

Constructioneer

Built Environment Informatics Laboratory

New technology to impact
teaching, research, industry





CAREER EXPO

Employees of Coastal Construction, above, came to campus to meet students during the most recent Career Expo. The event, held in the spring and fall, brings together leading local companies with young people looking for internships and jobs. Companies wishing to participate can call Bernadette Chung at 305-348-3537.

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On the Cover: Graduate student Jin Zhu in control of a virtual reality experience.

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15338_ 01/16

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Director’s Corner



Welcome to *Constructioneer*, annual newsletter of the OHL School of Construction.

Twenty fifteen was another eventful year for us. In September, Juan-Miguel Villar Mir, the CEO of construction conglomerate after which our school of construction is named, delivered an inspiring talk to

a select group of students, faculty, administrators and industry members at a luncheon FIU held in his honor. In attendance were undergraduate students Anthony Bonet and Ervin Sinay, both of whom had just completed internships at the company’s Madrid headquarters. For ten weeks the pair participated in unparalleled hands-on learning opportunities as they visited job sites, met with industry professionals and took on specific duties related to projects around the world. You can read about the students’ experiences on page 2 and about Mr. Villar Mir’s visit on page 3.

Our faculty, too, had their hand in international activity. Professors Ali Mostafavi and Nipesh Pradhananga traveled to Nepal in September to study the aftermath of the devastating earthquake that had hit earlier in the year. Their research was funded by the National Science Foundation under a Rapid Response Research grant that allowed them to collect time-bound data on the nature, impacts and recovery process related to cascading infrastructure failures following the tragedy. Read about their work on pages 6-7.

Notably, Professor Mostafavi in November was named by the online publication Engineering News Record Southeast to its “Top 20 Under 40” list for 2016, a recognition of up-and-coming leaders in the construction and design industries. This is a great honor for him and reflects well on our school. And speaking of those

who have brought renown to our institution, Professor Jose Mitrani for more than 26 years contributed to its development and ever-increasing stature. A former chairperson and longtime faculty member, he retired in December. The school greatly appreciates his service. We wish you and your family the best, Jose.

Even as we feel the departure of such a valued colleague, we extend a warm welcome to our newest addition, Professor Youngjib Ham, who joined us in the fall of 2015. He earned his doctoral degree in construction engineering and management from the University of Illinois at Urbana-Champaign and adds to the research capability and strength of our existing faculty.

As the ever-improving economy continues to help boost our enrollment numbers — which have rebounded to pre-recession levels and are expected to increase tremendously in the next few years — I would like to take this opportunity to thank our growing legion of students and alumni for choosing the OHL School of Construction to advance their careers. Our graduates are highly sought after by industry, and their success in turn elevates the school’s reputation.

One reason that our graduates do so well within the field: the ongoing involvement of our Industry Advisory Council. This group of professionals from top companies plays a significant role in helping the school prepare future leaders, and their support remains vital as we strive to attain recognition internationally as a center for excellence in construction education.

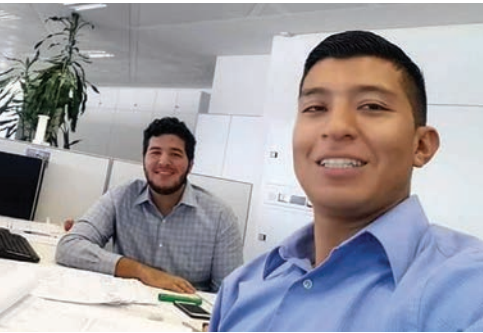
Finally, I invite you to join us for the Construction Americas 2016 Exposition, the school’s annual trade show and career fair, on April 8 in the FIU Arena at the Modesto A. Maidique Campus. Featured will be panel discussions with CEOs and technology leaders about best practices and groundbreaking innovations that are propelling the future of construction in the North and South American markets. I look forward to seeing you there.

Irtishad Ahmad

Irtishad Ahmad, Ph.D., P.E.
Director, OHL School of Construction

Irtishad Ahmad, director of the OHL School of Construction, was recently selected by the American Institute of Constructors to receive the W.A. Klinger Construction Education Award. This national honor recognizes an educator who has distinguished him- or herself in teaching, research or service while advancing the construction profession, the industry at large and the nominee’s institution.

