BALL STATE UNIVERSITY EDUCATION REDEFINED

FACULTY AND STUDENT SYMPOSIUM

#capfssym

APRIL 3, 2013

COLLEGE OF ARCHITECTURE AND PLANNING

ARCHITECTURE • LANDSCAPE ARCHITECTURE • URBAN PLANNING
HISTORIC PRESERVATION • URBAN DESIGN

DESIGN + THINKING

A Welcome from the Dean

Every year for the last six years, we have put aside a spring day in order to celebrate the intellectual richness of our faculty and students. We are a community of perpetual learners and we celebrate our vocation to learn by dedicating this day to the sharing of our most recently acquired knowledge.

This year, with the launching of a new strategic plan for the university, we are especially aware of the importance of promoting higher levels of knowledge generation. Our Faculty and Student Symposium is an initiative that continues to support faculty and student interaction, peer review, and collaboration, leading to the dissemination, validation, and further generation of new knowledge.

Following our traditional schedule for this event, we will open the day with a plenary presentation by our 2012-13 Charles M. Sappenfield Award of Excellence recipient, Assistant Professor Chris Marlow. His presentation will take our faculty and students to an area of multidisciplinary intersection which illustrates the added value of creative thinking. Following the plenary our first set of parallel sessions will inform our collective about the learning acquired by our faculty returning from special leave assignments. This group of presentations will also put in evidence that our learning is not limited to the footprint of our campus but transcends institutional, local, regional, national, and international boundaries.

In addition to our plenary session and special leave sessions, this year we have received a number of contributions towards panel discussion sessions and paper presentation sessions. In total we will be holding more than 25 presentations through the morning and afternoon hours. At the middle of the afternoon we will also have a number of posters available for interactive review, and we will be closing the day with two workshops on creative applications of digital technology.

As in previous years, our symposium will provide enhanced levels of transparency on how we teach and learn. Our students will have first-hand access to the inner workings of how our faculty learn, teach and learn to teach. In that same context our students will provide our faculty with an extraordinary view into how they learn and engage their peers in that process.

At the CAP we rely heavily on student peer interaction as a means to promote the creative inferences that fuel our design and planning processes.

I invite you to join us in this celebration of our collective intellectual richness.

Guillermo Vasquez de Velasco, PhD
Dean

CONTENTS

Faculty+Students Symposium

April 3, 2013

College of Architecture and Planning
Ball State University

http://printing.bsu.edu/servicecenter/cap_ondemand.html

Editor: Lori Pence

Layout & Design: Chris Helms

Symposium Committee:
Spencer Blaney
Michael Burayidi
Meg Calkins
Lohren Deeg
Pamela Harwood
Rachel Kruse
Zach Lutz
Deborah Middleton
Lori Pence
Guillermo Vasquez de Velasco

Schedule of Events

8:30 am	Atrium	Breakfast

The 2012 Charles M. Sappenfield Award of Excellence Recipient

9:00 am	Auditorium	Chris Marlow *Don't Just Play the Game*

Special Leave Presentations

10:15 am	AB100	Jonathan Spodek *The Work of ecoREHAB Design/Build*
	AB101	German Cruz *Walking Toward a Methodology of Place*
	AB202	George Elvin *Post-Petroleum Design*

Panel Presentations

11:00 am	AB100	Robert Koester - Moderator *Five Teams; Five Expressions*
	AB101	Anthony Gary - Moderator *How to leverage student leadership and networking as a springboard into the professional world*
	AB202	Michele Chiuini - Moderator *Interdisciplinary Education in Architecture: The Solar Decathlon Experience*
	AB021	Pam Harwood - Moderator *Linking Pedagogy and Space*
	AB004	Meg Calkins & Ted Wolner *Writing and Editing Books: Lesson Learned*
	AB210	Cynthia Brubaker, Carol Street, Angela Shelby, Sarah Robinson & Leslie Perrigo *The Indiana Bridge Company and Its Archives: A Tool for Preserving America's Historic Iron and Steel Structures*
12:00 noon	Atrium	Lunch

Paper Presentations

1:00 pm	AB100 Ultimate Challenges	Wes Janz, Tim Gray & Andrea Swartz *Flat Lot Design Competition, Flint Michigan* Chris Reinhart *Reflections on Wearing Many Hats and Playing in the Mud* Harry Eggink, Eric Beaman & Lucas Holwerda *The Second Life of a Boeing 747*
	AB101 Reflections on Past & Future	Chris Baas & Malcolm Cairns *Promoting the City Beautiful: The Editorial Cartoons of Bert J. Griswold* Francis Parker *Regional Planning and the Flood of 1913* Rob Benson *Horizontality! Linearity! Velocity! The Coming of High Speed Rail to America and Its Influence on Landscape Perception: Tracking the Pioneer Zephyr*

	AB202 Contemporary Teaching & Measurement	Antonieta Angulo *On the Design of Architectural Spatial Experiences Using Immersive Simulation* Lohren Deeg & Simon Bussiere *Quick Response Design Assessment* Michele Chiuini & Walter Grondzik *Architectural Education: The Solar Decathlon as a Pedagogical Opportunity*
	AB021 Connections	Joe Blalock *A Personal Effectiveness Strategy for the Connection Economy* Lisa Dunaway *Ensuring Accountability in Online Teaching* Pam Harwood *Nature Based Play: Responsible Design for Environmental Learning*
	AB004	Joe Bilello & Sarah Mangelsdorf, Assistant Professor of Dance - Interdisciplinary Session with Dance Students *Continuation of Linking Pedagogy and Space Panel*
2:30 pm	Atrium	Poster Sessions & Reflection Break *A Century of the City Beautiful Exhibit | 2013 Solar Decathlon: The Phoenix House Design Process | Wood, Steel, and Time. Derelict Material Finds a New Purpose | Succession of the Built Environment: A Regenerative Approach to the Revitalization of Historic Communities | A Survey of Chinoiserie Garden in Europe*

Paper Presentations

3:00 pm	AB100 Lessons Around the Globe	Jeff Lauer & Tim Little *Planning & Culture: Managing Our Co-existence* Ana de Brea *Architecture, Latin American Fragment. Checking Out Unlimitedness*
	AB101 Climate Chaos	Bruce Race & Claire Bowers *Climate Action Planning and the Future Form of Cities* Joe Bilello, Tony Costello, Kevin Mickey, Dean Illingsworth & Petra Zimmerman *Resiliency in Architecture: Disasters and Their Aftermaths: Buildings, Communities, Cities*
	AB202 Revitalization - Neighborhoods & Education	Sarah Essbai *Low Income Housing Tax Credit and Neighborhood Revitalization: Case Study of Three Projects in Indianapolis* Bruce Frankel *Winning with ICHE Metrics*
	AB021 Design Toolbox	Harry Eggink *The Evolution of a Drawing* Michele Chiuini *Digital Chicago Stock Exchange (DiCSX) Part III*

Workshops

4:00 pm	AB100	Lisa Dunaway *Basics of Trimble SketchUp (bring your laptop with SketchUp already installed)*
	AB021	John Fillwalk *Human Computer Interaction in Virtual 3D Design*

Charles M. Sappenfield Award of Excellence

2012 Recipient

The Charles M. Sappenfield Award of Excellence is named in honor of the founding Dean of the College, under whose leadership it opened its doors in the fall of 1966. This award is given to professors chosen by the alumni represented by the Governing Board "in recognition of outstanding dedication, contribution, and commitment to the education of the students of the College of Architecture and Planning."

Professor Chris Marlow, Assistant Professor in the Department of Landscape Architecture at Ball State University, was selected as the 2012 award winner.

Chris Marlow, Assistant Professor of Landscape Architecture, receiving the Charles M. Sappenfield Award of Excellence at the 2012 Alumni Awards Banquet, presented by M. J. Meneley, president of CAP Alumni Advisory Board.

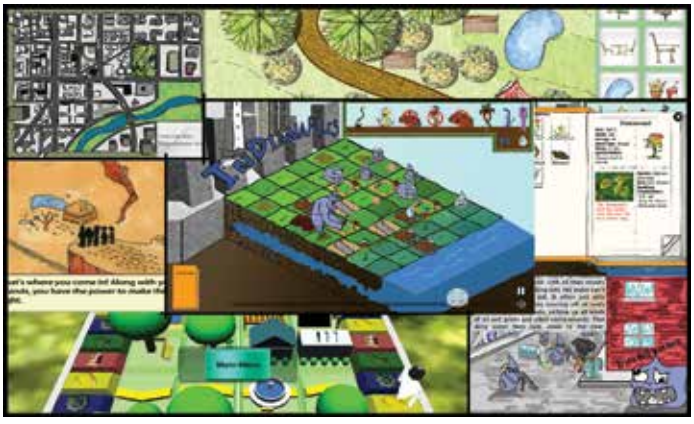
Chris Marlow

Don't Just Play the Game

Good games can capture and hold our attention like little else. Good drawings and models are among a designer's best tools for conveying and advancing ideas. Ideally, we all want to enjoy learning. Those are why making games is a powerful way to inspire learning – immersive, interdisciplinary experiences where students are more engaged and enthusiastic while striving for higher levels of achievement. The game design process promotes tangential learning, and helps facilitate a more veiled and memorable learning experience. Designing and making games has amazing potential to transform and strengthen current environmental design pedagogies, pedagogies which have gone relatively unchanged for decades.

