From PCI Headquarters

PCI now preferred provider of ICC courses

The International Code Council (ICC) has approved PCI's application to its Preferred Provider Program, which offers educational courses to its members and to ICC-certified individuals. ICC-approved courses cover construction codes, standards, and guidelines, along with construction materials, products, and methods. ICC certificate holders can obtain continuing education credits that can be used to meet the renewal requirements for their certifications. Joining the Preferred Provider Program allows PCI to make its courses available to ICC's 58,000 members and 40,000 certificate holders.

"The processes we already have in place that ensure the quality of PCI's education offerings met the requirements of ICC's new preferred education provider program. We simply had to document for them what we already do to obtain immediate approval, with no need to resubmit for reconsideration," says Alex Morales, managing director of Education and Information Systems. "Thanks to Sherrie [Nauden] for her legwork in getting all the documentation done to get us there."

Source: ICC

Sidney Freedman Craftsmanship Award accepting entries

PCI is accepting entries for the Fourth Annual Sidney Freedman Craftsmanship Award. Launched in 2012, the program recognizes PCI-certified plants for excellence in manufacture and craftsmanship of architectural precast (A1 or CA) and glass-fiber-reinforced concrete (GFRC) structures and individual components. Any kind, size, or type of structure and/or element may be entered.

The Sidney Freedman Craftsmanship Awards program emphasizes forming, overcoming obstacles to production, finishing, and quality of individual architectural precast/prestressed concrete and GFRC units rather than architectural design. For more information, go to www.pci.org and view Awards Programs under the About PCI tab.

The deadline for all entries is March 30, 2015. Contact Sid Freedman at sfreedman@pci.org with any questions.

Apply now for Daniel P. Jenny Fellowship Awards

Several $35,000 awards for the 2015–2016 academic year will be offered under the Daniel P. Jenny Fellowship program.

The fellowships are designed to introduce graduate students to the precast and prestressed concrete industry through participation in meaningful research. The program is intended primarily for the support of candidates for master's degree–level research. Doctoral candidates will also be considered.

Applications should clearly describe the relevance of the proposed research to precast/prestressed concrete, the potential contribution to the state of the art, the timeliness of the proposed research, and the possible effect on the industry market. Support from a PCI producer member or members is an essential part of the program and ensures that the research results or implementation plan has possible benefits to PCI and its members. Fellowships generally conclude with a master's degree thesis and a summary paper published in *PCI Journal*.

Proposals are due at PCI headquarters no later than March 16, 2015. The PCI Research and Development Council will meet in early May 2015 to decide on the awards. Results will be available by May 29, 2015. For more information, go to pci.org and click on Research and Development under the Design Resources tab.

Contact PCI managing director of Research and Development, Roger Becker, at rbecker@pci.org or (312) 360-3213 with any questions.

What does the PCI Foundation mean when it says, "This is working"?

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Jim Voss,
PCI Foundation
treasurer

We mean a lot of things. Without the work in one area of the PCI Foundation, the other parts of our program wouldn't happen. With all of these pieces working together, the PCI Foundation is seeing powerful results. Precast concrete design is being represented at major design firms and governments with a new crop of graduates who understand and like the products that our industry produces.

The PCI Foundation has offered grants to 11 schools since it started its programs in 2007. In the intervening years, the PCI Foundation has educated hundreds of students in architecture, engineering, and construction management programs. Many of those students have finished school and gone on to work in the building and design industry. Like PCI Foundation programs, these graduates are spread out all over the United States. There are working graduates in New York, Florida, Illinois, California, and many states in between, and like our programs, each student's experience is unique in shaping his or her trajectory into the work world.

"This is working" also means that members of the industry are working together to make all of the good work happen. The PCI Foundation cannot work alone but instead relies on the work of local producers, regional directors, suppliers, and other parties who come together to help a program thrive.

The foundation also has seen a crop of professors who are working hard at helping our programs run. They are eager to learn and provide students with a solid background of technical knowledge and design skills that will carry them through school and launch their careers.

None of this would happen if the PCI Foundation didn't have a dedicated group of donors whose commitment to funding programs is evident. The PCI Foundation has welcomed several new donors who have seen the success of these programs and have wanted to be a part of steering our own ship as an industry. We hope to see more of those donors come on board as our work continues to thrive.

