00 AM **Hospitality Room, Golf Alternatives (depart 8:30 AM) White Dove**
 8:00 – 5:00 PM **Registration – Presidio Desk**
 Noon – 5:00 PM **Exhibit Hall Open – Turquoise Ballroom**

MONDAY AFTERNOON, NOVEMBER 13

2:00 – 2:15 PM **Welcome & Opening Remarks – General Session – Presidio III, IV, V**
 Ken Kuechenmeister, Ameren Corporation, Conference Chairman
 2:15 – 3:15 PM **Achieving Peak Performance & Creating Value, Too**
 Nido Qubein, Entrepreneur, Business Coach, University President
 3:15 – 4:00 PM **Generating Value In A Dynamic Construction Environment**
 Thomas R. Voss, Executive Vice President & COO, Ameren Corporation
 4:00 – 4:15 PM **BREAK – Turquoise Ballroom (Exhibit Hall)**
 4:15 – 5:00 PM **Creating Value, Building The Industry: The CURT Perspective**
 Ricardo Aparicio, General Electric, CURT President

MONDAY EVENING, NOVEMBER 13

6:30 – 9:00 PM **Welcome Reception (casual) – The Last Territory**

TUESDAY MORNING, NOVEMBER 14

(Exhibits Open 6:30 – 11:00 AM, Noon – 1:15 PM, 3:30 – 5:00 PM &
 6:00 – 7:00 PM – Turquoise Ballroom)

6:30 – 7:30 AM **Continental Breakfast – Turquoise Ballroom (Exhibit Hall)**
 7:30 – 7:45 AM **Welcome & Opening Remarks – General Session – Presidio III, IV, V**
 Ken Kuechenmeister, Ameren Corporation, Conference Chairman
 7:45 – 8:30 AM **Bulls, Bears & Rallies: The Bottom Line For Our Industry**
 John Mitchell, Economist, US Bank
 8:30 – 9:30 AM **The State Of Construction Labor Relations & Other Workforce Issues: An Update with Peter Cockshaw**
 Peter Cockshaw, Publisher & National Labor Analyst,
Cockshaw's Construction Labor News+Opinion
 9:45 – 10:45 AM **Concurrent Educational Sessions****
Value Enhancements To Workforce Performance: Union Leaders Speak Out
 Ed Hill, General President, IBEW
 Bill Hite, General President, United Association
 Sean McGarvey, Secretary/Treasurer, BCTD – **Presidio I**
Value Enhancements To Workforce Performance: Merit Shop Leaders Speak Out
 Ted Kennedy, Chairman, BE&K
 Eddie Rispone, Chairman, Industrial Specialty Contractors
 Rick Graves, Vice President, Fluor Corporation – **Presidio II**
What's Ahead In Job Demand: An Industry Workforce Needs Assessment
 Tony Salemme, Vice President, Industrialinfo
 Steve Jones, Senior Director, McGraw-Hill Construction – **Joshua Tree**
Owners Take Action With The Southeast Manpower Tripartite Initiative: A Plan For The Future
 Ron Campbell, Vice President Tech Services, Southern Company
 Alan Katz, Construction Manager, Florida Power & Light – **Presidio III, IV, V**
Craft Workers Weigh In On Construction Productivity: Things That Help & Things That Hinder
 Rusty Fannin, Global Safety Supervisor, Air Products & Chemicals
 Paul Goodrum, Assistant Professor Civil Engineering, University of Kentucky
 Bryson Edmonds, Vice President Construction Services, BE&K
 Art Stover, Construction Manager, Bechtel Construction
 Jon Young, Sr. Manager PM & Construction, Anheuser-Busch – **Coronado I**
 10:45 – 11:00 AM **BREAK – Turquoise Ballroom (Exhibit Hall)**
 11:00 AM – Noon **Concurrent Educational Sessions****
Repeat of previous sessions; locations remain the same.

TUESDAY LUNCHEON, NOVEMBER 14

Noon – 1:15 PM **Luncheon – Turquoise Ballroom (Exhibit Hall)**

TUESDAY AFTERNOON, NOVEMBER 14

1:15 – 2:00 PM **Delivering Value In A Dynamic Construction Environment: A Contractor's Perspective – Presidio III, IV, V**
 Adrian Zaccaria, President & COO, Bechtel Group, Inc.
 2:00 – 2:45 PM **Delivering Value In The Public Sector: Opportunities, Challenges & Lessons Learned**
 Bob Hixon, Project Executive, U.S. Capitol

2006 NATIONAL CONFERENCE

EXHIBITORS

THE CONSTRUCTION USERS ROUNDTABLE WOULD LIKE TO THANK THE FOLLOWING FIRMS AND ORGANIZATIONS FOR THEIR SUPPORT OF CURT AND THE 2006 NATIONAL CONFERENCE OF CONSTRUCTION OWNERS.

AGC OF AMERICA
 AISC
 ALBERICI
 ARIZONA DEPARTMENT OF COMMERCE
 AUTODESK
 BUILDING & CONSTRUCTION TRADES DEPARTMENT
 BCTD DRUG TESTING PROGRAM
 BENTLEY SYSTEMS
 BRANDENBURG INDUSTRIAL SERVICE COMPANY
 THE BUILDERS EXCHANGE NETWORK
 CROWELL & MORING, LLP
 CONSTRUCTION SPECIFICATIONS INSTITUTE
 DISA, INC.
 E-BUILDER.COM
 FATECH
 FIRST ADVANTAGE CORPORATION
 GLOBAL TECHNICAL RESOURCES
 GREYHAWK
 IMPACT
 INTERNATIONAL MASONRY INSTITUTE
 LATISTA
 MAMMOET USA
 MOST
 NATIONAL COMMISSION FOR THE CERTIFICATION OF CRANE OPERATORS
 NATIONAL L.E.C.E.T.
 NAVIGANT CONSULTING, INC.
 NAWIC
 NCCER
 NLMCC-NECA/IBEW
 NOOTER CONSTRUCTION
 PAINTERS & ALLIED TRADES LMCI
 REYNOLDS, INC.
 SAFETY COUNCIL-LCA
 SATELLIER
 SKIRE, INC.
 SURETY INFORMATION OFFICE
 TURNER CONSTRUCTION CO.
 TUCSON TOYOTA DEALERS
 UNITED ASSOCIATION
 UNITED UNION OF ROOFERS
 VARIAN, INC.