Environmental design and game design processes share multiple similarities, but two characteristics embody why they fit so well together in environmental design education. The first – constructionism – celebrates thinking, tinkering, making, and learning in an interdisciplinary workshop/studio-like setting. The second – systems thinking – entails an understanding of the mechanics of both real and game environments. There is plenty written on the value of video games to education in general, but practically nothing addresses the impact of video games on environmental design education. Environmental design is among the most ideally-suited discipline in the world for embracing games.

This presentation highlights my approach to teaching and scholarship in the context of video games and other digital media that aim to augment student learning. I will also share examples of course materials that continue to spark my gaming interests, some excellent student-designed video game prototypes, and my evolving teaching philosophy.



Interface design is a subject of critical importance in the delivery of instructional content through games.

Special Leave Presentations

Jonathan Spodek

The Work of ecoREHAB Design/Build

Jonathan Spodek
Associate Professor
of Architecture

ecoREHABstudio was established to provide leadership in the ecologically sound and sustainable rehabilitation of abandoned housing. The focus is to improve the local quality of place while providing educational opportunities to students, housing organizations, and local property owners. Following city low -moderate income housing standards, students learn strategies to incorporate green & sustainable construction demonstrating that existing housing can be rehabbed to provide quality energy efficient housing in a manner that is economically competitive while maintaining the property's character and enhancing the neighborhood. ecoREHAB works on one building at a time. But the work is done with an understanding to look beyond a specific building and consider sustainability in the context of urban reinvestment, equity of user-ship, and effects on the environment. Engaging sustainable design in our existing built environment must go well beyond simply applying expensive technology to the buildings. It is important to help design students understand that the design process is similar whether they are proposing new construction or they are dealing with an existing resource. Design decisions must be thought of in neighborhood and urban contexts enhancing the quality of place. These decisions must take into account the existing characteristics of the structure to take full advantage of their qualities. Value judgments must be made when deciding what to keep and what can be modified. And ultimately, the final solution must address specific needs. All this must be completed with the appropriate technological and construction methods that will ensure their solution is viable not only today, but for many years into the future.

Sandy Steinau-Weber, Derek Anger, Jonathan Spodek, and David Smith

German Cruz
Associate Professor
of Landscape
Architecture

German Cruz

Walking Toward a Methodology of Place

A first section of the line of inquiry for this project led the author to undertake a self-funded investigation of land, its context, and attributes by walking for 67 days across 1600 km (1,000 miles) on the Way of St. James (Voie de St. Jacques / Camino de Santiago) between Le Puy-en-Velay (SE France) and Santiago de Compostela (NW Spain). The Camino de Santiago and its network of paths form a dendritic armature across the European continent that has played a vital social and political role in the unification of the land (European Union) and the integration of its people and culture. Thus, a critical walking experience across this historical landscape represents a powerful thematic foundation for the critical consideration of environmental perception and its methodology.

A second line of the project sought to address multiple issues of environmental perception that have direct and effective application to physical design on the land as well as to cultural overviews of land and people that frame current understandings of place and locality. The principal objective is to communicate the benefit of seeing and experiencing (perception) the land by such direct means as itinerant walking in a manner that becomes a tool for understanding its contextual capacity, potentialities, and qualities (J.B. Jackson, Discovering the Vernacular).

George Elvin

Post-Petroleum Design

George Elvin
Associate Professor
of Architecture

Of all the materials found on Earth, none has had the impact of oil. With it we have transformed life on the planet, and the atmosphere it depends on. Oil, which gave us the power to change the Earth, now threatens the existence of every living thing on it. But we can create a post-petroleum world rich in the good things that oil has brought us without its devastating side effects. Before we can create it, however, we have to design it.

Designing a post-petroleum world requires us to rethink how we make things, how we transport ourselves and our goods—how we power our entire economy. But reducing our dependence on oil is not just a technical problem. We need to change the way we make everything—our cars, our houses, the products we use every day—all the petroleum-based conveniences we enjoy today.

Post-petroleum design is a new way of designing and making things that uses drastically less oil. It is already taking shape in design studios, factories and laboratories around the world, where post-petroleum designers are forging an alternative to a future fouled by oil. Working with new materials and old, the most advanced technologies and the most ancient wisdoms, these pioneers are working today to shape our post-petroleum future.

iPad case made with natural, non-petroleum based materials.

Panel Presentations

Five Teams; Five Expressions

Robert Koester, AIA LEED AP, moderator
Director of Center for Energy Research, Education and Service and Professor of Architecture

Chris Crosley
Bill Giltz
Tyler Grave
Emily Kieper
Joshua Kriete
Erica Kudyba
Alex Powell
Chris Reinhart
Erin Roznik
Bret Skirvin
William Stark
Hanan Tufashiey
Sarah Yacko
Fabiola Yep
Emily Yu
Ningxin Zhang

As so nobly cited by David Orr, architecture (and by extension its urban form) is a crystallized pedagogy. With the Academy for Sustainability as an enterprising 'client/community partner', a class of sixteen BSU students has embarked on a semester-long examination of the effect/influence of social, economic and/or environmental constraints in the development of built form.

The configuration, workings, and enjoyment of buildings within the larger urban construct which are the sources of indigenous identity the world over, have been the very magnets for vacationing and ecotourism, and provide the touchstones for imagining the development of urban form specific to social, economic and environmental factors in design-for-sustainability.

The Academy for Sustainability is a BSU Knowledge Group, created to break down the silos of disciplinary language/expertise; it fosters inter-disciplinary, cross-disciplinary, trans-disciplinary interaction beyond the conventional hierarchy of collegiate and departmental segmentation. The urban modeling work this semester is a testament to the challenges of that mission/opportunity.

The five student teams within the class will present their respective work to date.

How to leverage student leadership and networking as a springboard into the professional world

Anthony Gary, moderator
Bryan Beerman
Kristin Cochran
Matt Nichols
Jacob Egan
Rachel Kruse

This panel will share insights about creating a professional network through the use of student organizations, leadership opportunities, etc. The panel members will discuss their internship experiences and how to make the most of the internship experience. The panelists will stress the importance of networking early and often and following up with professional contacts. Students attending the panel are encouraged to come with engaging questions for the panelists. The panelists represent a variety of leadership experience.

Interdisciplinary Education in Architecture: The Solar Decathlon Experience

Michele Chiuini, moderator
Associate Professor of Architecture

Zach Kendall
Jamie Owens
Andrea Lee
Scott Kollwitz
Sarah Yacko
Mark Sandberg
Eric James
Kelsey King

While we value interdisciplinarity in CAP, teams of students rarely work with their peers outside CAP disciplines. The 2013 Solar Decathlon has offered an opportunity to integrate teams of CAP students with students

from other colleges and universities as they progress through the design and construction of a home for the 2013 Solar Decathlon competition.

This competition requires engineering and architecture students, in addition to other disciplines, to design, build and operate a net-zero energy solar house prototype. CAP students have worked with Construction Management, Interior design, and Landscape Architecture students in addition to engineering students from the University of Louisville. The main design method has been building information modeling (BIM), a required deliverable by the US Department of Energy, which provides an excellent conceptual framework for organizing teamwork and interdisciplinary collaboration.

The panel will raise the issue of effectiveness of various methods of collaboration used in the design process, such as videoconferences versus face-to-face discussion.

The panel will also debate how the BIM management system was used by the students as a design tool and how it was used to support a collaborative interdisciplinary team approach, how the students' design processes were impacted by the use of BIM and how this facilitated an early collaboration with engineers. Questions will be raised about the effectiveness of this method to prepare future designers for their profession, and if this methodologies and skills should become part of the curriculum of Architecture and allied disciplines.

Linking Pedagogy and Space

Pam Harwood, moderator
Associate Professor of Architecture

Joe Bilello
Professor of Architecture

Deborah Middleton
Assistant Professor of Architecture

Mahesh Daas, DPACSA
Chairperson of the Department of Architecture and Irving Distinguished Professor of Architecture

This panel session will discuss innovative practices and research that leverage the advantages of flexible, technology-enhanced learning spaces and active learning pedagogies. Faculty and students will share successful practices that have enriched the experience in active learning classrooms, build and deepen online and global learning opportunities, and create active learning, team-driven, collaborative environments. As the digital transformation of higher education gains momentum, the academic experience of students and faculty members is being challenged. The physical campus will maintain its viability by providing qualities that cannot be duplicated elsewhere. Students must be at the center of this discussion!

There is a surprising lack of analysis about what is changing in teaching and learning practices and about what role architecture has in this process. New typologies are being offered as more appropriate environments for higher education, but are they enhancing learning as predicted? To develop learning spaces based on greater clarity and creativity we need to ask the following questions:

- What kinds of spaces are we talking about in learning: conceptual, physical, virtual, social, personal?
- What are the relationships between architectural design and learning, teaching and research activities and how can we rethink relationships between learning and space?

