Oregon State University Team Wins 2023 PCI Big Beam Competition

CHICAGO, August 24, 2023 – Oregon State University has won the Precast/Prestressed Concrete Institute’s (PCI) 2023 Engineering Design Competition, also known as the Big Beam Competition. The national competition, in its 23rd year, teaches college students important structural engineering skills in an applied learning environment that will benefit them in their future professions.

Teams of students and a faculty advisor design, build, and test a 20-foot, precast, prestressed concrete beam. Local PCI-certified precast concrete producers mentor and fabricate the beams for the teams. Entries are judged on a variety of criteria, including the beam’s load-resisting performance in tests that simulate real-life conditions structural building and infrastructure components must endure to ensure life safety, as well as the quality of their analysis and reports, and a video overview of their project.

“PCI Big Beam competition helped students learn different perspectives compared to the knowledge gained from the classroom,” said Tanarat Potisuk, faculty advisor for the winning team. “This included performing design calculations, building the beam, and observing actual behavior of the beam through the test. The results were eyeopening for them, showing that when design assumptions were well thought out and calculations were correctly executed, it could predict the actual behavior of the beam closely.”

“This competition facilitates a link between engineering calculations and real-world precast concrete fabrication,” added Jared Brewe, PCI’s Vice President, Technical Services, who served as a judge. “It’s exciting to see how the teams approach the problem, adapt to meet limits of their producer partner, and learn
through the process of design, fabrication, and testing. The creativity in the video submissions also demonstrates the ingenuity of these students and their excitement for the opportunity to visit and work with our producers.”

The 2023 PCI Big Beam Competition was sponsored by ALP Supply and ASPIRE magazine.

Overall Results

First Place: Oregon State University
Faculty Advisor: Tanarat Potisuk
Student Team: Sean Freitag, Nicholas Peterson, Kobe Wagner
PCI Producer: Knife River Prestress

Second Place: University of Minnesota Duluth
Faculty Advisor: Brock Hedegaard
Student Team: Justin Entinger, Eric Gibson, Kate McCabe, Abby Norman
PCI Producer: Molin Concrete Products

Third Place: Iowa State University
Faculty Advisor: Hartanto Wibowo
Student Team: Anisha Karki, Gata Milla, Lucas Reidel, Chandra Shekhar Lakavath
PCI Producer: Rinker Materials

Remaining finishers in alphabetical order.

University of British Columbia
Faculty Advisor: Lisa Tobber
Student Team: Alay Bhagat, Sara Darsi, Jassimrat Deol, Vishawjit Singh Gill, Navsift Kaur, Samantha Krieg, Mahya Moghadasi, Kiana Youssefian Sahzabi, Grant Shishido
PCI Producer: Rapid-Span Precast, a Limited Partnership

University of Illinois at Chicago
Faculty Advisor: Didem Ozevin
Student Team: Said Elferachi, Haider Himairi, Caitlin Koziel, Raguez Taha
PCI Producer: County Prestress
Lehigh University
Faculty Advisor: Clay Naito
Student Team: Tj Briscoe, Urinrin Otite, Constantine Patmandis
PCI Producer: High Concrete Group LLC

University of Massachusetts Amherst
Faculty Advisor: Sergio Brena
Student Team: Andrew Lochner, Lukas Souza, Omid Monshi Toussi
PCI Producer: Unistress Corporation

University of Massachusetts, Team 2
Faculty Advisor: Sergio Brena
Student Team: Joshua Govina, Thien-Thanh Nguyen, Lucia Pan, Cameron Ritchie
PCI Producer: Unistress Corporation

New Jersey Institute of Technology
Faculty Advisor: Mohamed Mahgoub
Student Team: Armin Saadegh-Vaziri, Alexander Savekin
PCI Producer: Jersey Precast

Northern Arizona University
Faculty Advisor: Robin Tuchscherer
Student Team: Anthony Eschen, Hunter McCormick, Joshua Sewell, Farrah Young
PCI Producer: Tpac

Keith Kaufman Award for Best Report

Judges considers the overall presentation of the report when deciding on a best report winner. In addition to verifying the report contains all the requested sections and required signatures, judges look for clear presentation of data, professional look and formatting, and an overall well-written report.

Oregon State University
Faculty Advisor: Tanarat Potisuk
Student Team: Sean Freitag, Nicholas Peterson, Kobe Wagner
PCI Producer: Knife River Prestress
Best Video

Requirements include a video taken of the precast concrete beam being tested. Teams are encouraged to be as creative as they wish when preparing the final video. Videos with a storyline related to the big beam competition are clear standouts and the judging committee may elect an entry to receive a best video award.

Lehigh University
Faculty Advisor: Clay Naito, PhD, PE
Student Team: Tj Briscoe, Urinrin Otite, Constantine Patmanidis
PCI Producer: High Concrete Group LLC

To see the student videos, please visit PCI’s Big Beam Channel on YouTube.

About PCI
Founded in 1954, The Precast/Prestressed Concrete Institute (PCI) is a technical institute for the precast concrete structures and systems industry. PCI develops maintains, and disseminates the Body of Knowledge for the design, fabrication, and construction of precast concrete structures and systems. PCI develops consensus base standards, industry handbooks, quality assurance programs, certification, research and development projects, design manuals, continuing education and periodical publications. PCI members include precast concrete producers, erectors, suppliers, professional engineers and architects, educators, students, and industry consultants who complement the wide range of knowledge of precast concrete. For additional information, visit pci.org/howprecastbuilds.