

ANNUAL REPORT | 2014



DRIVING **PERFORMANCE**  
AT EVERY TURN





DRIVING **PERFORMANCE** AT EVERY

## THE CONSTRUCTION INDUSTRY INSTITUTE

The Construction Industry Institute, based at The University of Texas at Austin, is a consortium of more than 140 leading owner, engineering-contractor, and supplier organizations from both the public and private arenas. These organizations work together to enhance the business effectiveness and sustainability of the capital facility life cycle through CII research, educational initiatives, and industry alliances. A research organization creating a wealth of expert knowledge and practical information, CII provides vital leadership to the engineering and construction industry.

### **PURPOSE**

The purpose of CII is to measurably improve capital delivery through the cooperative effort of owners, contractors, and academics.

### **VISION**

CII is a leader in the construction industry, renowned for creating research-based knowledge and best practices that measurably improve the safety, cost, schedule, quality, and sustainability of capital projects.

The increased business success CII member organizations experience prompts participating industry leaders to make breakthroughs in the life cycle value of capital facilities.

### **MISSION**

CII creates global, competitive, and market advantages for its members through its research-based, member-driven creation, dissemination, assessment, and management of industry knowledge and CII Best Practices. High use of these best practices gives members a decisive industry edge. Member organizations and their employees cooperatively engage with leading academics to generate CII knowledge; this unprecedented partnering of industry and academia creates the perfect forum for investigating the most significant opportunities for industry improvement. Member companies, their employees, academics, and the industry at large are improved through this collaborative effort.



A close-up, low-angle shot of the rear of a red and black Formula 1 car. The car is positioned on a racetrack, with the rear wing and a large black tire visible. The background shows a blurred racetrack and a warm, orange-hued sunset sky. The overall image has a dark, moody aesthetic with a blue gradient overlay at the bottom where the text is located.

## FOUR CORE **KNOWLEDGE** PROCESSES

Having begun in 1983 with 28 charter members who shared the CII vision, the Institute is now recognized in the engineering and construction industry as the knowledge leader for project success. CII has four core knowledge processes: creation, dissemination, assessment, and management.

**Knowledge Creation:** CII research teams—groups that include academic investigators and employees of both owner and contractor organizations—generate best practices and breakthroughs for the construction industry. CII Performance Assessment processes create additional knowledge, producing ongoing applied research that establishes industry norms for construction performance.

**Knowledge Dissemination:** Knowledge created by CII is disseminated to Institute members and to other organizations and individuals in the engineering and construction industry. CII distributes this knowledge through research publications, implementation guides, educational materials, workshops, and conferences.

**Knowledge Assessment:** CII Performance Assessment collects, analyzes, and assesses the impact of CII knowledge as it is initially implemented and integrated into member organizations' work processes. Once proven through member benchmarking, this knowledge is incorporated into the capital project work processes of the industry at large.

**Knowledge Management:** Since 1983, CII has produced nearly 700 research documents and hundreds of other presentations and publications. Knowledge management adds value to CII by organizing and facilitating access to CII's extensive body of knowledge. By establishing communities of practice—virtual interest groups that dynamically share and learn knowledge—CII Knowledge Management further advances the Institute's mission.

Through these knowledge processes, CII advances human knowledge and fulfills its mission of enhancing the business effectiveness, sustainability, and global competitiveness of CII members.

# REMARKS FROM THE CHAIR



My year as CII Chair was a growth experience for me—both professionally and personally. Throughout the year I met many bright, capable people and was exposed to great new ideas. While I have long known the value of CII membership, this deeper involvement put me in a better position to lead change in my own organization. As Director of Planning and Project Management for the Architect of the Capitol, I see that my organization benefits from CII's knowledge leadership for the industry. As members we can foster new ideas and technologies in the workplace, increase productivity, improve workplace safety, and continue to explore new practices and techniques. CII maintains its leading position because of the members' commitment to improving what we do and how we do it.

At the beginning of my tenure, I set the following goals and objectives: ensure that CII's research will continue to drive safety incidents and accidents down to zero; communicate the value of CII membership to prospective and current members; continue to promote performance metrics; and develop a program to mentor the next generation of industry professionals.

Looking back, I could not be more excited about our progress. The current CII member TRIR rate is the lowest it has been (0.37), and our Next Gen leaders are more engaged than ever. We continue to build relationships and alliances with other professionals and institutes. We made progress on our Knowledge Base Project, an effort to make CII resources more accessible. We launched the 10-10 Performance Assessment Program, the next generation of benchmarking. These great tools will provide more efficient ways of looking at and evaluating projects throughout their duration.

As a steward of the historic Capitol campus in Washington D.C., I certainly appreciate CII's role as a resource for building a steady and lasting foundation for its members. It has been a joy to lead this great organization in 2014, and I appreciate your commitment to CII's future growth. We should not fear change. We should embrace it. I am really looking forward to what lies ahead in the new year and beyond.

Anna Franz,  
CII Chair

As an active member of CII since 2003, Anna Franz came to the position of CII Chair in 2014 with a deep understanding of CII's mission and future plans. The Director of Planning and Project Management at the Architect of the Capitol, she is the first architect to lead the institute. Franz's long-time involvement with CII was evident in her tenure, with its focus on improving safety performance, member engagement, and performance metrics, and developing future industry leaders. Her leadership contributed to a successful annual conference, with a record number of attendees.



# REMARKS FROM THE DIRECTOR

2014 was wonderfully productive for CII. As I reflect back, I first want to offer my heartfelt thanks to the 1,000 participants who represent our 143 member companies on CII committees, teams, communities and boards. Your leadership, guidance, and participation give CII the strength to stand as the capital project industry's premier research institute.

Nine research teams (RTs) reported out at the 2014 Annual Conference in Indianapolis. The research findings presented by RT 308, Achieving Zero Rework through Effective Supplier Quality Practices, get to the very core of the CII purpose: to improve capital project delivery through quantitative research. There is something about the way they plotted  $P_{insp}$  against  $P_{fab}$  that just gives me goose bumps (I must be an engineer). I also marveled at the hard work and ingenuity of the other eight research teams. Their investigations into near miss reporting, interface management, project portfolio management, counterfeit construction materials, PM competency measurement, the impact of late construction deliverables, construction phase sustainability, and successful implementation of CII practices covered a remarkably full range of critical industry concerns. All these findings fill gaps in our knowledge that, when integrated into work processes, will improve capital project performance. So, I want to extend my great appreciation to the Research Committee and all team members for their outstanding work.

In 2014, CII continued two initiatives: the 10-10 Performance Assessment Project, and the CII Knowledge Base Restructuring Project. The new 10-10 Performance Assessment System, populated with data from 600+ project phases was launched just after the annual conference. The 10-10 System provides members with nearly instantaneous feedback comparing individual project phases with similar project phases in the 10-10 database. The transformation to phase-based, real-time performance assessment is here.

The Knowledge Management Committee (KMC) made good progress on its effort to restructure the CII Knowledge Base last year. By November, the KMC had piloted the new inventory, tag, and integrate processes to be used in the restructuring of CII's body of knowledge. Using the lessons learned from this pilot test, the group has refined

the training materials and has begun recruiting volunteers for this crucial effort. Using the tag line "If you knew what CII knows," recruitment for Restructuring, Integrating, and Tagging (RIT) teams is moving apace. In addition to providing volunteers with great leadership and mentoring opportunities, increasing their peer networks, and offering professional development hours, participation on an RIT will truly mean knowing what CII knows. The cost/benefit ratio of participating on an RIT is very small and I urge all CII members to check out this opportunity in the KMC section of the CII website.

Looking ahead to 2015, we expect a double-digit number of research teams to report out at the annual conference in Boston. The Spring 2015 Performance Improvement Workshop is morphing into the Performance Workshop, as two committees—Implementation Strategy and Performance Assessment—partner to bring you a workshop that connects the 10-10 Performance Assessment Program with specific CII research findings. This will be the most impactful workshop in CII history.

As I write this note, market volatility has soared and we are all trying to predict where the oil price will bottom. The industry will face turbulence and challenges in 2015. Through your leadership and guidance, though, CII will remain constant in our purpose: to measurably improve the delivery of capital projects through research, education, performance assessment, and knowledge management. Now it is your turn to reflect on your accomplishments in this 2014 CII Annual Report. For all you do for CII and the industry, I can only thank you again.

