

# SCHOOL OF ARCHITECTURE OKLAHOMA STATE UNIVERSITY



*The vision of the School of Architecture is to empower students to make creative contributions in the cause of architecture.*

*The mission of the School of Architecture is to cultivate a collaborative learning community focused upon critical thinking and ethical responsibility. We embrace established fundamentals and encourage the exploration of emerging innovations in design and technology.*

*Reflections  
Vol. IV Spring 2019*



# REFLECTIONS

Hello!

It is my pleasure to bring the spring edition of the *Reflections* newsletter to you as we close out the 2018-19 academic year. Our goal for this issue is to communicate some of the ways the School of Architecture places emphasis on the execution of craft - both digital and in the physical sense. We firmly believe that future architects and architectural engineers must understand the importance of clarity, accuracy, and ingenuity in the craft of design. We hope you like what you see, as we advance the curriculum ever forward!

This summer we are gearing up to send 32 of our students on OSU Architecture study abroad, in three programs: the study of 'Sacred/Civic Architecture' of Rome/Paris/London; the study of a myriad of urban issues in 'Urban Asia'; and with the CEAT Study Abroad program 'Technology and Society' in Germany. School of Architecture faculty will lead these programs, widening our students' understanding of the global issues involved in the making of places and spaces for people. In addition, we are hosting a travel/study program for alumni this June! Think about joining us in summer 2020.

Please enjoy the articles within this newsletter, and do keep in touch with us here at the School. We are proud of our current students and of the accomplishments of our alumni!

**Suzanne Bilbeisi, AIA**

Centennial Professor and  
Head of the School of Architecture  
[suzanne.bilbeisi@okstate.edu](mailto:suzanne.bilbeisi@okstate.edu)

Website: <https://arch-ceat.okstate.edu/>

Facebook: Oklahoma State University School of Architecture

Instagram: @OkStateArch

Twitter: @OkStateArch

◀ Donald W. Reynolds Architecture Building.



# UNMAKE, MAKE

**Nathan Richardson** Associate Professor of Architecture

This spring, Professor Richardson's third-year studio was charged with understanding material properties through the implementation of a curriculum focused on design and fabrication. Students explored the craft of making through a series of projects exploring deconstruction, fabrication, and adaptive reuse. In the first project, "Control Z," students selected and carefully deconstructed a mechanical device piece-by-piece while creating a complete list of parts, quantities, and costs. To conclude this study, students photographed their work in a taxonomic Knolling photograph.

For the second project, "Cache and Credit," students designed and built a lockable box from reclaimed maple shelving for a collection of personal items. The students designed boxes for a variety of items including cards, photos, jewelry, keys, game pieces, watches, currency, and other collectibles. The boxes were highly detailed, demonstrating intricate joinery and finishing processes.



▲ A knolling photograph of a Remington Rand adding machine.

► The careful making of the 'Cache and Credit' project.







In the “Re” project, students were randomly assigned a verb and were provided with two miscellaneous objects from the Habitat for Humanity ReStore second-hand store. The students designed a furnishing from the original two pieces, using no more than thirty-square feet of supplemental sheet material. The new furnishing had to address the verb students were assigned. For instance, one team made a coffee table (to gather) out of a chair and a ceiling fan. Another team made an easel (to make) from a chair and suitcase. And yet another team made a rotating shelf with cubbies (to conceal) from a door and CD rack. All told, student teams designed and fabricated two lamps, two shelves, two tables, and the easel—primarily from reclaimed second-hand store items. At the conclusion of the process, the constructed items were displayed in front of the office reception, on silent auction during Design Week. A portion of proceeds from the sales of the remade objects was donated back to the Habitat for Humanity ReStore in Stillwater.

In the final two concurrent projects of the semester, parallel student teams created an exhibition table for “Curate,” and a small exterior research pavilion for “Shelter.” The exhibition table provides a place to display a wide range work, just outside the current reception space of the main office of the Donald W. Reynolds School of Architecture. It is designed to accommodate work that is physical (small models and such) with digital work (projected images, animations, and film). The other team’s final project of the semester, the research station, is an aluminum clad shelter that allows for the testing of a variety of materials, details, and systems faced with the harsh natural environment of Oklahoma.

These studio projects, along with robust discussions and other assignments sprinkled throughout the semester, provided a framework for students to explore a wide variety of techniques for the crafting of physical objects. In the process, students were also able to leverage new skills in digital and physical design and fabrication. These tools and methods enabled them to unmake and make objects at a variety of scales—from something as small as a box for a treasured item to something as large as a full-scale shelter.



