MERIDIAN PARK IMAGINATION STATION

By George Elvin

Students designed and built a PLAYscape for a new pocket park in the Historic Meridian Park neighborhood of Indianapolis. The playscape provides a structure that supports creative play, environmental learning, and nature play. The PLAYscape was constructed in pieces in the CAP Design-Build Lab and installed in Indianapolis at the end of the semester. Our work included numerous field trips and meetings with residents plus other community, industry and academic partners. This project was a unique opportunity to work with design, materials and construction techniques while servicing the community. Our objectives were to serve the community and develop a deeper understanding of the design process through the integration of material and construction experience. Collaboration with each other and with community, industry and academic partners was a critical feature of our work.

Continued on page 3...
LET’S DESIGN AND BUILD A BETTER WORLD

By Michel Mounayar

CAP’s tradition of design-build studios is only accelerating and growing stronger. With CAP design-build projects already having a major presence as part of Muncie’s riverfront, where several public overlooks were designed and constructed in the 1980s and ‘90s by our faculty and students, CAP the tradition of design-build continues to grow both in scope and scale. In fact, CAP students typically have access to at least two distinct design-build studios every semester. In some cases these projects are multidisciplinary, representing more than one of CAP’s three departments, and sometimes they extend to other disciplines and areas of the university.

As a result of this intense level of engagement, three years ago the University awarded CAP (through a competitive process) the old print shop building on McKinley Avenue across from the Architecture Building (AB), and invested substantial university funds converting this facility into a new design-build laboratory (DBL).

Our design-build lab now has substantial steelworking capabilities plus large open space that may be used to construct and prototype designs proposals before shipment to the jobsite. We also developed several equipment kits contained in heavy large steel jobsite boxes that could be transported and left in a secure place onsite. These new facilities are elevating our commitment to community-based design-build pedagogy, and deepening our understanding of material construction and budgets. Mr. Roger Whited, who is trained and offers extensive experience in the area of construction methods and systems, oversees the design-build Lab. Roger’s office is located in the DBL facility, and he is available to consult with faculty and students.

What is particularly distinctive about CAP’s design-build activities is the combination of both digital and analog expertise and equipment available to CAP students and faculty. Many current projects bridge these two technical and formal processes in support of intricate and exciting environments for people. CNC and robotics have started to combine with welding and woodworking. This continued interplay between old and new technologies extends our reach among national programs engaged in this area of design and practice.

We hope you will enjoy this issue of CAPlife, as we celebrate and highlight this ongoing tradition and love for material, sites, landscapes, design, and building. You will be able to see many recent projects by faculty and students who have dedicated considerable time, talent, and energy to learn about this special method of design education that flourishes not only in theory but very much in practice at CAP.
HISTORIC MERIDIAN PARK NEIGHBORHOOD ASSOCIATION

The Historic Meridian Park Neighborhood Association and local residents united to create the pocket park where the playscape is located. HMP owns the park and is responsible for its upkeep and maintenance. Neighborhood Association President Cassie Mehlman-Rhys was the principal in the park’s planning.

KEEP INDIANAPOLIS BEAUTIFUL

Keep Indianapolis Beautiful is a private, not-for-profit organization that engages diverse communities to create vibrant public places, “helping people and nature thrive.” It is funded primarily by private donors who, together with its staff of 23, “see a vibrant city, with every neighborhood landscape thriving and well, and its people empowered, mobilized, and devoted toward that vision.” Joe Jarzen, Community Engagement Coordinator, was project manager for the pocket park.

W/PURPOSE

The Indianapolis-based w/purpose (“with purpose”) creative design studio “considers the interface of creative analysis on one hand and the process of making on the other; a design collaborative fixed on delivering ideas about how we live and what our future may look like.” Their studio has completed several community projects in the region and is working on others. Principal Wil Marquez, who has taught Ball State architecture studios, was the lead designer on the Historic Meridian Park Pocket Park.

The objective of this immersive studio was to design and build a play structure for a new pocket park in the Historic Meridian Park neighborhood of Indianapolis. Students met
many times with members of the Historic Meridian Park Neighborhood Association pocket park committee, project manager Joe Jarzen and park designer Wil Marquez, to present their design concepts to them. Those concepts evolved over the course of our meetings, and all parties eventually agreed to one. Students then developed the final concept through drawing, prototyping and testing to a level of detail sufficient to build from. They continued to improve the design during construction as well, modifying details based on specific site conditions and the emergence of the finished structure.

The team determined at the start of the semester how they would go about melding their individual concepts into a unified playscape design. The playscape is more than one object, so more than one design was built. Synthesizing their design ideas into a single plan brought ample opportunities to engage every student since the team designed every detail of the playscape prior to its construction. All design was based on multiple meetings with residents to consider and respect their goals for their park.

The park’s designer, Wil Marquez, project manager Joe Jarzen, and former Muncie Parks Superintendent Matt Bailey were involved in the students’ design development and construction processes. Students also engaged with industry partners, providing their team unique opportunities to work with sustainable and innovative materials.