Finally, I want to say one last thank-you to two individuals who, after multiple terms of service, rotated off the CII Executive Committee in late 2014: Glenn Gilkey of Fluor and Keith Manning of Zachry. It has been my privilege to work closely with you for many years. In addition to your commitment and leadership, your friendship has been phenomenal.

Regards,  
Wayne Crew, P.E.  
CII Director





# CII MEMBERS

## OWNERS

Abbott  
Ameren Corporation  
American Transmission Company, LLC  
Anadarko Petroleum Corporation  
Anglo American  
Anheuser-Busch InBev  
Aramco Services Company  
ArcelorMittal  
Architect of the Capitol  
BP America, Inc.  
Cargill, Inc.  
Chevron  
ConocoPhillips  
Consolidated Edison Company of New York  
The Dow Chemical Company  
DTE Energy  
DuPont  
Eastman Chemical Company  
Ecopetrol S.A.  
Eli Lilly and Company  
Enbridge, Inc.  
ExxonMobil Corporation  
General Electric Company

General Motors Company  
GlaxoSmithKline  
Global Infrastructure Partners  
Huntsman Corporation  
Intel Corporation  
Irving Oil Limited  
Kaiser Permanente  
Koch Industries, Inc.  
LyondellBasell  
Marathon Petroleum Corporation  
National Aeronautics & Space Administration  
NOVA Chemicals Corporation  
Occidental Petroleum Corporation  
ONEOK, Inc.  
Ontario Power Generation  
Pacific Gas and Electric Company  
Petroleo Brasileiro S/A - Petrobras  
Petroleos Mexicanos  
Petronas  
Phillips 66  
Pioneer Natural Resources  
Praxair, Inc.  
The Procter & Gamble Company

Public Service Electric & Gas Company  
Reliance Industries Limited (RIL)  
SABIC - Saudi Basic Industries Corporation  
Sasol Technology  
Shell Global Solutions US, Inc.  
Smithsonian Institution  
Southern Company  
Statoil ASA  
SunCoke Energy  
Tennessee Valley Authority  
TransCanada Corporation  
U.S. Army Corps of Engineers  
U.S. Department of Commerce/NIST/EL  
U.S. Department of Defense/Tricare Management Activity  
U.S. Department of Energy  
U.S. Department of State  
U.S. Department of Veterans Affairs  
U.S. General Services Administration  
Vale S.A.  
The Williams Companies, Inc.

## CONTRACTORS

AECOM  
Aecon Group, Inc.  
Affiliated Construction Services, Inc.  
Air Products & Chemicals  
Alstom Power, Inc.  
AMEC Foster Wheeler  
Autodesk, Inc.  
AZCO, Inc.  
Baker Concrete Construction, Inc.  
Barton Malow Company  
Bechtel Group, Inc.  
Bentley Systems, Inc.  
Bilfinger Industrial Services, Inc.  
Black & Veatch  
Burns & McDonnell  
Cannon Design  
CB&I  
CCC Group, Inc.  
CDI Engineering Solutions  
CH2M HILL  
Coreworx, Inc.  
CSA Central, Inc.  
Day & Zimmermann  
Dresser-Rand Company  
Emerson Process Management  
eProject Management, LLC

Faithful+Gould  
Fluor Corporation  
Gross Mechanical Contractors, Inc.  
Hargrove Engineers + Constructors  
Hilti Corporation  
Honeywell International, Inc.  
IHI E&C International Corporation  
IHS  
International Rivers Consulting, LLC  
Jacobs  
JMJ Associates, LLC  
JV Driver Projects, Inc.  
KBR  
Kiewit Corporation  
Lauren Engineers & Constructors, Inc.  
Leidos Constructors, LLC  
Matrix Service Company  
McCarthy Building Companies, Inc.  
McDermott International, Inc.  
Midwest Steel, Inc.  
Parsons  
Pathfinder, LLC  
PCL Construction Enterprises, Inc.  
POWER Engineers, Inc.  
PTAG  
Quality Execution, Inc.

Richard Industrial Group  
The Robins & Morton Group  
S&B Engineers and Constructors, Ltd.  
SBM Offshore  
Skanska USA  
SNC-Lavalin, Inc.  
Supreme Group  
Technip  
Tenova  
TOYO-SETAL Engenharia, Ltda.  
UniversalPegasus International  
URS Corporation  
Victaulic  
Walbridge  
Wanzek Construction, Inc.  
The Weitz Company, Inc.  
WESCO International, Inc.  
Wilhelm Construction, Inc.  
Willbros United States Holdings, Inc.  
Wood Group Mustang  
WorleyParsons, Ltd.  
Yates Construction  
Zachry Holdings, Inc.  
Zurich

*As of December 31, 2014*



## RESEARCH COMMITTEE

Charged with oversight of the CII research process, the CII Research Committee (RC) works to improve the effectiveness of CII research teams and to guarantee sound and implementable results. Made up of industry veterans and seasoned academics, the RC meets face-to-face four times a year (and virtually, when necessary) to manage the entire research process. Its activities include gathering research topic ideas, formulating research topic statements, seeking the research priorities of the CII Board of Advisors, and supporting the Associate Director's efforts to launch and advise research teams throughout the research cycle.

In recent years, the RC has worked to streamline the research process. From the beginning, Junghye Son has supported these improvement efforts. In early 2014, Son transitioned from her role as a graduate research assistant to that of CII's newest research associate. Having earned her Ph.D. in Construction Engineering and Project Management from UT Austin in 2013, she came to the post with several goals to further improve CII. She is already drawing on her doctoral studies on collaborative industry-academic research to develop practical guidance for the RC and for future CII research teams. Dr. Son has also begun work to improve the CII data collection experience. She first presented her material during the May and June kickoffs of the following teams:

- Definition and Measurement of Engineering/Design Deliverable Quality (The University of Texas at Austin)
- Using Precursor Analysis to Prevent Low-frequency High-impact Events, Including Fatalities (University of Colorado; Oregon State University)
- Improving Project Progress and Performance Assessment (North Carolina State University; Florida International University)
- Finding Leading Indicators to Prevent Premature Starts, and Ensuring Uninterrupted Construction (The University of Texas at Austin)
- Future Construction Needs of Virtual Design Models (Penn State University)
- Best Practices for Succession Planning (Arizona State University)
- Can We Utilize Next-Gen Experience to Maximize Virtual Team Performance? (Virginia Tech; University of Colorado).

Then, in late summer and early fall, the RC met virtually with these new teams to review their proposals.

At the 2014 CII Annual Conference, the following eight research teams reported out:

- The True Impact of Late Deliverables at the Construction Site (The University of Texas at Austin)
- Using Near Miss Reporting to Enhance Safety Performance (Georgia Tech)
- Interface Management (University of Waterloo; University of Michigan)
- Managing a Portfolio of Projects—Metrics for Improvement (Georgia Tech; University of Florida; Northeastern University)
- Sustainability Practices and Metrics for the Construction Phase of Capital Projects (The University of Texas at Austin)
- Quantitative Measurement of PM Competencies (University of Wisconsin in Madison; University of Michigan)
- Mitigating Threats of Counterfeit Materials in the Capital Projects Industry (Florida International University; Vanderbilt University; Purdue University)
- Achieving Zero Rework through Effective Supplier Quality Practices (San Diego State University; University of Arkansas).

The teams that kicked off in 2013 also attended the conference, to observe presentations and plan for their 2015 report-outs. Following are the teams slated for the 2015 Annual Conference:

- Improving Engineering and Procurement Alignment and Coordination with Construction (The University of Texas at Austin)
- Successful Delivery of Fast-track Projects (Virginia Tech; Georgia Tech)
- Best Practices for Commissioning and Start-up (The University of Texas at Austin)
- Creating Standards for Industry-wide Quality Metrics (University of Arkansas; University of Florida)
- PDRI Tool for Small Projects (Arizona State University)
- Successful Delivery of Mega-projects (The University of Texas at Austin)
- Instantaneous Project Control Systems (Arizona State University; University of Alabama)
- Safety Performance through Operational Discipline (University of Kentucky)
- Is There a Demographic Craft Labor Cliff That Will Affect Project Performance? (University of Colorado; University of Kentucky)
- Transforming the Industry: Making the Case for Advanced Work Packaging As a Standard Practice (The University of Texas at Austin).

