Volume 4
Issue 5

APDESIGN

THE COLLEGE of
ARCHITECTURE, PLANNING & DESIGN // K-STATE











Photos courtesy of Brianna Sprague and Thomas Jackson

Stay Connected:
apdesign.ksu.edu | facebook.com/APDesignKState | twitter.com/APDesignKState

INSIDE

A MESSAGE FROM THE DEAN

This issue of the APDesign Magazine focuses on our relationship with our industry partners. The activities highlighted in this issue are 'academic triple threats' in that they exemplify how support to our college can be bundled to encompass the three of the avenues of sustained support necessary to insure the continued legacy of excellence embedded in APDesign. Support for APDesign comes in three ways: 1) Philanthropy, funds in support of our mission, 2) Engagement with our students and faculty, and 3) Advocacy, helping us spread the message of our excellence and impact.

Of particular significance in this publication is how our mission, educating the next generation of design and planning leaders, can align with the interests and needs of private enterprise. In this way, we are not deferring our service to industry until graduation, but, as partners, are helping them research, test and develop their products and processes. With ever-increasing frequency we are engaging with the private sector as a funded laboratory of research and development. I certainly wish I would have had this opportunity as a student!

Similarly, our outreach activities help often overlooked, underrepresented or resource-deprived communities envision their potential and by extension, galvanizes their voices in advancing towards a more prosperous future and a better quality of life. In this way we often set the table for the professions, providing communities and organizations with material, in the form of research and graphics, to seek seed monies for instituting change in partnership with design and planning professionals.

Neither of these avenues would be possible without the confidence our industry partners and our communities have in the capacities of our students and faculty. I have no doubt that our perceived potency is embedded in the interdisciplinary, holistic and collaborative nature of our college, as well as the fact that we do not only think and design, but that we often make what we design. Nor would this be possible without the inventive capacity of our faculty to align these opportunities with the metrics of accreditation and the attendant curricular imperatives, all the while finding ways to engage the can-do serve-the-greater-good spirit of our students.

We continue to make progress on our project for Seaton Hall and are aiming for a construction start date of Fall 2015. Rest assured that our revitalized facility is being designed to support growth in the types of teaching, research and service activities chronicled in this issue. We will be the nexus of interdisciplinary activity for our campus!

Finally, please note that this publication is underwritten with the generous support of McCarthy Building Companies. We are appreciative of their support, as well as the support of other friends and industry partners in helping us carry out, and champion, our land-grant mission!

Tim de Noble, AIA
Dean

APD*PRO* MENTOR PROGRAM

The APD*Pro* Mentor Program kicked off its pilot year in the fall with a small group participating in the current pilot program. The program will be released to all upper-level APD*Pro* students to apply in Spring 2015, with an emphasis on current second year students. The mission of the APD*Pro* Mentor Program is to afford design and planning students the opportunity to learn from skilled and practiced professionals who can help guide them and provide advice as they transition to their career.

What are the requirements to be an APD*Pro* Mentor?
APD*Pro* Mentors don't have to be alumni of APDesign or even Kansas State University. APD*Pro* students have voiced that they would like to learn from professionals with experience in design, planning or any related fields. We only ask that you are committed to being a mentor and staying in contact with your mentee.

How much time will I need to commit to the program?
We know you and your potential mentees are busy, so we only expect mentors and mentees to communicate at least once a month. Communication can take place via phone, email, video chat, text or in person. Once a mentee selects you as a mentor, your professional relationship will last until he or she graduates.

Why should I get involved?
Did you have a mentor in college? Do you wish you would have? The APD*Pro* Mentor Program is a great opportunity for you to offer insights and advice to the future of the design and planning fields. You'll also be pleasantly surprised at how much you learn from our students as they transition to their professional life.

Photo courtesy of Wichita Downtown Development Corporation

The Importance of Giving Back
Current APD*Pro* Mentors share why they became involved in the program and the importance of giving back.

Why did you want to become an APD*Pro* Mentor?
"I see this as a great opportunity not only to serve as a resource for the student(s) but also to learn from the student."
— Casey Cassius, BNIM

How do you expect to benefit from being a part of this program?
"Design is a team sport - learning from others should never be a one-way street. Our society, our profession and our business models are changing more rapidly than ever. Understanding our younger generations and how they work is integral to a better profession and great design teams. I certainly look forward to learning a thing or two from my mentee."
— Clemente Jaquez-Herrera, RTKL Dallas

Any words of encouragement to professionals thinking about participating in the APD*Pro* Mentor Program?
"Have you ever wondered, 'I wish I had known then what I know now!'? All of us have thought that from time to time. When you were in college, what if a seasoned professional had shared with you what they "know now?" How would your perspective have changed? How would it have helped you? That knowledge could've been invaluable; maybe even life changing. APDPro is your opportunity to make a difference; to give back; to offer someone something that only you can give - your time and your perspective. You never know, it just might change a life."
— Brandon Dake, Dake Wells Architecture

How do I get started?
For more info or to sign up, please visit:
apdesign.k-state.edu/alumni/apdpromentor

If you have any questions about the APDPro Mentor Program, please contact Danna Voegeli, APDPro Coordinator, at apdpro@k-state.edu or call 785-532-2846.

VISIONS IN THE VILLE:

Looking Toward the Next 125 Years

Two big anniversaries converged this year to create a unique opportunity for a Manhattan institution, Aggieville, and the Landscape Architecture Program. During the 2014-2015 year, Aggieville is celebrating its 125th anniversary and the Landscape Architecture Program is celebrating 50 years as an accredited program. The Aggieville Business Association sought design assistance as they look toward the future. In response, fourteen landscape architecture students took part in an intensive 8-week Community Planning and Design studio co-led by Associate Professors Blake Belanger and Howard Hahn during the summer of 2014.

The Community Planning and Design Studio is the first graduate-level course in the MLA curriculum. It is an intensive 8-week course that meets daily from 8:30 a.m. to 5 p.m., with weekly deadlines for deliverables.

"Our intent is to prepare students for working with the realities of community-based planning and design, expand students' knowledge of urban design and planning practices, develop students' critical thinking, enhance students' visual and verbal communication, and deliver information and ideas to community stakeholders that will advance discussions about Aggieville's future," Belanger said.

Examining Aggieville's role within the context of the City of Manhattan and Kansas State University, the primary research questions the studio studied included: Manhattan's population projections and housing and Aggieville's business mix, visibility, parking and civic space. The studio examined the current opportunities and dilemmas facing Aggieville, and then proposed short- and long-term design based alternatives to spark local conversations.

"Aggieville is a special place that imbues much meaning for many people," Hahn said. "The physical form, range of businesses represented, and activities that take place at all times of the day and evening all contribute to this district's sense of place and vitality. Aggieville has a rich history, but it is facing competitive pressures, the infrastructure needs updating, and integration with the surrounding context needs re-examination."

Focusing on local and national trends in employment, housing preferences, and urban redevelopment patterns, the group made recommendations for greater housing and business density in Aggieville and Downtown. The students foresaw Aggieville as a citywide hub for permanent residents, students, tourists and business visitors.

Initial interaction and feedback from a variety of people connected with the district set in motion ongoing communication between Aggieville, affectionately known as the Ville, and landscape architecture students and faculty. Early on, the studio was given a walking tour of Aggieville by Aaron Apel and Evan Tuttle, representatives of the Aggieville Business Association, who provided historical background and insights related to current Aggieville issues. Trent Armbrust, representing the Manhattan Chamber of Commerce, provided a walking tour of downtown Manhattan and the new north and south development areas to explain the greater Manhattan context, and highlight recent development activity that might relate to potential connections to Aggieville. During the data collection and mapping phase of the project, students made contact with and received regular input from Aggieville business owners, university representatives, a city commissioner, city and county GIS staff, and a representative of the ATA bus system, to name just a few.

"As the President of the ABA Board of Directors, my role was to both give a history of the business district as it has functioned and how it came to be designed currently, as well as lay a foundation for the hopes and desires of the business district, it's business and property owners and the way in which we can serve the Manhattan community at large moving forward," Apel said. "I was a voice for the business district both as the board president and a business owner. I also assisted in organizing public and private meetings for the students to meet with other interested parties including other business and property owners, ABA Board members, city commissioners and the public at large."

Business owners and community leaders participated in interim design reviews and contributed discussion points. After project completion, the Aggieville 125th Birthday Celebration included a sidewalk display of the proposal boards, allowing direct feedback from the general public. Presentations were also made to the Manhattan City Commission and proposal boards were displayed in City Hall for several weeks. The framed proposal boards now are on display in the lobby of the new Bluemont Hotel for visitors and local residents to view.

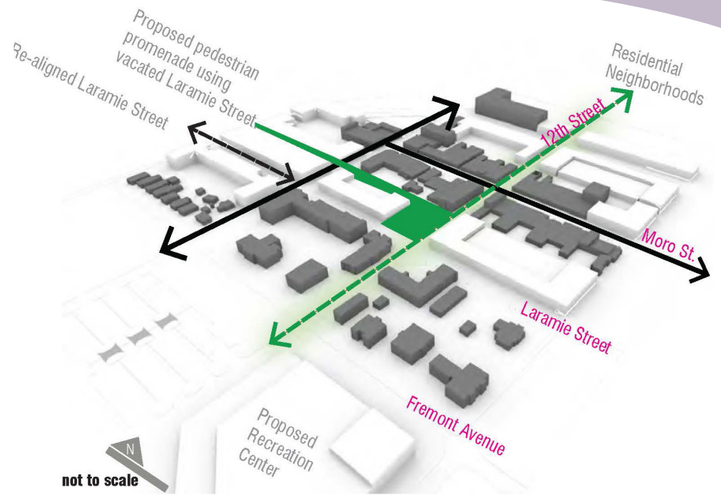
Hahn said the biggest hope for the studio is that the design-based proposals will initiate district conversations and on-going visioning. He also hopes that the extensive information researched and mapped will inform discussions leading to action that serves the full range of business owners and patrons of this special district.

"I thought that the work was thought provoking, outside the box, transformational, and professional," Apel said. "It started a conversation where there was no conversation when it came to the future of Aggieville. The work was incredibly detailed, even if final concepts were not presented the research leading up to the final presentations was worth the time put into the project."

For the students, the hope was that the studio process and critical mapping helped inform their design proposals, and opened their minds to new possibilities for a district already familiar to them. Hahn said listening to the perspectives and priorities of so many stakeholders was revelatory.

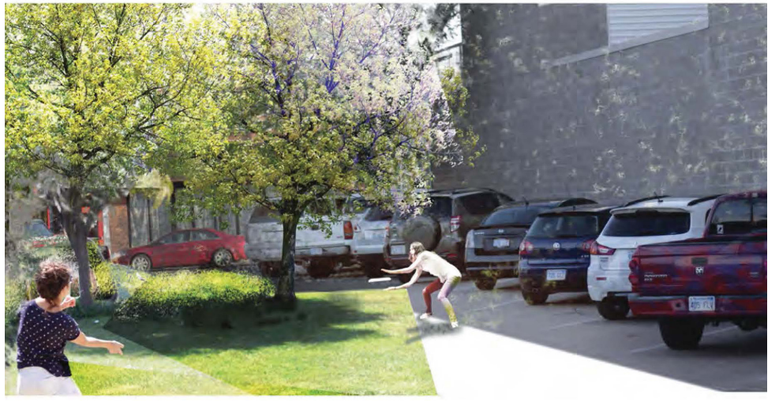
"In a short eight-week studio, the students did an impressive job collecting, synthesizing, and documenting copious amounts of information to inform design proposals that were an initial start in providing some vision of how Aggieville might evolve," Hahn said. "The quick pace and level of high expectations elevated their project management skills to a new threshold in their education."

"In general, the response has been overwhelmingly positive, especially our ideas for short-term implementation strategies," Belanger said. "Although some people considered the grander visions fanciful, we are excited that the studio has gotten people talking about possibilities."



Immediate interest in short-term implementation strategies initiated a new working relationship between Aggieville and the Department of Landscape Architecture and Regional & Community Planning. Two landscape architecture students are completing internships to develop concepts proposed by the studio and assist the ABA with infrastructure improvements. MLA students Beth Krehbiel and Erin Wilson are working with the Aggieville Business Association, to create maps informing lighting, parking and recycling improvements. In less than a year since the studio's work, specific improvements in Aggieville are underway with the students' help. Community members and Aggieville merchants were captivated by one of the studio's proposals for Fake Patio Day, a fun, positive take on the annual Fake Patty's Day event. This summer, residents will be able to enjoy Fake Patio Day when they can set up patios on Moro Street and the street becomes, as the students envisioned, "a location for dining, playing, chilling, and shopping."

Outcomes of the studio's work are documented in a two-volume book, Visions in the Ville: Looking Toward the Next 125 Years. The first volume documents the studio's initial research and strategic planning recommendations, presented in over 100 critical maps. Most of the findings are original, and to the department's knowledge, the most comprehensive urban design analysis ever conducted for Aggieville. Building upon the new research findings and evolving strategic planning ideas, the studio then created a set of six visionary design proposals for Aggieville's future. Volume 1: Critical Maps can be found on K-REx at http://hdl.handle.net/2097/18680 and Volume 2: Design Proposals can be found at http://hdl.handle.net/2097/18681.