2:45 – 3:30 PM

What's Hot & What's Not At OSHA

Edwin G. Foulke, Jr., Assistant Secretary of Labor, Director of OSHA

3:30 – 3:45 PM

BREAK – Turquoise Ballroom (Exhibit Hall)

3:45 – 4:45 PM

Concurrent Educational Sessions**

The Owner Safety Blueprint: New Value Added Implementation Tools

Steve Lindholm, Consultant, The Construction Users Roundtable
Cliff Florczak, Manager-Safety & Health, Shaw Environmental & Infrastructure
Art Goehry, Director of Project Management, Johnson & Johnson
Tom Roscetti, Consultant, ExxonMobil Chemical Co. – **Presidio I**

Identifying The Value Of "Safety First:"

Owner & Contractor Viewpoints

Greg Landis, Director Site Facilities Engineering, Merck & Company, Inc.
Bob Krzywicki, Contractor Safety Practice Manager, DuPont
David Krause, Project Manager, ExxonMobil Chemical Co.
Ken Leach, Exec. Vice President, Turner Construction Co. – **Presidio II**

Building Value By Diversifying Contract Strategies:

Unique Approaches For Owners

Teresa Magnus, Contract Strategy Manager, Southern Company
Ned Parrott, Attorney, Watt Tieder Hoffar & Fitzgerald – **Joshua Tree**

What Are They Thinking? Results Of The FMI Owner Survey

Mark Bridgers, Consultant, FMI Corporation – **Coronado I**

TUESDAY EVENING, NOVEMBER 14

6:00 - 7:00 PM

Awards Gala Reception (Coat & Tie) – Turquoise Ballroom (Exhibit Hall)

7:00 – 9:00 PM

CURT/CIF Awards Gala Dinner – Presidio III, IV, V

Jan Tuchman, Engineering New Record, Master Of Ceremonies

Safety Awards Presentation

Bob Krzywicki, DuPont, Safety Committee Chairman
Ron Prichard, Arcanum, Safety Awards Chairman

Workforce Development Awards

Roger Lane, DTE Energy, Workforce Awards Chairman

Nova Awards Presentation

Tim Alter, Rudolph/Libbe Companies, Nova CIF Chairman
Robert Carr, University of Michigan, Nova Awards Chairman

WEDNESDAY MORNING, NOVEMBER 15

(Exhibits will be open 7:00 – 11:00 AM – Turquoise Ballroom)

7:00 – 8:00 AM

Continental Breakfast – Turquoise Ballroom (Exhibit Hall)

8:00 – 8:15 AM

Welcome & Opening Remarks – General Session, Crystal IV & V

Ken Kuechenmeister, Ameren Corporation, Conference Chairman

8:15 – 9:15 AM

3XPT Strategy Group: How AIA, AGC & CURT Are Collaborating To Transform Project Delivery

Bill Tibbitt, Executive Director Worldwide Engineering Services, Johnson & Johnson/CURT
Norm Strong, Partner, The Miller Hull Partnership/AIA
John Tocci, President & CEO, Tocci Building Corporation/AGC

9:15 – 10:00 AM

Concurrent Educational Sessions**

E-Discovery In Today's Construction Environment:

Guidelines For Documentation

Randy Erickson, Construction Co-Chair, Crowell & Moring, LLP
Andy Marks, Partner, Crowell & Moring, LLP – **Presidio I**

Unloaking The Mystery: BIM & Other Enabling Technologies

Chris Holm, Dir. Metrics/Continuous Improvements, Walt Disney Imagineering
Mike Alianza, Senior Analyst/Engineer, Intel Corporation – **Presidio II**

Global Resources For North American Projects:

What's Going On Out There

Joe Gionfriddo, Global Construction Manager, Procter & Gamble – **Joshua Tree**
Steve Mongiardo, Sr. Director of Infrastructure, Merck & Company, Inc.
Paul Hochi, Marketing Services Manager, Jacobs Engineering Group – **Joshua Tree**

10:00 – 10:30 AM

BREAK – Turquoise Ballroom (Exhibit Hall)

10:30 – 11:15 AM

Providing Construction Value In The Changing Global Oil & Petrochemical Marketplace

Jose' R. Leon, Vice President Engineering & Manufacturing Support,
ExxonMobil Chemical Company

11:15 – 12:15 PM

Adding Value Through Flawless Execution: The Afterburner Story

Anthony "AB" Bourke, Afterburner Fighter Pilot
Patrick "Lips" Houlahan, Afterburner Fighter Pilot

12:15 – 12:30 PM

Closing Remarks & Critiques

Ken Kuechenmeister, Ameren Corporation, Conference Chairman

12:30 – 2:00 PM

Farewell Luncheon – Dos Locos & Patio

2:00 – 4:00 PM

CURT Committee & Task Force Meetings (CURT Members & Invited Guests Only)

- Safety – Palo Verde II
- Workforce Development – Presidio II
- Education & Implementation – Joshua Tree II
- Technology Deployment – Palo Verde I
- Productivity – Joshua Tree I
- National Conference – The Conquistador Suite
- Lean Construction – Coronado II
- LUC Summit – Coronado I

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CURT Publications

It's no secret that education is the key to success. In that spirit, CURT has been an industry leader, publishing almost two dozen books/papers on a number of hot topics. Ideal reading for anyone in the construction industry—from owner to employee—these publications cover a wide range of topics, including workplace shortages, safety, achieving quality, choosing strategies that work, and reverse auction technology.

Steve Lindholm, a Construction Users Roundtable staff member, notes that CURT's mission is to be the voice of the owner. As such, "CURT must make its voice heard. One technique is through CURT publications, which detail to other owners how CURT members are addressing issues in the construction industry."