# DIGITAL EXPLORATION

**Seung Ra** Associate Professor of Architecture

**Awilda Rodriguez** Associate Professor of Architecture

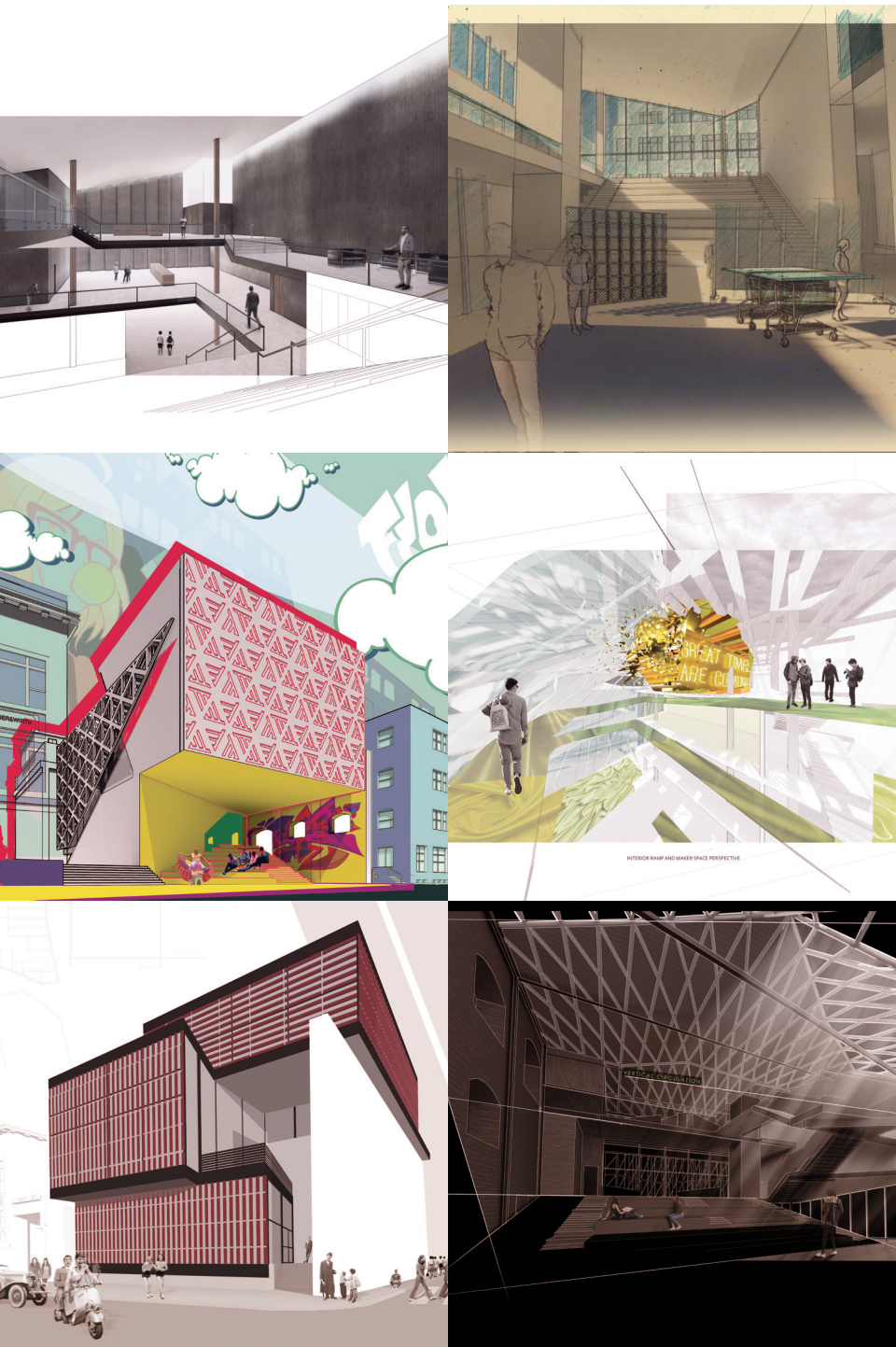
**Keith Peiffer** Assistant Professor of Architecture

**Jay Yowell** Assistant Professor of Architecture

Real-time rendering applications like Lumion and Enscape offer incredible opportunities to produce more photo-realistic renderings without requiring special expertise and excessive rendering time. While these new tools open up new potential, they also provoke interesting questions about the role of visualization and realism in architectural representation. The second-year design studio explored these questions within the context of creating a design school in downtown LA.

Our students primarily use Rhino for 3D modeling and drawing in the second-year studio. This tool results in digital craft in the design process often being concerned with the “building” of the model itself, in which the model is the drawing. Typically, students develop their digital model throughout the course of the project and then use it to extract orthographic drawings and three-dimensional views for the final presentation. Although this emphasis on modeling allows for a sophisticated understanding of the building as a three-dimensional object, the act of representation is delayed and essentially relegated to documenting the outcome of the project.

