



The

VOICE

The official magazine of The Construction Users Roundtable

Summer 2008

Booming AND Busting in Construction: Cracking the Economics Code

INSIDE:

- Creative Contracting Strategies for Difficult Times
- Safety First
- A Construction Industry Revolution
- Jointly Hosted CURT/ENR Business Forum a Success
- CURT Member Profiles



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On the Cover:

The effect of the sub-prime debt crisis isn't just making headlines in the United States, it's making headlines around the world. Yet, while there's a definite bust in residential construction, commercial and industrial projects are booming. Will the residential housing disaster seep into these other areas? Economists are sitting on both sides of the fence and only time will tell who predicted accurately. Read more on page 24.

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A Casual Request. A Difference Made.

I can truly say that back in 2001, when Dick Troell asked me to serve as co-chair of the CURT National Conference, I had no idea what I was about to get into. At that time I was fairly new to the organization, occasionally back-filling for my GE manager and founding member of the organization, Bobby Wilson, whenever he could not attend. As part of that task I started attending the National Conference Planning Committee meetings, and thus began my deep involvement with CURT.

During these past seven years, since that auspicious request, I have had the opportunity to work closely with leaders from all sectors of our industry, who not only represent the best-of-the-best from the owner community, but also from the contractor, architect/engineer, consulting, suppliers and labor communities.

The list of issues, challenges and projects we have tackled, and continue to tackle, together is rather long. It includes craft labor shortages, emerging technologies, job site safety, productivity, Katrina/Rita disaster response, cost escalation, diversity, education, BIM, Integrated Project Delivery and LEAN construction, just to mention a few.

And in tackling these and many other issues, I have discovered a common vein that runs throughout—as in a great and beautiful piece of recently quarried marble—the somewhat fragmented and isolated sectors of our business: a large group of dynamic and committed individuals who are working together at all levels to improve and advance the construction industry. Because, for all of our disagreements and often competing interests, there is a palpable realization at all levels that the challenges that we confront cannot be solved by one group alone. Thus, we must find wherever and whenever possible, common ground, and then work together to discover and implement solutions that result in a win-win outcome for all involved.

It is in this spirit that we continue to actively participate in and facilitate the tripartite labor initiative, working with the organized labor

and merit shop sector to address craft labor shortages, implementing attract-train-and-retain programs where needed.

It is in this spirit that we continue to actively participate in and facilitate the 3XPT Strategy Group initiative, working with the AIA, AGC, and others to identify and develop business models and processes that promote fully integrated and highly collaborative project teams.

It is in this spirit that we continue to actively participate in and facilitate educational programs that are leading the way in training the next generation of leaders in our industry, advancing excellence, opportunity and diversity in the process.

It is in this spirit that we continue to actively participate in and facilitate programs that promote job site safety at all levels, continually recognizing those teams who deliver superior results.

And these are but a few of the many CURT initiatives that I have had an opportunity to actively participate in or contribute to over the past seven years.

Now, as I conclude my second and final term as CURT President, I can say that so far it has been a truly great ride, one that started some seven years ago by a casual sounding request from a friend to serve as his co-chair on the National Conference Planning Committee. As I look back on that day, I am glad he asked.

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

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Many thanks from CURT

In June 2008 Ricardo Aparicio handed over the reigns to incoming CURT President Egon Larson. CURT would like to thank Ricardo for the countless hours he spent working on behalf of the organization and the entire industry as a whole. Ricardo was well-known for promoting change, encouraging forward-thinking, fostering innovative ideas, and, most importantly, telling great stories whenever the occasion arose. Thank you Ricardo for all your hard work!

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Strategies for a Sustainable Future: The Next Generation of Construction

One of the best legacies we can leave is a solid foundation for the future. In this complex construction world we are accountable for people, processes and systems/tools. Developing strategies in all these areas is a daunting task, but they must be done to keep your company growing.

To develop effective strategies, today's construction leaders need a thorough understanding of the external trends impacting our industry. As a result, the 2008 CURT National Conference aims to provoke you to reexamine your strategies in light of a rapidly changing world. Globalization, information technology, environmental sustainability and a new generation of e-enabled employees will need to be managed competitively to stay successful.

Planning this year's Conference has been eye-opening! As the National Conference Planning Committee has explored topics, we have gained new insight into these future trends and dislocations that will be either sources of new competitive advantages or barriers to success, depending on how we address them.

In addition to giving you insight into these emerging areas, the conference will also continue the CURT journey by sharing ideas on implementing new technologies that have been highlighted in the past (BIM, LEAN, etc.) and providing updates on core competencies (safety, craft workforce development, etc.).

One very exciting feature at the 2008 event will be the sessions exploring the generational change and how it will impact our professional and craft staffing. To help us, we have created a "Next Generation" Advisory Board composed of early career construction professionals (30 years old or less) to provide us input as to how their world is different! This new e-enabled generation entering the construction workforce is different from their predecessors, and can provide unique competitive advantages to those that utilize them innovatively.

As Tom Vaughn has put it, "If we are going to attract and then retain the best of the incoming generation, we must understand the significant intergeneration differences that exist... It is amazing to the level of comfort that the 5 to 25 year olds have functioning in an electronic, virtual world. It is

intuitively obvious the benefits they can bring

to our industry—but to capture and captivate them, we must understand this phenomenon and use this to our industry's advantage."

You'll want to be part of this event to get ideas into how to build your own bridges to a profitable future. We promise to capture your attention and captivate your thinking. Join us November 10 to 12th at the beautiful Westin Mission Hills in Rancho Mirage, CA!

Jocelyn Scott, DuPont
CURT National Conference Chairperson

In addition to giving you insight into these emerging areas, the conference will also continue the CURT journey by sharing ideas on implementing new technologies that have been highlighted in the past (BIM, LEAN, etc.) and providing updates on core competencies (safety, craft workforce development, etc.).



See page 50 of The VOICE for more details on the 2008 CURT National Conference!

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The VOICE is Every Owner's Voice. So, Let's Hear Yours!

OK. I admit it. Call me a magazine junkie. I love magazines. Always have. The reality is that we receive so many at the office, I sometimes feel sorry for the mail carrier whose route includes our office building.

As a magazine reader, I know that many times an organization's "rag" can feel more than a little self-indulgent. Sometimes magazines can get so caught up in promoting new products and services of the organization that they fail to give the readers the kind of stories and perspectives that made their readers loyal subscribers in the first place. That's why when developing each editorial planner for The VOICE, CURT makes every effort to give you—the reason we publish this piece in the first place—plenty of information, perspectives and news about industry events and trends, and the owners role behind them. To that end, I want to take an opportunity to recognize what makes The VOICE well recognized and well done and invite you—our reader—to help us improve.

Among the inducements for our readers: we make every effort to include news about the work of our several committees, opinions from our organizational leaders about what's hot in the industry and articles in our "Back At You" section which gives voice to differing and sometimes controversial opinions.

We also include news about our upcoming educational events and meetings as well as highlights from our partners in the labor community, the local user council community and other associations. And of course, we always feature articles on issues of universal concern to the owners.

Not willing to be left

out of the fun and sometimes overlooked, are our advertisers and sponsors whose faithful support makes The VOICE possible. To the many and varied industry advertisers and sponsors...thank you. Thank you very, very much!

By the time you are reading this, our office staff and the CURT Education and Implementation Committee members are preparing for the next issue. We will continue to celebrate the vitality and enduring appeal of the construction industry. The VOICE will recognize the industry's hard working leaders, highlight the curious new and emerging technologies, and tell you about CURT products, services, publications and events.

However, we also want to give you a voice, in The VOICE. If you have suggestions on how to improve the magazine, I invite you to send us your suggestions. Perhaps you would like to propose a topic or submit an article for consideration for inclusion. As we often say, "CURT leaders are thick skinned and tender hearted", so tell us how you feel. Feel free to send your comments to construction-users@curt.org.

I want to
take an opportunity to
recognize what makes The
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to help us improve.

Gregory Sizemore, Esq.
CURT Executive Vice President



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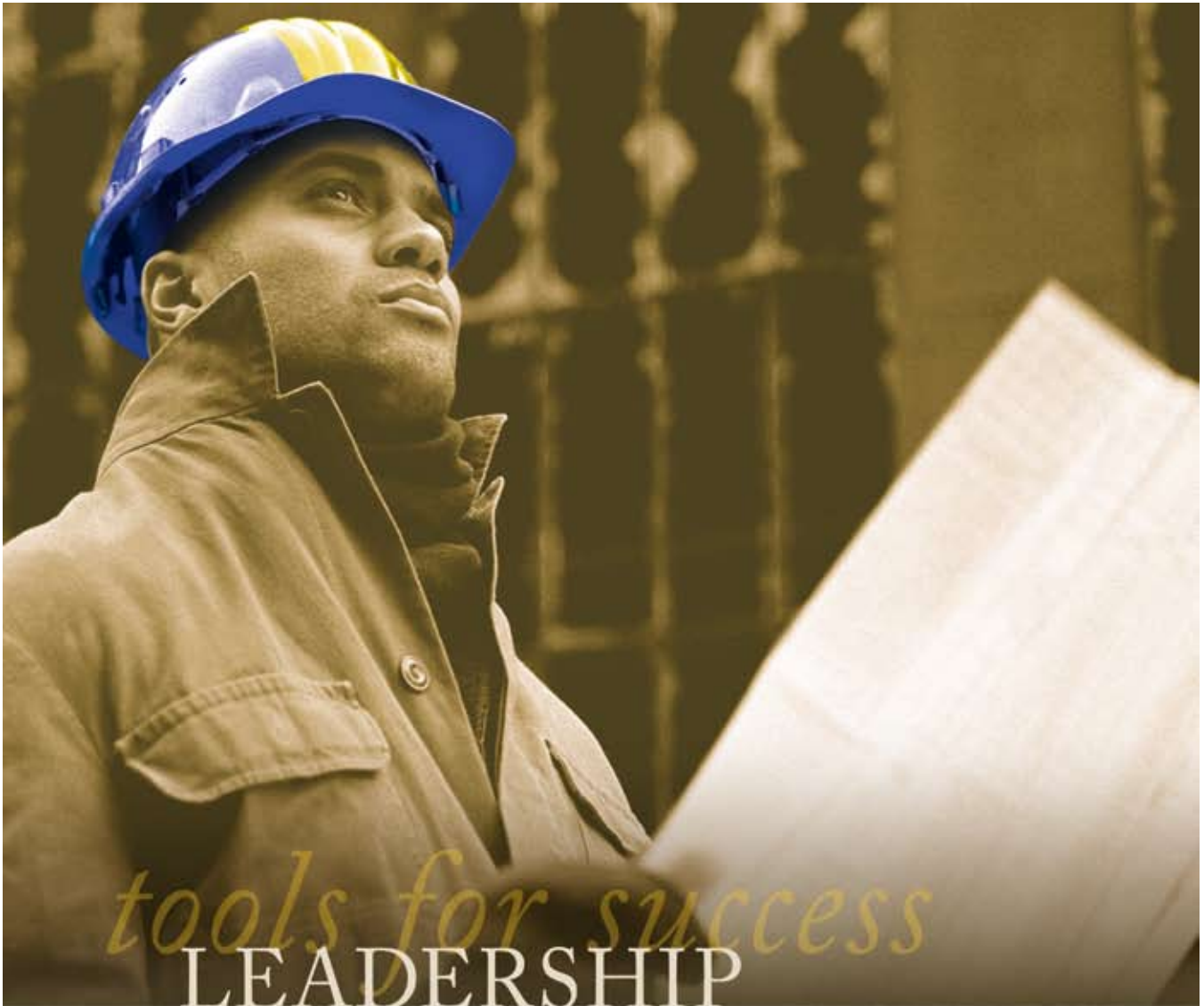
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CURT Comments

Each issue The VOICE asks CURT leaders their thoughts on the major issues affecting the construction industry. Here CURT Officers, Board of Trustee Members and Committee Chairs voice their opinions on the state of the economy and alternate contracting strategies for the owner community.

