Rhode Island School of Design students visit Blakeslee Prestress in Branford, Conn., as part of a PCI Foundation studio. Courtesy of Blakeslee Prestress Inc.

Blakeslee, Coreslab host RISD students

About 50 students from the Rhode Island School of Design (RISD) in Providence, R.I., visited Blakeslee Prestress in Branford, Conn., to see how a precast concrete manufacturing plant operates and to learn the basics of prestressed concrete design. This is the first year of the PCI Foundation and PCI North East (PCINE)–funded studio at RISD, which is being led by Assistant Professor Brett H. Schneider. During the semester, students will not only visit plants and learn from industry professionals but will have an opportunity to design precast concrete projects.

"The program is a great opportunity for students at one of the most prestigious design schools in the country to learn about a material that is often overlooked in architectural design classes," says Robert Vitelli, vice president of Blakeslee Prestress. "We were happy to work with the school and PCINE to give them a better understanding of the processes so they recognize precast's benefits."

During the half-day program, the students toured the plant and yard to see how a variety of precast concrete products are fabricated. They were able to view procedures for casting concrete and setting steel for architectural panels, double tees, columns, beams, and stairs. They were given a demonstration of the company's Tekla 3-D modeling software. In addition to the tour, Rita Seraderian of PCINE presented a program on the basics of precast concrete design.

The following day, students in the 2014 Precast Studio took part in a daylong precast concrete–related tour in Boston, Mass., led by Robert Del Vento Jr. of Coreslab Structures and Seraderian. Students in the program are either fourth-year undergraduate students or graduate students.

"We were able to give the students a look at the design process from beginning to end," Del Vento says. "We started the day at architecture firm Add Inc., where architect Michael Moorehead gave a presentation that reviewed design considerations and examples of projects using architectural precast concrete cladding materials. Then we went on a walking tour to a project recently completed at 319 A St., followed by visiting the installation at the Pier 4 Luxury Apartments. It allowed the students to see precast from cradle to grave."

In addition to touring the exterior of the project, the students were able to examine how the precast concrete works with the structural system inside the structure.

"The broad objective of this PCI Foundation–funded studio is to test opportunities for serious engagement with industry as a strategy for learning about construction technology and the construction industry as a whole," Schneider says. "RISD's Department of Architecture is committed to exposing students to the design and fabrication of full-sized components of architecture. The PCI studio will provide comprehensive exposure to the precast industry."

To learn more about the PCI Foundation studios, visit www.pci-foundation.org and click on Programs & Partnerships.

See You in September: PCI Foundation takes the personal approach to raising funds

Marty McIntyre
PCI Foundation
Executive Director

Your personal contribution to the PCI Foundation can be earmarked to fund a new annual education program being introduced in January 2015: the PCI Professors Seminar.

Precast concrete education faces more competition for time and attention at universities than it ever has before. Your contribution to the See You in September program will help us ensure that we have the opportunity to educate tomorrow's customers, and when September rolls around, precast concrete will be part of the curriculum at more colleges and universities. All individual donors will get a thank-you gift in September at the 60th Anniversary PCI Convention and National Bridge Conference or just after the convention if you aren't attending.

The first 50 individuals who contribute $100 or more will be entered in a drawing to receive a complimentary registration to the 60th Anniversary PCI Convention in September. That means you would have a 1 in 50 chance to register free—excellent odds!

Our goal is to raise $20,000 before the 60th Anniversary PCI Convention in September to fund this project.

The PCI Foundation is introducing a new program for architecture professors who wish to learn more about precast concrete design and how it can be taught in the university classroom or studio. The program will be a three-day intensive workshop that will include instruction from college professors already teaching precast concrete as part of grants received from the PCI Foundation, industry experts, and architects with precast concrete experience.

So far, the PCI Foundation has worked with professors from 10 schools of architecture, engineering, and construction management. Each professor has introduced precast concrete into the curriculum by working with local industry members. For the first time, the PCI Foundation will create a new program to "educate the educator." This program will provide new opportunities for local involvement, maybe even in your backyard.

The program will take place January 4–6, 2015, in Charlotte, N.C., with portions of the program taking place at the University of North Carolina–Charlotte. Peter Finsen of PCI Georgia/Carolinas is helping coordinate.

