About DCP

Established in 1925, the College of Design, Construction and Planning includes the disciplines of architecture, construction management, historic preservation, interior design, landscape architecture, sustainability and the built environment and urban and regional planning. The University of Florida is the only member of the Association of American Universities to house these disciplines within one college. This allows the college’s 1,300 students the opportunity to collaborate across disciplines on projects and in the classroom and studio.

The college offers study abroad and service learning opportunities around the world. Its programs have reached more than 55 countries, including award-winning programs in Vicenza, Italy, Mexico and Brazil, East Asia, Oceania and Africa, Paris, Germany and the Netherlands.

The college’s faculty are some of the most renowned in their fields. Members of this award-winning faculty are involved in professional practice, have published numerous books, journal articles, conference papers and posters and serve on profession-related boards and as advisers to professional organizations. The college’s 18 research centers, institutes and programs have collectively averaged $4 million per year in contracts and grants.

The college is at the epicenter of sustainability programs on campus and research at UF. The college’s bachelor’s degree in sustainability and the built environment is the first of its kind in the nation. Rinker Hall was the first building in Florida and 26th in the U.S. to receive LEED Gold certification, under the Leadership in Energy and Environmental Design Green Building Rating System. Also, UF’s first green roof was installed on the Perry Construction Yard, located adjacent to Rinker Hall.
Faculty Abstracts
Designing for the Spectrum: From Neuroscience to Design Actions

Sherry Ahrentzen, Professor
Shimberg Center for Housing Studies

This presentation demonstrates how environment-behavior research and theory can build upon neuroscience research to suggest fruitful ways in which the physical environment can be designed and developed to enhance the daily lives and aspirations of adults on the autism spectrum in their homes and living environments. A research-informed approach – which is documented in the recently published book At Home with Autism: Designing for the Spectrum – demonstrates how neurobiological/perceptual research findings of autism reverberate with fundamental environment-behavior principles and theories. In contrast to a medical model, the approach here reflects a neurodiversity paradigm which is promoted by many autistic advocates; one that considers autism as a variation of “brain wiring” or neurological development, and portrays autistic people as individuals who possess a blend of cognitive strengths and weaknesses. The presentation covers two of the 10 design goals that were derived from extensive review of the research literature: (1) maximizing familiarity, predictability, clarity and stability; and (2) enhancing sensory balance. From these, associated design guidelines were developed and have been put into practice by a number of architects and housing developers, examples of which will be presented. This presentation is based on a plenary co-presented at the 2015 annual Environmental Design Research Association (EDRA) conference. The research is a collaboration between Sherry Ahrentzen at UF and Kim Steele of The Elemental Group.
Increased longevity and rising population growth of older citizens forces policymakers and practitioners to address the environmental, economic, and social factors influencing the health and well-being of this population. One such factor is the residential environment and how it can be shaped, or reshaped, to not only accommodate a mounting market demand, but in a manner that is health-promoting for older residents. This population is diverse, but nonetheless one that inevitably faces increasing health and ability challenges – all the while living in neighborhoods and homes that were not designed or planned for aging households.

This presentation introduces the Vital by Design team, composed of UF faculty and students associated with the AIA Consortium of Health and Design Research. The overarching aim of Vital by Design’s research is to go beyond today’s conventional health and safety standards, to develop and test performance measures of key built environment-related systems and materials, spatial/design configurations, and residential infrastructure (e.g. streets/sidewalks, density) as to their impact on health of an aging population.

In introducing a series of presentations by members of this team, Ahrentzen and Steiner will first provide a broad overview of demographic projections of this age boom, and implications for the design and planning of residential environments that can promote and extend healthy living. Following this will be a profile of five aspects of the residential environment – both the dwelling and neighborhood – that enhance healthier living environments for older adults: active living design; safety, mobility and accessibility; environmental quality; social engagement and support; and inclusive integrated communities. Subsequent presentations by team members will focus on these issues in more depth as they pertain to research undertaken by Vital by Design faculty and graduate students.
Smart Cities in India: Challenge or an Opportunity?

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Smart cities are now discussed extensively in India and being hailed widely as solution to the problems associated with rapid urbanization the country is experiencing. City planning has never been priority in India until very recently. Urban spaces are expected to house 40% of India’s population by 2030. Also in 2014, for the first time ever, India added more people to urban areas than rural areas. Increasing focus on urban planning is evident from Government of India’s pledge to build 100 smart cities in next 5 years. Smart city project is also central to Prime Minister’s vision of urban India. Investment in smart cities is also critical towards having sustainable and competitive cities.

This paper looks into the origin and criteria of smart cities and discusses the readiness of Indian cities to undergo such a huge transformation. We will also discuss critical dimensions of a smart city such as Smart Economy, Smart Mobility, Smart Energy, Smart Citizen, Smart Living, Smart Technology, Smart Healthcare, and Smart Governance. Smart city concept is not a new concept. Europe, USA, and Canada have few functional smart cities. India can certainly learn from the best practices adopted around the world. We will also discuss few common implementation issues such as financial problems, technical capacity bottlenecks, and institutional shortcomings and their probable solutions, which are important for making Indian cities smart and functional.