CURT Officers



Egon J. Larsen

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

"I think owners are looking at having multiple strategies now more than they have had to in the past. They're seeing that things are changing quickly so they need different approaches from what they've done before. That's why CURT's quarterly workshops are so beneficial. In Florida we discussed alternate contracting approaches for owners and everyone got together and shared ideas. All owners are facing similar problems right now so when a group of us get together we can find more and better solutions that we would if we all just tackled it on our own. As an organization, it's our job to provide the forum for people to talk and come up with ideas that everyone can use."

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.



Michael G. Conley

CURT Vice President
DUPONT ENGINEERING
Manager, DuPont Project Engineering Center
Wilmington, DE

"With economic conditions as they are, the industry needs to double its efforts on all those practices that we know work—like maintaining our focus on safety, supporting craft training, utilizing advanced tools such as BIM and LEAN, working together as an industry to identify craft needs (as is happening with the SEMTA initiative) and bringing more craftspeople to the industry (as is happening with the I'M GREAT effort). Too often these initiatives lose support when times are tough. Yet, if we continue to work on these efforts, we will improve productivity, attract more people to the industry, and continue our safety improvement trends. Owners need to lead by example and send the message to 'stay the course' on these important fronts."

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).



Larry Wargo

CURT Treasurer
FIRSTENERGY
Consultant, Contractor Services
Akron, OH

"As the labor shortage continues and the economy remains unstable, the need for alternative solutions is of paramount importance. Modularization is one alternative solution we've been using at FirstEnergy for awhile now. And, as the workforce shortage continues and the difficult economical conditions remain, we're taking a deeper look at how it can be even more successful for us. Owner's really need to explore alternatives to the way things have been done, or risk incomplete projects."

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.



Curtis Ashley Baker, P.E.

CURT Secretary
SOUTHERN COMPANY
GENERATION
Vice President, Construction
Birmingham, AL

"In the current high demand and low supply environment of labor, equipment and contractor supervision, the need to re-examine our current contracting strategies has become essential. Right now, contractors can pick and choose the projects they take. The ones with high risk are easily passed by those with less risk and healthy owner relationships. However, sharing risk between contractors and owners can produce project teams with the same goals and focus. Owners must pick the right projects and contractors must dedicate their 'A' players to these efforts for everyone to come out ahead."

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.

Board of Trustees



Ricardo Aparicio, AIA, Esq.

CURT Past President
GENERAL ELECTRIC COMPANY
Contracts Manager Project Services
Birmingham, AL

"In order to combat the ups and downs of the economy, first and foremost, owners need to become even more efficient in the use of available resources and tools. For example, the use of BIM and LEAN construction principles can assist owners in reducing cycle times during construction, streamline the use of skilled labor, and do a much better job of improving logistics and cut waste. The savings generated by the implementation of these tools and principles can help offset the rising prices. Secondly, owners should be looking at their risk allocation models and adopt contract tools that drive out unnecessary contingencies. Finally, owners need to reward contractors and industry groups that are engaged in craft training by implementing prequalification standards that recognize the value that these programs and long-term investment bring to the industry."

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, FL 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.



Steven B. Satrom

CURT President Emeritus
AIR PRODUCTS AND
CHEMICALS, INC.
Vice President of Engineering,
Energy Businesses
Allentown, PA

"In several high-activity regions around the world, owners are having to change their traditional contracting methods. These areas are characterized by high industrial construction activity coupled with regional shortages of contractor supervisory capacity, craft labor, and in some cases, a lack of equipment availability. In these regions, contractors are reluctant to take on labor rate or productivity risk. As such, owners are shouldering more of the traditional contractor risks and are modifying their strategies to match the environment. Emphasis is also being placed on contractor's supervisory capabilities, the strength of the contractor's management and management systems, the ability to staff a project with qualified people, and the willingness to align objectives."

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

“Organizations such as CURT are vital for assisting with the communication of factual and consistent information relating to the challenges being faced in the construction industry. I believe the true market forces will align the supply/demand for construction labor and materials. Sometimes these factors will stress the viability of the project beyond the value to the owner community, and without the funding and support from

the owner community, projects will be jeopardized. The combining of owner centric inputs from various industries and contractors who are members of CURT enables our members to take action based on the best available knowledge in our Industry. The sub-committees sharpen that information and focus into specific categories such as workforce development or safety, that is not accessible without the involvement of organizations such as CURT.”

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.



Charles G. Hardy
 GENERAL SERVICES
 ADMINISTRATION,
 CCM
 Deputy Director, GSA
 PBS Great Lakes
 Region Office of
 Property Development
 Chicago, IL

“Confucius once said: ‘Real knowledge is to know the extent of one’s ignorance.’ I think we, as an industry, have slowly begun to learn the extent of our ignorance. Doing things as they’ve been done in the past may not be the best for the future of your company, or the industry. Innovation has, and will remain, the center of business success...that eternal quest to build that better mousetrap. We have new influences on our operations: the global economy, labor and material shortages, and new business practices involving relational contracting and collaboration. We must find innovative ways to in the procurement world to meet these challenges, innovate, and succeed. Alternative contracting strategies start to address the contemporaneous factors facing our projects and workforce. The key advantage in today’s world is that these strategies serve as enablers of collaboration.”

Charles G. Hardy is a licensed architect and certified construction manager. 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, Hardy is a retired officer of the U.S. Air Force Reserve.

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Gregory L. Sizemore, Esq.

Executive Vice President
THE CONSTRUCTION
USERS ROUNDTABLE
Cincinnati, OH

"Change, particularly in improved technologies, is inevitable. And changes in how all the stakeholder do business with each other is also inevitable. If integration is possible now more than ever because of technology, why not embrace it with a spirit of cooperation and collaboration with contractual arrangements that reflect all of this?"

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 start-up of CURT and has served as the Executive Director 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.



Steve Mongiardo

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

"In order to finish projects on time and on budget, it's definitely necessary for owners to explore new and innovative contracting approaches. Without creating a win-win contract for both owners AND the contractors, owners are going to find themselves with few bids and projects that can't even get off the ground...and that's a lose-lose situation for everyone involved."

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. Steve Mongiardo was elected to the CURT Board in June 2007. He is also Co-Chairman of the Workforce Development and Industrial Relations Committee.

CURT Committee Chairs

Education and Implementation Committee



Patrick Duffy

Chairman
TAMPA ELECTRIC COMPANY
Manager, Project Management
Tampa, FL

"Considering contracting strategy is always an important component of project planning. Contracting strategies are a matter of much discussion as today's market conditions have increased the pressure on owners to reduce the cost of construction, but one should examine contracting approach regardless of economic conditions to find the best value for each project."

Patrick Duffy has been managing projects at Tampa Electric for eight years and is currently responsible for a program of maintenance capital and plant improvement projects of \$50 million to \$100 million annually. Before joining Tampa Electric, he spent 10 years with a large engineering and construction firm working primarily for the process industries. Duffy has been active with CURT since 2002. He is also the Past President of the Florida Construction Users Roundtable (FCURT).



LEAN Construction Committee



Albert Schwarzkopf

Co-Chairman
MERCK AND CO., INC
Project Engineer Global
Engineering Services Durham, NC

"Traditional contracting methods create an adversarial relationship between parties, winners and losers. In order for everyone on a project to truly succeed there needs to be new ways for contractors and owners to both benefit. New contracting strategies try to create an environment where collaboration between all interested parties benefits all parties. Owners who continually look to take advantage of contractors will, in the end, lose. Contractor will not want to work for those owners, and those that do will charge premiums. With this in mind, if a contractor is willing to change their methods they have the potential to increase their profits."

Al Schwarzkopf has been with Merck & Co for 12 years and currently manages projects within the SE Region and Latin America for Merck. In his position he is responsible for all capital projects under \$5 million at the new Vaccine Manufacturing Facility in Durham, NC, and some additional projects throughout the Southeast region and Puerto Rico.

LEAN Construction Committee



George Lancos

Co-Chairman
JOHNSON &
JOHNSON
WORLDWIDE
ENGINEERING
& REAL ESTATE
(JWWERE)
Project Director
Vacaville, CA

"Owners would be wise to investigate alternate contracting strategies. With many owner's projects requiring a fast track approach, a relational type of contract where the owner, architect/engineer (A/E) and contractor are all party to the same agreement, could assist in delivering projects ahead of schedule and below budget. Further, the relational contract makes all parties dependent on each other in order to succeed and as they all work together they can provide a positive impact on minimization of owner's risk, increasing value and improving project delivery."

George Lancos has been with Johnson & Johnson for 18 years. He has held various positions within Facilities, Procurement and Engineering throughout his career and is currently a Project Director within the Worldwide Engineering group. He is responsible for large capital project implementation on the West Coast.

Workforce Development and Industrial Relations Committee



Gerry Sprentall

Co-Chairman
INTEL CORPORATION
CSC Operations Construction Manager
Chandler, AZ

"In order to prevent industrial construction from going the way of residential construction, it must keep pace by producing products faster and cheaper. This will help maintain a competitive advantage, and will help achieve the confidence and trust of the consumer with a relentless focus on environmental considerations. Owners can achieve this by using new technologies, reconsidering how they do things and applying the tactics of LEAN Construction—all of which can be used to achieve corporate objectives. To this end, CURT is the perfect forum for owners to share best practices, identify and address mutual issues, and create the relationships required to influence the direction of the construction industry, benefiting the owner, the contractor and the individual."

Gerald (Gerry) Sprentall is a Construction Manager for Intel Corporation. He has over twenty six years of industrial construction experience, and began his career in 1981, working in nuclear power, petro/chemical, pharmaceutical, food and beverage, and for the past 12 years, the microelectronic industry. Active in a variety of professional organizations, Sprentall also serves on the NCCER Board of Trustees. He holds a Bachelors Degree in Industrial Construction Management from Colorado State University.