# KNOWLEDGE CREATION



## ACADEMIC COMMITTEE

The Academic Committee (AC) continues to serve as CII's primary forum for the academic community. Its duties include the following:

- designating subject matter experts
- providing input to the research process
- identifying and grooming new academics to serve as CII researchers
- integrating CII research and products into university curriculums
- offering insights for new directions for CII research.

In 2014, Dr. W. Edward Back (University of Alabama) finished his term as chair of the committee, and Carlos Caldas (The University of Texas at Austin) assumed the post. John Taylor (Virginia Tech) was appointed as the committee's vice-chair.

At the beginning of the year, the AC formed several new subcommittees to strengthen CII's bond with the academic community. These new subcommittees address the following activities: the CII Annual Conference poster session; selection of an annual conference speaker; communications; CII technical sessions at the yearly Canadian Society for Civil Engineering and Construction Research Congress Conference; and CII webinars for academics new to CII.

The committee once again sponsored the poster competition at the 2014 CII Annual Conference. This annual contest benefits everyone involved: it gives graduate students working at schools not funded by CII exposure to the CII research model; it gives students at CII-funded schools who themselves are not working on CII-funded research a chance to present their work; and it allows conference participants to see valuable non-CII sponsored research.

The 2014 competition drew more than 30 submissions, of which 10 were selected. David Ramsey from Arizona State University took first place for his poster titled "Quantitative Performance Assessment of Single-Step and Two-Step Design-Build Procurement." Co-authoring the poster were Dr. Mounir El Asmar and Dr. G. Edward Gibson.

Dana K. "Deke" Smith was the AC's plenary speaker at the 2014 annual conference. The Executive Director of the National Institute of Building Sciences, Smith made a presentation titled "BIM for All – The State of BIM in the U.S. and the World." After giving his talk, he led implementation sessions on the topic.

In addition to its CII Annual Conference activities, the committee continued to promote awareness of CII-sponsored research outside CII, by organizing a CII research track at the 2014 American Society of Civil Engineers Construction Research Congress at the Georgia Institute of Technology. The committee ended the year organizing its CII research track for the 2015 Canadian Society for Civil Engineering Conference.

In support of CII's ongoing outreach to the academic community, the AC conducted three webinars in 2014. The first one was titled, "How to Participate in CII" and the second was called "How to Write a CII Proposal." The third webinar, "How to Successfully Execute a CII Project," was aimed at newer academics selected for CII research teams.

In 2014, the AC continued to support the CII New Scholars Program, a recent CII Research Committee (RC) initiative to subsidize the travel of new academics with no previous CII research experience to the CII Annual Conference. At the 2014 event, the RC welcomed three new scholars: Behzad Esmaeili (University of Nebraska-Lincoln), Amy A. Kim (University of Washington), and Giovanni C. Migliaccio (University of Washington).





## BREAKTHROUGH STRATEGY COMMITTEE

In 2014, the Breakthrough Strategy Committee (BTSC) welcomed Ray Simonson as its new chair, joining Michelle Kayon, the committee vice-chair, in leading the group. Beginning early in the year, the committee worked to transform its processes to increase the BTSC impact within the CII community. The centerpiece of this change was a BTSC research initiative, namely, the formation of Research Team (RT) 327, Innovative Delivery Methods of Information to the Crafts. Unlike typical CII research teams with their two-year scope, this initial BTSC study was designed as a short (one-year), high-intensity, and impact-driven effort. Yet, BTSC teams follow the CII research model, conducting their research through the close collaboration of domain experts from industry and process experts from academia. The objective is to provide CII members with immediately implementable recommendations on emerging technologies and innovative processes for improved productivity, efficiency, and/or safety performance.

To enable a steady flow of such valuable findings, the committee has set the goal of developing a new breakthrough research topic every year. This topic would go through the same vetting process as all prospective CII research topics. Once selected for funding, these teams would produce the standard set of documents required of all CII research teams, and they would vie with the other teams each year to present their results at the CII Annual Conference.

Another exciting development in 2014 was the committee's decision to present more visual and physical displays of up-and-coming breakthrough technologies and ideas at the annual conference and other events. Considering the success of past exhibits—e.g., 3D printing and helicopter drone demonstrations—this increased visibility will give members more in-person exposure to the newest and most effective technologies as they become available and affordable. By consistently and more frequently offering these glimpses over the industry horizon, the BTSC will increase the competitive edge CII members enjoy.





# KNOWLEDGE DISSEMINATION

## IMPLEMENTATION STRATEGY COMMITTEE

To fulfill its mission of promoting the implementation of CII knowledge and work processes, the Implementation Strategy Committee (ISC) supports the CII strategic plan through its initiatives and in close coordination with the CII Executive Committee as well as other committees.

Each year, the ISC organizes two Performance Improvement Workshops (PIW)—one in the spring and one in the fall—to help members learn how to implement CII’s Best Practices and to introduce them to new CII products. In 2014, the Spring PIW was held in Jersey City, New Jersey, and the Fall workshop took place in Houston, Texas. At the close of the Fall PIW, the ISC offered the four-hour optional Project Change Management course for attendees, taught by Dr. W. Edward Back of the University of Alabama.

In addition to developing and hosting the PIWs, the ISC provides mentoring on request to CII Implementation Champions. To further benefit implementers of CII practices, the committee also oversees three key online resources:

- The Implementation Tool Box—a web-based portal for CII members that aids implementation of CII Best Practices by detailing the Implementation Model, providing contact with CII knowledge experts, and linking to CII products and conference presentations
- The Implementation Assistant—a tool that allows users to create implementation plans based on Implementation Resource 246-2, The Implementation Planning Model: Steps to Success. Managers of implementation initiatives who use the Implementation Assistant can monitor the progress of their efforts. With the tool, implementers can initiate and track implementation plans, establish milestones, and use metrics for effective implementation

- The Implementation Navigator—a table for users to quickly locate all of the CII implementation resources, training materials, and Implementation Tool Box presentations that are available to support each of the 15 CII Best Practices.

In 2014, three committee members contributed articles featuring CII practices and workshop activities to the quarterly CII e-Newsletter: “Design in Fast-Track Projects” by Arch Lane, Wood Group Mustang; “Information Integration” by Tammy Lynam of Burns & McDonnell; and “PIW: Knocking Down Implementation Barriers through Role Play” by Greg Kanteres of Eastman Chemical.

The ISC’s sponsored Implementation Research Team IS 31 reported out at the 2014 CII Annual Conference with a presentation titled “Bridging the Gap: From Vision to Action – Igniting Passion and Imagination to Introduce Positive Change.” This presentation allowed attendees to see that introducing a CII practice into an organization happens in three stages: vision, evaluation, and action. While all CII members understand the importance of the vision phase, and even though CII has included evaluation and action plans in its implementation guidance documents, moving smoothly through all three stages is a challenge for many. The research of Team IS 31 provides CII members with a method and tool for establishing a uniform path to implementation success. The team developed the Implementation Process Action Tool (IMPACT) to help CII members successfully accomplish the following tasks:

- Assess their preparedness to undertake a new practice implementation
- Determine the potential gaps in implementation preparation
- Evaluate implementation progress and success.





# KNOWLEDGE DISSEMINATION

## PROFESSIONAL DEVELOPMENT COMMITTEE

The mission of the Professional Development Committee (PDC) is to provide continuing professional development opportunities for CII members. The committee enables implementation of CII research; plans future educational opportunities for CII members; evaluates trends in industry education; and develops educational vehicles. The committee executes its mission in close coordination with other committees, especially the Executive Committee, to ensure support of CII strategic objectives.

In 2014, CII and the McCombs School of Business at The University of Texas at Austin again collaborated to offer the highly rated CII Executive Leadership Program. The program—a two-week, in-residence, educational experience—provides in-depth knowledge of a range of leadership skills necessary for the capital facilities the future. CII also joined the McCombs School of Business to offer a custom professional development program for Ecopetrol S.A. The Ecopetrol International Project Management Program, now in its third year, is designed to help develop the managerial skills of project professionals at Ecopetrol S.A.

In addition to classroom-based programs, the committee oversees the CII online education program. The current online course curriculum covers CII Best Practices on:

- Alignment of Project Objectives
- Constructability
- Partnering
- Planning for Startup
- Pre-Project Planning
- Safety
- Scope Control

In 2014, the PDC continued the development of a new series of online courses that will expand the curriculum with several sessions on construction safety. Two online courses were launched in 2014: Design for Construction Safety and Safety Leading Indicators.