This semester the second-year studio countered this tendency by deliberately emphasizing representation within the design process. Enabled by the speed of real-time rendering, faculty challenged the students to produce drawings and renderings concurrently with the building of their model. This allowed them to test and refine experimental representational techniques as a design tool, moving beyond photorealism to mobilize qualities like color, texture, and abstraction in exploring their design concepts more vividly. This re-calibration of the use of digital tools in the design process raised the quality of the representations while simultaneously advancing the overall level of finished work for students readying to enter Professional School in Architecture and Architectural Engineering.





# BRIDGE vs TOWER

**Suzanne Bilbeisi** Professor of Architecture

**John Phillips** Associate Professor of Architecture

Since 2001, the first design studio in our curriculum has incorporated a project with a structural emphasis - to provide an initial exposure to the AE program. Initially, this was a project focused upon the design of a tower, but a few years ago the faculty decided to switch the focus to a pedestrian bridge. Both projects share two main points of emphasis: employing structural logic with load paths, and development of a structural hierarchy of members within the system. There are no calculations used, all analysis is tactile and visual. These are the primary criteria used to evaluate structural effectiveness and the students' understanding of how structural systems work. The hands-on nature of studio learning is a valuable tool, as is the method of group critique with a structural consultant (guest AE professor or guest PE professional) midway through the project. The freshmen students learn by observation and by doing, which is the most effective means of testing initial ideas.

The design parameters for the bridge project are similar to those of the tower project, but with two support points for the bridge project - one on each end of the span - instead of the one support at the base for the tower project, we have discovered that students are forced to more thoroughly understand the structural concepts necessary to sufficiently support the bridge. In addition, bridges can utilize a combination of structural systems (beam, truss, arch, or suspension) in their designs. Combining structural elements gives the students multiple choices to explore when determining how their bridge project can be structured. Also, the introduction of structural rules of thumb based on span-to-depth ratios of structural members is made more immediately visible in the bridge project than in the tower project, where oftentimes the structural system was hidden. This visual catalog of information more fully adds to the beginning student's arsenal of design decision-making tools, with the goal to utilize basic structural systems simultaneously to satisfy structural requirements for the project while designing for an aesthetically pleasing bridge.

*This article is an excerpt of "Bridge vs Tower: Introducing Architectural Engineering to Freshmen Students", written by Bilbeisi and Phillips for the 2017 ASEE Midwest Section Conference.*

► A freshman student crafts his final model for the Utopian/Dystopian Bridge project.





## REFINE DESIGN

**Jerry Stivers** Associate Professor of Architecture

**Tom Spector** Professor of Architecture

**Khaled Mansy** Professor of Architecture

**John Phillips** Associate Professor of Architecture

The drawing with the deceptively bland title of “wall section” does more to determine a building’s quality and character, and to reflect the architect’s skill and subtlety in achieving an integrated artistic whole, than any other. Fourth-year studios in the school of architecture have continued to improve upon the wall section instruction to the point where it has become one of the year’s defining features.