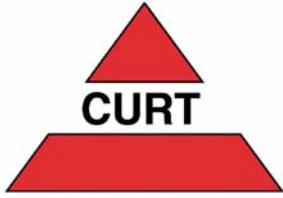
According to Lennart Antell, Chair of CURT's Education and Implementation Committee, publications like these go a long way towards driving CURT initiatives in the construction industry. One example is last year's *Owner's Safety Blueprint*. This guide, explains Antell, will, "help to develop training material that will lead to a full-day of safety training, based on the recommendations found in the guide." The CURT Safety Committee launched a pilot training program on September 11, 2006 which will lead to the training modules being broadly available to the industry by 2007.

For a list of CURT publications, see the next page. If you're interested in one or more of the topics, place your order with the application form included. ●



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R-402 CURT Tripartite Initiative Executive Summary	\$9.95	_____	_____
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CURT Surveys

Surveys are important to CURT members and the industry as a whole on a number of levels:

- One, they provide important benchmark data for members to measure their project processes and develop improvements;
- Two, the information collected makes it possible for members to learn from other members, both in terms of successes and areas to improve;
- Three, the data illustrates benchmark targets for member use; and
- Four, the process of collecting the data lends itself to frequent communication to and between CURT members, enabling the development of new training programs.

According to Robert Volkman, a Consultant with the Construction Users Roundtable, "surveys provide the benchmark data on current member practices and procedures that our working committees need. The committee's can then use this data to decide on future initiatives or as background information to develop CURT recommendations and white papers."

This past year has yielded three surveys to date. Those done in 2006 are: Workplace Attitudes, which was completed for the Tripartite Initiative; A Katrina Impact survey, which was done for a CURT member, and an Annual Owners Survey, which was done for FMI (a consultant) and the Construction Management Association of America (CMAA).

Volkman explains that CURT does do surveys at the request of members and outside associations. "Most, if not all of our members will be benchmarking practices internally. They'll want to look at their own practices and need benchmark data from other CURT members to determine current industry practices. Data from outside organizations is also vital so we can collect their

benchmark results so our members can compare their practices with the practices of other owners."

This fall another survey is planned, which is the Annual Value Generation Survey. In it, CURT members will be asked to provide feedback on individual CURT programs, with the data ultimately going to the Executive Committee to plan for 2007.

Volkman notes that all survey results are reported to the CURT membership at their National Conference and is then published on the CURT website. ●



Benchmarking Surveys Completed in 2005

Survey Title	Initiated By	Reported to CURT
Project Execution	Disney	February 2006
Workplace Attitudes	Tripartite	January 2006
FMI User Survey	FMI	November 2006
CURT Value Generation	Executive Board	December 2006
Safety Benchmarks	Safety Committee	Early 2007



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CURT Member Comments



CURT unifies a fragmented industry. It is the voice of the owners. It gives us clout to influence the industry in ways that are not possible on our own. CURT has assisted Merck through the Tripartite Initiative—using the agreements such as Project Labor Agreements—saving Merck money on several projects. We have used the CURT network to collaborate and benchmark best practices. Also, the CURT Safety Committee awards have recognized Merck as a preeminent safety conscious owner.

Steven Mongiardo
Senior Director, Infrastructure, Environmental
and Office Projects, Merck & Co., Inc.
Lebanon, NJ



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For DuPont, membership in CURT is valuable on a number of fronts: the ability to see what's happening in industry AND the ability to influence what's happening. CURT provides a forum for each member to learn and to air their concerns and to have them addressed in a LEVERAGED way. Membership allows DuPont to contribute to improvements in the industry—a shared responsibility with shared benefits.

DuPont has and will continue to benefit from CURT efforts, and results, in improving the industry. Efforts such as the "Construction Owners Safety Blueprint" will help the industry to continue the trend of improving safety, which will benefit everyone in the industry. Similarly, workforce development efforts through the CURT Tripartite Initiative and work with ABC will improve the industry workforce—again to the benefit of everyone in the industry, including DuPont.

Michael G. Conley
Engineering Manager
DuPont



NCCER's mission is to "build a safe, productive and sustainable workforce of craft professionals." CURT is a long-time supporter of both our mission and our organization by recognizing that the most critical issue facing the industry today is the skilled workforce shortage. CURT continues to keep the need for skilled trades at the forefront of owner organizations and develops action steps such as its new Craft Employee Training Evaluation Tool, to communicate those needs more effectively. In its 2004 white paper report, *Confronting the Skilled Construction Workforce Shortage*, CURT stated that "owners should require contractors to invest in training and maintain the skills of their workforce as a condition of employment." Today, CURT is instrumental in driving the need for sustainable funding for open-shop training like the cents-per-hour programs of NCCER. CURT is the force behind the continued and growing support of owners. NCCER is proud to be an Associate Member of CURT.

Don Whyte
President, NCCER
Gainesville, FL

Let's Hear You!

Do you have a story or comment about how CURT has helped your company, your organization or the industry as a whole? If so, let us know! E-mail the editor at editor@matrixgroupinc.net.

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Spotlight on

Workforce Development Award winner Establishing a Construction Academy

The statistics are alarming—the U.S. Department of Labor expects that more than 250,000 new construction workers could be needed each year for the remainder of this decade.

Rather than just hoping the crisis will disappear on its own, Albany Technical College, based out of Albany, Georgia is pushing forward with a plan to tackle the tough challenge of attracting youth to the industry and turning them into a skilled labor workforce. The college's Industrial Systems Technology Program, which gives students the skills they need to succeed as industrial electricians or industrial systems technicians, applied for the CURT Workforce Development Award. With the money received, the Carlton Construction Academy (named for the Carlton Family of Albany who donated the 80,000 square-foot facility) will be created, designed to provide state-of-the art construction training to Albany students.

As Mike Perry, Director of Instruction at Albany Technical College explains, "We have been teaching construction programs on campus since our Vocational Technical School days. What is new is the combining of instruction under the auspices of the Construction Academy, for which we have begun the design phase for the renovation of the building where it will be physically located."

