CONSTRUCTION PROCESS LAB
PROVIDES HANDS-ON LEARNING FOR STUDENTS
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Welcome to Constructioneer, OHL School of Construction, 2014-2015 newsletter. OHL School of Construction became the first named school in the College of Engineering and Computing at Florida International University in 2012. Since then, the school made noteworthy advances in all areas of education, research and service to the community.

In 2014, the school’s undergraduate program was fully reaccredited by the American Council of Construction Education (ACCE). The fully online Master of Science in Construction Management (MSCM) has been ranked among the nation’s best by U.S. News and World Report. It should be noted that according to the latest employment data published by the SUS (2010-11 Florida Public University Graduates) the MSCM program has the highest employment rate in the state when compared to other universities in Florida. Our bachelor’s degree program in Construction Management (BSCM) has the second highest rate of employment.

In 2013, OHL received a gift from Moss and Associates to establish its state-of-the-art Built Environment Informatics Laboratory. Moss and Associates’ generous gift is instrumental for teaching Building Information Modeling (BIM) and conducting research in construction information systems. Also in 2013, the school established the Construction Process Laboratory that is facilitating hands-on student learning with construction materials and components. These are just some of the incredible areas of growth the school has experienced in a very short time.

An important part of OHL’s mission is to provide enlightened leadership to the construction industry through its graduates. Our graduates are highly sought after in the industry. Notably, most of FIU’s Master of Science in Construction students are already employed in the industry. Several of our alumni are holding executive positions in South Florida’s construction industry, something we can attribute in part to our strong Industry Advisory Council members.

In spirit of FIU’s global learning and environmental research initiatives, OHL’s faculty are involved in cutting-edge research on various topics, including sustainability in construction, energy efficiency in buildings, innovative materials for construction and building information modeling. The OHL program is one of the finest in the country thanks to the collaborative efforts of our motivated students, highly qualified faculty, and dedicated alumni.

Before I conclude, I would like to invite our readers to participate in the upcoming Construction Americas 2015 Exposition (trade show) to be held in FIU’s Arena on March 26-27 (back cover). Construction Americas will feature panel discussions on the key factors propelling the future of construction best practices and technologies, with a focus on North and South American markets.

I would like to take this opportunity to thank our students and alumni for choosing the OHL School of Construction to advance their career. We are grateful to our industry partners—the members of our Industry Advisory Council for supporting the school in realizing our vision of excellence in construction education and hope you enjoy reading about it.
CONSTRUCTION STUDENTS EXCEL ON STRONG FOUNDATION

It takes a village to train a well-prepared construction engineer. That is exactly what a team of FIU students brought to a national competition last fall: the support of faculty, alumni and community members working together to help them achieve first place in a national competition.

FIU’s team beat nine other student team finalists from around the country at the annual ABC Construction Management Competition (CMC), a hallmark competition that promotes careers in construction management. FIU’s team planned every detail of its work based on the judges’ request for last-minute revisions—a premeditated nod to the kinds of demands that clients typically make—and then giving a 10-minute presentation. Professors Ayman Morad and Jose Faria were on-hand to give support and advice.

Professor Morad has organized the annual team for the last four years, and in that time his students have earned two overall second places and, now, their second overall first place. Congratulations to the team!

ABC COMPETITION PARTICIPATING UNIVERSITIES

• Auburn University
• Brigham Young University
• California State University - Long Beach
• Clemson University
• Colorado State University
• Florida International University
• Ferris State University
• Florida State University
• Florida International University
• Kansas State University
• Louisiana State University
• Purdue University
• Southern Polytechnic State University
• Texas State University
• The Ohio State University
• The University of Southern Mississippi
• Tuskegee University
• University of Central Florida
• University of Cincinnati
• University of Florida
• University of Northern Iowa

MADRID INTERNSHIP OFFERS A WORLD VIEW OF CONSTRUCTION INDUSTRY

Global citizens make the best construction managers. Just ask Julio Cuenca, a December 2014 graduate of FIU’s OHL School of Construction Management who landed a job before the ink was dry on his diploma.

“It was great,” he says of working for construction giant OHL at their Madrid headquarters. “I was really able to see what a global construction company needs to do in order to keep being a big player in the industry.”

Cuenca worked as part of a team that supports the bidding process for new projects. He assisted a senior engineer with proposals for two rail projects, one in the UK and another in the UAE. His duties included estimating quantities of materials needed for components such as concrete columns and beam spans. He also had to research local building codes, a task that confirmed the value of knowing how to respond appropriately across cultures.

“My big impression is, in construction there is no one way to do business.”

Cuenca says. He saw marked differences, for example, in what Europeans and Latin Americans expected of firms vying for jobs.

He noted that standards and requirements are set in stone in countries such as Ireland, making it nearly impossible for a construction firm to suggest any deviations from an approved design plan. In Brazil, on the other hand, contracting agencies welcome changes for reasons of innovation and cost savings.