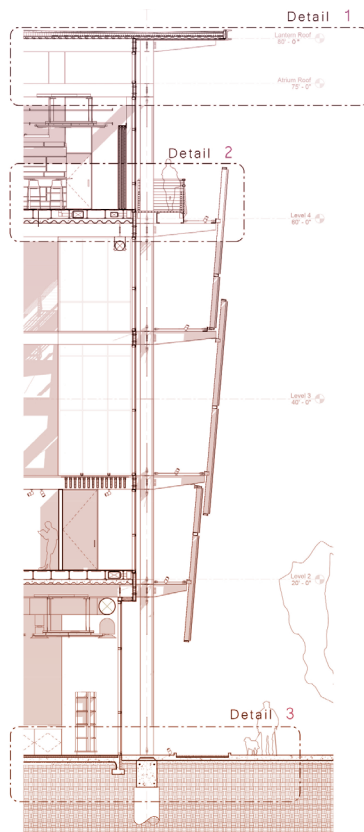
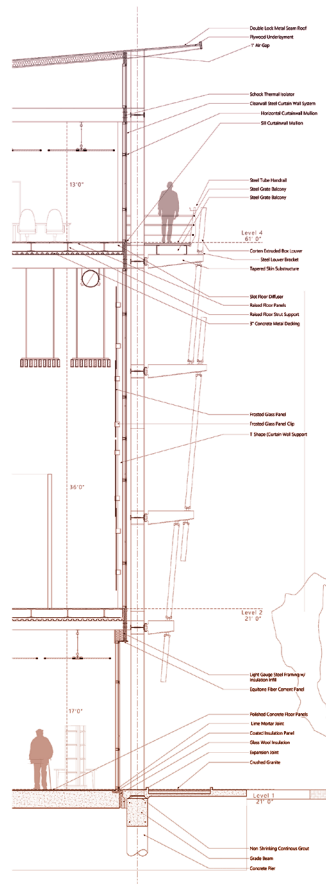
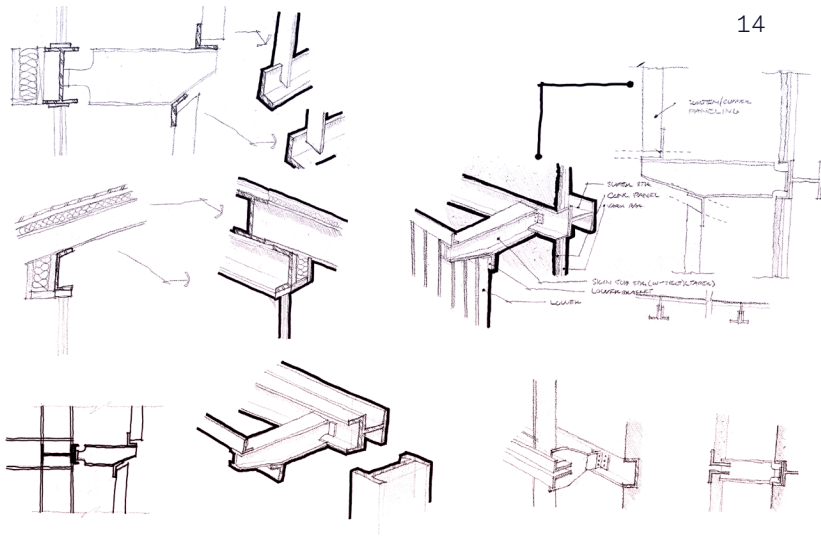
In the fall semester, students are required to create a detailed wall section as part of their presentations for the final project of the semester. In the spring Comprehensive Design Studio, students build on that initial experience to engage in four levels of wall section development. Drawing on their materials and specifications research, they begin a preliminary draft of a wall section on a prominent place in their building’s façade with the assistance of their professors. This first draft receives a concerted comprehensive review from invited professional architects and engineers on “wall section day.” The revised wall section emanating from this event is critiqued by the studio professors prior to the Design Development due date. Finally, during the construction documentation phase, the wall section gets a final red-lining for legibility and adequacy of communication.

The development of a polished wall section by fourth-year student Chase Webb illustrates the process of refinement, from idea sketches, to early integration, to design development and finally to a construction drawing (next page). It is a thoughtful process, as all alumni know!



◀ Dr. Tom Spector’s “Got Wall Section?” shirt he happily deploys for the annual event.

▶ Overleaf: (left) The student process of developing a wall section (counterclockwise from top); (right) the interactive day of critiques with architects, engineers, and code officials, in small crit group settings with studio peers.





# GOOOOOOAL!!!

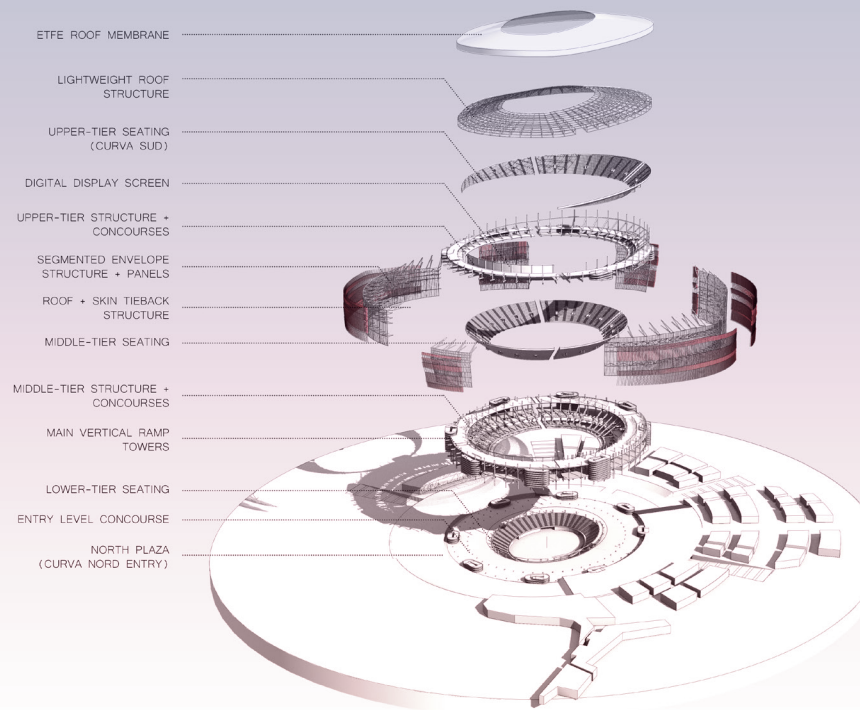
**Awilda Rodriguez Carrión** Associate Professor of Architecture  
**Paolo Sanza** Associate Professor of Architecture