When we put all of this together it works: the *students* graduating from our programs, the *schools* who have made a commitment to our industry, the *firms* that hire the graduates, the industry *sponsors* who take the lead in supporting the programs, the professors who teach the courses and build the curriculum, and of course the *donors* whose backing gives us the ability to make it happen.

Our progress is exciting, though slow. Just a few years ago it was rare for a student to leave school with more than a rudimentary knowledge of precast concrete. Where once we saw few dedicated precast studios, we now are seeing many students graduate with a new tool in their box: the ability to design and construct with precast concrete. We need to continue this growth to make our work meaningful.

I hope you will take a few minutes to visit the PCI Foundation website at pci-foundation.org to learn more about our programs and contribute to help us make it work!

Park added to PCI staff as senior graphic designer

Tressa Park has joined the PCI Production Department as senior graphic designer, reporting to Paul Grigonis, director of Publishing and Art Direction. Park has worked as a consultant for PCI since 2006. Park will be working with Grigonis as head designer on design, layout, and production for all PCI media. Park has been working as a graphic designer for 15 years. She received her bachelor's degree in graphic design/fine arts from Columbia College in Chicago, Ill., and studied at Studio Art Centers International in Florence, Italy.

PCI, Georgia/Carolinas PCI host Architecture Professors Seminar

Twelve professors from nine schools of architecture, engineering, and construction management and members of the precast concrete industry came together for a three-day workshop at University of North Carolina at Charlotte (UNCC) and Metromont's Charlotte plant, sponsored by the PCI Foundation. From left are Thad Heckman of Southern Illinois University, Norm Lach of Southern Illinois University, Marty McIntyre of the PCI Foundation, Farhad Reza of Minnesota State University at Mankato, Jason Lien of Encon, Thomas Gentry of UNCC, Matthew Dudzik of the Savannah College of Art and Design (SCAD), Dustin Albright of Clemson University, Tyler Sprague of University of Washington, Carlos Barrios of Clemson University, Craig Hinrichs of Miami of Ohio, Jim Voss of JVI, Tom D'Arcy of the PCI Foundation, Marilyn Corson Whitney of SCAD, Matt Shea of University of Colorado Denver, Peter Finsen of Georgia/Carolinas PCI, and Brett Tempest of UNCC. **Courtesy David Hearne, Metromont.**

The PCI Foundation and Georgia/Carolinas PCI brought together a diverse group of architecture, engineering, and construction management professors from around the country to discover how the ideas and experiences of previous grant recipients might inspire the future of building education. The program was hosted by the University of North Carolina at Charlotte (UNCC) and Metromont's Charlotte plant. Twenty-two attendees, including twelve professors from nine schools, joined for a three-day program focused on educating professors in teaching precast concrete.

The program focused in part on the work of Thomas Gentry, an associate professor from the School of Architecture, and Brett Q. Tempest, assistant professor from the School of Engineering. Tempest conducted an innovative integrated design studio as part of a six-year grant from PCI Foundation.

"The UNCC program broke new ground for us when it began six years ago because it was able to look at precast concrete from both an architecture and engineering perspective," says Marty McIntyre, executive director of the PCI Foundation. "That integrated approach prepares students much more realistically for their future when working with teams will be necessary to complete a design. We wanted to share that success with other university professors who are teaching materials courses."

In addition to taking an integrated design approach, the UNCC program developed a close working relationship with the local precast concrete industry and the local PCI region.

"Our students at UNC Charlotte have benefitted tremendously from the onsite plant instruction and the opportunity for hands-on exploration of materials with the local precast manufacturing industry, such as Metromont," says Chris Jarrett, professor and director of the School of Architecture.

The professors program allowed the school to share some of that work with other educators and precast concrete industry members.

"The Professors Seminar series brought together a diverse range of faculty from AEC programs across the country to share their ideas and unique experiences teaching architectural materials and technology courses," Jarrett says. "The focus of the program on precast/prestressed concrete prompted excellent dialogue and exchange between colleagues on best practices for university-industry partnerships in teaching technology courses in design schools."

For more information about these and other programs done in conjunction with the PCI Foundation, visit pci-foundation.org.