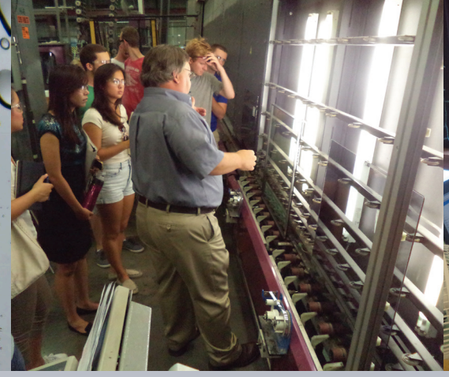


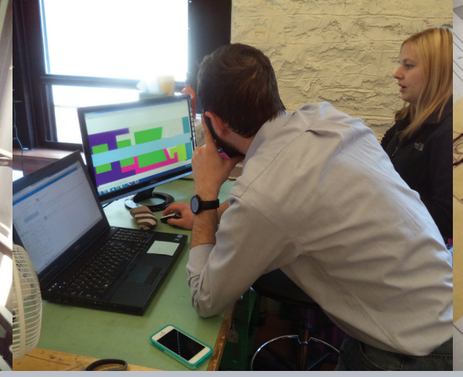
AGGIEVILLE SINCE 125 1889 MANHATTAN KANSAS

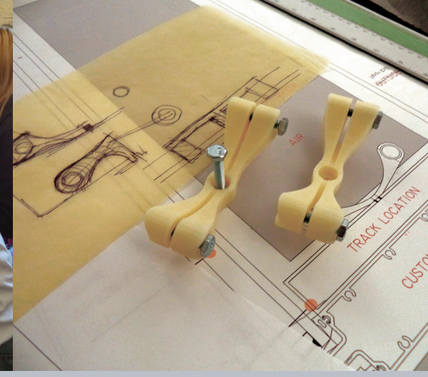
THE CURTAIN WALL STUDIO:

INNOVATION IN CURTAIN WALL ASSEMBLY SYSTEMS

MICHAEL GIBSON







(left to right): Manko Vice President Kevin Dix gave the students a tour of the Manko plant in Manhattan; students learned to use and interpret new tools for thermal simulation in the studio; prototyping, including 3D printing and full-scale fabrication, was central to the students' exploration.

The Curtain Wall Studio is a year-long fifth-year architecture studio engaging the premise that glass curtain wall systems can be an integral part of high performance buildings of the future. Collaborating with Manko Window Systems in Manhattan, KS and BNIM Architects of Kansas City, the studio developed, prototyped, and tested experimental curtain wall systems during the 2014-15 academic year. Students working in teams were charged in the research studio to rethink the modern curtain wall, questioning its material, environmental integration, and manufacturing implications. A primary goal of the studio was to introduce students to a research approach in which building science concepts, experimental methods, simulation and analysis tools, and prototyping could be deployed, suggesting a valuable knowledge base for a profession with increasing engagement in research. In this context the collaborating team of professionals and manufacturer provided real-world insight and feedback during the project. Currently in the spring semester, the studio is completing their exploration by integrating their experimental curtain wall systems into a comprehensive building design. The studio is funded by the NCARB Award for the Integration of Practice and Research.

Students in the studio are: Brian Conklin, Tyler Countess, Kate Gutierrez, Kristy Johnson, Cameron Marshall, Jose Martinez-Giron, Nick Nelson, Nathan Niewald, Alex Otto, Kevin Perks, Hanh Phung, Dylan Rupar, Lawrence Tan, Jenelle Tennigkeit, and Sammi Wai.

INTRODUCTION

The challenge of designing tomorrow's sustainable buildings requires architects to engage science and manufacturing in a more direct way than in the past. The performance of these buildings is critical, with innovation inherent to making buildings perform better. Building science, in turn, is a complex issue, and solutions to performance challenges can't be stopped by traditional disciplinary boundaries. Instead, the solution to these problems must result from architects, building science experts, engineers, and manufacturers working together collaboratively.

Subsequently, architects (and designers in a more general sense) are situated to lead innovation and inquiry – as a result of interdisciplinary knowledge and a broad understanding of how performance-related problems impact buildings and users. Thus a generating idea for the studio was how new tools and processes can be part of practice-situated inquiry, looking to several firms that have led the profession in introducing research into practice: namely SOM, Perkins + Will, and Kieran and Timberlake. The studio sought to conduct applied research in a design studio, while also introducing students to a science- and technology-enriched approach to design that could serve them as practitioners (and leaders) who will be designing the ultra-sustainable buildings of the future. Bringing together a diverse set of perspectives from practice, manufacturing, and building science, the studio targets an emerging reality in practice where high performing projects involve inquiry and integration that is collaborative and cross-disciplinary.

CURRENT GLASS CURTAIN WALLS: CHALLENGES AND OPPORTUNITIES

Glass curtain walls are ubiquitous in today's architecture, particularly in commercial and institutional buildings. These systems are on one hand criticized for contributing to an energy crisis in buildings due to large heat losses and gains, yet today's best systems manage heat transfer very well, achieving insulating properties equal to conventional opaque walls. Contemporary glass curtain wall performs better today largely as a result of advances in glazing production. Single panes of glass from the past have been replaced by sealed glass units that are now commonly filled with argon and use advanced coatings (Low-E and others) to minimize thermal transmission, with advanced manufactures like Manko investing in computer-automated glass unit production to produce highly reliable, durable, and economical glass units.

While glass technology has advanced, the aluminum frame systems used in curtain walls remain virtually unchanged, with manufactures offering nearly identical products. Two major explanations exist for the stagnation in technology. The first is that a major manufacturer abandoned curtain wall production in the 1980s, releasing intellectual property to aluminum extruders who freely used their aluminum dies as the template for today's ubiquitous aluminum curtain wall. The second reason for the ubiquity of the aluminum curtain wall is historical, attributed to the post-WWII industrial complex, which sought to re-purpose the aluminum extruding capabilities for domestic manufacturing (Yeomans 2001). The earliest examples of curtain walls were in buildings like factories and labs, using systems for their utility, durability, and modularity rather than to project the aesthetic of glass (Yeomans 1998).

Beginning with the curtain wall's history, students in the studio researched the challenges and opportunities present in glass curtain walls, recognizing early that aluminum frame systems in glass curtain walls are a performance weak point, with higher thermal conductivity and the potential for air leakage (infiltration) around joints compared to the glass units. Students also observed that while the energy code encourages the minimization of glass into 'punched openings' (i.e. individual windows), the interface with the walls and such isolated windows are where heat loss can be much worse (Boyle 2013). In contrast to traditional walls that are layered of several materials in the field, a controlled, continuous curtain wall system could offer many assets to offset its performance challenges, while offering straightforward and controlled erection along with predictable expectations for performance.

The students also learned that aluminum frames with thermal breaks reduce heat transfer through the frame, but also help to prevent cold areas at the edge of glazing that would result in condensation. Early on the studio considered using wood frames instead of aluminum, but test results showed the potential for harmful condensation. Another important advantage presented by these systems is one of airtightness. A recent assessment of air leakage (infiltration) in commercial buildings suggested savings of 40% in natural gas and 25% in electrical energy if buildings met minimum tightness standards; yet only 6% of tested buildings met proposed minimums, including many newer buildings (Emmerich 2005). Thus one of the most significant challenges in meeting efficiency targets comes from building airtightness, and high-performing glass curtain walls could allow buildings to reach these targets. A continuous glass curtain wall from Manko Window Systems, based on tests conducted by the studio, would infiltrate far lower than prevailing air leakage targets (Emmerich 2005). Rather than completely reinvent the curtain wall, the studio's appreciation for existing curtain walls led the students to consider how the curtain wall of the future could use materials and assembly methods to perform better.

COLLABORATING WITH MANKO

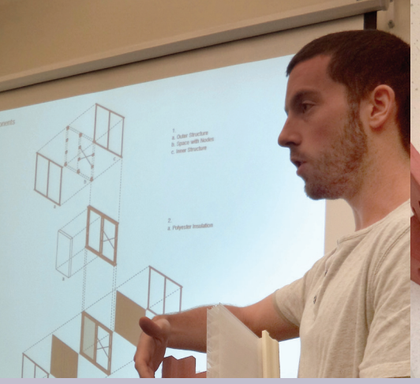
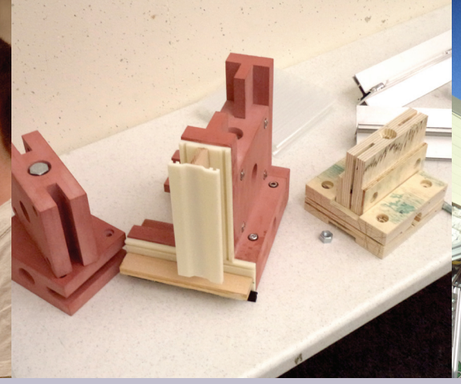
Collaboration with Manko Window Systems was initiated in the summer of 2014 with an introduction to Kevin Dix, Vice President at Manko and an experienced engineer in the window industry. Among Kevin's numerous leadership roles at Manko is overseeing the development and testing of new products among Manko's many successful window, door, and curtain wall lines. Working with Manko and Kevin was critical to the studio, allowing students to move beyond a superficial concept of glass walls to gain a deep understanding of how glazed curtain walls work and how they're manufactured and integrated in buildings. On top of sharing an extensive amount of knowledge and insight, working with Manko also brought essential industry support to the project, enabling students to build their work at full scale using donated Manko glazing and components.

The studio began in the fall with a tour of Manko Window's Manhattan plant, led by Kevin. The students learned about Manko's commitment to the latest production technologies and how products are tested in-house according to industry standards. Returning to the plant later in the fall, the students participated in a hands-on demonstration of how glazed curtain walls are installed in the field, presented by an experienced Manko installer. The students, in turn, found inspiration in Manko's push to develop and refine their product lines using the latest materials and automated manufacturing methods. Even for a regional manufacturer like Manko, innovation is a part of business and necessary to making product improvements and ensuring high quality and performance. This was of interest to the studio because it countered the idea that conventional curtain walls couldn't be improved. Visiting the Manko plant, the studio was shown several examples of how Manko has integrated custom components like shading louvers with curtain wall profiles, with computer-based testing and physical prototyping an important part of the process of development. The students, in turn, followed a similar approach to development, testing, and prototyping of their own experimental systems as they moved forward with their research.

NCARB AWARD AND BNIM PARTICIPATION

Major recognition for the studio came in 2014 when the project was awarded the NCARB Award for the Integration of Practice and Education. NCARB stands for the National Council of Architectural Registration Boards, and this organization oversees programs of internship and professional registration across the United States. The NCARB Award was developed to recognize innovative projects in academia that bring together faculty, students, and practicing architects while addressing issues important to NCARB. The project proposal was developed collaboratively with Brian McKinney, an Associate Principal at BNIM who continued to work with the studio this academic year.

The project proposal addressed preparing students to respond to complex issues of sustainability with a hands-on, experimentation-driven approach: something different from technical lecture courses where these issues are introduced as passing slides on a screen. The project envisioned a studio where students



(left to right): Students (Brian Conklin pictured) proposed and developed new curtain wall systems in the studio, emphasizing the relationship between materials, assemblies, and energy performance; to improve the curtain wall, the system developed by Brian Conklin, Dylan Rupar, and Nick Nelson used a double skin and connection nodes shown above as process models; students built a reuseable testing enclosure, supported by NCARB Award funding, to test their curtain wall prototypes at full scale.

(left to right): The studio spent a great deal of the fall in the shop, fabricating prototypes using methods and technologies including welding; Dylan Rupar connects the components in a prototype; Jenelle Tennigkeit, Kate Gutierrez, and Kristy Johnson monitor the CNC mill as it shapes the foam core of their prototype.

engaged these issues as part of inquiry, with collaborating manufacturers and architects giving the exploration critical dimension and context. Future innovations and performance advances aren't going to come from any single individual but from a collaborative process involving many disciplines, and the studio reflected this collaborative challenge. Preparing future architects to be innovators requires they cultivate a cross-disciplinary knowledge base along with their design abilities. Kansas State students seem particularly capable in this respect because they seem to arrive without a preconception of what design school should be: thus the project also owes its success to the students' eagerness to embrace building science issues, fabrication problems, and technical knowledge beyond their past experience.

Having professionals involved in the project introduced critical practice-based knowledge to the studio. Brian McKinney of BNIM (co-writing the original NCARB proposal) served as the lead collaborator, and Nadav Bittan of BNIM and Rick Schladweiler of PGAV Architects were regularly involved in research and design presentations. This team of professionals brought their insight into building envelopes, along with enthusiasm for the process of inquiry that everyone shared in the project. Brian McKinney wrote in a summative report to NCARB:

"The type of research that Michael and the students are producing advances the science of building enclosure and is invaluable to us as practicing professionals. As we push to integrate and advance building design and performance we need real answers to many difficult questions. The ideas and discoveries the students have made have already begun to impact my practice and the practice of the other professionals involved. As Michael and the students begin the spring semester and continue to gather and analyze data from their test mock-ups it will be exciting to see how the students integrate their research into a building design project…

…The process these students are involved in; developing a thesis for their research, investigation, modeling design options with software, fabricating large scale mock ups, testing and quantifying their research is developing a broad range of critical thinking and communication skills that will support them throughout their professional lives. These are the capabilities we as a firm look for in the students we ask to join BNIM."

Further, the presence of BNIM in the research process also helped bring additional design and engineering experts into the studio: namely David Herron, a leading envelope consultant in the Kansas City area, and Ryan Evans, a leading engineer and Director of Sustainability at Henderson Engineers in Kansas City. It was an aspiration of the studio to reach beyond the typical studio where designs are simply proposed and critiqued. Interacting with this team of experts made it possible to embrace analysis, evaluation, and integration as part of the design dialogue.

TECHNOLOGY AND RESEARCH PROCESS

In the past it was enough for students to learn how to solve problems with creativity and design logic alone. Brian Lawson, an author writing extensively about design thinking, remarks that design thinking is simultaneously an open-ended and top-down process that makes it difficult to solve performance problems that require analytical thinking (Lawson 2009). The traditional way of solving building performance problems reflects the differences in thinking between architects and engineers: architects design the building and define (or even worsen) its performance problems, and 'hand off' the design to engineers to organize the problem, analyze it, and provide properly engineered building systems. The studio re-imagines this division between design and analysis, where rigorous analysis is part of the design process. This is not so different from 'evidence-based design' that is common in practice in education, where methods of inquiry in design are based on the scientific method. In the studio, student inquiry embraced more than just the scientific method: students had to directly engage building science, learning how to conceive prototypes and interpret meaningful experiments to inform their designs. Bill Mitchell, director of the MIT media lab, notes that advanced research there requires prototypes – physical, designed artefacts that structure research questions, testing, and analysis (Brandt 2010).