To explore the wall section's potential in the fall semester, the fourth-year studio delved into building envelope and tectonic design with an atypical building type, a stadium in Rome, Italy for the AS Roma soccer team. The faculty distilled the essence of this complex building type into its core elements to create an academic exercise that could be achieved within the timeline of a semester. To supplement the students' research, faculty organized a "back-of-house" tour of Boone Pickens Stadium with the stadium's facility manager and led short seminars in which students built physical sectional models of various stadium precedents from around the world to analyze the interplay of different structural components. In their designs, the professors tasked the students with exploring the building envelope and roof structure through a contemporary architecture language. The goal was to achieve an expressive articulation of the major components, pushing the envelope of architectural engineering while still conveying a sense of local culture and creating an icon for Rome, the quintessential city, and AS Roma.

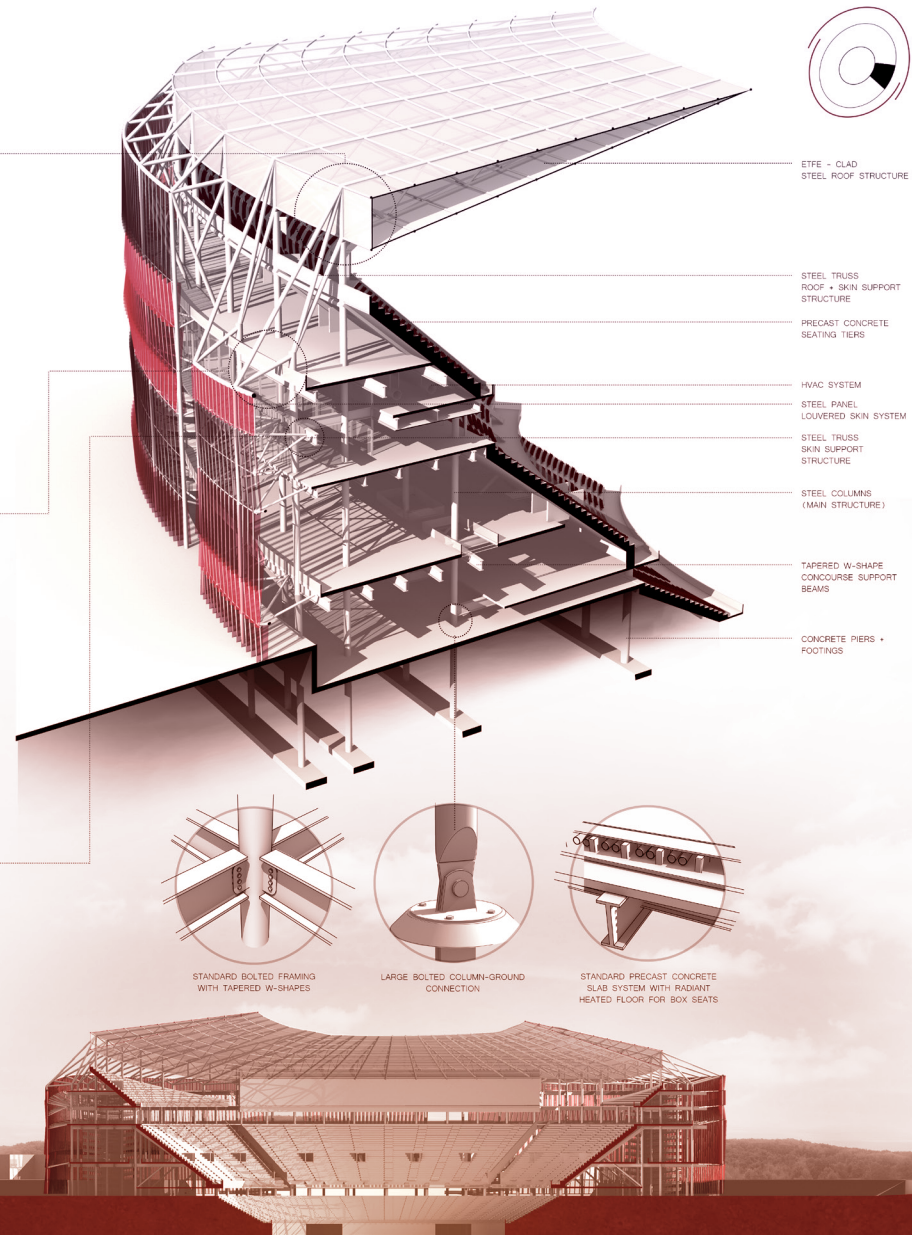
The students embraced the project with great enthusiasm, particularly evident when one of the students showed up to a crit in his full soccer uniform! Not only were the students enthusiastic, but as they progressed to the design development phase, some AE students began to show up voluntarily during studio hours to offer crits on long-span structural systems (concrete and steel) specifically required for the stadium roof and seating. After observing this synergy, the faculty formalized the crits to ensure all the students in the course could benefit from the AE students' valuable input. The students' work for this project was outstanding as they were able to reach a more developed level of tectonic detailing supported by highly technical design conversation during studio crits. Following the completion of the studio, the professors mentored 13 students who submitted their designs in the upcoming steel competition sponsored by the Association of Collegiate Schools of Architecture and the American Institute of Steel Construction.