India being a rapidly urbanizing country is already plagued with socio-economic problems such as acute poverty, unemployment, and inequality. Unless proper precautions are taken, smart urban space may increase the divide between rich and poor, and poor may be priced out or may be forced out of the city limits. Such divide is neither smart nor sustainable. It is therefore, important to keep in consideration the impact smart city project will have on these social-economic issues. This study also details the challenges in achieving the very core elements of smart city project laid by GOI. We also venture into the existing and prominent debate and critique of smart cities concept.
Maya Lin’s Shift in the Stream: A Story of Water’s Meditative and Destructive Properties

Jason Alread, Director and Professor
School of Architecture

In 1995, Maya Lin was approached by a large insurance company to consider an installation artwork for their new Helmut Jahn designed building. The client was offering essentially a blank slate, Maya could choose whatever area and format she deemed appropriate, even modifying some portion of the Helmut Jahn building under construction at the time. What she ultimately decided to do was an interior vertical “landscape” as she deemed it, where water would move three floors through the building. She wanted to use shifting water, in its random movement and sound, to counter the rigid geometric form of the project and create an introspective experience.

The artwork itself appears in two phases. The first is almost too subtle to notice, a two-story tall glass wall has twelve randomly materializing streams of water that trickle from top to bottom. These disappear into a slot in the floor and then reappear below in the second phase as a forty-foot long crack in the wall with water audibly flowing through it. In both locations the viewer is invited to touch the water and consider the relationship between the building, this intrusion into it, and the view to the adjacent exterior landscape. Maya intends the initial curiosity to render multiple effects. In this case water has both a meditative quality and a destructive property. It looks and sounds beautiful, but the building also appears leaking and broken. Using the ephemeral qualities of water to confront the Jahn building’s hyper-constructed surfaces is a delicate foil and renders a visceral emotional impact.

When approaching large-scale artwork installations, Maya prefers to hire outside assistance to determine the precise assembly of the project. She defines the type of thinking she does for artistic projects differently from the architectural projects and wants consultants to consider the technical issues while she focuses on the conceptual and perceptual concerns. Acting as the architectural consultant for this project, this presentation tells the story of how it was created in a dialogue between the process of making and material relationships to the power of the idea.
This paper proposes that the film Slumdog Millionaire represents a key event in the urban history of Bombay in the 1990s—the transformation of Bombay into Mumbai. The film shows how the city metamorphosed from a condition of modernity to postmodernity through the life trajectories of the Muslim protagonist Jamal Malik, his Hindu lover Latika, and his brother Salim Malik. Recent scholarship suggests that the formation of Mumbai has compromised the cosmopolitanism of Bombay. This paper argues that Slumdog Millionaire constructs an urban narrative that spatializes the declining cosmopolitanism of Bombay and its transformation into Mumbai. Slumdog Millionaire narrates Bombay’s decosmopolitanism and its transformation into Mumbai through two spatial registers. The first: urban renewal projects that raze the city’s layered architectural palimpsest to create homogenized gated communities and thus, serve as a trope for both intolerance for the poor and the erasure of Bombay’s histories to facilitate the city’s invention as Mumbai. The second spatial trope of decosmopolitanism in Slumdog Millionaire is the class struggle enacted over public spaces, which signifies the city’s declining tolerance for the poor. The film narrates Bombay’s urban history as a class war between what Rahul Mehrotra calls the “kinetic city” and the “static city.” This paper proposes that Slumdog Millionaire narrates Bombay’s urban history through three architectural and urban tropes that are invested with specific ideological meanings. Dharavi, an organic settlement, represents Bombay; Lake Castle in the Hiranandani Gardens in Powai, a residential building designed by the architect Hafeez Contractor depicts Bombay’s neoliberal transformation into Mumbai; and Victoria Terminus the Victorian Gothic train station designed by Frederick Stevens serves as a site of contestation between those who wish to preserve the city’s histories and the right wing forces that intend to rewrite the city’s histories through urban renewal, changing place names, and reinventing urban landmarks.
Person-Centered Behavioral Health Facility Design

Sheila Bosch, Assistant Professor
Department of Interior Design

Given the lack of rigorous data investigating the relationship between specific design interventions and therapeutic outcomes in behavioral health units, further research is needed to help us understand how to design patient-centered environments of care that provide an optimal balance between safety and a sense of well-being that contribute to enhancing the therapeutic effectiveness of the environment. Certain recently recommended design strategies may engender mixed feelings among patients, families and staff (e.g., open nursing stations.) There is a need for further research to shed light on the specific advantages and shortcomings of intuitive design elements such as open nurse stations, situational control over the environment, access to nature and other patient focused design interventions. The University of Florida’s College of Design, Construction and Planning has partnered with Planetree and Gresham Smith & Partners to investigate what types of design elements are the most successful in achieving positive outcomes for patients and staff and whether they impact the safety of the environment. More research is needed to prioritize environmental enhancements in behavioral health facilities. This study seeks to understand, from the perspective of former patients and staff, what environmental antecedents contribute to feelings of patient and staff situational control, dignity, compassionate care and healing.
Designing Retirement Ready Neighborhoods

Nichole Campbell, Research Scholar
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Across cultures and time, interaction with others has been a theme central to the human experience. As social interaction influences health, well-being, and life satisfaction, perhaps this focus is unsurprising. Relationships are even reflected in the definition of “successful aging” which posits physical health, social engagement and activities providing a sense of purpose are key ingredients to living well. With this, the vast majority of older adults hope to age successfully within mainstream residential environments. As these are rarely designed to suit common aging-related physiological changes, many struggle to thrive in these environments.