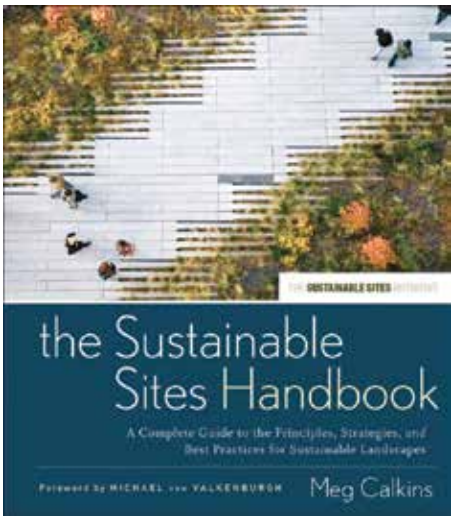
- What are the different spaces in which learning takes place and how can we judge their relative effectiveness?
- Finally, we need to unravel what matters about space when it comes to learning, to ask how does space "work?"
- Please join us in AB004 @ 1PM for an interdisciplinary session with Ball State Department of Dance Students

Writing and Editing Books: Lessons Learned

Meg Calkins
Associate Professor of Landscape Architecture

Ted Wolner
Professor of Architecture

Presenters in this panel presentation will discuss their experiences proposing, writing and producing books. Professor Ted Wolner will discuss his experience writing *Henry Ives Cobb's Chicago: Architecture, Institutions, and the Making of a Modern Metropolis*. Professor Meg Calkins will discuss her process of writing *Materials for Sustainable Sites* and editing *The Sustainable Sites Handbook*.

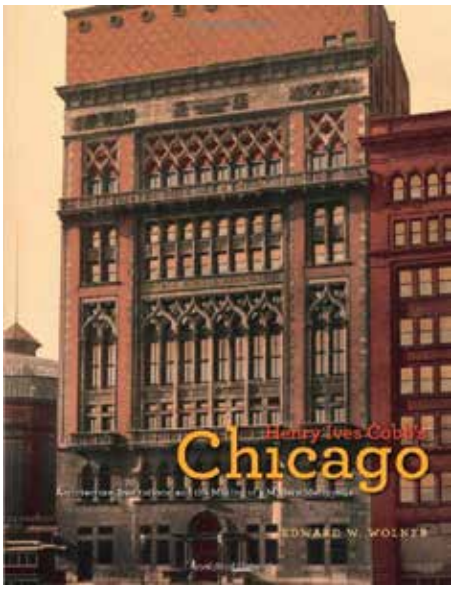


Presentations will cover the following topics: writing book proposals, choosing a publisher, writing the book, soliciting in-progress reviews, negotiating the contract, post-release activities and considerations for tenure and promotion.

Discussion by panelists and audience members will follow the brief presentations.

Some questions that will be offered for discussion are:

- What kind of publisher should you choose?
- Should one do a book during the tenure track?
- What are the benefits and drawbacks to writing a book?
- What is the start to finish process of writing a book?
- How can one balance writing and producing a book with teaching and service responsibilities?



The Indiana Bridge Company and Its Archives: A Tool for Preserving America's Historic Iron and Steel Structures

Carol Street
Archivist for Architectural Records

Cynthia Brubaker
Instructor of Architecture, Graduate Program in Historic Preservation

Leslie Perrigo
Masters of Historic Preservation

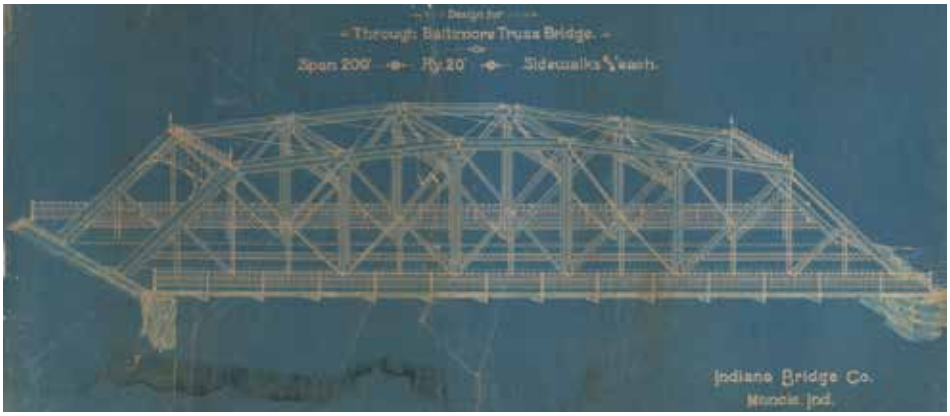
Sarah Robinson
Masters of Historic Preservation

Angela Shelby
Bachelors of Urban Planning and Design

Since its founding in 1886, the Indiana Bridge Company of Muncie, Indiana, designed and built thousands of iron and steel truss bridges that stretched across the chasms of Indiana and throughout the Midwestern region. With designs named Camelback, Fink, Bowstring, or Pratt, these bridges supported pedestrian, horse, train, and, eventually, car travel over a burgeoning infrastructure network.

Today these bridges may look like simple designs, but when they were erected they represented the latest technology in American building design. Many of the bridges are now over 100 years old, and their owners face preservation issues that affect safety in a time of decreased budgets. Bridge owners and engineers are increasingly being forced to decide whether they will make necessary repairs or send the bridges to the scrap heap. Often they make these decisions without knowing the history behind the bridge and its importance to our architectural heritage.

The Ball State University Drawings and Documents Archive and the Archives and Special Collections both hold extensive archival collections from the Indiana Bridge Company, which include original architectural drawings, photographs, specification books, and company papers. Historic Preservation professor Cynthia Brubaker will explore the history of the Indiana Bridge Company and its place in Muncie and America's industrial heritage. The Drawings + Documents Archive's archivist, Carol Street, will offer case studies of how the holdings in the collection have been used to rehabilitate bridges. Two students who attended the Iron & Steel Preservation Conference, held in Lansing, Michigan, in March, will present on their experiences at the conference.



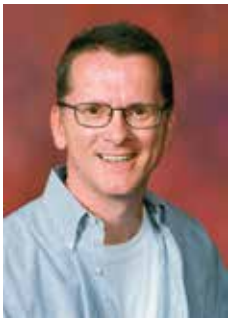
Indiana Bridge Company (Muncie, Ind.), Baltimore Through Truss blueprint, ca. 1900. Indiana Bridge Company Collection, Drawings + Documents Archive, Ball State University.

Indiana Bridge Company Collection at the Digital Media Repository of the Ball State University Libraries

http://libx.bsu.edu/cdm4/collection.php?CISOROOT=/INBrdgCmp

Faculty + Students

Paper Presentations



Wes Janz
Professor of Architecture

Tim Gray
Associate Professor of Architecture

Andrea Swartz
Associate Professor of Architecture

Chris Reinhart
Bachelor of Arts in Architecture

Wes Janz, Tim Gray & Andrea Swartz

Flat Lot Design Competition, Flint, Michigan

This paper presentation will document the experiences of a collaborative design effort between Professors Janz, Gray and Swartz in the Department of Architecture. The Flat Lot design competition, described on their website as "a program to design and build a temporary summer pavilion in the central parking lot in downtown Flint," (http://flintpublicartproject.com/flatlot/index.html) is sponsored by the American Institute of Architects--Flint and Flint Public Art Project. The team's design approach is to engage and empower what energies are already evident in Flint. This includes having conversations with several of Professor Janz's connections/colleagues from Flint who have already been contributors to his reflections and writing on Flint; identifying potential community partners (Flint Job Corps students, local unemployed) for the project's realization, and using the project to potentially establish local skills in the deconstruction of abandoned structures in Flint. The presentation will discuss the process of collaboration, the challenges and opportunities, and the ultimate competition entry proposal.

Chris Reinhart

Reflections on Wearing Many Hats and Playing in the Mud

The owner-designer-builder process offers a unique set of circumstances. Having the opportunity to live inside my own design, built with my own hands (and feet!), has been a powerful experience. It has taught me the strengths and weaknesses of my own character and helped me to grow as a designer and builder. My home is both experimental and conventional—just as I am. Exploring construction details with earth and straw and all the other components that make up a home has been a window into exploring the details of my personality. I am my home, and my home is me. As we build, so we live, and the manner in which we live dictates the manner in which we build. My home, like my body, is a record of decisions I have made, written in time-space. I don't like all of them, but we make our homes and then we live in them and we learn from them. While my experiences are unique to my particular circumstances, they speak of the universal experience of imagining, creating, and then living in one's own space. This presentation offers a personal look inside the process, sharing lessons learned from seven years of living in my building project. Long enough to have a degree of critical distance but still with sleeves and pants rolled up and dirt under finger and toenails.

Harry Eggink, Eric Beaman & Lucas Holwerda

The Second Life of a Boeing 747

The paper will introduce and present the studio that utilized the airline graveyards to reinvent the obsolete into the state of the art habitats and create a second life for a Boeing 747. The challenge was to define and redefine these once majestic ships of the sky and transform them into sustainable living spaces on earth.

Professor Eggink will be introducing the context and the process of the graduate studio and overlay the contemporary challenges of architecture, new technologies, and the changing extreme environments that confront our "design" profession today.

Graduate Student, Eric Beaman will be presenting two designs utilizing airplane parts that integrate the challenges of climate and versatility in his "Florida House" and the "Educational/Research Module."

Graduate Student, Lucas Holwerda will engage an extreme disaster situation and address an architectural solution that would change the outcome of many lives.

