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The achievements of the University of Wisconsin-Milwaukee School of Architecture and Urban Planning over the past few years have given us a great deal to be proud of. As the only accredited architecture school in the state, our focus on providing a well-developed foundation to promising architects who will practice in global capacities has been foremost in the direction of our program. As we encourage students to respond to the needs of local environments on a micro level, we remind them to reach out into the world with the opportunities we provide for them to travel and learn. Our strong historic preservation program provides a balance to the innovation of the technological advances we study, giving students the skills of appreciating the past while improving the future.

With international talent like this year’s Marcus Prize winner Sou Fujimoto and last year’s Urban Edge Award winners Michael Manfredi and Marion Weiss visiting the School to collaborate with faculty and students, and the implementation of projects that have been generated by this synergy in the Milwaukee area, the School has been an active participant in the improvement of the local built environment, and has used the city as a living laboratory. This activity is encouraged and sustained across the curriculum, in a concerted effort to provide students the skills that will enhance their contributions to their profession and to society. The urban locale of the School provides real-world case studies with real sites, real clients and communities. Work by students assumes a relevance and immediacy, and as the students learn, they bring fresh ideas and information to city officials, local groups and neighborhood businesses, becoming catalysts for new development and enlightened redevelopment. Often, this is done in partnership with local and regional studio sponsors, who provide opportunities to learn practical skills, and we are privileged, through the complete process from design to implementation, to have the support of our many contributors.

The quality of work demonstrated in this volume is but a small selection of the outstanding design abilities that our students possess. We are proud that the School has won three NCARB Prizes in four years, that a SARUP student has received 1st place in the Precast/Prestressed Concrete Institute’s national competition each year it has been offered, since 2006, and that students routinely win national and international competitions, including those conducted by the American Institute of Steel Construction and the Urban Land Institute.

Our faculty consistently strives to provide excellence in design education, and this volume is reflective of that effort. I am grateful to them all, and in particular to Professors Mo Zell, Karl Wallick and Kyle Reynolds, who with their team of student editors Amanda Koch, Nathan Buttel and Amber Piacentine, have produced this collection of work that represents the quality of the School.

Robert Greenstreet, RIBA, Ph.D.
Dean, School of Architecture & Urban Planning
University of Wisconsin-Milwaukee
Chair of City Development, Milwaukee, WI
We are optimistic about the state of our discipline. Rising international construction trends, the drive for sustainable solutions, the recovery of our national economy, and the continued relevance of civic space all bode well for graduates of architecture. With all the construction going on across the globe, we need well-educated architects more than ever.

Besides illustrating the vibrant and varied design culture at SARUP, this catalogue of student projects considers seven topics central to architectural processes. The chapter headings: discursive, element, generative, macro, technics, use, and vernacular refer to predispositions in courses at SARUP; latent interests that permeate the school.

Four years have passed since the last publication of Calibrations at UWM SARUP. Much growth has happened among the student and faculty body, undergraduates are now graduates, graduates are now practicing architects. Among the faculty, there are many new faces revising curricular approaches and establishing contemporary practices and research agendas. SARUP has established an Architecture Fellow program as a way to invite new theories and techniques to our school. Several faculty continue to solidify SARUP’s reputation as an award-winning design school with three NCARB prizes, numerous national awards and publications, and substantial research dollars. The Marcus Prize and Urban Edge Awards have made it possible for students to study with renowned international architects practicing at the vanguard of the discipline such as Alejandro Aravena, Francis Kéré, Marion Weiss and Michael Manfredi, and Herbart Dresser. Just announced in this year’s Marcus Prize winner: Sou Fujimoto who will run a studio in spring 2014 at SARUP!

Our sponsored studios leverage expertise from the professional community in unique partnerships that benefit students at SARUP. Over half of the studios represented in this publication have received external support. This funding provides access to lectures, guest critics, student travel, and manufacturing facilities.

Even with all of these changes and events occurring, SARUP remains steadfastly committed to a tectonic conception of architectural practice in much of its curriculum. Students know how to put a building together and how to derive formal poetics from constructive assembly. Constituting the backbone of SARUP’s curriculum, this passionate commitment to tectonics is complemented by many avenues of experimentation and research that challenge orthodoxy. Many of the thesis projects, elective studios, and seminars propose alternative theories for architectural thermodynamic form, cultural inclusion, speculative envelopes, digital prototyping, human agency, new ecological and programmatic compositions for water management, and many other queries made for a diverse and dynamic academic environment.

Positioned on the Great Lakes, Milwaukee is frequently referred to as the Third Coast. The city is re-freshing its industrial heritage based on water, culture, and the creative class. SARUP faculty and students leverage UWM’s location by addressing global concerns at the local and regional level. Projects initiated under the three-year Inner Harbor grant, BLC’s Field School or the $500,000 Historic Preservation grant represent many ventures at the school that capitalize on Milwaukee’s vibrant manufacturing past, its varied cultures and people, and an urban landscape that embraces current and future development.
SARUP CULTURE
SARUP CULTURE
The UWM School of Architecture and Urban Planning introduced the biennial Urban Edge Award in 2006. Modeled after the successful Marcus Prize for emerging architects, and supported by the Wisconsin Preservation Fund, the Urban Edge Award recognizes excellence in urban design and the ability of individuals to create major, positive change within the public realm. This award honors an internationally-recognized design professional who brings fresh, innovative, and effective thinking to the field of urban design.

For the 2013 Urban Edge Prize, winners Michael Manfredi and Marion Weiss of Weiss/Manfredi collaborated with the Department of Architecture to host a symposium on landscape urbanism titled Evolutionary Infrastructure.

Expanding the definition of infrastructure to address an escalating set of design challenges that are at once cultural, architectural, and environmental, the symposium hosted a series of cross-disciplinary talks and discussions between innovative architects, artists, ecologists, engineers, and theoreticians. Biased towards expediting movement and inherently resistant to supporting other forms of inhabitation, infrastructure is an archaic monument to mono-functional use. With ever-increasing levels of urban density, infrastructure in the city is an underworked territory that must sustain a larger agenda. Infrastructural systems are as important to cities as the institutions that typically attract the attention of designers and the general public, and recent climate-related events have catalyzed the need to re-define and re-shape our infrastructure.

Rather than narrowly circumscribing this topic, which is evolving at an increasingly rapid rate, the symposium fostered an open-ended conversation through multiple lenses (environmental, spatial, and cultural) and through unique voices that were willing to challenge typical perceptions of contemporary systems. What if a new paradigm for infrastructure existed? How can new ecological, engineering, and design imperatives redefine our understanding of an infrastructural system? What new reciprocities can we envision between pre-existing infrastructural systems and more ecologically resilient territories for public life?

Symposium participants included Eric Bunge, Michael Manfredi, Paul Mankiewicz, Anuradha Mathur, Mahadev Raman, Grace La, David van der Leer, Mary Miss, Keller Easterling, Kyle Reynolds, Arijit Sen, and Marion Weiss.

Weiss/Manfredi Architecture/Landscape/Urbanism is a multidisciplinary design practice based in New York City. Founded by Marion Weiss and Michael Manfredi, the firm is known for the dynamic integration of architecture, art, infrastructure, and landscape design. They recently won the international competition to redesign the Washington Monument grounds at the Sylvan Theater. The firm’s projects exemplify architecture’s potential to transform public space. The Seattle Art Museum’s Olympic Sculpture Park, the Brooklyn Botanic Garden Visitor Center, and other works have won their practice numerous awards, including the Academy Award for Architecture from the American Academy of Arts and Letters, and the International VR Green Prize for Urban Design. They have also been named one of North America’s “Emerging Voices” by the Architectural League of New York, and received the New York City AIA Gold Medal of Honor. Weiss and Manfredi have taught design studios at Yale University, Princeton University, and Harvard University. Michael Manfredi has been the Gensler Visiting Professor at Cornell University and Marion Weiss is the Graham Chair Professor of Architecture at the University of Pennsylvania.
For the 2011 Urban Edge Prize, winner Herbert Dreiseitl, Atelier Dreiseitl collaborated with Associate Professor James Wasley to lead a graduate studio on stormwater and infrastructure. The goal of the Spring 2011 studio was to create visions of UWM’s proposed plan for a ‘harbor campus’ of academic research and industrial incubator spaces marrying environmental sustainability with economic redevelopment. Ecologically restorative water management being the core research focus.

Atelier Dreiseitl is a multidisciplinary practice specialized in integrating art, urban hydrology, environmental engineering and landscape architecture within an urban context. The Atelier was formed in 1980 by Herbert Dreiseitl with a goal of promoting sustainable projects with high aesthetic and social value. With a particular focus on water, the practice seeks to awaken a new understanding of liveable cities while delivering holistic design solutions.

Whether visible or invisible, water plays an essential role in the vitality of urban life. Tried and trusted conventional infrastructure systems are no longer safe and cost-effective solutions. The networking of city public space as interactive, ecological infrastructure—publicly visible, technically smart and beautiful—is the basis of Dreiseitl’s approach. Water presents one of the most fundamental and rewarding challenges in our cities today.
The University of Wisconsin-Milwaukee School of Architecture & Urban Planning, through the vision and generosity of Milwaukee’s Marcus Corporation Foundation, initiated a biennial, international architectural prize to recognize the talent and achievements of emerging architects, in the early stages of their career. The award honors architects for their outstanding work to date—as well as their promise of greatness in the future. The $100,000 prize provides $50,000 to the winner and a further $50,000 to lead a design studio in collaboration with UWM faculty. In addition to the award itself, the Marcus Corporation Foundation provides financial support to host the selection jury and to bring the awardees to Milwaukee for the studio.

Diébédo Francis Kéré was born in Burkino Faso, the first-born son of the chief of Gando village. He was awarded a scholarship to complete his secondary education in Berlin, and upon completion, enrolled in the School of Architecture at the Technical University of Berlin, completing his degree in 2004. In 1998, Kéré founded “Bricks for the Gando Schools,” and raised funds to build a new school in his home village. Here he adapted construction techniques to take advantage of passive ventilation strategies, local resources and technical skills.

Diébédo Francis Kéré with Associate Professor Chris Cornelius led a collaborative studio in the spring of 2012.
In 2009, the Chilean practice of Alejandro Aravena was selected as the third Marcus Prize recipient from the largest pool of nominees to date consisting of 40 international architects drawn from 18 countries.

Aravena’s practice, a self-described “Do-Tank,” is affiliated with COPEC, a Chilean oil company, and the Universidad Católica de Chile. The affiliation has a social/political agenda and considers architecture a source for building social equity. The studio, which focused on specific architectural challenges that inspire positive change within Milwaukee’s urban fabric, was conducted in 2010.

Past winners of the Marcus Prize include Frank Barkow, Barkow Leibinger in 2007 and Winy Maas, MVRDV in 2005. International architect Sou Fujimoto has been awarded the fifth Marcus Prize.
AIAS MIDWEST QUAD

WILL BRUDER
VINCENT JAMES
The American Institute of Architecture Students (AIAS) is an active student-led organization hosting a number of events throughout the academic calendar. In addition to running several workshops on digital tools, social events such as Sandcastles on the beach, and professional networking opportunities, the AIAS hosted the Midwest Quad Conference. For two days in the spring, students from all over the Midwest descended on Milwaukee for tours of the city, educational panels, lectures, and a Beaux Arts Ball.

Will Bruder and Vincent James, featured speakers at the AIAS Quad Conference, have each described different paths for creative engagement addressing the following questions: How do architects interact with and affect changing conditions of culture, climate, and cities? How should architects be active citizen-participants in society? Their lectures were meant to be opportunities for reflection and provocation.
BUILDINGS
LANDSCAPES
CULTURES
Buildings - Landscapes - Cultures is an award-winning, collaborative research project. Serving both the Madison and Milwaukee campuses of the University of Wisconsin, this program supports doctoral students enrolled in architecture and the history of art. Faculty participate from both campuses with research and teaching focused on housing, urban and architectural history, cultural landscapes, urban and rural vernacular, and urban and architectural morphology.