To help seniors accomplish these goals, this study sought to understand how to optimally design mainstream neighborhoods and their social spaces (e.g. cafes, pubs, etc.) to meet older adults’ needs. Based on findings from a prior study identifying 40 factors found to aid seniors aging in place within a New Urbanist case study neighborhood, this study sought to understand the relative importance of these factors. To do this, Multi Attribute Utility Theory (MAUT) was applied to interview data from 63 seniors living within the case study community. MAUT analysis provided mathematical insight into each factor’s relative value, identifying design priorities to create neighborhoods and social centers to optimally support aging in place.

In short, of the factors examined, the most critical factors to include in neighborhoods intended to attract older adults and support social needs for aging in place included:

- Maintaining a site’s natural beauty.
- Locating key retail services (i.e. pharmacy & grocer) convenient to home and other places visited daily.

Pertaining to the social spaces within the neighborhood, the most important factor was:

- Creating spaces that support private conversation as well as group gatherings.

This study helps bridge seniors’ preference for aging in place successfully with helping designers make that preference a desirable, feasible option.
**Designing Empathetically for Integrative Healthcare Environments**

*Candy Carmel-Gilfilen, Associate Chair*
*Department of Interior Design*

Integrative medicine is an approach to care that puts the patient at the center of the healthcare experience to address the full range of physical, emotional, mental, social, spiritual, and environmental influences that affect a person’s health. It emphasizes the relationship between practitioner and patient and is informed by research. This senior level studio project entailed the design of an Integrated Care Center that was:

- **Patient-centered:** A partnership among practitioners, patients, and their families to ensure that patients have the education and support needed to make decisions and participate in their own care.
- **Comprehensive:** A team of care providers that is accountable for a patient’s physical and mental health care needs, including prevention and wellness, acute care, and chronic care.
- **Coordinated:** Care that is organized across all elements of the broader health care system including specialty care, hospitals, home health care, community services, and support.
- **Accessible:** Patients have access to services with shorter waiting times, “after hours” care, 24/7 electronic or telephone access, and strong communication through health IT innovations (AHRQ, 2015).

This presentation will share discoveries, processes, and outcomes from a collaborative design project centered on empathetic design through narrative inquiry. Benchmarking, observations, and interviews with chronic illness patients, staff, and family members were merged with data drawn from scholarly literature reviews to provide the evidence-based design (EBD) framework for designing. Innovative design solutions that highlight empathy dimensions in the clinic setting will be explained and illustrated.
Exploring Energy Saving Measures during Construction of Buildings

Abdol Chini, Professor  
M.E. Rinker, Sr. School of Construction Management

A building construction project degrades the environment in many ways, namely its depletion of resources and its contamination of air, soil, and water. These impacts are associated with the energy and material demands of the building. Energy consumed during the life cycle of a building may be divided into operational energy, embodied energy, and decommissioning energy. Embodied energy includes energy used to acquire, process, and manufacture building materials; energy used to transport resources to the site and construct the building (construction phase); and energy required to maintain and repair the building during its life. Most of the literature available on energy consumption and environmental impacts of buildings mainly focuses on the operational energy and only a few articles explore the construction phase. The reason is that operational energy makes about 80-85% of the total life cycle energy requirement of a conventional building. However, the share of embodied energy will become more significant when buildings become more energy efficient and when low- and net zero-energy buildings will be commonplace. This study focuses on the energy consumed during the construction phase of buildings. It proposes a framework to assist contractors in estimating and recording such energy consumption. The framework identifies energy-intensive construction activities that could be targeted for reduction of energy consumption. The contractor may reduce the transportation distances for procuring resources and/or select more energy efficient means and methods of construction. The framework was applied on a three-story office project to demonstrate its utility. It was found that while average national data can be used to estimate energy consumption during construction, project-specific data better quantifies energy consumption. Therefore, a data collection mechanism and a tool for its implementation were added to the framework.
UAS4Safety: Unmanned Aerial Systems for Construction Safety Applications

Masoud Gheisari, Assistant Professor
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The construction industry plays a significant role in economic growth of all countries. However, workers employed in this industry experience a disproportionately high rate of injuries and fatalities. In response, researchers suggested to use technologies such as wireless sensors, radio-frequency identification (RFID), and global positioning system (GPS) to improve safety performance and reduce potential for human errors. One of the emerging technologies that provides immense promises to positively impact safety performance is Unmanned Aerial Systems (UASs). UASs can provide several advantages for safety managers as they can move faster than humans, reach inaccessible areas of jobsites, and can be equipped with video cameras, wireless sensors, radars, or different communication hardware to transfer real-time data. Therefore, to explore potential applications of UASs in construction safety, this study was conducted to identify safety practices that can be improved by using UASs and distinguish user and technical requirements to successfully facilitate safety managers in conducting their tasks. These objectives were achieved by distributing an online survey among safety managers in States of Florida, Georgia and Nebraska. In total, twenty-two safety managers responded to the survey and they rated hazardous situations such as working in proximity of boomed vehicles/cranes, working near unprotected edge/opening, and working in blind spot of heavy equipment as the three most important activities that UASs have great potentials to improve them. Safety managers also rated UAS technical features such as providing real-time video of the jobsite, being able to accurately navigate in an outdoor environment, sense & avoid, and the ruggedness/durability of the vehicle/control-station as the most important features that can improve their safety monitoring practices on site using UASs. These findings can help professionals recognize potential applications and technical requirements and challenges in which UASs can be useful in construction safety practices.
The Residential Normalcy of Older Americans

Stephen Golant, Professor
UF Department of Geography

This presentation outlines an emotion-based theoretical model to judge whether older adults are occupying places (residential and care arrangements) that are congruent with their needs and goals. By relying on subjective appraisals as opposed to expert judgments, we can often better predict the effectiveness of our individual and environmental interventions.