The studio used virtual and physical prototypes at the center of the process of inquiry, integrating experimentation with design decision-making. Students worked in teams of three to develop experimental curtain wall systems in the studio, identifying on their own a range of issues to explore. Computer and physical models served as prototypes, reflecting the processes students observed at Manko. Development began with basic hypotheses with student groups piecing together schematic ideas from their early research. Computer modeling allowed performance of early hypothetical 'sketches' to be evaluated, using THERM and WINDOW simulation tools from Lawrence Berkeley National Labs. This software is also used by Manko and other fenestration manufacturers in the rating of products; essentially the program simulates heat flow through walls, frames, and window glass. Using computer simulation early in the process allowed the students to test multiple alternative hypotheses at a time, while also making both failed ideas and successful ideas important in improving early designs.

Students next extrapolated thermal properties from initial simulations into whole building energy simulations, using a base model of a 24,000SF office building. This virtual base model was similar to those used for energy code compliance, and it was located in Des Moines Iowa and modeled using energy code minimum criteria. This effort allowed students to determine the monthly, seasonal, and annual impact of their experimental systems as part of a realistic, hypothetical commercial building.

Eventually the students constructed 1:1 prototypes of their systems to better understand the implications and challenges of materials and assembly methods to their experimental systems. The first prototype was a 'desktop model' that served as a proof-of-concept during presentations involving Manko and the collaborating architects. Feedback from the small prototype and the simulations ultimately led to the design and fabrication of a larger 1:1 prototype by each team. These large prototypes (27" wide by 74" high) used material and assembly techniques that were as realistic as possible, with glass, insulated glass units, and curtain wall hardware donated generously by Manko. In addition to the five student-developed prototypes, a curtain wall unit was assembled by Manko at the same dimension to be used as a baseline during live tests. Together the six curtain wall sections were installed in the southern wall of a test enclosure measuring 16 feet long, 8 feet deep, and 8 feet high. Erected on a gravel pad outdoors, the envelope (walls, floors, and ceiling) of the test enclosure was finished with 3.5" deep Structural Insulated Panels with an additional 0.75 inch of polystyrene insulation over the exterior (a composite R-value of 21 approximately). The test enclosure was designed to allow accurate testing of multiple modes of heat transfer through each mock-up under real-world conditions, and the enclosure itself is reusable and can be 'flat packed' for use in future projects involving prototype testing. Using prototypes to test real world performance is important for manufacturers and also in building science research, because real world heat transfer, assembly-related performance, and infiltration (air leakage) cannot easily be tested using virtual prototypes.

Live testing using the test enclosure referenced numerous ASTM standards, and students became familiar with the rigors of testing typically undertaken by engineers and scientists. During tests, a small, thermostatically controlled heater was used to maintain a relative interior temperature in the test enclosure, with a set point roughly at 68F. Data collection included the use of an array of thermocouples – small wire junctions used to collect temperature readings – that continuously monitored surface temperatures in the prototypes as well as interior and exterior environmental conditions. Data was also supplemented by thermal imagery collected with a thermal camera. On the interior of the prototypes, the temperatures of surface was used to compare heat flow rates, with cooler surfaces indicated more heat flow relative to warmer surfaces. For infiltration (air leakage) tests, a baseline infiltration (air leakage rate) was established for the entire enclosure and then each individual prototype was tested by maintaining a plastic seal on the other prototypes. A blower door – a large fan controlled by a microcontroller -- then depressurized the test enclosure to a set negative pressure, and the air leakage rate for the prototype was calculated from the air flow rate moving through the fan. Overall, the fabrication and full scale testing of the experimental systems served to confirm the viability of the systems against real-world conditions and performance concerns.

STUDENT WORK HIGHLIGHTS AND DISCUSSION

Base System: 250i system from Manko Window Systems

Manko's system is one of the highest performing systems available commercially. Features in the Manko system include internal thermal breaks that slow thermal conduction through the frame, made out of a special composite called polyamide. The glazing unit in the Manko system was a triple glazed, argon-filled IGU using Low-E glass that used structural silicone spacers and an edge seal around the window that was applied in the factory using an automated process. The argon between the glass reduces heat transfer from convection (air currents) in the glass cavity, while the Low-E coatings reflect heat back to the interior of buildings. Using silicon spacers and applying sealant with a robotic process further reduces heat transfer, while ensuring a completely sealed window unit. The frame of the Manko system was friction fit together (with very tight joints) and when the glazing was installed, the exterior joints were sealed with weather stripping and silicon exactly as the system would be installed in the field.

Students installed Manko's system alongside the five experimental systems that they built as part of their research. It

(left to right): Manko generated donated much of the aluminum frame components and all of the glass used in the student prototypes -- Nick Nelson and Tyler Countess pick up part of the order produced for them after they specified it to Manko; as part of the process, students learned to properly install glazed curtain walls; Cameron Marshall places his group's frame into the test enclosure; three of the curtain wall prototypes seen from the interior of the test enclosure.

(left to right): While developing their prototype systems, students used software that simulates the heat flow through the various components and materials in wall profiles, producing feedback that could be used to evaluate energy efficiency; during the projcet, students regularly dialogued with collaborating professionals, joined in this review by Kevin Dix (V.P. at Manko Windows), Ryan Evans (Dir. of Sustainability, Henderson Engineers), Nadav Bittan (BNIM), Brian McKinney (Associate Principal, BNIM), Doug Stevens (Principal, BNIM), and David Herron (envelope consultant, Principal at Herron + Partners); advanced CAD techniques normally used by students to design buildings were important in their systems' detail development, as shown in this diagram created by Brian Conklin, Nick Nelson, and Dylan Rupar to explain how the nodes work in their system.

should be considered that Manko's system was assembled using standardized and tested methods, while the experimental systems were built by the students in the college shop blending Manko-provided components and improvised pieces. As a result Manko's system set a very high performance bar in testing, particularly for air leakage, where leaking air was almost undetectable by the testing equipment.

System 1: Structural Spacer in Insulated Glass Units

Tyler Countess, Hanh Phung, Samantha Wai

This system was developed by a team that acknowledged the aluminum frames of conventional curtain walls carry the most structural loads in the vertical direction, while in the horizontal direction they typically are not used to their full structural capacity. Additionally the team recognized that with high performance glass systems, the glass conducted heat at a lower rate than the frame; eliminating any part of the frame could increase the overall thermal resistance of the system. The response developed by this group was to integrate a horizontal steel piece in the glass unit, as part of the spacer that already exists in insulated glass units. The structural spacer designed by the team is capable of spanning 6' in a 24 sq. ft. glass unit according to structural calculations. The team also added two internal films in the glass cavity to prevent convection in the glass cavity. To resolve installation, the students devised hidden steel angles in the vertical frame to support each glass unit, and worked out an assembly process to install the glass units with a foam gasket in the horizontal joints between units that was sealed with silicon as a final step.

Virtual testing indicated an increase in thermal resistance of 59% compared to the base system, an improvement believed to come from reducing the surface area where heat is lost at the horizontal joints, versus conventional mullions. In comparative simulations, HVAC energy usage in a commercial building could be reduced by 17% by using this system versus the conventional system. Eliminating horizontal mullions also increased daylight by 20% in tests. In live tests, the system performed quite well even though it was fabricated in studio instead of a factory and the 'homemade' glazing unit performed only slightly worse than the manufacturer's unit. While not measured, light admittance and view through the small prototype was increased over bulkier conventional mullions. This prototype's air leakage results could be improved, yet even so, the system was tighter than the panelized walls of the test enclosure.

System 2: Adaptable Façade System

Jose Martínez-Giron, Alex Otto, Lawrence Tan

Low-E coatings (sometimes referred to as 'heat mirror' coatings) are used in modern glazing to selectively reflect heat, while largely allowing visible light to pass through them. In cold climates, the low-E coatings usually face inwards to the interior while in hot climates, Low-E coatings face outwards to the exterior. Yet a drawback of these coatings is that at times sunlight moving through windows can be desirable, and the low-E coating can prevent beneficial radiation from entering the building in cold climates along with usable daylight. This team became familiar with this problem and sought to develop a system where Low-E coatings could be 'turned off' using an active façade system. During the semester the students created a system based on coated glass louvers that rotated within a glass buffer space. The low-E side of the louvers could then be faced inwards during cold periods, outwards during hot periods, and could be opened to allow a maximum amount of solar gain during sunny winter days.

The system showed great promise in computer modeling: with the system open, beneficial solar heat gain increased 14% over conventional double glazing and daylight transmission increasing 4%. Yet when with the louvers closed (low-E facing inwards) the thermal resistance more than doubled versus conventional double glazing. Live testing in the test enclosure is ongoing, but the group achieved a working prototype with louvers that rotated via a micro-controller and compact pancake motors that eliminated complex gearing and only increased the frame sight-line by less than one inch.

System 3: Pluggable Mullion System

Nathan Niewald, Cameron Marshall, Kevin Perks

Curtain wall profiles are typically rectangular and bulky, and accessory components such as directional louvers and shading fins are difficult to integrate. This team proposed a new round profile that could accept a variety of fin to enhance envelope performance in a kit-of-parts approach. Coincidentally, the round section in the profile reduces heat transfer by radiation and computer simulations showed heat transfer in the frame reduced by 15% versus high-performing triple glazing. This group approximated the round aluminum profiles by braking heavy aluminum sheet and welding it in the college shop; in the end, this process was challenging and testing the large prototype had mixed success. As these students work in the spring to integrate these systems into their design projects, a better understanding of the benefits of this system will be realized.

System 4: Composite Node System

Brian Conkin, Nick Nelson, Dylan Rupar

This system came from interest in relatively low cost multi-wall plastic products that are less conductive than glass but retain translucency and daylighting potential. These products are frequently used in place of glazing in industrial and agricultural applications where affordability is important. Doubled up on either side of a deep façade, these plastic products are excellent insulators and this team developed a framing system that could accept a polycarbonate skin on both interior and exterior sides in a deep wall, with translucent polymer fiber insulation filling the gap. The second issue addressed in this system is that of thermal transmission through the aluminum framing. To respond to this problem the team devised a framing system consisting of interior and exterior 'rails' that can interchangeably hold glass or polycarbonate skins. Between the framing rails, composite 'nodes' intermittently tie the rails together and allow connections from the assembly and to the building. The ingenuity of the system is that it allows conventional transparent window units and operable windows to be introduced freely within the system.

One of the most important implications of this system is that aluminum is used in an advantageous manner – to create a resilient, easily erected wall system – yet the amount of aluminum in the frame is reduced versus a heavier rectangular profile, and thermal transmission is subsequently reduced. Additionally, most of the aluminum in the system (except the caps) is inside the wall; this would allow the system to use a non-appearance grade of anodization for the rails, permitting the use of recycled aluminum instead of virgin aluminum.

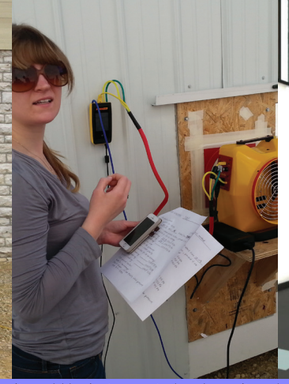
Simulation results showed a thermal resistance of R20 in the translucent parts of the panel: an increase in thermal resistance of 84% in comparison to the base curtain wall system, while still bringing in usable daylight. Whole building energy simulations, with a mix of polycarbonate and glass infill (80% and 20% respectively) showed a reduction in HVAC energy usage by 20%. The team also conducted several daylight simulations to show the impact of their system on daylight quality and the reduction of direct glare from sunlight.

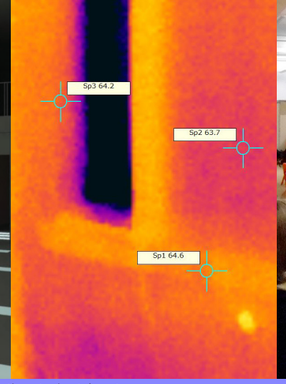
The team constructed their prototype after developing a series of smaller models to refine the design of the rails and nodes, especially the connecting interfaces. The final 1:1 prototype used improvised aluminum rails and composite nodes that were milled and machined in the college shop. Because the node design allowed a single node shape to be used for any of the connections in the system, fabrication of the nodes was very easy. As constructed, the system used polycarbonate from a local hardware store for the skin, loose polyester fiber to insulate the cavities, along with an IGU, caps, pressure plates, and weatherstripping provided by Manko. Performance of the system in real conditions was remarkable, with the translucent polycarbonate skin performing nearly as effectively as the opaque SIP walls of the test enclosure, and losing much less heat than any of the glazing tested. The interior frames also showed a reduction in thermal transmission over the base system's aluminum frame. In summary the testing of the prototype confirmed expectations from computer simulations and showed that the main strategies of the system to reduce heat loss were working as expected. The system also had very low air leakage results, with an infiltration rate of only 40% of that of the rest of the panelized test enclosure, despite having many parts and joints. Overall, the system demonstrated that the depth, multiple layers, and material properties of the components could make a very efficient translucent wall.