This was an extremely intensive and fast-paced studio, with design quickly blending into construction documentation and construction. Students were based in the CAP Design-Build Lab throughout the semester. Even during conceptual design in the first few weeks of the semester, they fabricated mockups for resident feedback. Design development also included construction experiments. Their goal was to complete the design by the first week of February and then begin construction of the PLAYscape’s components in the lab. They then began to install the components on site during April.

In addition to the installation on site, students took weekly field trips for at least the first five weeks of class. Along with studio visits by community, industry and academic partners, these trips gave them first-hand experience in working with community partners and residents, as well as innovative materials and technologies.

Students met with numerous project partners representing the profession and the public. Through this interaction they developed and improved the design, and learned to interact with clients and other project stakeholders. They also built their design, giving them new insights into the relationship between design and construction, the role of materials and methods with respect to the design process, and the interaction between designer and builder on site. Students were fully responsible for seeing their project through from concept to completion and learned a great deal about working with clients and other project stakeholders to get their design built. They also learned to value their clients’ insights and objections and experienced the opportunity to educate them through numerous client meetings.

Students also learned new respect for the contractor, and many developed an interest in design-build, by working under extreme conditions on site. And they learned the value of their work to the people they serve, as a steady stream of local residents stopped by to admire their design and craft and thank them for their work. I believe this was the deepest experience of all—feeling firsthand the gratitude and appreciation that our work as architects can inspire in others...
“Our children are the first generation to be raised without meaningful contact with the natural world,” writes Richard Louv in his thought-provoking book *Last Child in the Woods*. This sentence sums up the significance of this design-build project Nature Play: Into the Woods with Design Thinking. Beginning in Fall 2012, students from architecture, landscape architecture, early childhood education, psychology, and natural resources and environmental management, have researched, designed, developed and begun construction on a nature-based outdoor educational environment for 300 preschool-age children at a local Head Start. Initially, as part of an Immersive Learning (IL) Building Better Communities (BBC) project entitled Responsible Design for Environmental Learning, we examined the links between use of the outdoors, access to natural play spaces, and human health. Nature is missing from most adult-designed play areas, even though research shows that children take pleasure from being in natural spaces and that playing in nature increases their cognitive and creative development. As we face contemporary health challenges, particularly growth in levels of obesity, diabetes, and stress-related illnesses, medical researchers, physiologists, social scientists, and designers have turned to examine the outdoors and natural spaces’ potential for alleviating such health problems. A positive correlation between contact with nature and mitigation of attention deficit hyperactivity disorder (ADHD) symptoms has been shown. Children have been identified as one of the key groups that gain health benefits from use of the outdoors. Regularly playing in nature-inspired spaces, children are more able to learn about their body’s movements, overcome their fears and release stress, increase self-esteem and self-belief, and use their imagination and creativity more fully.

Children have been identified as one of the key groups that gain health benefits from use of the outdoors.
with wind wands? Kids today often have their heads down, playing with an electronic device, video gaming, or watching a TV or DVD program. An elementary student made a wonderfully honest comment, “I like to play indoors better, ‘cause that’s where all the electrical outlets are.” For many children, playing in nature seems so unproductive, dangerous, foreign, even televised. We have become a sedentary society. Nature Play’s primary goal is to re-connect children with the natural world by making developmentally appropriate nature education an enriching and sustainable part of their daily lives. Our project objectives are threefold: to increase physical activity, problem-solving, and creative play in natural play spaces; to provide community access to this unique environment; and to promote a conversation and coordinated vision to address health and wellness needs.

The concept of “playscape” describes a different kind of outdoor environment where play structures, activity settings, and landscape features are uniquely designed into natural habitats. Facilitating unstructured play in Head Start’s playscape, we are creating four natural habitats; Whimsical Woods, Wetland Wonder, Magical Meadows, and Peaceful Prairie. These habitats surround a “certified” outdoor learning classroom divided into clearly delineated areas for different kinds of nature-inspired activities. The central area of this space is a large, timber-frame outdoor classroom called Habitat Hub. It has room for two classes and acts as a starting point for the children’s outdoor adventures, leading to other nature-based play areas with names like Fort Fun, Timber Time, Sunny Sands, and Melody Meadows.

Research studies have shown that children who play in and explore natural environments at an early age adopt conservation and sustainability values as adults. Head Start’s Nature Play provides multiple opportunities for children to learn about environmental responsibility. An ash borer infestation led to the removal of hundreds of trees from the Ball State campus and city of Muncie, and the wood was used at the Nature Play site. The idea was that children would learn that ash borers destroyed this tree because we can see the markings in these logs, and now we’re reusing them and they are part of our play environment. That continuity of the trees’ life and after life was important for us to work with. The Habitat Hub is constructed of the re-harvested diseased ash trees that were locally milled and assembled in a true mortise and tenon outdoor learning structure. Each of the pegged joints provides the children learning lessons in construction. The
fabrication of Habitat Hub was especially rewarding. Architecture student Spencer Blaney remarks, “The most challenging and exciting aspect of this project for me was learning the technical and design thinking skills needed to work with heavy timber framing.” Additionally, students had the opportunity to work with natural materials and traditional hand processes in a way that their marks becomes part of the nature-based outdoor playspace. The rammed earth wall of the Nature Art area is one example where the labor intensive process of hand tamping the earthen mixture to its hardened state provides a visible reminder of building with local materials, in this case, local dirt! Rainwater harvesting is another lesson children learn, accessing water from the Habitat Hub’s roof for use in the garden area and making a water wall in the sand area. The wood for the Bird Blind screen and Crazy Climbers decking is also all reclaimed timber from Rebuilding Our Community (ROC), an organization that takes down old structures and repurposes the materials for use in current construction.