The model distinguishes two broad and relatively independent categories of emotional experiences: (1) residential comfort experiences representing older persons’ feelings of whether they have pleasurable (e.g., enjoyable, appealing, and stimulating), hassle-free (that is, free of problems), and memorable place experiences; and (2) residential mastery experiences representing their appraisals of whether they feel competent and in control when occupying these places. When older persons appraise these two sets of feelings as altogether positive, the model conceptualizes them as being squarely in their residential comfort and residential mastery zones and occupying places in which they have achieved residential normalcy.

Older persons often find that their residential environments have become emotional battlefields because although they are in their comfort zones, they are out of their mastery zones, or vice versa. Distinguishing these emotional outcomes becomes critical as we increasingly judge residential settings not just for their home-like qualities, but also as settings to accommodate the delivery of long-term care.

When older persons are out of either (or both) of these experiential zones, they are expected to initiate accommodative or assimilative forms of coping to achieve residential normalcy. The former are mind strategies by which they change their residential goals or assessments, mollify their negative emotional experiences, or engage in denial behaviors; and the latter are action strategies, by which they change their activities or modify their residential or care settings to achieve congruent places to live.
Planning for Sea Level Rise: An Infrastructure for Data & Analysis

Crystal Goodison, Associate Director
GeoPlan Center

In 2012-13, the UF GeoPlan Center developed a geographic information systems (GIS) planning tool to assist in the identification of transportation facilities vulnerable to inundation from sea level rise (SLR). The Sea Level Scenario (SLS) Sketch Planning Tool is a set of publicly available data and tools, including an online map viewer displaying SLR maps and affected transportation facilities, GIS data layers of SLR, and a custom GIS tool for creating SLR inundation map layers.

Since the initial release of the SLS Sketch Planning Tool, various communities have used the tool to facilitate SLR assessments in their regions. In 2014-15, the GeoPlan Center worked extensively with two Metropolitan Planning Organizations (MPOs) to test the use of the SLS Sketch Planning Tool and gather feedback on usability and enhancements. Hillsborough MPO and Broward MPO (serving as the lead agency for the southeast Florida four-county region of Broward, Miami-Dade, Palm Beach, and Monroe Counties) were both awarded second-round grants through the U.S. Department of Transportation (USDOT) Federal Highway Administration (FHWA) Climate Change Resilience Pilot Program. This program has funded partners to assess infrastructure vulnerability to the impacts of sea level changes and extreme weather events and to determine adaptation options and improve resiliency of infrastructure.
Concrete on Sand: Casting Freedom Between Necessity and Control in Slab City’s Desert Camp

Charlie Hailey, Professor
School of Architecture

Slab City’s 640 acres are slated to be sold by the state of California after more than 150 years as public land. Though it is often called the “last free place,” this settlement of artists, Canadian “snowbirds,” and homeless persons on the “slabs” of a decommissioned military base in Imperial County has instead existed in a state of play between the control of nature and the nature of control for almost six decades. Slab City provides a unique opportunity to study the relation of adaptation to control in built environments and to understand the relation of resistance to landscape. At one level, this research probes legacies of Jeffersonian policies granting land for public use amidst contemporary pressures for control and codification. At another level, Slab City occupies a landscape ostensibly controlled by U.S. military infrastructure and Corps of Engineers’ projects to move water, while the desert’s environment exerts its own controlling forces. This project continues ongoing research into how informal settlements relate to autonomy, necessity, and control.
A Strategic Plan for Maintaining Natural Resources and Sustaining Military Readiness on Air Force Bases in Florida

Tom Hoctor, Director and Research Associate Professor
Center for Landscape Conservation Planning

Michael Volk, Research Assistant Professor
Department of Landscape Architecture

The state of Florida has an extensive array of unique and fragile natural resources, which are important to protect not only for the intrinsic value they possess, but also for the vital ecosystem services they provide to citizens throughout the state. Within Florida, the United States Air Force controls 626,759 acres of land, many of which are undeveloped, and subject to federal mandates for natural resource protection such as the 1973 Endangered Species Act. At the same time, development pressure is increasing throughout the state, creating land use and development encroachment issues adjacent to Air Force properties. The Air Force is actively engaged in mitigating these issues by working with communities, NGOs and agencies to identify opportunities to buffer bases and mitigate natural resource impacts from Air Force activities on bases, which can be used to help maintain mission flexibility. This study focuses on a statewide assessment of natural resource conservation priorities around Air Force installations in Florida, including opportunities to mitigate impacts to focal species on Air Force properties, to increase natural buffers around installations to help reduce encroachment risks from adjacent development, and to increase opportunities for conservation partnerships and use of existing or potential conservation programs. In addition to identifying conservation opportunities for specific Air Force installations, this project aims to form a cohesive and coordinated approach to conservation across Air Force installations throughout the state, identifying conservation priorities relevant to multiple installations, as well as opportunities to increase conservation partnerships between installations. Preliminary results indicate that there are ample opportunities to coordinate and cooperate in protecting conservation and military training and readiness priorities in the regional landscapes surrounding Air Force bases across Florida.
A Synthetic Cartography of Dredging and Beach Nourishment in Florida

Rob Holmes, Assistant Professor
Department of Landscape Architecture

Historically, dredging was central to the urbanization of Florida: canals were dredged through the Everglades to drain land for development; spoil islands reflect the dredging of intracoastal waterways; and beach nourishment has sustained the beaches that draw both tourists and residents. Today, navigational dredging can be understood as an infrastructure supporting urban life, through the role of working waterfronts in urban economies, as those waterfronts serve as conduits for goods, platforms for harvesting natural resources, and recreational amenities.