Safety Committee



John (Jack) S. Flannery

Co-Chairman
CONOCOPHILLIPS
Manager, HSE, Global Project Development
Houston, TX

"Supply and demand issues are driving the commercial and industrial construction efforts in the United States. Currently the U.S. consumes more finished petroleum products than it manufactures daily, so it must turn to the market for these products. Unfortunately, with the rest of the world becoming competitive, those finished products are also desired by developing nations. When it comes to construction, the growing volume requires materials and people—both of which are also in extremely short supply. Therefore, owners must become partners with contractors, as an owner of choice. Basically, if the contractor wins, the owner wins! From a design and construction safety standpoint, this is the only way it can go for both parties to complete projects safely, on time and under budget. The CURT Owners Blueprint for Safety has exactly the Health, Safety & Excellence (HS&E) management system template that will facilitate this partnership!"

Jack Flannery has been in the safety, occupational health and environmental field for the last 30 years. His current position is Manager of HSE for Global Project Development. Prior to the merger, Flannery worked for Conoco/DuPont on a variety of positions spanning 18 years as Refinery HSE Manager in Billings, Montana; Corporate Significant Incident Planning in Houston, Texas; Manager of HSE over Southeast Asia in Kuala Lumpur, Malaysia; Project HSE Manager in the Czech Republic; and HSE Principal Consultant for Project Development and Management in Houston, Texas. Flannery holds a Bachelor of Science degree in Industrial Design from Eastern Washington State University, and an MBA from Central Oklahoma State University.

National Conference Planning Committee



Jocelyn Scott

Chairman
DUPONT
Director of DuPont Capital Asset Productivity
Wilmington, DE

"It is now more important than ever to be running an efficient and effective project process. The high cost of materials and the shortage of quality labor demand that you do it right the first time and stay on schedule while doing it. Planning is critical—from the design stage to the construction site. Design errors are costly to fix in the field and material delays will hold you up days, months or even longer. CURT can help you find the tools to figure all this out. CURT is a great source of best practices. Going one step further, take part in committee work and read/ implement the new practices. You'll be glad you did."

Jocelyn Scott joined DuPont in 1984 where she has held numerous positions in engineering, operations and R&D. Prior to her current position she served as Director of DuPont Engineering Research and Technology. She has also held the roles of Executive Assistant to the Chairman & CEO, Business Engineering Manager for DuPont Teijin Films joint venture and Planning Manager for DuPont Engineering. Scott is active in industry organizations including the Construction Users Roundtable. She has served on engineering education advisory boards for the University of Delaware, M.I.T., Penn State, the University of Michigan and local boards in support of minority engineering education.



Process Transformation Committee



Charles G. Hardy

GENERAL SERVICES
ADMINISTRATION, CCM
Deputy Director, GSA PBS Great Lakes
Region Office of Property Development
Chicago, IL

Charles Hardy is also on the CURT Board of Trustees. See page 20 for more information.

National Conference Planning Committee



Norbert W. Young, Jr., FAIA

Vice Chairperson
THE MCGRAW-HILL COMPANIES
President
New York, NY

"It's simple. The commercial and industrial construction industries are doing well as opposed to the housing industry because demand is driving commercial and industrial construction forward. However, there are a number of negative factors impacting the industry, such as rising fuel prices and worker shortages. The big challenge for owners will be to balance these factors by achieving higher productivity by utilizing virtual design and construction. Owners must also continue to drive education initiatives and implement training programs in the areas where they have projects."

Norbert W. Young, Jr., FAIA, joined McGraw-Hill Companies in December 1997 as Vice President, Editorial, for Dodge. His knowledge of their brands—Dodge, Sweets, Architectural Record, Engineering News-Record, GreenSource, 11 Regional Publications and construction.com—has been instrumental. Young is a registered architect who holds a Master of Architecture degree from the University of Pennsylvania. His professional affiliations include The American Institute of Architects, where he is a Fellow; the Urban Land Institute; the Construction Specifications Institute; and the International Alliance for Interoperability, where he served as Chairman of the IA-INA Board of Directors. Prior to McGraw-Hill, he was president of the Bovis Construction Group's Bovis Management Systems; was a partner at Toombs Development Company, where he managed all aspects of design and construction; and spent 12 years as a practicing architect in Philadelphia. ●

Booming AND Busti



Cracking the Economics Code

The “R” word. Recession. It never used to be a dirty word...but it is now. The “R” word has yet to be used to officially describe the current state of the U.S. economy despite the current state that the U.S. economy seems to be in. In actuality, the “R” word may not formally be tossed around for another couple of years.

An official ruling on whether the U.S. is in recession is made by the National Bureau of Economic Research (NBER). They define a recession as, “A significant decline in economic activity spread across

the economy, lasting more than a few months.” The decision is based on final figures on employment, personal income, industrial production and sales activity in the manufacturing and retail sectors. It may take the NBER a year or more to sort out all the data but right now, other economic experts are taking the lead.

Merrill Lynch is one such expert. Around the same time that the NBER didn’t use the word recession, Merrill Lynch did. David Rosenberg, the bank’s Chief North American Economist argued in January

2008 that a weakening employment picture and declining retail sales signal that the economy had tipped into its first month of recession. Merrill, one of Wall Street’s biggest casualties of the sub-prime crisis, was the first major bank to declare that the world’s biggest economy is, indeed, an economy in recession.

His view, however, was at odds with some other forecasters on Wall Street. The Lehman Brothers, for example, went so far as to issue ten reasons why the U.S. economy would not enter into a recession.

ng in Construction:

The reasons were shortlived, though. Soon after writing them, The Lehman Brothers joined the chorus of economists who said the economy was, indeed, in recession.

Many factors have had a hand in creating this situation. The one that has arguably received the most attention is the sub-prime debt fiasco. Voted the American Dialect Society's word of the year, sub-prime debt used to be a term only lenders and bankers tossed around. Now it's a term that has worked its way into every day vernacular. Yet, while there's a definite bust in residential construction, commercial and industrial projects are booming.

This, however, is destined to slow down, says David Wyss, a Chief Economist at Standard & Poor's. He predicts that, "Commercial construction will decline but it will happen later and not as much as residential building. The nonresidential sector didn't have the bubble that residential had. Fortunately, developers were stopped before they could overbuild."

Wyss is one of those economists who isn't skirting around the "R" word. In fact, he believes that the U.S. economy is, indeed, in a recession—even if just a mild one.

When it comes to construction, Wyss predicts that the recession will weaken demand for office, retail and hotel space, slowing down construction very sharply. "We expect to see continued declines in new nonresidential starts. We anticipate that declines in activity will last through mid-2009 with a total drop of more than 10 percent."

Wyss also believes that the sub-prime debt crisis plaguing residential housing will, to some degree, seep into the commercial and industrial construction industry. In fact, he says, "We are already seeing problems when it comes to financing projects. I know

of several ventures that have been delayed because of financing issues. We are also seeing some sales falling through all together."

"We are already seeing problems when it comes to financing projects. I know of several ventures that have been delayed because of financing issues. We are also seeing some sales falling through all together."

Oil prices are also cause for concern. Surging past \$143 a barrel for the first time ever in late June 2008, the price for a gallon of gas continues to hit all-time highs in the United States. Supply concerns and a fragile global economy are driving the price of oil to new heights. Continued tensions in the Middle East are also pushing prices up.

"Higher oil prices," says Wyss, "have raised construction costs because of higher transportation and material's costs. We expect that these costs will cut into travel plans, largely impacting hotels. There will also be more of a push for green construction to cut energy use, which also raises building costs."

Do owners have reason to be concerned? Yes, says Wyss. An economic slowdown, the possibility of unfinished projects because of a slow-down, and the possibility of sub-prime squeamishness affecting projects and investments—"All of the above are problems right now."

John Mitchell, Principle at M&H

Economic Consultants agrees. He says that five consecutive months of decline in unemployment is a pretty strong indicator that the U.S. is in a recession, even if those in charge won't officially say it. However, he does note that the Gross Domestic Product has yet to fall. "It's growing very slowly but it has not gone down," he says. "It's semantics though. There's not much difference between growing at less than one percent and declining at half a percent. While we may not be in a recession, if I had to bet, I'd say that we are."

However, Mitchell notes that commercial and industrial construction are worlds apart from the residential sector. "While ten percent of houses built since the year 2000 are vacant, the nonresidential side has been very strong. The accommodations section, power generation, education, hospitals—they've all held up."

But, he cautions, the commercial and industrial sectors are not immune. "We

An owner's take on the current economics

"The residential construction industry relies on the actions of consumers, bank rates and a myriad of market nuances. A negative perception in this market, such as the sub-prime loan issues or tightening credit, can cause an immediate and dramatic impact to this market. Conversely, much of the industrial construction is ongoing and is less sensitive to daily new and events. Many of the capital intense projects in this construction sector are long-term and strategic in focus and need."

Allen Bunner, Tyco International

are starting to see a softening on the nonresidential side. The credit issue is very big. Banks have taken major hits and so their credit standards have tightened considerably. Everyone is going to feel that, no matter what side of the fence they're on."

Mitchell points to the Federal Reserve's Beige Book, which is published eight times per year. Each Federal Reserve Bank gathers anecdotal information on current economic conditions from bank and branch directors, and interviews with key business contacts, economists, market experts, and other sources. In the June 2008 edition (found online at www.federalreserve.gov/FOMC/BEIGEBOOK/2008/20080611/FullReport.htm) reports on nonresidential construction activity were mixed. While contacts from Chicago and Minneapolis saw slight increases in activity, Philadelphia, Cleveland, Richmond, Atlanta, and Dallas reported easing or weak levels of construction. In addition, a

number of Districts—Cleveland, Richmond, Chicago, and Dallas—reported that obtaining financing remained difficult for some projects.

"There's a lot of uncertainty out there," cautions Mitchell. "If I was an owner, I'd take a very close look at my financing situation because it's going to be a tougher financing climate than before, and it's not going to go away any time soon. There's been a sharp deterioration in business confidence and when people make multi-million dollar construction deals they need to have confidence. It's going to take some time—there's not going to be a vigorous surge back."

Mitchell predicts that while the growth rate will pick up in the second half of 2008, it won't be a significant jump. He foresees a one and a half percent jump for 2008 and two percent into 2009. "It's going to take some time to work out the bug," he says.

Just how much time is impossible to predict. However, Robert A. Murray,

Vice President of Economic Affairs for McGraw-Hill Construction, expects that a pattern bearing some resemblance to past construction cycles will emerge. This means that commercial building will follow the path of housing, and then institutional building and public works will follow the path of commercial building, albeit to a lesser degree.

"Construction has typically been a cyclical business, with periods of growth followed by periods of decline," he says. "The declining pattern is anticipated to play out over the next two years."

Murray, who was a guest speaker at the jointly hosted CURT/ENR Construction Business Forum in June 2008, walked event attendees through a mid-year update (now available at www.construction.com), touching on a number of different construction sectors, including residential, commercial, institutional, manufacturing and public works/electric utilities. In summary:

Commercial: Murray's Construction Outlook 2008, Midyear Update tells the



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story of a commercial building sector that was rising up until the credit crunch that emerged during the summer of 2007. Since then, this sector isn't showing the same strength it had even a year ago. Bank lending is also a factor as standards have tightened making it increasingly difficult for projects to get financing. As a result, in 2008 commercial building is expected to drop 16 percent to 875 million square feet.