Making it happen

Without the support of industry stakeholders this important initiative would not have been possible. Perry credits CURT affiliated South Georgia Construction & Maintenance Council with getting the project off the ground, "providing vital assistance in developing the concept of the academy, that eventually led to the donation from the Carlton family." From there, Sonny Perdue, the Governor of Georgia, authorized \$1.8 million to be given for the start of building renovation and donor-designated cash (as part of gift campaigns) totaled over \$20,000.

As Perry notes, everyone truly realized the importance of getting this off the ground. He explains that, "With many members of the Baby Boomer generation soon to be retiring, we beg the question, who will be available to replace the retirees? We are faced with a real dilemma. We have to find some innovative ways to educate people and definitively point out that construction is a way to make a good living."

"With many members of the Baby Boomer generation soon to be retiring, we beg the question, who will be available to replace the retirees?"

This is where the academy comes in. "We'll be able to help replace the retiring work force with graduates that will be highly trained and ready to join the workforce." Perry points out that this is especially important because of Albany's location at the juncture of Alabama, Florida and Georgia. "Consider all the hurricane traffic that has pounded the Gulf Coast in the recent past. We are striving to help in the rebuilding process," he says.

The details

Even as the design of the actual building is progressing, Albany Technical College is reviewing their curriculum. A major aspect will be the intention to add the National Center for Construction Education and Research (NCCER) curriculum, where it is relevant to do so. This is in addition to their already present DTAE (Department of Technical and Adult Education) curriculum. Perry says that this addition "gives us a great tool for monitoring the pulse of the

construction trades and overall industry needs. By graduating from the NCCER curriculum, our students will be able to pass over the threshold of Albany Technical College with a nationally recognized credit as well as a certification that is recognized industry wide. The NCCER curriculum added to our current DTAE programs provides our graduates with a complete set of tools for successful entry into the construction field."

In the long-term

Albany Technical College reaches out to students long-before they even plan for college. Educating K-12 students in the seven surrounding counties ensures that students both at the beginning and end of their elementary and high school careers are in tune with just how in-demand construction skills are.

It is through this long-term planning, both in educating K-12 students and providing opportunities to advance in training, that students will be positioned as well-educated, vital employees in the industry. Perry explains that, "Dual enrollment puts students on a 'fast track' to graduate sooner than a person who didn't take a construction program in high school. If a person gets an education in two years, then goes to work in the industry making thirty to thirty-five thousand dollars a year, that is a major turn on to many young people—that is time well spent"

For the future

Once completed, the new construction academy will allow for expansion of the existing program, providing much-needed space for training and equipment. Anticipated new programs include advanced air conditioning, plumbing, cabinet-making, civil technology, construction management, finish-carpentry and masonry. The existing programs that will be relocated are air conditioning, electrical and carpentry. ●

LUC Summit Report

In June 2006 Local User Councils from across the country met in St. Louis for their annual CURT LUC Leadership Summit. In total, 26 individuals attended, representing 14 Local User Councils and the general CURT membership.

Each year the CURT LUC Summit provides a networking opportunity for the LUC's to come together and share best practices and exchange ideas. It also provides time for them to learn about new CURT initiatives and future LUC implementation opportunities.

As Robert Volkman, Consultant with the Construction Users Roundtable and Liaison to the Local User Councils notes, sharing CURT initiatives is especially important as LUC's are independent organizations. He notes that, "LUC's share similar missions, objectives and programs with CURT, but they are legally separate entities. While CURT's mission is national and global, the LUC's mission is always local, usually formed around a major city or region. Many of the LUC's have similar programs around workforce, safety, drug testing, labor relations, etc., but all customized for the local area needs."

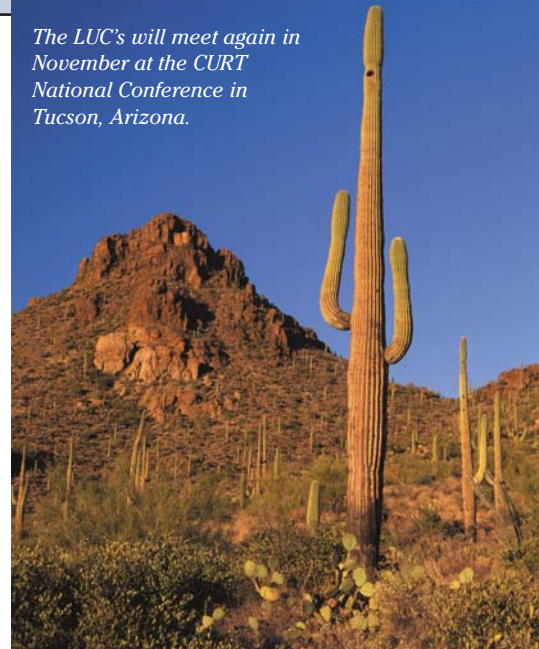
Even so, Volkman notes that in the past, LUC's have been a frequent and important part of the implementation of CURT recommendations by having local training events and distributing CURT White Papers to their members.

Getting together

Despite being separate entities, the importance of meeting as a group can not be underestimated. As Volkman explains, "The summit is the group's only opportunity to network with their peers and to share information on their programs. The participants really value the opportunity to learn about what others are doing and have that face-to-face discussion to understand how the programs work, learning from others failures and successes."

Since all LUC Summits are also done in conjunction with CURT meetings, it also gives them the opportunity to participate in CURT committee meetings and plenary session to get a hands-on involvement in the CURT programs. "Frequently, LUC executive directors take information, contacts and materials back to use in their own local programs," says Volkman.

The LUC's will meet again in November at the CURT National Conference in Tucson, Arizona.