PCI introduces online academy for continuing education

For professionals in the design and construction industries, continuing education is not only a requirement but a means of ensuring that designers stay up to date on the latest research, innovations, and options available for future projects. Continuing its drive toward the design and construction of high-performance structures, PCI wants to ensure that professionals have a full understanding and knowledge of high-performance precast concrete and its benefits, applications, and design methodologies.

PCI has introduced PCI's Online Academy, a continuing education series for engineering professionals and students. Each course consists of weekly 90-minute sessions that last from four to six weeks. Continuing education credits will be awarded at the conclusion of each course. Courses are offered via an online delivery system, allowing students to take courses from anywhere in the world.

Leading professors and industry experts in precast/prestressed concrete design teach the courses. These subject-matter experts have significant experience teaching precast/prestressed concrete topics and will format the classes to optimize learning.

Participants are not required to have prior precast/prestressed concrete experience. Program content will be technical and useful to those designing precast/prestressed concrete structures or intending to do so in the near future, such as licensed engineers, engineers in training, professors, and graduate and undergraduate students.

Course I: Basic Prestressed Concrete Design, which is six sessions long, explains the basic concepts and methods of prestressed concrete design. Participants will work through the design of a simple prestressed concrete rectangular beam of a building. Both straight-strand and harped-strand design will be covered in the example, exposing participants to realistic design conditions. The course is based on ACI 318-14, ASCE-7 (2010), and IBC (2015).

For more information, contact Alex Morales at amorales@pci.org.

PCI Foundation names two trustees

Greg Force

Todd Adams

The PCI Foundation voted during its fall retreat to add two new trustees to its board of trustees. Joining the board will be Greg Force and Todd Adams.

Force has been the president and COO of Tindall Corp. since 2004, having joined the company in 1988. He has been actively involved in PCI for nearly 30 years, serving as chairman in 2012.

Adams has been a sales representative for JVI Inc. for more than twenty years. He is a graduate of the inaugural Leadership PCI class. Adams chaired the 2013 PCI Foundation Auction Committee. He is in his second year as a member of the PCI board of directors.

Chris Pastorius of Metromont and Jim Toscas of PCA have retired from the PCI Foundation board of trustees.

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 managing director of Education and Information Systems, Alex Morales, at amorales@pci.org or (312) 360-3219. Registration forms are available at http://www.pci.org/schools.

Level I/II	March 30–April 1, 2015	Austin, Tex.
Level III	April 1–4, 2015	Austin, Tex.

Significant fire safety code changes for IBC 2006 to 2012

PCI submitted several fire-related code changes to the International Building Code (IBC) during the code change process affecting the 2006, 2009, and 2012 editions of the IBC.

PCI was successful in championing two significant code changes. The first reduced the technical burden required to meet the fire resistance of joints in precast concrete floor assemblies in open and enclosed parking structures. The second code change clarified the height dimension to be used in calculating the interior area of the side of an open parking structure to qualify for the height and area increases permitted in the IBC. Following is an explanation of these changes.

Precast/prestressed concrete floor and roof systems

When fire-rated walls, floors, and roof assemblies are used in a building, section 713.1 of the 2006 IBC specifies the requirements for fire protection of the joints in the assembly. The provisions call for the use of approved fire-resistant joint systems in these assemblies. However, there are several exceptions to the requirement for these approved fire-resistant joint systems. Exception 5 permits the joint to be non–fire rated in floors for open parking structures. This exception was placed in the first edition of the IBC in 2000 based on similar provisions from the legacy codes used to formulate the IBC provisions (for example, BOCA National Building Code, Standard Building Code, and the Uniform Building Code). The exception traditionally only applied to open parking structures.

In both open and enclosed parking structures, however, the building code does not place a high importance on floor systems serving as fire barriers to prevent smoke and hot gases from moving upward through the structure. This is evidenced by the code permitting the floor assemblies to have openings for vehicle ramps to allow vehicle movement between parking levels. Therefore, the primary reason for the fire resistance for the floor assemblies in open and enclosed parking structures is structural stability in fire.

PCI submitted code change FS102 during the 2007–2008 code change cycle to modify Exception 5 to section 713.1 of the 2006 IBC. The following reflects the code change as it was submitted. The underlining and strikethrough show the added and deleted language as approved.

