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RAFAEL LONGORIA'S ARCHITECTURE STUDENTS TRACK THE FLOW OF URBAN MORPHOLOGY FROM THE AGE OF ANTIQUITY TO SUSTAINABLE DESIGN IN THE 21ST CENTURY

BY ALEXANDRA ZUBRICK

Architects and urban designers increasingly are working to produce sustainable buildings and cities, focusing on renewable sources of building materials and energy in order to build for the future. This summer, 13 students with the Gerald D. Hines College of Architecture and Design spent a month travelling through Europe as part of the Pan-American Studio, studying the past in preparation for their final project - a building designed to reflect the environment and culture of one of the cities they visited.

Glancing over the itinerary for the 2016 trip, which consisted of intensive study in Madrid and Barcelona and included bus tours throughout northern Spain and southern France, "Pan-American Studio" appears to have become something of a misnomer. Next year, the program will take students to Rome and revisit Barcelona, with a week of travel in between the two cities, with stops that, as of now, include Florence, Genoa and Marseille.

The program's migration eastward is easily explained, though, by program director Rafael Longoria's personal and professional interest in the flow of architectural culture and the transfer of this culture from one continent to the next. Originally, the Pan-American studio was conceived as a means for studying the architectural history of Latin America by tracing its roots and influence back to medieval and renaissance Spain. But over the last six years, the program has shifted towards something that Longoria says can be more accurately described as Ibero-American, as the studio seeks to expand to include European influences.

"So much of it comes from Europe," Longoria said. "To me, it's all part of that same flow because it all starts with Rome. It goes from Rome to France and Spain, and then from Spain and France and England and Portugal to the Americas. And all of those four countries were Roman colonies. So there's a direct link from Rome to the Americas, and the American cities all over both Latin America and in the United States."

The study abroad program is built around three classes: Design Studio (the Pan-American Studio), Latin-American Architecture and Urban Morphology, the study of the evolution of form within a built environment. Combined, these classes inform students about the historical cultural influence of architecture down through the centuries, expose them to modern architectural trends and ultimately equip UH students with the necessary tools to enter the design world, with an eye towards creating a sustainable living space in the urban environment.

"First and foremost," said Longoria, "students get a better understanding of our cities by seeing where they come from, to

visit other cities to understand our city better. But I was also encouraged to start this program because we have such a large percentage of students in architecture who are Hispanic, and who have a particular interest in knowing those countries that they have never been to but have heard about from their relatives; that they have some link to, even though they have never been there."

Much like his students, Longoria's background has had a lasting influence on his career. "I grew up in Laredo, so I'm originally from the border," he said. "I ended up in Houston because I was an undergraduate at Rice. It was really at Rice that I became aware of what a great laboratory the two Laredos are. After 1848, one half became American and the other remained Mexican, and they developed very differently. In the last 150-plus years, they evolved so differently, but they started out as the same city."

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Urban morphology is especially relevant in architecture of the 21st century, as architects are increasingly concerned about sustainability. Because the goal of sustainable design is to minimize the negative environmental impact of buildings by efficiency and moderation in the use of materials, energy and developmental space, energy efficiency has become a key component in design. Sustainable design accounts for everyday functionality, including heating, ventilation, and cooling-system efficiency, as well as renewable energy generation, such as solar panels to generate electricity and heat water. It also places an emphasis on building materials, incorporating recycled and second hand materials into the building plan and using low-impact materials with lower volatile organic compounds wherever possible.

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Urban morphology has also given rise to the modern architectural movement known as "Smart Cities," cities that are designed with an understanding of the environment in which they will exist, and elements of the environment with which they will interact. Building placement is a crucial component of the design process, as architects have begun to make a conscious effort to curb suburban sprawl and reduce energy consumption in regards to transportation.

And so the Pan-American Studio is doing its part to expose students to functional architecture that embodies these principles of sustainability and "better living." The Studio is just one of the ways in which the College of Architecture and Design is investing in producing architects who will build for the future, by emphasizing a thorough knowledge of the cultural evolution of urban living, from the ancient to the modern.

Graduate students Amie Akers and Michelle Elbers, who received undergraduate degrees from Texas A&M University and the University of Texas at Arlington, respectively, participated in the summer 2016 studio.

"I've been on a study abroad before, but this one was a lot more interactive. I felt like UH really had it well planned out - the school was more involved in the planning," said Elbers.

Akers agreed. "You're there to see the architecture as well as practice it, and learn and study it. So there's a really great balance of seeing the architecture and being in the classroom, but also of experiencing the culture, too, and really understanding how architecture works in the city," she said. "It was on two scales, which was nice - we had the building scale and the city scale, and really got to work between those two."

One observation that left an impression on Akers was the opportunity, as she said, to "really compare the two - getting to see Barcelona, and then getting to see Madrid, and seeing how the cities reacted differently over time and how even architecture affected that. There's a difference of scale and a difference of reaction to how life was lived in both places, and how the urban environment responded to that, and how the urban environment responded to that, and how the people responded to the urban environment."

The 2016 studio also met with UH alumna Laurence Krupa in Bordeaux, where she and her husband co-own an architecture firm. "It was nice to see what a former student ends up doing," said Longoria.