



FROM PCI HEADQUARTERS

2021 PCI convention rescheduled to May

The PCI Executive Committee has voted unanimously to move the 2021 PCI Convention in New Orleans to May 18–22, 2021. This decision followed the National Precast Concrete Association (NPCA) Board of Directors' recent decision to move the 2021 Precast Show to May 20–22, 2021.

Council and committee meetings, education sessions, and awards presentations will be held in their usual fashion at the PCI Convention in May. Consideration was given to holding the PCI Convention as a standalone event in February in New Orleans, but it was ultimately determined that postponing until May and keeping the two events together was safest and best for PCI members.

This decision was made in coordination with both NPCA and our New Orleans partners, with whom PCI has engaged in ongoing conversations regarding pandemic-related variables and available dates. Weighing all factors, the PCI Executive Committee and staff determined that the prudent decision was to move the dates to ensure the health of all participants, as well as the overall success of the show and the PCI Convention.

2021 Project Precast deadline extended to April 1

The PCI Foundation has moved its deadline for Project Precast 2021 applications to April 1, 2021. Applicants who are chosen to be on a team will have all expenses paid for four days in New Orleans, La., in conjunction with the rescheduled 2021 PCI Convention at the Precast Show May 18–22, 2021.

Authors of UHPC paper win 2020 Nasser Award

Vidya Sagar Ronanki, Sriram Aaleti, and J. P. Binard received the George D. Nasser Award for their paper titled “Long-Span Hybrid Precast Concrete Bridge Girder Using Ultra-High-Performance Concrete and Normalweight Concrete” in the November–December 2019 issue of *PCI Journal*. The George D. Nasser Award recognizes authors 40 years of age or younger who write outstanding *PCI Journal* papers on design, research, production, or construction.

This paper proposes a long-span hybrid girder design using standard girder shapes with ultra-high-performance concrete (UHPC) in the end-zone regions. The purpose is to take advantage of UHPC's superior mechanical and durability properties compared with normalweight concrete. Experimental studies were carried out to investigate the behavior of a UHPC-to-normalweight concrete interface with 0.2 in. (5 mm) roughness under shear and flexural loading. The results of the experimental studies were used to calibrate the necessary parameters required for developing a three-dimensional (3-D) finite element analysis (FEA) model for a hybrid girder. Structural performance of a 205 ft (62.5 m) long, 95 in. (2400 mm) deep Precast Concrete Economical Fabrication Committee standard bulb-tee (PCEF-95) hybrid girder was investigated using 3-D FEA models in the software program ATENA and compared with a girder designed with normalweight concrete. The hybrid girder exhibited better performance in terms of end-zone cracking compared with the traditional concrete girder. A significant reduction in shear and end-zone reinforcement was achieved in the hybrid girder compared with the normalweight concrete girder. The details regarding the feasibility of the proposed hybrid girder concept, the results from the interface tests, and the FEA study are presented in this paper.

PCI TECHNICAL INTERNSHIP OPPORTUNITY AVAILABLE

PCI is looking for an enterprising and well-qualified student intern to assist PCI staff with important technical projects. This individual will work with the PCI Technical Services team to support the extensive technical workload and will gain a unique experience advancing the institute's body of knowledge to benefit potential career opportunities. If you are interested or know an engineering student who may be interested in a full-time internship with PCI's headquarters, please review the opportunity at http://pci.org/PCI/News-Events/Precast_Careers/PCI_HQ.aspx.

Paper on double-tee slab fire resistance receives 2020 Zollman award

Puneet Kumar and Venkatesh K. R. Kodur received the Charles C. Zollman Award for the best state-of-the-art precast and prestressed concrete paper appearing in *PCI Journal* during a single year. Their paper “A Rational Approach for Fire-Resistance Evaluation of Double-Tee, Prestressed Concrete Slabs in Parking Structures” in the March–April 2020 issue of *PCI Journal* proposes a rational approach for evaluating the fire resistance of double-tee, prestressed concrete slabs in parking structures.