► Final presentation drawings from the fourth-year studio.

► Overleaf: (left) tour of Boone Pickens Stadium;  
 (right) Final presentation drawings from the fourth-year studio.









## @ ARCH CENTRE

The School of Architecture Gallery was rechristened this January as the “ARCH Centre”, a place intended not only to be used to display student work and hold juries, but also as a place for gathering, studying, and relaxation. How was it changed? The interior walls were removed, opening up the expansive space from the north wall and north plaza, to the formal entry doors and southern daylight. This small architectural move created a dramatic impact!

To capitalize on the new identity of the space, throughout the semester, the school hosted a series of lunchtime “Monday Meet-ups” at the ARCH Centre, with a selection of healthy fruits and snacks available. Each week a different student organization within the school took charge of creating a “community activate” activity during the meet-up, these activities ranged from a valentine card design event, to game challenges, to an Earth Day planting party, in pots painted by the students.

Tables designed and constructed by last Fall’s Design Build studio occupy the space, providing places for the gatherings to occur naturally in the ARCH Centre. The Coffee Cart, also constructed by the same Design Build studio and unveiled in the space last December, offers students the opportunity for a hot beverage at any time of day. A commercial popcorn unit has also found a home on the coffee cart!

Something we are considering - coffee sponsorships! Alumni and/or firms are welcome to sponsor a month of coffee for the students in the ARCH Centre; with appropriate name placement on the coffee cart, it could be a lucrative recruiting tool! Please contact Professor Suzanne Bilbeisi ([suzanne.bilbeisi@okstate.edu](mailto:suzanne.bilbeisi@okstate.edu)) to inquire.



# NEWS

## School News

The Career Fair, hosted by AIAS in February, was attended by 47 firms whose representatives had the opportunity to meet with an array of interested potential interns and new graduates in both Architecture and Architectural Engineering.

In March, the school hosted a workshop offered by the Institute of Classical Architecture and Art of NYC. Twenty-eight students, five faculty members, and ten alumni professionals attended the two-day workshop to learn the principles of classical architecture and how they can be employed in contemporary design. As part of the workshop, participants measured and sketched the columns of the Architecture Building!

The Lecture Series for the School of Architecture in the spring was robust, guests were: Maxi Spina of Los Angeles; Guy Nordensen of NYC and Princeton; Luca Guido, Italian scholar at OU; and Alan Ricks of MASS Design in Boston. The School also hosted seven faculty candidate lectures!

This year, a four-week travel-study abroad experience is

required for all third-year students as a condition of graduation. The 2019 summer travel study programs include *Europe: the Civic and the Sacred* and *Urban Asia*. The Europe course, led by Associate Professors Jerry Stivers and Nathan Richardson, will include two weeks in Rome, one week in Paris, and one week in London. The Asia course will be guided by Associate Professor Seung Ra and Assistant Professor Sarah Ra and will include ten days each in Hong Kong, Seoul, and Tokyo.

In June the school is offering a travel study opportunity for alumni! Professors Moh and Suzanne Bilbeisi will lead the program, which will connect with the student program in Paris and London. Eight hours of HSW learning units will be provided as part of the program instruction—plus sketching with Moh! If you would like to go to Europe with other OSU alumni and the Bilbeisis in the summer of 2020, please email Suzanne to get on the watch list!

Save the date! The annual Fall Tailgate at the School of Architecture will be held Saturday, Nov 2. Time TBA.