BLC focuses on the study of the built environment within a historical framework. Scholars associated with this area seek to understand the relationship between cultural practices, material culture, and human agency. Two major epistemological frameworks define BLC scholarship. First is the complex dialectic between empirical material environment and social theory. The second pertains to situating knowledge of buildings, landscapes, and cultures within shifting social, geographical, and temporal scales of analysis. The BLC curriculum is unique because both the Madison and Milwaukee campuses retain program independence while sharing resources and collaborating through courses.

Central to the BLC pedagogy is a critical examination of the field as a location and a classroom in addition to being an object of analysis. Engagement with this context takes on multiple forms of scholarship, but a critical interpretation of the field as a political site is central to the investigation. Foundational depth to the field as an area of knowledge is seen as a precursor to interdisciplinary experimentation. As such, BLC faculty and students participate in a wide variety of discipline-specific organizations including anthropological, geographical, architectural, cultural studies, religious studies, cartography, and preservation, among others.

At Milwaukee, BLC students receive a degree in architecture and pursue program requirements of the doctoral program in architecture. At Madison, students fulfill the requirements for the architectural option within the Art History doctoral program. Students have a primary advisor at their home campus but may enroll in courses and use resources at either institution. Currently there are eighteen faculty representing a number of different academic departments including architecture, landscape architecture, art history, sociology, and geography.
Community Design Solutions is an NCARB-designated Community Design Center/Collaborator within SARUP that assists communities, agencies, civic groups, and campuses throughout Wisconsin. CDS was founded in 2000 by Dean Bob Greenstreet to provide preliminary design and planning services to underserved communities and agencies. Students from SARUP work with Director Carolyn Esswein, clients, and faculty, to develop concepts that promote positive change, stimulate funding opportunities, and serve as a catalyst for continued investment. More than 200 projects have been completed since 2000, with about 20 projects being completed each year. The programs are funded by a combination of University funds, gifts, grants, and fees for service.

Integrated with the culture of the school, all projects and initiatives involve students at various levels of undergraduate and graduate education. Student-led design and planning teams assist with neighborhood visioning, renovation and adaptive reuse, streetscape and landscape planning, sustainable development and design, design for special needs and activities, urban green space planning and design, and design education and training.

Current projects operate at a range of scales from signage to neighborhood planning. On the boards is an outdoor corridor for the University of Wisconsin-Milwaukee’s campus, renovation schemes for foreclosed houses in the Layton Boulevard neighborhood and a waterfront plan for the city of Oconomowoc.
In addition to exhibits occurring in SARUP’s gallery, faculty and students have exhibited projects in a number of venues across the city from galleries to the Discovery Center. Operating year-round, a typical calendar for the SARUP gallery includes work by the Marcus Prize and Urban Edge winners, the SARUP Architectural Fellow, new faculty, local practitioners, and the annual student award winners. The 2013-14 exhibit calendar includes shows by Marcus Prize winner Sou Fujimoto, Kyle Reynolds and McLain Clutter - Empty Pavilion, Jimenez Lai, About Face; SARUP Building Enclosure, Filip Tejchman - Manifold Destiny, and SARUP’s second Architecture Fellow, Tao Sule Du Four.
The Historic Preservation Institute promotes historic preservation and adaptive reuse through engagement in community service projects. The Institute is focused on expanding the already acknowledged social and economic benefits of historic preservation by both recognizing and promoting significant historic buildings. The ability to overlap academic studies with real-world circumstance has proven beneficial to both the students and the community.

Philanthropists David and Julia Uihlein have made a $500,000 donation to SARUP’s Historic Preservation Institute, to enhance its work in building preservation and heritage protection through academic coursework and community preservation activities.

“This transformational gift will vastly expand HPI’s ability to address key Milwaukee preservation challenges. By funding students and interns who will work directly with the City’s Historic Preservation office, the effectiveness and profile of that office will be elevated. By providing direct services in the research and evaluation of building development projects, the Institute will be a high-profile contributor connecting planned development to the preservation community. David and Julia believe in the importance of preservation studies and research and I couldn’t be happier they’ve demonstrated their commitment by investing in our School,” said Dean Bob Greenstreet.

The gift will help fund a graduate level historic preservation design studio, which will focus on the challenges of retaining key historic buildings and neighborhoods in Milwaukee. Professor Matt Jarosz is the director of the Historic Preservation Institute at SARUP and will lead that studio effort with yearly documentation and design intervention proposals.

“Retaining and adaptively reusing existing historic buildings is becoming a fundamental component of architectural education. SARUP, through the work of the HPI over the past 10 years, is working hard to provide students with an education in the effective and economical reuse of existing buildings. National and global trends continue to reinforce the proposition that for many decades to come, building re-use will account for a considerable amount of work in professional architectural firms.

This grant will significantly elevate our educational resources. The city of Milwaukee will serve as our laboratory of study in building documentation, historic research, re-use design proposals, and studies in the economics of heritage retention. We feel that both the products - our academic work, as well as our student interns themselves - will be an important tool for the city and the many people and groups engaged in the struggle to retain our unique heritage.”

David Uihlein, an architect, is the President of Uihlein-Wilson Architects, and with his wife Julia, is the chair of the David & Julia Uihlein Charitable Foundation.
The goal of the Institute for Ecological Design is to advance sustainability research in the design fields, advance sustainable practice through consulting on high-performance design projects, to collect critical data and develop design standards to inform public policy, and to lead ecological design education and curriculum development.

A $250,000 grant from the Brico Fund has underwritten a three-year focus by the School on the ecological and economic issues of the 200+ acre post-industrial lands of Milwaukee’s Inner Harbor at the confluence of the Milwaukee, Menomonee, and Kinnickinnick rivers. Celebrating the founding of the UWM School of Freshwater Sciences and the construction of a $53M new laboratory addition to the existing Great Lakes Research Facility on the Inner Harbor, our goal has been to create a solid body of research to drive city policy and a new public vision for the ecological restoration and economic redevelopment of our waterfront.

The Brico Fund grant has been complimented by the Dean’s commitment of the Urban Edge Prize in both 2011 and 2013 to the theme of water and infrastructure. In 2011, Associate Professor James Wasley taught a graduate design studio with Urban Edge recipient Herbert Dreiseitl that explored the handling of water at the scale of a campus designed to complete the masterplanning vision of the new School of Freshwater Science on land now occupied by black mountains of coal. In 2013, Associate Professor Karl Wallick worked with Urban Edge recipients Marion Weiss and Michael Manfredi to host a significant symposium – Evolutionary Infrastructure / Evolving Practices - on public infrastructure in the age of ecology.

Over the last five semesters, the Inner Harbor Project has sponsored a public charrette with Herbert Dreiseitl engaging over 100 students in the second semester core undergraduate studio and other studios, four urban design studios developing large sections of the Inner Harbor piece by piece, nine upper-level elective studios on specific sites, five comprehensive design studios with specific tectonic objectives, and eight thesis projects. Furthermore, the Project has sponsored four seminars on landscape and related topics examining the Inner Harbor, a preservation studio, three Civil Engineering Capstone Project classes and one Landscape Architecture studio with students from the University of Wisconsin Madison, and a landscape architecture studio taught at the Illinois Institute of Technology. The work of the Inner Harbor Project has been chronicled in a series of end-of-year exhibits in May of 2011, 2012, and 2013. As one component of sponsoring these efforts, the Inner Harbor Project has distributed $15,500 in awards for student work to date.

The Inner Harbor Project was a highlight of the Mayor’s ‘State of the City’ address in 2012, and in 2013 the Mayor’s Green Team issued a ten-year Sustainability Plan for the City that identified the Inner Harbor Project as one of two keystone projects for the next decade.

The Inner Harbor Project has resulted in a master-plan for stormwater and habitat restoration demonstration projects at the new School of Freshwater Science that are being implemented in concert with the City’s reconstruction of Greenfield Avenue, an important access point into the heart of the harbor serving the School. It has also supported City of Milwaukee efforts to restore the last remnant wetland within the Milwaukee Estuary and to create a new constructed wetland providing spawning habitat for Lake fish. These two real projects create anchor points for a proposed Harbor Walk that will open the Inner Harbor for public access. They also provide hopeful visions embodied in all of the Inner Harbor Project work.
LECTURE SERIES
Pipeline to America

The pipeline network pictured here is primarily fed by oil and gas extraction in the Gulf of Mexico, though it includes transfer points for tankers as well. Over twenty-five thousand miles of underwater oil and natural gas pipelines are buried beneath the seabed and connect offshore drilling platforms to Gulf state refineries and chemical industries. These offshore platforms traverse vast spans of land and water, merging infrastructural, ecological, and political imperatives in a new geography. The consequences of ever deeper water drilling include the risk of uncontrollable oil spills, where, unlike the defined surface extents of a tanker spill, deep holes in the earth can release unknown quantities of oil into the water column. The Deepwater Horizon explosion of April 20, 2010, released approximately five million barrels of crude into Gulf waters.
NATIONAL ORGANIZATION OF MINORITY ARCHITECTURE STUDENTS
Dedicated to fostering opportunities for students and pre-professionals, NOMAS provides a platform to network with professionals, share ideas, and discuss the progression of the architectural profession. The SARUP chapter of NOMAS works with faculty advisors to host an annual symposium on the state of the discipline. This year’s theme was “Re-envisioning Architecture.” Speakers who have sought and established an enlarged vision of disciplinary boundaries by developing non-traditional architectural business approaches presented their work and discussed issues with the student and professional audience. This year’s panelists included: Isaac Menyoli from A&E Architects and Engineers, Jezamil Vega-Skeels from Layton Boulevard West Neighbors, Gil Snyder from UWM-SARUP, and NJ Unaka from ReThink Factory.
STUDY ABROAD
Students at SARUP have regular opportunities to enhance their education through myriad study abroad opportunities. Within our teaching and research, we strive to prepare them to meet future social, cultural, and technological challenges by becoming globally competent and culturally sensitive, with an expanded understanding of today’s multifaceted and interconnected world.

Travel abroad introduces students to architectural discourse across an expanding spectrum of place and time (from Europe to South America), in diverse cities (from Amsterdam to Istanbul). The emphasis on culture in architecture is a platform from which to participate, at unprecedented levels, in trans-continental and cross-disciplinary investigations. A limited mapping of recent years reveals over forty national and international destinations that architecture students and faculty have visited together. This cultural curiosity illuminates the school’s tremendous appetite to understand the global position and contexts from which architects operate.

Workshops, lectures, fieldwork, and visits to notable sites are all part of the experience. While the focus of study is architecture, historic preservation, and urban design, there are opportunities for students to experience and enjoy the local culture of these wonderful places. SARUP study abroad travels include trips to Italy, France, England, Japan, Cape Verde, India, Spain, Netherlands, Finland, and Scandinavia.
The Milwaukee lakefront, within the Central Business District, continues to provide inspiration for the transformation of this important historic site into an iconic center for the City. Nowhere is the vision of Milwaukee’s identity more evident than in the intersection of Wisconsin Avenue, the east-west main street of the downtown, as it reaches the prospect overlooking Lake Michigan, one of the world’s most important freshwater lakes.

The symposium, organized by Associate Dean Gil Snyder, titled (RE)SOLVE: Life on the Edge, took place in Milwaukee’s Historic Third Ward in the community seminar space of cosponsor Eppstein Uhen Architects. Civic leaders joined with professionals from the architecture, engineering, and construction communities for an afternoon of critical dialogue around the development issues for this important piece of Milwaukee.

The symposium was led by three speculative student seminar presentations. Each interrogated the constituent components of potential massing and building realization according to varied theoretical approaches. Important speculation was also generated about the “content” or programming for the massing selected as the subject of focus in these lakefront masterplans and their constituent buildings.

This was followed by remarks from selected professionals, invited as “discussants,” each representing a community stakeholder in the lakefront site. These discussants laid out their positions on the development prospects for the project, and then responded to questions and comment from the community assembly. Vigorous debate ensued with particular energy focused on the morphological implications of the definition of “edge,” especially with respect to sectional connection from the upper level of the downtown to the lake level.
The school’s long tradition of pluralism serves as the backdrop for discussions at the school-wide external review of student work known as SUPERjury. Currently, the school fields a diverse range of studios with no single doctrine or philosophy dominating the curriculum. A range of work representing multiple strands of student and faculty research is represented and yields an engaging discussion about the direction SARUP might position itself for the future.

