

PCI New Zealand team returns with preliminary observations

The group from PCI that went to Christchurch, New Zealand, in March to investigate the results of the February 22, 2011, earthquake has returned and is compiling its findings. The team leader, Robert Fleischman, reports that precast concrete construction is used extensively for buildings in and around Christchurch, including:

- emulative precast concrete moment frames for multistory structures
- topped precast concrete flooring elements for multistory and parking structures
- precast concrete cladding panels
- precast concrete stair elements

The team found that with the exception of precast concrete stairs, the vast majority of these elements and systems performed as intended.

Emulative frames developed beam-end plastic hinging to a level of damage commensurate with the seismic excitation. Floor systems remained seated and intact, with damage limited in most cases to displacement compatibility cracks along the units, though cracking in the end regions of flange-hung double-tees was observed and requires closer attention. Precast concrete cladding panels remained attached with the exception of a pair of cases. Several precast concrete stair elements collapsed, and the team says that “the connections and landing details for these elements require revisiting.”

In addition, tilt-up and precast concrete wall panels incurred damage but, with one exception, performed well. A hospital building using self-centering, jointed PRESSS (Precast Seismic Structural Systems)—an unbonded post-tensioned frame in one direction and an unbonded post-tensioned rocking wall in the other—remained operational with little or no damage.

Other team members were Joe Maffei, Jose Restrepo, and Kim Seeber. Their report is expected to be ready for this year’s PCI Annual Convention in Salt Lake City, Utah.

PCI launches member newsletter series

PCI recently launched a new member newsletter series. The first issue of the four-newsletter series, the *Technical Member Newsletter*, was sent out via email on April 26.

This monthly newsletter series will include the *Technical Member Newsletter*, the *Marketing Member Newsletter*, the *Quality Assurance Member Newsletter*, and the *Operational Member Newsletter*. Each of these newsletters is published once every four months (three times a year). The newsletters share what each department is working on, news, and events. All PCI members will receive the four initial newsletters.

If you have any comments or questions, please contact Whitney Stephens at wstephens@pci.org.

Georgia DOT now requires PCI Certification

The Georgia Department of Transportation (DOT) now requires PCI Certification for prestressed concrete elements, and either PCI or National Precast Concrete Association certification for precast concrete elements. Currently, 33 state DOTs accept or require PCI Plant Certification.

A copy of GDOT's standard operating procedure, *Standard Operating Procedure 3 Quality Assurance of Precast/Prestressed Concrete Members and Structural Precast Concrete Members*, is available at www.dot.ga.gov/doingbusiness/TheSource/sop/sop03.pdf.

PCI Journal paper receives 2011 T. Y. Lin Award from ASCE



Stephen J. Seguirant



Maher K. Tadros



Nabil Al-Omaishi

The authors of a two-part paper appearing in *PCI Journal* have been selected for the 2011 T. Y. Lin Award from the American Society of Civil Engineers (ASCE). Established in 1968, this annual award honors

outstanding engineers and their contributions in the field of prestressed concrete. The award is bestowed on authors of meaningful papers that advance the field.

The authors of the winning paper are Nabil Al-Omaishi, associate professor and chair for the Department of Civil Engineering at the College of New Jersey in Ewing, N.J.; Maher K. Tadros, Leslie D. Martin Professor for the Department of Civil Engineering at the University of Nebraska–Lincoln in Omaha, Neb.; and Stephen J. Seguirant, vice president and director of engineering for Concrete Technology Corp. in Tacoma, Wash.

The two-part paper was published in the summer and fall 2009 issues of *PCI Journal*. The first part is “Elasticity Modulus, Shrinkage, and Creep of High-Strength Concrete as Adopted by AASHTO.” Part two is titled “Estimating Prestress Loss in Pretensioned, High-Strength Concrete Members.” The articles are available online at www.pci.org/view_file.cfm?file=JL-09-SUMMER-7.pdf and www.pci.org/view_file.cfm?file=JL-09-FALL-13.pdf.

Eight Jenny Fellowships awarded

PCI received 38 proposals for the Daniel P. Jenny Fellowship for the 2011–2012 school year and granted eight \$20,000 research fellowships as part of this program.