During 2014, the PDC also developed and successfully presented a three-part web seminar series on Disputes Prevention & Resolution (DPR) which included a panel discussion with current DPR professionals in the third part of the series.

The PDC's 2014 CII Annual Conference presentation, titled "Think for a Change," aimed to inspire industry leaders to offer management teams a healthy challenge. The PDC also offered instructor-led courses in conjunction with the 2014 CII Annual Conference in Indianapolis, Indiana. Dr. Carl T. Haas, of the University of Waterloo in Canada taught the Prefabrication,



Preassembly, Modularization, and Off-site Fabrication (PPMOF) course before the conference and Dr. Steve Sanders of Clemson University taught the Developing, Implementing, and Managing a Partnering Relationship course at its conclusion.

The annual CII Best Practices course took place during the 2014 fall semester. This interactive course, offered to graduate students in civil engineering and construction management, was held at The University of Texas at Austin and broadcast to 11 other universities. Each fall, CII staff and senior leaders from CII member organizations serve as course lecturers, offering students insights into the workings of the engineering and construction industry. The PDC continues to sponsor the Best Practices—Best Practitioners Alliance, a collaboration of the Construction Management Association of America (CMAA) and CII. This alliance is dedicated to improving construction performance and outcomes.

Other PDC yearly deliverables include oversight of continuing education course offerings, the award of professional development hours, the Registered Education Provider Program, the Professional Development Continuum, and production and updates of education modules.

# KNOWLEDGE ASSESSMENT

## PERFORMANCE ASSESSMENT COMMITTEE

The CII Performance Assessment Committee (PAC) and staff regularly obtain, analyze, and disseminate quantitative information regarding members' project performance. 2014 was a watershed year for CII's performance assessment activities as the majority of CII members contributed project data to the 10-10 Program. By the end of the year, over 600 project phases had been entered into the 10-10 database. Results from these projects were returned to participating organizations through the new 10-10 System upon its launch in September. The importance of the 10-10 Program should not be understated:

- The 10-10 Program evaluates the practices employed by project teams to manage projects through 10 leading indicators and 10 output metrics. It surveys the key practices learned over three decades in numerous CII research studies.
- The premise of the 10-10 Program is that the nature and quality of working relationships between project stakeholders has a primary impact on project cost and schedule variance. At CII, the explanatory power of relationships is more than five times stronger than scope definition in determining project outcomes.
- The 10-10 Program surveys each phase of a capital project, which enables project teams to understand their performance and initiate corrective action proactively.
- Findings from the 10-10 Program indicate that there is a great potential to improve project performance by focusing on the "soft skills" in managing projects. Specifically, project staffing and individual responsibilities must be properly organized with effective leadership, communications, and a shared culture of achievement.

2014 also saw gains in CII's General Benchmarking Program as 107 projects were added, bringing the database to 2,270 projects worth \$335 Billion. Going forward, the PAC intends to merge portions of the General Program Questionnaire into the 10-10 Program. An example of this would be the integration of budgeted costs into the Front End Planning 10-10 Survey. By entering data as a project progresses, 80 percent of the data entry during closeout is eliminated. Combining these programs makes each stronger while also creating synergies in the use of information technology. The PAC intends to leverage the new 10-10 System to provide enhanced reporting, including company dashboards and real-time data mining capabilities for all PAC programs.

There were 2,829,136,467 total work hours reported by 76 CII member organizations for the 2014 CII Annual Safety Survey. This total eclipsed all previous records at CII and is a testament to the commitment made by CII members to the assessment of safety performance. In 2015, the PAC plans to make the corporate safety findings available online to CII member companies. The resulting system will also feature real-time data mining capabilities for many aspects of safety performance.

CII remains at the forefront of project performance assessment through the work of the PAC, the 10-10 Program, the CII General Program, and the CII Annual Safety Survey. Together, these three programs serve as the basis for CII's expansion into new sectors of the capital projects industry around the world. By the end of 2014, the PAC was actively operating in the United States, Canada, and Norway, and was involved in establishing a presence in Singapore, South Africa, Brazil, and Saudi Arabia.

Other notable achievements of the CII Performance Assessment Program in 2014 include:

- Completed Phase I of a Productivity Improvement Research Project for owners and contractors in the refining and chemicals industry in Singapore. This research was funded by the Singapore Economic Development Board (EDB), creating the foundation for Phase II (2015-2018)
- Started the second round of the National Healthcare Facilities Benchmarking Program. Following the first round, improvements were made and additional participants were trained. 159 projects have been entered
- Finished Phase II of capital project benchmarking in the Canadian Oil Sands in association with the University of Calgary's Schulich School of Engineering. This research project was sponsored by the Construction Owners Association of Alberta (COAA) and the Natural Sciences and Engineering Research Council of Canada (NSERC)
- Continued research with the Benchmarking Committee of the Procurement Executives Group (PEG) to uncover new findings about the use of CII's 10-10 Program
- Companies that are members of Prosjekt Norge (Project Norway) began benchmarking projects in CII's 10-10 Program through CII's Performance Assessment Laboratory (PAL) at the Norwegian University of Science and Technology (NTNU) in Trondheim, Norway
- Published CII's Annual Safety Report, and two conference proceedings
- Produced 31 data requests for CII member organizations and CII research teams
- Trained 137 new CII Benchmarking Associates. Host cities included Oslo, Norway (Prosjekt Norge); Washington, D.C. (Kaiser Permanente); Houston, Texas (Aramco Services); Atlanta, Georgia (CH2M HILL); and Oakland in California (Kaiser Permanente).

It is clear that a strong Performance Assessment Program remains essential for CII's continued efforts to improve capital project outcomes. Aside from producing reports and analyses for individual projects, CII's Performance Assessment staff conducts research funded through external research grants around the world. The resulting data, information, and knowledge produced continue to be utilized by many CII research teams and member companies.





# KNOWLEDGE MANAGEMENT

## KNOWLEDGE MANAGEMENT COMMITTEE

The purpose of the Knowledge Management Committee (KMC) is to maintain and add value to CII's ever-increasing body of knowledge, and to establish and support CII Communities of Practice. Members leverage collective industry wisdom through the Knowledge Structure, a systematic online categorization of CII's research products. The committee manages and maintains this structure and is responsible for approving changes, including the placement of new products and archiving outdated products. The Knowledge Structure categorizes research publications into knowledge areas, and further subdivides them into CII Best Practices, other practices, and information topics.

In an effort to maintain and add value to CII's body of knowledge, the KMC reviews research products on a periodic basis to determine their relevance; slots new research products into the Knowledge Structure; recommends CII Best Practices for updating; identifies and validates emerging best practices; and nominates new research topics to the Research Committee for consideration.

In 2014, the KMC continued the utilization of the Knowledge Management System (KMS), an online tool developed by the committee to help its members effectively conduct product family reviews to keep CII's body of knowledge relevant. The committee completed its assigned reviews and added 38 new publications to the Knowledge Structure. The KMC also finalized its evaluation of numerous CII affiliates to determine future potential for knowledge sharing and reported its findings to the CII Executive Committee.

The Risk Management Integration Team (RMIT), launched by the KMC in 2012, completed an overarching special publication (SP181-3) to provide CII members and the industry with a broad perspective and guidance on the overall risk management process. This was published in 2014 and presented at the Fall Performance Improvement Workshop in Houston, along with the Integrated Project Risk Assessment tool (IR181-2), which had been updated and published by the RMIT in the prior year.

The Knowledge Base Steering Committee, a subcommittee of the KMC, continued its work on the Knowledge Base Restructuring and Integration Program, a major CII initiative. The restructured knowledge base will allow visitors to explore CII content, using structured navigation through six different category portals and an easy-to-use, powerful search interface. The new platform will integrate content from CII's publication library, workshop and conference presentations, implementation tools, new topic summaries highlighting key research findings, and 10-10 Performance Assessment Program metrics.

A restructuring and integration pilot was successfully completed among KMC members in the first half of 2014. The KMC

also scoped a content management system (CMS), search optimization, and visualization IT solution that formed the basis for a request for proposal. Based on this pilot, the first Restructuring, Integration, and Tagging team (RIT) was launched in St. Louis with 15 member volunteers from eight local CII companies. Other teams are currently being recruited to carry out and support the restructuring and integration of the CII Knowledge Base, which will continue throughout 2015. A communications campaign included the launch of a Knowledge Base Program website with key messaging and a flyer to promote awareness, update members on progress, and recruit volunteers.