SUPERjury fosters a merit-based competition in the school which provides an opportunity for the best students to be exposed to the larger architectural community. For students, the process of joining SUPERjury is very competitive; only the best student representative from each participating studio is selected to present. The second SUPERjury, SUPERjury 2010, brought together Martin Finio of Yale University, Andrea Kahn of Columbia University, and Martin Hogue of Syracuse University to review student work.

Building on the tradition of a school-wide external review of work established in the fall of 2008, the most recent iteration of SUPERjury 2013, was combined with the annual student awards. Organized and funded by the SARUP chapter of AIAS, an initial round of student and faculty votes selected student projects from the fall and spring undergraduate, graduate, and thesis studios. These semi-finalists were exhibited throughout the school as part of the annual exhibition. External jurists were Assistant Dean and Professor Peggy Deamer of Yale University and John McMorrough, director of University of Michigan’s Taubman School of Architecture. Together, they selected the award finalists and led a public discussion on the work and its disciplinary context.
The idea of a rambling line in a sketch leading to a moment of artistic and aesthetic brilliance might seem to be inherent within a pedagogical definition of discursive. However, the meaning we seek to promote here relates more to expanding modes of discursive and is characterized by a rigorous analytical approach rather than intuitive processes. Many times the creative process for design can be a highly personal, private even, internal search. For discursive modes of investigation, design as a mode of architectural research is deployed to challenge long-standing disciplinary assumptions relating to conventional inhabitation, form, thermal forces, structure, and other issues. Key to this approach is a manner of investigation that externalizes the architectural thought processes. In this section, projects develop new modes of representation or appropriate technology from other disciplines.
A change in the philosophy of education requires a fundamental change in the design of learning environments, offering a unique opportunity for architecture to be reimagined, not as isolated spaces and objects upon a landscape, but instead as an architecture of the landscape. This thesis tries to create a symbiosis of the natural and the constructed (of river and city), which has the added benefit to transcend the physical built world and offer insight into the philosophy behind education, especially connections between mind and matter. This thesis is sited in the Menomonee Valley of Milwaukee, WI. It inhabits the zone left over by other activities, harnesses existing ones, and makes a middle-school learning environment like none other.
“Architects are not the engineers of the three great variables: territory, communication, or speed.”
- Michel Foucault

This thesis is a speculation on the formal and spatial implications of the urban cross-grain connectivity of I-794, Milwaukee’s east-west freeway.

The introduction of the freeway has been essential in easing traffic congestion, but the consequences to the pedestrian experience at its edges and below it have been dire. Wide swaths of freeway have fractured urban tissue and erased neighborhood identities. The consequences include immense pockets of leftover space, devoid of identity. These places are forgotten and disconnected from the city and in architectural terms, are referred to as “non-place.”

This study aims to use novel representative strategies to assume agency over the territory of speed and the nonplace, while speculating on the urban links within the dividing swath of the freeway. The purpose is to identify a modulating symbiotic language between urban freeway and city.
Extending the landscape for performance from the street and unfolding it through the theater, from the box office to the stage, creates a new spatial paradigm for critiquing the architectural promenade. This thesis unpacks the architectural devices typically used to heighten the division between the informal performative space of the city and the privileged, formal, and highly staged performance space of canonical theaters. By deploying a continuous ribbon of theatrical landscape, the informal character of street interactions are threaded from the pavement to a theatrical roof garden. This architectural ribbon heightens the accessibility and visibility of the theater within the city.

This project proposes a new off-campus Center for the Performing Arts that integrates the University of Wisconsin-Milwaukee Peck School of the Arts more fully within the city. This new hub will strengthen the institution’s collaborative exchanges between students, arts lovers, professionals, and faculty by eroding the barriers between performer and audience.

Advisors: Grace La (chair), Ash Lottow, Scott Georgeson, Rebecca Holderness
Cars are a dynamic foil to architecture. The discipline grapples with this ubiquitous invention over a century after its introduction, as it continues to compete with our spatial efforts in contemporary rhetoric. Competing with and against our spatial efforts in contemporary and popular rhetoric, the discipline still grapples with this ubiquitous invention over a century after its introduction. While cars may be in many ways, far more technically advanced as a consumer product than a building, the degree of intimate contact with both is quite similar. As in a structure, issues of iconography, imagery, civic and personal space are all activated in automobiles.

Exploiting the connection between pleasure and necessity, this studio uses a public institution, the Auto Museum, as a tool for questioning and provoking issues relevant to architecture, culture, and society. Architecture, as a discipline, typically exercises formal means to unite spatial concerns with social issues in the construction of a building. The museum as a typology is uniquely positioned to agitate this condition with both internal operational roles and external societal roles competing for formal prominence. What is this identity? Is it distinct? What is its position within the local and global context of the art community?

The question one poses towards the content of the museum will undoubtedly affect the form of the museum itself and the relationship between building and context.

This studio requires each student to take a thesis from the point of view of a connoisseur, feminist, cultural anthropologist, enthusiast, consumer, or some combination of these characters. What kind of museum unfolds from this particular point of view? How does this influence the real presentation of the car?
The studio is modeled after a research think-tank. The semester begins with an open question, and members of the studio work as a group to generate a range of scenarios in response. Because there is no precise expertise or contemporary voice that encompasses the totality of what is being investigated, the research is far-reaching, extending into other disciplines and historic eras.

Disciplinarity is ultimately at the core of each assignment, technique, and discussion. Students continually assess whether an aspect of what they are doing negates existing professional modalities. Does the work produced serve to expand the expertise of the architect and process of architectural knowledge-making? While considering this, students confront the question of what qualifies as architectural research. Representation, in this case drawing, is fundamental to the goals of the studio: it occurs at the earliest stage of exploration and anticipates the next step in the design process. Plans, sections, elevations, and isometric projection are only the most basic forms of architectural drawing. In borrowing from other disciplines, the appropriation of alternate techniques for architectural notation is critical. An effective drawing must do three things: measure, describe, and instruct.
Explorative Prototyping

Students look beyond the standard catalog of construction details and discover the hidden potential in materials, structures, and fabrication techniques, finding rich and unexpected ways to deploy ordinary material systems. This effort involves the extensive use of prototyping. The studio culminates in the design and fabrication of full-scale ceiling or partition systems installed in local businesses, which give students the opportunity to move beyond theoretical designs. By building their designs, students learn to take a project to completion, to creatively adapt to fabrication and field limitations, to collaborate and coordinate work, and to evaluate the success of a design directly through its habitation.

Emerging Digital Technology

Students explore the creative potential of new digital methods, including parametric modeling, scripting, rapid prototyping and digitally-augmented fabrication. The central technological goal of the studio is to integrate parametrically-driven digital media with a material-based design process.

Alternative Models of Practice

Rather than limit thinking to conventional models of practice — corporate firms and small design boutiques — students explore various entrepreneurial models of practice. Students research how to start a design practice, including funding start-up costs, maintaining low-overhead operations, partnerships, and finding work. Students engage entrepreneurial skill-building exercises including free-market-based team collaboration, organizing a public exhibition of work, publishing an exhibition catalog, finding local sources of salvage building materials, networking and collaborating with local manufacturers and fabricators, and finding a real client to fund their studio project. The studio operates as a profit-seeking design and fabrication business.
From Top:
Jackson Lindsay
Axon Construction Detail
Blake Villwock
Unraveled Diagram
Blake Villwock:
Hide House Leasing Office
Wall Diagram
Next Page:
Blake Villwock:
Hide House Leasing Office
Display View
This studio investigates craft in architecture as a mode of fluctuating between representation of what we know about a place and its phenomena, and how we might manipulate that found condition, through an intuitive design process, into a desired future. Oscillating between drawings, models and digital space, the studio advances an architectural proposition that emerges from the site, while recognizing the presence of water as an enveloping and problematic entity.

Located on Milwaukee’s Inner Harbor, the “siting” of the building in this case involves using the terrain and architectural infrastructure to mark civic territory and consciously gather, retain and release water. By engaging in dialogue between internal program and building skin, the project redefines the physical edges between water and land and between land and building, as well as the soft or invisible edges defining ecological and civic infrastructure systems. The domestically-scaled program for a micro-hotel, spa, and public changing facilities allows for a deep investment in the act of making, while the inclusion of public space forces an agenda of transformation and porosity. The potential for a responsive architecture implies strategies of pouring, stacking, layering, carving, laminating, and folding—in search of sculptural form with a materially-specific tectonic language, while imparting the architecture with sensuous resiliency.

James Dallman
Elective Studio
A tone poem on water and land in three acts, this studio promotes a dialogue between tectonics and landform, embedding a civic program in a highly charged site at the interface of urbanity, landscape, and water. With construction as a fundamental criterion, students investigate building as transformed site, unearthing its topological structure as a source for design inspiration. By representing the site through an iterative, evolving series of physical and digital models, the studio will pose the question of how architecture can act in a geometrical-ly reciprocal relationship with its surroundings, confronting the legacy of constructed ground. Can construction be viewed as “topography’s perpetual becoming?” (Leatherbarrow, Uncommon Ground, p.ix)

Fashioned from one million tons of rock excavated in the 1980s from the Milwaukee Metropolitan Sewerage District Deep Tunnel Project, the Lakeshore State Park has been cultivated as a recreational area integrating paths, prairies, beaches, boardwalks, and boat slips. The program for the project promotes the further articulation of the emergent civic network of this man-made landscape, including spaces for education, recreation, and gathering. The essential qualities of water, land, and human settlement offer potential for a simultaneously knitted and radical form, suggesting architecture as eco-civic terrain.
The final studio in the undergraduate core sequence focuses on the relationship between space and site. The project is divided into three areas: precedent and collage, program and parti, and spatial sequence. A series of exercises provide the creative springboard for the semester. Initially, a diagrammatic model is coupled with an analytical precedent collage. Next, students are asked to conceive, develop, and refine a parti for their project. A design stance is developed and represented in a manner pertinent to each student’s specific point of view. Finally, the spatial sequence is developed to emphasize unique sensations and experiences along the architectural promenade. Special drawings akin to storyboards for a film are developed to convey the perspective sequence as a narration for human experience in the space.
Jonathan Wang
Sectional Perspective
Clockwise from Left:
Nate Waddell
Section
Bird’s Eye View
Damian Raducuca
Rendered Perspective
Final Model
Nate Waddell
Diagrams
This foundation studio challenges students’ preconceptions about architecture while enabling them to become critical of the built environment. Emphasis is placed on the formation of ideas and the abilities of the student to carry these ideas throughout the design process. Fundamental concepts and terms like path, place, space, sequence, procession, and poché are introduced.

Several themes are explored throughout the semester, including spatial experience, contextual analysis, formal concepts, and social/cultural relationships. The process of architectural study includes models, drawings (diagrammatic, analytical or evocative) and other visual material necessary to present each concept or idea to support the process of designing, one through which thought is recorded visually.

Students explore the spatial relationship between architecture and place-making. The term “space” is elusive in that it can be a physical or conceptual entity. Though the concept of space is commonly used in architecture, its role in the design of architecture is not always clear. Space is difficult to identify since its own physicality is, in actuality, defined or contained by other elements. A reciprocal relationship exists between space and that which contains it. This emphasis, from the elements that form space to the space being the form itself, is considered as part of this studio.
Tectonic approaches to architecture are typically appreciated as the parts and arrangements that are arranged to prefigure assembly. Whether following an elemental definition of tectonics with mass, planes, and frames or a mindset that embraces the structure, enclosure, and mechanical configuration of contemporary building trades, these are the fundamental elements that architects use for composing buildings.

The projects that follow share a common interest in the development of components and assembly systems to produce and articulate architectural form. As such, this work calls our attention to part-to-whole relationships and the development of material articulation. The work emphasizes tectonics and the resolution of connections as well as the effects of singular elements. Whether working from an individual component and expanding it into a system or starting with a general form and breaking it down into its constituent parts, these projects have rationalized their inherent complexities in order to develop new models of construction and order.
Once known as the “Machine Shop of the World,” Milwaukee’s rich industrial heritage offers aesthetic and tectonic cues for the new design of an Industrial Exhibition Center. Highlighted within this tectonic framework is the design of adaptable architectural elements that allow the building to change in response to the exterior environment. The primary element being controlled is sunlight. The design methodology oscillated between macro and micro issues to formalize a symbiotic relationship between the two scales.
Milwaukee’s original manufacturers had access to existing equipment and to startup funds to make prototypes and launch their businesses. The ability to produce their designs in an existing factory helped Harley and Davidson launch their company. Herman Falk, given the opportunity to experiment in the Brewery, eventually had a successful business making machinery.