The paper’s approach is implemented through a finite element analysis (FEA) numerical model to evaluate the fire resistance of double-tee slabs under varying fire and loading scenarios that could occur in a parking structure. The FEA model accounts for varying fire characteristics, member geometry, loading and support conditions, temperature-dependent material properties, and realistic failure limit states to evaluate the fire resistance of double-tee slabs. The numerical model is validated by comparing thermal and structural response parameters with measured values from documented fire tests. Furthermore, the model is applied to case studies aimed at quantifying the fire performance of typical double-tee slabs under different vehicle fire exposures in parking structures. Results from these numerical studies clearly indicate that fire-resistance predictions for double-tee slabs under current prescriptive approaches for evaluating fire resistance are overly conservative. Application of the rational approach yields higher fire resistance for double-tee slabs under realistic fire and loading conditions.



Puneet Kumar



Venkatesh Kodur

2020 Lyman award goes to paper on bridge girder design

Richard Brice, Stephen J. Seguirant, Anthony Mizumori, and Bijan Khaleghi received the Robert J. Lyman Award for the best construction, production, or erection paper appearing in *PCI Journal* during a single year. The paper, titled “Fabrication and Design of Precambered Precast, Prestressed Concrete Bridge Girders,” appeared in the May–June 2020 issue of *PCI Journal*.

The paper highlights the fabrication and design of precambered girders to raise awareness and share technical knowledge about this effective but underused application of precast concrete. The paper explains how building an intentional vertical curve into a precast concrete girder formwork system and the prestressing strand layout creates a girder with a prefabricated vertical curvature known as precamber. Designing with this type of precamber is an effective technique for matching the roadway profile grade for girders fabricated with a monolithic deck slab. For superstructures with a cast-in-place concrete deck, this technique helps meet challenging vertical clearance requirements and reduces the slab haunch buildup associated with significant vertical curve profiles.



Richard Brice



Stephen Seguirant



Anthony Mizumori



Bijan Khaleghi

DANIEL P. JENNY FELLOWSHIP CALL FOR APPLICATIONS

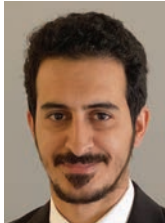
>> Applications for the Daniel P. Jenny Research Fellowships during the 2021–22 academic year are now being accepted. These fellowship awards of up to \$40,000 are intended to engage the interest of young engineering students in the precast concrete industry while providing a research experience of value to both the student and the precast concrete industry. MS degree candidates conducting research related to precast concrete are preferred, but PhD program candidates will also be considered.

Applications are due January 15, 2021. Complete information is available at <https://www.pci.org/JennyFellowship>.

Paper on blast design methodologies receives 2020 Korn award

Omar M. Alawad, Matthew J. Gombeda, Clay J. Naito, and Spencer E. Quiel received the Martin P. Korn Award for their paper titled “Simplified Methodologies for Preliminary Blast-Resistant Design of Precast Concrete Wall Panels” in the July–August 2019 issue of *PCI Journal*. The Martin P. Korn Award is given to the best design or research paper appearing in *PCI Journal* during a single year.

This paper presents two simplified blast-resistant design methodologies for rapid generation of pressure-impulse (*P-I*) curves for solid precast concrete wall panels with conventional reinforcement: a normalization approach and a curve-fitting methodology. Both methods are primarily intended for preliminary design calculations that would be conducted during the bidding phase. The normalization approach involves shifting a control *P-I* curve to determine the respective curve for any panel configuration based on its constitutive properties. This method generally results in low error and, due to its streamlined computational efficiency, was used to develop a spreadsheet-based design tool. The curve-fitting approach, which uses an analytical formula to calculate the dynamic region of the *P-I* curve, is suited for simplified hand calculations or design handbooks. Both approaches exhibit superior computational efficiency relative to traditional single degree of freedom analyses and are well suited for the rapid assessments of panel performance during the preliminary design phase.



Omar Alawad



Matthew Gombeda



Clay Naito



Spencer Quiel

2020 EPP participants recognized

Participants of the 2020 Exceptional Precast Practices (EPP) program were recognized during PCI’s Committee Days. The Quality Enhancement Committee developed the EPP as a continuous quality improvement tool specifically for the precast concrete industry. This voluntary, self-assessment

tool offers both a roadmap for quality-improvement efforts and milestones for measuring progress. The EPP program gives producer plants an opportunity to self-assess their management systems.