Professors will learn the basics of precast concrete design for buildings and will be given tools to assist them in teaching precast concrete concepts to students. At the end of the program, professors will receive Precast in a Box, a special resource designed to offer professors a cafeteria of teaching tools that they can select to use in the classroom. Professors will also have the opportunity to tour the UNCC Solar Decathlon project, which is being reassembled on campus.

The schedule is as follows:

- Sunday, January 4: Arrive in Charlotte, N.C., and Introduction to Precast and Classroom Examples
- Monday, January 5: Precast concrete plant tour, project tour, and architecture office visit
- Tuesday, January 6: Teaching Tools and Ideas (Precast in a Box)

Content provided to professors interested in teaching precast concrete design will include videos, books, case studies, precast concrete details, and other materials useful in the classroom. Many of the PCI Foundation–sponsored programs have offered integrated courses with either engineering or construction management departments. If professors from either of those departments wish to attend with an architecture professor, that can be arranged.

We are searching for professors who should attend this program. If you know of a local university where precast concrete should be taught, this may be a great opportunity to work with a professor to get him or her up to speed. The program is free to qualified attendees. We ask that sponsors pay airfare and hotel costs for attendees.

Business Performance Council news

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What does BIM mean to you? 3-D sales drawings? 3-D erection drawings? How about building information management?

Managing a business depends on reliable information. Construction in general, and precast concrete specifically, can become more efficient and therefore less costly with proper management of project information. The PCI BIM Committee has been working for the past several years with the Georgia Institute of Technology to develop the technical tools to allow information exchange among various modeling software more easily. Those tools will be available soon. What are we going to do with them?

We should first understand where BIM is currently. A good resource is "Business Value of BIM for Construction in Major Global Markets," a McGraw-Hill Smart Market Report available free at http://construction.com/market_research/. The report says that contractor adoption of BIM increased from 28% in 2007 to 74% in 2012. These are our customers. Are we ready to serve them as they require the use of BIM in their projects? The report gives us a hint. General contractors rated the BIM skills of trade contractors. In the United States, only 13% of concrete and masonry contractors were rated as having high or very high skills. This was just above drywall/ceiling contractors. Maybe we have room for improvement, considering 62% of steel fabricator/erector contractors in the United States were rated as having high or very high skills.

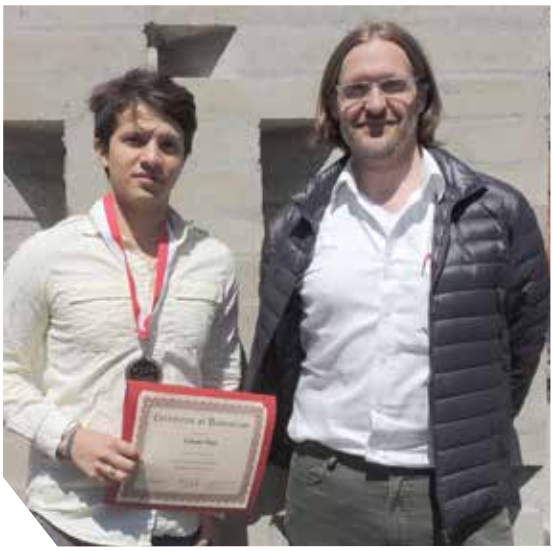
Another item from the McGraw-Hill report is that contractors are realizing significant benefits in BIM-driven projects. Topping the list, 41% report reduced errors and omissions and 31% report reduced rework. At a recent ACI Strategic Development Council session, it was reported that a reinforcing bar fabricator reduced a defect rate from 30% to essentially nothing using BIM. A key factor is errors in data reentry. When data are available in a BIM model, they should be used by everyone affected by them to eliminate reentry and the consequent errors.

This type of application has a direct effect on precast concrete manufacture. Our industry certainly has some early adopters. Increased efficiencies are reported in procurement, hardware fabrication, concrete batching, quality control tagging and tracking, piece tracking, production scheduling, and erection scheduling. The March issue of *Structure* includes an article, "3-D In-Model Shop Drawing Review," on a more efficient shop drawing review process used in the steel industry. The possibilities go beyond 3-D drawings.

The PCI BIM Committee can get things rolling on BIM implementation, but to be successful we will need the involvement of marketing, operations, and business leaders to drive solutions for efficiency inside our industry and to create a strategy for providing value to our customers. It is not inexpensive to get started in BIM. Early adopters may be able to provide an understanding of potential return on investment. McGraw-Hill reports that 75% of reporting contractors had a positive return on their investment in BIM.