System 5: Structural Foam Composite

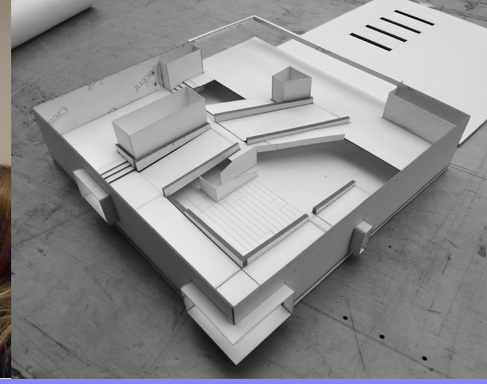
Kate Gutierrez, Kristina Johnson, Jenelle Tennigkeit

The final system discussed in this paper was developed by a group interested in unitized curtain walls: those differing from stick systems in that the units are assembled in controlled conditions in the factory and set as units in the building façade. Other interests of the group included construction via 'grand blocks' as that used in the fabrication of large ships, and non-linear construction, where assembly or disassembly sequencing can be flexible and future modification and service is simplified. The group began with the assumption that in high performance buildings, most of the walls must be opaque rather than glazed. The solution developed by the group after some experimentation and research was that a high-performance foam panel could replace frames yet support glass windows while distributing loads to attachment points on the building. Simple calculations confirmed that





(left to right): The test enclosure was set up in the Seaton Alley so it could be instrumented and monitored during tests (numbers identify the students' systems as they appear in the text); students conducted an infiltration test of their prototypes with a blower door instrument; translucency and daylight were simulated by some student groups using the lighting simulation tool Radiance; thermography was an important tool in the studio for investigating relative temperatures through the assemblies during tests.



(left to right): In spring, students presented their research work during a lunch-and-learn hosted at BNIM in Kansas City; students (Dylan Rupar pictured) continued in the spring to develop design proposals for a new library branch in Des Moines that will integrate the curtain wall systems they developed, while continuing the dialogue of performance and design integration with professionals; a study model by Brian Conklin shows the emerging intersection between envelope design, site, and interior space in his library design.

structural foam products have enough structural capacity to support large glass units (50SF and larger) so long as minimum foam areas are maintained around the perimeter of the glass. The team argued that such foam panels can reduce the weight of conventional glass and infill panel systems by 60%, reducing construction and transportation energy. The light weight of these wall panels and their ability to flex slightly to close gaps would enable a more continuously sealed wall that could also be easily modified or repaired by removing and replacing panels.

The final 1:1 prototype produced by the group used foam as the core of the panel, substituting actual structural foam with polystyrene with similar thermal properties. The panel was fabricated using the CNC mill in the college shop, and it varied in depth throughout its area, demonstrating the concept of an 'active Z-axis' that could be useful either for structural, environmental, or aesthetic purposes. A single glass unit was installed in the panel using structural sealant without any frame, in a joint designed to reduce air leakage and prevent condensation. The exterior of the panel was finished in heat-bent fiber-reinforced plastic and the interior was finished with attractive maple-veneered plywood.

In the computer simulations results this system had excellent thermal resistance (R40) through the foam sections, well below the typical opaque walls dictated by energy codes in our region. Predictably, the system matched the thermal performance of the test enclosure (R21) very closely under the test conditions. With this performance in mind, a whole building energy simulation tested with 25% glazing and 75% opaque infill revealed a reduction in HVAC energy usage by 12% -- although this improvement could be even higher for a project that favored higher opaque wall percentages. Predictably, the monolithic nature of this system performed very well in infiltration tests, showing virtually no measured leakage in the lower pressure test.

DESIGN INTEGRATION

The research undertaken in the studio demonstrates first that high performing curtain wall systems, like those produced by Manko, are not the same glass walls used in 'energy hog' buildings of the 20th. These systems resist thermal transfer as well as some opaque walls, can reduce building infiltration, and offer a managed and serviceable envelope solution. For these reasons these systems will continue to be useful in low-energy buildings when they are properly specified and installed. That said, the systems developed by the students all showed potential performance improvements over today's curtain wall systems: both average curtain wall systems, and to some degree even high-performing systems like those offered by Manko. While economics was not a part of the studios' analysis, any of these three systems could be reasonably produced using readily available methods and processes. It is feasible that any of these systems could be developed for a large project through direct collaboration between manufacturer, architect, and consultants.

While the fall semester of the studio engaged building science and construction technology issues, the studio aims to test the integration of these systems in a building design in the spring semester. Kevin Dix and the architectural collaborators will assist the students as consultants while they work to integrate their experimental systems into a comprehensive architectural design. The studio is also excited to interact with Stephen Kieran from KieranTimberlake, who will join the studio for a dialogue before he presents his Ekdahl Lecture to the APDesign community in the later in the spring.

For their spring design project, students are working with the Des Moines Public Library to program and design a new library branch that addresses the evolving needs of community libraries, while demonstrating a high standard for environmental quality and energy efficiency. The branch will serve Southeast Des Moines, a growing and diverse area on the perimeter of the city. Students traveled to Des Moines in December 2014 and will be returning in March of the 2015 semester to engage the Des Moines library administration while also seeing some recent architectural work in the city and also visit BNIM's Des Moines office. During their December visit, students toured three libraries with Greg Heid, the Executive Director of the library system, which features four LEED-certified buildings. Students had a chance to discuss their design assignment with a group of librarians and managers in order to better understand the system's specific needs and outlook. The highlight of the visit was a tour of the Central Library, designed by David Chipperfield and executed with Herbert Lewis Blunck Architects. Students also visited Substance Architects and spoke with Paul Mankins FAIA, a principal at Substance and one of the architects who worked on the Central Library project at HLB. The studio was also able to drop in to the Des Moines office of BNIM and see progress on a new Steven Holl project, while getting a guided tour of the Iowa Utilities Board and Public Advocate Building, a project that won a Top Ten Plus honor from the AIA's Committee on the Environment.

Extending the studio themes of testing and research into their design work, the students are using many of the performance-based tools from the fall to optimize their designs for daylighting and thermal performance. The students will also further develop their curtain wall systems to the level of architectural details as part of their individual design projects. In this way design integration is a final step in evaluating the feasibility and the architectural potential of the systems they developed in the fall.

FUTURE RESEARCH POSSIBILITIES

The research infrastructure behind the project will be central to future teaching-oriented research, while continuing to seek collaborative opportunities with practitioners and manufacturers who are interested in exploring the intersection of design, science, and inquiry. The studio of 2014-15 follows a previous year studio that worked with the A. Zahner Company in Kansas City to examine the thermal performance of ventilated facades. Continuing forward, the studio aspires to match inquisitive Kansas State architecture students with future collaborators from industry and practice that can share in the process of inquiry, supported by state-of-the-art testing infrastructure, the reusable test enclosure, and excellent fabrication facilities in the college. Research results from these studios continue to reach international audiences through publications and presentations, contributing to the expansion of building science knowledge.

The studio was very fortunate to work with a team of collaborators that know the importance of research and who were willing to contribute their energy to the project. Reflecting on the research process, what was shared in the studio represents the collaborative and innovative approach to sustainability that students will see in their future careers, as technology in manufacturing and building analysis brings new opportunities to advance building performance and performance brings new value to the craft of design. In a larger view, the studio confronts the issue that building science exists not just because of what is known about buildings, but what is unknown: suggesting inquiry is inherent in how designers and manufacturers will work in the future. For the students – themselves future professionals – the studio was an opportunity to share a process of innovation that will be integral to designing the highest performing buildings of tomorrow.

REFERENCES

Boyle, Brian J., John Runkle, and Richard Ziegler. "Achieving Tight Buildings Through Building Envelope Commissioning." Proceedings of the 3rd AIVC Airtightness Workshop. Washington DC, 18-19 April 2013.

Brandt, Robert M., Gordon H. Chong, W. Mike Martin. Design Informed: Driving Innovation with Evidenced-Based Design. Hoboken, N.J.: John Wiley & Sons, 2010.

Lawson, Bryan and Kees Dorst. Design Expertise. Oxford, UK: Architectural Press, 2009.

Steven J. Emmerich, Andrew K. Persily. "Energy Impacts of Infiltration and Ventilation in U.S. Office Buildings Using Multi-zone Airflow Simulation." Proceedings of IAQ and Energy 98 Conference. New Orleans, LA 22-27 Oct 1998.

Steven J. Emmerich, Tim McDowell, Wagdy Anis. "Investigation of the Impact of Commercial Building Envelope Airtightness on HVAC Energy Use." National Institute of Science and Technology, 2005.

Yeomans, David. "The pre-history of the curtain wall." Construction History, Vol. 14 (1998), pp. 59-82

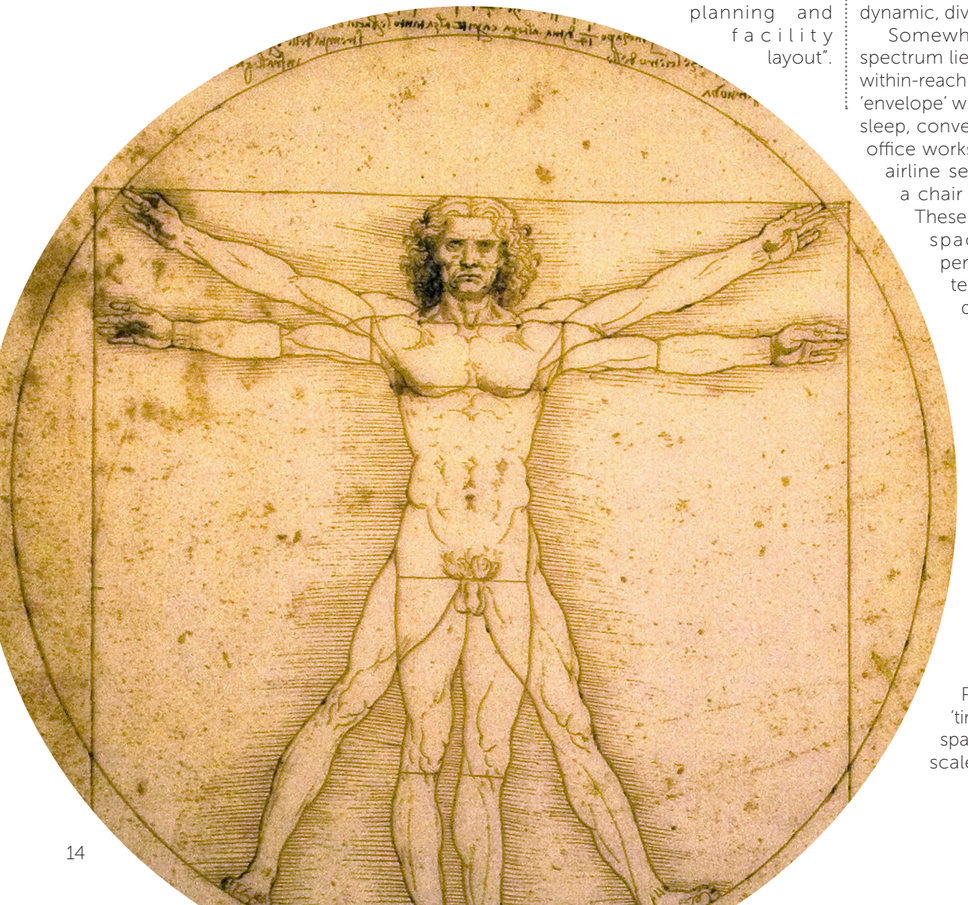
Yeomans, David. "Origins of the Modern Curtain Wall." Association for Preservation Technology Bulletin, Vol. 32, No. 1, Curtain Walls (2001).

The Near Environment-

The Within-Reach Realm of Multi-Disciplinary Design and Development

Assistant Professors
Dave Richter-O'Connell
and Steven Davidson
12/2014

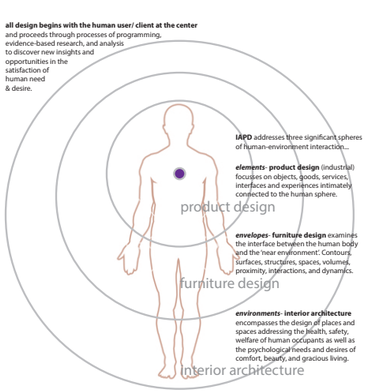
The 'Near Environment' is an environmental design term that refers to an invisible, three dimensional 'sphere of influence' encircling the human body, describing a unique, controllable, defensible and experiential pocket of personal space. Design educator Edward Ostrander defines the 'near environment' as "'the area between the skin and the walls', thereby including such man made environmental elements as clothing, furnishings, appliances, interior design, space planning and facility layout".

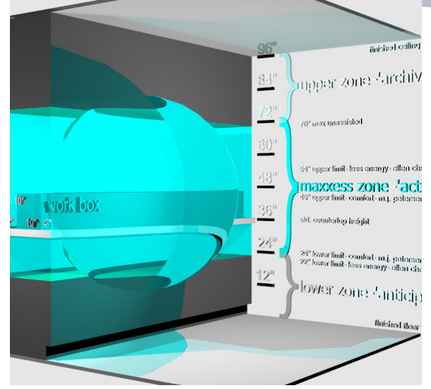


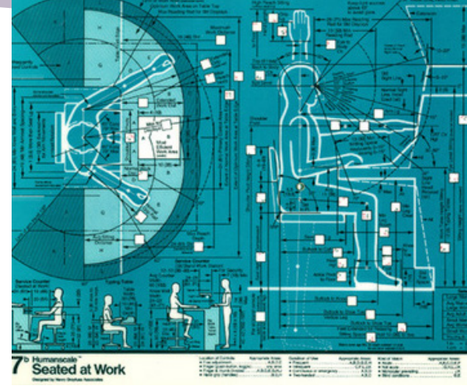
Design researchers Wendy McClure and Tom Bartuska characterize the 'near environment' as part of a "'content-component-context' continuum" where 'content' and 'component' refer to products and furniture, and 'context' refers to interiors, exteriors, landscapes and ultimately planet earth! Both descriptions suggest a range of design scales coexisting within built environments, from the close contact and interaction of designed 'elements', objects and artifacts to the macro scale of dynamic, diverse interior 'environments'.

Somewhere in the center of this spectrum lies the 'near environment'. A within-reach behavioral and performance 'envelope' where humans work, play, eat, sleep, converse, read, relax and live... an office workstation, a student's desk, an airline seat, a table at a restaurant, a chair grouping in a hotel lobby. These important, human-centered spaces-within-spaces are perhaps too easily traced with templates and calculated for density, codes and access, but underappreciated for the rich slices of life they stage and support.