The 2020 program participants were Conewago Precast Building Systems of Hanover, Pa.; CXT Inc. (an LB Foster company) Concrete Ties of Spokane, Wash.; CXT Inc. Precast Concrete of Hillsboro, Tex.; Carr Concrete, a division of CXT Inc., Williamstown, W.Va.; Forterra Building Products of Caldwell, Idaho, and Salt Lake City, Utah; International Concrete Products Inc. of Germantown, Wis.; Mid-States Concrete Industries LLC of South Beloit, Ill.; Nitterhouse Concrete Products Inc. of Chambersburg, Pa.; Northeast Prestressed Products LLC of Cressona, Pa.; Prestressed Casting Co. of Springfield, Mo.; Prestressed Concrete Construction LLC of Newton, Kans.; Smith-Midland Corp. of Midland, Va.; Standard Concrete Products Inc. of Atlanta, Ga.; and Wells Concrete of Albany, Minn.

Georgia/Carolinas PCI names Clark new executive director as Finsen retires

The Board of Directors of Georgia/Carolinas PCI, an independent regional chapter of PCI, has hired Ray Clark as its new executive director, starting on January 1, 2021.

The current executive director and CEO, Peter Finsen, a PCI Fellow, will step down as executive director but continue as CEO from January 1 until his retirement on March 7, 2021, to provide onboarding and assist in a smooth transition of administrative service and technical, educational, and marketing promotion.

Clark brings 22 years of experience in the precast concrete industry and most recently served as president of US Formliner, a position he held since 2012. In addition to his business leadership roles, he has served as an associate director on the Georgia/Carolinas PCI Board of Directors and chairman of the Georgia/Carolinas PCI Education Committee. He has also served on the Board of Directors for the PCI Foundation, as well as PCI, the National Precast Concrete Association, and the Canadian Precast Concrete Institute.



Ray Clark



Peter Finsen

2020–21 Mertz fellowship awarded to Hart

The PCI Transportation Activities Council and the PCI Research and Development Council have awarded the 2020–21 Dennis R. Mertz Bridge Research Fellowship to Kallan Hart’s submittal titled “Repairable Precast Bridge Bents for Extreme Events.”

Hart, who attends South Dakota State University in Brookings, S.Dak., will be advised by Mostafa Tazarv, assistant professor at SDSU. His project is supported by Gage Brothers in Sioux Falls, S.Dak., where he previously worked as an intern, and the National Center for Transportation Infrastructure Durability and Life-Extension (TriDurLE), a national University Transportation Center consortium of 11 universities led by Washington State University. In his application, Hart wrote, “I hope to not only broaden my knowledge and experience in the area of accelerated bridge construction (ABC), but also to challenge the industry to make progressive changes to bridge design codes in seismic regions.”

The Mertz fellowship was established in 2017 in memory of Dennis R. Mertz, a professor of civil engineering at the University of Delaware and one of the principal investigators who developed the *AASHTO LRFD Bridge Design Specifications*.



Kallan Hart

Gulling, Lucier, Barrios receive educator awards

Dana Gulling and Gregory Lucier were both named 2020 PCI Educator of the Year, and Michael Carlos Barrios was named Distinguished Educator.

Gulling is associate professor and the director of graduate programs at the North Carolina State University (NCSU) College of Design. Gregory Lucier, a research associate professor and the Constructed Facilities Laboratory manager in the Department of Civil, Construction, and Environmental Engineering at NCSU. Together they developed a unique graduate-level studio course, *Creations in Concrete*, for architectural and engineering students.

Barrios is associate professor of architecture at Clemson University in Clemson, S.C. He has played a vital role in advancing PCI’s educational mission and has been a creative force and leader in PCI Foundation’s precast studio program and was a founder and active professor in Clemson’s successful pilot studio.

PCI FOUNDATION CARRIES ON

>> You would be hard pressed to meet anyone in the industry with more enthusiasm for educating students about precast concrete than Tom Kelley. He often told stories at PCI Foundation Board of Trustee meetings about his desk critiques with architecture students at South Dakota State University, where somehow, every time, the hours got away from him. He could talk to students all afternoon, sometimes keeping them there well past the allotted hourlong class time.