Regarding the future of BIM, we should pay attention to a couple of quotes from the McGraw Hill report: "Existing companies will need to embrace the change, determine where they provide value and stake out their role, or else risk becoming irrelevant," and "A firm's ability to succeed will depend on its willingness to innovate and embrace the business opportunities that these advancing technologies provide."

The Business Performance Council would like to hear about your needs where an industry initiative could provide solutions. Send your thoughts to Dave Dieter, BPC chair, at ddieter@midstateprecast.com or to staff liaison Roger Becker at rbecker@pci.org. We need your ideas to do our best job and accomplish our mission.



New Jersey Institute of Technology student Edward Perez was the first place winner of the Dana Knox Student Research Showcase. He is pictured here with his professor, Matthew Burgermaster. Courtesy of Matthew Burgermaster.

Precast Studio student wins research showcase

New Jersey Institute of Technology (NJIT) student Edward Perez received first place in the Dana Knox Student Research Showcase for undergraduate students in April. His research poster, titled "Porosity + Luminosity: A Storm-Resilient Precast Concrete Wall System Featuring Integrated Fiber-optic Lighting," was received favorably by the Alumni Associates committee, which called his work cutting edge. Perez's work was part of the Precast Studio conducted by assistant professor Matthew Burgermaster in the NJIT School of Architecture.

This project is a design prototype for a high-performance exterior envelope system that combines high-strength lightweight precast concrete wall panels with integrated fiber-optic strands to create a light-emissive, highly durable perforated facade. This resilient building system is envisioned as a prototypical public way-finding and back-up lighting system for emergency use in disaster-prone communities. This design research included both a hands-on fabrication of prototypes and a hypothetical test-case design application for a disaster relief center/emergency response center in coastal New Jersey.

The studio is offered in the fourth year as an optional studio. After the first year, the studio proved so popular that a second class was added and the number of students in the program doubled.

During the second year of the program, students presented their findings on resilient design with precast concrete to several community groups in areas affected by Hurricane Sandy.

"Post–Hurricane Sandy, that has been a focus of the entire university, and we have led the charge with our resilient design center. We have tried to find collaborators in the community to help with this," says professor and team leader Matthew Burgermaster. "They help us envision new types of design and construction solutions that might be useful to the marketplace."

The fiber-optic panels are featured in the Project Spotlight on page 32.

Diaphragm Seismic Design Methodology project completed

The Diaphragm Seismic Design Methodology (DSDM) research project conducted by the University of Arizona; the University of California, San Diego (UCSD); and Lehigh University is now complete. The research included testing on a three-story, half-scale structure using the UCSD shake table. The structure was subjected to a series of different seismic simulations, including a Berkeley maximum considered design earthquake. The full report is posted on the R&D page of the PCI website, www.pci.org. The report includes a step-by-step diaphragm design procedure, connection qualification protocols, design examples, and a detailed commentary on the research. The information gained from this project is being used to propose changes to some ASCE 7 provisions and will be the basis for proposed ACI standards on design and connection qualification.

Nancy Peterson and Joe Voss work at the PCI Foundation wine pull during the 2013 PCI Foundation silent auction at the PCI Convention. Courtesy of Marty McIntyre.

Fifth PCI Foundation silent auction to take place at convention

Plans are under way for the fifth annual PCI Foundation Silent Auction during the opening reception of the 60th Anniversary PCI Convention and National Bridge Exhibition. The theme of this year's auction is Monumental Success.

Silent auction committee chair Nancy Peterson of Rocky Mountain Prestress says that it is going to be a fun auction that will also highlight some of the successes of the PCI Foundation. "We really wanted to play off not only the fact that we are in Washington this year but also the fact that we are making monumental changes in the way precast concrete is taught in schools of architecture, engineering, and construction management."

"And this year, it is fitting that we are celebrating in conjunction with the 60th anniversary of PCI, the group that has made the work of the PCI Foundation possible," Peterson says.

New activities that were introduced last year will be included this year, including the wine pull, in which $20 gives the player a chance at a bottle of fine wine, and the balloon pop, in which $20 gives the player the chance to win a gift card.

Donations for items to auction off are being accepted. So far items include the ever-popular Concrete Chefs dinner provided by Jim Voss of JVI, an iPad Air donated by A. L. Peterson, a Go Play Golf package donated by BASF, and a smart home package provided by the Consulting Engineers Group. These and other items will be up for bid at bargain prices during the auction, but more items are still needed. Please contact Marty McIntyre at (708) 386-3715 or info@pci-foundation.org to donate an item.