### Communities of Practice

In 2014, the KMC expanded CII's Communities of Practice (COPs), groups whose members share a passion for a particular topic or practice area. COPs provide a virtual environment in which members can deepen their knowledge and understanding of a topic through ongoing collaboration and knowledge sharing. At the beginning of 2014, the established COPs addressed safety, globalization, information management, front end planning, next-generation leaders, risk management, quality management, federal facilities delivery, modularization, performance assessment, and process controls. In December, the Sustainability COP was reactivated, bringing the total from 11 to 12 active COPs with participation of 350 members from over 90 member companies.

A highlight during the 2014 CII Annual Conference in Indianapolis was the Next-Generation Leaders Forum, co-sponsored by CII and the Next-Generation Leaders COP. This popular third-annual event featuring Mark Breslin, CEO of United Contractors and President of Breslin Strategies, was attended by 100 participants. Breslin's presentation, "Managing Demographics, Generations, and Change for Performance Improvement," highlighted several key areas of opportunity that offer performance improvement, including understanding changing demographics, and generations in the workplace; building successor leaders for capacity and profit; enacting effective knowledge transfer; and maximizing mentoring for rapid development. The forum received exceptional ratings and will be repeated at the 2015 CII Annual Conference in Boston. The Next-Generation Leaders COP also sponsored a plenary session and video to update the membership on their initiatives and activities. A display area attracted several new recruits to our COPs.

The KMC sponsored the fourth annual COP Leadership Forum, held during the conference week. COP leaders provided insight into their progress, growth, deliverables, and lessons learned, as well as ideas for continuous improvement and launching new COPs.

# SPECIAL COMMITTEES

## STRATEGIC COMMUNICATIONS COMMITTEE

The Strategic Communications Committee (SCC) aims to support the purpose, vision, and mission of CII through communications; improve the quality, consistency, and alignment of communication between core process groups and standing committees to deliver more value to CII members; maintain and promote CII's brand and industry leadership; and maximize communication channels to expand CII's audience and membership.

The SCC manages CII's Communications and Branding Guidelines to help CII members and staff plan and develop all forms of communications. The goal is to maintain a strong brand identity through all communication pieces that carry the CII name. To move CII communications from tactical to strategic, the committee conducted a member-wide communications survey in December 2014 to obtain key input on the best communications strategy for the institute. Using the survey findings, the SCC is now formulating a strategic communications plan to provide a more targeted, more coordinated, and more forward-looking focus for CII communications.

To help implement this move from tactical to strategic, Mariette Hummel joined CII as communications program coordinator in 2014. Drawing on her previous experience in international public relations and broadcasting, Hummel has set the following goals: leverage multimedia and social media channels to increase public and industry awareness of the wealth of CII knowledge and tools; capitalize on the tremendous expertise and talent of our committee members; unify all external communication by aligning our internal resources; and develop a multi-year communications strategy for CII in close collaboration with the committee.

The SCC also updated the CII Ambassador Toolkit, an online resource to support the recruitment of CII members. It provides member organizations with the tools to promote internal

awareness of CII. This toolkit is located under the tab "resources" in *myCII* and consists of five promotional pieces, including:

- "Why CII?" Brochure
- Key Messaging and Elevator Speech
- CII Overview Presentation
- CII Annual Report
- CII 30-Year Anniversary Video

The "Why CII?" brochure highlights the value of CII membership with a list of benefits and member testimonials, and is used by the Membership Engagement Committee in its work to recruit new members.

CII staff continued to expand media relations to increase industry awareness and coverage of CII research and the annual conference, including articles that appeared in *Engineering News-Record (ENR)*, *Associated Construction Publications (ACP)* and *Hydrocarbon Processing*. CII has also partnered with ACP to publish a monthly feature article in all of their regional publications.

In addition to these highlights, the SCC and CII staff implemented its 2014 communications plan, which included developing and publishing CII's 30th Anniversary Annual Report, commemorating 30 years of CII's industry leadership in research; creating the quarterly e-News; and sending various e-blasts announcing CII events and key initiatives. CII staff also worked with the Performance Assessment Committee on its Health Care Benchmarking Metrics and 10-10 Program campaigns, and assisted the Knowledge Management Committee in its Knowledge Base Program communications, which included launching a program website, developing key messaging, and creating a flyer presented at the 2014 Fall Board of Advisors Meeting.







# SPECIAL COMMITTEES

## MEMBERSHIP ENGAGEMENT COMMITTEE

The mission of the Membership Engagement Committee (MEC) is to develop and implement strategies and resources to recruit members; promote the early engagement of new members; ensure the continuing participation of current members; and monitor member value and satisfaction. The MEC recruits organizations that add to the stature and knowledge base of CII, keeping a balance between owners and contractors. CII's growth continued in 2014, reaching 141 members by year-end. Member retention remained high at 92 percent.

In addition to recruiting, the MEC spends a large part of its time developing information and reference tools to assist the Board of Advisors (BOA) in gaining the most from their CII membership. In 2014, the MEC organized the BOA reference tools (*myCII*, BOA Awareness Webinar Series, and BOA Awareness Self-Assessment Tool) into a one-page online BOA Reference Guide. The committee also added two new BOA tools this year – an Annual CII Business Plan Template and New Member Roadmap. This 24/7 resource provides useful information for new and existing CII members alike.

The MEC organizes various orientations throughout the year. Monthly Board of Advisors Awareness Webinars inform new members and updates existing members on various topics ranging from in-depth reviews of a core knowledge process to research team staffing preparations. New BOA members are invited to a special orientation before each BOA meeting to familiarize them with their role and provide a comprehensive overview of the organization. Additional orientations are held for prospective and existing members throughout the year.

The MEC surveys its members biennially to assess member value and satisfaction. In 2014, the MEC and CII staff analyzed the 2013 survey data and distributed the findings at the 2014 Fall Board of Advisors meeting. The MEC then conducted a roundtable where the BOA reviewed the challenges and identified possible ways to improve. It is this continuous improvement that drives CII and its membership to be the best of the best.

## ANNUAL CONFERENCE

The CII Annual Conference held in Indianapolis, Indiana, broke attendance record in 2014, attracting more than 730 professionals. The conference theme, "Driving Performance at Every Turn," was highlighted by Indianapolis' world famous Motor Speedway and the racing flavor provided at the start of the event by CII Annual Conference Chair Rex Phillips of Eli Lilly and Company.

Keynote speakers included Mitch Daniels, President of Purdue University; Ridge Miller and Adrian Russell on behalf of The ACE Mentor Program of America, and David Foot, demographer and economist. Nine CII research team members presented new findings, partnered with ready-to-use implementation tools. The Performance Assessment Committee reported on the new 10-10 Performance Assessment Program, a companion to the current CII Benchmarking & Metrics Program. Member case studies and standing committee presentations provided insight into using existing CII Best Practices and tools.

CII continues to support the education and training of the industry's next generation. In addition to ACE, NCCER, and SkillsUSA gave the audience an overview of their programs. These presentations were supported by training simulators for hands-on demonstrations. Other student research efforts were highlighted by a poster session presenting non-CII funded research from engineering programs at universities across North America.

During the annual awards banquet, CII's top two awards were presented by CII Director Wayne Crew, CII Chair Anna Franz, and Annual Conference Chair Rex Phillips. John Nobles of Burns & McDonnell—a CII veteran since the 1980s—won the Richard L. Tucker Leadership and Service Award. Taking home the institute's most prestigious award, the Carroll H. Dunn Award of Excellence, was Janice L. Tuchman, Editor-in-Chief of *Engineering News-Record (ENR)*, for her lifelong dedication to reporting on industry happenings and trends.

# PROCESS INDUSTRY PRACTICES

In its 25th year of operation, Process Industry Practices continued its growth and success throughout 2014. Over the past year, our lists of members and subscribers has grown to a total of 124 owner, operator and contractor companies who regularly implement PIP Practices. With an additional 22 PIP licensees, we remain a recognized industry consortium. As the global reach of our members, subscribers, and licensees grows, we continue to see the use of our practices extend beyond the process industry.