Harry Eggink
Professor of Architecture

Eric Beaman
Masters of Architecture

Lucas Holwerda
Masters of Architecture

Chris Baas & Malcolm Cairns

Promoting the City Beautiful: The Editorial Cartoons of Bert J. Griswold

Beginning in 1907, civic and governmental leaders combined efforts to "beautify" Fort Wayne to compete in business--as well as culture--with other Midwestern industrial cities. A rationally planned and beautiful city would raise Fort Wayne's stature as a civilized populace. Between 1909 and 1914 editorial cartoonist Bert J. Griswold used his position at the *Fort Wayne Sentinel* and *Fort Wayne News* to influence public opinion and promote civic action in support of city improvements proposed by planner Charles Mulford Robinson and landscape architect George Edward Kessler.

Griswold's cartoons were typically the lone graphic on the paper's cover, printed just below the banner in the sea of headlines that characterized early twentieth-century reporting where photographs were rare. He was most talented at caricaturing public figures, commonly drawn with large heads on undersized bodies and referred to as phizes. Griswold often portrayed Fort Wayne as a beautiful brunette, and

Chris Baas
Assistant Professor of Landscape Architecture

Malcolm Cairns
Professor of Landsape Architecture

hayseeds illustrated activities deemed uncivilized. Griswold's "dingbat," a cartoonist's trademark mascot used to communicate additional editorial commentary, was a wide-eyed, floppy-eared rabbit, whose name has been lost to history.

This paper will explain the national trend of using editorial cartoons in promoting Progressive Era design of American cities; briefly explain Fort Wayne's planning and design of a Progressive city; introduce cartoonist Bert J. Griswold and his role as city promoter; and interpret a collection of Griswold's cartoons.

Francis Parker
Professor of Urban Planning

Francis Parker

Regional Planning and the Flood of 1913

My purpose is to show how an innovative planning experiment, the Miami Conservancy District, responded to a specific natural disaster, but also became the template for later regional planning and development agencies like the Tennessee Valley Authority.

2013 is the 100th anniversary of the great Midwest flood of 1913, the most devastating flood in the history of Ohio and Indiana. For five days starting on March 23, 1913 a succession of storms moved across the region, dropping 8-11 inches of rain on ground already saturated by earlier storms. Rivers rose, inundating cities, demolishing bridges, and destroying transport and communication throughout the region. Indianapolis, Muncie, Dayton, Hamilton, and Columbus, among others, saw rail communication destroyed as bridges fell. Fire added to flood as fire departments couldn't reach burning buildings. Two blocks of downtown Dayton burned. The Dayton area alone had over 300 dead, with over 80 dead in Columbus.

Out of this disaster came immediate flood relief from civic and public institutions. In Dayton the effort was led by the energetic president of the National Cash Register Company, John H. Patterson. By nightfall of the first day, Patterson had NCR employees build 167 flat-bottomed boats to use in rescuing people from their roofs and attics.

Turning to the longer term, Patterson was instrumental in organizing and lobbying for creation of the Miami Conservancy District (MCD), an innovative regional body devoted to constructing long term physical improvements to reduce the impact of future storms. The MCD was an independent agency, authorized by the Ohio State Legislature, with taxing and eminent domain authority throughout the 10 counties of the Miami River watershed. Through a series of five major flood storage dams and miles of levees and flood plain projects, the MCD produced a coordinated flood control plan which was completed by 1922, in time to prove effective in handling a major storm event that year.

The Miami Conservancy District demonstrated the power of regional solutions to regional watershed problems. Moreover, it became the prototype for an even larger regional planning experiment, the Tennessee Valley Authority, a Federally owned multipurpose river-basin conservation agency authorized in 1933 as a component of the Roosevelt New Deal.

There was a direct personal link between the MCD and the TVA: they shared the same managing director. Arthur Morgan, an engineer from Memphis, was hired in 1913 as director of the MCD. When his work there was done he became President of Antioch University, but was recruited in 1933 to be the first director of the Tennessee Valley Authority.

The TVA, like the MCD, built on the model of a natural unit – the river basin – as a basis for planning, with an entirely new governmental unit created to match this natural region. The TVA went beyond the MCD in its focus on multi-purpose watershed development, as distinct from single purpose flood control. But without the precedent of the Miami Conservancy District, the TVA would have been much less likely to exist. MCD, a specific response to catastrophe in the Miami River basin in 1913, has had ramifications far beyond its own region.

Rob Benson

Rob Benson
Professor of
Landscape
Architecture

Horizontality! Linearity! Velocity! The Coming of High Speed Rail to America and Its Influence on Landscape Perception: Tracking the Pioneer Zephyr

That the so-called bullet trains of Europe and Japan initiated the age of high speed passenger rail travel is a modern misconception, for on the morning of May 26, 1934, a revolutionary new American train sped across the Great Plains, its shapely, tapered nose plowing a furrow through time and space to set a record of 13 hours and 5 minutes for the 1,025 mile run from Denver to Chicago and its final destination, the *Century of Progress* exposition. The Burlington *Zephyr* - named for Zephyrus, the Greek god of the west wind (what were they thinking? A zephyr is a gentle breeze) - slashed the time previously required for the trip in half, at one point reaching a velocity of well in excess of 100 miles per hour. It would eventually travel 3.2 million miles during its 26 years of active service. A technical, aesthetic, and experiential triumph, it was the first – and last of its kind. This paper will explore ways in which the *Zephyr* pioneered and combined new technologies and aesthetic principles, and altered certain aspects of traditional landscape perception. It will also speculate about the evolution of spatial and temporal perception in an age of high speed rail travel in which "net" speed must be seen relative to context.

The "streamliner," as such trains came to be called, was a joint venture of the Chicago, Burlington & Quincy Railroad under the control of manager Ralph Budd, and Edward G. Budd - distantly related, but unknown to each other - of the Budd Company of Philadelphia. Fabricated from lightweight stainless steel and powered by diesel-electric engines, a fleet of cloned *Zephyrs* would set new technological precedents in motion and define a uniquely 20th century aesthetic, but one whose inspiration sprang from the forms of nature. It was also a stellar example of the Modernist precept that form follows function. Robert Carroll Reed writes in *The American Streamliner* that ". . . streamlining came to symbolize all that was modern and moved quickly,"

as well as a good many things · like toasters · that didn't. It was the result of "the confluence of two distinct currents: technology, with all its connection with utility, and art, with its aura of glamour and luxury." It was also a response to the Great Depression, prior to which the railroads had lost 40% of their passengers in less than a decade. In the economic sense, the *Zephyr* was just as revolutionary, an expression of the idea that "small is beautiful" – and efficient.

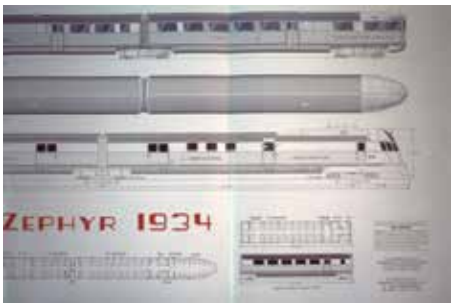
The technologies which made this possible included diesel-electric power plants, lightweight stainless steel construction principles, and Budd's newly invented process of high amperage shot-welding. This allowed construction of light but strong railcar bodies requiring almost no maintenance. After 79 years, the shining steel sheathing of the *Zephyr*, now on permanent display at Chicago's Museum of Science and Industry, is still brilliantly intact and was the characteristic of the train needing the least attention during the restoration. Both the technology and aesthetics of streamlining required that forms in motion be smooth, tapered, and curvilinear like those of birds, irregular projections eliminated, and window glass installed flush with the sides of each car body. Thin, fluted sheets of stainless steel not only captivated the eve with their reflective, concave surfaces, but also added strength, rigidity, and lightness to the tube-like structure, similar to that of the former Sears Tower. In a manner of speaking, it was a strange sort of horizontal "skyscraper" itself. These design principles governing its form were not adopted merely for the sake of aesthetics, but the consequences of wind tunnel tests on mockups at M.I.T. The new train also possessed an exceptionally low center of gravity, which made far higher velocities possible within the safety limits of the existing track network · another economic plus.

The entire three car train, including the power unit, weighed in at only 85 tons, just slightly more than a single typical riveted steel "heavyweight" passenger car of the period. It also carried more passengers (72 instead of the previous average of 55 · 60) and several thousand pounds of highly profitable express mail and baggage in one compact, economical package. In fact, it would be fair · and accurate · to say that the *Zephyr* did everything by halves. Travel time between destinations was half that of any of its predecessors, and the 600 horsepower Winton 201A 8 cylinder diesel-electric engine which propelled it was far more efficient than conventional steam or gasoline. Diesel-electric propulsion cut the operating costs of steam engines by half from 65 to 35 cents per mile, required no turnaround time for overhaul at the end of each trip, and never needed to stop for water or coal. Thus diesels were far more cost effective, as was evident by the end of 1935 when the new trains had doubled Burlington's passenger revenues and netted a profit of $95,000. By 1940 ridership had actually increased by one third.