Steve Kenepp, director of sales at U.S. Concrete Precast Group, conducts a midterm critique of 28 New Jersey Institute of Technology architecture students participating in the PCI Foundation and Mid-Atlantic Precast Association (MAPA)–sponsored precast design studio. Courtesy of Greg Winkler.

NJIT students get professional critique

Steve Kenepp, director of sales at U.S. Concrete Precast Group, recently visited the New Jersey Institute of Technology (NJIT) to join a midterm critique of 28 architecture students who are participating in the third year of the PCI Foundation and Mid-Atlantic Precast Association (MAPA)–sponsored precast design studio.

Kenepp spent the day reviewing presentations of work in progress by the upper-level students in the studio. The purpose of a midterm critique is to help students recognize strengths and weaknesses in their concepts and to provide them with guidance to enable them to strengthen their designs before the final review at the end of the semester.

The personal approach taken by local precasters at all of the PCI Foundation–sponsored programs is key to the success of the program. There have been PCI Foundation–sponsored programs at nine colleges in schools of engineering, architecture, and construction management.

PCI accredited as National Standards Developer

PCI has been formally accredited as a Standards Developer by the American National Standards Institute (ANSI), making PCI the only ANSI-accredited Standards Developer dedicated to precast concrete structures and systems.

The accreditation allows PCI's voluntary consensus documents relating to the design, detailing, fabrication, transport, and erection of precast and precast, prestressed concrete to be registered as American National Standards.

"As the leading technical institute for this industry, PCI has been developing standards for sixty years," says PCI President James G. Toscas. "Our accreditation by ANSI allows PCI to have these documents formally recognized as American National Standards."

Since its founding in 1954, PCI has developed, maintained, and disseminated the body of knowledge for the precast concrete structures industry, which establishes engineering and quality requirements for design, fabrication, and construction of everything from buildings and bridges to parking structures and stadiums using precast concrete. In addition to the rigorous development and review procedures PCI has traditionally used for its technical documents, to establish an American National Standard PCI will subject a document to a special standardization review and public comment.

"PCI has long been the technical institute for the precast concrete structures industry, and becoming an ANSI-accredited standards developer was a logical next step in furthering our standing in this industry," says Larbi Sennour, chair of the PCI Technical Activities Council. "ANSI accreditation will make it easier for code and regulating authorities to adopt PCI standards."

Besides its broad-based professional membership, PCI has a highly qualified staff that includes licensed professional engineers. This team, together with an internet-based committee management system, will provide oversight and support for PCI's standardization activities.

"PCI has a variety of guides, manuals, and other technical resources that already serve as standards for the precast concrete structures industry," says Jason Krohn, PCI managing director of technical activities. "Our ANSI accreditation is a testament to the capabilities and reputation that we have built over our 60-year history."

PCI will initially focus on updating several of its existing standards, such as those relating to quality improvement, quality control, and quality assessment, to become American National Standards.

Dave Dieter of Mid State Precast LP was the winner of a Sound & Fitness package during the PCI Foundation raffle at Committee Days. Courtesy of Marty McIntyre.

Committee Days raffle raises money for precast concrete education

The PCI Foundation held a ticket-of-choice raffle as part of the activities at the PCI Committee Days in April. The PCI Foundation Board of Trustees donated the prizes, and ticket holders were able to choose which prize they would like to win.

Prizes ranged from a Jawbone Jambox to a Capital Grille gift card. The raffle raised more than $3000, which will help fund precast concrete education programs at schools of architecture.

Winners of the prizes were Dave Deiter, Jim Sirko, Maher Tadros, and Pinar Okumus.

Concrete Chefs created a delicious dinner at JVI for 300 guests in April during PCI Committee Days. Proceeds benefit the PCI Foundation. From left are the chefs themselves, Robert Vitelli, Tom D'Arcy, Jim Voss, Chuck Magnesio, Nancy Peterson, Dick Taylor, and Ted Coons. Courtesy of Marty McIntyre.

Concrete Chefs host annual Committee Days dinner

The crowd was lively and the jambalaya was hot when the Concrete Chefs hosted their annual gathering during 2014 PCI Committee Days. Just over 300 people attended this year's dinner and helped the PCI Foundation raise more than $7500. The dinner was first hosted in 2002 as an opportunity for members of the PCI community to socialize in a relaxed atmosphere. Jim Voss of JVI provided his chef's kitchen, and a group of PCI members who enjoy cooking together took the opportunity to spend the day creating a feast that topped off a day of committee meetings with laughter and relaxation. Last year, the chefs decided it was time to add a cause to the fun and began asking for a $25 entry fee that goes to the PCI Foundation.