713.1 General. Joints installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies shall be protected by an approved fire-resistant joint system designed to resist the passage of fire for a time period not less than the required fire-resistance rating of the wall, floor or roof in or between which it is installed. Fire-resistant joint systems shall be tested in accordance with Section 713.3. The void created at the intersection of a floor/ceiling assembly and an exterior curtain wall assembly shall be protected in accordance with section 713.4.

Exception: Fire-resistant joint systems shall not be required for joints in all of the following locations:

1. *Floors within a single dwelling unit.*
2. *Floors where the joint is protected by a shaft enclosure in accordance with Section 707.*
3. *Floors within atriums where the space adjacent to the atrium is included in the volume of the atrium for smoke control purposes.*
4. *Floors within malls.*
5. *Floors within open and enclosed parking ~~structures~~ garages constructed in accordance with Sections 406.3 and 406.4, respectively.*
6. *Mezzanine floors.*
7. *Walls that are permitted to have unprotected openings.*
8. *Roofs where openings are permitted.*
9. *Control joints not exceeding a maximum width of 0.625 inch (15.9 mm) and tested in accordance with ASTM E119 or UL 263.*

This code change expanded the application of this exception for approved fire-resistant joint systems in fire-rated floor assemblies not only for open parking structures but also for enclosed parking structures. The technical basis included the premise that open vehicle ramps are permitted for both open and enclosed parking structures, and thus the need for approved fire-resistant joint systems for fire-resistant floors in either parking structure configuration was unnecessary.

The approved Exception 5 for open and enclosed parking structures is in section 713.1 of the 2006 IBC, section 714.1 of the 2009 IBC, and section 715.1 of the 2012 IBC and 2015 IBC.

Open sides of precast/prestressed concrete parking structures

Section 406.3.6 of the 2009 IBC permits increases in the allowable height and area for open parking structures based on the percentage of openness on the sides of the parking structure. Structures with open sides around the entire perimeter are permitted to be increased one tier in height and 50% in area. The code specifies that for a side to be considered open, the total area of openings must be 50% of the interior area of the side at each tier. However, the 2009 edition of the IBC is not clear on what height dimension should be used to calculate the interior area of the side. The height can vary from floor to floor along the side based on different parking structure configurations.

PCI submitted code change G62 during the 2009–2010 code change cycle to clarify the calculation of the interior area of the open side. The change added a sentence to the section to specify that the height dimension to be used in calculating the interior area of the side shall be 7 ft (2134 mm). Seven feet is the minimum dimension permitted between floors for the clear height of parking structure tiers in sections 406.2.2 and 406.3.5.1 of the 2009 IBC. The following reflects the code change as it was submitted. The underlining shows the added wording as approved.

406.3.6 Area and height increases. The allowable area and height of open parking garages *shall be increased in accordance with the provisions of this section. Garages with sides open on three-fourths of the building's perimeter are permitted to be increased by 25 percent in area and one tier in height. Garages with sides open around the entire building's perimeter are permitted to be increased by 50 percent in area and one tier in height. For a side to be considered open under the above provisions, the total area of openings along the side shall not be less than 50 percent of the interior area of the side at each tier and such openings shall be equally distributed along the length of the tier. <u>For purposes of calculating the interior area of the side, the height shall not exceed 7 feet (2134 mm).</u>*

Allowable tier areas in Table 406.3.5 shall be increased for open parking garages *constructed to heights less than the table maximum. The gross tier area of the garage shall not exceed that permitted for the higher structure. At least three sides of each such larger tier shall have continuous horizontal openings not less than 30 inches (762 mm) in clear height extending for at least 80 percent of the length of the sides and no part of such larger tier shall be more than 200 feet (60 960 mm) horizontally from such an opening. In addition, each such opening shall face a street or* yard *accessible to a street with a width of at least 30 feet (9144 mm) for the full length of the opening, and standpipes shall be provided in each such tier.*

Open parking garages *of Type II construction, with all sides open, shall be unlimited in allowable area where the* building height *does not exceed 75 feet (22 860 mm). For a side to be considered open, the total area of openings along the side shall not be less than 50 percent of the interior area of the side at each tier and such openings shall be equally distributed along the length of the tier. <u>For purposes of calculating the interior area of the side, the height shall not exceed 7 feet (2134 mm).</u> All portions of tiers shall be within 200 feet (60 960 mm) horizontally from such openings or other natural ventilation openings as defined in Section 406.3.3.1. These openings shall be permitted to be provided in* courts *with a minimum dimension of 20 feet (6096 mm) for the full width of the openings.*

By specifying this dimension, the code makes clearer how the interior area is to be calculated to qualify for application of the allowable area increase. This clarification became effective in the 2012 IBC and can be found in section 406.5.5.