Institutional: While the institutional sector showed moderate expansion in 2005 and 2006, there was a slight decline in square footage in 2007. This is expected to continue for 2008 with square footage predicted to be down three percent.

Manufacturing: While the manufacturing building industry has been unexciting in recent years—holding steady at 83 million square feet in 2007—contracting in dollar terms in this sector has actually been upbeat; up 33 percent in 2006 and 25 percent in 2007. It is expected that in 2008 the

weak U.S. dollar will continue to provide some relief to the manufacturing sector as it makes domestically produced goods more competitive in overseas markets. In addition, while manufacturing plant square footage is expected to slide 6 percent in 2008, the dollar volume is forecast to rise 7 percent, lifted by the start of a \$7 billion expansion to an oil refinery in Texas, among other large projects.

Public works and electric utilities: The public works sector has experienced four straight years of expansion, advancing 7 percent in 2007 to \$120.4 billion. For 2008, public works is forecast to edge up an additional 2 percent to \$122.9 billion, helped by more growth for transportation projects given the 5 percent hike to the federal-aid highway program approved by Congress for the current fiscal year. Tighter state budgets will have a more discernible impact on the public works sector in 2009.

While a recession is sure to hit some sectors harder than others it seems conceivable that it won't hit the commercial

and industrial sectors quite as hard as it has already hit the residential side of things. The bust in residential building, it seems, may be isolated.

The construction climate for owners is certainly different than it was just a few short years ago. However, a year from now—when the “R” word is likely to be “officially” used—most owners will still be experiencing success on their projects. “Owners may have to go about commissioning projects in a different way than they’re now used to,” says Mitchell, “but that’s the nature of the beast. It’s a safe bet that even with a slowdown, owners in the commercial and industrial sector will make it through this slump just fine.” ●

For more information:

David Wyss: david_wyss@sandp.com

John Mitchell: jwmecon@aol.com

Robert A. Murray:

robert_murray@mcgraw-hill.com

Residential down, non-residential up

Nonresidential construction spending has risen almost 12 percent over the past year, despite the slump in the residential sector, according to the U.S. Department of Commerce's construction spending report from April 2008 (released in June 2008). Total nonresidential construction spending achieved an all-time high in April (\$678 billion), with private nonresidential construction spending up 15.4 percent for the year.

Of the 16 reported nonresidential sectors:

- 13 produced year-over-year spending gains, with the largest growth in lodging (41.8 percent), public safety (27.4 percent), manufacturing (25.7 percent) and power (22.5 percent).
- 3 nonresidential segments experienced reduced construction spending activity over the past 12 months (religious construction, water

supply construction and commercial construction).

- On a monthly basis, 11 of 16 nonresidential sub-sectors reported increased spending. Total construction spending, both nonresidential and residential, was \$1.121 trillion in April 2008, based on a seasonally-adjusted, annualized basis. This represents a 0.4 percent decline from a month earlier and a 3.9 percent fall from April 2007.

So, what does this mean? Well, according to Associated

Builders and Contractors (ABC), even with an economy that is expanding at less than one percent on an annualized basis, the level of nonresidential construction spending continues to rise. In fact, given the huge increase in energy prices, construction spending related to power generating facilities is expected to be a source of strength to the construction industry as the United States looks to build its capacity to be more fully self-sufficient.

	November 2007	December 2007	January 2007	February 2007	March 2008	April 2008
Construction Spending (trillions)	\$1.16	\$1.14	\$1.14	\$1.13	\$1.13	\$1.12

Chart courtesy of Associated Builders and Contractors.

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Alternate Contracting Strategies for Owners During Difficult Times

“Just how bad is it?” asked Robert Volkman, a Consultant for the Construction Users Roundtable (CURT) at the start of a CURT Membership Meeting and Workshop in February 2008 in Orlando, FL. The discussion that followed included stories from owners who described a market where contractors are busy, bidding isn’t as competitive as it used to be and owners are having trouble getting their work done. One attendee spoke of a multi-million dollar job that received only one bid from 14 contacted contractors.

Carl McColey, an Engineering Manager for DuPont, noted during his presentation that a number of isolated factors have snowballed together to form one major predicament. The factors—significant global demand increases for materials and services; skilled worker availability that is not keeping up with demand; hurricane recovery; simultaneously growing sectors (power, chemical, oil and gas); and competition between owners for contracted services—is making it necessary for owners to look at alternative approaches.

He described one major project from the southwest United States that started with a 100 percent lump sum strategy. However, bids came in at extreme ranges with some contractors even refusing to bid. In addition, because of a lack of skilled

workers, per diems and overtime were required, and quality and productivity suffered.

In response, DuPont had to explore new ways of doing business which, for them, included striking up alliances with key contractors. Alliances, explained McColey:

- Provide access to the best people at a competitive cost (not necessarily the lowest cost);
- Reduce cycle times;
- Allow reasonable flexibility at lowest cost;
- Allow life cycle data for full facilities/programs rather than project by project;
- Reduce administrative costs; and
- Promote mutual competitiveness.

“The way we were doing projects just wasn’t working anymore,” says McColey. “We were having to change strategies mid-project and there was an escalation in instability which caused estimating challenges. We found that alliances with specific contractors and incentives for workers that had to do with safety, attendance and productivity, rather than per diems and overtime, are what enabled us to get our projects back on track.”

Egon Larsen, Global Construction Manager for Air Products and Chemicals, Inc., says that it’s just good business sense for owners

to have a lot of different strategies in place. For Air Products that has meant setting up a team to evaluate contracting strategies, looking at what they currently do and where the market currently is. "In today's market the risk for construction is shifting," he explains. "Five years ago, contractors were willing to take on construction risks. Today, it's not that they don't want to take on those the responsibilities, it's that they can't control the workforce so the risk is just too high. One bad project could wipe them out."

That's why, says Larsen, Air Products and other owners are taking on these risks, even though they haven't had to in the past. "Ten years ago we'd put a scope for work together, contractors would bid on it, there'd be a fixed price, and contractors would work within that price. They'd hire all the subtrades and we'd check to make sure they were on schedule, but as far as the budget went, as long as they weren't going over the set price, we didn't worry about it too much."

Now though, says Larsen, "We've moved to a cost reimbursable/fixed fee model. The contractors still get the details on the costs because they have the tools to do it, but we're taking the risk on the labor. We're paying the contractor what they're paying for the workers—reimbursing them, so to speak. The fixed fees are those that are stable, like the costs to hire secretaries and other on-site administrative personnel."

So, do contractors like this way of doing things? Larson says it depends on the region. "The less stable the region, the more they want to eliminate all possible risks, especially when it comes to hiring subtrades."

Collaboration is another area where Air Products has seen results. Larsen says that in the past, they would have had an engineering firm lay out the scope of the engineering work, based on the different disciplines involved. "With our new collaborative strategy, the construction contractor meets with the engineering firm and gives suggestions on how the process can be made better. After all, they're the ones who will actually be doing the work. We've found that this progressive way of doing things has reduced costs substantially because we're coming up with value-added ideas in the conference room that can then be taken to the construction site."

Larsen says that in his experience contractors have been happy with this way of doing things because they can use the process as a marketing tool, essentially showing other potential clients how much money they were able to save for Air Products. "We, as owners, are happy because we're saving time and money. Contractors are also happy because they've added value to their day, working out problems ahead of time so that once on-site, they don't have to re-do jobs if problems pop up. It's a win-win situation."

So, just how bad is it? Well, if you're able to declare a project a win-win in today's tumultuous construction climate, then it must not be too bad. That is, of course, if you're willing to try out fresh ideas and new ways of doing things. ●

What do contractors have to say?

The workshop in Orlando featured an all-contractor panel, comprised of Jim Early from BE&K, Bill Rudolph from Rudolph/Libbe Companies, and Mike Kenig of Holder Construction. Here's some of what they had to say:

Q What is the contractor's perspective on the current marketplace?

Jim Early: Labor is short and the shops are full. There's not necessarily more projects but they are getting larger.

Mike Kenig: We're definitely seeing more projects. All aspects of the industry are growing—except maybe housing.

Bill Rudolph: Every single sector is busy in the Midwest. To top it off, there's also a number of mega-projects going on.

Q Are contractors more selective?

All: YES!

Q What is your criteria for selecting a project?

Jim Early: BE&K has a formal process for selecting that includes looking at our relationship with the owner, the project's timing and resource availability, and the labor market available, specifically the skill level.

Mike Kenig: Holder has a very formal process to evaluate projects. Our relationship with the owner is the number one criteria. For us, the owner absorbing more risk is not an issue—we don't mind assuming the risk.

Bill Rudolph: We look at a number of areas such as whether the project fits into our scope of capability, if the risks and the rewards are balanced, and the ethics of the owners we'd be working with.

Q What have you seen/do you predict will be the result of the economic slowdown?

Jim Early: We're seeing some delays on industrial projects and others are beginning to slow down.

Mike Kenig: We've also seen signs of projects being delayed.

Bill Rudolph: I think that during the downturn project selection will be even more important. Risk allocation will also become critical when choosing which projects to participate on.

Q Should owners require the use of the Building Information Modelling (BIM)?

Jim Early: Yes! BIM adds value. Owners need to understand its strengths and weaknesses and use it to its best capabilities.

Mike Kenig: BIM saves money after the initial investment and training. We've only seen a few owners though, who have specifically required its use on a project.

Bill Rudolph: BIM can eliminate waste and associated risks. It's ideal for when times are tight because when errors go uncaught (making it to the construction site) they can really set back projects.

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Workforce Winners

The Awards Gala at the CURT National Conference also honors the people and organizations that have created extraordinary and innovative training programs. Here are comments from some of the 2007 Construction Industry Workforce Award winners.

Program: Mississippi Construction Education Foundation (MCEF)

On winning the award: "Winning this award was important to our foundation because it proved to the board that their proactive approach to workforce issues is recognized by the industry. We've done much to demonstrate that construction is a career, not just a job. The success of our students proves this." *Gary Bambauer, President, MCEF*

Program: The Okaloosa School District CHOICE: Construction Technology Institute (CTI)

On winning the award: "When designing and implementing this program we determined that the industry would drive the initiative from program design to the curriculum that would be used. Winning this CURT award is a strong validation that we are on track in meeting the needs of the industry, both owners and users. In addition, it validates that the training we provide is relevant to our students and will open doors of opportunity and prepare them to take best advantage of those opportunities. Winning this award has definitely put CTI on the map and in the spotlight." *Matt Clark, CHOICE: Program Specialist*

Program: Gulf Coast Workforce Development Initiative

On winning the award: "The Gulf Coast Workforce Development Initiative was honored to be recognized by CURT for its construction workforce development efforts along the Gulf Coast. The recognition reflects owner company support for the unique workforce development solutions that will be required by the industry to overcome future workforce shortages." *Tim Horst, Bectel, Initiative Program Manager*

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

On winning the award: "One thing organizations face—especially non-profit organizations—is being able to substantiate that the programs they offer are creditable. Winning this award from CURT gave creditability to us, not only validating our training program but also our philosophy, and methods, showing that we can all come together as partners to deliver an excellent product. The award gave us the 'Seal of Approval'." *Andrea Bills, Work Paths Director*

Each year, at the CURT National Conference, the Construction Industry Safety Excellence (CISE) Awards are presented to the contractors, owners and LUC's that epitomize the importance of good safety practices in their everyday work environment. In this issue of The VOICE, we asked past recipients to describe what winning this award meant to them.