PIP is an independently funded organization operating under the umbrella of CII. Success is a direct result of our member companies applying key resources in support of nearly 600 PIP Practices in 11 engineering disciplines. Developing PIP Practices involves harmonizing member companies' internal standards. The content of these practices is applicable to the needs of non-members in the process industry and related industries around the world. Once again, we have seen enthusiastic participation and support of member company volunteers and management. This ensures the continuous development and revision of approved PIP Practices, and the ever-growing increase in industry awareness, acceptance, and implementation of these practices.

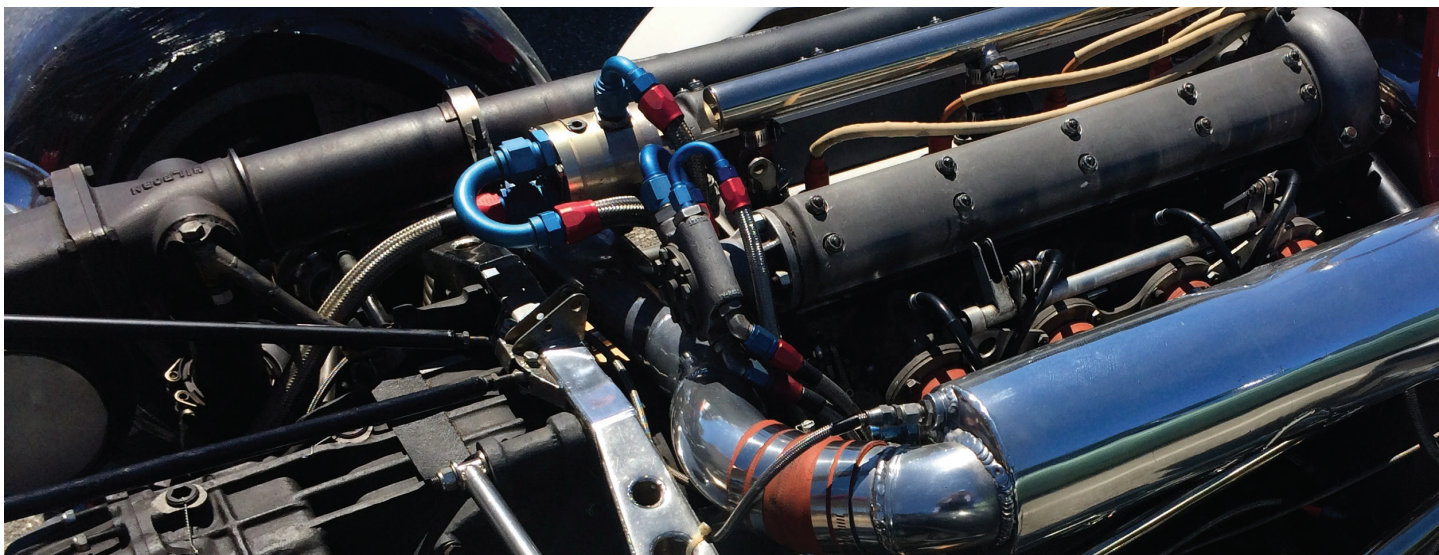
Member-driven initiatives in 2014 included our continued commitment to identify opportunities to make the practices more globally applicable. The Pipeline Systems Function Team continues developing Piping Practices related to ASME B31.4 and B31.8 codes for gas/liquid transmission and distribution piping systems. The special need for hygienic processes is addressed with a new team developing plans for practices to support this industry. In response to member company needs, we have added a feature to our website that gives our members online access

to archived publications and supporting documents. We also updated and published our strategic plan and we are now in the process of implementing its key elements.

Quarterly implementation workshops continued throughout 2014. The workshops focused on teambuilding and PIP metrics and featured both the Machinery Function Team and Pipeline Function Team. These workshops continue to provide excellent forums for sharing implementation success stories. PIP members once again reported that they achieved considerable savings by implementing PIP Practices. The networking opportunities and access to (non-proprietary) knowledge are recognized as additional benefits for PIP Members.

In 2014 PIP offered the following workshops:

- Counterfeit Mitigation Research Team Report; Max Casada reported out on the process of CII's Research Team 307 "Migrating Threats of Counterfeiting in the Capital Projects Industry"
- P&ID Function Team Spotlight; Jay Clark, P&ID Function Team Leader, presented an update on the activities of the team in 2014
- Enhancing the Functionality of the PIP Piping Line and Specifications and Valve Descriptions; Ken Hamilton provided an update on PIP's work to improve consistency in the content of the piping line specifications and valve descriptions and deliver them in a database format
- PIP Roadmap: Your "Complete Set" of Standards; The workshop discussed the lifecycle of a project and how PIP fits into the engineering process of the lifecycle.





# PROCESS INDUSTRY PRACTICES

## MEMBERS — OWNERS

|                                |                               |                                           |                                            |
|--------------------------------|-------------------------------|-------------------------------------------|--------------------------------------------|
| 3M Company                     | Devon Energy Corporation      | Invista                                   | Phillips 66                                |
| Aera Energy, LLC               | Direct Energy (Hess)          | Lubrizol Corp.                            | Pioneer Natural Resources                  |
| Aramco Services Company        | DuPont                        | LyondellBasell                            | REC Silicon                                |
| Archer Daniels Midland Company | Eastman Chemical Company      | Mallinckrodt                              | Rentech, Inc.                              |
| Arkema, Inc.                   | Evonik Corporation            | Momentive Specialty Chemicals, Inc.       | Saudi Basic Industries Corporation - SABIC |
| Ascend Performance Materials   | Flint Hills Resources, LP     | Monsanto Company                          | Sekisui Specialty Chemicals America, LLC   |
| Axiall Corporation             | FMC Corporation               | Mosaic Fertilizer, LLC                    | Tesoro Corporation                         |
| BP America, Inc.               | Grupo Petrotex - GPT          | NORAM E&C                                 | UOP, LLC                                   |
| Celanese, Ltd.                 | Hess Corporation              | Occidental Petroleum Corporation          | Zachry Holdings, Inc.                      |
| Chemtura Corporation           | Hess Energy Marketing, LLC    | Pasadena Refining System, Inc.            | Zeon Chemicals, LP                         |
| Chevron                        | HollyFrontier                 | PESRM (Philadelphia Energy Solutions R&M) |                                            |
| CITGO Corporation              | Honeywell International, Inc. |                                           |                                            |
| Compass Minerals               | Huntsman Corporation          |                                           |                                            |
| ConocoPhillips                 | INEOS Olefins & Polymers USA  |                                           |                                            |

## MEMBERS — CONTRACTORS

|                                  |                                   |                          |                                      |
|----------------------------------|-----------------------------------|--------------------------|--------------------------------------|
| Ambitech Engineering Corporation | CDI Corporation                   | JGC America              | S&B Engineers and Constructors, Ltd. |
| Audubon Engineering Operations   | CH2M HILL                         | Jacobs                   | Samsung Engineering America, Inc.    |
| BE&K (a KBR company)             | Chart Energy & Chemicals, Inc.    | KBR                      | SK E&C USA, Inc.                     |
| Bechtel Group, Inc.              | Chemtex International             | Leidos Construction, LLC | SNC-Lavalin, Inc.                    |
| Brinderson, LP                   | ENGlobal Engineering, Inc.        | Merrick & Company        | Technip                              |
| Burns & McDonnell                | Fluor Corporation                 | Middough, Inc.           | URS Corporation                      |
| Burrow Global, LLC               | GE Energy                         | OnQuest                  | WorleyParsons, Ltd.                  |
| CB&I                             | IHI E&C International Corporation | Preferred Engineering    |                                      |
|                                  |                                   | Ref-Chem                 |                                      |