To see what children enjoy and how they interact with natural elements and built components, the students conducted simulations during the design-build process. One of the first simulations was a Mud Mash. We wanted to see how children, parents, and teachers reacted to playing in mud and really getting involved and even dirty. We brought in mud and water and put it on a large plastic tarp with some baking utensils to see what children would do. We made easels out of Plexiglas, and they painted with mud and pine branches. Then, as we evolved the space for mud and dirt play, we created another simulation to test the size of the area, what it should be surrounded with, and what mixture of sand, peat, and dirt is best to achieve a desired consistency. Finally, a third simulation was done to create a storage area for the children’s boots and utensils used in Debbie’s Dirt Dig, named after a teacher instrumental in developing Nature Play.

Prototyping activity components is instrumental in observing children and responding to changes needed as actual construction evolves. Commenting about the reverse build-design process, one student writes, “The simulations with the children were so much fun, really the most informative
part of the design-build process.” Students also had to design activities to work on with children and teachers that advanced their nature-based play setting. Students thought about how what the children make could be used in Nature Play at a later time. Together we made drums, wind chimes, art pavers, painted tiles, and even decorated pumpkins with stemmed flowers.

We did a music and movement simulation to see what elements the children played with, what they picked up, what they shook, what they did with the hand-crafted instruments, how they made music collaboratively and independently, and what enticed them to begin to interact with movement and sound. For the mock-up component, two students made an impromptu stage, which then developed into a more formal stage with local flagstone, natural ash uprights and a river birch tree as the backdrop. For the music storage, a different student team noted that the stacked container boxes also became an informal stage, like a back stage, facing the main performance area. In all the components we simulated, it was important to provide the children some basic clues to use of the space and then let their imaginations take over. One of the most important things we’ve learned from the design perspective is not to over-design, but to leave it free and unstructured, allowing children to make choices and initiate their own responses to the materials at hand, stimulating cognitive and creative development.

Prototypes of the component parts were made using scrap wood, cardboard, palettes, or any other material not intended for actual use later. The mock-up had to be at full scale to test aspects of children’s scale, safety, and use. When the children came to interact with the full scale mock ups, the design students had to observe, take notes, and photographically document the play. They had to identify the successes, problems, and insights from these activities; suggest design changes; and illustrate to improve the design component with drawings, sketches, and photographs of children using the setting.

Community Build Days (CBD) help extend awareness of the project to people beyond Head Start and the University. Family members of the Head Start children and staff, local Girl Scouts, and the mayor of Muncie all had a hand in the project. Beginning in Fall 2013, we initiated bi-monthly Community Build Days to bring parents, children, teachers, and staff to Head Start to work on specific building, activity settings, or plantings for the Nature Playscape. Each of the Community Build Days had a focus. For example, the community and students made concrete pavers for the Sensory Hill and bamboo wind chimes for the Habitat Hub Bird Blind. Community volunteers planted the Butterfly Garden and Tree Trail, with children taking responsibility for each of the twenty native trees. The community and students worked on the Sunny Sands area, laying sandstone edging, filling and raking sand into the defined area, and placing gabion baskets filled with local stones as a surface for the future water wall.

We also developed workshops for training educators and designers interested in the use and construction of nature-based play environments. This opportunity for early childhood professionals is designed to strengthen teachers’ understanding of the possibilities for curriculum design, and increase their awareness of the positive impact nature play can have on children’s health and well-being.

Design development and construction of our schematic design for the overall 1.5 acre Nature Play site at Head Start began in earnest in Fall 2013 when we received funding (over $125,000) from Ball Brothers Foundation, The Community
Development Foundation, and an Imaginative Learning Provost’s Grant for Phase 1: Nature Play’s Certified Outdoor Learning Classroom. Interdisciplinary teams of students guided the design and building of ten nature-based activity settings surrounding Habitat Hub, the outdoor timber-frame structure made of re-harvested ash trees. The overall budget for Nature Play’s certified outdoor learning classroom and four natural habitat areas is approximately $250,000, with much of the labor provided by Ball State University Immersive Learning students. The design-build process is phased, with Phase I to include the construction of a 15,000-square-foot nature-based playscape with the outdoor classroom Habitat Hub. Phase 1 will be complete this fall 2014 with a grand opening on Wednesday, November 5th. Phase 2 grants have been submitted and if received will be used for implementing the four natural habitats, starting with the constructed wetland area fueled by a large drainage bioswale and the meadow and wildflower area with a gravity-fed trickling stream flowing down the children’s sledding hill.

A series of design-build studios and concurrent elective offerings that began in Fall 2013, and set three goals. First, we engage in an alternative design process which integrates thinking and making as interrelated components. The studio demonstrates at full scale the implications of students’ design ideas and measures the quality of this thinking against the rigorous standard of built reality. Students learn how to make detailed drawings, prepare cost estimates, construct prototypes, and comprehend constructability in the final built structures of Nature Play. Working with natural materials and traditional hand processes is rewarding as students become empowered and engaged in the work. “When you’re making the model, it’s a lot of laser-cut pieces, so things don’t actually go together the way they do in real life. It’s just a representation of it,” explains
architecture major Corey Clark. “But actually being able to build it in real life puts a whole new spin on it. It was definitely challenging but great.”