Neither the historical nor present infrastructural roles of dredging are well-understood by the public, and they are often also not well-understood by key decision-makers. This presentation reports on the construction of a synthetic cartography of dredging at a statewide scale in Florida. This cartography is constructed by compiling, distilling, spatializing, and visualizing data collected from both historic and contemporary sources, synthesizing disparate datasets in order to represent the geography of dredging and dredged material placement in a way that can inform decision-makers and publics. It also supports the author’s own design research, which looks for synergies between ecological goals like habitat creation, economic goals like maintenance of channel depths, public goals like recreation, and long-term environmental priorities such as adaptation to sea-level rise.
Latent (e)Scapes: An Interactive Kinetic Media Landscape Installation

Lee-Su Huang, Assistant Professor
School of Architecture

Latent (e)Scapes is a landscape installation in the Susan S. and Kenneth L. Wallach Garden at the Radcliffe Institute for Advanced Study at Harvard University. Installations in the garden rotate on a two-year competition cycle and are selected by an esteemed jury of Harvard faculty, including the Dean of the Radcliffe Institute.

An interactive and kinetic media installation, Latent (e)Scapes explores the natural-synthetic landscape through systematizing the implicit and explicit impacts of human and non-human forces within the garden. Finding inspiration in the swaying grasses of the prairies and coasts, the work calls in to question our roles within everyday environments and creates an immersive experience contrasting the typical urban landscape of Cambridge.

Designed to be seamlessly embedded within the natural landscape and therefore integrated within the natural ecology, the installation is comprised of 1600 RGB LEDs embedded within a series of berms each planted with Pennsylvania Sedge and a No-mow Fescue mix. Each RGB pixel is connected to a 3 foot long, 0.125” diameter extruded acrylic rod that transmits and projects the light upwards. Every RGB pixel is mapped spatially within a custom-written environmental simulation interface that controls the lighting behaviour of each individually addressable pixel.

A network of motion sensors tracks the movement of occupants as they traverse the space, as each sensor is activated a series of reactive animations propagate throughout the installation in real-time. While the interactive animations convey the spatial location of human occupancy, the color of the LEDs can be used to imply specific environmental factors such as temperature or humidity, each tied to a RGB value. In contrast to the digital interpretation of physical stimuli, the acrylic stalks and their inherent flexible physical properties react naturally to self-weight, air movement, and human touch, embodying and tracing the kinetic energies and latent forces present within the environment.

The installation can be seen as a physical metaphor of an attitude towards symbiotic relationships between natural and synthetic, the implicit and the explicit, the static and kinetic manifestations of energy. As human impact is registered through the synthetic elements, the interactivity makes explicit the synthetic nature of the ecology, while the effect of natural environmental forces are simultaneously implied in the structure and material of the installation. This interweaving of natural/synthetic ecologies serves as a critique and method in which artificial systems could possibly be designed to mimic, co-exist, and co-create within the natural-synthetic landscape of the anthropocene.
Fearless: Taking Risks and Learning from Failure in the Material Realm

Lisa Huang, Assistant Professor
School of Architecture

Our first-hand experiences are instrumental in the understanding of the world around us. Learning occurs not only through visual or auditory means but also through tactile engagement. Engaging building materials hands-on provides critical knowledge in comprehending the parameters of working with the material. The value of working directly with materials and physically engaging matter must also account for the potential of stumbles along the way.

It is significant to examine the distinction between explicit and tacit knowledge in architectural design education. There is a cultural shift of thinking in our students that only focuses on successes; however, it is the failures that are more revealing in the developmental learning process. The typical studio design work that is done on paper or on screen can easily mask potential problems where as those errors cannot be hidden when confronted with the physical presence of the built thing. In professional practice, the desire to experiment is often stripped away. There is too much at stake to fail with issues of budgets, schedules, life safety, and liability looming over each project. Design education is an ideal time to take risks and learn from mistakes where one cannot be penalized or held liable for naïve propositions.

Architectural design is often produced at representative scales where the understanding of materiality at a 1:1 scale is often a remote horizon. There exists a gap between understanding building materials as a theoretical construct and as a practical application. This presentation will examine different modes of failure and student outcomes from experimenting with full scale building materials and contending with critical issues – material behaviors and characteristics, processes of working with materials and methods of assembly or joining materials – that impact design decisions and cultivate building design knowledge.
Planning and Public-Private Partnerships: Essential Links in Early Federal Housing Policy

Kristin Larsen, Director and Associate Professor
School of Landscape Architecture and Planning

Many historians document the divorce between housing reform and planning. Yet, key advocates for government supported housing during the early twentieth century considered the two highly interconnected, taking the form of the garden city. Members of the Regional Planning Association of America (RPAA) translated the garden city into a uniquely American vision of complete communities that partnered government and entrepreneurial initiatives. Examining these lesser studied principles through the writings and advocacy of pioneer garden city planner and British government houser Raymond Unwin and prominent RPAA members Clarence Stein and Henry Wright broaden our understanding of early housing programs.