"We saw this as the perfect opportunity to raise awareness for the PCI Foundation while having a lot of fun at the same time," Voss says. "It is a great opportunity to kick back and relax with your industry friends and enjoy dinner—all for a great cause."

The Concrete Chefs include Jim Voss, Ted Coons, Tom D'Arcy, Chuck Magnesio, Nancy Peterson, Dick Taylor, and Robert Vitelli.

PCI to comment on proposed crystalline silica rule

OSHA published in the Federal Register on September 12, 2013, a comprehensive standard to protect employees from exposure to respirable crystalline silica in general industry and the maritime industry and is proposing a second standard for the construction industry. PCI is reviewing and submitting a response to the construction industry standard.

AltusGroup honors memory of Bertolini with donation to PCI Foundation

AltusGroup has donated $5000 to the PCI Foundation in the name of Mario J. Bertolini, who died in February at the age of 79.

Bertolini was president and CEO of Branford, Conn.–based Blakeslee Prestress Inc. and a longtime member of AltusGroup. He was a PCI Fellow, past PCI chairman, and 2011 PCI Medal of Honor recipient in addition to sitting on more than three dozen committees during his illustrious career in the precast concrete industry.

The gift was presented to Bertolini's son, Peter Bertolini, April 23, 2014, at the AltusGroup annual general meeting in Chicago, Ill. Peter later handed the check to Jim Voss, treasurer of the PCI Education Foundation, who graciously accepted the gift.

"Mario was such an influential force in our industry," says John Carson, executive director of AltusGroup. "He was a man of great passion and honor, so it was only appropriate that we marked his passing with appreciation for his integrity and humility."

Blakeslee Prestress joined AltusGroup in 2005 as an associate member and CarbonCast double tee product licensee.

Bijan Khaleghi

Eric Schultz

Steve Seguirant

Lee Marsh

Olafur Haraldsson

Marc Eberhard

John Stanton

PCI Journal paper receives 2014 T. Y. Lin Award

The authors of "Accelerated Bridge Construction in Washington State: From Research to Practice" have been selected for the American Society of Civil Engineers (ASCE) 2014 T. Y. Lin Award. This paper was the cover story of the Fall 2012 issue of *PCI Journal*. Established in 1968, this annual award honors outstanding engineers and their contributions in the field of prestressed concrete and is bestowed on authors of meaningful papers that advance the field.

The authors of the winning paper are Bijan Khaleghi, state bridge design engineer, Bridge and Structures Office, Washington State Department of Transportation (WSDOT) in Olympia, Wash.; Eric Schultz, bridge designer, WSDOT Bridge and Structures Office in Olympia; Stephen Seguirant, vice president and director of engineering, Concrete Technology Corp. in Tacoma, Wash.; Lee Marsh, senior project manager, BergerABAM in Federal Way, Wash.; Olafur Haraldsson, graduate student assistant, Department of Civil Engineering at the University of Washington in Seattle; Marc Eberhard, professor, Department of Civil Engineering at the University of Washington in Seattle; and John Stanton, professor, Department of Civil Engineering at the University of Washington in Seattle.

The paper describes the development and implementation of a precast concrete bridge bent system suitable for accelerated bridge construction in high seismic zones. At the base of the bent the column is connected to a spread footing using a socket connection, while at the top the column is joined to the cap beam using bars grouted in ducts. Both connections were tested at the University of Washington before the system was successfully implemented in a bridge over Interstate 5 in western Washington. The paper includes feedback from the contractor and others involved in the construction of the experimental bridge.

Professor T. Y. Lin, an eminent prestressed concrete pioneer, endowed the award to ASCE in 1968 to recognize outstanding engineers and their contributions to the field of prestressed concrete. The award is presented each year to the best paper written or coauthored by members of ASCE in the various publications of ASCE, PCI, and the American Concrete Institute during a 12-month period.

The award will be presented at the 60th Anniversary PCI Convention and National Bridge Conference at the Gaylord National Resort and Convention Center in National Harbor, Md.

The paper is available online at www.pci.org/publications/journal.