“You need to be diversified,” Cuenca says of the kind of thinking successful individuals and companies need to employ across borders. “You need to know how other countries are reacting to changes in construction.”

Cuenca believes so strongly in its employees’ understanding how cultural differences impact construction work that it offers workers foreign-language instruction as a way to promote that.

The business lessons Cuenca learned at CMC, combined with an earlier internship in Panama and a required school course that covered international construction documentation and communication, made for a powerful resume. On Jan. 5, he started a job as a project engineer in the Miami office of a New York-based company looking to grow its international division.

“They loved that I had that global experience with different cultures and different methods of construction,” says Cuenca, who hails from El Salvador. “Right now construction companies are getting more global. They’re looking for individuals who have that global learning.”

“You need to be diversified. You need to know how other countries are reacting to changes in construction.”
A team from OHL School of Construction placed among the top five last fall in a national bowling competition, but it wasn’t only the team’s ability to throw down strikes and spares that vaulted it past dozens of other teams. Creativity with engineering design came in handy, too.

Thirty-three teams competed in the 2014 American Concrete Institute’s (ACI) bowling ball competition, which took place in Reno, Nevada, during ACI’s spring convention. Timothy Libre represented the OHL School of Construction at the contest and faced teams from the United States, Puerto Rico, Mexico and Ecuador.

The objective of the annual competition is three-fold: demonstrate the effect of fibers in reinforcing concrete, gain experience in forming and fabricating a concrete fiber-reinforced element; and encourage creativity in engineering design and analysis.

The competition is divided into two categories: the Bowling Ball Performance Category and the Presentation Category. For the Bowling Ball Performance Category, the balls were evaluated and scored based upon the following five tests: the mass test; the diameter consistency test; the bowling test; the final deformation load test; and the toughness load test. The OHL School of Construction team obtained the top score in the mass and diameter tests in addition to tallying two strikes, a 5-spare and another strike in the bowling category. The Presentation Category required the submission of a poster.

Libre and classmate Abdalaziz Alshalabi had competed previously in an Orlando-area competition that featured only Florida institutions. Alshalabi was unable to participate in the Reno competition as he was out of the country at the time.

The team was sponsored by Facchina Construction, the East Coast chapter of Associated Builders and Contractors, Supermix, Grace, Florida Concrete and Products Association.

ROLLING INTO 5TH PLACE AT NATIONAL CONCRETE BOWLING BALL COMPETITION
Having spent over a decade working with the construction industry, Agustin R. Arellano Jr. is much more than the vice president of finance and CFO of OHL Arellano Construction Co. He is a philanthropist, community leader, and known to most by the nickname, “Konyk”—so as not to confuse him with his father, Agustin Arellano Sr., who founded Arellano Construction more than 30 years ago and remains active as the company’s chairman.

Arellano received his bachelor’s degree from Duke University and MBA from the University of Miami, Graduate School of Business in the late 1980s. He got his start working in the private equity field for seven years, executing and managing leveraged buyouts. In a move that showcased his visionary determination, Arellano joined his father to help build the firm through hard work and strong ties to the community.

Today, Arellano is responsible for all finance, accounting, human resources, office administration and information technology areas of OHL Arellano which has landed more than $500 million in contracts over the past year and is expanding its operations into international markets. And while it’s no secret that the construction industry continues to undergo vast changes born out of the confluence of a number of forces, trends and events, the firm has managed to stay headstrong and profitable over its 40 years existence—even during the 2007 economic activity slowdown.

Specializing in niche markets, OHL Arellano has built its reputation for excellence in healthcare and education construction. The company has worked on the most renowned campuses around the world. On the health care side, OHL Arellano recently completed the South Miami Hospital Clinical Expansion project—an 80,000-square-foot expansion that houses a new emergency department (ED) and a new 15-room operating suite. Baptist Children’s Hospital Clinical Expansion project—an organization benefitting the Children’s Cancer Caring Center, Neonatal Intensive Care Unit & Children’s Emergency Care Center at Baptist Children’s Hospital.

In 2013, Arellano helped spearhead the pro bono contracting services for the construction of the Miami Lighthouse of the Blind’s “Sash A. Spencer Educational Empowerment Center” and held a groundbreaking ceremony for its new fourth floor expansion. Elected officials, community leaders, media and other supporters of Miami Lighthouse attended the ceremony in support of the facility that helps blind teenagers transition successfully from high school to higher education or mainstream employment. This project represents a partnership between Miami Lighthouse and OHL Arellano, which also provided pro bono general contracting services for the facility’s third floor expansion in 2006. “OHL Arellano Construction has a long history of supporting nonprofits in our community,” says Arellano. “This project was representative of our commitment to Miami Dade County.”