And, if you plan to attend the A'19 Conference on Architecture, please join us at Friedmutter Group for the OSU Alumni gathering on Friday, June 7th, in a reception from 5:30-7:30pm. Dr. Tom Spector will be the host!

## Student Competition News

This past academic year, School of Architecture students received many accolades in an array of design competitions. Some of these include:

First Place in the AIA Oklahoma Video Challenge; a Student Merit Award in the American Society of Landscape Architects Central Chapter Conference awards program (won jointly with landscape architecture students); a Structural Ingenuity Award in the local CANstruction competition; an Award of \$5,000 in the OSU Student Government Association Sustainability Challenge; and First Place in the Associated Schools of Construction Region 5 Student Competition (won jointly with Construction Management students). Many of these wins were earned in extracurricular activities, which demonstrates how well prepared our students are for competition, and how much they enjoy designing!

In-house competitions for OSU School of Architecture students were sponsored this past year by ACME Brick, US Stone, WW Steel, the Oklahoma Structural Engineering Association, the Illuminating Engineering Society, and MA+ Architecture. For the second time, the Baumiller Prize for Excellence in Urban Design was awarded to a team in the fifth-year studio, and the inaugural Elliott Prize for the study of light in architecture was awarded to a third-year student.

This year the Caudill Fellowship awardee is Mr. Hancong (Robbie) Zheng, who will study abroad in Europe in the summer of 2019. Robbie plans to visit works of architecture, both ancient and modern, in Athens, Rome, Paris, and London.

## Faculty News

This coming fall the school will welcome three new Assistant Professors to the faculty—Sarah Ra, Jared Macken, and Christina McCoy. Sarah is a graduate of RISD and a LEED accredited professional who has served in the role of Adjunct Professor with OSU on several occasions. Jared is a recent Doctor of Science graduate of the ETH in Zurich, and the coauthor of





*The Western Town: A Theory of Aggregation.* Christina is a licensed architect and a licensed structural engineer, joining our faculty after practicing with Thornton Tomasetti in Kansas City for the past ten years where she was responsible for many high profile elements of large stadiums across the US. We look forward to the new ideas and new courses each of them will bring to our academic programs!

Associate Professor Carisa Ramming received recognition from three separate entities for her teaching quality and mentorship of students this past year. She was awarded the *2019 OSU Faculty Excellence Award* for her work as an advisor and mentor for several student organizations as well as for her service as faculty associate for the Maude's Squad Living Learning Program in Parker Hall. The OSU Fraternity and Sorority Affairs selected Carisa as the *Outstanding Faculty Member of CEAT* and she was honored at the CEAT Diversity and Inclusion Banquet with a *Faculty of the Year Award*. Congratulations, Carisa!

We were delighted to see Professor Moh'd Bilbeisi receive

the "Kirby Lockard Lifetime Achievement Award" from the Design Communication Association this spring. And check out your latest copy of "State" magazine, in it you will find a feature article on Moh, and his work and passion for art and architecture. The continued recognition of his superlative talents in fact humbles our very own Professor Moh.

Associate Professor Paolo Sanza is the recipient of the 2019 Knight Family Faculty Development Fellowship, which he will utilize this summer to further his investigations of early modern architecture in northern Italy.

Dr. Khaled Mansy was again selected this year to review the scholarly output of research projects funded by the US Department of Energy. The research reports that he reviewed focused on efficient LED sources and next generation lighting and control systems.

Associate Professor John Phillips supervised the work of CEAT undergraduate research scholar Jenna Harbert; her work on the use of BIM for the

purpose of structural design was presented at the Architectural Engineering Institute Conference in Washington DC in April. Impressed by her work, some attendees attempted to recruit Jenna into their Graduate program!

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Associate Professor Seung Ra was awarded a research grant through the Office of the Vice President for Research at OSU. as part of the Grants in Humanities-, Arts-, and Design-Based Disciplines program. His project, the Interactive Podium, aims to enhance interdisciplinary research and communication by using embedded computing technology to create a visual surface for interaction between users. This data visualization tool provides planning analysis for the built environment, from interior space to cityscapes. City planning and spatial analysis of complex interior programs like schools, hospitals, and manufacturing facilities can be better understood through this visual, intuitive, and interactive research tool.