Peer Review of Teaching

Kristin Larsen, Director and Associate Professor
School of Landscape Architecture and Planning

Robert Ries, Director and Associate Professor
M.E. Rinker, Sr. School of Construction Management

As new faculty enter the college and existing faculty seek tenure and promotion, a responsive and effective faculty mentoring system is essential. Peer review of teaching forms an essential element of that system. It provides critical feedback to improve teaching effectiveness and is increasingly being used for documenting teaching performance in tenure and promotion cases. Therefore, having a robust peer review process is critical for both student learning and faculty success. Enhancing content mastery, engaging effective teaching methods, and fostering a dynamic learning environment are among the factors considered in peer review.

The University of Florida held a peer review of teaching workshop on August 17, 2015 that included an invited speaker, panel presentations, and breakout sessions. The panel presentations included discussion of the role of peer review in the tenure and promotion process, examples of peer review across colleges, and perceptions of peer review of teaching at UF.

This session will provide a summary of the peer review of teaching workshop, discuss peer review of teaching within the broader context of faculty mentoring, and conclude with a look forward and discussion of peer review at the college.
The Fire and Emergency Services program consists of both undergraduate and graduate degrees. The undergraduate degree program, in existence since 1998, is designed for students to complete the last two years of their bachelor’s degree. The program is online, allowing students to complete the program anywhere in the world. Designed in an asynchronous format, the program emphasizes peer-to-peer interactions. From 1998 to the fall of 2013, there was no structure in place for course completion, and students were allowed up to three years beyond the start of courses to complete them. This resulted in a plethora of incompletes on the books, with some students having in excess of six incomplete courses because they were allowed to enroll in additional courses without completing previous ones. In the fall semester of 2013, the program began to change to a more structured format, utilizing modules and due dates. Consequently, we realized a significant change in the completion rate of the courses. The rate went from as low as 12% completion to a more consistent rate of 94% or greater completion rate. The identifying factors contributing to the increase were the establishment of course modules and due dates, coupled with professors conforming to the model. Currently, course incompletes are the result of students in the military being deployed or students being scheduled for disaster assignments, accounting for 1-2 students. An “I” contract is now being utilized to insure completion of courses by students in these situations.

Jeffrey Lindsey, Coordinator/Lecturer
Fire and Emergency Services Program
To speak of “live” projects is also to acknowledge the presence of “dead” projects, those for whom there is no client and at the end of which there is no plan to implement or full-scale project to occupy. The dead project is severed from implementation and/or actualization, disconnected from productive processes, and often lands in the architectural dead letter office, a place of unbuilt or unbuildable ruminations that cannot quite find a way into the world of built things. The dead project gives us a way to frame a reconsideration of live projects by reflecting on the role of speculation and incompleteness in architectural education as contrasted with similarly fertile possibilities of the specific and determinate. Rather than setting these two aspects of practice in opposition to one another, it is possible to see each as a vehicle through which it is possible to better understand the possibilities of the other. By intertwining these processes, we have an opportunity to allow more projects to come alive, to unfold into or across productive streams, and to inform our discipline in inventive and unanticipated ways. This intermingling offers a fundamental reframing of the live project by challenging distinctions between life and death.
Currently, the complexity of building regulatory and standards increases rapidly with the acquisition of new knowledge in the design and construction domain. The need for computable representation of the building codes and regulations for automating the code checking process is becoming ever more important. Within the framework of Building Information Modeling (BIM) workflow, model checking against building codes and standards is generally needed to be an automatic or semi-automatic process. These checking mechanisms generally do not modify a building design, but rather evaluates a design on the basis of the configuration of objects, their relations and attributes. This paper presents an overview of the main existing methods for computerizing building codes and regulations. It reviews main concepts for these methods including knowledge representation, reasoning procedures, and knowledge acquisition. Additionally, this research explores the capabilities of the cited approaches in terms of strengths and practical limitations for creating computable building regulatory.
Finding One’s Way in the Cloud: Working with Large Data Sets in the Design Studio

Kristin Nelson, Assistant Professor  
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The current age of ever-improving digital information gathering and ordering tools provides unique new opportunities, but necessitates a reconsideration of the traditional design approach and assumptions. Architecture, as a business of response, has always been a complex undertaking which, until recently, relied on limited human faculties to observe, record, sort, and prioritize many thousands of inputs to determine the most complete response to the many unique factors of climate, society, micro and macro site context, urban networks and client program. The traditional intuitive approach, an approach informed by incomplete, loose data sets, rules of thumb, and the guild-like transfer of knowledge relies heavily upon the conjurer, the typical practitioner of the past. The conjurer has to generate webs of connective tissues to unite the relatively sparse known conditions. By contrast, the practitioner of the future will be inundated with more information than can be practicably used on a project, or even sorted in a timely fashion by a human. In lieu of the conjuring methods of the long history of architecture, practitioners will be asked to mine and edit massive quantities of data, designing the methods to access, organize and connect the most useful information in pursuit of the most fitting solution.

Cutting edge digital scanning allows for an unprecedented documentation of extremely complex site conditions, whether urban or natural. These types of digital tools create a compression of both time and space. A typical site can be scanned in a matter of hours or days; when compared to the time required to physically survey the site to anything approaching the same accuracy, it would take weeks or perhaps months. This compression allows designers to gain detailed information more quickly, and also potentially allows designers to virtually visit remote locations.