Designers, architects, sociologists and behavioral psychologists have quite successfully defined and described these spaces over time- from Leonardo's Vitruvian man, to Le Corbusier's Modulor, Hall's Proxemics, Dreyfuss' Measures of Man and Woman, Appleton's Prospect & Refuge, etc. Christopher Alexander's Pattern Language built a 'timeless way' of designing living spaces around working through scale ranges from geographic







regions to 'jars of jam' on kitchen shelves. Pattern 127 describes an Intimacy Gradient that introduces us to the Near Environment and subsequent steps take us deeper and deeper into our innermost spatial needs and desires. Designers have collectively benefited from the insights and observations of these researchers as they pertain to the design of our personal and interpersonal bubbles- physically, cognitively and emotionally/ behaviorally.

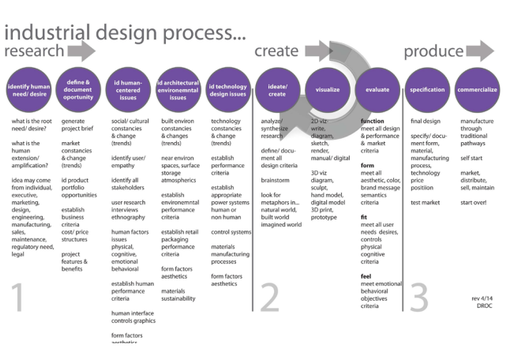
Other disciplines understand this experiential orb as well. Culturally we have a need to legislate, protect and prosecute incursions into these spaces through legal descriptions of assault, harassment, and restraining orders. Advertisers visualize a bubble of bad breathe that keeps prospective love interests at bay unless they chew a specific brand of chewing gum. Recently the very public quarantining of Ebola patients has reinforced a sense of a critical zone immediately around patients and the spaces they've occupied during contamination. More positively, we imagine colorful spiritual auras and chakras that emanate 'good vibrations' around us. The recreational world abounds with invisible spatial constructs of strike and personal foul zones directly connected to our bodies. Collectively, Pop Culture even agrees upon fictionalized 'force fields' of concentrated energy that render some 'Super' members of society to be invincible!

IAPD435 Studio III comes as the second Product Design focused studio in the fall of the 3rd year. In 2006 Professor Allan Hastings, with the support of Hawker Beechcraft, created a significant legacy project where students design and model a re-imagined, full scale corporate jet interior. Hastings describes this space as "the envelope in which the user and product come in contact" in the "zone of association between space and user." Assistant Professor David Richter-O'Connell, team teaching with Hastings, saw the project as an archetypal 'near environment' study- "a purposefully defined, high performance environmental envelope populated with people, performing a variety of tasks and supported by designed spaces, furniture and objects." In recent semesters, professors Richter-O'Connell and Steven Davidson have worked to re-frame the project as an advanced 'near environment' problem that leverages the legacy work, but broadens the description to define a unique user and task opportunity and then deliberately focuses on spaces, seating, surfaces, storage, lighting, atmospherics, sights, sounds, smells, tastes, tactility, controls, and touch points. Higher order needs are also explored- privacy, connectivity, focus, comfort, stress relief, etc.

In the fall of 2014, Professors Richter-O'Connell and Davidson created a collaborative project with Nemschoff/ Herman Miller Healthcare for students to explore residentially-based healthcare treatment trends and how and where those treatments may be administered in a contemporary residential interior.

Described as a Home Healthcare Lounge/ Treatment Station/ Communication Portal, four teams of 6-7 students tackled Chemo Therapy, Gastro Intestinal Cleansing Procedures, and Upper Respiratory Regimens for chronically ill patients whose conditions allowed residentially-based treatments. Team solutions ranged from all-inclusive, chair-based products to fully modular furniture and equipment systems. One team turned a master bathroom lounging tub into a 'Home Spa' with the ability to administer periodic intestinal therapies. Some addressed self-administered treatments while some accommodated seating and work stations for visiting care providers. One team, in interviewing a local doctor, determined that an in- home version of treatment he currently provides in a clinical or hospital setting, could save patients $5,000-$6,000 a month in treatment, equipment and clerical costs.

Gary Cruce, an Industrial Designer, Furniture Designer and currently the Director of Nemschoff New Product Development helped write the Project



Statement; digitally attended kick off, mid crit, and final crit, contributed towards costs of modeling materials; and was greatly impressed with the quality and quantity of research, design and 'make' our students had accomplished over the course of 6 weeks. "Overall I am impressed by the effort exhibited from all of the teams and feel there was real work performed in tackling this project brief. The in-depth preparation of the research and the presentation of those findings was excellent and I learned a few facts myself." Cruce's original interest in working with IAPD was to explore "the role of healthcare in our everyday lives and investigate how that would impact our home environment." Additionally "When we consider the impact of healthcare on our home environment, coupled with the reality of a large generation of people entering the retirement years, it drives us to consider the impact of healthcare needs such a large demographic group will have on the home environment. My hope was to challenge these teams with that level of vision and look for the impact of not only the treatment but the complete need for wellness in our lives."

The 'near environment' project with its multi-disciplinary approach to design employs some interesting process and methodology strategies. One of the most entertaining activities comes during project kickoff as a classroom activity that invites two student volunteers up to the front of the room where a formally set dining table is unveiled from beneath a blanket. The students are asked to sit and act out a variety of behavioral scenarios... meeting an old friend for lunch, having a first date, making a marriage proposal, breaking up a relationship. This often quite funny role playing of interpersonal and spatial experiences reminds students that 'life happens' within designed spaces and is affected by the built objects that surround them... table top centerpieces that frame or block views, the diameter of the table and resulting distance between couples, the relative privacy and proximity to other tables and diners, distracting sight-lines, harsh lighting, distracting sounds, service interferences, etc. This reinforces the importance of the careful consideration of each 'near environment' and the myriad human experiences each must successfully support.

Another important aspect of the project is that, other than the Furniture Design Workshops, this is the only required full scale build of designed products, furniture and interior spaces in the IAPD curriculum. This allows students to define spatial relationships and then test their performance and validity in real time, real space scenarios.

The team aspect of the project adds an additional level of challenge. While not a true multi-disciplinary product development team with business, marketing, engineering and manufacturing input, the multi-designer makeup requires students to work through conflicting opinions, forge bonds between heretofore disparate groups and individuals, and meet deadlines and deliverables. The overall size and make up of the teams yielded a collaborative, opinionated, but generally respectful level of interaction and the high quality results, coupled with Nemschoff's positive reception of them, seem to indicate a high degree of interactive team success.

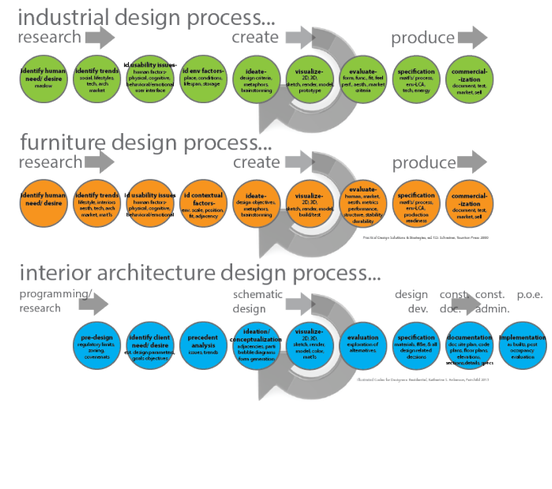
Methodologically, the creation of a Function Structure has become a process cornerstone of this project. Students learn that any endeavor is framed by a sequence of activities that lead up to it and a series that follows. This illustrates that every human action is a temporal and spatial process and not a discrete moment in time, and great design insights can be gained by a broader framing of the problem. An added strength of the Function Structure build exercise is that it, by default, creates an evaluation matrix that teams can use to measure relative success of design decisions as they progress through the project.

Perhaps most importantly, the 'near environment' project provides an opportunity to intertwine the three prongs of the IAPD program- Interior Architecture, Product Design and Furniture Design and see the commonalities and contrasts between the three disciplines processes, methodologies and outcomes. Professor Davidson, a 17 year faculty member and a KSU IA 1977 graduate, acknowledges that verbiage and framing may be updated, but still sees the project as a "the continuum of the legacy of Jack Durgan, who saw the genesis of design in the user and his/her needs, perceptions and nuanced relationships to a particular environment." Third year IAPD student Emma Cole observes, "It was rewarding to see our understanding of design be easily translated from design sector to sector. The flow from furniture to product to spatial environment was natural, which was very affirming to recognize." Another third year IAPD student, Alex Marschman reflects that "It presented a new way of thinking and creating connections. A lot of consideration about ergonomics, the user, the user's abilities when using the home health system."

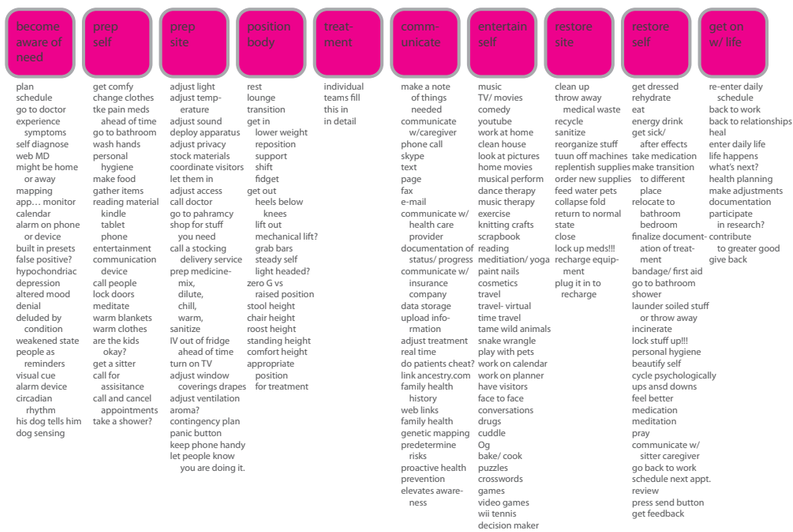
Since the fall of 2012, Professors Hastings, Richter-O'Connell, Davidson and Ryadi Adityavarman have worked with several new corporately-sponsored 'near environment' projects. In 2012 students worked with Herman Miller to imagine Distance Learner Remote Study Stations for working adults returning to University for advanced degrees but needing to stay in their communities and workplaces and commute to campus digitally. An unanticipated, but gratifying outcome of this project was the acceptance of proposal and subsequent invitation of two team representatives to the 2012 KSU research symposium. The enthusiastic reception of their presentation was enhanced by the fact that they were the sole undergraduate entries in the event.

2013, with the added support of IAPD alumnus Kayla Sorenson, third years engaged with HON on creating 'cold seat' work stations around Mobile Workers whose personal bubbles are constantly moving through time and space in an office over the course of a day, week or month. Both projects required sensitivity to a wide range of workplace age and experience cohorts from Veterans to Baby Boomers, Millennials and Mosaics. HON reviewers remarked that IAPD students' mock-ups and models rivaled the craft of their corporate model makers and the depth of dive of their research far exceeded work they were running concurrently with senior level student groups from other Midwestern Industrial Design Programs.

This fall, the 2014 Regional IDEC Conference hosted by Kansas State IAPD, overlapped the project schedule, and Assistant Professor Richter-O'Connell made a conference presentation framed around the 'near environment' project and the strengths of its multi-disciplinary nature, the crossovers in process and methodology, and the power of the culminating full scale build. It was well received by the attendees and served as a public showcase of the unique nature of our multi-legged program and the invaluable corporately supported programs and projects within IAPD and APDesign.



Home Healthcare Station/ Portal Nemschoff HM Project Fall 2014
Function Structure...



Peace and Design:
Emerging Fields of Harmony

By: Mary Cosimano

Photos courtesy of Vibhavari Jani and Katrina Lewis.

"Design must reflect the practical and aesthetic in business but above all...good design must primarily serve people" – Thomas Watson.

Interior Architecture & Product Design (IAPD) students are trailblazers in the design world, always pushing the path and relevancy of design to greater heights. This passion and drive stems from the foundation laid by their mentors and professors.

The faculty of IAPD are leaders in the design field, focused on bettering communities through their designs, and their influence and passion affecting not only the students of IAPD, but individuals worldwide.

Three faculty members have taken this focus to a new level while also stamping their individual mark on the journey toward conflict resolution by receiving the International Rotary Peace Fellowship.

The Rotary Peace Fellowship is a prestigious award for up to 100 people a year (as many as 50 of these people are selected for the three-month program in peace and conflict prevention and resolution at Chulalongkorn University in Thailand). The fellowship is awarded to leaders who promote cooperation, peace, and conflict resolution in their communities and around the world. They are chosen for their ability to have a significant and positive impact on world peace throughout their careers.

Once this fellowship is granted, recipients spend time at one of six universities around the world obtaining either a Master's Degree or Certificate in Peace and Conflict Studies. All three IAPD faculty awarded this fellowship were assigned to Chulalongkorn University in Bangkok, Thailand studying over the summer for the Certificate program.

Rotary Peace Fellowships have historically been awarded to individuals in fields such as Government (20%), Teaching (8%) and Non-Governmental organizations (38%) – among other fields. Until 2012, no professional in the field of design had been awarded the fellowship. The designer presented this landmark honor was IAPD Professor Katrina Lewis.

Along with Professor Lewis, both Professors Vibhavari Jani and Ryadi Adityavarman have been recipients of this award over the past four years and the influence these professors have is continually seen through teaching and completed work of IAPD students.

Under the influence of these three professors along with their collaboration with fellow professors, students have a new focus. Students now work on design topics with a worldly view in order to solve a community issue. This perspective makes students think more creatively and ultimately helps them become leaders in the design world.

Each faculty member wanted to gain something different from their fellowship.

As the first designer awarded the fellowship, Professor Lewis expected a lot from her experience. "My hopes from the experience were threefold. I hoped to acquire theoretical understanding and practical knowledge experience with peace and conflict issues; learn how to enhance my teaching to challenge students to consider how they can promote peace, understanding and justice through design; and, to build relationships with my Peace Fellows."