Prior to that, in 2012 OHL Arellano joined FIU College of Computing and Engineering to celebrate the naming of the OHL School of Construction, the first named school in the history of the college. Arellano actively participates in the OHL School of Construction and has started an internship program opportunity for the students to work at the firm on a semester basis. In the same year, Arellano gifted Miami Dade College with a donation to support educational ventures such as the Miami Book Fair International. Arellano believes that participation in reading, writing and performing arts fosters creativity, ingenuity and confidence, particularly in young people.

“OHL Arellano takes pride in giving back to the educational community through philanthropic and educational programs,” Arellano says.

“OHL Arellano takes pride in giving back to the educational community through philanthropic and educational programs,” Arellano says. “We believe that philanthropic endeavors are the private sector’s opportunity to look in two directions at once: to the past for guidance and inspiration as we look upon successful projects and to the future with hope and purpose for its community.”
The Construction Process Lab, headed by faculty member Jose Faria, Ph.D., offers an exceptional opportunity for students in the construction management program to advance their building and safety skills. One class assignment has students preparing a job hazard analysis for a scaffold assembly, which they then put together.

Safety in construction lectures are also given in the lab where the students can experience the feeling of a fallen worker waiting to be rescued. They learn about the hazards associated with using handheld tools and how to protect themselves by using proper personal protective equipment.

The facility is divided into two sections: a residential side and a commercial side.

The residential side has a mock-up bathroom fitted with a bathtub, sink and toilet. The walls and the floor are completed to different stages, which shows students the backing materials used in the construction as well as a variety of finishes and accessories.

The commercial side also has a split air conditioning system where students can learn the different components of a typical residential system. A see-through plexiglass panel on the air-handling unit allows them to see the internal elements of the unit.

The lab also has mock-ups for different construction structures such as foundations, walls and roofs. Students can see how rebar is placed in a foundation and a wall to provide strength.

In addition, the lab contains handheld tools, samples of different construction materials and equipment such as scaffolds and scissor lifts.
News from the OHL School of Construction at the FIU College of Engineering & Computing

Doctoral Student Profile:
Farrukh Arif

A Fall 2013 graduate of FIU’s College of Engineering and Computing, Farrukh Arif is an assistant professor in the Department of Civil Engineering at NED University of Engineering and Technology in Karachi, Pakistan. Arif arrived at FIU after earning a master’s in engineering management (civil engineering/construction management) and a bachelor’s in civil engineering from NED. He earned his Ph.D. from FIU in civil engineering with a dissertation in construction engineering and management. His dissertation was titled, “A Decision Support Framework for Infrastructure Maintenance Investment Decision-Making.”

After earning his doctorate, Arif worked as a post-doctoral associate at OHL School of Construction from January to July 2014. Engaged in cutting-edge research in construction engineering and management, his work was funded by agencies such as the Construction Industry Institute (CII), Florida Department of Transportation (FDOT) and FIU Eugenio Pino and Family Global Entrepreneurship Center. During this period, he worked as the sole research assistant on seven funded research projects with M.E. Bayraktar.

Arif’s research has made significant contributions toward the field of infrastructure management, green and sustainable construction, cost estimation and control, construction safety, and legal affairs and dispute resolution in construction. He has authored and co-authored 27 publications, including 19 while at FIU, that include journal papers (7), conference proceedings publications (16) and funded research project reports (4). He also attended and made oral and poster presentations at conferences including the Construction Research Congress (CRC) and the Construction Industry Institute (CII).

Arif received several honors and awards while at FIU for his academic and research performance. These include: the Dissertation Year Fellowship Award (2013) by FIU’s University Graduate School, the 2012-13 American Society of Civil Engineers Miami-Dade Branch Graduate Student of the Year, the 2013 Association for the Advancement of Cost Engineering (AACE) International Scholarship Award, and three Scholarly Forum awards (2010, 2011 and 2013) from FIU Scholarly Forums. Upon completion of his Ph.D. degree, the college honored Arif with the Outstanding Doctoral Degree Graduate Award, given to a student in recognition of academic and research achievements as well as service to the university and community.

New Faculty Profile:
Dr. Ali Mostafavi
Looking for Interdisciplinary Solutions to 21st Century Infrastructure Problems

Here is what we know: sea levels are rising. The climate is changing. Our infrastructure has widely been described as “crumbling.”

Here’s what we don’t know: how to address—and to foresee—issues that have not yet occurred but are definitely going to happen. Ali Mostafavi, an assistant professor in the OHL School of Construction, believes an approach that “merges teaching and science, actively incorporating new methodology and merging engineering, computing, science and policy” is a way to “unlock new opportunities for sustainability and resilience.”