Passenger trains and service not only became faster and more frequent, but also far more comfortable and forward-looking since the revolution had been fought on both scientific and artistic fronts. Basic

forms, general appearance, and decoration, both inside and out, were reinvented by famed industrial designers such as Otto Kuhler, Raymond Loewy, and Henry Dreyfus. The *Zephyr's* sleek interior by architect Paul Cret was air-conditioned and illuminated at night by indirect fluorescent lights, while broad expanses of glass during the daylight hours revealed clean, uncluttered surfaces whose light colors, leather seats, and bright metal accents replaced the darker, stuffy interiors of previous passenger cars. Most indicative of the train's success, perhaps, was the fact that Ford Motor Company named a new luxury car, the Lincoln Zephyr – also legendary - after the streamliner and pictured them together in ads.

The *Zephyr* exhibited a distinctively horizontal silhouette that was visually, symbolically, and functionally appropriate to the flat landscapes over which it flew. The appearance of the train was broadly reminiscent of Frank Lloyd Wright's ground-hugging Prairie houses with their linear bands of windows, a resemblance due to the *Zephyr's* long, low profile. Full-width rubber diaphragms between the cars smoothed airflow and ride, further enhancing the sleek silhouette. Even bulky truck frames and wheels were shrouded to reduce drag. The smoothly rounded, swept back nose of the power unit and the tapering "boat tail" end of the observation car recalled the angles and curves of Philadelphia's PSFS and New York's Chrysler Buildings and employed the same nickel-chromium-steel alloy used in Van Alen's spire and ornamentation. Expressions of new technologies and aesthetics were plain to see in towers and train.



The *Zephyr's* relationship to the vast, empty Great Plains was also readily apparent and even more pronounced. This region was well suited to high speeds, since it lacked the congestion of the East and the sharp curves and steep grades of the Rockies. Film records show the *Zephyr* bulleting along in an uninterrupted straight line at rates which sometimes seem the result of speeded up projection. The compression of time was a factor in the visual equation as well, for once the train was in motion, passenger perception of space and duration were radically altered. A popular saying of the period, "She sure is coming – wasn't she!" perfectly captures the idea of a visually simultaneous contraction of time and space, similar on a smaller scale to that involved in Einstein's principles of relativity . The scale of landscape perception was also drastically altered. Obvious cues regarding to the passengers as to the train's real and increasing velocity included the ever more rapid staccato clicking of its wheels rolling over joints in the rails - rather similar in effect to the apparent movement of lights in a subway tunnel. The speed and rhythm of passing telegraph poles, and the constantly changing perspective of the plowed furrows of the agricultural landscape also reinforced this impression. The vast scale of the Great Plains was thus more easily accessed and visually comprehended through the vehicle of the *Zephyr's* sheer speed, and the edge of the horizon where landscape, sky, and space-time met and merged didn't seem so far away. In this context and the constantly changing point of view, the train and its passengers seemed less of a stationary point in space than had ever been the case before.

Embedded in the totality of the experience there was also an implied rejection of rural isolation, confinement, restraint, and a static existence, commented upon by author Thomas Wolfe, who saw that train travel was special, especially to those who were left behind in the fields – those who knew

> The emptiness and absence and a feeling of, "there goes everybody," without knowing who anybody is . . . And all of a sudden the watcher feels the vastness and loneliness of America and all those little lives hurled by on the immensity of the continent. But if one is inside the train, everything is different.

As a direct result of the coming of high speed passenger rail travel through the technology and radically re-sculpted form of the *Pioneer Zephyr*, the terms, "near" and "far," became significantly closer together and their relative meaning began to blur - rather like the passing new train. It was high noon for the streamliner - the *Zephyr* and its horde of high-stepping offspring went where no one had gone before, and a lot faster! It expressed a synergistic coming together of art and science and economics which in turn defined and created a new sort of vision (of landscape) in motion. It also reopened the West to another wave of faster travel there and back, and the subsequent colonization.

Whether the times created the *Zephyr* or the *Zephyr* created the times matters little in the long run. Rail historian Jeffrey Mauchly calls the *Zephyrs*, "Flashy, fast, non-smoke belching, sleek things that suggest flight, that suggest a new age, that things were different." They were - as the United States entered the 1940s, the Great Depression was ending, and the ten fastest trains in the world were American streamliners. Mauchly concludes, "It was like a new beginning for people," and the *Pioneer Zephyr* was, "in the throes of the Depression . . . a silver, stainless steel ray of hope."

> Return with us now to the golden days of yesteryear, when from out of the west comes a sound of thunder, a flash of light, a cloud of dust, and a hearty beep-beeeeep, beep beep – the *Pioneer Zephyr*!

(apologies to *The Lone Ranger* radio and television shows and new film)

Antonieta Angulo
Associate Professor
Practice of
Architecture

Antonieta Angulo

On the Design of Architectural Spatial Experiences Using Immersive Simulation

The paper describes current research efforts seeking to assess the potential use of immersive simulation through virtual reality (VR) environments as a tool for aiding the design of architectural spatial

experiences. The design of spatial experiences demands the use of representations that handle time in addition to the other three dimensions. Tools that help us to represent design through time are the right tools for simulating and testing the satisfaction of architectural spatial experiences. Immersive VR environments are superior tools for the representation of spatial experiences if compared with conventional 3D visualization methods using renderings and/or animations. Immersive VR environments that make use of head mounted displays (HMD) and control tools for navigation in the environment reach a higher sense of presence if compared with visualization tools using large screens or even multi-wall caves. By making use of a fully implemented VR HMD-based Environment in our school we have conducted a controlled experiment with novice architectural design students who were assigned the task of redesigning the public waiting areas of a local medical clinic. After the evaluation of results of the experiment we have found evidence of the positive impact in aiding the design of architectural spatial experiences and evidence in providing just-in-time feedback to accommodate changes in the conceptual design of the spaces. We hope that this study will promote further investigation in the use of the immersive VR tools addressing opportunities for real time manipulation of the environment through the sorting of design alternatives among other methods.

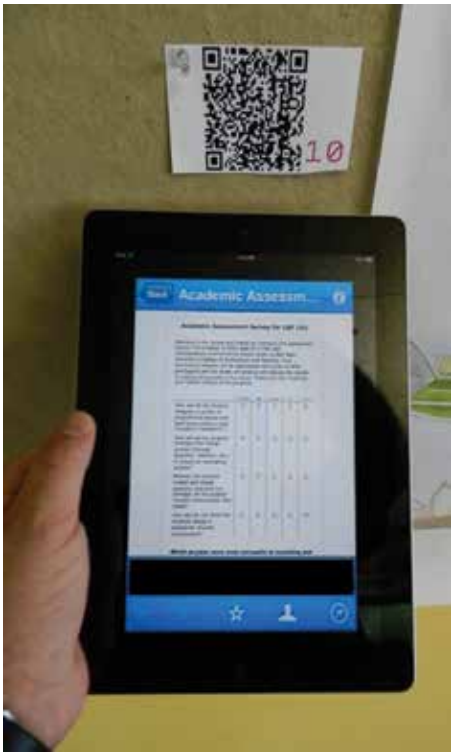
Lohren Deeg & Simon Bussiere

Quick Response Design Assessment

Lohren Deeg
Assistant Professor of Urban Planning

Simon Bussiere
Assistant Professor of Landscape Architecture

Over the last number of years, there has been brisk growth in smart-phone ownership and advances in the interface between digital and physical media content through mobile devices. The subsequent evolution in digital literacy among design students, faculty and industry practitioners is energizing aspects of design education and assessment at a time when institutions struggle to capitalize on the technology to improve assessment methods and learning outcomes in design environments. Quick response (QR) technology, characterized by a square pattern of printed shapes found in print and digital media, once solely used to identify automotive parts, now had a ubiquitous presence in the media landscape. QR codes are a two-dimensional matrix data storage technology that allows for fast readability and large storage capacity when compared to standard barcodes. The connection to web based content from print media through a mobile phone digital camera has opened significant new opportunities for information deployment in advertising and signage media. The authors observe that many useful applications for QR codes may exist within the context of academic assessment in design education.



Michele Chiuini
Professor of
Architecture

Walter Grondzik
Professor of
Architecture

Michele Chiuini & Walter Grondzik

Architectural Education: The Solar Decathlon as a Pedagogical Opportunity

The increasing technical complexity of architecture has brought out major changes in architectural education since the 19th century, requiring students to acquire skills and knowledge that overlap those of mechanical and structural engineers. However collaboration does not come naturally to both parties, in part due to the fact that we still educate students of each of these professions separately. Building technologies are mainly taught in academic courses and newly graduated architects have typically a limited experience of work in the field.

Participation in the 2013 Solar Decathlon competition has provided students in our College to explore and experience a true interdisciplinary collaboration with students of other disciplines, including engineering. It also offers a unique immersive learning opportunity for environmental systems and building construction.

This competition joins engineering and architecture students, in addition to other disciplines, in a collaborative design of a net-zero solar house. The paper will focus on two aspects or methodologies of learning: the use of building information modeling (BIM) and studio-integrated design-building.

AS Team Kentucky-Indiana was formed in 2011 between our architecture school and the University of Louisville engineering school, early collaboration and management system for BIM with Revit was established. The presentation illustrates the architectural and educational outcomes of this collaboration and of the initial design-build experience of a partial mock-up of the house prototype. It offers an opportunity for a reflection at a crucial stage of design, between final CD revisions and the beginning of construction.