Company: L-CON Constructors

Class: Contractor Safety Award

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

On winning the award: "What I like the most about winning these awards is that it is proof and point that our safety processes and procedures are working, and that the time and effort we've invested has paid off. Winning proves to our current and prospective employees that we care about their well-being and that we put the necessary steps and procedures in place for them to do their job safely and efficiently. I also have no doubt that this helps us sell our company to customers when the competition is tough and they're looking for what sets us apart from the pack. Winning this award is one more ingredient that allows us to take pride in what L-CON Constructors is and what we stand for: safety, quality and performance." *Mark A. Peavler, President, L-CON Constructors*

Company: S&B Engineers & Constructors, Ltd.

Class: Contractor Safety Award

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

On winning the award: "Winning this award means EVERYTHING and NOTHING; everything because it is a measure of our safety culture that we can share with the outside world, with great pride. NOTHING because our true award is not having people endure pain in the process of our company pursuing a profit. While trying to dig ourselves out of a hole on safety performance in the mid-1980s, we accidentally discovered Zero Accident/Zero Injury on our own. Current wisdom at the time was that accidents were just a part of construction—the fault of careless workers. While trying to set a new goal for safety, we examined three years of accidents, wanting to separate the avoidable from the unavoidable. We checked through each accident twice and found none that were unavoidable. This hit us hard. At one time we blamed our employees if they got injured. Then we realized that we, the management, were to blame for not recognizing that we were responsible for the work environment. This was a great paradigm shift in our organization and led to the zero injury policy we have today." *James G. Slaughter, Jr., President, S&B Engineers and Constructors, Ltd.*

Continued on page 34

Share how winning a CURT Award benefited your company!
Email shannonl@matrixgroupinc.net.

Company: Big J Enterprises, LLC
Class: Contractor Safety Award
Category: 100,000 to 500,000 man hours/year

On winning the award: "Not only does winning this award recognize our team for their commitment to safety excellence, it also proves to our clients that we are leaders, not followers when it

comes to our safety policies and practices. They are happy knowing that safety incidents will not disrupt the work we do, and our employees are happy knowing their well-being is paramount to everyone's success. We want to provide a safe work environment and the security of future work for our employees, and that's exactly what we have done." *Dick Teater, President/CEO, Big J Enterprises, LLC*

Company: P&G
Class: Owner Safety Award
Project(s): The Folger Coffee Company / Green Bay Wildfire Project

On winning the award: "It is a great honor for P&G to receive the CISE Awards for safety from the Construction Users Roundtable. Safety is a core value for the Procter & Gamble Company. It is a culture that is embedded in all P&G employees, with our safety motto being, 'Nothing we do is worth getting hurt for.' These two recognitions are examples that P&G plants, offices and contractor personnel practices continually improve everyday around the globe.

As a founding member of CURT, P&G has been an industry leader in driving safe practices into the construction industry. As a company we have invested greatly in keeping our focus on ensuring our plant sites are safe and secure. We have valued long-term relationships with our contractors who share our vision of zero incidents." *Joe Gionfriddo, Corporate Engineering-Global Construction Management Process Owner, Procter and Gamble Company*

Company: Merck & Co. Inc.
Class: Owner Safety Award
Project: Global Engineering Services INSB Project

On winning the award: "CURT's recognition of safety performance is only given to companies who demonstrate excellent performance, leadership and innovative practices in the area of construction safety. Merck is one of those companies." *Greg Landis, Director, West Point Regional Engineering*

"Ultimately, we can improve safety, save money, enhance productivity and, most importantly, avoid injuries. To be recognized by an organization like CURT is a true testament to everyone's commitment and personal ownership to safety in Merck Global Engineering Services." *Jeanne Stahl, Vice President, Global Safety & Environment* ●



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A Construction Industry Revolution

ConsensusDOCS 300 + BIM + LEAN Construction = Amazing Results

By James L. Salmon, Esq., President, Collaborative Construction Resources, LLC (CCR) and Richard D. Cardwell, Esq., President, Construction Owner Resources, LLC (COR)

In past issues, The VOICE has covered ConsensusDOCS^{1,2}, Building Information Modeling³ (BIM) and LEAN Construction⁴...albeit all separately. Combining these collaborative ideas within one article has yet to be done here on paper and, to a large extent, blending these ideas in the same contract and project is virtually unheard of within the industry. Doing so, however, will truly be revolutionary for the U.S. construction industry.

ConsensusDOCS 300: part one of this revolutionary combination

The model for ConsensusDOCS 300 was drafted by a group which included owners, designers, contractors and sureties using a successful collaborative agreement from a project that had just been completed. ConsensusDOCS 300 responds to the

question, “What if owners, contractors, subcontractors, designers and sureties could all agree on a standard contract that was fair to all parties? According to the ConsensusDOCS 300 website (www.consensusdocs.org) the creation of these contract documents—which brings together 21 leading construction associations—has done just that.

ConsensusDOCS 300 is a landmark agreement that adopts a collaborative project delivery (paragraph 3.2) where the owner, designer and constructor (construction manager/general contractor) are all equal parties to the same agreement whose interests are aligned to make consensus decisions in the “best interest of the project” through a management group (Article 4) and a collaborative project delivery (CPD) team that also includes

the major trade or subcontractors at the beginning of the design (paragraph 3.3). ConsensusDOCS 300 is also groundbreaking because the parties can share risks and rewards up to specified limits (Article 11), agree to a Safe Harbor Risk Allocation (paragraph 3.8), it implements Target Value Design (paragraph 6.13), and calls for unique Cost Modeling and Project Target Cost Estimates (PTCE) (Article 8).

BIM: part two of this revolutionary combination

ConsensusDOCS 300 provides that the owner, designer and constructor may optionally establish a BIM approach to design and construction that provides for a continuous and immediate availability of reliable, integrated and coordinated



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design, scope, schedule and cost information and execute a BIM Addendum for BIM parameters, standards and technological requirements (paragraph 6.9). The ConsensusDOCS organization released a universal BIM Addendum for all of its ConsensusDOCS agreements in June 2008, which can be tailored to and supplemented for ConsensusDOCS 300.

ConsensusDOCS 300 also expressly permits the constructor to sign joining agreements with key trade contractors and suppliers early on or at the beginning of the design process to provide preconstruction services and facilitate an integrated, collaborative design process as part of the CPD Team (paragraph 12.1). This design process with key trade contractors and suppliers can include the use of BIM, if that option is used under paragraph 6.9.

LEAN construction: part three of this revolutionary combination

LEAN construction principals are the foundation of ConsensusDOCS 300 and are generally incorporated through the adoption of collaborative project delivery and the principals of LEAN construction project delivery that require parties to recognize:

- 1) Success of all members of the CPD team is intertwined;
- 2) Roles, responsibilities and expertise must be organized and integrated to benefit the whole;
- 3) Expectations and objectives must be articulated and aligned;
- 4) Open communications, transparent decision-making, proactive and non-adversarial interaction, innovative problem-solving and the sharing of ideas must be their hallmark; and
- 5) Continuous improvements to the project planning, design and construction processes must be sought while the risks and rewards of achieving the project objectives are shared (paragraph 3.2).

ConsensusDOCS 300 requires the designer and constructor, along with the CPD team, to employ a LEAN Construction inspired quality plan that addresses standardized and continuous improvement of work practices, task-based quality

checklists, methods to provide for a review of early work products and assure quality performance, procedures for immediately addressing quality failures and outstanding performance and standards by which to measure and track quality performance (subparagraph 3.10.1).

ConsensusDOCS 300 also requires the CPD team to develop a project planning system that includes the collaborative development of a milestone schedule that

embraces the pull scheduling approach, phase or progression schedules, "make-ready" look-ahead plans, weekly work plans and methods for recording, measuring and improving the reliability of project planning (paragraph 7.2). This process appears to be inspired by LCI's Last Planner System.

ConsensusDOCS 300 also mandates the constructor, trade contractors and subcontractors submit a construction operations quality plan that includes LEAN Construction

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techniques and processes such as locating items that will be used during construction so as to facilitate their efficient and responsible use, standardizing and constantly improving construction operations practices and creating a culture of discipline and continuous improvement (paragraph 13.2).

The academic underpinnings of this revolutionary combination

The mission statement of the twenty year old Center for Integrated Facility Engineering

(CIFE) at the prestigious Stanford University is, "To be the world's premier academic research center for Virtual Design and Construction (VDC) of architectural, engineering, construction (AEC) industry projects."⁵ CIFE defines VDC as, "The use of multi-disciplinary performance models of design-construction projects, including the product (i.e., facilities), work processes and organization of the design-construction-operation team in order to support business objectives."⁶ CIFE is the coordinator of

and repository for an extensive collection of academic Bulletins, Technical Reports and Working Papers on VDC.

CIFE's Working Paper (#093) entitled, "A Guide to Applying the Principals of Virtual Design & Construction (VDC) to the LEAN Project Delivery Process," dated December 2006, found the following support for combining collaborative or integrated project delivery with BIM and LEAN Construction:

1. "VDC tools such as product, process and organization modeling tools can be applied very effectively to accomplish the objectives of the LEAN Project Delivery Process (LPDS).
2. Product modeling tools like 3D modeling can be effectively applied to the project definition, LEAN design and LEAN assembly phases of the LPDS.
3. Product and process modeling tools like 4D models can be applied during the LEAN supply and LEAN assembly phases of the LPDS.
4. Product, organization and process modeling tools such as the product-organization-process or POP method can be used to analyze the tradeoffs between product, organization and process during the Lean Design phase of the LPDS."⁷

Sutter Health's revolutionary success

The Sutter Health Camino Medical Group Mountain View Project⁸—a \$96.9 million, 250,000 square foot medical office complex with 410,000 square feet of parking, completed in 2007—is one of the first U.S. construction projects to utilize the revolutionary combination of collaborative or integrated project delivery, BIM and LEAN Construction, even though the actual contracts entered into by the parties were traditional in form and pre-dated the previously mentioned Form of Integrated Agreement (FOIA) and ConsensusDOCS 300. The project, which was the winner of the San Francisco American Institute of Architects (AIA) 2007 Honor Award for Integrated Practice, is considered a prime example of best practices used throughout the previously mentioned CIFE Working Paper (#093) dealing with the application



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

Barbara Moses, Engineer, Skanska in New York

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

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of VDC to the LEAN Construction Project Delivery Processes.

In the independent 2007 CIFE/CURT VDC and BIM Value Survey Case Study, a part of CIFE's December, 2007 Technical Report (#TR171) entitled, "VDC Use in 2007: Significant Value, Dramatic Growth and Apparent Business Opportunity," the Sutter Health Camino Project was one of the projects closely examined and highlighted.⁹ In that case study, the Sutter Health Camino Project was found to have used an integrated 3D BIM model of the building built by the Construction Manager/General Contractor DPR Construction and its subcontractors (Cupertino Electric, Southland Industries, JW McLenahan, AFCCO) from conceptual 2D MEP drawings and used it to maximize clash elimination and field productivity.