Second, we craft new ways of working together, engaging collaboration between fabricators, product representatives, professionals, stakeholders, and graduate and undergraduate students of differing disciplines, ages and skill levels. Identifying expertise and designating individual responsibility (taking on roles as material expert, accountant, construction manager), students demonstrate learner-leader attitudes as they bring ideas to fruition cooperatively, in the shared act of designing and making. Constructionism asserts that knowledge is not simply transmitted from teacher to student, but actively constructed by the mind of the learner when engaged in making artifacts they can reflect on and share with others. Learners don’t get ideas; they make ideas. Students learn through the construction of knowledge in the context of making personally meaningful things.

The third goal of Nature Play allows students to learn through making while giving back to the community. Students gain respect for various points of view as they work with parents, staff, and community members. User-centered design is a way of understanding how design and making take place with considerations of how inhabitants of a constructed environment will interact with the place. The simulations present a strategy for responding to the needs of multiple, flexible, learning-centered spaces and objects, as generated by the dynamic of uses and users, in this case, the children, parents, caregivers, and educators of Head Start.

We are grateful to have had this opportunity to benefit children through the design-build of the Nature Play! It is vital that we help today’s young children develop emotional connections with nature so they will want to take action on behalf of the environment as adults. Working with Head Start teachers, children, and families, and University students and faculty, we have transformed the Head Start playground into an ecologically rich environment, setting a new benchmark of design for educating a creative, healthy, eco-literate generation.

It is vital that we help today’s young children develop emotional connections with nature so that they will want to take action on behalf of the environment as adults.
The Department of Landscape Architecture has a long tradition of design-build studios. Image above is of previous project completed last year at the sensitive Craddock Wetland preserve, Muncie Indiana. This involvement has engaged students over multiple years in one major public site, executed in phases based on a master plan. This is a complex undertaking that teaches students the full integrated aspect of design-build. Photo by Les Smith.

IMPROVING MUNCIE’S PUBLIC OPEN SPACE AND NATURAL LANDSCAPES: LANDSCAPE ARCHITECTURE DESIGN-BUILD 1999-2014

By Les Smith

The Department of Landscape Architecture, with encouragement from leadership in the College of Architecture and Planning (CAP), continues to sustain a strong “service learning” presence in the Muncie community through our design-build real-project outcomes. In the past fifteen (15) years (1999-2014), the BLA and MLA programs have engaged over 400 undergraduate and graduate students in this advanced-level interdisciplinary elective course. The LA design/build course fulfills professional education through experiential learning, resulting in well-designed and well-crafted landscape architectural projects. Focused on developing public open space, recreational opportunities, and public environmental education facilities within urban and naturalized landscape settings. Typically installed in underserved neighborhoods, the projects also facilitate natural environment restoration and wildlife conservation objectives. To date, the LA design-build program has provided eighteen (18) distinct built works serving these public space objectives and needs.

The LA design-build classes are offered in the spring and summer semesters. Undergraduate and graduate students involved in this course are challenged to perform rigorous research-based design with the added responsibility to refine designs to buildable resolution – and then construct a fully engineered and code-compliant structure.

The class unfolds over the semester with all students participating in a full-group design-ideation period for the opening weeks to develop conceptual design directions for the project. The learning and design direction early in the semester is also shaped by “client” and user group meetings, providing a participatory design process.

The real-client and community group partnership is further strengthened as the student design-team presents their design proposal in public meetings. As the design direction for the project emerges, the class is divided into sub-teams who work independently, advancing the project’s detailing and engineering towards a buildable resolution. Construction materials are then ordered after fulfilling budget-fit and engineering standards. Typically by mid-semester, the
project construction - the build - is underway.

This course is distinctive among community-based projects: a) in its fast pace to detailed and buildable design outcomes; b) in that students are frequently confronted with client and user input and critique sessions during the project’s design development (all within a 4-6 week span). The project build-out typically results over the last half of the semester. Some projects have been of greater scope and were completed over the combined spring and summer semester time frame.

LEARNING IN THE DESIGN/BUILD WAY

The model for teaching the Landscape Architecture design-build program provides students and faculty confronting tests in the quest to define “good” design. It affords students an opportunity to “fit” and “shape” their “internal” design values and sensibilities with real-client compliance and student/designer-constructed outcomes (built works). In this teaching/learning model, students must massage, refine, and press their design concepts to resolve workable construction technologies, engineering solutions, accessibility regulations, and clients’ and the user’s aesthetics and functional needs into a “real” built work that produces satisfaction.

To date, the LA design-build program has provided eighteen (18) distinct built works serving these public space objectives and needs.
The students’ “final design” must survive the “final test” by way of a rigorous critical review by the client/user groups and faculty. At this stage, the graduate students take leadership in guiding all students in the process of design detailing, costing, material palette selection, assistance in ordering, and engineering of the project site and structures. Site surveying and topographic base maps are student-produced, allowing students to “refresh” their previously-learned field-mapping skills. Professional engineers (if required) and faculty who are registered landscape architects assist the project in design and engineering refinements leading to a build-ready status for the project.