How can a similar environment be recreated today, to rebuild Milwaukee’s industries, to foster the creation of businesses, encourage job growth, and reverse the exodus of jobs to suburban business parks?

One way to bring investment to Milwaukee in the 21st century is to build a signature facility, the Milwaukee Innovation Center, that will function as a business incubator and production facility. This iconic catalyst for growth can provide access to equipment and support for aspiring entrepreneurs to develop their ideas and business with greater ease and flexibility and less risk.

Advisors: Gil Snyder (chair), Kyle Talbott, Jim Shields

Milwaukee Innovation Center: Business - Production Facility
Alexander Fortney - Master’s Thesis Project
The comprehensive studio provides a model for the entire building design process from programming to construction documentation. This model calls for design excellence and integrity at every phase in the design of a single public building, with a focus on simple, direct, and elegant design solutions.

Students develop the following: a methodology for writing detailed space programs, based upon a narrative of the client’s needs and desires; three schematic design alternatives from which one is chosen for design development; a methodology to balance project size with level of finish, utilizing one of three conceptual cost categories; an ethical position in regard to the use of non-renewable materials and those that pose a threat to human and environmental health; compliance with ADA and IBC codes.

Students further refine schematic designs focusing on sectional tectonics, primary elevation materiality, and one primary interior. Finally, each student compiles a short set of construction drawings documenting the essential components of their design. In lieu of actual construction, each student builds a basswood model of their design.
Embedded within the spatial organization of college dormitories are profound conflicts between opposing conditions: public vs. private space, individual vs. collective identity, transient vs. permanent occupation, bounded vs. open domains, claimed vs. unclaimed territories. These forces are frequently submerged beneath conventional stylistic adornments that are assumed to be the content of dormitory housing design. The goal of this studio is 1) to excavate beneath these stylistic preconceptions to more fundamental qualities that emerge when the oppositional conditions within the dormitory are revealed and 2) to discover spatial opportunities - cocoons - which mediate opposing forces and which suggest evolving trends in dormitory design.

The studio begins with an in-depth precedent analysis and research phase intended to stimulate and deepen the understanding of the dormitory/residence hall typology. Following this period of research, the studio designs a unit module as a fragment, focusing on an intimate scale in which to critique residential hall conventions.

The final project involves the design of a residence hall located on the UW-M campus. Each student analyzes specific campus site conditions to determine opportunistic possibilities for intervention. Our strategies search for smaller-scaled, stealth operations which “co-opt” and leverage existing conditions in political, economic, and physical terms. Depending on adjacencies to other buildings, students modify the support programs of their residential halls (laundry facilities, dining hall, kitchens, etc.) required by each specific site. Students also develop specific program elements that encourage deeper modes of collaboration (the cocoons) developed in the earlier phase of the semester.

This studio was generously sponsored by KI.
The studio engages concerns of building production through the repurposing of post-industrial sites - sites that are seemingly “off the grid,” but which nonetheless remain reliant on global systems and offer the potential to re-cuperate in a resilient economy. Students, with real client insight, are asked to design and propose a comprehensive design for a corporate office and fabrication/manufacturing facility for a building envelope company. Located on the Grand Trunk of Milwaukee’s Inner Harbor, the site is nestled within varied infrastructures, remnants of heavy industry, and recovering wetlands. This site provides a conceptual framework for the studio, whereby the questions of the tectonics related to the building envelope - hard or soft, thick or thin, dense or porous - are explored.

Comprehensive Studios endeavor to draw experience from the range of curricula. However, this studio is not just a means, an effort, or an attempt to bring knowledge together, but is to serve as a platform to provoke a larger conversation about the process of design and the practice of architecture.
Our approach to architectural detailing can range from passive to active. Our goal might be to solve technical problems as a matter of expediency, or we can recognize how questions of detailing and technology are generative to design. This comprehensive design studio seeks to integrate issues of technology (structure, energy, detail) with space and form at the three architectural scales of hand, body, and site. For architects, the very act of design is a form of research since our process is discursive and iterative before it is synthetic. This studio strives to make that research visible through design products created in the service of precedent analysis, technical research, and consultation with experts.

The premise of the studio is that details can be a generating force for the creation of architecture. This has never been more relevant than in today’s practice culture of fast-track schedules, off-site fabrication, multidisciplinary teams, and international collaborations, which considers the question of a construction ethic less rather than more.

What are the means by which we articulate inquiry within our work? What are the formal and technical values we use to make design decisions? Instead of reading architecture as primarily figurative or shape-based, it can instead be understood as an infinitely integrated matrix of detailed moments, connected by comprehensive strategies.

Karl Wallick | Filip Tejchman | Erik Walsh

Comprehensive Studio
Previous Spread
Greg Bongers
Floor Plan
Top to Bottom
Bruno Silva
Detailed Sections
Next Page
Dustin Roosa
Model
element generative detailing
This is the final core studio in the three and a half year graduate program. The objective is for students to leave the course prepared to compete with graduate students in the two-year M.Arch program who have more extensive studio experience. The course focuses on further development of knowledge and skill in the fundamentals of architectural design, ramping students up to handle increasingly large and complex design scenarios.

Over the semester students produce two projects involving various design procedures, graphic techniques, and aesthetic principles. Each project consists of a Design Research phase involving a series of short-duration creative assignments, which are called Experiments. Each Experiment provides an opportunity to explore one facet of the project and test creative ideas in a focused manner. Additionally, the Design Research phase involves collaborative work with classmates and a high degree of pedagogical structure, which is used to introduce new concepts, principles, and methods at an accelerated pace.

Following the Design Research phase is the Design Generation phase, in which each student generates ideas for his or her own comprehensive design proposal. This is a moderately-structured portion, in which students are given more freedom to manage their creative effort. Finally, each project has a Design Refinement and Design Production phase, in which students make a Herculean push to produce an array of required models, drawings, diagrams, and images for the Final Review.
MASTER’S ARCHITECTURAL DESIGN I

Graduate Core Studio
Don Hanlon
Grace La
Napoleon Nikolaus

This is the first required studio for students in the three and half year graduate program in architecture. The studio encourages students to develop their graphic technique, analytical thinking, and three dimensional design skills. The studio investigates design projects of varying scale, aimed at introducing students to fundamental concepts of design. In the spirit of an introductory studio, students explore design within a range of scales and emphases—from broad conceptual thinking through the design of details. At the same time, students concentrate on developing visual communication, basic knowledge of compositional strategies, and methodologies of the design process. Students are expected to engage in an intensive, iterative development, supported by rigorous analytical and formal decision making, in order to integrate space, program, structure, and context. In this sense, students engage in the notion of repetition as an operative concept in design methodology. The iterative approach promotes a broad range of thinking, an ability to test ideas, and to develop critical impulses based on a comparative foundation.

The studio is comprised of five design projects. The first four design briefs concentrate on specific aspects of architectural composition. The last project of the semester is devoted to a single project that encompasses many of the issues raised in the previous four projects, but also considers the value of site analysis as a precursor and valuable asset throughout the design effort.
The third design studio in the four-studio undergraduate core sequence asks students to synthesize four aspects of architectural design: context, space, tectonics, and organized planning, in the design of two separate projects. The first project deals with the planning and detailed design of a building and public open space intended to support a public market for the Brady Street neighborhood in Milwaukee. The second project is for the planning and detailed design of a 500-student residential college on the grounds of UWM.

In terms of context, students consider how a building is designed so that it is embedded in place. Site forces and forms are dissected for design cues so that the proposal is so intrinsically locked into the unique character of the existing site that its forms would make sense nowhere else. Clear and legible organization of program to respond to the complexities of use and site is essential. For spatial development, interior and exterior elements are configured so that the overall volume contributes to the richness of human experience and inhabitation. To support this spatial definition, students explore assembly of various material combinations in a critique of notions of authenticity and poetic tectonics.
Space and form, two indispensable elements of architecture, are interdependent and completely reciprocal. The job of spatial organization is not one of personal expression, but of capturing and channeling the manifold requirements of site, program, and construction into a legible volumetric composition. This studio concerns itself with the development of compositional skills and the manipulation of space. Investigation during this semester is primarily formal, not because form is valued as a means unto itself, but because it is the foundation of spatial cognition. In this studio, space is considered to be the intentional result of form making that can anticipate future activities and occupations – placemaking.
Great architects have always needed to be parametric thinkers, seeing opportunities for form amongst the many varied and contradictory forces synthesized in an architectural project. Replacing the nostalgia of layering vellum sheets, opportunities in computation and parametric design offer ways to organize the increasingly complex technical and performative criteria for buildings. Scripting, parameter maps, rapid prototyping equipment and algorithms are critical tools that enable architects to define a multivalent process in contemporary practice. In addition to authoring custom codes and scripts, students conceive and generate a range of complex geometry types and related effects such as curved and planar geometry, propagation of mass-customized components, matrices and gradients, randomization, proximity testing, branching and fractals. These processes are then translated into material prototypes using laser-cutting and 3D printing. This translation from the digital to material presents an often underestimated challenge. However, confidence in parametric design grows when combined with iterative material making. A series of mini-projects explore the application of parametric methods to architectural conditions through the conceptual design of wall, roof, column, ceiling and siting systems.
Intuitive creative tools embody some of the most powerful processes in the architect’s palette. Harnessing impossible internal visions and making them graphically accessible for the world has led to changes of paradigm at every generation. We expect architects to exercise rigor, discipline, and precision in both the conception and execution of intent, but sometimes it can also be appropriate to go down the rabbit hole of graphic exploration. Some of the more unique projects in Calibrations can be found within this chapter, underscoring the need for work that brings into question conventions of representation, research, and design process. This is not a call for relaxing one’s technical and intellectual standards. To make the internal world of design visible, experimental works require an even higher degree of control and careful execution than conventional works and processes. The projects that follow share an investment in the generative capability of representation to produce architectural ideas. At times intuitive and at others highly scripted, each of the projects has a clear interest in process as a means to elicit and uncover new architectural potential. The projects make use of speculative drawings, model making, and story telling as a way to understand architecture through the translation of ideas into artifacts.
How can architecture enhance the contemplative ritual of stargazing? Humanity has always looked to the stars for answers. Ancient cultures found gods in the cosmos and signs in the stars. Recently, it was discovered that the elements on the periodic table are formed in stars themselves. Contemporary scientific facts reinforce the ancient narrative that we are children of the stars. Today, stargazing remains a search for universal logic and the relative place of humanity. Contemplative practices that engage the spiritual and logical aspects of human existence are a manner of reinforcing this search.

Through the design of new techniques and methods of description, this project builds on ancient canonical precedents to investigate the potential for architecture to actively support contemplative cosmological practices. The purpose of this building, its program, details, and spaces encourage reflection on the experience of stargazing. As users stroll through this heightened architectural promenade, they become absorbed within the programmatic field of perspective space and the overwhelming scale of the universe, so that the architecture recedes, leaving awestruck astronomers to orbit the wonders of the night sky.

A HOUSE FOR GALILEO
Jacob Walker – Master’s Thesis Project
Advisors: Mo Zell (chair), Karl Wallick, Filip Tejchman
In order to challenge architectural conventions for conceptualizing spatial conditions, this thesis investigates the relationship between dance and space. New investigative methods of representation are uncovered within conventional techniques by complementing existing processes with a heavily layered design process. Atypical processes of photography, conceptual modeling, and abstract drawing provide multiple lenses to extract similar techniques between the seemingly unrelated disciplines of dance and architecture. These techniques translate movement into architectural form, providing a foundation for a cultural dance center in Milwaukee. Architectural design principles are enhanced by transcribing choreographic techniques for moving bodies within ephemeral performances to work at the scale of the built environment and the everyday narrative of human interaction. The result is a new syntax of movement which uncovers new potentials for inhabitation and architecture.
A six-and-a-half mile radial void gapes between Chicago’s urban core and the nearest site for human internment. While notions of land access or public health may be cited, this thesis contends that Americans place their dead in remote locations in order to remove them from our everyday reality. Death has meaning, contextualizes our lives, and motivates existence. By removing these temporary artifacts, we have severed cognitive identification of our individual fibers in the larger fabric.