This paper will provide a case study of a cross-departmental collaboration within the context of an academic studio research project, which attempts to bring both the opportunities and challenges offered by the disruptive epoch of the data driven design to bear in the studio setting. The design project is set within the unique, complex landform of a massive sinkhole. This project site is over 500’ wide and 130’ deep, with twelve freshwater springs creating a tropical microclimate within the sinkhole. Two different approaches to solid surface modeling from laser scan data were developed: one approach allows for more accurate and complex modeling, the other is simpler. The processes help the studio with data sorting and editing, topographical study, fabrication including laser-cut modeling, digital modeling, and final rendering. Common processes include: 1) manipulating a point cloud (a 3-D, digital model of laser scan data); 2) converting it to a solid surface model; and 3) extracting 2-D contour lines. The two different approaches are designed based upon students’ skill levels as well as different software sets. The processes of working with large data sets and solid surface models helps students with not only analyzing a landscape and site, but also prepares them for the growing use of laser scanners in architectural practice.
Unit Design Factors and Patient Falls in VA Hospitals

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Patient falls are the most common adverse events reported in hospitals. Each year, roughly one million patient falls occur in United States (US) hospitals resulting in over 250,000 injuries and 11,000 deaths. Although the physical hospital environment contributes to nearly 40% of severe or fatal hospital falls, we know little about the relationship between hospital unit design factors and fall rates. The few studies that measured unit design and fall rates have been conducted in a single hospital or a small number of units, limiting generalizability.

Professors Ron Shorr and Sherry Ahrentzen, doctoral student Arezou Sadoughi, and colleagues of the VA’s Center for Innovation in Disability and Rehabilitation Research (CINDRR), have developed a research project using a mixed methods approach to investigate factors of hospital unit design contributing to patient falls in 30 Veterans Health Administration (VHA) medical/surgical nursing units. The qualitative approach investigates staff and management perceptions of unit design factors that contribute to patient falls. The subsequent quantitative approach utilizes administrative data on falls in VHA databases and digitized hospital floor plans to empirically examine potential contributing factors. Using units that are high- and low- outliers in terms of risk-adjusted fall rates, we compare these high- and low-units using spatial analyses of floor plans and other design factors. Depthmap, a spatial analysis software program, has been used in preliminary work to evaluate unit design features. In the full study, spatial analyses and statistical tests (t-test, Chi-square as appropriate) will be performed to identify those design factors that distinguish high and low outliers.

This study represents the first time that fall rates in VHA medical/surgical nursing units will be studied to identify unit design factors that impact the rates in positive or negative ways. Synthesis of the rich information provided by the interviews of frontline staff, the spatial analyses, and the environmental inventories provide evidence upon which to build improved hospital fall prevention programs.
Waterfront Jakarta: The Battle for the Future of the Metropolis

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Jakarta, Indonesia was established as the Dutch trading center of Batavia in Southeast Asia in the early 17th century, a place identified by its connection to waterways. Thirteen rivers (and their tributaries) created the delta region where the Dutch planted this port and the city builders incorporated water into its essential fabric. Between the 17th century and the early twentieth century, Batavia’s waterfront was the gateway to the Queen City. Throughout the 20th century, it was transformed into its backwater, a process facilitated by the dominant governmental, industrial, service and residential functions shifting to the interior regions of this expanding metropolis. The transformation was guided by a planning process that neglected the social and ecological foundations of the city and that treated the waterfront area as the place to accommodate the least desirable aspects of the modern city.

Beginning in the 1980s, there was renewed attention to Jakarta’s historic waterfront area, in large part because of the redevelopment potential that it offered. From the very beginning of this renewed interest in coastal Jakarta, there has been accelerating protestations from indigenous residents who challenged the implications for their neighborhoods and their lifestyle to accommodate redevelopment. At the same time, the city experienced flooding at an unprecedented scale, not just in the always vulnerable coastal areas, but reaching deeply into the metropolis. This revealed the disastrous consequences of insufficient attention to water management, especially along the coastal areas. The dislocations that resulted from renewed waterfront development after 2000 brought increasing challenges from a civil society empowered by the transformation of Indonesia from an authoritarian regime to a more democratic society. The newly empowered local stakeholders challenged some of the planning efforts aimed at sustaining waterfront development and redressing the decades of neglect of the city’s ecological systems. In recent years, therefore, the waterfront of Jakarta has reemerged as contested space, where the conflicting agendas of development, sustainability and environmental justice in this megacity are being played out.

Building upon an historical perspective, this paper examines impacts of planning and development on the changing character of Jakarta’s waterfront in the late 20th century and the emergence of the battle for the future of the metropolis. It is noteworthy that the past three Jakarta governors, Sutiyoso, Bowo and Widodo, devoted significant attention to the waterfront region not just to promote development but also because of the increasing problems of flooding and in response to political pressures. Overall, however, less attention has been given to the implications of new development and flood mitigation on the indigenous population. As noted in a recent UN-Habitat study (2005) the problem of forced displacement prompted by the rejuvenated pace of redevelopment along coastal Jakarta has accelerated. The impacts of development and flood mitigation on the indigenous populations are central to the contested process of planning for the future sustainability of Jakarta.
BuildEm Tool for Integrated Environmental Assessments of Buildings + Updates on Dynamic-Sustainability Information Modeling (Dynamic-SIM) Workbench