- Development of a Blast and Ballistic Resistant Precast Concrete Armored Wall System: Department of Civil and Environmental Engineering, Lehigh University, Patrick Trasborg, under the direction of Clay Naito, associate professor
- Second Generation Precast Parking Structures, Civil Engineering Department: University of Nebraska–Lincoln, Jenna Hansen, under the direction of Kromel Hanna, postdoctoral research associate
- Seismic Performance and Modeling of Post-tensioned, Precast Concrete Shear Walls: Department of Civil and Environmental Engineering, University of California–Berkeley, Ahmet Can Tanyeri, under the direction of Jack P. Moehle, T. Y. and Margaret Lin Professor of Engineering
- Lightweight Concrete Modification Factor for Shear Friction: Department of Civil, Architectural and Environmental Engineering, Missouri University of Science and Technology, Dane Shaw, under the direction of Lesley H. Sneed, assistant professor
- Analytical Evaluation of Precast Concrete Structure Resistance to Disproportionate Collapse: Department of Civil Engineering and Engineering Mechanics, University of Arizona, Alicia R. Mullenbach, under the direction of Robert Fleischman, associate professor
- Precast Concrete Solution for Tall Wind Towers: Department of Civil and Environmental Engineering, University of Illinois, Somashekar Viswanath, under the direction of Daniel A. Kuchma, associate professor
- The NASP Bond Test as a Predictor of Strand Bond, Transfer Length, and Development Length: Department of Civil, Architectural and Environmental Engineering, Missouri University of Science and Technology, Krista B. Porterfield, under the direction of Jeffery S. Volz, assistant professor, and John J. Myers, associate professor
- Stresses, Deflections, and Twist in Precast/Prestressed Concrete Beams during Lifting, Transportation, and Installation: Department of Civil and Environmental Engineering, Virginia Polytechnic Institute, Razvan Cojocar, under the direction of Christopher D. Moen, assistant professor

The fellowship program was established in 1972 to support civil engineering graduate students interested in research related to precast and prestressed concrete. Fellowships generally conclude with a master of science degree thesis and a summary paper published in the *PCI Journal*.

For more information on the Daniel P. Jenny Research Fellowship Program, contact PCI's director of research and development, Roger Becker, at rbecker@pci.org.

Request for proposals for research project

The PCI Research and Development Council has issued a request for proposals for a research project on the behavior and design of ledges on prestressed concrete spandrels and beams. Proposals are due at PCI no later than August 1, 2011. For more information, go to www.pci.org/cms/index.cfm/tech/research or contact PCI's director of research and development, Roger Becker, at rbecker@pci.org.

Bonus point may be awarded for strand-bond QA test

Earn a bonus point on your PCI Plant Certification audit score by completing beam testing in accordance with the test method outlined in the *PCI Journal* article “A Simple Quality Assurance Test for Strand Bond,” by Robert J. Peterman (originally published in Spring 2009 and revised in May 2009).

This article focuses on the development of a simple test that precasters can use to verify the bond of pretensioned steel reinforcement to concrete. You can access the article online at www.pci.org/pdf/publications/journal/2009/Spring/JL-09-SPRING-14.pdf.

Contact Dean Frank, PCI director of quality programs, at dfrank@pci.org or (312) 583-6770 with questions or to request an outline of the test procedure or test data sheet.

PCI promotes precast concrete parking structures at IPI

As part of PCI’s targeted marketing program for parking structures, PCI launched an extensive campaign this May at the 2011 International Parking Institute’s (IPI’s) Conference and Expo in Pittsburgh, Pa.

PCI sponsored the keynote breakfast and met with several engineering and architectural firms, such as Walker Parking, Timothy Haahs and Associates, and International Parking Design. The spring issue of *Ascent* magazine, which is themed on parking structures, made its debut at the IPI show, and a copy of the magazine was distributed to attendees in their registration bags.

In addition, PCI is preparing a parking structure systems comparison chart to highlight the design and cost effectiveness of precast concrete parking structure construction. The chart compares typical long-bay (60 ft [18 m]) cast-in-place, total–precast concrete field-topped and total–precast concrete pretopped parking decks and rates each structure by completion time, cost, site considerations, constructability, quality, aesthetics, design, maintenance, lean construction attributes, and sustainability.

PCI a sustainability conference partner

PCI is an organizational partner for the 2011 International Concrete Sustainability Conference, August 9–11, in Boston, Mass. In addition, PCI’s director of quality programs, Dean Frank, will present at the event.

The International Concrete Sustainability Conference provides learning and networking opportunities on advances, technical knowledge, continuing research, tools, and solutions for sustainable concrete manufacturing and construction. This year’s conference is being held in conjunction with the Massachusetts Institute of Technology Concrete Sustainability Hub 2011 Industry Day on August 11.

For information about the event or to register, visit www.sustainabilityconf.org. Please use the following code when registering: CSC11PPCI.



From left are the speakers and host of the Precast Concrete Structures mini-seminar, Marco Menegotto of Sapienza University of Rome, consultant Arnold Van Acker, David Fernández-Ordóñez of Prefabricados Castelo, Jason J. Krohn of PCI, Arto Suikka (seminar host) of the Finnish Confederation of Construction Industries RT, Stef Maas of Echo NV, and Timo Kukkola of Teollisuuden Voima Oyj. The seminar was May 26, 2011, in Helsinki, Finland. Courtesy of Arto Suikka.