According to this independent case study, the following successes were achieved on the Sutter Health Camino Project:

1. Mechanical Subcontractor Southland Industries was able to process and fabricate and assemble over 90 percent of its duct and piping materials in production shops off-site resulting in 30 percent fewer sheet metal and 55 percent fewer pipe fitter hours in the field, with a savings of over \$400,000. In addition, there were only 43 hours of rework on 25,000 hours of total labor.
2. Across all trades, there was a 20 to 37 percent increase in field crew productivity.
3. The BIM effort cost Sutter Health an extra \$410,000 (0.5 percent of the project's budget), but resulted in a project with zero change orders due to field conflicts, a completion that was nearly 6 months early and nearly \$3 million in avoided costs.
4. Sutter Health's LEAN Construction Project Delivery Processes required early interaction between the design and construction teams and used 3D BIM models to capitalize on value engineering worth nearly \$6 million.
5. Sutter Health's owner's representative said the project, "Had proceeded better than any he had ever seen in his 30 years of experience and that Sutter Health will now be requiring the use of BIM from initial design on all future projects."

Another detailed study of the Sutter Health Camino Project entitled, "Integration of Virtual Design & Construction and Lean Project Delivery Process—Case Study of Medical Group Project, Mountain View, CA, USA" was prepared by Atul Khanzode, Director of Virtual Building, DPR Construction, Inc.¹⁰ ●

This article provides general information about the subjects covered and is not meant to be all-inclusive or comprehensive, and is not legal advice. Readers should obtain their own legal counsel on the subject matters as needed.

The opinions in this article are not necessarily those of CURT.



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website-based training to assist the U.S. construction industry, both generally and on specific projects, to take full and complete advantage of the historic convergence of collaborative or integrated project delivery/contracts, BIM and lean construction. James is an active member of the National Building Information Modeling Standards (NBIMS) Project Committee's Business Process Integration Task Team (BPITT). James has fifteen years of experience as a construction lawyer, including but not limited to, construction dispute resolution and litigation matters. James can be reached at (859) 802-1118 or James.Salmon@CollaborativeCR.com.

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THE WEBSITE:
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THE HISTORY:

Ameristar Casinos, Inc. is a leading Las Vegas-based gaming and entertainment company known for its premier properties characterized by innovative architecture, state-of-the-art casino floors, and superior dining, lodging and entertainment. Ameristar's focus on the total entertainment experience and the highest quality guest service has earned it leading market share positions in the markets in which it operates. Founded in 1954 in Jackpot, Nevada, Ameristar has been a public company since November 1993. The company has a portfolio of eight casinos in six states: Ameristar Casino Resort Spa in St. Charles (greater St. Louis, Missouri); Ameristar Kansas City; Ameristar Council Bluffs (Omaha, Nebraska and southwestern Iowa); Ameristar Vicksburg (Jackson, Mississippi, and Monroe, Louisiana); Ameristar Black Hawk (Denver, Colorado metropolitan area); Ameristar Casino Hotel, East Chicago, Indiana (Chicago, Illinois metropolitan area); and Cactus Petes and The Horseshu in Jackpot, Nevada (Idaho and the Pacific Northwest).

THE RIGHT NOW:

Attendees at the jointly hosted CURT/ENR Construction Business Forum in June 2008 were able to experience firsthand the luxury of Ameristar's new St. Charles facility. The property boasts a 400-suite hotel, a 7,000-square-foot spa, an indoor/outdoor pool, new convention facilities, numerous restaurants, and one of the largest casinos in the United States, with a 130,000-square-foot gaming floor featuring more than 3,000 slot and video poker machines and 97 table games.

"From the moment our guests enter this property, they enjoy a truly exceptional experience," says General Manager Jim

Franke. "We combine the finest modern finishes and most luxurious amenities with our trademark guest services to ensure Ameristar delivers an outstanding entertainment environment."

THE FUTURE:

Committed to offering high quality properties with a broad range of amenities, the company is now completing a 33-story, four-diamond-quality hotel at Ameristar Black Hawk. The hotel tower will feature an enclosed rooftop pool, full-service spa, and meeting and event space. Scheduled to be completed in the second half of 2009, the hotel follows a 2006 reconfiguration and expansion of the property's gaming area and a near-doubling of the capacity of the parking garage, to 1,550 spaces. Once completed, Ameristar Black Hawk will offer destination resort amenities and services unprecedented in the Denver gaming market.

In addition, Ameristar Vicksburg recently opened a new 1,000-space parking garage that provides direct access to the casino floor and a casino expansion that accommodates hundreds of additional gaming positions and a new live poker room. Two new restaurants and an upscale Star Club lounge will open at the property by this fall.

THE COMMITMENT:

Ameristar proudly supports the communities in which its Team Members live and work, through the company's charitable giving program, "Ameristar Cares." This three-part effort includes financial contributions to nonprofit organizations, an annual Team Member Workplace Giving Campaign and Team Member volunteerism.

During 2007, the company and its Team Members donated more than \$8.65 million to charitable organizations in markets where the company does business. Team Members are active volunteers in their

hometowns, each year giving hundreds of hours of their time for worthy causes such as the Cystic Fibrosis Foundation's Great Strides Walks, the American Cancer Society Relay for Life, Habitat for Humanity and many local organizations.

Ameristar is also committed to responsible gaming, with comprehensive and long-standing programs to address underage and compulsive gambling, as well as responsible alcohol consumption.

THE AWARDS:

In June 2008, Ameristar Black Hawk received First Place in the Renovation—\$10-million-\$99 million category—in the Associated Builders and Contractors Excellence in Construction Awards, which highlights top construction projects across America each year.

The award specifically recognized the 2006 reconfiguration and expansion of the property's two-story casino, which now includes 25 table games, including a live poker room, 1,600 slot machines and a Star Club.

THE FACTS:

- Ameristar has annual revenues of \$1.3 billion;
- Ameristar employs 9,000 in the United States; and
- Ameristar owns and operates properties in Colorado, Indiana, Iowa, Mississippi, Missouri and Nevada. ●



Ameristar's new St. Charles facility was the location for the jointly hosted CURT/ENR Construction Business Forum in June 2008.



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THE COMPANY:
ALBERICI CONSTRUCTORS

THE WEBSITE:
www.alberici.com

THE HISTORY:

Alberici Corporation, headquartered in St. Louis, MO, is the parent company for a collection of independent construction services enterprises operating throughout North America. Alberici Constructors, the largest of the enterprises, was founded in 1918 and provides general contracting, construction management, specialty contracting and design-build services across various markets including healthcare, power, automotive, manufacturing, food and beverage, industrial, and water/wastewater. In May 2008, Alberici was ranked as the 51st largest contractor in the U.S. by Engineering News Record, with annual revenue of \$1.130 billion.

THE RIGHT NOW:

To say Alberici is busy would be a massive understatement. Current projects include:

- SSM Healthcare St. Clare Health Center, Fenton, Missouri (\$146,000,000): Building Missouri's first "LEAN" hospital.
- Holcim (U.S.) Ste. Genevieve, Missouri, working in joint venture with URS (\$905,000,000): Building the world's largest single-kiln cement plant (estimated completion 12/2009).
- Ameren Coffeen Scrubber, Coffeen, Illinois (\$213,000,000): Installation of

two new wet flue gas desulphurization (WFGD) scrubber systems (estimated completion 2/2010).

- MUD Platte West Water Treatment Plant, Omaha, Nebraska (\$236,000,000): Increasing Omaha's drinking water capacity by 40 percent (completion 10/2008).
- Olmsted Lock and Dam, Ohio River, Illinois/Kentucky (\$1,400,000,000): Working as a joint venture partner with URS to build two 110' x 1,200' locks and a dam with 5 tainter gates utilizing a unique "wet" construction approach (estimated completion 2013).

THE FUTURE:

With a busy present, Alberici also has a busy future planned. Upcoming projects include:

- The Basin Electric-Leland Olds Station 1&2-AQC-WFGD (\$115,000,000): Installation of two WFGD units at the Leland Olds Station Power Plant in Stanton, North Dakota.
- Abengoa Bioenergy of Illinois, Madison, IL (\$40,000,000): A Bioenergy Facility for the production of ethanol fuel.
- Louisville Arena Structural Steel, Louisville, KY (\$18,681,766): The fabrication and erection of 3,486 tons of structural steel for the Louisville Arena.

THE SOCIAL COMMITMENT:

Over the past 90 years, Alberici has developed a reputation for being a good corporate citizen in the communities that

they work in. The commitment to give back is actually part of their Mission Statement: Alberici will be recognized as the leader in providing services to the highest standard of quality for our clients by:

- Treating everyone with whom we do business fairly and honestly;
- Working in partnership with our clients, performing our services with skill and integrity;
- Affording our employees rewarding opportunities in a safe environment;
- Seeking continuous improvement and innovation in our performance;
- Reinvesting in our firm to ensure stability and growth; and
- Being a responsible corporate citizen in the communities where we work.

THE AWARDS:

Over the years, Alberici has been recognized for innovation, quality, diversity, partnering, cost effectiveness and best practices, to name a few. Their headquarters in St. Louis, for example, has attracted much attention for its green design which has attained the highest level of LEED® certification possible, LEED® Platinum.

Here is a list of some of the awards associated with 8800 Page, the Alberici Corporate Headquarters:

- 2005, Associated General Contractor's "AON - Build America Award".
- 2006, AGC/AON Build America Award – Environmental, New Construction.
- 2006, Green Building Initiative's Green Globes – Four Globes.
- AIA Central States Region Honor Award for Excellence in Architecture.
- 2006, AIA/COTE Top Ten Green Buildings – "Newsweek".
- 2006, Missouri Recycling Association Outstanding Corporate Leadership – Recycling and Green Building.
- 2006, Phoenix Award – EPA Region 7 & Green Building Award.
- 2007, BusinessWeek/Architectural Record Citation for Excellence Award. ●



Alberici's new headquarters has achieved LEED® Platinum certification.

THE COMPANY: THE AMERICAN INSTITUTE OF ARCHITECTS

THE WEBSITE:

www.aia.org

THE HISTORY:

Founded in 1857, the American Institute of Architects (AIA) was created to develop standards and criteria for the licensure of architects (prior to its formation, anyone could call themselves an architect). When the constitution was officially adopted in 1858, the mission was declared, "To promote the artistic, scientific, and practical profession of its members; to facilitate their intercourse and good fellowship; to elevate the standing of the profession; and to combine the efforts of those engaged in the practice of Architecture, for the general advancement of the Art." More than a century and a half later, the AIA now serves over 83,000 members.