OHL Madrid internship impacts students' futures



Anthony Bonet, left, and Ervin Sinay in the offices of OHL Madrid

For Construction Management majors Anthony Bonet and Ervin Sinay, interning at the OHL Madrid headquarters proved a crucial step on their career paths. Through the internship, the two learned the art of adjusting to circumstances and seeking knowledge from experienced individuals as well as the importance of communication and hard work.

Every year, two FIU students spend the summer at the international construction conglomerate, after which the OHL School of Construction is named. There the pair gain valuable hands-on experience at an international level.

Last summer, Bonet and Sinay assisted civil engineers in the technical department, working on cost estimates for a metro station in Singapore and helping review specifications for a highway that includes a series of tunnels and bridges in a mountainous region of Colombia.

"Construction has a lot to do with how you communicate through the plan. You have to read each plan differently," Bonet says. He realized that plans written in Spanish from Spain were different than plans written in Spanish from his native Colombia as each

country's use of the language and construction terms varies.

He says the internship prepared him to work hard and figure out how to read whatever plans come his way, whether in English or in Spanish.

Sinay graduated in December of 2015 and now works for a Miami-based subsidiary of the international OHL corporation. He assists a civil engineer with preparing estimates and bids for new projects, and plans eventually to earn an MBA to better understand the financial aspects of construction management.

Bonet will graduate in the spring of 2017. He says the OHL internship reaffirmed his calling for construction work. "It was the first time I experienced waking up every day and going to work, and actually enjoying working."

A symbolic representation of the interns' experience, Sinay remembers when Bonet and he would pass an historic building in Plaza Canalejas, in the center of the city, that OHL was restoring.

"We would go out and see those OHL cranes sticking out like sore thumbs, reminding us that we were here not only for our benefit, but also to be responsible ambassadors for FIU." ■

OHL Madrid construction project: Renovation of the historic Plaza Canalejas in the heart of the city



OHL School's billionaire benefactor a man of vision and humanity

One of the world's richest men — the CEO of the global firm after which FIU's school of construction is named — arrived on campus in late September to something of a rock star welcome.

The celebrated Spanish industrialist spoke to a select group of students, faculty, administrators and guests eager to hear about his rise from a middle class family to number 259 on the *Forbes* list of billionaires. The former lawyer and civil engineer and one-time vice president of Spain's economic affairs detailed how hard work and a willingness to take risks have paid off. And interlaced between his promotion of "education, innovation and infrastructure" as the foundations for commercial success: a deep and abiding sense of humanity.

"It was very inspirational," said College of Engineering & Computing Interim Dean Ranu Jung about the address by Juan-Miguel Villar Mir. "One thing he talked about was work, work, work, no matter what you do, honesty and integrity, taking care of your health and, most importantly," she added, "serving others."

The 84-year-old also highlighted the value of a methodical approach to business while respecting "the dignity of all persons," a message that motivated graduate construction management student Shivkumar Patil.

"It gave me a proper vision on how to set your goals," Patil said. "It gave me a broad perspective on how great leaders think."

Villar Mir has grown an empire by buying failing operations. In 1987, he paid less than \$1 for the debt-laden, Madrid-based builder Obrascon. He turned the company around, merged it with another and within four years had it listed on the Spanish stock exchange. That was just the beginning for Villar Mir, who has since purchased one business per year, on average, to add to a conglomerate that today is the largest independent producer of hydroelectric power in Spain, the world's leading manufacturer of silicon metal and a major fertilizer producer and real estate developer. The construction company, meanwhile, has morphed into Obrascon Huarte Lain, or OHL for short, and builds railways, ports, airports and more in 30 countries.

"Here is somebody who has been a world leader in this space, who has been taking companies that are not working and turning the impossible into the possible," Jung said. "It's exactly what FIU's president talks about, and he has been doing it in the global field."

In 2008, Villar Mir and OHL came looking for a South Florida



During his recent visit to FIU, Juan-Miguel Villar Mir, far right, met with alumni and students of the OHL School of Construction, including, left to right, Alejandro Falgons '14, Anthony Bonet (obstructed), Felipe Martinez Hernandez '15 and Ervin Sinay '15.

firm to add to the company's growing international construction portfolio. While they did not find one in need of rescuing, they did come across the successful Arellano Construction. Negotiations resulted in the creation of the subsidiary OHL Arellano.