In post-project questionnaires, graduate students and undergraduate students alike unanimously share that the course experiences, especially the challenging manual labor and testy nature of materials conforming to design intent, have substantially caused them to mature as designers. Further, students become aware that through hands-on service learning, they have left their personal imprints, impressions, footprints and vital marks in the community that hosted them while they were shaped into sound design professionals.

SPRING AND SUMMER 2014 – DESIGNING AND BUILDING TRAILS AND BRIDGE AT PRAIRIE CREEK RESERVOIR.

The most recent LA design-build classes achieved the completion of another important public recreational project. A proposed new trail spur connecting the Cardinal Greenway eastward to the south end of Prairie Creek Reservoir received funding late in 2013. The Spring 2014 and Summer 2014 LA Design Build classes collectively designed and constructed a bicycle and pedestrian bridge spanning the sensitive wetland valley at the south end of Prairie Creek Reservoir.

A local design-build firm, Flatland Resources LLC, partnered with the students as the project overseer and professional consultants. This partnership enhanced the students’ learning, making this project an ideal immersive learning experience for all. The Flatland professionals concentrated on the trail installation, while providing design detailing advice and engineering refinements for the bridge.

By mid-July, the arced bridge form was completed, allowing the new trail system to be open for public use. The bridge is a ten-foot (10’) wide ADA-accessible pedestrian and bicycle trail spur connecting from the Cardinal Greenway (near Co. Rd. 650 S.) all the way around the south lake-edge ridge and valley landscape to the beach area on the
east shore of the reservoir. The bridge includes an observation deck bump-out that encourages trail users to stop and rest on the bridge while they enjoy an educational overlook and viewing of the unique fen wetland setting.

From an engineering and construction perspective, the scope of treated timber materials composing the bridge is impressive. The main girders (beams) are full-cut 12” X 12” structural-rated timbers. The joists are 4” X 14” slab timbers. And the planks (decking) are 3” X 8” timbers. Substantial steel reinforcing is integrated within the piers and understructure of the bridge to fulfill the required anti-sway supports. The federal, state and municipal grant program that funded the bridge required this public-use structure to be engineered to support full-size ambulance trucks and heavy duty park maintenance trucks (20,000 pound load capacity).

With the collective efforts of the Spring and Summer 2014 LA design-build class participants, the bridge now provides an essential connecting element in support of a new trail system that provides Muncie area bicyclists and hikers alternative means of accessing and experiencing the many recreational opportunities hosted at Prairie Creek Reservoir Park. The Muncie community has once again been improved and enhanced by the LA design-build students providing a well-designed and uniquely constructed facility, supporting the community’s conservation, recreation, wellness and trail network initiatives.

...The bridge now provides an essential connecting element in support of a new trail system that provides Muncie area bicyclists and hikers alternative means of accessing and experiencing the many recreational opportunities hosted at Prairie Creek Reservoir Park.
TRAVELING PAVILLION

By Gernot Reither and Andrew Wit

Throughout the five weeks of the first summer semester, students in ARCH 600 designed, prototyped, and built a traveling pavilion that is currently located in Muncie. Built as a tensegrity structure, the pavilion encloses a space approximately 12’x12’x12’ and is composed of small, easy-to-assemble modules. Constructed of aluminum tubes, steel cables and covered in a white Lycra fabric, the pavilion is designed to quickly assemble and disassemble so that it can become a part of different community events. Riether wanted the students to realize that architects don’t always need to wait for a project from a client, but instead can engage in the creation of a project itself.
THE MUNCIE MAKES LAB

By Andrea Swartz

This interdisciplinary CAP student group initiated use of the CAP-owned MUDS (Muncie Urban Design Studio) located at 628 South Walnut Street as a design/build/make/display lab for students and faculty. The MUDS building was founded in 1980 and was in disrepair. Swartz and her class explored revitalizing the space, what options they had for its future use, and its relationship to the community. Mini-grant immersive learning funds were used to purchase materials for a display system. The design-build work focused on interior improvements, mostly to the lower level, which is to be used as gallery space.

The original plan for this class was to participate in the April and May Muncie Downtown First Thursday Arts Walks. This space was so well received that classes have been able to continue their participation. The long-term vision for the space is to connect design with community members, particularly with K-12 students for gallery exhibits, plus design exercises and workshops.

Associate Professor Andrea Swartz’s CAP 490/598 students involved in this course included: Ellen Forthofer (3rd-year planning undergrad), Max Wurster (4th-year architecture undergrad), Shannon Buchanan (4th-year architecture undergrad), Morganne Walker (4th-year architecture) Andrea Kuruda (3rd-year landscape architecture undergrad), Kevin Miller (3rd-year architecture undergrad), Kellie Locke (4th-year architecture undergrad), Joe Pavilonis (4th-year architecture undergrad), Jeannie Marrugo (architecture grad student), Victoria Browne (architecture grad student), Michael Evertsen (architecture grad student), Andrew Schenk (architecture grad student). Faculty members on this project included, Janice Shimizu, Simon Bussiere, Ana de Brea, Mary Ann Heidemann, Lohren Deeg, and Woodshop Bob.