Concrete Chefs return for 2015 Spring Committee Days

The Concrete Chefs will prepare dinner during the 2015 PCI Spring Committee Days and Membership Conference. From left are members of last year's Concrete Chefs team, Bob Vitelli of Blakeslee Prestress, Jim Voss of JVI, PCI Foundation chairman Tom D'Arcy, Chuck Magnesio of JVI, Nancy Peterson of Rocky Mountain Prestress, Dick Taylor of Strand-Tech Martin, and Ted Coons of Spillman. Courtesy of Marty McIntyre.

Fun, food, and a good cause will come together when the Concrete Chefs prepare a meal during the 2015 PCI Spring Committee Days and Membership Conference. After the meetings on May 1, attendees will be able to ride a bus to JVI headquarters in Lincolnwood, Ill., and enjoy drinks, appetizers, and dinner prepared by the finest chefs in the industry, all for a bargain price of a minimum $25 donation to the PCI Foundation.

"It's exciting to put together some of the things I like best about our industry," says chef Jim Voss. "Tasty food, good wine, an important cause, and great company can all be found at the Concrete Chef's dinner during Committee Days. I love bringing everyone together."

In addition, the PCI Foundation will hold its annual Ticket of Choice raffle during Committee Days. Tickets are $20 each or six for $100. Entrants can select which prize or prizes they would like to win from an array of items. Previous raffle items have included a fitness package with a Fitbit, wine, and dinner at Capital Grille. For more information, contact Marty McIntyre at martymci@pci-foundation.org.

To learn more about the PCI Foundation programs, visit the website at pci-foundation.org.

R&D advisory committee to recommend position on threshold pullout acceptance value for prestressing strand in pretensioned applications

The PCI Research and Development Council funded a project titled Determination of Acceptance Criteria for Prestressing Strand in Pretensioned Applications. ASTM A1081, Standard Test Method for Evaluating Bond of Seven-Wire Steel Prestressing Strand, is an untensioned strand pullout test protocol intended for qualifying prestressing strand for use in pretensioned members where bond is critical to performance.

The primary objectives of the PCI research project were to evaluate the repeatability and reproducibility of ASTM A1081 and to establish an acceptance threshold pullout value for the test. A contract for this work was awarded to Kansas State University in 2011. As with all PCI research projects, an Industry Advisory Committee was assigned to the project to work with the researchers. Kansas State University has now submitted a draft final report to the advisory committee for review.

The advisory committee has been assigned the responsibility of recommending a PCI position on the threshold pullout acceptance value based on the information and data presented in the Kansas State report. That recommendation will be balloted by the Research and Development Council and then forwarded to the PCI Technical Activities Council for approval. It is projected that a final position will be established in the first quarter of 2015. This position will ultimately be forwarded to joint ACI-ASCE Committee 423, Prestressed Concrete, which can recommend a threshold value to ASTM for possible inclusion in ASTM A416, Standard Specification for Steel Strand, Uncoated Seven-Wire for Prestressed Concrete.

When complete, PCI producers will be asked to qualify their concrete mixes with their strand through the PCI Plant Certification Program. Strand can be qualified to a very fundamental concrete mixture, but it is really the specific combination of strand and concrete that determines the ultimate performance of a pretensioned member.

PCI Calendar

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.

PCI Winter Conference Rosen Shingle Creek Resort, Orlando, Fla.	March 4–8, 2015
MAPA Spring Event Citizens Bank Park, Philadelphia, Pa.	April 23, 2015
2015 PCI Spring Committee Days and Membership Conference Hyatt Magnificent Mile, Chicago, Ill.	April 30–May 3, 2015
2015 PCI Summer Conference The Mills House Wyndham Grand Hotel, Charleston, S.C.	June 25–28, 2015
2015 PCI Fall Committee Days and Membership Conference Louisville, Ky.	October 15–18, 2015
2016 PCI Convention at the Precast Show Nashville, Tenn.	March 3–6, 2016
2018 PCI Convention at the Precast Show Denver, Colo.	February 22–25, 2018

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

Classified