The founder of the original Miami-based company, Augustin Arellano Sr., who is a member of the FIU Foundation Board of Directors, eventually introduced Villar Mir to FIU. With its diverse student body and a strong focus on academic excellence, the school left a good impression on the entrepreneur, and a transformative gift soon followed.

The renamed OHL School of Construction has since been able to make important facility improvements and other upgrades that remain critical to educating the next generation of construction professionals for South Florida and beyond.

"My pride is today bigger and bigger in having created here the OHL School of Construction and in doing so, our contribution to drive the growth and well being of many countries in the world," Villar Mir said in his campus remarks.

Irtishad Ahmad, director of the school, said its association with a recognized name in the industry sends a powerful message that "We also want to be a global leader in education and research." ■

Construction Americas Expo benefits students and industry

2015 conference a success that looks to be repeated in 2016

A 30-story hotel goes up in China in just 15 days, and a fully customized elementary or high school in the U.S. can be ordered “in a box.” These phenomena speak volumes about the future of building. The 2015 Construction Americas Conference presented by the OHL School of Construction highlighted these and other trends and brought together professionals and students for a day of learning and networking.

As the school prepares for the 2016 edition, its director, Irtishad Ahmad, confirmed the wide-reaching benefits of the annual event.

“We can only teach so much in the classrooms,” he said. “Industry is moving very fast. We really cannot catch up by changing our curriculum. That’s why this [conference] is so valuable for the students as well as educators like me. It’s also important for the industry because they are connecting with the students that they are going to hire soon.”

Speakers forecast increased productivity

In 2015 leaders from top international companies such as Skanska, Odebrecht, Facchina and OHL Arellano discussed the future of the business. Technology experts followed with a panel dedicated to digital innovations that have transformed how buildings are designed and erected.

“The change we’re going to see in the next 15 years in our industry is unlike anything we’ve ever seen,” said Steve Jones, a senior director at Dodge Data & Analytics. Jones talked about the single biggest impact on today’s thriving construction industry: building information modeling, or BIM, the process of designing a building collaboratively using computer models instead of sets of drawings. In this way architects, engineers and clients can share information in a single file and communicate more effectively.

Equally important, BIM supports the integration of functions such as materials ordering, contractor scheduling, price estimating and more. As Jones explained it, waste is reduced, errors go down, costs are lowered and time is saved.

“This is bringing an enormous amount of certainty to the process,” Jones said. Making his point in dramatic fashion, he showed a time-lapse video of the construction of a 328-foot tower in Hunan Province, China, that was completed in just 360 hours.

Jones also talked about high-quality pre-fabrication made possible with the aid of digital templates. The technology allows for attractive, customized designs that take basic building materials and traditional construction out of the equation. The result: a cost-effective and sustainable facility — a school, a hospital—built of components, including exterior walls and whole rooms, that are manufactured and partly assembled in a plant before shipping to its intended site for final placement, the so-called “in a box” approach to new development.

Expo features school-involved companies

An important feature of the conference, the accompanying exhibit hall showcases large and mid-size construction firms alongside vendors who support the building industry. The set up give students a chance to talk with potential employers.

“They’re eager to see students,” said Jose Pereyra, who is working toward a master’s in construction management and has

studied modeling systems as part of his curriculum. He believes that employers increasingly look for candidates with skills in that area. “[Companies] see that BIM is the future, and they know they lag on some technological knowledge,” he said. “[FIU students] have the knowledge.”

Luis Jimenez, an account manager for concrete provider Supermix, which exhibited a new product, reiterated his support of FIU students, whom he has had out to the company for tours of its test lab.

“We will always welcome students,” said Jimenez, who encourages young people to gain industry exposure in any and every way possible. He advises them to take initiative when meeting those in the field. “Don’t be afraid to say, ‘Can I see your place?’” he tells them.

That directive dovetails perfectly with the goals of the OHL School, which has cultivated strong industry relationships to provide students with the experiences to succeed. “The South Florida construction industry is our laboratory for these students,” said Ahmad, the school’s director. “We take them to the real world.” ■

The 2016 Construction Americas will take place on Friday, April 8. Register at constructionamericas.fiu.edu



RESEARCHING CONSTRUCTION IN THE FACE OF DISASTER

Professors in the OHL School of Construction dig up data, best practices from Nepal's earthquake rubble



Ali Mostafavi

Watching live TV coverage of earthquake destruction in Nepal in April 2015 prompted Ali Mostafavi to make three important phone calls.