THE RIGHT NOW:

The AIA has many projects, goals and initiatives currently on the go—too many to list, in fact! According to Markku Allison, AIA, a Resource Architect at the AIA National Office, one of the biggest items on the radar right now is sustainability. As such, the AIA has a number of initiatives for 2008, including:

- **50to50:** Fifty strategies were selected in 2007 to help members move toward 50 percent energy reduction targets. The resource will continue to mature, change and evolve.
- **Sustainability2030:** This voluntary program asks AIA members to make a pledge, develop multi-year action plans and implement steps that can advance AIA's goal of carbon neutral buildings by the year 2030.
- **2030 Coalition:** A coalition of organizations in the design and construction industry that have signed on to principles supporting the AIA's goals relating to carbon reduction.

The AIA has also been very active in promoting Integrated Project Delivery (IPD), which the organization sees as a way to better deal with industry waste, technological evolution, owner demand for change, and sustainability goals. Allison says that in December 2007, the AIA Board of Directors unanimously approved a position statement on project delivery that clearly states that the AIA believes that IPD is the future of the industry and the profession, a belief that is supported by the tremendous cross-market interest in the AIA's *Integrated Project Delivery: A Guide*, released in November 2007. It just passed the 11,200 download mark as of June 1st, 2008.

THE FUTURE:

The future, says Allison, will move the industry and the AIA, "Toward greater and greater collaboration, the open sharing of information, and the increased use of technology in design, construction and operations. IPD and sustainability are clearly related here."

The AIA is also continuing to work hard to respond to the industry's talent and labor shortages. Allison notes, "We must work together to attract the best and brightest regardless of their background, perspective, etc. The changing demographics of this country and the globalization of the industry make the case for increasing diversity within the profession and related industries."

THE SOCIAL COMMITMENT:

The AIA is involved in two very important social commitments (among others). One, the AIA's Sustainable Design Assessment Team is heavily involved in a community revitalization grant program that bring together architects and other professionals assembled from across the country to provide a roadmap for communities seeking to

improve their sustainability. Furthermore, the organization also recently announced that the AIA has joined forces with the American Architectural Foundation and Chicago Architecture Foundation as a partner in the Architecture + Design Education Network (A+DEN). The purpose is to recognize the value of a national K-12 design education program to foster an appreciation of the value of architecture.

THE AWARDS:

Bragging rights were extended to the AIA when, out of nearly 10,000 entries, they won the 2008 People's Voice Webby Award for the America's Favorite Architecture (AFA) website. In addition, in 2007, the American Society of Association Executives and the Center for Association Leadership recognized the AIA Blueprint for American community service program and the SustAIAnability 2030 Toolkit—a resource conceived to inspire mayors and community leaders to push for eco-friendly building design—in their Associations Advance America Awards. ●



Every year the AIA Committee on the Environment (COTE) invites submissions of built projects to be named as Top Ten Green Projects. This project, the headquarters for the Aldo Leopold Foundation, was submitted by Kubala Washatko Architects, Inc., in Cedarburg, Wisconsin. The Legacy Center includes office and meeting spaces, an interpretive hall, an archive, and a workshop organized around a central courtyard. Built where Leopold died fighting a brush fire in 1948, the Legacy Center also provides a trailhead to the original Leopold Shack. Photo courtesy of Kubala WashatkoArchitects, Inc./Mark F. Heffron.

Jointly Hosted CURT/ENR Workshop a Success

There's no doubt, the venue for the jointly hosted CURT/ENR Construction Business Forum in June 2008 was a spectacle for the eye. Held at Ameristar Casino's re-vamped facility in St. Charles, MO, this second annual event attracted construction industry professionals from across the United States (for more on Ameristar go to page 41).

This year's theme, *Construction*

Industry Challenges & Opportunities proved to be a hot topic. Attendees were given the opportunity to listen to and question some of the industry's foremost experts, and panel discussions on various subjects featured many unique ideas, suggestions and plans to improve the way business is done.

Here's just a snippet of everything that happened during this two-day event.

Fittingly, Jerome Klint, Vice President of Construction for Ameristar Casinos, welcomed everyone to the hotel and to the event. As part of his address, he dazzled attendees with details on the construction and renovation of the St. Charles facility, which is built right on the edge of the Missouri River. He also presented a list of 10 Things That Make a Great Project Manager, which included



Operable glass windows and a clerestory glazing system produce open, sun-lit office space. The building's south-side received a saw-tooth-shaped brick and glass addition allowing reorientation of the building to a true south exposure. Across the courtyard,

the remaining building was converted to a multi-level, indoor 303-car parking structure.

In addition, two retention ponds on the property eliminate storm water run off, and extensive use of native plantings in the landscape eliminate the need for an irrigation system. Walking trails and an interpretive wetlands boardwalk also gives employees and visitors the opportunity to learn about nature during lunch or at break times.

A catchment system collects rainwater from 60 percent of the garage roof area. The rainwater is stored in a 38,000-gallon cistern, treated, then used for sewage conveyance, saving nearly 250,000 gallons of water per year.

The building's HVAC system uses a mix of under floor air distribution and natural ventilation through operable windows. The raised floor system used throughout the building enables employees to individually control air flow through floor vents. A 65-kilowatt wind turbine generates 20 percent of the building's total energy needs.

For more information on this building go to www.alberici.com.

Alberici tour amazes visitors

As a kickoff to the forum, attendees were invited to tour Alberici's headquarters in St. Louis, MO. The building, which was rated LEED® Platinum, wowed visitors with its open-floor design that gives every single person in the building a view outdoors. The building, originally a 50-year old manufacturing facility that was converted into office space, has become a model of sustainable design and construction, both locally and nationally.

Originally the property contained a three-story brick office building and a large metal fabrication facility. Alberici deconstructed and recycled the 60,000 square foot office building, diverting 97 percent of the material from the landfill. The manufacturing shed was divided by removing a 70-foot wide, 485-foot long section out of the middle, creating a space for an outdoor courtyard.

From there, one side of the building was converted into a two-story, 110,000 square foot, mezzanine-style office space.

understanding your client's goals, monitoring the project site's progress by photographing it, and holding the contractor, architects and all others involved accountable.

Next to present was Luc J. Messier, Senior Vice President for Project Development for ConocoPhillips. Messier described ConocoPhillips' projects around the world, detailing some of the company's current challenges and how they are overcoming them. One challenge he described is the increased demand for oil and gas. He noted that, "Most energy analysts agree that sustaining even modest economic growth worldwide for the next several decades will require massive new investments in oil and natural gas." For ConocoPhillips this demand means more facilities are going to have to be built to meet the need.

Attendees were given the opportunity to listen to and question some of the industry's foremost experts, and panel discussions on various subjects featured many unique ideas, suggestions and plans to improve the industry.

After Messier, a panel discussion on *The Business Case for Sustainability* was moderated by Doug Gatlin, Vice President of Market Development for the U.S. Green Building Council. The session brought together owners, designers and contractors to showcase projects they've completed that have been good for the environment and community. Important too, was that the projects were also economically successful. One example came from Tim Carey, Director of Sustainability and Resource Conservation for PepsiCo., who outlined the three phases the company is currently working on, in terms of sustainability. Phase one includes reducing the environmental impact by improving PepsiCo's operational effectiveness and eco-efficiency; strengthening corporate environmental governance mechanisms; and enhancing external communications

and transparency. Phase two is the social aspect, addressing key social issues locally and around the globe. And phase three is the full integration of the three legs of sustainability into all decision making. Carey spoke of the work done to complete all these phases, as well as the reasons why PepsiCo. has decided to pro-actively promote sustainability.

After a busy networking break, attendees participated in a panel discussion called *Improved Project Outcomes Through Collaboration and Technology*. Moderated by Steve Jones, Senior Director for McGraw-Hill Construction, this session discussed the increasing use of collaboration at construction sites. Panelists described their use of Building Information Modeling (BIM), Integrated Project Delivery and the adoption of new technologies and

processes that foster an environment of teamwork. One panelist, Kurt Maldovan, Design and Construction Visualization Coordinator from Jacobs Architecture and Engineering Practice, described Jacob's use of BIM. He gave a number of reasons as to why they've started using BIM, including the dissatisfaction of clients with the current performance of the design and construction industry, the advent of Integrated Project Delivery concepts and practices, and the maturation of BIM technology, making its use now possible.

After lunch keynote speaker Robert Murray, Vice President of McGraw-Hill Construction Research and Analytics gave his take on the state of the construction industry. He noted that while residential housing has been plagued by a downturn, the opposite is true for the non-residential sector. Attendees, who were

given copies of *Construction Outlook 2008, Midyear Report*, were updated on activity in all the various sectors—from residential to public works. For more on Murray's report, see page 26.

Next on the schedule was the panel discussion, *Adapting to Changing Site Dynamics: Can we Build More With Less?* With the global push to expand in certain sectors including the power and petrochemical industries, both owners and contractors are dealing with increased competition for a shrinking supply of craft labor, experienced managers, critical materials and other project resources. As Ted Kennedy, Founder of BE&K explained, "In order to get projects done on time and on budget, we have to do far-reaching planning in advance of each and every project. Things are different now, than they were before. Dynamics have changed. Planning is mandatory."

Wrapping up the event was the final session, *Construction Professionals and Craft Work Force Solutions*, which explored a number of workforce challenges and possible remedies. Owners, engineers and contractors presented programs they have successfully implemented to get the professional and craft resources that they need now and into the future. One panelist, John A. Scott, President and COO of Parsons Corp., described a number of initiatives, including a partnership he has with Texas A&M to train students in construction.

With that Jay McGraw, Owner of McGraw-Hill and Greg Sizemore, Executive Vice President of CURT, thanked everyone for taking the time to attend the forum, discuss and share ideas and realize what's possible if everyone gets together to learn from each other in a collaborative manner.

Stay tuned for details on the next jointly hosted CURT/ENR Construction Business Forum. ●

For more information:

www.construction.com/events/cbf2008/

Results from the 2007 CURT Value Generation Survey

In 2007 CURT conducted a Value Generation Survey, asking members and the industry at large for feedback about the work CURT does. Over 100 respondents filled out an online questionnaire which asked how well those answering think CURT is working for them. Out of the 102 respondents, 60 were owners, 31 were contractors, 8 were “other” and 3 were “unidentified. Here is a snapshot of what they had to say:

The Process Transformation Committee has been working hard on a number of initiatives including the 3XPT Strategy Group. On this initiative, which promotes collaboration between various groups, one respondent commented, “Common business practices and uniform documentation are a very good idea. But the bottom line is the companies which develop successful models in this arena are using these practices as part of their own success strategy. For owners, these standard practices are wonderful. They allow owners to understand the construction process from project to project and contractor to contractor but this works against competitive pricing by removing a competitive advantage for those with the better business practices.”

The LEAN Construction Committee has a number of goals that include reviewing the current state of LEAN Project Delivery methodology and proposing recommendations to the Education & Implementation Committee, raising awareness of LEAN Project Delivery principles among CURT members and industry, and identifying the tools and processes owners can implement to drive the application of LEAN technique. The survey made committee members aware of both the

importance of this concept, judging by the comment, “This is a big value area and needs the focus; over the workforce initiatives,” and the need for more education, judging by this concept, “We need more information on the LEAN process. Since I am new to CURT, I am not as familiar with it.”