Joseph Blalock
Associate Professor
of Landscape
Architecture

Joe Blalock

A Personal Effectiveness Strategy for the Connection Economy

The world economic system and the ideas behind them are changing. We have passed from an industrial economy, specializing in the manufacture of products, through an information economy that harnessed great amounts of raw data, to an economy that is based on the ability to make connections and bring meaning to the deluge. It is in the connection economy that the world desires to have authenticity, personal connection, meaningful relationships and a customized response.

I believe we are at a paradigm shift that will require us to rethink, restructure and retool the nature of our work, our learning, our energies and our systems. Individually, we as members of the creative class, are uniquely poised to not only have a huge impact, but will be required to adapt to produce and to produce in ourselves what is authentic, meaningful and necessary.

This paper will discuss; the difference between the industrial, information and connection economies; the nature of creativity; current and traditional design pedagogy; the strategies for design thought and thinking; the differences this poses with the current business models; the systems and strategies we need to cultivate opportunities and employ for personal effectiveness in the age of connection and distraction.

Lisa Dunaway

Ensuring Accountability in Online Teaching

Lisa Dunaway
Instructor of Urban Planning

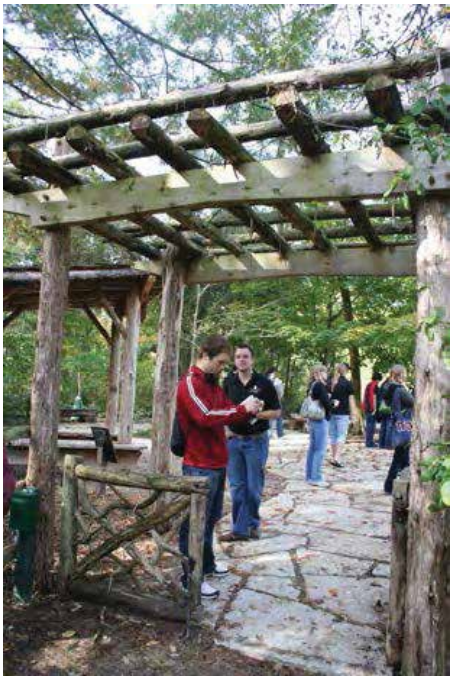
Different types of courses require various techniques for successful implementation, whether the courses are lecture or design-based, hybrid or entirely online, or lower or upper-level courses. However, students can benefit from a core set of techniques that help ensure their comprehension and complete participation. Hybrid and online lecture-based courses are much like traditional courses, but entail different methods to ensure student-to-student and student-to-professor interaction. There are a number of free resources available to professors that allow even design-based courses to be taught in the hybrid or 100% online formats. Hybrid courses can rely on the personality of professors and guest speakers to be interesting for students, but other techniques are required for entirely online courses. A balance of freedom and requirements, based on the level of the course, helps to meet both the flexibility the students want and the deliverables the instructor expects. Lessons learned from teaching over one dozen hybrid and online courses will be presented in this session, from maximizing the students' experience and satisfaction to ensuring their accountability in completing the course work.

Pam Harwood

Nature Based Play: Responsible Design for Environmental Learning

Pam Harwood
Associate Professor of Architecture

Our planet earth is vulnerable to environmental threats of monumental proportions. Finding solutions to environmental challenges will require the best minds and best efforts of this and future generations. It is vital that we help today's young children develop physical, cognitive, and emotional connections with nature so that they will want to take action on behalf of the environment as adults. Research shows that children who play in and explore natural environments adapt conservation and sustainability values as adults.



In this paper on the design of a nature based outdoor educational environment for preschool age children, architecture students, landscape architecture students, early childhood education majors, natural resources and environmental management students, and I have examined the links between use of the outdoors, access to natural play spaces, and human health. Research suggests that nature is missing from adult-designed play areas even though it has been shown that children take pleasure from being in natural spaces and that particular natural features can increase their physical and creative play. As we face contemporary health challenges, such as a growth in levels of obesity and stress, medical researchers, physiologists, social scientists, and designers have turned to examine the outdoors and natural spaces' potential for alleviating such health problems. A focus on the link between contact with nature and the alleviation of attention deficit hyperactivity disorder (ADHD) symptoms is particularly relevant. Children have been identified as one of the key social groups that could gain health benefits from use of the outdoors. Our research relates to understanding the links between children's use of outdoor natural spaces and health outcomes. Children regularly playing in a natural outdoor environment are more able to learn about their body's movements, overcome their fears and release stress, increase self-esteem and self-belief, and use their imagination and creativity more fully.

Jeff Lauer
Masters of Urban and Regional Planning

Tim Little
Masters of Urban and Regional Planning

Jeff Lauer & Tim Little

Planning & Culture: Managing Our Co-existence

What 'globalization' means for professional planning is still in its infancy. There are many debates, but 'globalization's' relationship to existing institutions, terms of sociality and conceptions of time and space (just to name a few) are anything but settled. 'Globalization' is far more than an opportunity to practice internationally. Rather, it is a brave new social terrain where the meanings of place, community and identity "have lost their moorings in definite places" and undergo re-shuffling, re-packaging, and re-inscription. How 'the global' is produced locally and negotiated forms the basis of an expanding literature. Its insights, however, have not penetrated the profession.

By using the case of Ahmedabad, India I argue that planning's inattention to cultural specificity and multicultural co-existence are merely symptoms suggesting the profession is suffering a fundamental crisis of definition, meaning and relevance in a global, transnational world. Picking up on the fact that planning's role, position and engagement with society has been increasingly challenged, I argue that planning cannot respond to these critiques on its own, but must open up its theory and practice to other disciplines and lean from new analytical and methodological approaches. Only then will it gain support. In the process, planning will lose its 'grandeur,' which may be a necessary sacrifice in order to regain relevance, criticality, insight and closeness to people.

Ana de Brea
Associate Professor of Architecture

Ana de Brea

Architecture, Latin American Fragment. Check*ing* Out Unlimitedness

By *design*, this presentation [paper] intends to communicate to the audience the targeted objective. It intends to circumscribe a segment, a series of observations and actions in architecture. However, it is a

selected, fully open, and deep fragment, that carries the explicit intent of outlining conceptual and practical verifications on critical views and concrete projects, concerning the actual, extensive world of architecture in the Latin American territory.

Sequence of topical segments [*organized as an unsystematic series and through a number of different projects in each case*]: **a**. the single family house [looking at the way people *live in* or *occupy* a place or environment / **b**. searches on bigger scales [does scale have a direct relation to dimension?] / **c**. poetical structures observed [*just that*] / **d**. topics under consideration [*invited compositions*] / **e**. a look over *laboratories*[14] [investigation, not just research] / **f**. terrain / landscape / topography [geography all around] / **g**. covering folk factors [*traditional* (adj.) *society* (n.)] / **h**. the volumetric reasoning [*reviewing physical features*].

Modern reflections and contemporary works by architects, designers, and artists [*thinkers*] from Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Spain, the United States, Uruguay, Venezuela as well as references of other artistic works along with architectural projects developed in Bolivia, Costa Rica, Holland, Italy, Japan, Nicaragua, and Panama –in the majority of cases, developed by Latin American firms.

Bruce Race & Claire Bowers

Climate Action Planning and the Future Form of Cities

The 2010 U.S. Census recorded about 20,000 “incorporated places”. The 100 U.S. cities surveyed in this study are among the first 1% to prepare climate action plans. Their experience and actions offer an early glimpse of how the nation’s urban regions could evolve over time as more cites consider how they will curb their impact on greenhouse gas emissions and adapt to a changing climate. The research asks original questions about what is motivating cities to prepare climate actions, how they integrate the climate action plans into comprehensive plans, and the types of policies they pursue that will alter their urban form. A regression analysis of a 23-question survey considers the probability of how city fundamentals (size, location, form of government, etc.), climate action strategies, and policy outcomes influence the design of cities. Preliminary results from survey respondents indicate statistically significant connections between: what motivates a city to prepare a climate action plan and how likely they are to collaborate regionally; the size of cities, requirements for preparing comprehensive plans, and how well they integrate their climate action strategies into city planning policies; and climate action plans, growth patterns, and energy efficiency requirements relationship to electric power providers. The study is co-sponsored by the American Planning Association (APA) and will be presented at the National 2013 APA Conference in Chicago.

Bruce Race
Associate Professor of Professional Practice

Claire Bowers
Masters of Urban and Regional Planning

Joseph Bilello, FAIA
Professor of Architecture

Tony Costello, FAIA
Irving Distinguished Professor Emeritus of Architecture

Dean Illinsworth, FAIA
Indiana Building Commissioner and IBEAM Head

Kevin Micky, POLIS
IUPUI GIS disasters expert and member of the National Institute of Building Sciences Multihazard Task Force

Petra Zimmerman
Associate Professor of Geography, Climatologist

Sarah Essbai
Masters of Urban and Regional Planning

Joe Bilello, Tony Costello, Dean Illingsworth, Kevin Micky & Petra Zimmerman

Resiliency in Architecture: disasters and their aftermaths: buildings, communities, cities

This case study based lecture seeks to offer differing responses to recent disasters in the built environment, and the roles of designers and planners to better prepare for and aid in the resiliency of the built environment afterwards.

Resiliency in built environment terms concerns the capacity of communities and their peoples to bouncing back following natural and man-made disasters (Examples: Dresden/Prague following WWII [the manmade disasters of carpet bombing] Chernobyl [the man-made disaster of nuclear radiation] WTC following 9/11, Greensburg, KS--tornado devastation Queensland--flooding Japan amidst a heritage of natural disaster--earthquake and tsunami barriers --cultural barriers and sustainability--political agendas, building codes.