The first two he placed to his fellow-professor in the OHL School of Construction. Initially, he wanted only to inquire about the man's family.

Nipesh Pradhananga hails from the South Asian country and his immediate

relatives were safe, but in the days ahead several others would be counted among the heartbreaking 8,500 who perished in the disaster and its wake.

"I said, 'If you need anything, let me know,'" Mostafavi recalls telling his friend before hanging up, "and then I continued watching the news, and I started seeing different images of infrastructure failures." Waterline breaks, landslides spilling onto roadways — those are the kinds of things the engineer in him noticed.

So, despite the late hour, Mostafavi called him again. "I said, 'Nipesh, I think we can do something about it. Would you be interested?' He said, 'Yeah, of course, let's do it.'"

That affirmative answer would lead to the third important phone conversation. "The next day I called NSF, talked to them and they seemed to be interested," Mostafavi says of the National Science Foundation's response to an idea he had begun formulating just hours before. A program director there expressed interest in providing funding through a special grant that targets time-critical projects and reduces the normal months-long approval process. Soon the two professors of construction management would be making their first research trip to Kathmandu.

Understanding how it all connects

In his busy lab at FIU, Mostafavi has several active projects related to his expertise in how to design and manage interdependent infrastructure systems such as power and water

utilities. His work takes a holistic approach to this interconnected "system of systems" with the goal of enhancing resiliency, defined as the capacity to recover from failures.

Nepal makes a good case study, he explains, because it allows him and other researchers to add to the scarce data that exists on infrastructure breakdowns in developing countries and how systems perform in the face of disaster. Understanding how things in Nepal went wrong — and, in some cases, right — could potentially inform stakeholders in both the developing and developed worlds.

Certainly countries such as the United States are not immune to natural disasters nor their often-calamitous aftermath. Mostafavi offers the example of Hurricane Sandy, which pounded the eastern seaboard in 2012, as one in which residents felt the full brunt of "cascading failures." He points out how storm surge in New York knocked out a power substation, which in turn shut down the pumping station at a waste water treatment plant, which in turn saw dirty water back up into the freshwater supply, which ultimately left citizens in a lurch. Lacking utilities, one affected hospital spent 15 harrowing hours evacuating some 300 patients.

The value of learning to adapt

On their first visit to Kathmandu Valley, the professors met with local officials, heads of utilities, representatives of international relief agencies and residents. The two surveyed the physical damage and spoke with as many people as possible. Their goal: to find out how the failure of "lifeline" systems affected the community's response process.

Very quickly the pair made two important observations. The first concerned the physical aspects of infrastructure. As Mostafavi explains it, construction based on solid urban development and sound engineering principles fared best, with damage at a minimum. But, as might be expected, structures built of unreinforced masonry — those not embedded with steel and therefore susceptible to collapse under catastrophic conditions — did not withstand the quake. An estimated more than 60 percent

of buildings in Nepal consist of the latter, and the 2015 cataclysm delivered a painful lesson.

More eye-opening, and certainly less-expected, was the second observation: The professors found that the community in general displayed a high degree of resiliency. Trained to look for signs and attitudes that point to an ability to rebound — interviews and surveys with both officials and residents are used to glean this important data — Mostafavi came to understand why. Strange as it might seem, people's ability to successfully bounce back after the earthquake was a direct result of the previously existing shortfall in municipal services.

"The system, even before the earthquake, had a huge supply-demand gap," Mostafavi explains. Residents could never count on uninterrupted access to electricity or water, and in some cases could not expect utility services for more than 10 to 15 hours *per week*. Yet the workarounds that individuals and even whole communities had in place to overcome the lack of reliable centralized services ultimately helped them get through the aftermath of the quake.

"The social system adapted," Mostafavi explains of the accommodations people had made for years. For example, homeowners had installed rooftop water collection and storage tanks and connected their dwellings to generators to run lights and essential appliances. Institutions likewise had their plans in place. An area hospital, for example, had long held contracts with local companies to truck in water as regularly needed, something that automatically continued after the earthquake.