The Workforce Development and Industrial Relations Committee is working diligently to come up with solutions to alleviate the skilled craft shortage. One survey respondent reflected the concerns of many, saying, “Workforce development is the biggest issue facing the industry and the economy. Unfortunately the approach to solving this problem has largely been to talk about it and very little has been done to make any substantive change. This is largely due to the fact that craft labor is viewed as a commodity by contractors and owners. Lip service is given to the craftsman being the most important part of the construction process but without owner buy-in to fund training at the level needed to make a difference, things will continue to spiral down forcing contractors to seek craftsmen from other sources such as foreign countries. CURT could change all this if the owners would get behind an initiative which factors the number of contractor craftsmen who have met performance assessment standards or are in training into the bid process...”

The Safety Committee, whose job it is to recognize and promote continuous improvements in construction industry safety performance, received feedback like the following comment: “Safety is first and foremost a grassroots initiative which must be implemented at the job site. Gathering statistics and reporting on

safety are quite important. As the saying goes, what gets measured gets done. Currently safety is largely a contractor issue driven by fear of OSHA fines and a desire to lower the EMR to receive better insurance savings. While these are admirable, additional incentives need to be designed with owner participation to ingrain safety as a way of life rather than a way of doing business.”

The Education and Implementation Committee—which assists with CURT communications, the implementation of other committee’s initiatives, and the adoption of recent research findings and products—also works with existing Local User Councils (LUCs). As one survey respondent noted, “LUCs are a great opportunity to expand CURT influence.” One new service for LUCs is that they are now included in a Memorandum of Understanding which defines expectations, and grants them free access to all CURT documents, as well as a new network for sharing best practices.

The National Conference Planning Committee, which strives to present the best speakers, topics and case-studies to attendees each and every year, received this comment from a Conference attendee and survey respondent: “The National Conference is an excellent event. It is a great opportunity to interact and learn a great many things.”

Surveys like this Value Generation Survey provide CURT leadership with valuable information on where the industry is currently at, what changes the industry would like to see and what CURT needs to focus on in the present and the future. Please take the time to respond to future surveys, when the chance arises. ●



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*Photos courtesy of The Westin
Mission Hills Resort & Spa.*

An Owner's Perspective: What do we look for in a contractor?

By **Matt Burkholder**, Global Construction Contracts Manager, Intel Corporation

Intel Corporation is a results driven organization that demands consistent and predictable performance of our construction contractors, specifically in regards to safety, schedule, cost and quality.

As Intel Corporation grew it was faced with escalating construction costs, extended construction schedules and labor resource shortages. In a nutshell, performance on Intel construction projects was not consistent or predictable. Change was needed so Intel took a proactive approach and decided the best way to combat the escalating challenges on its construction projects was by building a more competitive sourcing environment, hence Master Sourcing Model (MSM) was created.

MSM focuses on four objectives which Intel believes positions the company and the construction contracting community for successful execution of projects. These objectives are:

1. Identifying the forecasted supplier sourcing requirements based upon the Intel Construction Roadmap;
2. Understanding contractor capabilities and gaps in the supply base;
3. Developing new supplier qualification initiatives; and
4. Proactive scenario planning, addressing an increase in the portfolio of projects.

Implementation of a master sourcing model forced Intel Corporation to define critical components and qualities of construction contractors in regards to safety, cost, quality and schedule performance. This effort took as much work internally as externally—collecting, documenting and consolidating multiple key stakeholder input within an owner organization.

With the criteria established and the process to implement a robust sourcing strategy created, Intel then introduced the plan to the construction supply base. The critical components used to qualify contractors are:

- Environmental health and safety information, providing evidence that the contractor has established a robust safety culture and an incident and injury free work environment. Specific data they are required to give Intel includes:
 - Their recordable incident rate;
 - Their written substance abuse policy;
 - Details of their safety training program; and
 - Their written safety program.
- Supplier diversity.
- Workforce development strategies addressing recruitment, training, assessment and retention of a skilled construction professional workforce. Knowing their capabilities or limits in terms of staffing ensures that they'll meet Intel's expectations while achieving profitability goals, both of which are essential to achieving preferred supplier status. Components include:
 - Management capabilities;
 - Craft workforce capabilities; and
 - Labor and labor relations.
- Financial information regarding current forecasts, annual revenue for past three years, Dunn and Bradstreet rating (Dunn and Bradstreet provides international and US business credit information and credit reports), bonding rate/capacity, and insurance multiplier. The information collected is used to avoid the detrimental reliance of any contractor on Intel Corporation's awarded scope.

- Qualifications/experience seeking validation of project references associated with experience in clean-room construction and high purity construction methodologies in the micro electronics industry.
- Business processes and procedures demonstrating an active total quality management program.

As one would expect, the level of engagement by the contractors was unknown at the start, however, the baseline was established to begin the continuous improvement cycle. Through extensive interviews and evaluations addressing specific performance expectations of the critical components above, each contractor received an independent score. After that the scores were presented directly to each contractor resulting in definitions, improvement strategies and Intel's expectations of corrective action plans promoting a collaborative approach. Scores are pareto'd to clearly segregate suppliers that are proactive and demonstrate initiatives resulting with contractors being placed on a project bid list.

Robust supplier management is a critical component implemented by Intel Corporation and it has resulted in improved project performance: achieving projects completed within budget, on-schedule, with uncompromising quality, and world class safety performance based on the selection of qualified suppliers. ●

Matt Burkholder has worked at Intel for almost nine years. He has spent a considerable amount of time sourcing and negotiating Cleanroom construction contracts in the U.S., Mexico, Costa Rica, Philippines, China, Israel and Malaysia.

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

A Contractors Perspective: It's all about the relationship

By Bill Rudolph, Chairman of The Rudolph/Libbe Companies

The construction industry, like most others, is cyclical. In some construction markets there are currently more opportunities than contractors have seen in a long time. As a result, contractors are more selective about the work we choose to pursue. In turn, owners face the challenge of finding contractors who have the time and resources to commit to their projects.

The decision for us to pursue a project, of course, includes having the resources to successfully complete the scope of work, within the schedule and budget requirements. However, when we select projects to pursue, we look well beyond these basic elements. We consider the history of our business relationships. The owners we focus on first are those with whom we have a prior history of working together and have built a relationship based on shared values. Many of our customers share our commitment to integrity and excellence, and we have a long and successful history of working together. We look forward to working with those customers year in and year out, helping them achieve their objectives and making them a part of our future. We make those customers our first priority.

As we seek to grow and add new customers, we want to work for owners who share our values, who value relationships and share our commitment to fair and objective business practices, from bidding through construction. We value integrity in our customers; it allows us the opportunity to add the most value to the design and construction process. It gives us the confidence to trust an owner to protect our intellectual property and not share it with competitors.

Both confidence and trust need to be present at the earliest stages of a project. We want owners to be candid with us from the start about their expectations, resources and their priorities. This is essential, because we'll be depending on them to make decisions in a timely manner, staff their projects appropriately and communicate with us continuously throughout the project.

As we seek to grow and add new customers, we want to work for owners who share our values, who value relationships and share our commitment to fair and objective business practices, from bidding through construction. We value integrity in our customers; it allows us the opportunity to add the most value to the design and construction process.

Fundamental to a successful relationship is our commitment to live up to our responsibilities as a contractor. An owner also needs to make the same commitment to our working relationship and to the project.

The best owners, and the most successful projects, involve the contractor

early, so value can be planned into every aspect of the project. It's a good contractor's responsibility to help an owner drive waste out of the construction process and add value. But to best serve a project, we need the owner to demonstrate open-mindedness and trust in our team—in short, to be willing to let us get involved and help plan the project in its earliest phases, as well as execute it.

Safety is another important example of a value that we feel very strongly should be shared between owners and contractors. At Rudolph/Libbe, safety is a core value. That means ensuring that the health and safety of everyone on our jobsites—our associates, subcontractors, suppliers, the owner's employees and the public—always come first, without exception. Our favorite customers are those who not only support our commitment to safety, but are as insistent as we are on safe behaviors and conditions.

At the present time, many contractors have more opportunities than they can handle, but it won't always be this way. We have experienced slow times and expect them to return again. And, the customers we want to work with the most during these busy times are the same customers we'll want to work with during a slow economy—because of the values we share. For us, it's all about the relationship. ●

The Rudolph/Libbe Companies—Rudolph/Libbe Inc., GEM Inc. and Rudolph/Libbe Properties—offer site selection, real estate development, general contracting, construction management, mechanical and electrical services, and ongoing facility and process maintenance.



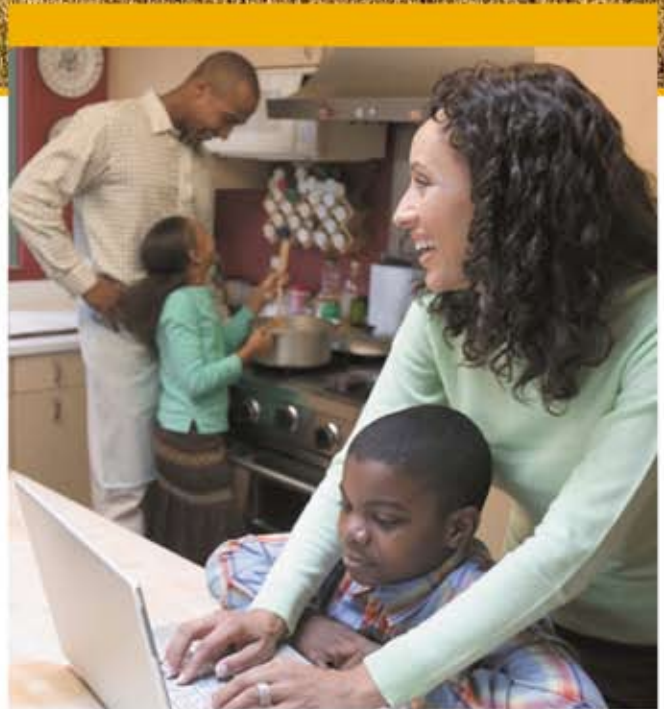
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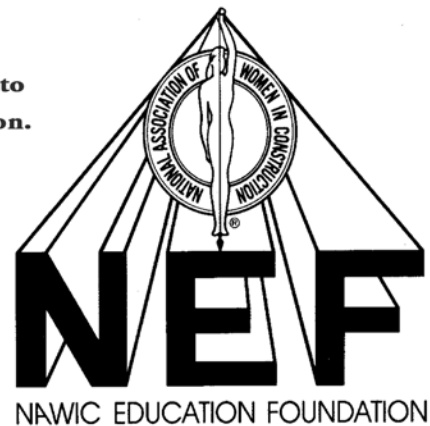
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the electrical
contractor?**

Good question. The answer could mean the difference between a job well done and a job done well over budget. The NECA/IBEW apprenticeship and training program invests more than \$100 million annually to develop the highest quality electrical workforce. At the end of their on-the-job and classroom training, we know exactly what we're getting. And so will you.

Contact your local NECA chapter or IBEW local union for more information.

www.thequalityconnection.org