This thesis envisages an architectural approach for reconnecting Americans with the collective memory of our deceased. It further addresses a decade-long urban development problem at Wolf Point, one of the oldest sites in downtown Chicago, which is currently a parking lot, as proposals for development have failed due to constricted site access.

The RAW adopts an aggressive aesthetic of unrefined materials mimicking the harsh realities of death to inspire conditional intrigue. As an allegory for death, the jagged tomb hoods at the water’s edge connect the mourning experience with a symbol of time: the Chicago River. The park invites pedestrian interaction and places the living in temporal, spatial, and experiential juxtaposition with the deceased below.
James Corner’s Rhizomatic maps have neither beginning nor end, but always a middle from which they grow. They are non-hierarchical and expand across many terrains. They privilege action and effect over representation and meaning. This thesis leverages the generative nature of Corner’s mapping to see site in new and provocative ways, and it is through the process of sight that the site becomes activated.

Site is narrated through the eyes of three relevant professionals: the radiologist, the low flying pilot, and the fly fisherman, chosen for their unique and distinct methods of seeing. The site, Potsdamer Platz, the convergence of 5 roads, has seen both development and destruction—it has been both urban attraction and a desolate, violent place. Because the radiologist is uninterested in surface—he doesn’t take what is immediately visible for granted—she is able to see past the skins of buildings into the depths of their structure and composition. She can see through the surface of the earth into the ground.

For the pilot, Potsdamer Platz registers not as streets or buildings, but as a mountainous surface to fly over or land upon. His telemetry is always mediating this task, telling him where he is in relation to the surface and how he can stay safely above it. The scale of the earth is always changing, and it seems to stand still as he moves quickly above it.

The fly fisherman envisions the whole city as underwater, the surface ripples distorting the exact location of the places. The city is never fully visible to the fisherman, however he can learn to spot shadow and movement because he is trained to read both transparency and surface.
The methods of representation used in architecture have always reflected a cultural understanding of our built environment. Along with perspective drawing and the figure ground map came a particular understanding of reality and the way we use space. Recent theories have suggested that our perception of place has been dramatically altered by the acceleration of transportation and communication technologies. More dramatically, the colonization of abstract and physical space by a placeless palette of brand identities has resulted in an unrelenting homogenization of space in all realms. Our current experience of reality is characterized more and more by what are called ‘non-places’ - the anonymous sites of consumption found along transportation infrastructures within which social existence is fleeting and individuals are supposed to interact only with texts. This thesis addresses how the means of representation of site can confront the experience of ‘non-place’ in the context of a seemingly ubiquitous yet topologically unique commercial strip found along the interstate known as Breezewood, PA.
188 representing non-place 189
This studio showcases the culture of place through a careful reading of context. Students, as cosmographers, discover the origins of place and then, as cartographers, develop an experiential map of that place. An architectural translation of findings is created through the design of a small worship space for the Historic Mitchell Street area in Milwaukee. Students render their findings visible via well-crafted and detailed artifacts. These buildings serve as a translative map from the ephemerality of culture to the corporeality of built form.
PRIMITIVE HUT

Elective Studio
Marc Roehrle

This studio is predicated on three concepts - the mythology of the primitive hut, a critical reexamination of context, and the value of the simultaneous exploration of macro/micro scales.

The first act of building is the placement of the structure on the site, and a careful consideration of the impact of the building on the site and vice versa. The primitive hut is not an artifact that can be unearthed physically, but rather it is essentially an intellectual quest. No inquiry regarding the nature of the first dwelling and what it means to build can be done without a critical reexamination of the basic elements that comprise a structure - foundation, wall, aperture, door, threshold, and roof.

The second act questions the definition of context. What do contextual elements mean? How do they participate in a greater meaning and how can design add to this discourse? Buildings participate in space-making and therefore should not be relegated to being isolated objects on sites, but rather should be integrated with the site to heighten the spatial experience of occupation.

The studio also challenges preconceived notions of wall, considering its tectonic nature and physical properties. Questions are posed such as: Is the wall enclosing one space or is it the boundary of another? Is it one or the other, or can it be both?

The act of defining a space relies on the understanding of its boundaries. As designers, we represent the boundaries that define the space. Given the reciprocal relationship between containers and the space contained, this studio places an emphasis on the malleability and hierarchy of space.

The final act explores building through multiple scales and layers to gain a better understanding on how the micro-scale can reinforce the macro-scale and vice versa.
This studio explores three different places and proposes architectural interventions for each. These interventions are intended to enhance, amplify, and raise awareness of their context. They are speculative in nature and intended to work in conjunction with one another. The underlying premise of the studio is: what if one was to make critical observations of a place one was only remotely familiar with and could not visit? How does one begin to assess a place that requires acute vision?

Experimental or speculative architecture has a rich and lengthy history in the episteme of architectural thought, from Vitruvius’ speculations on the origins of architecture to Piranesi’s sensuous worlds of imaginative drawing. In order to respond in an appropriate manner, the field conditions in which one is working must be understood. The three locations considered in this studio are Rome, New York, and Milwaukee. Two of these sites cannot be visited within the context of the studio (while the third, Milwaukee, can). Deep analysis of these places is synthesized into provocative artifacts (models and graphics). Students engage site analysis in an active, creative way as opposed to being a distant observer. Indexical mapping and data visualization tools render their findings visible.

Experimentation, expansion, and exploitation of all the possibilities of architectural interventions are encouraged. Programs and sites of these interventions are student-driven.
In architecture, detailing refers to any number of approaches that seek to reconcile technical constraints with poetic opportunities for space. In most cases, opportunities for detail occur at changes in orientation, material, or system, for instance, the way a brick is designed to turn the corner, or how a wall transitions into a roof. While such instances tend to occur at the “hand-scale” (as opposed to building or site-scale), the definition of detail is not necessarily constrained by size or dimension. The way an architect resolves how a tiny building sits in a vast meadow or a dense city would also be within the realm of detailing.

Architecture is not a whole. Rarely are the experiences and sensations comprehensive. We remember instances and elements. The context of what we do as architects is always fragmentary, even as it seeks to be resolved in a comprehensive manner. Rather than insisting on the totality of complete works, architecture could be better understood as an infinite matrix of detailed moments. These details can be disassembled from their constituent buildings and reconstructed as a universe of scale-less moments to be understood over a lifetime of observation, use, thinking, drawing, and construction. Marginal details may provide oblique ways for maintaining both the accidental and intentional within our discipline, and be a means for keeping contradictory modes of inexplicit and explicit information balanced within architecture.

ART OF DETAIL
Seminar Course
Karl Wallick

From Left:
Ryan Shortridge
Detail Drawing
Nicole Zack
Detail Drawing
Daniel Kornaus
Detail Drawing
This seminar provides students in a flipped classroom an array of demonstration digital videos of art media in the production of design drawings. The website exposes students to black and white media through prismacolor pencil, ink, ink wash, and water soluble graphite, then color media through color pencil, design markers, watercolor, and oil pastel. Students work towards eight master works over the course of the semester. The course provides live demonstrations and direct feedback on the master work development during weekly studio sessions as a group. All work is posted on the school gallery wall as it is completed. Techniques in merging the digital realm with the traditional through rapid modeling, mixed media, photography, scanning, and simple Photoshop applications are explored.
Previous Page:
Anthony Meyer
Rendering

Left from Top:
Mingzao Hou
Rendering
Christopher Knitt
Rendering

Anthony Meyer
Rendering
Jonathan Schedler
Villa Tugendhat Rendering
Graphic acuity is the primary tool in the architect’s arsenal. However, with the rapidly changing issues of modernity increasingly under the purview of architects, how do we communicate the limitations and artifacts of non-physical but relevant information and analyses to the broad range of stakeholders? Information and data are becoming increasingly more available to architects and designers, as are a multitude of computational means of accessing this information. It is imperative that designers be able to interpret and translate this information into meaningful design inspiration. New theories of visualization need to be formed in order to guide this growing field of graphic material.

This course focuses on the importance, theory, and fundamentals of diagramming and mapping information, space, and concepts in a manner relevant to architects. Students are asked to render visible their own areas of investigation, which may include studio projects, graduate thesis projects, or other self-initiated interests.

Chris Cornelius
Seminar Course

Visible Certainty
The ability of architecture to affect territories and operate at a scale larger than singular buildings has long been of interest to architects. Macro also implies seeing - with a wide view to context. The role of an architect is to stitch together the many distinct and un-synthesized qualities present in the city. Particularly among our thesis students there is an ambition to address issues of social inequities, zoning, urban sprawl, cultural history, food production, density, and to enlarge architecture's scope of influence. Tools such as historical mapping, GIS, and analytical collage are deployed in a manner which seeks to bring what might appear to be non-spatial or non-formal factors under the architect's influence. Turning these complex issues into graphic narratives demonstrates the utility of expanding the conventional 'building' boundaries of the discipline. The projects that follow address a range of interests from urbanity and civic deference, to infrastructure and landscape urbanism. Each project shares the optimism of size as a quality that when expanded to the macro scale can make an impact that exceeds that of traditional building while accommodating the needs and desires of the human scale.
Relational Ground explores the relevance of the horizontal surface in the post-industrial metropolis. It is a series of investigations identifying spatial and tectonic concepts in the design and manipulation of the urban ground. Above all, it presents an argument for a novel type of public space.

Unlike past urban theories, Relational Ground presumes the city not through form, but process. As a temporal and evolving system, it exists at the intersection between the spatial concepts of urban field theory and the experiential properties of the built artifact. Relational Ground proposes fundamental changes in our understanding of spatial definitions. It proposes the deconstruction of hard urban edges into transitional spatial ecotones, defined paths and corridors into fields, and strict horizontal borders into multi-layered urban surfaces. Above all, Relational Ground challenges conventional notions of the urban landscape in an effort to merge the experiential qualities of the urban room with the dynamic variables of the living city.

Relational Ground presents a case study - an exploration of a specific instance of post-industrial territory. It examines the very surface upon which the urban process unfolds and, subsequently, leaves its traces. These are then employed as generative tools and variables in the design process of a novel urban condition in which the architectural desire for a tabula rasa is replaced by the spatial desire to engage the horizontal border. In order to develop a truly contextual intervention upon the horizontal edge of the city, Relational Ground divorces architectural space from the constraints of the building. The building, after all, is nothing more than an urban artifact - one fragment in the density of the vast urban figure. The horizontal edge of the city, on the other hand, offers a unique spatial and architectural opportunity: tectonic continuity.
Using public transportation as a catalyst for siting, this thesis carves and reclaims the void of Milwaukee’s Menomonee Valley. Reforming pedestrian encounters with respect to its past residents and rituals, new topographical connections and experiences emerge from the industrial landscape, bringing a once fragmented city new life at its core. Venturing down the exploratory stair from a transit shelter on the forty-foot tall viaduct, one begins the journey into a new world. Like the train car or canoe that once graced this valley’s layered past, the steel and wood architecture of the bridge now supports an episodic adventure of framed views and orientations down to the valley floor. Underneath the viaduct reveals a crossroads of footpaths, bike trails, and roads. Reinforcing these flows with new programmatic elements of relaxation and research, new experiences come alive to the generation of natives: cyclists, runners, fishermen, children, and even bats. What once was a place to pass over now becomes a place for all to enjoy. By day, the valley terrain encourages discovery, conservation, and recreation. By night, a luminous field of shelters stitches together the urban void. Menomonee Crossing becomes the new convergence of events, identities, and rituals for all of Milwaukee’s inhabitants.
Waste, Water & Light posits a new urban node: an interconnected collection of infrastructural and programmatic entities which currently suffer from a systemic degree of disconnection. This network unites the western Valley stormwater park, Hank Aaron State Trail, Mitchell Park Conservatory, and the Central Valley while serving as a pedestrian connection and stormwater management tool. The structures serving these functions will be the Centers for Urban Agriculture: a large organic urban farmstead, research and education center, community gardens and recreation space, and a landscape designed to channel, cleanse and harvest rain water.