Mostafavi joined the faculty at FIU in August 2013 after receiving a doctorate in civil engineering at Purdue University. In addition to his Ph.D., he also has an MBA from the Krannert School of Management at Purdue University, before he became an academic. Mostafavi had worked as a construction professional on both industrial and residential projects. His varied experience and education have positioned Mostafavi well as he pursues multipronged solutions to multipronged issues. Mostafavi supervises the Infrastructure System-of-Systems (I-SoS) Research group at FIU, which is studying sustainable and resilient infrastructure systems, construction project performance complex systems-of-systems and safety hazards in construction projects, among others.

“I am in the right place at the right time,” Mostafavi says. “Our infrastructure systems are facing significant problems such as demand-supply disparity, climate change adaptation, the decay of reliability and resilience in infrastructure networks, need for energy efficient facilities, protection of communities during extreme events and the efficient use of limited natural, physical, human and financial resources. These problems are often large in scale and multidisciplinary, thereby requiring solution concepts that consider engineering, computing and science simultaneously.”

“This is a very exciting time for making transformative breakthroughs in our infrastructure systems. We have developed advanced computational simulation methodologies and technologies that foster data driven decision making data in the planning, operation and management of our infrastructure systems. We no longer design and manage infrastructure independently. We are looking at infrastructure as complex systems-of-systems in which interdependence, emergence, complexity and uncertainty are critical dimensions of analysis,” Mostafavi says. “Our research provides tools for the policy-makers to simulate various decision scenarios under different uncertain conditions to formulate infrastructure policies. They can test the robustness of formulated policies in the simulated environment before implementation in the real world. This significantly improves the likelihood of achieving the desired outcomes.”

In addition to research, Mostafavi is a dedicated teacher who uses Twitter to promote collaboration and discussion among his students. “I have students who are pursuing their degrees online and may never see their peers who are on campus.” The Twitter forum enables both sets of students to interact with each other. Mostafavi teaches several courses at FIU. “The most exciting and rewarding part of my career is when I am in class and interacting with the students,” he notes.

“I am very excited and proud to be a part of the FIU family. We are a young university that has already established itself as a leading academic institution.”
First Cornerstone Awards honor longtime supporters

On Nov. 8, the OHL School of Construction—along with its Industry Advisory Council and Alumni Chapter—joined together at a festive event celebrating the inaugural Cornerstone Awards. These awards were given to individuals and organizations that have supported the school and helped it grow into one of the state’s top training grounds for construction professionals.

From left: Natasha Wedderburn, professional advisor; Deepika Paryani, alumna; Reinaldo de Castro, assistant professor; Preena Toppo, doctoral student; and Daphne Brown, senior secretary, enjoyed attending the inaugural awards event. OHL-Arellano Construction chairman Agustin Arellano Sr., second left, Agustin Arellano Jr., vice president, finance/CFO second right, were on hand to accept the Cornerstone Award on behalf of their company, OHL-Arellano Construction. Miguel “Mike” Cerra, executive vice president, Link Construction Group, proudly shows his Alumni Cornerstone Award. Chad Moss, OHL-Arellano Construction chairman Agustin Arellano Sr., second left, Agustin Arellano Jr., vice president, finance/CFO second right, were on hand to accept the Cornerstone Award on behalf of their company, OHL-Arellano Construction.

Meet the Faculty

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FIU's OHL School of Construction will be presenting the first Construction Americas Exposition on March 26 and 27 at FIU's Modesto A. Maidique Campus.

Designed to give attendees a window into the future of construction, the expo will present panel discussions featuring CEOs, industry journalists and technology providers; 30,000-square-feet of displays and exhibits; and unparalleled opportunities for networking with the construction industry's top movers and shakers.

Construction Americas 2015 kicks off the two-day event with a welcome reception on March 26 and remarks by Chris Grundy, the host of DIY's "Cool Tools" and "Blog Cabin 2012, 2013, 2014 & 2015." Grundy, an actor and comedian, is "a tool expert and avid do-it-yourselfer who's the first to admit his enthusiasm often outweighs his expertise."

On March 27, three panel discussions will cover the key factors propelling the future of construction best practices and technologies, with a focus on North and South American markets.

Tickets for Construction Americas 2015 are $50 with a discounted rate of $40 for two or more attendees. Admission includes a continental breakfast and refreshments throughout the day.

For more information and to register, visit constructionamericas.fiu.edu.

**SCHEDULE**

**MARCH 26, 2015**
6:30 p.m.: Evening Reception and Opening Remarks
Irtishad Ahmad, Ph.D., P.E.
Director - OHL School of Construction
Chris Grundy
Cool Tools and Blog Cabin

**MARCH 27, 2015**
8-9 a.m. Breakfast and Keynote: CEO Panel
9 a.m.-6 p.m. Exposition
11 a.m.-noon: Morning Breakout: Technology Panel
Noon Exposition and Lunch
(lunch not provided)
2-3 p.m. Afternoon Breakout: Editor Panel
6 p.m. Exposition Closes