The renovated space is now called Muncie Makes Lab, and we are excited to view the future of this revitalized space.

The long term vision for the space is to connect design with community members...

Students work diligently in the Muncie Makes Lab to prepare the building for use. Photo by Andrea Swartz.
KUKA: A ROBOTIC ARM

By Andrew Wit

CAP would like to introduce the newest addition to its digital fabrication capabilities. Purchased over the summer semester, the KUKA KR 60-3 has recently been installed and powered up for the first time. The addition of this tool will help encourage further exploration into advanced robotic fabrication throughout the disciplines.

Led by Professor Andrew Wit and several graduate students, initial setup, programming and end effector fabrication has been in full swing, hoping for the robot’s rapid integration into the design curriculum.

Introducing the industrial robot into the department is exciting for many reasons. Unlike the CNC mill, the robot is not limited by the x,y and z axis. The industrial robot has the ability to utilize 6 full axis with 360 degrees of rotation, operating within a work envelope of nearly 17’.

The robot also introduces a level of tooling flexibility and programming which is not possible with our current CNC mill setup. Unlike the mill, the robot gains the ability of interchangeable tools. This now allows us with one machine the flexibility to mill, hot wire cut, paint, or create any other tool attachment which can aid us in completing of our design processes.

Using simple materials and methodologies, we will create and test a series of robotic end effectors which can be integrated into the curriculum.

As we are currently still scratching the surface in understanding the inner workings of the robot, the current academic year’s access will be limited to qualified faculty and students to perform testing. Once a better understanding of the robotics and its safety has been evaluated and documented, access to the machine will become more integrated.

During the current academic year, simultaneous use of the CNC Mill and Robot will not be permitted for safety reasons.
NEW CNC MILL RULES FOR 2014-2015

By Joshua Stowers and Andrew Wit

Starting this semester, there will be some changes to the rules for the CNC Mill. The mill has been moved to make room for the new Kuka robotic arm and is now up and running, but students and faculty need to be aware of the changes before contacting the graduate assistants for use of the facility.

When working in the prototyping Lab, it is imperative to understand your tools and your surroundings. Currently the Thermwood mill & KUKA Robot Arm do not have the ability to sense any object or person within their work paths. The machines will not stop if you move into their workspace. Please be mindful of your surroundings and the equipment.

Because the machines in the Prototyping Lab can be extremely dangerous, require a high level of knowledge to use and are very expensive, access to the Lab will be monitored and limited. Trained faculty and GA's will have access, but cannot use this access to leave untrained students unattended in the Lab. Training does not give you individual access to the Lab; rather, it states to the college that you are qualified to use the specific machine.

Training for the CNC Mill does not give you access to the KUKA KR60 industrial robot and vice versa. Each requires separate certification.

MATERIALS STORAGE:

Materials may only be stored in the prototyping lab for immediate use. Only materials which will be milled can be held within the prototyping lab. After 7 days material will be removed without notice of the owner. The school is not responsible for materials left unattended in the lab. All materials must be labeled with the owner’s name, contact information and faculty signoff. No hazardous or flammable materials can be stored in the prototyping lab.

TRAINING:

Starting this year, all students and faculty wishing to use the tools in the CNC Mill lab must attend training and receive certification prior to use of the facility. The workshops will cover but are not limited to: Lab Safety, Clean 3d File creation and preparation, MasterCam/RhinoCam creation, tooling, G-Code creation, Machine Setup, Materials Setup, Troubleshooting, and Machine/Lab maintenance. Applicants must attend all training to be considered for certification.

After attending the required workshops, applicants will be required to pass a skills test to gain certification. The test requires applicants to submit all necessary documents for a complete mill job. As these workshops will take a great deal of setup time, they will only be offered on specified days and will not be conducted by request. For more information regarding the Prototyping Lab rules, please send requests to the bsufablabs e-mail listed below.

SAFETY:

Until we have a better grasp on the industrial robot, the mill and robot should not be used simultaneously. All rules will be explained during training and posted in the lab and must be followed.

SCHEDULING:

A Google Calendar will be created, and access will be granted only to those qualified faculty and students. All appointments must be documented on the calendar, and scheduling conflicts will be addressed by the graduate assistants in charge of the facility.

MAINTENANCE:

All maintenance must be performed prior to and after the use of the CNC Mill and will be the responsibility of the students and faculty using the facility. All maintenance responsibilities will be posted within the room. Failure to perform required maintenance will result in forfeiture of access to the mill.

PERSONAL BITS VS. SCHOOL BITS:

The Prototyping Lab will supply a small number of bits for open use. These bits will not cover all potential materials and mill types. Also, because of heavy use and potential incorrect settings, the bits will quickly dull.

It is recommended that students purchase their own bits. Having your own personal bits ensures that your project always comes out the way you intend it to. Bits can also be sent back to the manufacturer to be sharpened for a small fee. Pooling together with a class or several students can make it easier to purchase the required tools. Bits can be purchased through Vortex tools. Delivery time is typically 1 week.