Cases presented briefly will include the built environment and: 1. Sendai Mediatheque performance in Japan's earthquake and tsunami, 2. Greensberg, Kansas tornado response merging sustainability and resiliency, 3. Christchurch, New Zealand earthquake aftershock responses and Haiti's Ushahidi tools in crowdsourcing emergency database building; and 5. A prototype for a multihazard refuge and response center to replace fire stations in coastal Australia.

It is the intent of the presentation that attendees will understand 1. the place of the architect in the design decision making process where questions of risk/loss prevention are critical pre-disaster, during, and post-disaster; 2. Distinguish competing assumptions and decision making paths in various cases; 3. Begin to understand critical evaluations of actual natural and man-made disaster cases from alternative perspectives.

Sarah Essbai

Low Income Housing Tax Credit and Neighborhood Revitalization: Case Study of Three Projects in Indianapolis

Since its inception in 1986, Low Income Housing Tax Credit (LIHTC) became one of the most popular programs for the development of affordable housing. LIHTC is currently the primary supply-based subsidy mechanism that supports the development of place-based affordable housing in the United Sates. With the declining number of occupied public housing units, the main goal of the LIHTC program was to contribute to the increase of the supply of affordable housing for low income households. In 2005, the LIHTC program was responsible for about $7.5 billion of private investments that supported the development of approximately 1.5 million affordable rental units.

However in conformity with the US low income housing policies, the LIHTC program sought also to eliminate the negative externalities often related to affordable housing in general and public housing in particular. Small scale and dispersed development are supposed to avoid poverty concentration and to spur economic growth in the neighborhoods

accommodating LIHTC projects. For these purposes, LIHTC applicants are encouraged to look into the community host improvement and revitalization programs and to conform with specific requirements related to building quality and to neighborhood amenities.

The study of three projects located in three different neighborhoods of Indianapolis shows a change that is in general consistent with Marion County trends. The two census tracts located in the immediate surroundings of downtown show however different changes in racial composition, in the educational achievement of the residents, in housing units values as well as in rent. These changes can't however be attributed to the presence of the LIHTC projects in the census tracts, they are rather the result of other neighborhood revitalization projects and the general growing interest in downtown trend.

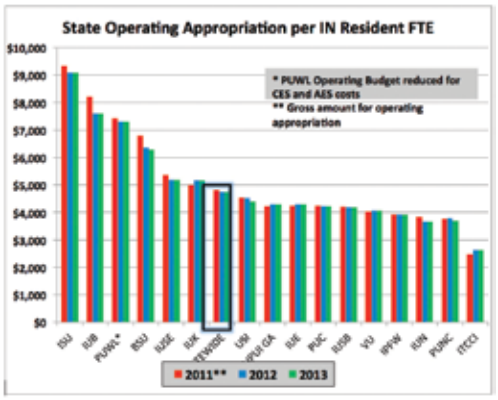
Bruce Frankel

Winning with ICHE Metrics

Bruce Frankel
Professor of Urban Planning

The strategic plan of the Indiana Commission on Higher Education incentivizes productivity with State funding. Each metric presents differential weighting. Largely, this is in degree completion, on-time graduation rates, and with STEM [Science, Technology, Engineering, Math] degrees. Derived measures include student cost burden as defined by the Delta Cost Project and student debt. There are minor quality of education measures as framed by return on investment and performed through nationally-recognized self-assessments and the quickness and quality [income] of licensure achievement and job placement.

The results for BSU are mediocre, trailing the major four State universities. Particular to the College of Architecture & Planning, two of its three disciplines have been removed by the National Science Foundation as STEM disciplines. My study will demonstrate how that may be restored.



Less than a third of our matriculants graduate on-time. Relying on a series of simple reforms the study formulates a remedy, impacting both how we attract students here and how we can accelerate graduation and with multiple degrees.

Not a factor in ICHE appropriations is the "brain drain." In sum, Indiana retains its graduates for a short spell, falling to the lure of coastal waters. For the age cohort 18-24, Indiana ranks the highest among Midwestern states in retaining its college graduates, and the lowest in the next group 25-44. Curiously, Governor Daniels proposed a scholarship program for those who would remain in-state upon graduation for three years. My report recommends initiatives on this brain drain, key to our economic development.

Harry Eggink
Professor of
Architecture

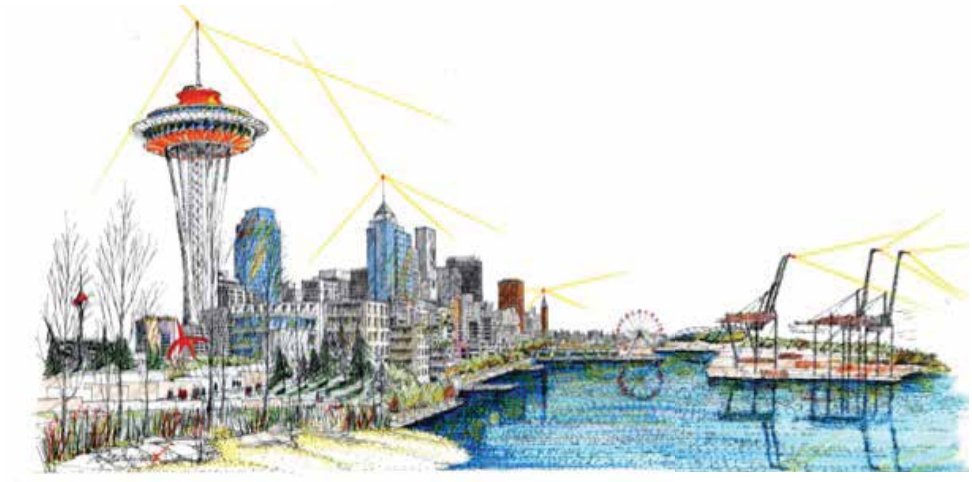
Harry Eggink

The Evolution of a Drawing

This paper will document and illustrate the evolution of creating a drawing. The process will begin by taking a journey to Seattle and viewing the city from varies perspectives, on the Ferris Wheel, from the dock, on a ferryboat going to Bainbridge Island, from wandering in the Sculpture Garden, and along Puget Sound and it's environment of the harbor. These series of views will be remembered and recorded by quick sketches and discovery line gestures, and orchestrated towards a final drawing.

The paper will show the ink line drawing process through the early sketchbooks, the documentations of architectural objects, the visual thinking, the discovery of urban building patterns, and focus them into the final image of the Seattle Skyline and Waterfront drawing

The presentation will also illustrate the study of the overall composition, changing of perspectives, scales, and depth perception and conclude by showing the coloring layers, blending, and composition of the drawing.



Michele Chiuini
Professor of
Architecture

Michele Chiuini

Digital Chicago Stock Exchange (DiCSX) Part III

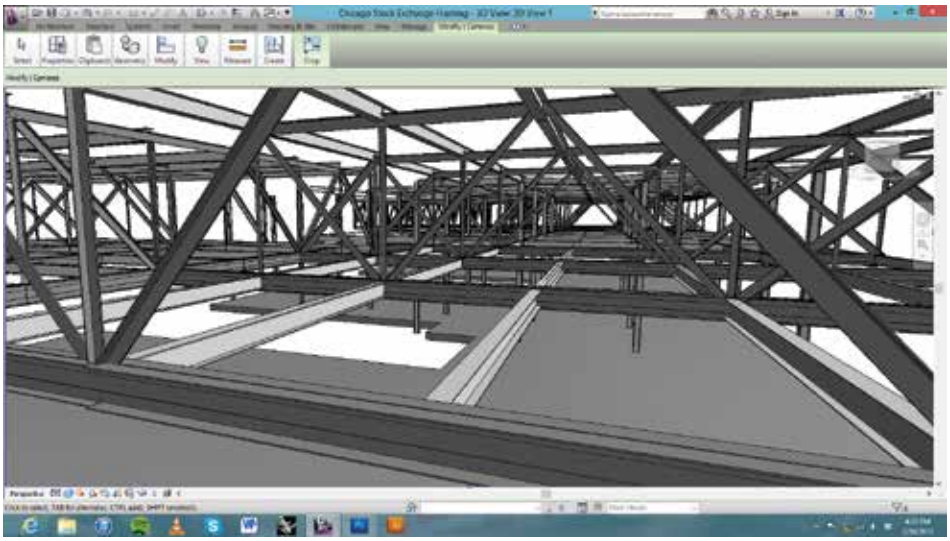
The Chicago Stock Exchange, designed by Adler and Sullivan in 1893, was one of the most important skyscrapers of the Chicago School. It made use of the most important building innovation of that period, the steel frame clad with a terra cotta curtain wall. The separation of the two elements, skeleton and skin, raised the problem of how the building form and the architectural composition of the cladding should relate to the loadbearing structure.

The project presented here started with the documentation of the terra cotta cornice with a laser scanner, which led to a plan for the digital reconstruction of the Exchange to study the construction system and the relationship between the frame and the curtain wall. In Part II a portion of the steel frame supporting the roof cornice was reconstructed and the terra cotta blocks were digitally re-assembled on it.