Bridge seismic design report released

The *PCI State-of-the-Art Report on Seismic Design of Precast Concrete Bridges* has been released and is available from the PCI bookstore at www.pci.org. Seismic design of precast concrete bridges begins with a global analysis of the response of the structure to earthquake loadings and a detailed evaluation of connections between precast concrete elements of the superstructure and substructure. Because modeling techniques have not yet been implemented for jointed details, the focus of this report is on procedures for the evaluation of system response and the detailing of connections for emulative behavior. Seismic analysis procedures are discussed, with the primary emphasis on force-based analysis procedures. Displacement-based analysis and computer modeling are also discussed. Relevant seismic design criteria of early years are summarized along with the current criteria from the American Association of State Highway and Transportation Officials, the California Department of Transportation, Japan, and New Zealand.

PCI partners with the International Parking Institute

PCI continues to grow and strengthen its partnership with the International Parking Institute (IPI). From June 1 through 4, PCI will be in Dallas, Tex., at the 2014 IPI Conference and Expo. PCI will have a larger presence at this year's conference than in the past.

PCI also partnered with IPI for a webinar to be presented on June 17 and 19. The webinar, Designing High Performance Parking Structures, is a part of the PCI webinar series and will explain what a high-performance parking structure is, as well as how to design and build them with high-performance precast concrete.

JVI announces $250,000 pledge to PCI Foundation

Leading by example, JVI has made a $250,000 pledge to the PCI Foundation. JVI president Jim Voss says, "I sincerely believe that the work of the foundation is helping to influence the choice of precast in more and more projects. If we all can get behind supporting this effort, I feel certain we will all be busier in the future." JVI's pledge is meant to focus on the recently renewed push to continue and complete the first phase of a capital campaign, which not only will allow the PCI Foundation to continue its educational efforts in architectural and engineering schools across the nation but also begin new programs that get the "precast gospel" deeper into the consciousness of mainstream construction.

Kansas State project to determine acceptance criteria for prestressing strand in pretensioned applications

Kansas State University in Manhattan, Kans., is working on a project to establish a threshold pullout value for strand subjected to ASTM A1081. Strand passing this test will be qualified for use in pretensioned applications. All of the experimental work has been completed, and data analysis and statistical analysis are nearing completion. The Industry Advisory Committee has been active in this project and will be working closely with the researchers as conclusions are developed. When complete, the R&D Council will be working with the Quality Activities Council on concrete mixture qualification for use with qualified strands.

Events

For the most current information on PCI events, visit http://www.pci.org/events. For industry events, visit http://www.pci.org/news/events.

Georgia/Carolinas PCI Annual Meeting	**June 12–15, 2014**
Sea Pines Resort, Hilton Head Island, S.C.	
PCI Summer Conference	**June 19–22, 2014**
Whitefish, Mont.	
PCI-IW Summer General Membership Meeting and Golf Outing	**July 29–30, 2014**
Lake Geneva, Wis.	
60th Anniversary PCI Convention and National Bridge Conference	**September 6–9, 2014**
Gaylord National Resort and Convention Center, National Harbor, Md.	
PCI Central Region Fall Event	**September 30–October 1, 2014**
Florence, Ind.	
MAPA Architects' Day Cruise on the Potomac	**October 8–9, 2014**
National Harbor, Md.	
MAPA Fall Event	**October 9, 2014**
Iron Hill Brewery, West Chester, Pa.	
PCI Central Region Fall Event	**October 30–November 1, 2014**
Florence, Ind.	
MAPA Annual Meeting	**December 4, 2014**
Philadelphia, Pa.	
PCI Winter Conference	**March 4–8, 2015**
Rosen Shingle Creek Resort, Orlando, Fla	

PCI personnel training and certification schools

If you have any questions about the Quality Control School schedule or need help completing a registration form, please contact PCI's educational activities director, Alex Morales, at amorales@pci.org or (312) 360-3219. Registration forms are available at www.pci.org/schools.

Level I/II	
June 10–12, 2014	New Cumberland, Pa.
September 24–26, 2014	Chicago, Ill.
December 2014	Nashville, Tenn.
Level III	
September 23–26, 2014	Chicago, Ill.
December 2014	Nashville, Tenn.
Certified Field Auditor and Industry Erection Standards School	
December 2014	Nashville, Tenn.

Compiled by K. Michelle Burgess (mburgess@pci.org) and Jennifer Peters (jpeters@pci.org)