Lessons from Nepal

Mostafavi believes that developed countries should take note of Nepal's success in that regard. "This verifies the hypothesis that if we move to a more distributed [less centralized] system in designing lifeline infrastructure systems, we improve resiliency in the face of disasters," he says. "The impacts are reduced."

On the first anniversary of the earthquake, the professors will

present their findings and conclusions to researchers and officials from around the world at a conference in Nepal. The research team will also organize a workshop at a local university to share practical information with those who live and work in the area.

Back in Miami, in his research lab, Mostafavi continues to work with the data gathered in Nepal and elsewhere to create models based on a variety of worst-case scenarios. His goal: to provide tools that encourage decision makers — whether anticipating earthquakes, hurricanes, drought, flooding caused by sea level rise or any other natural disaster — to undertake needed investments and preparations for the best possible outcomes.

"Because," he says, "no matter how well we plan, how well we've modeled, these events include an unknown component, things that we don't know we don't know. They happen and they surprise us in one way or the other." ■



Downed power lines and crumpled buildings are among the infrastructure problems that affected Nepal after a magnitude 7.8 earthquake in April 2015.

The Moss & Associates

BEIL

BUILT ENVIRONMENT INFORMATICS LAB
TAKES TEACHING, RESEARCH TO NEW LEVELS

The OHL School of Construction hosts the Moss & Associates Built Environment Informatics Lab (BEIL). The space houses state-of-the-art virtual reality systems that have many different teaching, learning and research applications of value to professors and students.

Professor Nipesh Pradhananga has used the lab to advance his research and taken the lead in employing it for teaching purposes. He has convened his building informatics class within the space and instructed students to design, for example, a new classroom. They relied upon building information modeling, or BIM, which provides a digital representation of physical and functional characteristics of a facility. The students enter all the required data to generate a 3D model that can be viewed in the BEIL. The model is either projected onto the walls or viewed through virtual reality headsets.

"Instead of a computer screen, now you are actually inside the environment," Pradhananga explains. "That is a different experience."

Such a tool has great potential in the construction industry, particularly with regard to planning and collaboration among engineers, architects and contractors.

"In today's world, the problem is that the owner is in one state

and the contractor is in a different country and the designer is somewhere else," Pradhananga says. "So how do they know that they are on the same page?"

"Environments like this actually help because now you can meet virtually and then navigate around to see if this is exactly the project that you want. That way, before you build, you avoid any confusion or misunderstanding that you might have during the construction phase." At that point, changes can be made to the construction plan and even potential financial backers can be brought in to view the project.

The possible uses of virtual reality in relation to construction education and research are endless, Pradhananga adds. In the case of teaching, it allows students with little practical background to better understand the tasks at hand. For example, those enrolled in estimating classes can use virtual reality to look at cross sections of buildings. That gives them a chance to see all of the various components and, therefore, many of the costs involved, from materials needed for building to the installation of electrical and plumbing systems.

In terms of research, Pradhananga has used the lab to test how people react to hazardous situations on construction sites

and for other studies related to his interest in construction safety.

"The problem with my research is it's hard to get data from the site. You cannot expose people to a hazardous environment just to get data," he says. "Now we can use a virtual environment and then expose them to as many hazards as we want and then get their response."

The director of the OHL School, Irtishad Ahmad, knows that the BEIL, established in 2013 and supported with a generous gift from Moss & Associates, helps students hone skills in a new and increasingly important technology. Its addition provides another way for the school to help aspiring construction management professionals meet greater expectations in the field.

"We used to teach building and drawing in autocad. Things have evolved now to this," Ahmad says of the BEIL and its capacity for high-tech visualization. And alumnus Chad Moss, executive vice president of Moss & Associates, agrees that "industry is demanding cutting-edge building information modeling. As an alumnus of FIU's construction management program, I want to ensure that our newest graduates enter industry with knowledge and skills to meet that demand." ■



In the driver's seat: Graduate student Jin Zhu sits at the controls of a virtual reality station used to simulate the operation of heavy construction equipment. At top, virtual reality allows students to navigate a proposed new classroom space designed as part of a class project.