Chris Pastorius
PCI Foundation
Chairman

The PCI Foundation Board of Trustees typically meets once a year at one of the schools where we have a precast studio, and Tom was the same with those students as he was in his hometown. Tom’s enthusiasm for the work and for the students was visible. He said in a recent video, “It is without question the best investment that a precast pro-

ducer can do is to invest in a precast studio. It is the highest return on investment, it is the most fun to do, and it is just a great place to be.”

Tom not only saw the fun and meaning his local studio meant, but he helped form a vision for the future of the PCI Foundation. He pushed us to grow from just a few Precast Studios to our current status. Last year, there were 15 studios, but the PCI Foundation was really made up of 50 professors, 54 precast concrete industry partners, 35 other partners, seven PCI regions and 1149 students. Tom had a vision that helped us get to that success.

As current vice chairman of the PCI Foundation Board of Trustees, I am honored to lead the effort to continue the work that Tom so enthusiastically embraced. This year, we have 21 schools with precast studios planned and several more making proposals. The work with our programs carries on, but we will surely miss having Tom as our chairman.

GFRC panels task group receives Leslie D. Martin Award

Members of the task group for ANSI/PCI 128-19, *Specification for Glass-Fiber-Reinforced Concrete Panels*, received the Leslie D. Martin Certificate of Merit. The award recognizes a PCI-published document judged to be technically outstanding and worthy of special commendation for its contribution in advancing precast concrete. The task group members were Edward S. Knowles (chair), Sidney Freedman, John Jones, James A. Lee, Ray A. McCann, Edwin A. McDougale, W. Michael Paris, and Bradley G. Williams.

Aultman first recipient of Speyer award

Suzanne Aultman is the first recipient of the Irwin J. Speyer Young Professional Award, recognizing a PCI member who serves on at least one committee and is a registered professional engineer or structural engineer for less than 15 years. Aultman, chief engineer with Metromont Corp in Greenville, S.C., was selected because of her extensive work with PCI and the American Concrete Institute.



Suzanne Aultman

PCI Foundation bestows honor of Trustee Emeritus to D'Arcy, Hynes, Sutton

The PCI Foundation Board of Trustees has chosen three distinguished members of the precast concrete industry to be honored as emeritus members. This is the first time the board has selected emeritus members.

Tom D'Arcy served as chairman of the PCI Foundation from 2006 to 2016 and is a renowned Concrete Chef, which is just one of the many activities he is involved in to raise the stature of, and funding for, the PCI Foundation.

Patrick Hynes received the PCI Medal of Honor and is a PCI Fellow, along with his many roles and committees and PCI Foundation activities.

Doug Sutton taught at Purdue University School of Engineering in West Lafayette, Ind., and has been a dedicated member of PCI. He served as chairman of the PCI Foundation's Academic Council from 2006 to 2016.



Tom D'Arcy



Pat Hynes



Doug Sutton

PCI'S CALENDAR

Events

PCI event details are subject to change. For the most current information, visit <https://www.pci.org/events>.

2021 PCI Convention at the Precast Show
New Orleans, La.

May 18-22, 2021

2021 PCI Committee Days and Technical Conference
Rosemont, Ill.

September 22-25, 2021

2021 Productivity Tour
Charlotte, N.C.

October 2021

2022 PCI Convention featuring the National Bridge Conference at The Precast Show
Kansas City, Mo.

March 1-5, 2022

PCI recognizes Gate project with Sidney Freedman Craftsmanship Award

Gate Precast Co. in Winchester, Ky., and Oxford, N.C., is the winner of PCI's ninth annual Sidney Freedman Craftsmanship Award for its work on One South First—the Domino Sugar Refinery—in Brooklyn, N.Y. The award recognizes PCI-certified plants for excellence in manufacturing and craftsmanship of architectural precast concrete and glass-fiber-reinforced concrete (GFRC) structures and individual components.

The 42-story commercial/residential building, located along the East River in Brooklyn, represents an important advancement in the architectural precast concrete manufacturing by using three-dimensional (3-D) printed forms.

"The design of this building pays homage to the sugar factory that once sat on this property," says Steve Schweitzer, Gate's vice president of operations. "This new and innovative forming system not only was instrumental to using architectural precast concrete for the facade of this building but is changing the way precast producers across the country think about utilizing a new material to form precast concrete products. This innovative and cutting-edge project took craftsmanship in a whole different direction, combining 3-D-printed molds and wood forms to meet the architect's vision, schedule, and budgetary requirements."