## SUBSCRIBERS

|                                                            |                                 |                                               |                                                                      |
|------------------------------------------------------------|---------------------------------|-----------------------------------------------|----------------------------------------------------------------------|
| Agrium Inc.                                                | James Construction Group, LLC   | Petroleum Company of Trinidad and Tobago Ltd. | Sumitomo Chemical Company, Ltd.                                      |
| Bahrain Petroleum Company - BAPCO                          | Jotun Paints, Inc.              | PlusPetrol S.A.                               | The Sherwin-Williams Company                                         |
| Braskem, PP Americas, Inc.                                 | Koch Industries, Inc.           | Praxair, Inc.                                 | Tengizchevroil (TCO)                                                 |
| Chevron Phillips Chemical Company, LP                      | Kraton Polymers                 | Phoenix Park Gas Processors Limited           | Utilities and Energy Management at The University of Texas at Austin |
| Coffeyville Resources Refining & Marketing, LLC            | L-Con Engineers & Constructors  | Rockwood Lithium, Inc.                        | Valero Corporate Services Company                                    |
| Coskata                                                    | Lloyd Engineering, Inc.         | Roquette America, Inc.                        | Velocys, Inc.                                                        |
| Engineering for the Petroleum & Process Industries (ENPPI) | M & H                           | ROXUL                                         | The Williams Companies, Inc.                                         |
| Furmanite Technical Solutions                              | North West Redwater Partnership | Roxtec International AB                       | Willbros Engineers, LLC                                              |
| Indorama Ventures, PCI                                     | Nuclear Fuel Services, Inc.     | Sasol Technology                              | Wood Group Mustang                                                   |
|                                                            | NuStar Logistics, LP            | Seadrift Coke, LP                             |                                                                      |
|                                                            | ONEOK, Inc.                     | SGCenergia SGPS                               |                                                                      |
|                                                            | OXEA Corporation                | Stepan Company                                |                                                                      |

## LICENSEES

|                          |                                         |                                                   |                                       |
|--------------------------|-----------------------------------------|---------------------------------------------------|---------------------------------------|
| API                      | IEEE                                    | National Insulation Association                   | Texas A&M University - Corpus Christi |
| ASME                     | IHS                                     | Palomar College                                   | ThomasNet                             |
| Autodesk                 | Intergraph                              | South Central Louisiana Technical College (SCLTC) | Thomson Reuters / Techstreet          |
| Aveva                    | ISA                                     | St. Paul Technical College                        | University of North Dakota            |
| Bentley Systems, Inc.    | Lee College                             | SAI Global                                        |                                       |
| Blue Cielo ECM Solutions | National Institute of Building Sciences |                                                   |                                       |
| Codeware                 |                                         |                                                   |                                       |



# FIATECH

Comprised of more than 100 member organizations and strategic partners, Fiatech leads the way to productivity improvement through the identification and development of new technologies and innovative solutions for critical challenges that drive the future of the capital projects industry. Fiatech's industry impact and engagement exceeded expectations in 2014, including the addition of 15 new member organizations and more than 575 attendees at its four domestic and international events. An open Mobile IT Community of Interest was launched and has grown to serve 850 members. Our online footprint grew this year through 31,000 social media exchanges, 100,000 website visitors, and 3,000 recipients of leading-edge webinars.

To further increase the return on investment for constituents, expert education sessions included increased dialogue, webinars featured real-time on-topic polling, and exhibitions focused on hands-on experiences with demonstrations. In 2014, Fiatech members led progress on over 20 innovative projects. Numerous deliverables came to market in the categories of project management, construction, procurement and materials management, operations, and information management. Through these projects, Fiatech members continue to advance industry-leading solutions while minimizing their individual costs and risks. Just prior to the end of the year, three new and exciting projects were publicly announced after being approved by the Board of Advisors.

Through the dedicated work and expert guidance of Fiatech members, this year began with a three-year strategic plan officially in place. The plan provides a path forward for sustainability through five key strategies with established targets and specific performance metrics. Four teams addressed the actual implementation plans for the five strategies this year and reported on progress at the annual Member Meeting in the fall. The Strategy #1 Team announced the first deliverable of the plan by introducing an expert volunteer group to scan and track

game-changing or incremental technologies and processes from across the global economy. Known as the Horizon 360 Team, the group counts six academia and six industry members, including representatives from the University of Alberta, The University of Texas at Austin, ExxonMobil, and Mott MacDonald.

Fiatech is excited to go into 2015 with a focus on strategic opportunities that provide potential for step change improvements in the capital project industry. Our member participation continues to increase as we work toward our vision of "transforming the world's infrastructure delivery and operations through innovation." The Fiatech team is eager to accomplish and exceed the ambitious goals for growth and excellence in 2015. We invite you to read more about our progress online at [www.fiatech.org](http://www.fiatech.org).

***"Fiatech projects and presentations reflect customer needs in functional areas not well addressed in the market today. This also provides insight into how our organization's technology can be used to help the market."***

***—Dassault Systemes***

***"We obtain value from Fiatech by leveraging learning and solutions so we don't have to do it all ourselves. As a member organization, we are able to set the direction of projects of high value to us to accelerate progress in areas where we need a solution. Through Fiatech we have opportunities to help improve the industry."***

***—The Dow Chemical Company***



## FIATECH 2014 MEMBERS & PARTNERS

4SPECS, Inc.  
 AIA Building Connections  
 American Institute of Steel Construction  
   - AISC  
 ARC Advisory Group  
 AREVA  
 Arizona State University  
 Atlas RFID  
 AUCOTEC  
 Autodesk, Inc.  
 AVEVA  
 Avolve Software Corporation  
 Bechtel Group, Inc.  
 Bentley Systems, Inc.  
 BergerAVART, Inc.  
 Black & Veatch  
 buildingSMART alliance™  
 Burnham Nationwide  
 Cardno TEC  
 Carnegie Mellon University  
 CCC Group, Inc.  
 CCT - Computer & Communication  
   Technology  
 CH2M HILL  
 Chevron  
 CIB  
 CIFE - Stanford University  
 Construction Industry Institute - CII  
 Class of Your Own  
 Clemson University  
 COMIT  
 Compu.tecture, Inc. (MadCad)  
 Conspectus, Inc.  
 Continental Automated Buildings  
   Association - CABA  
 Coreworx, Inc.  
 Crossrail  
 Dassault Systemes

Department of Veterans Affairs  
 DMS Corporation (Formerly Beijing)  
 DotProduct, LLC  
 Douglas Day Associates  
 The Dow Chemical Company  
 Drexel University  
 Dupont  
 E2Open  
 Element Industrial  
 Emerson Process Management  
 EPRI - Electric Power Research Institute  
 ExxonMobil Research and Engineering  
 Faithful+Gould (division of Atkins)  
 Fluor Corporation  
 Georgia Institute of Technology  
 Goodman, Allen & Filetti  
 HAL, Inc.  
 Hatch  
 Hydraulic Institute  
 InEight (Hard Dollar)  
 Intelliwave Technologies  
 Intergraph Corporation  
 International Code Council - ICC  
 Iowa State University  
 iRing User Group  
 Jacobs  
 JKB Architectural Specifications  
 Johnson & Johnson Consultants, LLC  
 Kaiser Permanente  
 KAIST, Korea Advanced Institute of  
   Science and Technology  
 KICTEP  
 King Fahd University of Petroleum and  
   Minerals  
 Lidar News  
 Loughborough University  
 McLaren Software  
 Mechanical Contractors Assoc of Chicago

MIMOSA  
 Mott MacDonald  
 Myongji University  
 National Academy of Construction - NAC  
 NCMS - National Center for Manufacturing  
   Sciences  
 NIST  
 Noumenon Consulting, Ltd.  
 OnTrack Engineering, Ltd.  
 Open O&M Initiative  
 ORACLE  
 PCA - POSC Caesar Association  
 PIP  
 Ruby + Associates, Inc.  
 S&B Engineers and Constructors, Ltd.  
 Shell Global Solutions US, Inc.  
 Siemens  
 Skanska USA Building, Inc.  
 Solibri  
 SPAR Europe  
 Synchro Softwar, Ltd.  
 Target  
 TEAM Integrated Engineering, Inc.  
 Tecgraf / PUC-Rio University  
 Texas A&M University  
 Thalden - Boyd Architects  
 ThomasNet  
 Trimble  
 University of Alberta  
 University of Illinois at Urbana-Champaign  
 University of Michigan  
 University of Salford  
 University of South California  
 University of Washington  
 University of Waterloo  
 WorleyParsons, Ltd.  
 Zachry Holdings, Inc.