Agenda

The agenda for the June summit was jam-packed full of reports, sessions and updates. In particular, highlights included:

- A welcome from Dennis Lavallee, on behalf of the St. Louis Council of Construction Consumers. Lavallee provided an introduction to St. Louis as well as an overview of LUC initiatives in area.
- Numerous roundtable discussions on topics such as "What Owners Need from LUCs" and "What LUCs Need to Succeed."
- A presentation from the Western Council of Construction Consumers, which showcased an example of how CURT Tripartite recommendations are being used successfully in southern California.
- The Houston Business Roundtable explained several successful programs including their Contractor Safety Excellence Award Program, On-line Contractor Prequalification Database, Process Safety Management Auditing of Contractors, North American Substance Abuse Program, Workforce Development Program & Initiatives, and Background Screening consortium.

As the LUC's prepare to meet at the National Conference in Tucson, Volkman forecasts a successful meeting that will include networking opportunities, the sharing of LUC initiatives and information and updates on CURT initiatives. ●

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The Business Roundtable Joint Partnership/Hurricane Recovery Initiative

The Business Roundtable Joint Partnership was given the green light in February 2006. Since then, those involved have been busy soliciting funds, developing plans and supporting training activities. And the success is already evident as, to date, approximately 1,000 people have completed or are enrolled in the entry-level training. Tim Horst, Program Manager of the Gulf Coast Workforce Development Initiative notes that they expect the bulk of the training to occur in 2007 and 2008 with the overall goal of recruiting and training 20,000 new entrants into the industry, specifically to support Gulf Coast reconstruction. He notes that, "by supporting construction education materials issued by the National Center for

Construction Education and Research, we hope to encourage the industry to move toward adopting standard education modules that are transportable from one region to another and from one industry segment to another."

The overall plan is to recruit and train 1,250 workers in 2006; 7,500 workers in 2007 and 2008; and 3,750 workers in 2009. Horst notes that, "to accomplish the training, we are currently leveraging current federal and state training grants." A number of CURT members have contributed money to the cause as well. They are Abbott Laboratories, Air Products and Chemicals, Inc., American Electric Power, Associated Builders and Contractors, Inc., Associated General Contractors, BE&K,

Bechtel Group, Inc., Dow Chemical Co., DuPont, Exxon/Mobil Corporation, General Electric, McGraw-Hill Companies, NCCER, Pfizer, Inc., Rohm and Haas Co., Shaw Group, and Washington Group International, Inc.

The most recognized accomplishments of the initiative has been the development of the "I'M GREAT" marketing outreach campaign which seeks to use simple, positive messaging to recruit new entrants into the industry. Program organizers have found that this targeted marketing message is very effective in recruiting candidates to the training program.

For more information on this initiative, go to www.imgreat.org.

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The CURT Productivity White Paper 1003

In July 2006 the CURT Productivity White Paper 1003 *Construction Strategy: Optimizing the Construction Process* was released. The paper outlines how to substantially change the project environment to an arena where projects are undertaken by deeply collaborative, multidisciplinary teams that contribute to project fruition, and where better, faster, more capable projects are the norm rather than the exception. This paper is a follow-up to WP 1202, *Collaboration, Integrated Information and the Project Life Cycle in Building Design, Construction and Operation*.

“By supporting construction education materials issued by the National Center for Construction Education and Research, we hope to encourage the industry to move toward adopting standard education modules that are transportable from one region to another and from one industry segment to another.”

According to Steve Lindholm, consultant with CURT, white papers are important on a number of levels. **One**, other owners want to know how CURT members are addressing issues. **Two**, contractors want to know what owners want in order to meet their needs. **Three**, labor is interested in

owner goals and objectives so that they might appropriately organize, recruit, and train the required workforce. **Four**, industry leaders who set policy within their organization are interested in and influenced by CURT findings and recommendations. **Five**, construction practitioners are interested in replicating recommended CURT work practices for their projects. **Six**, academia is interested in keeping their concepts and training materials current and relevant.

White Paper 1003, in particular, outlines a number of key strategies that will allow this transformation to fully take place. They include:

- Assemble integrated project teams (including all life-cycle project stakeholders) early in the process, yielding high-functioning teams.
- Establish and ensure the understanding of clear and concise goals, values, and objectives for the project and for all team members **BEFORE** design begins; this will require project preplanning.
- Use contracts that promote, not impede, high degrees of collaboration, defining new business terms.
- Match resources with the needs of the project and its ebb and flow as needed. Additional knowledge and expertise are “woven in” as required, providing insight at the optimum moment.
- Share information in an open, honest way as a norm, and create no disincentives to share; no information is considered proprietary within the team. This creates an open information environment.
- Optimize objectives of the project as a whole and do not sub-optimize results of the separate participating firms; this approach creates a common vision of success.
- Make decisions based on overall value and not simply lowest first cost (defining measurable outcomes).

For the complete report, fill out the order form on page 43.

The Building Information Model and AIA and AGC

Technology is here to stay, and, as such, so is computer aided design (CAD). That is why CURT is working with the American Institute of Architects (AIA) to enhance the Building Information Model (BIM) to guide and educate the industry.

What is BIM: According to the AIA website, BIM is more than most people expect. Beyond the basic concept of transferring electronic files into paper documents, or creating 3D renderings, BIM involves how information is used, reused and exchanged between parties. For example, when integrated 3D-2D model-based technology is linked with information, design firms have a faster, higher quality, richer design process—one that is less-likely to experience problems and more likely to experience streamlined, high quality design.

Making it happen: As Mike Alianza, Chair of CURT’s Technology Committee and Senior Analyst with Intel points out, “BIM is the future for design and construction applications.” In a presentation he gave at the CURT Membership Meeting in September 2006, he outlined the progress that CURT, the AIA and the AGC (The Associated General Contractors of America) have made in promoting the

continued on page 54

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CURT INITIATIVES *continued from page 53*

awareness and acceptance of BIM. He noted that in May 2006 the AIA/AGC Construction Industry Summit propelled the topic into the limelight as industry stakeholders identified specific actions that can be taken to advance the implementation of BIM. Out of this came 3XPT (see the cover story on page 15) as well as a number of surveys, panel discussion groups and collaborations.