Professor's research pushes leading edge of worker safety

The image of a construction worker's lifeless body hanging from an electrical cable has stayed with Nipesh Pradhananga for more than two decades. As a fourth grader in Nepal, he saw the tragedy unfold steps away from his elementary school.

"There was a high voltage line just next to the building," he recalls. "They were concreting the slab. There was a worker. He slipped and hit the wire. He got electrocuted. I think he died instantly."

And while the FIU professor hesitates to say that the particular incident singlehandedly led him to the field of construction management, clearly it affected him. His current research and even the courses he teaches at FIU revolve around construction safety and technology.

A changing approach to safety research

As a graduate student in the United States— Pradhananga attended the University of Nevada at Las Vegas and then Georgia Tech. After completing a bachelor's degree in Nepal—he focused his research on equipment-worker interaction. By tracking the location of individuals on work sites, he was able to quantify the ideal safe distances between machinery and people.

As valuable as such metrics are, Pradhananga eventually came to understand that he was looking at only one part of the equation. "I realize that safety is not about objects and object interaction," he explains of his work's evolution. "It's about the operator that is inside the equipment and how he handles the equipment. It's more about the human aspect."

Pradhananga has since veered from exclusively collecting "hard-core data" based on past incidents to studying the softer, human factors that lead to construction injuries, accidents and fatalities. He now works within the widely-embraced science of behavioral safety, which applies behavioral research on human performance to the problems of safety in the workplace.

"When I track the workers and I track their emotions, that is where these two meet," he says of his previous research and his current studies.

While behavioral safety has application in virtually all industries, he is concentrating on the one that has the greatest need. According to OSHA, more than one in five reported worker fatalities within private industry in the United States in 2014 occurred in construction. Falls, electrocutions and blunt force injury accounted for all but a few.

"This is a really big issue," Pradhananga says. "People die while doing their work. This is not acceptable."

Leading the way to better safety

Pradhananga puts his forward-looking research approach to work in the OHL School's Moss & Associates Built Environment Informatics Lab, an immersive, high-tech computer facility that uses real-world data and case studies to create virtual simulations (see story on page 8.) Through a variety of studies, he hopes to establish leading indicators of construction site safety, the types of information that would suggest the best possible outcomes.

Some of the areas Pradhananga is investigating include:

- Human observation, or how workers and safety managers view a construction site. Pradhananga is looking at how people's eyes track when scanning an active construction site. Currently he is running such investigations on a computer with students as his subjects.
- Reaction time, or situational responses. Again, students are serving as subjects as they look at computerized scenes that capture some of the daily activities and potential hazards on a typical construction site.
- Stress, or the quality of a reaction. Pradhananga explains that he and his team of graduate research assistants are examining "data-driven physiological senses that can be quantified." Wearable devices that monitor, for example, heart rate or certain types of skin response such as sweating can provide important information about a person's emotions under changing conditions.

An ideal teaching/learning environment

For Pradhananga, now in his second year at FIU, his promising research finds a perfect complement in his classroom teaching. Among the courses he offers is one on automation that brings together his love of engineering and technology. And he finds those who take his classes give him much back in return.

With many of FIU's undergraduate and graduate construction management students actively employed in the industry as they attend school—Miami-Fort Lauderdale annually ranks among the top ten metro areas for new construction starts, which means plenty of job openings for enterprising young people—South Florida serves as an ideal laboratory for those coming up the ladder.

"It's a great environment," Pradhananga says of the OHL School. "Most of the students work full time so they have their own background in construction, and they bring new things to the class that I can learn from. So it's not just me lecturing in the class. It makes the class really interactive. I think that's the best part. I think that's how the classroom should be." ■



Peeraya Inyim during a course on job hazard analysis she took as a graduate student

Postdoctoral researcher proves women can make it in construction management

Women in construction management have to push the boundaries, and Peeraya Inyim is no exception. In a traditionally male-dominated field, female professionals represent pioneers — and they are making strides.

In the case of Inyim, she has a history of stepping outside the norm, starting with her decision at the age of 18 to travel alone to the United States from her native Thailand.

“I asked my parents, ‘Can I go outside and explore the world?’” Inyim remembers. And while she concedes that “most Asian parents wouldn’t allow it,” her good grades and exemplary handling of family responsibilities led her father and mother, career military and a health-ministry employee, respectively, to overcome their concerns and purchase a plane ticket for their only daughter.