While the 19th and 20th centuries are marked by an increasing specialization and fragmentation of knowledge and activity, the 21st century reintegrates that which has been separated. Longstanding efforts to provide public amenities in the Valley suggest that the days of the “Industrial Valley” as a monolithic entity are numbered. Historically, it has served the purposes of both recreation and production. While it is long beyond restoration to its original state, there is still potential for some of the natural functions it once provided: water cleansing and management, food production, and recreation.

Advisors: Grace La (Chair), Don Hanlon, Chris DeSousa

WASTE, WATER, AND LIGHT: CENTERS FOR URBAN ARCHITECTURE
Kevin Dunphy – Master’s Thesis Project

MACRO
This thesis emanates from the idea that taking an initial concept and holding true to it throughout the design process will, in the end, have created a project with one cohesive image. It is the idea that every decision made at every scale within the design process is judged and guided by one common concept. When this is done, everything becomes one, and the designer has then formed a relationship.

The common concept is Object and Receiver. The design process is divided into three categories: the Scale of the Context, the Scale of the Building, and the Scale of the Detail. Throughout the project, development of these three categories occurred simultaneously.

The Scale of the Context focuses on using site manipulations and the surrounding buildings as the Receiver, and items from the site analysis as Objects, those objects being a bike path, urban voids, and parks.

The Scale of the Building utilizes the private programmatic functions as the Receptors (hotel suites), and the public programmatic functions as the Objects (classrooms, auditoriums, meeting rooms).

The Scale of the Detail, which focuses most closely on façade studies, looks at the Receiver as a repetitive monolithic item, such as a brick, and the Objects to be anomalies within that repetition.
What is the new civic landscape of food infrastructure? This design proposes a restructuring of sustainable food practices by combining the growth, processing, storage, transportation, recreation, education, and waste systems of food production into a single entity. The suburban food landscape, with new programs and spaces, has significant implications on the manner in which Milwaukee residents shape the society and culture around their local food system.

By implementing this landscape in proximity to existing food organizations, this project will catalyze local growth and re-center the regional food network. This landscape, re-imagined as a new typology for suburban spatial precincts, incorporates all aspects of food process including storage and processing facilities, community gardens and education facilities, restaurants and composting programs. By combining techniques of rhetorical representation with a rich gradient of cultural programming, a vibrant environment centered on food emerges to re-energize the local food experience.

Advisors: Grace La (Chair), Filip Tejchman, Carolyn Esswein
Interfaces and connections between the many thresholds and spaces of a contemporary rail station are the subject of this thesis. Although Milwaukee's Intermodal Station was recently renovated, it will be unable to fully accommodate the growing diversity of our regional transit infrastructure in future decades. Adjacent to the current Intermodal Station is a soon-to-be vacant United States Postal Service building. The interface as architectural device is exaggerated and enhanced through design strategies that address the typically abrupt and awkward edges found in contemporary transportation infrastructure. A series of elongated thresholds are developed through the design of a faceted steelplate structure that joins the two existing buildings, making the movement from train to city to car, bus, or bicycle a more gradual transition and turns the transit station into a more celebratory gateway to Milwaukee.
The 2011 Urban Edge Prize studio addressed the idea of ecological stormwater management and ecological infrastructure with the capacity to define the character of the Inner Harbor’s redevelopment.

Providing foundational studies for the School-wide Inner Harbor Design Charrette hosted by Herbert Dreiseitl, the studio examined the possibilities and limits inherent in the need to cap the brownfields bordering the harbor and a study of the public harbor walk to establish an edge condition for the entire waterfront. The ultimate objective of the studio was to create a master plan for the transformation of the current coal storage facility adjacent to the UW-M School of Freshwater Sciences into a research park and network of aquaculture greenhouses.

A highlight of the studio made possible by the Inner Harbor Project was the coincident presence of the distinguished architect Peter Busby, invited for a school-wide lecture, with Herbert Dreiseitl. The two had collaborated on proposals in the past and shared a strong, ethical and aesthetic orientation towards ecology that they discussed at length in a public forum hosted by the Johnson Foundation at Frank Lloyd Wright’s Wingspread conference facility.

Herbert’s insistence that the students think creatively about all of the water cycling through the School of Freshwater Sciences, and not simply the stormwater, set the challenge for an investigation that has continued on through several studios and the Ecological Waterscapes Masterplan for Greenfield Avenue and the School of Freshwater Sciences, funded by the Milwaukee Metropolitan Sewerage District, partly as a result of the work of this studio.

This studio was generously sponsored by the Wisconsin Preservation Fund and the Brico Fund.
The aesthetic, hygenic, programmatic, and energy potentials of water anchor the research strands of this studio.

Milwaukee's Inner Harbor is a previously robust industrial area of the city that is evolving to include more public uses such as institutional and residential programs. However, the need for refining, shipping, and storing large quantities of raw materials continues. Given the site's proximity to the lake's expansive horizon and access to myriad transportation networks, this studio explores future ways for typically non-compatible uses to co-exist. By integrating effective urban design, redevelopment plans, and a carbon-neutral agenda, the design research from this studio seeks to inform both local and national debates about how best to transform economic problems into optimistic civic solutions.

This multi-year studio builds on the research and progress of the previous year's projects, while encouraging students to focus on personal design interests as they develop skills applicable to larger scale issues of urban design and development. The range of individual design projects includes public and private buildings, street layout, public squares and piazzas. Issues dealing with the movement and energy potential of water in a spatially or programmatically transformative manner are of particular interest, as this class collaborates with civil engineering students from UW-Madison.
The 2012 studio, collaboratively spearheaded by Diébédo Francis Kéré, founder of Kéré Architecture (Berlin, Germany) and Associate Professor Chris Cornelius, focused on underserved areas of Milwaukee. Proposed interventions harnessed Kéré’s ideology of community engagement through architecture.

Students analyzed census data, crime statistics, transportation, food markets, and parks along a 26.2 mile strip in the city to determine needs for the adjacent population. With cost and feasibility in mind, students proposed urban interventions of various scales using simple materials.

This studio was generously sponsored by the Marcus Corporation Foundation.
Keith Hayes
Concept Image
Site Map
Exterior Rendering

Previous Page:
Marcus Prize Studio
Population Study Diagram

This Page, from Top:

Opposite Page:
Marcus Prize Studio
Population Statistic Diagrams
Students Working
Perhaps as much as 75% of all construction takes place in the suburbs, where development has been criticized from a number of viewpoints, including the separation of uses, lack of public transit and pedestrian facilities, dependency on automobiles, the impact of changing landscape from rural into subdivisions, the lack of a sense of community, and the inability to sustain development economically and ecologically.

However, the reality remains that much of our population makes the most important decision to live their lives in the suburbs. Good schools, low crime rates, clean air, property appreciation, a large private site and the relocation of jobs to the suburbs are strong advantages for the suburban experience. New Urbanism is a movement that was born in the suburbs, Seaside being its poster child. Architects and urban designers Duany, Plater-Zyberk and developer, Robert Davis, set to develop a seminal project. Seaside integrated suburban development with urban qualities to ameliorate problems of the suburban experience. A high density, mixed use, walkable, well-designed project, this exemplar was the progenitor for more than 1000 projects.

Menomonee Falls is a typical suburb. In recent history it was a farming community with a village center. Today it is almost all single family housing with a few farms at the far edges of the village. This studio proposes to develop one of these farms, a 100-acre parcel, into 1000 units of housing.
Urban landscape architecture creates a framework capable of inciting change. At its most resilient, it is able to cope with and adapt to the transformations of contemporary urban sites.

This course is intended to get students thinking like a landscape architect. References are made to key movements and designers in landscape architecture history including recent landscape theory of the past two decades, which largely shapes the way we think about modern urban landscape architecture. The application of these theories and histories is applied in the design of a small-scale urban open space and wetland from the viewpoint of a landscape architect. Students in other studios throughout the school also investigate the same site from their own unique points of view.

The built landscape form is positioned within the post-industrial landscape of Milwaukee’s Inner Harbor leveraging the urban stage, nature in the city, waterfront development, and public water access through urban open space design.

Inspired by different vectors of movement, orientation, compression, and release, this proposal emphasizes user experience and integration with the landscape. The proposed framework also allows for many different ecologies to develop within the site. Each vegetated zone will initially take on a unique aesthetic that distinguishes it from its neighbor.
Referring to a wide range of factors affecting building performance, technics encompasses issues of performance, technology, and sustainability but in a much broader sense than quantitative predictions. It also relates to the historical, political, and cultural concerns that inform and drive the way that we live.

New approaches to structure yielded an ornamental system of expressive architecture from gothic tracery to Nervi’s concrete sports halls. To develop a new language of forms that do more than advertise the greening of existing approaches requires a new way of approaching form-making that links to the fundamental properties of thermal and climatic issues present in many ancient design approaches and combines those efforts with new advances in biomimicry, technology, and sustainable policy.

The following projects share a desire to channel the environmental processes inherent to building into novel architectural proposals. The work displays a deep-rooted interest in building performance as a means to both lessen the environmental impact of construction but also to develop new aesthetic paradigms. While highly technical and detailed analysis informs much of the work, it is through interpretation of scientific predictive data into robust architectural spaces that these projects attain their greatest feats.
To combat local environmental and economic threats caused by expanding urban populations, contemporary consumption patterns, and industrial agricultural practices, cities must begin to assimilate food production activities into planning and design processes. The philosophies of Agricultural Urbanism guide the development and implementation of sustainable, holistic food systems into urban communities in order to reconnect the consumer to their food source.

This project highlights building and site design as a successful means of fostering an educational relationship with food, creating economic opportunities, and improving urban food security.

The goal of this thesis is to establish an iconic and prototypical building typology capable of housing local residents and businesses, while facilitating the year-round production of food. It enhances Milwaukee’s existing agricultural identity and the stability, diversity, and celebration of its urban food supply. In order to have the greatest impact on remediation and revitalization, it is located in an environmentally and economically distressed area of the city.

This project becomes a destination within the city for urban inhabitants to discover.
A new aesthetic for environmental performance is promoted by the imagery proposed in this project for the DuSable Technology Center. Prevailing winds off Lake Michigan are harvested to ventilate the tower naturally. Storm water is captured by courtyards, green roofs, and sky gardens, which provide spatial and programmatic organization in addition to performative composition. Overall, the center is composed of three strands, reiterating the strong urban grid and the verticality of the city. Arranged in a progression, the bars emerge from the water and reach for the sky.

The bars are ordered into tangible programmatic elements. The tower is occupied by residential units on the upper floors and office space below. The first two floors are dedicated to retail and dining options while above, three-story laboratory pods are arranged, repeating the tower rhythm. An auditorium runs below the laboratories toward the lake to create assembly and reception space.
AT_WATER TOWER:
AN EXPLORATION OF NATURE IN ARCHITECTURE

Jodi Masanz
Advisors: Chris Gorski (chair), James Wooley, Jeffrey Ollswang

In “Walden,” Henry David Thoreau rejected society while searching for his own relationship with nature. A lake is the landscape’s most beautiful and expressive feature. It is the earth’s eye; looking into which the beholder measures the depth of his own nature. Thoreau’s self-reflection suggests that the lake acts as a lens to the world around—showing not only what is below the surface of the water to the lake bed, but also reflecting the landscape that is around it.

Nature and architecture are often portrayed as a dichotomous relationship. Architecture is the built environment. Nature, on the other hand, in its raw state, is continuously evolving and changing. By designing for a symbiotic relationship between the two, architecture can become something that nature can be experienced within. This project is a lookout tower off Atwater Beach that responds to the environment of Lake Michigan, the wind, water and the sun, allowing the user to have the sense of being connected to nature. This tower serves as a point of reference that transforms nature to a human scale.

Advisors: Chris Cornelius (chair), James Wooley, Jeffrey Ollswang
The technical innovation present in Building Information Modeling (BIM) systems raises as many issues as it resolves. This technology is predicated on a model of Integrated Practice (IP) that has the potential to bind design and production into a unitary, collaborative act. This has significant implications for the architect. With the proliferation of materials production and the advancements in engineering skill, BIM and the power it brings to the organizational act must be added to the list of innovative forces informing design. Technical innovation brings with it the promise of new paradigms for spatial complexity and the re-interpretation of the architectural surface.