Professor Jani, the second Peace Fellow from IAPD wanted "to acquire theoretical knowledge about the nature and root causes of conflict; its interrelationship with violence; and, how to diagnose, analyze and find resolution for these problems. The Rotary Peace Fellowship provides the rare opportunity to study issues through the Certification. I wanted to understand how designer educators can apply conflict resolution theories in their teaching and to develop peaceful sustainable design solutions."

Professor Adityavarman, the most recent recipient of the award, views his opportunity as a learning adventure for added personal growth, not merely in the classroom. "I have always believed in the importance of open tolerance, genuine kindness and respectful equality whether in life or design. All of these values are embodied in the Rotary Peace Fellowship."

Professors Lewis and Jani have taken their experiences and brought global issues and solutions back to the campus where they were poured into their classroom and department as a whole.

During Professor Lewis' time as a Fellow, she was given the opportunity to gain meaningful interactions with the classmates which helped her better define how design relates to peace and conflict resolution issues. Professor Lewis reflects on her experience saying "I explored new theories about peace and conflict resolution strategies, something that we do not touch on in design. In considering how conflicts occur and possibilities for prevention, I was able to consider just how design factors into these issues and create exercises for my students." The projects she was able to create vary in topic, but the theme of humanitarianism is apparent in the projects.

Professor Lewis' experience began a chain reaction, instruction became more focused on using design to help solve community and world problems in addition to traditional focus on function and aesthetics.

During the summer of 2013, Professor Jani joined 19 fellowship winners and her eyes were opened to not only issues plaguing the world but also the future of mankind. She believes the three biggest challenges facing the world are "how to control population growth, eradicate poverty and minimize environmental degradation."

During the three month study, the field study in Chiang-Mai, Thailand and Cambodia had the greatest effect on her. "Seeing the conditions and various human rights violations was difficult. But, despite their hardships, the people of Cambodia had a smile on their faces and seemed very sweet. They made me realize how lucky and privileged I am."

Prior to her fellowship, Professor Jani had been working with her students on a project focused on designing rehabilitation centers for Wounded Warriors. During her fellowship, she had the opportunity to learn more, first hand, about the impact design can have on communities affected by wars. To her, it was obvious that architects and designers can assist in post-construction efforts through the design of housing and other building projects. She has since integrated this thought process into her classes and the designs each year have become even more open minded.

To this point, the designs had been well received by the local Fort Riley community and consequently have opened the eyes of students to the needs of soldiers in the immediate area as well as throughout the world.

Professor Adityavarman hopes his summer 2015 experience will allow him to bring back his knowledge and apply it to his teaching while also influencing the IAPD curriculum after his experience in Bangkok this coming summer. "I plan to teach the students to understand the importance of design within its society and cultural system. Peaceful harmony is not just critically needed in regions with explicit political and armed conflicts...even our societal values promote subtle and yet conflicting patterns in life and education that has created out of proportion stress among students."

IAPD faculty are at the forefront of design and conflict resolution. Viewing conflict resolution through design is a new concept the Rotary Peace Fellowship and designers are embracing equally.

Herman Miller: Setting the bar

By: Mary Cosimano

Education is changing. Student/teacher collaboration has become more digitally focused while funding for education seems to disappear on a daily basis. Universities nationwide are addressing these two in various ways. Solutions include cutting programs or classes while other improvise by adding outside funds or making do with what supplies they can afford.

The department of Interior Architecture & Product Design (IAPD) believes in improvising rather than reducing efforts. The most fruitful effort has been by reaching out to professional partners for support, both financially and educationally.

IAPD's quest for partnerships began during the 2012-2013 academic year. Herman Miller (a furniture manufacturer) partnered with IAPD to collaborate and bring continuity to the educational experience. The project titled "21st Century Education: Paradigm Shift from 'Instruction' to 'Learning' Encourages Innovation and Collaboration in Design" focused on bringing theoretical learning to life.

Herman Miller employees Susan Whitmer, Anthony Rotman and IAPD graduate Andrea Nelson worked closely with IAPD faculty and the students to help achieve success and learning outcomes set up by the project. They were able to travel to campus both in person and virtual meeting. The constant communication helped both parties stay engaged and also taught students proper ways to engage with professionals via technology.

The representatives facilitated student progress by working with individuals and groups to increase the quality of designs.

Herman Miller assigned each IAPD cohort different guidelines and goals for their specific project. Assignments ranged from designing work spaces for employees pursuing a distance degree from work to designing/building organization systems for desktops.

Funds supplied to the department were also used to supplement student field trips. Participants were able to travel to Kansas City for day trips to hold reviews in the local Herman Miller office. The experience gave them irreplaceable feedback from professionals in the office, ultimately elevating the quality of the student's design. The funds also allowed the 4th year class to take an overnight field trip to Herman Miller's headquarters located in Grand Rapids, MI. Visiting the headquarters allowed students to be inspired and apply inspiration to their designs.

Resulting from their experiences and applications, each cohort connected what they learned from one class and applied it to a subsequent class throughout the academic year. A direct result was seen in the fourth year students Research Methods course. They learned new tactics for exploring topics and took these skills and applied them to their studio class. The refined research skills allowed students to dig deeper and as a result, almost all students had research accepted into local or national conferences. Without the support of Herman Miller and their employees' feedback, projects may not have been as successful.

Not all projects were cohort specific. Students were encouraged to work together, reaching out of their academic year. In one case, second year students were encouraged to study and create a photo essay about the fifth year classes desk organization. Through their task, students noticed the collection of clutter was due to the design of the desks. Students used their photo research to create 'storeganization' units for desks. These organization units were designed with Herman Miller's new office furniture in mind. The result of this project was not only a number of great organization units, but also opened communication between the second year and fifth year classes allowing for greater collaboration efforts.

The partnership between IAPD and Herman Miller spawned the creation of a more cohesive and learner focused curriculum. Now the department is focused on growing and fostering skills students learn from class to class throughout their four years with IAPD.

Herman Miller's generous support for the students and the department set the bar for future efforts by them and other companies. Their support no doubt has helped and will continue to help IAPD remain in the top 10 programs nationwide. Without financial support, the lack of funding could hold IAPD students back from reaching their full potential.

Photo courtesy of Brianna Sprague

IAPD STUDENT PROJECT SOARS with support from corporate mentors

Corporate partners are often the backbone of applied learning, giving students a glimpse of real-world demands in a global marketplace. Whether through lectures, mentoring, sponsorships or internships, APDesign's corporate partners help elevate the student experience.

Emma Montgomery, of Sabetha, Kansas, recently benefited from such a partnership in the Department of Interior Architecture & Product Design (IAPD). Through weekly teleconferences with employees in the Dallas office of design firm Gensler, Montgomery and her fellow studio classmates gained professional advice on their design projects during the fall 2014 semester.

"We actively pursue corporate partnerships because it adds another dimension to the student's overall learning experience, and we think it's a key aspect of our department's consistent reputation of excellence," said IAPD department head Katherine Ankerson.

Montgomery's design of a flexible learning space, inspired by the concept of urban porosity, won the Grand Prize in the NEXT Student Design Competition, hosted by international furniture design company Steelcase. She received $1,000 cash prize, and Steelcase also donated $1,000 to IAPD.

"I was immediately struck by Emma's well-planned design concept when I first saw her work," said Allison Seyler, the Gensler designer who acted as Montgomery's studio mentor.

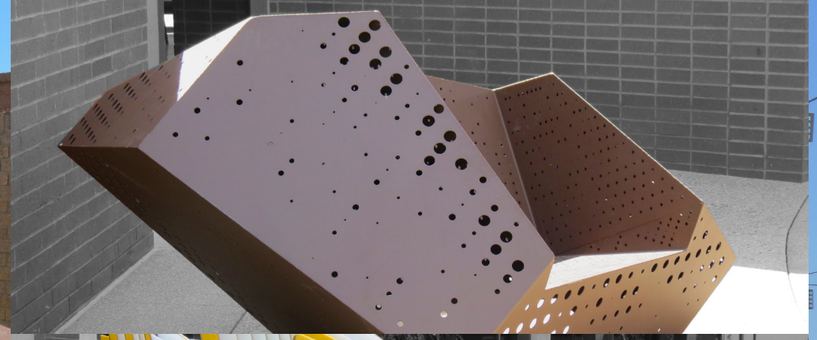
Seyler, who graduated from IAPD at K-State in 2010, said students aren't the only beneficiaries of corporate partnerships.

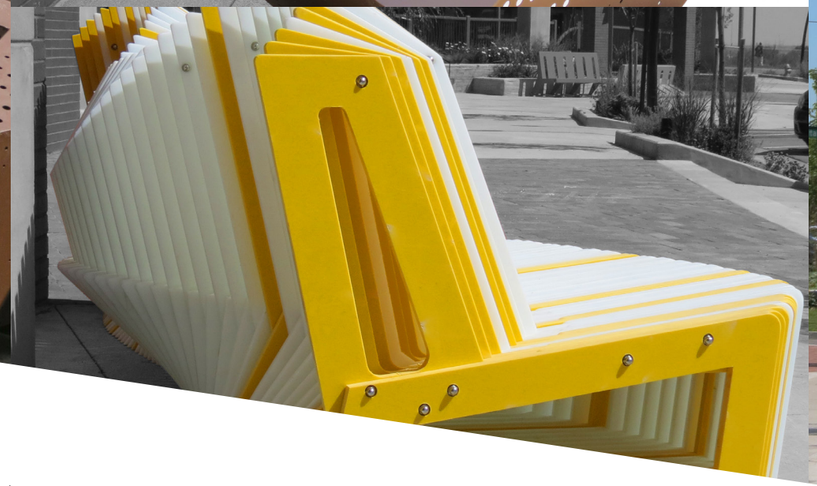
"Mentoring students and collaborating with professors help us as designers and architects gauge trends in design and influence students as they enter the profession," she said. "It's a great way to attract new talent and we are so inspired by innovative student work."

Montgomery, who is studying this semester at Centro Studi in Orvieto, Italy, said it was exciting to work with such a "forward-thinking design firm" as Gensler.

"It speaks to the high standing of the IAPD program and the effort made by IAPD faculty to foster engagement between design firms and students," she said. "Gensler has a great reputation in the worldwide design community, and this allowed my classmates and I to gain insight into the professional world through feedback from practicing designers."

To learn how individual or corporate support can make a difference for APDesign students, please contact the college development office at natalies@found.ksu.edu or (785) 532-7654.





Bringing the Digital to Life:

The Bridge Between Practice and Pedagogy

By: Mary Cosimano

In many fields, the higher education and the professional world are all too many times separated, and students are seldom given the chance to see how they can put their skills to use in a "real" setting, adding an element of difficulty to the already daunting transition into "the real world." But think of this, what happens to the students' learning when educators bring the real world to the classroom? Does hands-on practice make a difference?

'Design + Make' is a recent philosophy for many in the world of education. The process transforms conceptual learning to an applied learning environment. Students engaging in 'Design + Make' apply the theoretical ideas living on paper or on a computer screen and put them to the test through a series of prototypes. As a result, they create and learn about processes as they progress through design production.

Education programs countrywide are beginning to embrace this concept but for Kansas State University's Interior Architecture & Product Design (IAPD) department, 'Design + Make' is more than a concept; it is a long-standing reality all faculty, students, alumni and corporate partners embrace.

Each year the boundaries of Design + Make grow in complexity and involvement. Spring 2014 gave students the most hands-on opportunity to date applying this concept in a multi-disciplinary real-world application.

Professor Dustin Headley offered an elective titled "Digital Fabrication." The class drew attention from students not only in IAPD, but also other APDesign disciplines including Landscape Architecture and Architecture.

The class and its' concept was created with help from John Norris, owner of Norris Designs, a landscape architecture firm headquartered in Denver, CO.

Mr. Norris and department head Kathy Ankerson met through Mr. Norris' involvement with the Dean's Advisory Council and spoke about a potential partnership. From there, this innovative project which began as a hypothetical idea turned into a fruitful and expanding experience. "When I met her, I had a feeling she might be interested in collaborating for a furniture project," Mr. Norris said. "I always knew the IAPD program was involved in furniture design and I just felt like I had a client that was interested." One goal from the client was to differentiate the new community through the creative designs.

Brookfield Residential, the client in question, is working on developing a new development in Denver called Midtown. Midtown is being designed with new urbanism ideals in mind. Mr. Norris knew Brookfield Residences was looking for innovative furniture pieces around the complex to create a memorable sense of place; and in turn, Mr. Norris knew IAPD was capable of delivering the product.

Advertisement of Professor Headley's class depicted it as a chance to design furniture digitally and students were excited but unsure of what the semester would bring. "I wasn't exactly sure what to expect," Katherine Moeder, 2014 IAPD graduate said. "I thought we would learn the basics of Grasshopper software and design some outdoor furniture."

To kick-off the project, an interdisciplinary charrette was held In Seaton Hall. Participants included many students representing all of the disciplines in APDesign, (many were not even enrolled in the course, but viewed it as an opportunity to engage with the other disciplines). Lorn Clement's Landscape Architecture design studio participated in its entirety for the charrette, collaborating to create diverse teams. Members of the class then worked together to design unique outdoor furnishings that would create a sense of place in the new development from this initial charrette.

Professor Headley noted he was impressed by the work done by all the students. "They took to the experience quite rigorously. The added dimension of having a real client with needs and also resolving functional details not only increased activity and quality, but enabled students to see how industry design process operates."

Throughout the semester, students continued to hone and enhance their designs within their class teams as well as with Mr. Norris. Designers took care to ensure the seats were comfortable and the materials were sturdy enough to survive Colorado's harsh winters.

To bring the designs to life, students worked with Advance Manufacturing Institute (AMI) for fabrication. The opportunity for students to work with a manufacturer outside of the department was an immense learning opportunity for the students. They learned how to effectively convey needs and timelines to AMI engineers while working with them to ensure pieces were completed correctly.