What's next: The CURT Productivity Committee recently joined forces with Stanford University to survey use of VDC (Virtual Design and Construction) and BIM (Building Information Model). Visitors to the Stanford Center for Integrated Facility Engineering website were asked to spend 15 minutes sharing their experiences with VDC/BIM. Stay tuned for results.

As well, the AGC is in the process of creating the "Contractors Guide to Getting Started with BIM", which will be distributed at their Mid-Year AGC in September 2007. ●

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Attitudes and Behaviors

Shifting attitudes of the industry's "rookies"

By Mark Breslin, Breslin Strategies Inc.

I LOVE TERRELL OWENS

I love Terrell Owens.

I do not love him as a lifetime 49er fan who watched him destroy my team's cohesion. I do not love him for his erratic showboating self-centered behaviors. I do not love him due to his role in wreaking havoc with the Eagles and contributing to their downfall. I do not love him for his weak apologies while he searched for his next big contract. But this is only my opinion.

No: I love Terrell because he makes it so damn easy. What he does and who he is, exemplifies the greatest challenge that our industry is facing; how to cultivate not only extraordinary skills, but the commensurate attitudes and behaviors to compete and succeed, in meeting the needs of our industry.

The construction community faces no greater challenge than creating a major cultural shift in workplace attitudes and behaviors. I don't have to tell

you that; forty minutes onto any job-site in North America you will see it in front of you. But for the industry to thrive and succeed we will now have to take up a "parental" role in shaping the person rather than just providing technical education. And the end-user community can be the most powerful catalyst for this cultural shift to occur.

The end-users voice resonates the loudest. The end-users construction dollars frequently determine policy. As was done in the areas of safety and drug testing, a lead role must be taken; and much sooner than later. The good news is that there is a willingness by contractors,

Truth is, we've got a heck of a lot of Terrell's on our team in this industry. And so, the best and most immediate answer is that we have to get to those rookies, before the Terrell's get to them.

training programs and end-users to not only recognize the challenge, but collectively do something about it. The bad news is that with the demographic shifts occurring with the retirement of the Baby Boomers, the challenges are about to get more critical and acute.

I know we did not sign up for this. Our old school work ethic assumes you simply get it; "work hard, get ahead". Today, many entry level workers or apprentices think attendance is optional. There is no connection between quality and future job prospects. Appearance, work ethic and a value system are foreign concepts. This disconnect spreads not only across the existing workforce but defines the next two generations and we better get used to it fast. It is not their fault. I am not going to lay the blame on their moms and dads or teachers; but I will say without any doubt that we can no longer try to push simple "compliance" with our traditional value system as the answer.

I have made speeches to more than six thousand apprentices, trainees and instructors just this year and tested every method and strategy for applicability. It is my view that two components are necessary; a workplace

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code of conduct and a training curriculum that both educates and prepares a worker to accept that higher level of individual responsibility. It is my assertion that if we continue to focus mostly on teaching worker skills for the next decade, we will still find ourselves exponentially further behind the productivity curve.

Terrell is an extreme example I will admit. But he is a fine case study for the argument that skills are not enough. Truth is, we've got a heck of a lot of Terrell's on our team in this industry. And so, the best and most immediate answer is that we have to get to those rookies, before the Terrell's get to them. A collaboration of progressive owners, training providers, unions, contractors and other stakeholders will hopefully be the vehicle to inspire a new generation of workers. Though it may seem strange to say, I'm betting that our future may rest more on this inspiration than any one other factor. That alone makes each of you reading this among the most important catalysts and resources for improving jobsite performance and productivity. Simply put; Excellent Skills + Positive Attitudes + Great Behaviors = Desired Outcomes.

Perhaps inspiring, mentoring, influencing and motivating were not on our original job descriptions, but now it is time to connect all the dots by using every possible resource available to develop self-pride and commitment in the workers of our future. It doesn't mean that we don't want apprentices and journeymen level workers with fire in their eyes and a yearning to prove themselves; this is no industry for the weak-kneed. No it just means that we have to take on a rookie team building exercise. Building a new team of fifty thousand rookies every few years takes a lot of cheerleading. I think it sounds like this...

"Go Terrell." "Go Terrell." "Home." ●

Mark Breslin is a strategist, trainer and author specializing in construction labor-management challenges. He is the author of the Attitudes and Behaviors Survival of the Fittest curriculum for training centers and speaks to over fifty thousand industry leaders and workers per year. Additional information is available at www.breslin.biz.

Project Labor Agreements: Pro/Con

What is a project labor agreement?

A project labor agreement is a comprehensive pre-hire collective bargaining agreement, which means that basic terms and conditions for labor are established in advance for everyone involved in the project: the public sector employer, contractors and subcontractors, and the labor force.

Here's what two CURT member associations have to say:

The Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) takes the position that PLA's ensure uniformity and standardization in the terms and conditions of how employment may be obtained for the duration of a construction project.

In a brief to their members, the Alliance makes the following points supporting the use of PLAs:

- A single PLA operates to cover all of the contractors, employees and unions involved on a complex construction project with resulting uniformity on important issues including working hours, overtime and holidays. Without a PLA there may be a multitude of different collective bar-

gaining agreements with varying conditions.

- PLAs contain dispute resolution mechanisms and no-strike clauses prohibiting work stoppages during the duration of the project.
- To the extent that the Executive Order prohibits owner-developers and labor organizations from negotiating PLAs, it disrupts the economic balance between management and labor established under the National Labor Relations Act.

According to the **Associated Builders and Contractors (ABC)**, union-only project labor agreements (PLA) not only exclude open shop contractors from bidding on projects paid for by their own tax dollars, but also drive up the cost of construction by reducing competition for the work. According to their website, a union-only PLA is a contract that requires that the project be awarded only to contractors and subcontractors who agree to:

- Recognize unions as the representatives of their employees on that job;
- Use the union hiring hall to obtain workers;
- Pay union wages and benefits; and
- Obey the union's restrictive work rules, job classifications and arbitration procedures. ●

PRO

Seeks to ensure an open flow of communication among all the parties involved in the project.