For information regarding the use of the CNC Mill, please e-mail bsufablabs@gmail.com.
THE SPA: DEVELOPING STRONGER STUDENTS AND PROFESSIONALS

By Charlie Rymer, SPA Vice President

The Student Planning Association (or SPA) is the Urban Planning Department’s student organization. We focus on connecting students with practicing planners and volunteering with various organizations in the Muncie community. As planning students advance their education, they begin to find their place in the “real world,” and the same series of questions begin to arise: How will I find a good job? What sector of Urban Planning do I belong in? How will my minor influence my potential for getting a job? Our executive board and SPA members make a point to help answer these questions, but also to immerse planning students in the various aspects of the profession while offering them tools to improve themselves as students and professionals.

We will be offering a wide array of events this coming year, including the “Future Cities” outreach program with the Burris Elementary and Middle School, and the “Just Lunch Program.” The “Future Cities” program offers Ball State students interested in planning or community development the chance to work with middle school students on a design competition. The competition calls for middle school students to design a city using SimCity, build a model of the city using recycled materials, and to write a narrative addressing a specific planning issue within their city. This program is a great way to act as a role model for younger students who have expressed interest in the fields of planning, architecture, and engineering.

The “Just Lunch” Program immerses planning students in the professional world. The program’s intent is exactly as its name suggests—students simply have lunch with a practicing or experienced planner in the field and talk about what their job entails. This program connects students to the professional world of planning, provides a glimpse into many careers within the field, and forms valuable relationships with professionals or organizations.

More events we have planned for this year include a professional Planning Department tour, the Box City event with Promise Road Elementary School in Noblesville, IN,
Habitat for Humanity, Dance Marathon, and helping with the Urban Garden Initiative.

SPA also enhances the skills our members already possess. For instance, Lisa Dunaway, a first and third-year studio professor, has previously volunteered to come to an SPA General Meeting to review and critique students’ resumes. Various other guest speakers such as Dr. Eric Kelly, Lohren Deeg, and others have come to speak about portfolio building, job and internship hunting, and volunteer opportunities.

As the primary student organization for Urban Planning at CAP, the Student Planning Association focuses heavily on what matters to planning students. The various events, lectures, and learning opportunities we host are intended to help each and every member of the organization achieve their personal and professional goals. The Student Planning Association meets every 2-3 weeks on Wednesdays. Those interested in learning more about the organization should contact SPA president Bryant Niehoff at bpniehoff@bsu.edu. We hope to see you at our next meeting!

**ASHP NEWS**

*By Lara Olinger, ASHP Vice President*

This year, Associated Students for Historic Preservation (ASHP) is hoping to revamp its past initiatives, creating some exciting new programming fresh for the new year. Two events have already occurred, centering around Muncie’s First Thursday. Students were given an inside look into the 628 Walnut Building that is being renovated by CAP students. Next on the roster is a private tour of Ratio Architectural Firm led by part-time BSU faculty member and Historic Preservation Team Lead David Kroll. We will also be attending a historic tour of Madison, IN, led by their preservation specialist. To cap off the start of the school year, students will be heading to Irvington for the Ghost Tours, which combines Halloween spirit, history and preservation into a night of fun. For this year’s Field Trip Week, students are either touring Michigan historic maritime sites – a growing field of preservation – or touring the Legacy Cities to look at blighted historic neighborhoods and their effects on surrounding communities.

ASHP is also hoping to make the 2014 Photo Challenge bigger and better with increased categories, submissions, and larger prizes. Watch for upcoming news. All submissions will help fund our trip to the 2014 National Trust for Historic Preservation Conference in Savannah, GA. Help us stay up to date on preservation techniques, policies and happenings!

Want to partake in any field trips we have listed or any of our monthly meetings? We welcome all disciplines to learn more about how preservation and their field of study align. Please email Julie Koomler (jkoomler@bsu.edu) for details regarding upcoming events and meeting times.

**N.O.M.A.S.**

*By Nicore Murray, NOMAS Marketing Chair*

N.O.M.A.S. is the National Organization of Minority Architecture Students. One of our focuses is to bring the departments together as one and help develop better connections between the different majors. We strive to be there for one another, whether it’s helping someone prepare for an upcoming presentation or just needing a lunch buddy before studio.

We are a small, close organization and are always looking for ways to better benefit our members. Every year we enter into the national NOMA Student Design competition. This competition is highly competitive, and last year, we brought home 2nd place. We have guest speakers come and teach us a thing or two about what’s going on in the world and how we can help. We even reach out to the community by collaborating with other programs like Habitat for Humanity.

We meet regularly on Mondays at 5 p.m. in the College of Architecture and Planning building, room 310. Our meetings are always open to non-members and to all students.

My name is Nicore Murray. I am the Marketing Chair for the National Organization of Minority Architecture Students, and I hope to see you at our next meeting!
USGBC STUDENTS – EMERGING GREEN BUILDERS

By Maya Bird-Murphy, USGBC Students Co-President

EGB is Ball State University’s official U.S. Green Building Council chapter and the 2014 USGBC Student group of the year! Together we promote green design principles throughout the College of Architecture and Planning, Ball State University, and the state of Indiana. We are an interdisciplinary group of students, each with unique talents and diverse backgrounds. Together, we discuss passive design and renewable energy as they relate to the world around us, in order to become future leaders in the green building industry. We have broadened our group outside of CAP and the design field by getting involved with everything sustainability!