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BuildEm, a web-based tool for integrated environmental assessments of buildings, calculates life cycle energy and emissions; emergy; and ecosystem services of the building materials. While US economic Input-Output model is used to calculate life cycle energy and emissions, a custom built-in building materials database and transformities are used to calculate emergy. Emergy evaluates the dependency of a product on its upstream environmental and resource energy flows. The tool calculates Ecosystem Services namely, Provisioning Services, Regulating Services, Supporting Services, and Cultural Services. Ecosystem Services are the benefits humans are provided directly and indirectly by ecosystems. Additionally, BuildEm calculates Disability Adjusted Life Years (DALY). All these can be analyzed by building component, i.e., emergy quantities for Sitework; Earthwork, Concrete, Masonry, Structural & Metals, Carpentry, Waterproofing, Finishes, Operational Energy Use, Operational Water use, and more. All these can be analyzed across the phases of a building – Raw Material Formation Stage, Product Stage, Construction Stage, Use Stage, and End-of-Life Stage. Other updates related to Dynamic-SIM workbench and on-going research activities will be discussed. Tool information is available at: http://built-ecologist.com/
Golden Years: Creating a “Gold” Bicycle Friendly Community Framework for America’s Largest Retirement Community (The Villages, FL)

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From 2013 – 2014, The Villages, a Central Florida master-planned, age-restricted retirement community comprising multiple jurisdictions and counties, led the Sunshine State’s population boom with a 5.4% growth rate, making it the fastest growing metro area in the United States and one of the nation’s largest retirement communities (Census, 2014). With over 100 miles of multimodal transportation trails, and four active bike clubs collectively representing thousands of recreational cyclists, The Villages was recently designated a Silver Bicycle Friendly Community by the League of American Bicyclists (LAB), one of the United States’ oldest and largest bicycling advocacy organizations, recognizing that community’s achievements in the “five-E’s” of active transportation planning: engineering, education, encouragement, enforcement, and evaluation.

With feedback from LAB, and in consultation with the University of Florida’s Urban and Regional Planning program, The Villages Bicycle Friendly Advisory Group, an umbrella bike advocacy organization which liaises with the community’s developer to advocate for better bicycling, is currently pursuing Gold Bicycle Friendly Community status as a means of improving quality of life, public health, road safety and community connectivity.

While The Villages’ uniquely homogenous socioeconomic and demographic characteristics make it an outlier in the urban context, this study has important implications for America’s fastest growing demographic: retiring Baby Boomers, whose age-related declines in health and mobility could be mitigated by encouraging active forms of transportation and recreation, such as bicycling and walking. This research will document existing cycling infrastructure within The Villages, provide recommendations for improvement, and devise a framework for bicycle master planning in the context of LAB Bicycle Friendly Community certification as an area for further development.
Developing a Data Clearinghouse of Housing Needs and Practices for Aging Population Growth in Florida

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The Baby Boom generation is reaching retirement age, and Americans are living longer. These two trends are leading to a surge in the aging population, particularly in Florida—the state that already has the greatest proportion of retirement-age residents in the U.S. Florida is home to nearly 3.7 million residents age 65 and over. That number is expected to grow to 6.2 million by 2040, with two-thirds of the growth coming from people age 75 and older.

As households age, their household structure, income, and physical needs change, resulting in shifting housing needs. Older adult service providers and the affordable housing industry both need more information about the housing needs of Florida’s growing older population, particularly low- and moderate-income households. Currently, there is no publicly available databank specific to Florida and its constituent cities and counties for planning and policymaking around elders’ affordable housing needs.

To fill this need, the Shimberg Center for Housing Studies proposes to create a data clearinghouse of housing needs and practices for aging population. The Center will disseminate data on Florida’s aging population housing needs via written briefs, links to applied research, and expanded presence of aging-related data and mapping on the Florida Housing Data Clearinghouse website.

As part of the Exchange, the Shimberg Center will seek to expand the older adults housing conversation beyond the traditional affordable housing industry. Throughout the development and launch of the clearinghouse, the Center will build relationships with service providers, researchers and advocates who focus on other issues related to aging, including health, transportation, service and social engagement. The older adult services professional community will provide crucial input on how these issues affect housing needs; it also forms one of the key audiences for the housing data that will become available via the clearinghouse.
Innovation in Online Planning Education: Beyond the Technology

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Online education is often touted as “the way of the future.” Because the future is inherent to planning practice, it is only fitting that planning education be delivered online. Yet no longer is it innovative to simply package and deliver one or a series of planning courses online. Innovation in planning education online necessitates the same delicate balance between best practices and risk management as does innovation in planning education in the classroom. And just as innovations in the field influence the way we teach planning, so too can innovations online influence how we re-think planning education on-ground.

This discussion will move beyond the individual course development and delivery process to focus on challenges and opportunities that exist when bringing a collection of courses to scale to offer an online planning degree program, particularly focusing on areas of innovation and engagement. The ways in which technology facilitates these innovations will be explored, recognizing that online program delivery alone does not make for an innovative learning environment.

The up-front commitment of resources and time required of online education often stifles the opportunity for on-going innovation in the online learning environment, and content can fall victim to university-supported Learning Management Systems (LMS). Seeking out strategies to liberate discipline-specific content from the structure online delivery often imposes not only can improve how planning education is delivered online at the course-specific scale, but also opens up the opportunity to package content in various ways to accommodate the growing need for planning education to be more globally accessible.

It is increasingly necessary, then, to devise an engagement strategy for peer-to-peer, peer-to-professor, and peer-to-professional dynamics while fostering relationships among and between these different categories of stakeholders—all the while upholding the theoretical and professional threshold set by planning scholarship and practice. This presentation will draw upon experiences gleaned by implementing a graduate degree program in planning, whereby standards (e.g., professional, accrediting, and university-based) have not necessarily stifled the innovative potential of online planning education, but in fact have been innovated by the ways in which online planning education is increasingly delivered. The current reality is that increasing global program demands outpace existing bricks-and-mortar strategies, so new “best practices” are needed as planning education responds more generally through online delivery mechanisms.