Through the vehicle of architectural design exercises and a project, this studio provides a collaborative environment for creative dialogue. Alternate modes of architectural representation are employed to verify the role of the BIM tool. External professional reviewers provide unique commentary on these investigations. The production of artifacts for general discussion and for inclusion in class materials for dissemination beyond the school environment, is a critical component of the pedagogy of this studio.

This studio was generously sponsored by Eppstein Uhen Architects.
With growing demand for high-performance building envelopes and an aging building stock in central business districts across the country, an opportunity exists to radically transform the face of cities without changing their shape. There is tremendous opportunity to address issues of aesthetics and performance at the scale of both, the city and the building.

This studio focuses on creating an innovative design for the Aon Tower in Chicago through the exploration of high-performance building envelopes and programmatic strategies for adaptive reuse. Students strive to achieve a balance between issues of aesthetics and performance, enhancing the iconography and effects of this quintessential Chicago office tower, while improving interior daylighting and overall building performance. Representation of design ideas is a key component, so students investigate novel ways to design and present design research in this burgeoning area of investigation.

This studio was generously sponsored by Jones Lang LaSalle.
Previous Page:
Nathan Cantley +
Ted Jameyfield
Axonometric Drawing
This Page:
Karol Perez +
Jakob Wagner
Axonometric Drawing
Opposite:
High Rise Studio
Material Studies
This studio introduces principles of sustainable design, environmental and resource conservation, and building envelope systems as they pertain to the design and consequent performance of buildings. A key component is the principle of environmental system design that has the biggest impact on the form and skin of buildings. Topics of the studio include determining appropriate passive measures of environmental control, methods of determining sun-angles and design shading devices, and coordinating building systems for heating, air-conditioning, ventilation, electrical power, and lighting.

Projects engage the environment in a way that dramatically reduces or eliminates the need for fossil fuels, and to convey an ethical position in regard to the use of non-renewable materials and materials that pose a threat to human and environmental health. The intelligent skin of an intelligent building will move beyond passive control of energy flows (heat, light, solar radiation) to being an active agent in optimizing energy flows.

Current high performance buildings consist of integrated and modular components. In the future these components will include intelligence, which will provide for minimal configuration and system commissioning requirements, as well as controls, monitoring, and diagnostic capacity. Intelligent skins will contain autonomous features allowing them to function and provide local interfaces and feedback to users. These embedded intelligences will enable plug-and-play controls and diagnostics, allowing individual intelligent-agent controllers to work collaboratively across a network to minimize operating cost and maintain comfort in response to time-varying conditions. Facades of this type will be dynamic, changing adaptation to respond to changing interior and exterior conditions.
Shaun Sullivan
Daylighting + Thermal Studies

Shaun Sullivan
Exploded Axonometric

Zach Reiser
Interior Perspective
The philosophy of this studio, born in Alejandro Aravena’s firm, Elemental, is that we should operate from both ends of the social spectrum. This entails making a city competitive by identifying and implementing proposals for the elite and for the disadvantaged.

In order to attract the knowledge-creators to Milwaukee, we need to create a high quality urban environment. To do this, we look to non-traditional architectural projects: redeveloping urban leftovers, improving public space connected to geographical events, enhancing transport and mobility, intensifying urban amenities and cultural offerings, and developing excellent educational offerings embedded in the neighborhoods.

Cities provide opportunities towards equality by improving the quality of life of the poor without waiting for income distribution. We need to identify strategic projects that can reshape declining communities and neighborhoods and integrate them with the network of opportunities around urban projects such as housing, public space, transportation, or urban infrastructure.

Aravena’s practice, a self-described “do tank,” is affiliated with COPEC, a Chilean oil company and the Universidad Católica de Chile. The affiliation has a social/political agenda and considers architecture a source for building social equity. Students in the Marcus Prize studio applied Aravena’s approach in Milwaukee providing research and design, and through a synthesis of data gathering, experience, and interviews, sought to find opportunities to redevelop urban leftovers or engage infrastructure.

This studio was generously sponsored by the Marcus Corporation Foundation.
Component 1: planter

Component 2: water habitat

Component 3: planter + boardwalk

tear-drop shape creates a swirling

soil

wood planks

pre-cast concrete

bulkhead

component system pinned
together by structural rebar

From Top:
Nathan Siewe + Keith Stachowski
Situ Diagrams

Ethan Stewd + Alan Wold
Water Diagram

Clockwise From Top:
Ethan Stewd + Alan Wold
Component Diagrams

Nathan Siewe + Keith Stachowski
Section Diagram
Plan Shown
The technical innovation inherent in precast/prestressed concrete systems raises as many issues as it resolves. This technology is predicated on a rationalized model of fabrication and erection with enormous potential in the world of Integrated Practice that embodies the potential to bind design and production into a unitary, collaborative act. This has significant implications for the architect. The proliferation of concrete materials and the production of surface effects coupled with advancements in engineering skill must now be added to the list of innovative forces informing design. Yet technical innovation brings with it the promise of new paradigms for spatial complexity and the reinterpretation of the architectural surface. The advancements present in precast/prestressed concrete technologies call for a thoughtful consideration of architectural design in all arenas of investigation.

Through the vehicle of architectural design exercises and a long-term locally-based design project, this studio provides a collaborative environment for creative dialogue. The production of artifacts for general discussion, and for inclusion in class materials for dissemination beyond the school environment, is a critical component of the pedagogy of this studio.

This studio was generously sponsored by Spancrete.
This course focuses on the act of making, and seeks to answer questions about specific acts of production in design and fabrication, to determine their role in conceptualizing art and architecture. A central postulate of this seminar is that the “making” of artifacts clarifies intentions and invigorates the design process.

Fabrication Methodologies provides a survey of the different fabrication methods and techniques used to solve problems encountered in the design of physical prototypes. Taught collaboratively by faculty from art and architecture to students in art and architecture, the course examines the wide array of fabrication techniques that are currently available for contemporary artists and architects pursuing innovation in their craft.

Since no material can be separated from its physical properties and performance characteristics, this course also examines material selection as a fundamental decision. Emphasis is placed on rapid advances in fabrication technologies to explore the hybridization/combination of materials and processes. While this course serves as an overview of fabrication methodologies, experimentation through hands-on projects allows students to pursue a multiplicity of agendas in the form-making of functional artifacts.
Amantine Silvia + Cody Cornellier
Panel Installation Model

Colin Brown, Lee Eckert + Robert Zdanowski
Model
Architecture is of course, made for people. A detailed assessment of the human body in relationship to space prompts program and use. The projects that follow share a desire for human interaction, activity, ergonomics, and events to shape their designs. From the pragmatics of function to the speculative potential of generative programming, these projects look to the people that inhabit architecture to define its potential. By speculating on modes of inhabitation, the work displays a broad range of aesthetic interpretation. This contemporary attitude makes clear that form and use are linked yet variable in their outcomes. Though scale is always referenced to the human figure, the projects range in size and type from furniture to buildings in the city.
A PATTERN LANGUAGE
FOR SARUP’S CAFÉ

Amin Mojtahedi - PhD Research
Advisor: Brian Schermer

All space-matter has perceptible degrees of life – the necessary criterion for quality in buildings. This perspective provides an intellectual basis for a way of thinking about architectural design and enables one to ask questions about what must be done to create more life in our world.

Christopher Alexander shows us how any living structure, or living order, depends on fifteen fundamental properties from which all wholes are built: Levels of Scale, Strong Centers, Boundaries, Alternating Repetition, Positive Space, Good Shape, Local Symmetries, Deep Interlock and Ambiguity, Contrast, Gradients, Roughness, Echoes, The Void, Simplicity and Inner Calm, and Not-separateness, and a Pattern Language as a process through which the wholeness is achieved: a process which allows the design to unfold rather than to align with the “concept.”

In order to cover the whole span of scale, unfolding a living café in SARUP starts by introducing twelve patterns for five scales of neighborhood, campus, site, building, and individual. Yet, no pattern is an isolated entity – patterns support other patterns. Therefore, each step creates the context for the next one, and each next wholeness is derived from the previous one. How can one know whether the next step enhances wholeness? We want to make a café. At each moment, we ask ourselves, what is the most important thing I have to do next, which will have the best effect on the life of the Café? Then, we do it.
SPOKE: MILWAUKEE’S CYCLE CENTER
Jaclyn Rutter – Master’s Thesis Project
Advisors: Mike Utzinger (chair), Grace La, Kyle Reesmidt

How do you resolve the section between two different levels of the city, incorporate appropriate slopes for bike paths, and manage stormwater runoff in the same formal strategy?

In order to create a highly-used sustainable transportation network in Milwaukee that compares to cities with high bicycle use, this project creates a central cycle center for the community to gather, connect, educate, encourage, and support cycling needs. This cycle center stitches together a large gap in the current cycling network between Milwaukee’s two main bike “highways”, the Hank Aaron State Trail and the Oak Leaf Trail, and proposes folding plates and terraced landscapes as a model for a new sustainable infrastructural field.
Design excellence relies on the connection of a social science strategy within the context of universal design values. Promoting new, more inclusive models for professional practice, this studio seeks to challenge architectural leadership conventions.

The studio includes an intense design experience, seminars, and tutorial course work, focused on social research and environmental behavior within the context of the architectural interior experience. The program goal is to expand research and further develop skills in user-centric design as students engage in studio work, interactive workshops, field trip experiences, and interaction with corporate leaders and architects throughout the region.

Because of the broad range of options for interpreting a design strategy that focuses on the human experience, it is necessary to have an opinion. Therefore, the studio is designed to provide a meaningful understanding of the potential impact architecture can have on its users, the relationship between architecture and the effectiveness of the interior environment, strategies to enhance architectural leadership, and the courage to challenge preconceived notions of user needs and established precedents.
Clearly, the complete submittal is the architecture in a design competition. Communicating ideas is done through graphic means. This does not mean that the end product is a commodity, valued over the process of design, rather, it means that product and process are closely interwoven. In a competition project, the preparation of the drawings and models does not occur as a final recording of a linear process. Instead, the design process is structured, delimited, directed by an understanding – even if not yet a focused visualization – of the product. This is an intensification of the educational method from the Ecole des Beaux-Arts; a reference to the analytique. Though certainly not the only method of design, and like all methods, one which privileges certain aspects of architecture over others, it is a method that has guided well-intentioned practitioners and resulted in admirable buildings for over two centuries of architectural production.
This studio focuses on learning environments and limited-scale, spatial objects. Modeling a unique relationship between the academy, industry, and design communities, the prototypes leverage the studio’s design research of ergonomics, the vital Midwest’s manufacturing base, and diverse interactions with specialists and experts that extend beyond the traditional disciplinary boundaries of architecture, engineering, and product design.

By expanding the role of surface, texture and embodied functionality, the prototypes engage user-driven criteria to inform shape and contour. With regard to Drift Seating, the project is inspired by the subtle topography of snow and sand drifts and recognizes an array of natural body positions. The project offers an informal landscape of flexible seating, collaborative opportunities, and intensified ergonomic potential. Drift Seating also serves as a lantern, integrating both lighting and electrical power needs to provide an inviting and intimate scale.

The Flip Table prototype leverages current touch-screen technology and the desire to position the table in numerous configurations for collaboration and presentation. Utilizing a unique pivot mechanism designed in the studio, the tabletop can be positioned via foot pedal as a flat/horizontal surface parallel to the ground plane as well as an angled or vertical surface. UWM and KI developed the design and engineering of the pivoting mechanism, which was then fabricated in Germany. The final version of the mobile base and table surface, made of plywood, was fabricated predominantly in KI’s prototype shop.