The objective of this new phase of work, Part III, is the digital modeling of the top two floors of the building, which have a special significance in relation to Sullivan's philosophy and peculiar structural and spatial qualities. While the Exchange is often mentioned because of technical advancements on foundation methods, its real structural tour-de-force is

in the roof trusses, which have never been studied or even mentioned in any publication.

The paper will explain the methodology of the reconstruction, which is based on the analysis of original documentation as well as on research on construction technologies of the 1890s in Chicago. It will also discuss the significance of the structural system in the context of the Chicago School and of the work of Adler and Sullivan.



Faculty + Students

Poster Sessions

Malcolm Cairns & Chris Baas

A Century of the City Beautiful Exhibit

A Century of the City Beautiful Exhibit celebrates the centennial anniversary of George Edward Kessler's Park and Boulevard Plan for Fort Wayne, Indiana. Beginning in 1907, civic and governmental leaders combined efforts to "beautify" Fort Wayne to compete in business--as well as culture--with other Midwestern industrial cities. A rationally planned and beautiful city would raise the city's stature as a civilized populace. A century later, the plan has become the green structure around which the city has evolved, and is evident in its parks, riverside drives, and boulevard transportation framework.

The exhibit includes the interpretation of the grassroots efforts to bring the City Beautiful to Fort Wayne, Kessler's contributions to the design of Indiana cities, the promotion of his improvements by local civic groups and newspapers, and examples of his park and boulevard designs. We are proposing to display all or part of our twenty-seven board exhibit in support of our paper presentation describing Fort Wayne's Bert J. Griswold and his promotion of the City Beautiful through editorial cartoons.

Michele Chiuini and ARCH 301-402-600-601-501 students

2013 Solar Decathlon: The Phoenix House design process

Team Kentucky-Indiana Phoenix House is still in the process of being designed, but, after the submission of the Construction Documents, specifications, structural calculations and cost estimates, the architectural and engineering design is basically completed. The poster will present the design process resulting from an interdisciplinary collaboration between the school of engineering of the University of Louisville and a number of departments at BSU.

The ARCH 301 studio worked on the conceptual design that was crucial to outline a clear narrative and formulate the proposal to the Department of Energy. After the team was accepted with 19 other teams in the competition in January 2012, an ARCH 402 studio became charged with the production of an initial team video and of the submission of the Schematic Design. This represented the crucial design stage when a single house was selected. Two ARCH 600 workshops played an important role in developing the design further, and determined what is essentially the prototype that is going to be built. In fall an ARCH 601 studio had

the responsibility for the Design Development submission, including 80 percent of the construction documents.

This process has made use of traditional design methods and more innovative ones, such as building information modeling and virtual reality, as well as a design-build full-scale prototyping of a section of the house.

The poster will present the work of these three undergraduate studios, two graduate design workshops, and two graduate studios, including the ARCH 501 currently in charge of the Construction Documents and beginning construction phase. This studio is working in parallel with an ARCH 402 and is being supported by a Provost Immersive Learning grant.

Ana de Brea & Matthew Lawton

Wood, Steel, and Time. Derelict Material Finds a New Purpose

Reclaimed timbers find a new purpose in an exploration into the design where sculpture meets furniture. A material whose original purpose has been removed it will find a new identity in this exploration. The piece while heavy and strong remains mobile and part of the space for which it calls its new home, its purpose every changing it becomes one with its home playing a role in its own unique way.

Leslie Perrigo

Succession of the Built Environment: A Regenerative Approach to the Revitalization of Historic Communities

In ecological terms, succession is “the process of community development over time, which involves species in one stage being replaced by different species” (Berg & Hager, 2009). Architects and planners would consider succession more in terms of the transition of neighborhoods. Early examples of parallel transitions include the conversion of wilderness land to agriculture and of agricultural land to urban centers. Energy development or the lack thereof, remains the biggest factor driving succession of the built environment.

This poster attempts to create a parallel symbiotic dialogue for applying scientific laws of the natural world to the built environment. By examining the factors driving primary and secondary succession, it is possible to negate potential adverse effects through effective planning. It is the intention that this paradigm will serve as a blueprint for creating a comprehensive preservation plan which will foster positive economic growth, environmental stewardship, and a strong sense of cultural identity.

Preservation is integral to the revitalization of older communities. Reducing energy consumption and finding new uses for old buildings will allow historic neighborhoods to remain viable throughout turbulent

periods of social transformation. Although new buildings will be needed to fill in the gaps and record the progression of culture, old buildings must stand as a testament to human history and the evolution of culture. Preservation planners have a unique role in maintaining a balance of habitat diversity. A comprehensive plan which includes feedback from planners, architects and preservationists is the best way to ensure that zoning ordinances do not have a disproportionately negative effect on historic neighborhoods.

Bo Zhang, Lin Wang & Jinjing Lu

A Survey of Chinoiserie Garden in Europe

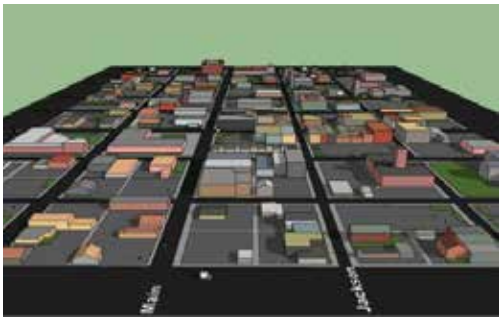
It is always an intriguing question how many credits the 18th century picturesque garden should give to the Chinese garden for its inspiration. With this academic dispute unsolved, the author believes that a thorough garden survey is more urgent than the debate itself. A survey will not only depict a clearer scope of the phenomenon, but also suggest new evidences and research angles. The project presents an annotated list of more than 140 Chinoiserie Gardens in Europe, which greatly exceeds the list by Von Erdberg (1936) and that by Césari (2000). The sources come from existing literature, internet garden information, and the author's private collection of visual materials. The list includes the existing gardens having existing Chinoserie elements, the existing gardens used to have Chinoserie elements, the demolished gardens used to have Chinoserie elements, and several undetermined gardens.

Faculty + Students

Workshops

Lisa Dunaway

Basics of Trimble SketchUp



SketchUp is generally a very intuitive program that many people can navigate by teaching themselves, up to a point. However, like most design software programs, there are many tricks that people cannot figure out on their own. There are also many quirks unique to the program that are imperative to work around to avoid frustration and failure. This workshop will be a premier on the basic functionality of SketchUp, as well as an explanation of some of these tricks, and how to avoid the quirks of the program. Skills taught will include the drawling of basic buildings and landscapes, the difference between groups and components, rendering and 3-D effects, using online resources, and more. Tips for a more pleasant experience with the program will include proper layer management, dealing with the "sticky" geometry, and those weird lines that appear on the axes for no reason. Please come prepared with your laptop, a mouse, and the latest version of Trimble SketchUp, downloadable for free at http://www.sketchup.com/.

Lisa Dunaway
Instructor of Urban Planning

John Fillwalk

Human Computer Interaction in Virtual 3D Design

Workshop showcasing emergent technologies in the exploration of human computer interaction in 3D design and simulation. IDIA Lab staff and faculty will demonstrate new processes involving gesture, augmented reality, image based scanning, and input from brain activity to interact within 3D virtual environments. Specific technologies will incude the Microsoft Kinect, Zspace 3D stereoscopic panel, iPad, Sphero by Orbotix, Track IR, Cycling 74's Max MSP, and WorldViz Vizard. These products are being employed in various development projects as the IDIA researches means of interacting past keyboard and mouse interaction with virtual 3D simulation projects.

John Fillwalk
Senior Director of Hybrid Design Technologies

Notes

THE COLLEGE OF ARCHITECTURE AND PLANNING HOUSES THE FOLLOWING CENTERS AND INSTITUTIONS:

CENTER FOR ENERGY RESEARCH/EDUCATION/SERVICE
CERES is an interdisciplinary academic support unit focused on issues related to energy and resource use, alternatives, and conservation.
www.bsu.edu/ceres

CENTER FOR HISTORIC PRESERVATION
CHP utilizes historic preservation to promote economic development, strengthen community identity, and improve the quality of life.
www.bsu.edu/chp

COMMUNITY BASED PROJECTS
The CBP initiatives combine teaching, research, and service activities that focus on the environmental design and planning professions to create opportunities in Indiana communities from inner-city neighborhoods to rural small towns. We can help with development and revitalization issues for your business or neighborhood.
www.bsu.edu/cbp

INSTITUTE FOR DIGITAL FABRICATION
IDF acts as a catalyst of digital design and fabrication techniques for both industry and education related to architecture and allied arts.
www.bsu.edu/imade

INSTITUTE FOR DIGITAL INTERMEDIA ARTS
IDIA is an interdisciplinary, collaborative research and studio environment that explores intersections between art and technology.
www.idiarts.org

LAND DESIGN INSTITUTE
LDI pursues ecologically and culturally responsible land design through education, research, outreach, and service.
www.bsu.edu/ldi

CONTACT

COLLEGE OF ARCHITECTURE AND PLANNING
Ball State University
Muncie, IN 47306
Phone (765) 285-5861
Fax (765) 285-3726

Follow us on Twitter
@BallStateCAP

Like us at
facebook.com/BallStateCAP

BALL STATE UNIVERSITY
EDUCATION REDEFINED®

www.bsu.edu/cap