Krohn speaks at seminar in Finland

PCI's managing director of technical activities, Jason Krohn, presented on behalf of PCI on May 26, 2011, at an international mini-seminar in Helsinki, Finland.

Krohn's presentation was titled "Handbooks and Publications of PCI" and was focused on a description of the various publications and periodicals that PCI maintains. The presentation included a detailed explanation of the consensus development process for the *PCI Design Handbook: Precast and Prestressed Concrete*. The audience of more than 50 structural and precast concrete engineers was interested in the technical knowledge that PCI has to offer even though the PCI publications are based on U.S. codes and are not in metric units.

Precast Concrete Structures was sponsored by the Concrete Association of Finland and falls within the work of the Commission 6 (Prefabrication) of *fib* (International Federation for Structural Concrete). After the event, *fib* Commission 6 held its plenary and task group meetings as well as a joint meeting with PCI. Krohn attended these meetings representing PCI along with Larbi Sennour, S. K. Ghosh, and Paul Kourajian.

PCI Foundation golf tournament returns

After a year's hiatus, the PCI Foundation Golf Tournament has returned. Join your associates or put together a team to enjoy the Stonebridge Golf Club. All tournament proceeds benefit the PCI Foundation and its industry programs. The golf tournament will take place on Friday, October 21, 2011, at Stonebridge Golf Club, West Valley City, Utah, during the PCI Annual Convention and National Bridge Conference.

Foundation's Advanced Technology Council extends visionary thinking



Mike LaNier

A little over 50 years ago, a group of forward-thinking individuals formed PCI to advance the use of precast/prestressed concrete in North America. They recognized the potential of the construction technology represented by the concept of manufacturing prestressing concrete and took action to foster and develop that technology. The results of the collaboration of academics, engineers, producers, and suppliers that PCI represents are significant and today benefit society in many ways.

The Advanced Technology Council of the PCI Foundation has the mission to extend the visionary thinking of PCI's founders to consider how the institute will foster the development of our design, manufacturing, and construction technology to serve the needs of society 50 and 100 years into the future.

- Will we be using a new ultradurable material as a binder for our concrete?
- Will we be prestressing our concrete with new ultra-high-strength fiber materials?
- Will we have new ways of integrating building and industrial support systems within our products?
- Will the configuration of our products change to take advantage of new material properties?
- Will our advances in construction methods result in dramatically improved productivity for the construction industry as a whole?
- Will we develop new products to serve needs that are not yet evident in the marketplace?

What are the questions we should be asking to see the potential that the future of our industry represents?

The Advanced Technology Council is the place to bring your ideas for far-forward-focused research, the type of research that is needed to advance our current technology such that we can preserve the strategic advantage that technology has provided for our industry since its inception.

If you have ideas along these lines, the PCI Foundation Advanced Technology Council would like to work with you to move your ideas toward reality. We are looking for opportunities to leverage PCI Foundation funds with resources from other foundations, interested governmental agencies, and forward-thinking companies to prepare the institute membership with solutions to provide more economical, safer, longer-lasting, visually exciting facilities to meet emerging and future societal needs. The PCI Foundation will collaborate with the PCI Research and Development Council to extend the successful model of research and development achievement through the wise development of research projects and the use of thoughtful industry advisory groups to proactively guide research efforts. This model will be applied to ensure the success of the types of forward-focused research projects that have the potential for significant breakthroughs in the technology available to the institute.

To learn more about how the PCI Foundation Advanced Technology Council might play a role in your future, contact me at lanier@abam.com.

Looking back, we have always had our eye on the future. Contribution to and participation in the programs of the PCI Foundation today is a way to capture the possibility that our industry represents and influence the future that is tomorrow and beyond.

—Mike LaNier

New pages added to *Architectural Color and Texture Selection Guide*

The *Architectural Precast Concrete: Color and Texture Selection Guide* has been reprinted with 12 new color and texture pages and identification pages with mix designs. This includes nine new color pages with two new colors per page, two pages of new formliners, and one page of new clay-brick-faced precast concrete. The numbers in the guide have not been changed so that there is no confusion between the old and the new versions.

The guide (CTG-10) is \$40 each plus any applicable sales taxes. The new additional pages only (CTG-A) are \$3 per copy.

Russell joins *PCI Journal* team

Nyema Russell joined the *PCI Journal* team part time as administrative assistant in March. She has provided support for the *PCI Journal* since she started working at PCI in 2010.

Russell acts as a liaison between manuscript reviewers and authors and the *PCI Journal* editorial staff. This includes tracking manuscripts through the review process and making modifications to the process as necessary, obtaining permissions for papers, and maintaining and updating contact information in the PCI database. In addition, Russell has been supporting PCI's educational activities for the past two years.