The Learning Landscapes Studio was generously sponsored by a grant from KI.
KI TEAM LEADERS
Amy Kiefer
Mike Tennity

KI ENGINEERS
Jim Chudz
Dennis Gippert
Tim Kortanger

KI SARUP STUDENTS, Drift Seating
Adriana Arteaga
Ian Kearns
Blake Villwock

KI SARUP STUDENT, UTable
Kallie Ogi

INSTALLATION & EXHIBITION DESIGN
La Dallman Architects
Grace La
Adriana Arteaga
Ian Kearns
Blake Villwock
Robert Tiede
Erik Walsh

FABRICATORS
Shoto Corp
Adriana Arteaga

FABRICATORS
A&A Plastics
American Excalibur

WIRING ASSISTANCE
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SEATING ASSEMBLY
Adriana Arteaga
Ian Kearns
Blake Villwock
Evan Bartlett
Joe Racina

UWM/SARUP STUDENTS, Drift Seating
Adriana Arteaga
Ian Kearns
Blake Villwock

UWM/SARUP STUDENT, UTable
Kallie Ogi

UWM STUDENTS: AUDITORIA REDUX, 2011
Nickolas Aringer
Patrick Bakkum
Keith Hayes
Kyle Heikkinen
Rachel Hicks
Daniel Martin
Timothy Russell
Brandon Spero

LEARNING LANDSCAPES, 2010
Adriana Arteaga
Kyle Bartelt
Alison Laferriere
Annette Hammer
Rob Dierker
Oluwemimo Adelowo
Barbara Hughes
Colin Jamieson
Katie Putman
Stephanie Kerschinski
Andrew Kuehn
Jared Legg
Rachel Mates
Samuel Michael

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Students infuse social research into this design studio by collaborating with leaders from Workshop Architects, a firm nationally recognized for its expertise in buildings for higher education and theater performance. Students emulate the programming and design strategies of the sponsoring firm, which includes social research to inspire design thinking and to create experientially rich and beautifully crafted campus spaces. By observing a firm in action over the course of the semester, students gain valuable lessons in entrepreneurship, specifically, the role that a firm’s design philosophy plays in planning and positioning, marketing, and securing work.

As a Jesuit and Catholic institution, Marquette University is a community that fuses faith and learning and instills values of service and reflection. Religious spaces and artifacts are interspersed with more secular ones. While most of the campus reinforces the street edge to create the impression of a handsome urban university, the portion of campus that the studio considers recedes from the street without creating outdoor space or overall sense of place. This project presents an opportunity to reconsider what is arguably the heart of the campus. Our projects address the need to further bind the campus together and to create a community that is true to Marquette University.
This course lays a foundation for a general understanding of architecture. Through fundamental principles spanning the education, profession, art, science, and the current spirit of architecture, students encounter a broad survey of vocabularies and conceptual processes. Lectures, readings, interactive digital video, examinations, and projects provide the means of exploration.

Students complete three projects during the course of the semester. First, they analyze an iconic building and build a scale model that depicts the key aesthetic philosophical stances of the work. Projects are evaluated based on correct proportions between plan and elevation dimensions, strategies of model design, and quality of craftsmanship.

In the second project, students design a birdhouse “in the language of” an architect from the 20th century. The semester closes with the Chair Design project. In the first phase of the project, students select a chair typology, research existing models, and complete a schematic design. A 3” = 1'-0” scale model is constructed based on the completed schematic design.

The Chair Design competition is sponsored by Nemschoff, who provides funds and works with the first place winner to produce a prototype.
By using the word vernacular, we are referring to research and projects that operate within the core historical trajectory of architecture. Here, expertise is filtered and deployed through a sincere and deep appreciation of the wide roots of building and construction employed historically, whether by architects or those without architectural training. Priority in this category is on context. From the highly articulated landscape of Wisconsin’s Driftless Region to the culturally rich neighborhoods of the city, these projects speculate on the future of urban, suburban and rural conditions by recognizing the importance of the past—historically, physically, economically, culturally, and socially. Evident is a vernacular modernism that documents and responds to these regional tendencies.
The interrelated problems of historic preservation, adaptive reuse, and the design of new construction are investigated through design interventions in complicated and controversial physical, social, and political settings. We challenge the hypothetical by using real programs and real budget constraints, addressing matters of design, heritage research, technology, and building construction with extant buildings and environments.

Design proposals from the studio, which include studies for an addition to Frank Lloyd Wright’s Unity Temple, are less about individualism and self-expression and more about responding to the existing building, its material reality, the architects and artists responsible for its creation, and its importance as a cultural treasure. Analysis and synthesis are both technical and theoretical, with design proposals that avoid neo-historicism and advance the matter of contemporary building technologies, just as the historic artifact had accomplished in its time. This approach is perceived as a method to generate truly creative, lingering, and appropriate re-use proposals. The semester is divided into two major design projects and one short documentation project with historic preservation research trips to Chicago or New York.

The other major studio project, the East Side Commercial Historic District, is locally based, challenging students to work with a heritage treasure that does not have universal backing and support. Students consider program creation, proforma practicality, technical innovation and affordability, and code and life-safety modifications. The role of the architect is elevated to preservation advocate, heritage expert, construction technician, and programming professional. Students select vacant sites in the district and create design proposals that complete the street-wall fabric. These infill projects help save the adjoining historic building by weaving new infrastructure – structural, mechanical, HVAC, vertical conveyance, communications and life safety modification – into the existing building without damaging its historic integrity.

The comprehensive vision for the district is organized in a hardcopy publication and a website and is used by the city of Milwaukee to encourage existing building owners to restore, and new developers to invest in the area.
Recounting stories of everyday places where we live and work can spur active engagement with others who share these spaces with us, revive interest in our built environment and encourage stewardship of this patrimony. The need for collaborative storytelling to create a public culture takes on a sense of urgency when established traditions and ways of life disappear and new ones emerge.

Attending to this gap in our knowledge of the built environment, the BLC field school turns towards the study of cultural landscapes as a way to interpret neighborhoods. To us, cultural landscape is phenomena materialized in space. We define cultural landscape as the materialization of a complex relationship between an individual and her larger cultural and material contexts. Cultural landscapes need not be physical, tangible, nor visible. Indeed, much of what we search for may be symbolic, experiential, and sensorial – invisible to our eyes. And just as we make our cultural landscapes, these landscapes influence who we are.

Such is the case of Thurston Woods and Historic Water Tower Place. Merely telling stories is not enough in these cases - rather citizens are inspired to participate and contribute in a collective retelling of stories thereby producing a public discourse that is invested and engaged. The objective is to produce an inventory of sites that have historical value to these neighborhoods and to provide users with interpretive ways of reading these sites. This project will increase awareness of neighborhood history and preservation of the built environment.
The aftermath of Hurricane Katrina in New Orleans revealed the extent to which social injustice dominated the city. According to the US Census of 2000, New Orleans’ population of 484,674 residents included 139,890 classified as living below the poverty line. In the Lower Ninth Ward, over 32% of residents had no available vehicle in 2000. Proponents of a more just urbanity have applied Henri Lefebvre’s notion of “rights to the city” as a starting point for charters that aim to better society. The idea asserts that everyone has the right not only to live in the city, but also has a right to shape it, design it, and operationalize an urban human rights agenda (Right to the City). Other cities, such as San Francisco and New York, have charters that serve as an inspiration and a guide to redevelopment activities for New Orleans.

There are particular issues with implementing the terms social justice and “rights to the city” in New Orleans. As a post-disaster setting, New Orleans is physically devastated beyond any other city for which a charter has been written. As a result, the priorities of residents here are likely to differ from other cities and from the perspectives of outsiders who are trying to help. While New Orleans’ residents appreciate outsider help, it is necessary to be sensitive to the perspective of local residents and not to impose “help” if it contradicts their professed needs and desires.

New Orleans and the Lower Ninth Ward, in particular, present a contested history. This studio examines the impact of memory and displacement at the scale of the human body. Students learn how to read and analyze the built environment as a cultural artifact. They examine how histories and voices of citizens can be incorporated into the design process and how contested histories, traditions, and identities can be represented. They learn how material culture history, public history, and environmental history can impact their design process.
"From here on the primary judgment of all human institutions, professions, programs and activities will be determined by the extent to which they inhibit, ignore or foster a mutually enhancing human – Earth relationship."
- Thomas Berry, in an interview, 2006

The premise of this studio is that the form of every human settlement derives from a complex set of fundamental values that underlies, pervades, or accentuates major patterns of thought and behavior in a culture, i.e. an ethos. An ethos defines how people relate to one another and how they relate to the natural world. In every civilization, cities and architecture have been manifestations of the ethos of the people who made them.

In this studio we begin by analyzing a particular place – a neighborhood – to reveal the ethos of post-World War II American suburbia that prevailed during its formation. Then we propose an alternative ethos more appropriate to our present condition. A new master plan will accommodate the same number of households as the existing condition but in a radically different pattern of development.
This thesis formulates a design process that reveals itself through a detailed investigation of the physical and cultural landscape of Wisconsin’s Driftless Region. At the center of this investigation lies the notion that “landscape” is a manmade phenomenon, and that vernacular architectural tradition is concerned with, among other things, utility and practicality. The thesis seeks to answer the question of how one process can inform another, i.e., how an analysis of multiple layers of cultural geography can yield an appropriate and sensitive architectural language of simultaneous beauty and utility.

Through an interpretation of the intersection between site (physical, cultural and spiritual) and the concept of contingency, the evidence shall present itself as an artifact that is deeply embedded within, and deferent to, the landscape from which it was derived.

Advisors: Chris Cornelius (chair), Mo Zell, James Dallman
Educational environments are becoming increasingly outdated and have not adapted to the needs of today’s students. This thesis challenges the program, site, and educational pedagogy of the traditional high school. Milwaukee’s Inner Harbor, positioned on Lake Michigan, creates a venue for students to understand the importance of water in defining the urban character. The Inner Harbor site provides a place for an alternative pedagogy and educational environment while embracing the surrounding community as two nearby schools, Bradley Technology and Trade High School and the University of Wisconsin-Milwaukee School of Freshwater Sciences, offer non-traditional learning models. Leveraging existing resources, the site becomes part of an incubator for water research, technology, and vocational study. Water shapes the architecture, creating a place which responds to the student’s specific water interests, the educator’s expertise, the landscape conditions, and the community it embraces — together forming a distinctive learning patchwork.

Advisors: Grace Le (chair), Jim Wasley, Karl Wallick

Paul Rohde – Master’s Thesis Project
To record the spatial world on a two-dimensional surface requires a series of evaluative judgments ranging from subject choice, point of view, perspective construction, composition, control of light, rendition of materials and textures, moods, and accessibility of details. This series of decisions requires an experienced eye gained from an understanding of these elements in the existing environment and an ability to manipulate them. Students are first taught to see and then to draw what is seen, but what they want to be seen.

On-site analysis offers the experience of learning about freehand sketching techniques and drawing principles. Freehand sketching exercises develop students’ artistic eye, skill, and vision while they experience and record many historical and contemporary subjects throughout their travels. Training hand and eye through freehand sketching directly contributes to an ability to imagine and convey a design; the time spent sketching trains one to learn from looking, to record and communicate ideas, and to become more intimate with the world.

Mark Keane
Undergraduate Core Course

Introduction to Architectural Drawing
CONSTRUCTED SITE
Seminar Course

This seminar explores the deeper meaning of 'site' as it relates to placemaking. Architect and educator WG Clark (formerly of Clark and Menefee) describes every site as having three places: physical, cultural, and spiritual. These notions of place clarify the connection between building and the land. Clark conceptualizes architecture as a duality of site and building, ‘before and after’.

In an attempt to make the methods of study used in studio clearer, this seminar adopts modes of analysis to further the development of architectural ideas. The process of inquiry includes readings and discussions, and detailed analytical studies through drawings. Students participate in the International Parking Day event by critically evaluating existing on-street parking spaces and then transforming them into new types of public space.
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Alden Dreiser, Ulmerringen
This volume of Calibrations is dedicated to Harry Van Oudenallen, 1944-2011. Harry was an extraordinary teacher, friend, and colleague. He will be remembered by all for his kindness, laughter, and passion. Always willing to offer a helping hand, Harry leaves an empty space in our school and hearts.

Harry joined the SARUP faculty in 1979, and from the very start excelled as a teacher. Hundreds of students were profoundly influenced and mentored by Harry. Among the awards he won in his career were the UWM Undergraduate Teaching Award and the ACSA Distinguished Professor Award. He was elected by his peers at the ACSA to serve as the Vice Chancellor of this distinguished group of scholars and teachers.

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