Once stateside — Inyim came for a semester of study and received a temporary student work visa — she was on her own. She took two part-time jobs and “worked all the time” between classes to fund her travel around the country “just to learn.” She hit New York, D.C. and Philadelphia before heading to California, where she would return some years later for a master’s degree in construction management at the University of Southern California.

First, however, she had to conquer Thailand. Inyim went back to continue undergraduate studies in civil engineering and eventually took a job working for a company that designed, fabricated and installed offshore oil-drilling rigs.

As one of only two women at the firm, “It was really difficult,” she says of the reaction of her male coworkers, some of whom made it obvious they did not want her there. Refusing to let any negativity impact her — “I let the bad things go” — she worked hard and put on a good face. In the end, “I proved myself,” she says.

Flash forward 10 years, and Inyim has a recently minted Ph.D. from FIU, where she has stayed on to complete post-doctoral work. En route she racked up several awards, among them a People’s Choice honor at a 2014 EPA national sustainable design competition.

The last speaks to Inyim’s primary research interests: sustainability and energy efficiency. Today, working under the mentorship of the OHL School of Construction’s Ali Mostafavi, she has her hand in a number of projects related to sustainable infrastructure, and she is helping run a “life-cycle assessment” and cost analyses of proposed pavement materials for a major highway extension planned by Miami-Dade Expressway Authority. In the fall, Inyim also co-taught a class on site work and equipment in which she enjoyed instructing students (more than 90 percent of whom happen to be male) about, for example, running the cost analyses on the operation of bulldozers, backhoes and the like.

And while Inyim’s status as a woman might have made her journey a bit challenging, at least at the start, today some recognize it as an asset in a changing world.

“We need to train researchers from populations that are not well represented,” says Mostafavi, who has welcomed Inyim into his research group. “I actively try to recruit students and researchers from a diverse group because they bring different perspectives, and it’s the key to improvement.”

Mostafavi sees Inyim’s potential and has helped establish a one-year plan for transitioning into academia. “She’s doing a phenomenal job,” he says. “She will be an outstanding professor.” ■



Jesus Vazquez '85
Chief Operating Officer
Facchina Construction

Alumnus-turned-CEO helps boost OHL School

Valued industry advisory board member offers guidance, real-world insights

From FIU graduate to chief operating officer of the award-winning construction company Facchina, Jesus Vazquez '85 has worked his way through the ranks and proved himself on the South Florida stage.

“In our industry, your success is out in the field,” he says of the very public work he does, “in the ability to start and finish a job efficiently, within schedule and within budget. Let your actions speak for yourself.”

That lesson has served Vazquez well, from his earliest days as an intern working on a local VA medical center through today. Along the way, he has had his hand in numerous South Florida projects, among them the American Airlines Arena, the Adrienne Arsht Center for the Performing Arts, a terminal expansion at Miami International Airport as well as two of FIU’s newest buildings: Parking Garage 6 at the Modesto A. Maidique Campus and the in-progress Bayview apartments at the Biscayne Bay Campus.

Aside from helping build Miami, Vazquez is making a difference in another way: He serves on the OHL School of Construction’s Advisory Council. He offers insight on industry practices, fundraises and helps guide the curriculum to ensure students graduate prepared to enter the field. But Vazquez believes the best way he can serve as an advisor is to spread the word about OHL, its students and the university as a whole.

“We are very proud of FIU,” he says. “As an organization, whenever we are in the public or networking, we always speak highly of FIU and provide recommendations to our peers and our competitors to go to FIU for future resources.”

Those resources — students and alumni whom Vazquez believes make excellent employees — have their foundation in the high quality of OHL’s curriculum and the emphasis the school places on hands-on learning experience, he says.

Like a growing number of local companies, Facchina offers just such internship opportunities to help students hone their skills. They usually start out in the estimation department or as project engineers, two areas that Vazquez calls among the most important for new graduates entering the job market. Facchina also offers classes the chance to tour work sites and sponsors FIU’s student entry into the annual ABC Construction Management Competition.

For Vazquez, passion for his work has led to success, and he encourages young people to foster that same devotion. “You’ve got to get up every morning and you’ve got to want to go to work,” he says. “You’ve got to love what you do.” ■

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