The success of the design process and ultimately fabrication was, in many ways, enhanced by the interdisciplinary approach to the project. Throughout the course, students in Architecture, Landscape Architecture and Interior Architecture & Product Design all worked together and collaborated on projects, each bringing their own set of ideas to create a cohesive product. Teams included Ben Slater, (Architecture) and Wesley Moore (Landscape Architecture) who designed the Sine Bench, Alex Meyer, (Architecture) who designed the Flip Bench, Matthew Cadle and Mohammed Dinn (both Architecture) who designed the Aero Bench, and Laura Stockdell and Kate Moeder (both Interior Architecture & Product Design), who designed the Boulder Series. Richard Thompson (Interior Architecture & Product Design) created the Custom Bench. Other students involved included Nathan Cook, Nick Ruggeri and JJ Johnson from Architecture.

Professor Headley believes "being able to include students from the other programs embodies what the department and college strive to achieve in our educational models – that we are collaborators that can enhance the quality of any designed experience."

A hope of Mr. Norris' involvement with IAPD and APDesign was "to include students and provide a unique learning opportunity by working with clients." He also sees it as his chance to bring the experience of working with clients into the classroom to teaching students variable skills they will need in their future.

The opportunity students had helped them gain a new perspective on how to appropriately work with clients once they graduate from the university. Kate Moeder thought the best part of the experience was having her eyes "opened to Grasshopper, manufacturing, materials and working with an actual client." She has been able to put these lessons to use during her post-graduation time.

Resulting from the students' hard work was creative furniture pieces; beautiful and ready to be used. The pieces were shipped to Midtown, Colorado and are now in place.

Professor Headley, Mr. Norris and all the students involved are pleased with the outcomes of their furniture pieces. Resulting has been the beginning of the growth of partnerships between APDesign, IAPD and outside companies.

Professor Headley hopes being able to develop relationships and collaborations that share the attitude of APDesign will help enable students to bridge the gap between practice and pedagogy. Bridging this gap helps develop the relationships between disciplines as well as with companies who can offer unique perspectives and skills to APDesign students.

Flint Hills organization has impact on community and students

Photo courtesy of Kansas State University

Faculty, alumni and students from the Master of Regional & Community Planning Program are playing a big role in shaping the future of the Flint Hills. In 2013, the State of Kansas launched its' first Metropolitan Planning Organization in three decades, the Flint Hills Metropolitan Planning Organization(FHMPO). FHMPO is the designated entity to provide regional transportation planning and programming services for the safe and efficient movement of people and goods throughout the FHMPO planning area. Special emphasis is placed on providing equal access to a variety of transportation mode choices such as transit, bicycling, walking, automobile and carpooling and on ensuring effective public involvement throughout the planning process.

The Flint Hills Metropolitan Planning Organization (FHMPO) covers portions of Geary, Pottawatomie, and Riley Counties; including the cities of Junction City and Manhattan. Federal law requires any Urbanized Area population exceeding 50,000 persons to create a Metropolitan Planning Organization to carry out the multi-modal transportation planning for the metropolitan area. The Manhattan Urbanized Area exceeded this population threshold in the 2010 Census.

The Regional and Community Planning Program has been able to be involved with this unique organization through Gary Stith, RCP visiting assistant professor and executive director of the Flint Hills Regional Council (FHRC), and secretary to the FHMPO Policy Board, Stephanie Watts, MRCP 08' alumnus and FHRC transportation planner, and Eric Conner, RCP fourth year and FHRC intern.

"The Flint Hills Region is unique in that it has two similarly sized cities, a major military installation and a state university, all within short proximity," Watts said. "Our region is very interconnected due to this and requires coordination to occur across jurisdictional boundaries. I have found that our region is already well versed in thinking with a regional mindset, which has set the MPO up to be very successful."

With the FHMPO comes transportation opportunities like increased funding for transit, the potential for a regional bicycle/pedestrian master plan, and regional support for projects regardless of which jurisdiction they are located in. Having a MPO, and a well-functioning one, places the region further into the state and federal spotlight and increases FHMPO's chances of receiving discretionary funding.

Two of the major projects FHMPO currently is working on are the region's first long-range transportation plan, called the Flint Hills Transportation Plan (FHTP) and a regional travel demand model. The long-range plan is a federally required product that all MPOs must produce. It outlines existing conditions and needs of the region's multi-modal transportation system and contains a fiscally constrained list of projects to address the identified needs through the year 2040.

With a 25 year planning horizon, one of the tools the organization uses to identify future projects is a travel demand model, which is a computer-based tool used to project future roadway conditions. One of the outputs of the travel demand model is a map showing roadway congestion (the volume of a roadway compared to the capacity of the roadway).

"Once the congested roadways are identified, we can then run various model scenarios for the year 2040 to determine which projects best address these issues," Watts said. "Having this model will allow us to be more proactive towards addressing

future transportation needs and allocate our limited resources towards projects that have the biggest impact."

The organization is a small office with only one transportation planner, Watts. The Flint Hills Regional Council also provides supervision and administrative support to the FHMPO. Interns, such as Eric, help provide additional staff support.

"Eric was intimately involved in the organization of the first bike and pedestrian count in Manhattan last September," Stith said. "We could not have taken this on without his help."

Conner was given responsibility for completion of the 2014 bike and pedestrian counts. Last fall he developed and implemented the event that spanned three days and counted over 11,000 bicycles and pedestrians. The counting project was given to Conner at the conceptual stage and he was tasked to take it as his own and make it happen. This event will now be completed annually and expand beyond Manhattan to include Junction City and Fort Riley.

"This was a great experience for me because I was able to take a large undertaking from the very early stages and develop it into an event with over 100 volunteers over three days all over Manhattan," Conner said.

FHRC has had five interns since being instated, with three being from the LARCP department. Both Stith and Watts believe students holding internship prior to graduation is vital.

"I think they get first-hand experience in what a planner does," Stith said. "They can see the importance of the planning process and the relationship that has with other areas of planning beyond transportation. They can see how things they learn in the classroom can be applied to planning projects."

Along with his internship at FHRC preparing him for a future career, Conner said his work through the LARCP department helped build a base.

"I think the coursework I've completed really helped give me the knowledge base to be an asset in the professional world," Conner said. "I was definitely able to demonstrate my technical knowledge with Adobe Creative Suite, Microsoft Office, and ArcGIS. Furthermore, the concepts that I learned and practiced in the classroom are quite readily adaptable to any workplace environment, where the specifics of a job or position are able to be learned or re-learned in the workplace."

As a RCP alumnus, Watts was able to echo the same sentiments that Conner felt as to how the RCP program prepared her for a career.

"Everyone in the LARCP Department took a personal investment in ensuring the success of their students, even after graduation," Watts said. "I now feel extremely fortunate to still be involved with the department whether that is through serving on the LARCP Advisory Committee, presenting to first year students in the Survey of Design Professions lecture, or working with the K-State student representative and Regional and Community Planning representative on the American Planning Association-Kansas Chapter's Executive Committee. The family like atmosphere of the department, even after graduation is unique. The personal investment from all of the faculty and staff I believe gave me the confidence and helped prepare me to get to where I am today. I proudly tell people that I am a graduate of K-State's Regional and Community Planning Program."

SPORTS CAR COLLECTION

PAVES THE WAY TO NEW STUDENT OPPORTUNITIES

For David and Eileen Simmons, Alfa Romeos are more than just cars. They are a lifelong hobby, with an ever-growing collection David has lovingly restored over the past 40 years. With the couple's recent update to their estate plans, the Alfa Romeos will eventually pave the way to new opportunities for K-State students.

"I went through K-State on several grants and loans, and I know how important that extra support is for students," said Eileen, who earned undergraduate and graduate degrees in English from K-State. "That money isn't nearly as readily available now as when I went through, and I want students now to have the same opportunities I did."

Students like Rutvik Date would certainly agree. The fifth-year interior architecture and product design student is the latest recipient of the Simmons Architecture and Design Scholarship. Such support, he says, is the reason he was able to study abroad last year in Denmark.

"If I had been bogged down with much larger student loan debt, I would've been hesitant to go on the study abroad of my choice and would've been more likely to choose a cheaper option," Date said. "Because I have received scholarships, I was able to go to Denmark, and I got a lot out of it. The Danish people have a completely unique perspective on design and architecture."

Supporting student scholarships through annual gifts now and estate gifts later is a priority for David Simmons because he knows how expensive the study of architecture and design can be. A 1970 graduate of the college, he currently serves on the dean's advisory council. "K-State has meant a lot to us over the years," he said.

For students like Date, it is significant to have someone make such an investment in his future.

"It means a lot that they've trusted me," he said. "It means peace of mind to focus on my studies and it motivates me to do better in school."

Learn how you can make a difference for the people, places and programs of the College of Architecture, Planning & Design. Please contact the Development Office at 785-532-7524 or damonf@found.ksu.edu.

K-State alumni David and Eileen Simmons ('70) with one of the 14 vintage Alfa Romeos they will give to K-State as part of their estate plans.

APDesign Across the Globe

2014-2015 INTERNSHIP AND STUDY ABROAD STUDENTS

LANDSCAPE ARCHITECTURE, REGIONAL & COMMUNITY PLANNING

Ryan Albracht
Orvieto

Allison Balderston
Orvieto

Everett Haynes
City of Manhattan
Manhattan, KS

Lauren Heermann
Orvieto

John Heiman
Dortmund Tech

Andrew Holzum
Confluence
Kansas City, MO

Amanda Kline
Orvieto

Taylor Lininger
Landworks Studio
Olathe, KS

Phillip Martinez
University of Pretoria

Wesley Moore
DIS/Denmark

Andrew Rostek
Sasaki
Watertown, MA

Parker Ruskamp
EDSA
Ft. Lauderdale, FL

Jared Sickmann
EDSA
Ft. Lauderdale, FL

Harriett Tudor
Orvieto

Jessica Weber
HNTB Corp.
Kansas City, MO

Yihong Yan
KCDC

INTERIOR ARCHITECTURE & PRODUCT DESIGN

David Amstutz
Orvieto

Aaron Bisch
KCDC

Diana Blom
Orvieto

Laura Cale
DIS/Denmark

Christine Donley
Kevin Cowan Architects
Overland Park, KS

Jessica Griesemer
GLMV
Wichita, KS

Erin Heiden
Orvieto

Zachary Manues
Nest Woodworking
Dennison, MN

Matthew Mastroly
Coburg, Germany

Emma Montgomery
Orvieto

Madeline Schneider
Humphries Poli Architects
Denver, CO

Amanda Sloup
Textron Aviation – Cessna Aircraft Co.
Wichita, KS:
Trier, Germany

Robyn Tank
Czech Tech

Grace Twedt
Treat and Company
Minneapolis, MN

ARCHITECTURE

Cody Anderson
NSPJ Architects
Prairie Village, KS

John Bagarozy
Lehman Smith McLeish (LSM)
Washington, DC

Matthew Baumann
lauckgroup
Dallas, TX

Josh Broadway
Ennead Architects
New York, NY

Lindsey Brockhouse
KCDC

Justin Cain
Gensler
Houston, TX

Torrence Campbell
Bohlin Cywinski Jackson
Seattle, WA

Owen Cobb
KCDC

Wendy Coleman
BRR Architecture
San Francisco, CA

Tamra Collins
Overland Partners
San Antonio, TX

Luke Custer
Bergmeyer Associates, Inc.
Boston, MA

Jeffrey Czajkowski
Lehman Smith McLeish (LSM)
Washington, DC

Cooper Dahms
Orvieto

Joseph D'Elia
Orvieto

Will Dubois
Davidson Architecture
Overland Park, KS

Jordan Eggers
Mancini Duffy
New York, NY

Tyler Friesen
Helix
Kansas City, MO

Melissa Gaddis
Bohlin Cywinski Jackson
Wilkes-Barre, PA

Rachel Gordon
Lawrence Group
St. Louis, MO

Brendan Gregory
BRR Architecture
Atlanta, GA

Julia Guerra
Orvieto

Rae Hauff
NAC Architecture
Seattle, WA

AJ Henry
H+L Architecture
Denver, CO

Ryan Hergott
Perkins Eastman
New York, NY

Frederik Heuser
Beat Kampfen
Zurich, Switzerland

Brent Higgins
HTK Architects
Overland Park, KS

Megan Hohensinner
KCDC

Derek Hueffmeier
KCDC

Shannon Hush
Soloman Cordwell Buenz
San Francisco, CA

Jacob Kelly-Salo
Solomon Cordwell Buenz
Chicago, IL

Rachel Kelsey
KCDC

Daniel Johnson
BNIM
San Diego, CA

James Kendall
Works Partnership Architecture
Portland, OR

Alex Kuchinskas
HOK
Tampa, FL

John LaFontain
Ann Beha Architects
Boston, MA

Lindsey Leardi
Orvieto

Gongyan Liu
Bohlin Cywinski Jackson
Wilkes-Barre, PA
Nathan Long
BRR Architecture
Merriam, KS

Luhua Liu
DIS/Denmark

Phil Macaluso
Lawrence Group
St. Louis, MO

Alex Martinez
SFS Architecture
Kansas City, MO

Nathan Mattenlee
HTK Architects
Overland Park, KS

Daniel Mazzetti
Mancini Duffy
New York, NY

Kelsey Middelkamp
Jacobs Engineering Group, Inc.
Fort Worth, TX

Eric Mueth
Dessau

Vy Nguyen
Orvieto

Hyeonhee Oh
HDR Architects
San Francisco, CA

Anthony Pandino
Junk Architects
Kansas City, MO

Jazmin Perez Flores
Urban Prairie Collaborative
Kansas City, MO

Kelly Pyle
Orvieto

Nicholas Rallo
Ennead Architects
New York, NY

Joshua Ralls
Orvieto

Briana Reece
Orvieto

Trent Richardson
Work AC
New York, NY

Dominique Roberson
KCDC

Jake Rose
Soloman Cordwell Buenz
San Francisco, CA

Christopher Sanford
Czech Tech

Joel Savage
HDR Architects
Denver, CO

Sevrin Scarcelli
Orvieto

Spencer Scherer
Czech Tech

Halima Shehu
Cannon Design
St. Louis, MO

Ju Shen
Perkins Eastman
Shanghai, China

Benjamin Slater
Czech Tech

Derek Smith
Corgan Associates
Dallas, TX

Katherine Smith
lauckgroup
Dallas, TX

Haoyang Song
LOT-EK
New York, NY

Lanting Su
NBBJ
New York, NY

Hanna Sul
Dessau

Brooke Thompson
Bohlin Cywinski Jackson
Seattle, WA

Blake Toews
Czech Tech

April Trotter
Orvieto

Brendan Tucker
Studio MODH
Brooklyn, NY

Kendra Vander Baan
University of Sydney

Noah Volz
KCDC

Kelly Weckman
Lake Flato Architects
San Antonio, TX

Holly Wolf
Czech Tech

Ruilin Zhang
HTK Architects
Topeka, KS

Images courtesy of Ennead Architects

SEATON COMPLEX REVITALIZATION AND EXPANSION GAINING TRACTION

After years of planning, Kansas State University leaders are pleased to see the Seaton Complex revitalization and expansion gaining traction with support from state representatives, alumni, friends and industry partners.