# CII AWARDS

## CARROLL H. DUNN AWARD OF EXCELLENCE

*The Carroll H. Dunn Award of Excellence is one of the most prestigious awards in the construction industry and was named in honor of Carroll H. Dunn, Project Director of the Construction Industry Cost Effectiveness Project, which formed the foundation of CII. Each year, the award recognizes an individual who has had singular and notable responsibility for significant advancements in improving the construction industry.*



### Janice (Jan) Lyn Tuchman

The 2014 Carroll H. Dunn Award of Excellence was presented to *Engineering News-Record (ENR)* Editor-in-Chief **Janice (Jan) Lyn Tuchman**. She accepted CII's highest honor for her lifelong commitment to the health and growth of the industry. In her role of Managing Editor at ENR for the past 13 years, Tuchman has shown the leadership, dedication and passion that helped to keep construction news data

flowing. Known as a fixture in the industry, her influence extends beyond the journalism arena as she serves on committees and boards of various industry organizations. As the first-ever female recipient of the award, Tuchman said she was amazed and honored by the recognition that rewarded her work in continuously improving the engineering and construction industry.

## RICHARD L. TUCKER LEADERSHIP & SERVICE AWARD

*The Richard L. Tucker Leadership & Service Award was named after Dr. Richard L. Tucker, who led the founding of the Construction Industry Institute in 1983. The award traditionally recognizes individuals who have made a significant contribution to the CII mission and its success.*



### John Nobles

This year, the CII Executive Committee selected **John Nobles** of Burns & McDonnell for this prestigious award because of his longtime commitment to CII's mission and success. Throughout the years, Nobles has demonstrated a passion for CII leadership and dedication to service through his involvement on the CII Board of Advisors, Executive

Committee, and Strategic Planning Committee and as the 1997 Chair. Nobles' commitment to safety was named as a key factor in establishing Burns & McDonnell as a first-quartile safety performer among CII members and earned the company a spot among *Fortune* magazine's Top 100 Places to Work in 2012 and the two subsequent years.



## OTHER CII AWARDS

*In addition to the Carroll H Dunn and Richard L. Tucker awards, the Construction Industry Institute recognized excellence among its members and academics with various other awards.*

### CII Distinguished Professor Award

#### Dr. W. Edward Back

Dr. Back is the Director of the Construction Engineering Management Program at the University of Alabama. CII honored him for his methods of teaching, such as student teamwork and project-focused education, which he believes prepares his students for real-world projects and creative problem solving.



#### Dr. Mounir El Asmar

Dr. El Asmar is a faculty member of Arizona State University's School of Sustainable Engineering and the Built Environment. Currently a member of the CII Academic Committee, he was recognized for his commitment to the industry. Through his interactive teaching style, Dr. El Asmar succeeds in simulating real-life scenarios that prepare both his undergraduate and graduate students in the most effective way possible.



#### Dr. Paul Goodrum

Dr. Goodrum is Professor of Construction Engineering & Management at the University of Colorado at Boulder. He has served on numerous CII research teams and is a member of the Breakthrough Strategy Committee, CII Academic Committee, and Strategic Communications Committee. Dr. Goodrum's involvement with CII extends into his classrooms where he has included numerous CII products in his course curriculum.



#### Dr. Brian Kleiner

Dr. Kleiner is Professor in Industrial and Systems Engineering and Director of the Myers-Lawson School of Construction at Virginia Tech. He regularly presents CII research findings, initiatives, and impacts to the industry and incorporates CII research in regular courses, short courses, guest lectures and presentations on health and safety.



### CII Outstanding Graduate Research Assistant

#### Eric Marks

Dr. Marks of the Georgia Institute of Technology is the first-ever Outstanding Graduate Research Assistant. He is known for his dedication and commitment to Research Team 301.

### CII Outstanding Researcher

In 2014, CII awarded the title of Outstanding Researcher to **Dr. Carlos Caldas** – The University of Texas at Austin, **Dr. Paul Goodrum** – The University of Colorado at Boulder, and **Dr. Carl Haas** – The University of Waterloo of Research Team 252, Construction Productivity.

### CII Professional Development Award

CII recognized **The Procter & Gamble Company** for its dedication to professional development. The member company used CII research findings and resources to create an innovative professional development program.

### CII Outstanding Implementer

CII selected **Tammy Lynam** of Burns & McDonnell and **Barry Rittberg** of Fluor Corporation as recipients of the Outstanding Implementer Award.

### CII Outstanding Instructor

**Dr. G. Edward Gibson, Jr.**, Arizona State University was selected as CII Outstanding Instructor of 2014. He is Professor and Director of the School of Sustainable Engineering and the Built Environment at Arizona State University and served on several CII committees and teams.

### CII Performance Assessment User Awards

The following companies were selected for the CII Performance Assessment User Awards: **Kaiser Permanente**, **Cannon Design** and **Hargrove Engineers + Constructors**. They were recognized for their involvement with the various CII benchmarking programs.

# CII FINANCIALS

## Sources and Uses of CII Resources in (\$000)

|                          |                                        |         | Net                 |
|--------------------------|----------------------------------------|---------|---------------------|
| <b>BEGINNING BALANCE</b> |                                        |         |                     |
|                          | Carried Forward from 2013              | 1,008   |                     |
|                          | Balance Forward                        | 744     |                     |
|                          | Reserve                                | 1,000   | <b>2,752</b>        |
| <b>SOURCES</b>           |                                        |         |                     |
|                          | <u>Membership Dues</u>                 |         | 5,199               |
|                          | <u>Product Sales:</u>                  |         |                     |
|                          | Revenue                                | 163     |                     |
|                          | Production & Sales Expense             | (224)   | (61)                |
|                          | <u>Other Sources</u>                   |         | 18                  |
|                          | <b><u>TOTAL SOURCES</u></b>            |         | <b><u>5,156</u></b> |
| <b>USES</b>              |                                        |         |                     |
|                          | <u>Programs:</u>                       |         |                     |
|                          | Research                               | 2,538   |                     |
|                          | Implementation                         | 317     |                     |
|                          | Professional Development               | 177     |                     |
|                          | Best Practices Program                 | 29      |                     |
|                          | Knowledge Management                   | 195     |                     |
|                          | Benchmarking & Metrics                 | 1,329   |                     |
|                          | Executive Leadership Program           | 278     |                     |
|                          | Breakthrough                           | 6       |                     |
|                          | Benchmarking & Metrics Revenue         | (370)   |                     |
|                          | Other Program Revenue                  | (764)   | 3,737               |
|                          | <u>Conferences:</u>                    |         |                     |
|                          | Annual Conference                      | 1,391   |                     |
|                          | Attendance Fees                        | (1,074) | 317                 |
|                          | <u>Supporting Activities:</u>          |         |                     |
|                          | Support of Members & Director's Groups | 457     |                     |
|                          | Academic Committee                     | 23      |                     |
|                          | Other Activities                       | 75      |                     |
|                          | Supporting Activity Revenue            | (157)   | 398                 |
|                          | <u>Information Systems</u>             |         | 188                 |
|                          | <u>General Expense:</u>                |         |                     |
|                          | Administration                         | 408     |                     |
|                          | Other Activities                       | 385     | 793                 |
|                          | <b><u>TOTAL USES</u></b>               |         | <b><u>5,433</u></b> |
|                          | <b>NET</b>                             |         | <b>(275)</b>        |
|                          | <b>ENDING BALANCE</b>                  |         | <b><u>2,478</u></b> |



# CII STAFF

## Director

Wayne Crew

## Executive Staff

Kim Allen

*Associate Director, Knowledge Management*

Dr. Cynthia King

*Associate Director, Implementation and Professional Development*

Dr. Stephen Mulva

*Associate Director, Performance Assessment*

Dr. Stephen Thomas

*Associate Director, Research, Academic, and Breakthrough*

Jewell Walters

*Program Director, Member Services*

## Staff

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Terri Buvia, *Executive Assistant*

Erika Corbell, *Senior Program Coordinator*

Frances DeCoux, *Administrative Associate*

Deborah DeGezelle, *Project Manager*

Kristi Delaney, *Senior Program Coordinator*

Mariette Hummel, *Program Coordinator*

Kelly Lenig, *Senior Program Coordinator*

Dr. Daniel Oliveira, *Research Associate*

Pipper Ramsey, *Administrative Associate*

Donna Rinehart, *Administrative Associate*

Debbie Samilpa, *Senior Administrative Associate*

Dr. Junghye Son, *Research Associate*

Dr. Jacqueline Thomas, *Editor*

Stevan Wilsan, *Systems Administrator*

Dr. Sungmin Yun, *Postdoctoral Fellow*

Hong Zhao, *Project Manager*

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