Access to an immediate supply of skilled craft workers who are trained through apprenticeship programs jointly administered and funded by labor and management.

Allows contractors to bid, with labor as a constant by standardizing working conditions, wages and benefits.

CON

The bidding may be open to all, but only a very small percentage of open shop employers are willing to disrupt their companies and employees for the opportunity to work under a PLA.

The unions restrict entry into their apprenticeship programs by limiting the number of apprentices taken into their programs. They have waiting lists that can be literally years long.

Limits the number of bidders to only union contractors or those few open shop who are willing to become signatory to the PLA for the duration of the project.

Sources: *The New England Laborers' Labor-Management Cooperation Trust / The Association of Washington Business*

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Immigration to Fill Labor Shortages: Pro/Con

According to the Department of Homeland Security Immigration Statistics, in September 2004 the estimated population of legal permanent residents (LPRs) was 11.6 million, with an estimated 8.0 million eligible to apply for citizenship. Mexico was the leading country of origin with an estimated 3.1 million (27 percent) of LPRs coming from there. Other leading countries of birth included the Philippines, India, People's Republic of China, the Dominican Republic, Vietnam, Canada, El Salvador, Korea, and the United Kingdom.

With a looming workforce shortage in the construction industry, should immigrants be allowed in to fill the hole? Here's what some have to say:

President George W. Bush, in a radio statement made to the American public, on immigration. August 2006.

"Rational and comprehensive immigration reform must begin with border securi-

ty, and we have more to do. So I've asked Congress to fund dramatic increases in manpower and technology for the Border Patrol. We will add 6,000 new Border Patrol agents. We will build high-tech fences in urban corridors and new patrol roads and barriers in rural areas. And we will employ motion sensors, infrared cameras, and unmanned aerial vehicles to prevent illegal crossings. By deploying 21st century technologies, we will make our Border Patrol agents even more effective and our border more secure.

Yet to be successful, comprehensive immigration reform must also accomplish four other critical goals. We need a temporary worker program that will create a legal and orderly path for foreign workers to enter our country to work on a temporary basis. This program will add to our security by helping us know who is in our country and why they are here. And by reducing pressure on our border, it will free up our Border Patrol to focus on making sure

we stop terrorists, violent criminals, and drug smugglers from entering our country.

To help honest businesses follow the law, I propose more effective tools to verify the legal status of workers. These tools should include a tamper-proof identification card for legal foreign workers. By taking these steps, we will make it easier for businesses to obey the law and leave them no excuse for violating it."

Kirk Pickerel, Associated Builders and Contractors President and CEO in a statement responding to a presidential address on immigration reform. May 2006.

"Associated Builders and Contractors commends President Bush for continuing to push for congressional action on one of our nation's most critical issues—immigration reform. Associated Builders and Contractors believes that the most effective, worthwhile and meaningful immigration reform measures must include a wide-ranging approach that addresses a broad spectrum of issues. Any measure should include reforms that better secure our borders, provide a channel for those who want to work legally in our country, institute a reliable employee verification system and address the millions of undocumented workers already in our country."

Stephen E. Sandherr, Associated General Contractors of America CEO, on the announcement that the Senate was nearing an agreement on immigration reform via a new guest worker visa and realistic strategies to address the undocumented individuals that are already in the country.


"AGC is encouraged by the attention focused on immigration. We strongly believe that a comprehensive approach is the only way to achieve true reform. AGC believes that this approach strengthens both national and economic security. AGC is encouraged by this latest development and we hope that the Senate will pass this legislation before the end of the week." ●

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Construction Budgets

A case for certifying estimators

By Edward B. Walsh, Executive Director National ASPE

BEFORE the first dirt is moved, or the first nail driven, a construction project may be in serious trouble and paramount amongst the reasons is a flawed cost estimate.

Every year publicly funded state and federal agencies' and private parties' construction projects face the prospect of cancellation or going through an expensive redesigning process because the bids came in well above a budget estimate that was set too low.

Contractors may suffer serious financial losses or slip into bankruptcy because of a bid based on a flawed estimate.

Often bonding companies must take over failed projects and suffer great losses all because of a contractor's poorly prepared cost estimate. This scenario results in higher premiums for bonds, contractors not qualifying for bonds and the lowering of competition for bidding on projects.

Construction cost estimating, if not done in a professional manner, may

result in financial damages and construction delays, which in some cases precipitate excessive cost cutting. Recouping lost profits from a bad estimate by cutting corners can lead to shoddy workmanship or, worse, unsafe construction practices.

The issues described above are resolvable if acted upon properly. Currently in the United States, owners, federal agencies and state governments all require that the architects and engineers involved in the design of a project to be recognized by having been licensed or registered—but why aren't construction cost estimators? All too often the task of preparing a cost estimate is simply left to anyone that cares to call themselves an "estimator".

Certified Professional Estimators (CPE's) are available through the American Society of Professional Estimators (ASPE).

The ASPE requires a minimum of five years experience and a passing grade in both a General Estimating Knowledge (GEK) test and a Discipline Specific Test,

and acceptance of a technical paper, before granting the designation Certified Professional Estimator (CPE).

To date the States of California, New Jersey and New Mexico, the General Services Administration, the U.S. Postal Service, the U.S. Army, U.S. Coast Guard and the U.S. Navy require that parties involved in preparing, supervising or checking their project construction cost estimates be certified professionals as designated by the ASPE. Several other states and federal agencies are proposing similar requirements and FEMA has adopted the Standard Estimating Practices of the ASPE.