The Kansas House of Representatives' appropriations committee recently recommended that Kansas State University be allowed to issue up to $60 million in bonds to renovate and expand the home of the College of Architecture, Planning and Design. The building's current condition is in stark contrast to the success of the college, where programs consistently rank in the top 10 nationally.

"We're bringing the facility in line with our national reputation and commensurate with the quality that's been coming out of Seaton for a long time," said Tim de Noble, professor and dean of the college.

The $75 million project will renovate 80,000 square feet of historic space to improve configuration and energy efficiency. It will also add 114,000 square feet of new construction that includes modern production facilities, collaborative workspace and the college's first auditorium. Construction is scheduled to begin this summer with expected completion in fall 2017.

The College of Architecture, Planning and Design attracts students from around the world due to its unique balance of program quality and tuition affordability. Student enthusiasm for the Seaton Complex revitalization and expansion led to the Dean's Student Advisory Council approving a significant increase in student technology fees to support the project.

"We have a vision for the future of Seaton that is in sync with our national reputation and the design and planning principles instilled in us by the college," said Andy McAllister, an architecture graduate student from O'Fallon, Missouri.

The project has garnered additional support through philanthropic gifts from college alumni, friends and industry partners. Victor Regnier, a 1971 college graduate, said his family decided their Leawood, Kansas-based V&H Charitable Foundation should support the Seaton project because "the college is worth investing in." Their leadership gift in 2013 helped encourage early momentum in the planning phase.

"This new building will be a wonderful enhanced environment for learning. The college has always represented quality, and this excellent organization will excel even further with additional funding," said Regnier, who now works in Los Angeles as ACSA distinguishes professor for the University of Southern California's School of Architecture.

Total philanthropic support for the Seaton project has now reached more than $6.3 million.

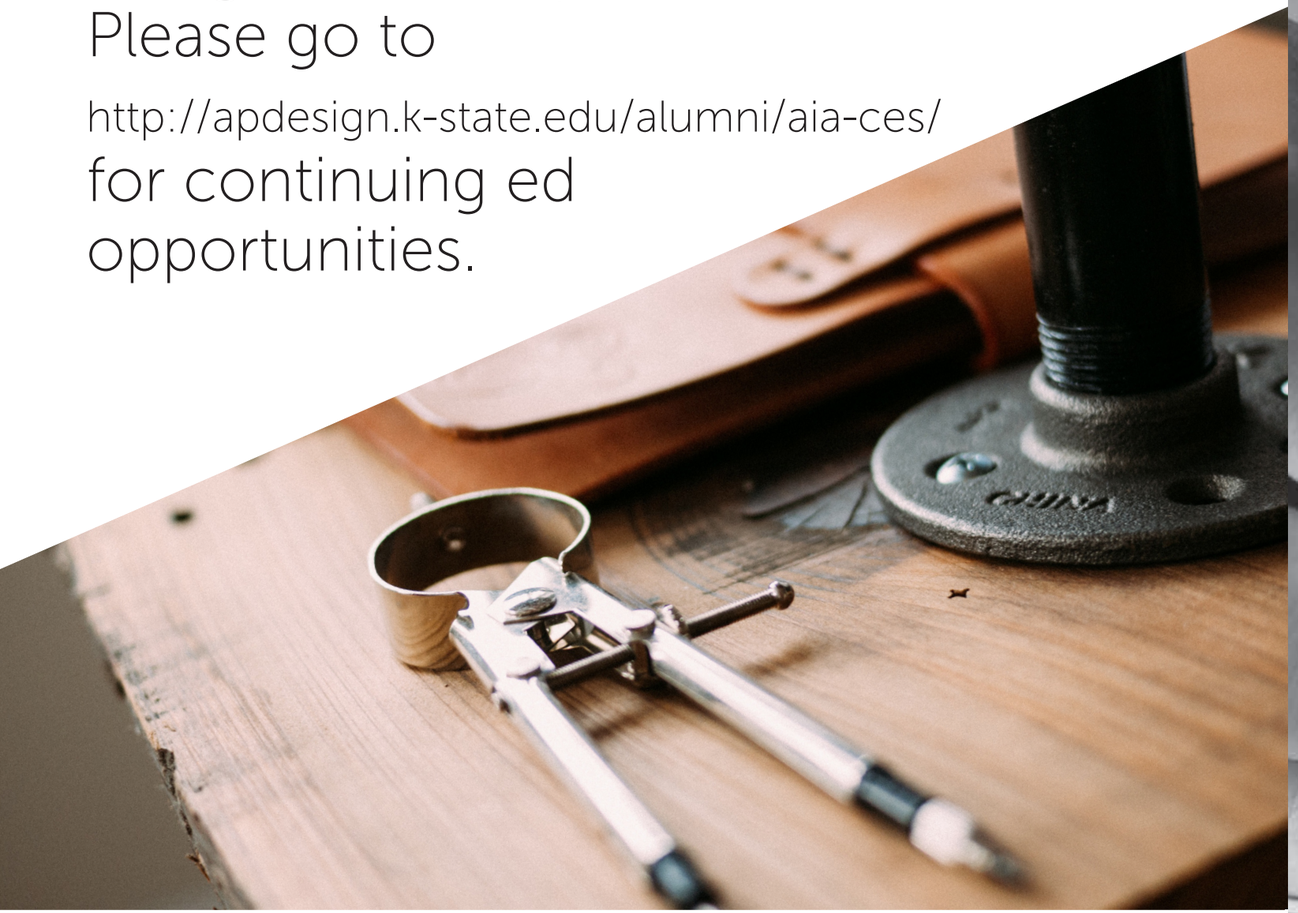
"There has been an incredible increase in philanthropic support by our alumni and friends in the past three years," de Noble said. "This represents the great faith and commitment of our supporters in ensuring our continued excellence. I can't even begin to express how thankful I am."

The total includes gifts from the following individuals and organizations: Brad and Amanda Nelsen, Austin, Texas; Pete and Janet Kruse, Carlsbad, California; Wei Wu and Wen Su, Chesterfield, Missouri; The Norris Design Company, Denver, Colorado; Tom and Peggy Waggoner, Fairway, Kansas; Sahni Family Foundation, Houston, Texas; Strategic Planning Initiatives, LLC, Huntingdon Valley, PA; William T. Kemper Foundation, Jim and Maggie Calcara, Populous Group, LLC, TK Architects, Inc., The Greater Kansas City Community Foundation, HOK Sports + Recreation + Entertainment, McCownGordon Construction, LLC, BNIM Architects, El Dorado, Inc., Helix Architects, Gould Evans Associates PA and SFS Architecture, Inc., Kansas City, Missouri; V & H Charitable Foundation and David and Sara Roesler, Leawood, Kansas; Sahap and Gul Cakin, Leicester, United Kingdom; BBN Architects, Inc. and Midwest Concrete Materials, Inc., Manhattan, Kansas; BRR Architecture, Merriam, Kansas; Casey and Barb Cassias, Mission, Kansas; Jimmy Counts, New York City; Rich and Christine Majors, Olathe, Kansas; The Sunderland Foundation, Keith and Kathleen Taylor, James and Linda Hailey, Mark and Kathy Franzen and Don and Barb Pruitt, Overland Park, Kansas; Mike and Mary Lou Fickel, Prairie Village, Kansas; Rick and Pam Heinz and Donald McKahan, AIA, FACHA, San Diego; Scott and Cheryl Gales, HTK Architects, Keith and Emily Blackburn and Charles and Denise Smith, Topeka, Kansas; William Stoskopf, Tulsa, Oklahoma; Howard & Helmer Architects PA, LK Architecture, GLMV Architecture and WDM Architects, Wichita, Kansas.

The College of Architecture, Planning & Design is now a provider for AIA credits. Please go to

http://apdesign.k-state.edu/alumni/aia-ces/

for continuing ed opportunities.



Stay Connected:
apdesign.ksu.edu | facebook.com/APDesignKState | twitter.com/APDesignKState

Architecture . Interior Architecture & Product Design . Landscape Architecture|Regional & Community Planning

Ideas are formed in your **mind**, inspired by your **heart** and transferred through your **hand**. Every stroke of the pen or click of the mouse brings your **vision** closer to reality.

Help Recruit Students to APDesign!

Susan Lannou is the personal contact for students interested in pursuing one of our design or planning degrees. Please feel free to share her contact information. Also, if you are preparing to give a presentation about your profession, please let us know. We are happy to provide information about APDesign.

Susan Lannou
Director of Student Recruitment · 785-532-1994 · myapd@k-state.edu

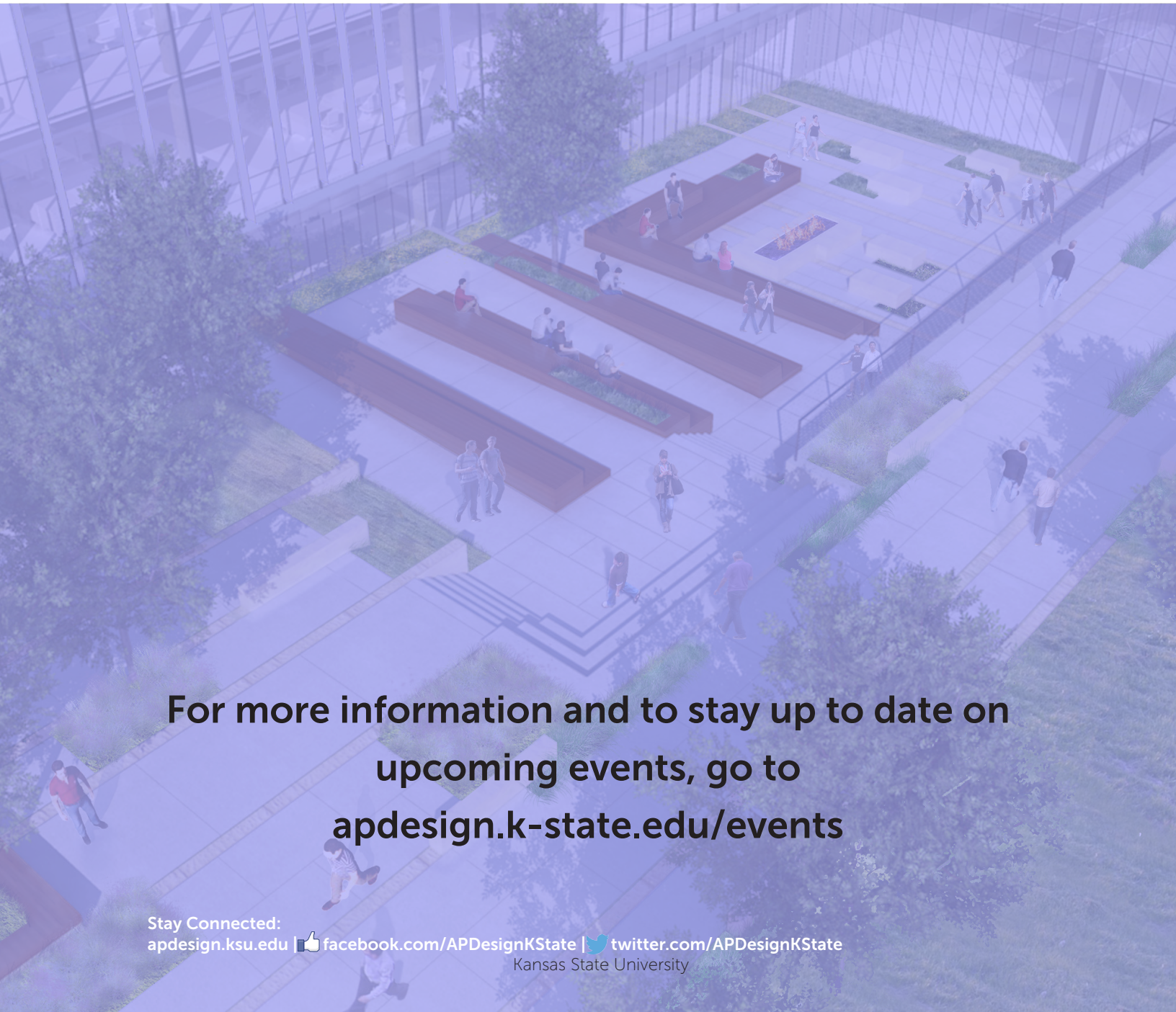
KANSAS STATE UNIVERSITY | College of Architecture, Planning & Design

Visit APDesign. Visualize your future.

KANSAS STATE UNIVERSITY

The College of Architecture, Planning & Design
115 Seaton Hall
Manhattan, KS
66506-2902

Nonprofit Organization
U.S. Postage
PAID
Permit #525
Manhattan, KS, 66502



For more information and to stay up to date on upcoming events, go to apdesign.k-state.edu/events

Stay Connected:
apdesign.ksu.edu | facebook.com/APDesignKState | twitter.com/APDesignKState
Kansas State University