Russell graduated from the Brooklyn Technical High School and has completed coursework at the New York City College of Technology.

Prior to this position, Russell worked for the National Precast Concrete Association as the marketing, education, and communications administrative assistant, where she was responsible for managing and maintaining various types of data using Excel, iMIS, and Access. Russell also managed an awards program, copyrights, and sponsor advertising, among other projects. ¶

PCI Calendar

Events

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

2011 Summer Conference	July 7–10, 2011
James Hotel, Chicago, Ill.	
PCI-IW Member Meeting	July 26–27, 2011
Lake Geneva, Wis.	
PCINE Annual Meeting	September 15–16, 2011
Cranwell Resort, Lenox, Mass.	
Productivity Tours	September 20–23, 2011
Minneapolis, Minn.	
PCI-IW Member Meeting	September 21, 2011
Prairie Grove, Ill.	
Western Bridge Engineers' Seminar	September 25–28, 2011
Arizona Grand Hotel, Phoenix, Ariz.	
PCI Annual Convention and National Bridge Conference	October 22–26, 2011
Salt Palace Convention Center, Salt Lake City, Utah	
PCI-IW Member Meeting	December 7, 2011
Prairie Grove, Ill.	
2012 PCI Winter Conference	January 19–22, 2012
San Antonio Marriott Rivercenter, San Antonio, Tex.	
PCI Annual Convention and National Bridge Conference	September 29–October 3, 2012
Gaylord Opryland Resort and Convention Center, Nashville, Tenn.	
PCI Annual Convention and National Bridge Conference	September 21–September 25, 2013
Gaylord Texan Resort and Convention Center, Grapevine, Tex.	
PCI Annual Convention and National Bridge Conference	September 6–September 10, 2014
Gaylord National Resort and Convention Center, National Harbor, Md.	
PCI Annual Convention and National Bridge Conference	September 19–September 23, 2015
Gaylord Opryland Resort and Convention Center, Nashville, Tenn.	



PCI Personnel Training and Certification Schools

If you have any questions about the Quality Control School schedule, would like information on any of our Spanish-language exams, or need help completing a registration form, please contact PCI's learning and performance management director, Alex Morales, at amorales@pci.org or (312) 360-3219. Registration forms are available at www.pci.org/schools.

Level I/II

September 14–16, 2011
Chicago, Ill.

November 14–16, 2011
Nashville, Tenn.

Level III

September 13–16, 2011
Chicago, Ill.

November 16–19, 2011
Nashville, Tenn.

CFA/IES

September 14–16, 2011
Nashville, Tenn.

Compiled by K. Michelle Burgess (mburgess@pci.org)

Survey on high-priority topics for research at PCI

To: PCI Producer, Associate, and Professional Members

Do you know that each year PCI allocates 7% of Producer Member and Associate Member dues for projects conducted under the auspices of the PCI Research and Development Committee? Despite this commitment by PCI, total industry expenditures for research conducted on topics of specific interest to the precast concrete industry are still relatively low compared with those for competitor industries. It is especially important that we spend PCI's research dollars wisely. Accordingly, we are asking for your help.

Periodically, we solicit input from the entire PCI community regarding your opinions on technical research activities that could produce knowledge that would benefit your organization and the industry's market share. We then summarize these data in the form of a prioritized listing titled "Top 10 PCI Research Topics." This list is shared with prospective researchers to assist them as they develop research proposals to be funded as regular PCI (major) projects and/or PCI (Daniel P. Jenny) Research Fellowships, as well as those to be funded entirely or in part by other research agencies, such as the National Science Foundation, the National Institute of Standards & Technology, and the Federal Highway Administration.

We have designed a survey form to facilitate your providing us with your opinions regarding current technical research needs. In addition, we are requesting that you tell us about your company's current and recent (nonproprietary) research and development activities.

Please send your response to Roger Becker at PCI as indicated on the survey form.

Harry Gleich
Chair, PCI Research &
Development Committee

Research & Development Survey

Please list below the four most pressing technical problems that, in your opinion, confront the precast/prestressed concrete industry today. Provide a brief statement of scope and objective(s) of research that would address each proposed topic. Attach additional sheets as required.

1. _____

2. _____

3. _____

4. _____

Please describe your company's current and recent (past 5 years) nonproprietary research and/or testing. Attach additional sheets as required.

Additional comments. Attach additional sheets as required.

Please mail/email/fax this sheet to

Roger Becker
Research & Development Director
Precast/Prestressed Concrete Institute
200 W. Adams St., Suite 2100 • Chicago, IL 60606
Telephone: (312) 786-0300 • Fax: (312) 621-1114
Email: rbecker@pci.org

Name (please print)

Position

Company

Telephone

Fax

Email