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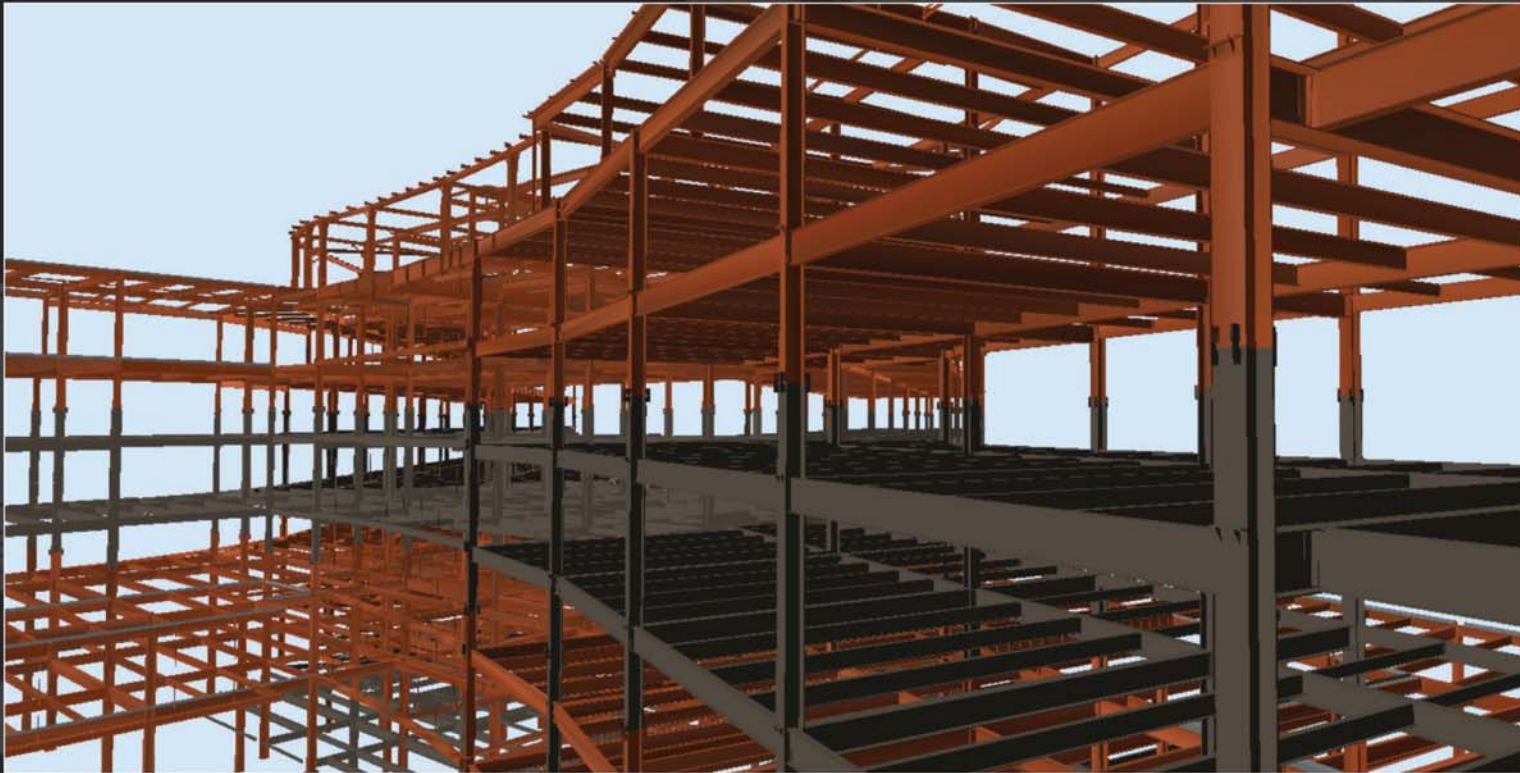
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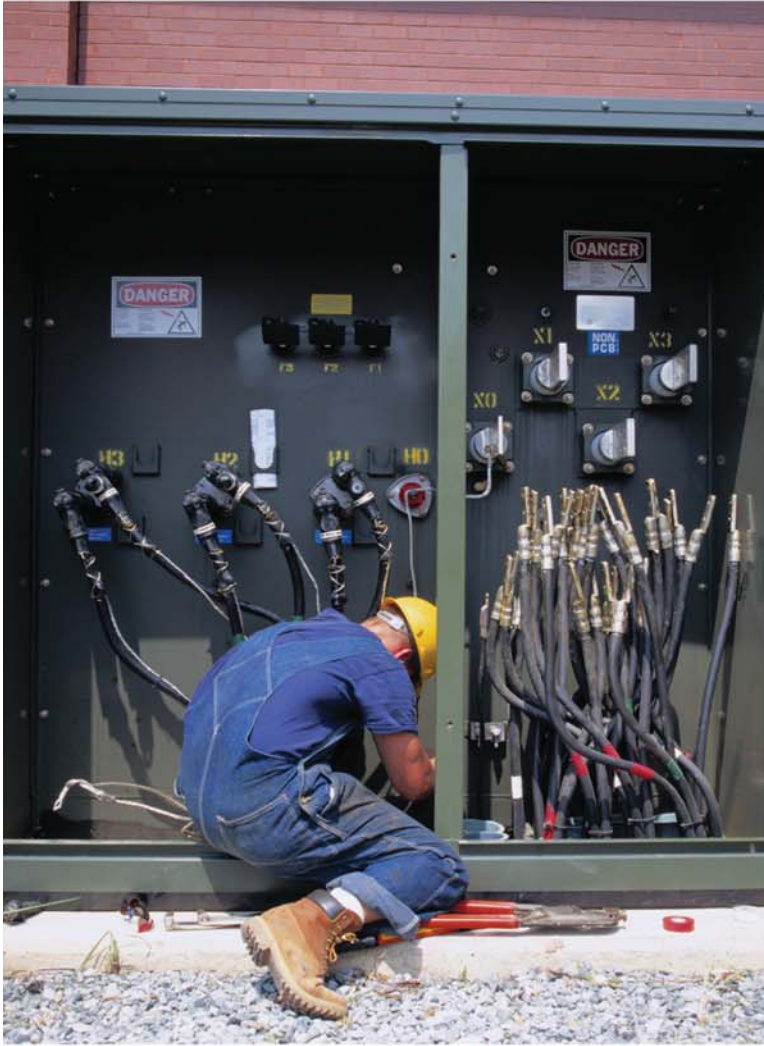
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