### Alumni Giving

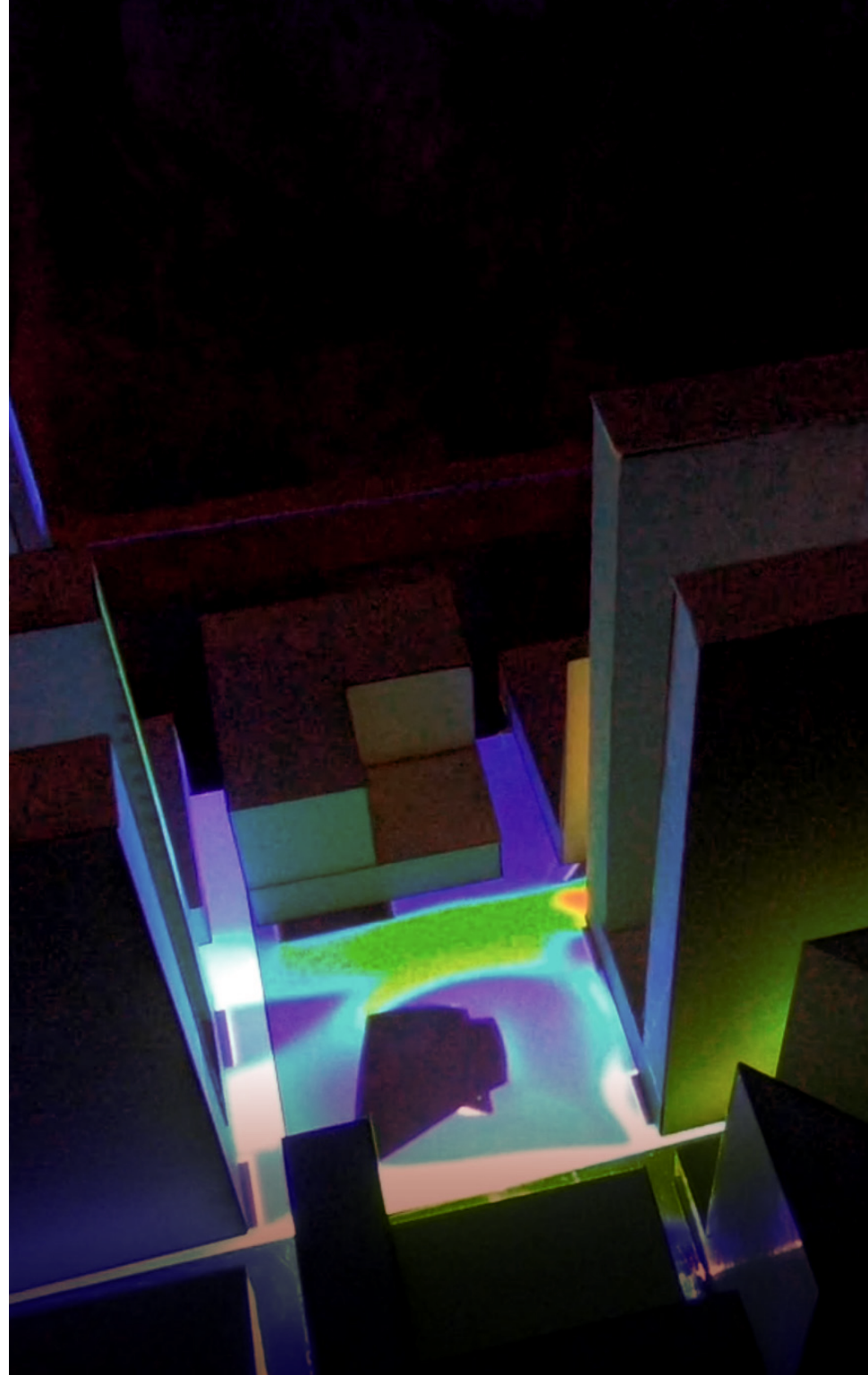
Students of the School of Architecture benefit greatly from the generosity of alumni - who give to support student programs, special events, and funding for scholarships. We are truly grateful for alumni interest and support of our school and students - we have the best alumni!

If you would like to learn of opportunities to further assist our school and students, please email Professor Suzanne Bilbeisi (suzanne.bilbeisi@okstate.edu), or follow up at the OSU Foundation website, [www.OSUGiving.com](http://www.OSUGiving.com) (be sure to search 'Architecture'). There you will find the *Architecture Fund*, the *Architecture Scholarship Fund*, and several named funds which benefit the students of the School of Architecture. Thank you!!!

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### Future News

Please let us know what is happening in your part of the world. We're always glad to hear of your success! Comments and observations are also welcome. Please keep in touch!



► Associate Professor Ra's tests of the Interactive Podium with a data visualization projection.

► Back page: Professor Bilbeisi with students in "Go Pokes" mode, on the School of Architecture Plaza.





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Newsletter designed and published by Suzanne Bilbeisi, Keith Peiffer, and Nathan Richardson at the Oklahoma State University School of Architecture. Printed on Mohawk Via Light Gray with a smooth finish. Bound at the Oklahoma State University School of Architecture. Original content authors retain copyright of their creative work.