During our weekly meetings, we take tours of sustainable buildings and spaces, and hear lectures from practicing architects, LEED APs, and anyone who has a passion for sustainability. We have a lot of exciting events happening this semester, including the International Greenbuild Conference taking place in New Orleans! Greenbuild is the largest green building conference in the ENTIRE WORLD, and EGB is going as a group! Critical Mass: Muncie is another great event that occurs every last Friday of the month. Critical Mass is a non-competitive bike ride where we remind cars that pedestrians are most important. We meet in the LaFollette parking lot for every ride. EGB is also hosting a screening of “If You Build It,” a new documentary about how a structure for a farmers’ market, designed and constructed by local teens, transforms the town and perceptions within it. Additionally, EGB will participate in two Habitat for Humanity builds. And all of that is just this semester!

If you are interested in participating in our events, being green, or just want to find out more about our group, come check us out! Meetings are typically held in the College of Architecture and Planning atrium on Mondays at 5:00pm. Stay updated by joining our Emerging Green Builders | USGBC Students Facebook page.
DO YOU WANT TO BECOME AN ARCHITECT?

By Bryan Beerman, Student Licensing Advisor

Steps to Get Your License:
Accredited Degree + IDP Experience + ARE Exam

What is IDP?
To become licensed, architects in all U.S. jurisdictions must first complete an experience requirement. NCARB’s Intern Development Program guides interns through this process, which includes logging hours across different categories of learning in the profession. You can start now!

How do I start recording IDP experience?
1. Establish an NCARB Record:
   - Go to www.ncarb.org
   - Click the “Log In” button, then “Establish Record”
   - Complete the instructions to create an account
   - Submit payment and fill out the school form
2. Once working, identify a supervisor
3. Document your hours through NCARB’s online reporting system:
   - Log into NCARB and choose “NCARB Record”
   - Choose the “IDP / Experience Reports” button

Do I have to work in an architecture firm to log hours?
No. Any construction-related field will qualify to submit experience. See the IDP Guidelines PDF for details.

Where can I find more information?
For complete explanations and to download the IDP Guidelines PDF, go to www.ncarb.org, then click on the Intern Development Program tab. For specific questions, contact Bryan Beerman, Student Architect Licensing Advisor, at bmbbeerman@bsu.edu.

50TH ANNIVERSARY EVENTS

April 9 and 10 - All CAP Symposium Ball State University, Architecture Building

Workshops, presentations, panels, and more are what we have in store. Continuing education credits too. Tours of CAP and of BSU are waiting for you. If there is a specific presentation topic or event you’d like us to add, please contact Lori Pence, assistant to the dean. We are beginning our search for presenters, so if you’ve done a cool project, or have something you’d like to share during the symposium, just let Lori know.

April 9 - Alumni Awards Banquet (open to all CAP alumni) Ball State University, Alumni Center

Cocktails begin at 6:00; Dinner is at 7:00 Join us to celebrate some of our remarkably talented alumni at the 2014 Alumni Awards Banquet. The 2014 CAP alumni award recipients are; (Distinguished award) Tom Baker, BArch ’74 (Outstanding awards) Rebecca Leonard, BS’95/MURP’97, Dan Overbey, BArch’05, Steven Spears, BLA’99, and Amy Williams, BUPD’04/MURP’05. Andrea Swartz, Associate Professor in Architecture, has been selected by the CAP alumni to receive the Charles M. Sappenfield Award of Excellence. Dinner is $27 per person and reservations are required. Contact Lori Pence to reserve your seat today.

April 10 - Beaux Arts Ball (open to all CAP alumni, students, faculty, and staff) Muncie, Indiana, Minnetrista Cultural Center, 7:00-11 p.m.

Yes, you read that correctly. We are revisiting the tradition of the Beaux Art Ball. The theme of “design” was been chosen. Get your costume ready and join us for dancing, cocktails, and hors d’oeuvres. There is a cover charge and cash bar. Cover charges are $10/student, $15/alumni, faculty, staff, or $25 per couple. Reservations are required.
MARCH GRAD DESIGNS 50TH ANNIVERSARY LOGO

By Lori Pence

Celebration of the CAP 50th anniversary began with the unveiling of the anniversary graphic design. The competition, held in June and July, produced 17 very different designs. The online public voting and final jury narrowed the choice down to one as the main logo. That design was submitted by Kevin Tempelman, Associate AIA, who graduated from the Masters of Architecture program in 2013. Kevin is currently an architectural designer at Design Organization, Inc. in Valparaiso, IN. His design now hangs from the CAP building greeting visitors and students. This designed will be used on communication pieces, celebratory products, and more.

During the final jury selection of the design, the jury decided to also recognize a second submission for its uniqueness and creativity. The “CAP House,” as it was named by the designer, is an exceptional view into the day-to-day activities of CAP students, faculty, and staff. Submitted by Eric Lawler, a current third-year architecture student, the creativity of this design could not be overlooked.

Thank you to everyone who submitted designs and participated in the selection process. Congratulations to Kevin and Eric, whose designs will now become another addition to the history of CAP.