"One South First is a very interesting and custom looking project, utilizing craftsmanship techniques throughout the construction process," says Matt Graf, executive vice president of sales at International Concrete Products, who served on the judging panel. "Challenges included devising a fastening system to hold the 3D-printed mold parts in place, the fabrication of special jigs to tie the special rebar cages, and the polishing of the precast concrete."

The award is named after retired PCI Director of Architectural Systems Sidney Freedman, who was a leading voice in precast concrete architectural design for more than 43 years with the organization.



Gate Precast Co. received the 2020 Sidney Freedman Craftsmanship Award for One South First in Brooklyn, N.Y. Courtesy of Gate Precast Co

Malsom receives 2020 Norman L. Scott Award

Mike Malsom, former president of Consulting Engineers Group (CEG) Illinois, received the Norman L. Scott Professional Engineer Award. The award recognizes engineering professionals who exhibit the personal and professional traits that Scott exemplified.



Mike Malsom

Malsom's career in the precast concrete industry began in 1987 at CEG, where he worked as a structural engineer and project manager on more than 100 projects, including five NFL stadiums. Among his mentors at CEG was Norman Scott himself. In 2017, Malsom retired from CEG but he remains active in the company.

His contributions to PCI include work on the fifth and sixth editions of the *PCI Design Handbook: Precast and Prestressed Concrete*, serving on the PCI Board of Directors, acting as a mentor for the first Project Precast, and serving as a trustee for the PCI Foundation. Malsom was named a PCI Fellow in 2016.

Winners of 2020 PCI Big Beam Competition announced

The judging committee recently selected the winners of the 20th year of the PCI Engineering Student Design Competition, also known as the Big Beam Contest. PCI's Student Education Committee (Wael Zatar, chair) organized the Big Beam Contest, sponsored by Sika Corp., PTAC, and *Aspire* magazine. The objective is for teams of students to fabricate and test a precast/prestressed concrete beam with the help of local precast concrete PCI producer members.

The objective was for teams of students to fabricate and test a 22 ft (7 m) long precast/prestressed concrete beam with the help of local precast concrete PCI producer members. Project entries are judged on a variety of criteria, including the beam's performance in stress tests that simulate the types of real-life conditions structural building and infrastructure components must endure to ensure life safety, as well as the quality of the team's analysis and reports and a video overview of their project.

Entries were ranked by total number of points earned. This year the first-place team was from the University of Notre Dame. Fewer teams than usual entered this year because of the pandemic.

To see the student videos, please visit https://www.youtube.com/channel/UCBV2K1BGAopHHM9Thk_-dfw/featured.

First place: University of Notre Dame (Team 2); Notre Dame, Ind.

Faculty advisor: Robert Devine

PCI producer: Strescore Inc. (Adam Reihl); South Bend, Ind.

Student team: Zack Lescowitch, Kyle Mutschler, Athena Clare Richards, Lily Polster, Marie Bond, Barret Lee, Nic Saladino, Audrey Cross, and Naomi Foster

Award: \$2000, plus other prizes

Keith Kaufman Award for Best Report: Lehigh University (Team 2, King Beam); Bethlehem, Pa.

Faculty advisor: Clay Naito

PCI producer: Northeast Prestressed Products (Gary Lehman); Cressona, Pa.

Student team: Logan King, Kinga Kuczynski, and Louis Lin

Award: \$500

Best Video: Lehigh University (Team 1); Bethlehem, Pa.

Faculty advisor: Clay Naito

PCI producer: Northeast Prestressed Products (Gary Lehman); Cressona, Pa.

Student team: Jackson Cooney, Rachel Hamburger, and Pawat Rithipreedanant

Award: \$500

PCI personnel training and certification schools

Quality Control School event details are subject to change. If you have any questions about the Quality Control School schedule or need help completing a registration form, please contact PCI's continuing education senior manager, Sherrie Nauden, at snauden@pci.org or (312) 360-3215. Registration forms are available at https://www.pci.org/qc_schools.

Level I/II	February 1-4, 2021	online
Level III	March 9-12, 2021	online
CFA	January 18-21, 2021	online
CCA	January 22, 2021	online

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