

Faculty Research Symposium

2014

San Antonio

Friday, 21 November
8:00 AM – 7:00 PM

abstracts

John Alexander
Rahman Azari
Saadet Beeson
Mark Blizard
Edward Burian
Ian Caine
Sedef Doganer
Jing Eric Du
Suat Gunhan
Azza Kamal
Yilmaz H. Karasulu
Rui Liu
Angela Lombardi
Taeg Nishimito
Rogelio Palomera-Arias
Antonio Petrov
Ela Poursani
Hazem Rashed-Ali
Shelley Roff
Richard Tangum
Stephen Temple
Maggie Valentine
Rebecca Walter

special thanks to

John Murphy, Dean, CACP

Mauli Agrawal, Vice President of Research,
UTSA—for financial support
(research.utsa.edu)

&

Valeria Martinez, Barbara Warren and the
students in arc 3113, *graphic design*—for
photography of CACP faculty

symposium coordinated by

Hazem Rashed-Ali, Associate Dean of
Research and Graduate Studies, CACP

COLLEGE OF
ARCHITECTURE
CONSTRUCTION &
PLANNING

&

keynote speakers
Alison Kwok
Upali Nanda

College of Architecture, Construction and Planning
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CACP
UTSA COLLEGE OF ARCHITECTURE,
CONSTRUCTION AND PLANNING

schedule

7:30 – 8:00 8:00	registration welcome John Murphy, CACP Dean Mauli Agrawal, UTSA V.P. for Research	Buena Vista Theater Lobby Buena Vista Theater (BV 1.326)
8:30 – 9:45	session 1A Materials and Materiality moderator: Richard Tangum Taeg Nishimoto Yilmaz H. Karasulu Rahman Azari	Buena Vista Theater
8:30 – 9:45	session 1B The Mediterranean, Past and Present moderator: Maggie Valentine John Alexander Shelley Roff Antonio Petrov	Assembly Room (BV 1.338)
10:00 : 11:15	session 2A On San Antonio and the Region: Architects, Architecture, and Urban Fabric moderator: Bob Baron Maggie Valentine Edward Burian Ian Caine	Buena Vista Theater
10:00 : 11:15	session 2B The Mediterranean, Preserving the Culture moderator: Vince Canizaro Mark Blizard Angela Lombardi Saadet Beeson	Assembly Room
11:15 – 12:30	lunch	Community Room (BV 1.322)
12:30 – 2:00	keynote speech <i>The Changing Paradigm in Architectural Practice: Research Comes of Age</i> Upali Nanda Vice President and Director of Research HKS Architects	Buena Vista Theater
2:15 – 3:30	session 3A Urban Growth, Visions and Tools moderator: Hazem Rashed-Ali Richard Tangum Rebecca Walter Azza Kamal	Buena Vista Theater
2:15 – 3:30	session 3B Agent-Based Modeling in Construction Science moderator: Suat Gunhan Eric Jing Du Rui Liu Rogelio Palomera-Arias	Assembly Room

continued on inside of back cover

continued from inside of front cover

3:45 – 5:00	session 4A Pedagogical Approaches moderator: Mark Blizard Stephen Temple Suat Gunhan Hazem Rashed-Ali	Buena Vista Theater
3:45 – 5:00	session 4B Architecture and Tourism moderator: Taeg Nishimoto Sedef Doganer Ela Poursani	Assembly Room
5:30 – 7:00	keynote speech <i>Ninety-five percent: Framing the Questions for Research</i> Alison Kwok Professor of Architecture University of Oregon	Buena Vista Theater

4A

4B

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a message from the
Dean

Research is Leadership

As professors in higher education, we must be content specialists in the topic areas that we teach. In most disciplines, and ours in the built environment are no exception, the state of the art keeps moving... being active in scholarly inquiry keeps us abreast of our topic areas, and keeps what we “profess” fresh and interesting to students. In many cases, being a professional college, we present the latest developments through the results of our inquiries. However, our optimum research should be leading change, leading discovery, leading creativity, leading pedagogical change, leading the testing of existing technologies and theories. That is where our College needs to be.

Best regards,

John D. Murphy Jr., Ph.D., CPC, Assoc. AIA, LEED AP
Dean and Professor
College of Architecture, Construction and Planning
University of Texas at San Antonio



Addressing the Affordable Housing Crisis for Vulnerable Renters: Insights from Broward County on an Affordable Housing Acquisition Analytical Tool

South Florida is experiencing an affordable rental crisis that is especially burdensome on the most vulnerable in society, extremely low-income households. Rapid urbanization has resulted in inequitable land use patterns that are a barrier to housing for the poor. As a solution to the crisis, local housing agencies seek to expand their affordable housing stock for vulnerable renters in opportunity-rich neighborhoods, but there is no standard framework for identifying properties for acquisition. Broward County serves as a case study to develop a housing acquisition analytical tool. Using a combination of spatial statistics and principal components analysis, neighborhoods in which housing agencies may consider acquiring property are identified through the creation of an affordability surface in ArcGIS. Affordability is overlaid by an opportunity surface derived from neighborhood quality and accessibility rankings. The results identify neighborhoods in Broward County that are both affordable and opportunity-rich to better serve the county's most vulnerable renters.

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accepted for publication
in *Housing Policy Debate*
Journal, 2014



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Professor Urban and
 Regional Planning

Beaufort Books
 2014

John H. Kampmann, Master Builder: San Antonio's German Influence in the 19th Century

Although relatively unknown in modern day San Antonio, John H. Kampmann was an imposing force during his lifetime (1819-1885). Maggie Valentine explores the lasting legacy Kampmann had as a craftsman, builder, contractor, stonemason, construction supervisor, building designer, materials supplier, and business and civic leader for thirty-five years in San Antonio. He changed the face of the city from an adobe Spanish village to a city of stone and mortar. The book also looks at what it meant to be an architect, the business of building, and the role of immigrants. John and Caroline Bonnet Kampmann's descendants contributed much to the history of the city for generations. His client list reads like a Who's Who in 19th-century San Antonio. His work included the Menger Hotel, St. Joseph's Catholic Church, St. Mark's Episcopal Church, and the German-English School, as well as the Steves, Eagar, Halff, Groos, and Oppenheimer Houses. In addition he ran businesses from a bank to a brewery, and served as city alderman and fire captain. This study brings to light an important chapter in the formation of the urban fabric of San Antonio and its evolution into a multi-cultural community. Valentine explores the built environment as it exemplified the social, political, and economic history.

www.beaufortbooks.com/2013/09/john-h-kampmann-master-builder/



Ninety-five Percent: Framing the Questions for Research

Alison Kwok, PhD, AIA, is an educator, architect, and researcher for over fifteen years. She teaches at the University of Oregon and received her PhD and M. Arch from the University of California, Berkeley. She has a degree in biology with advanced studies in architecture, building science, and curriculum development. She received the 2008 American Solar Energy Society's Women in Solar Energy Award and Fellow in 2010 and the University of Oregon's Faculty Excellence Award. Professor Kwok's research focuses on health, comfort, net zero energy design, and the integration of architecture, engineering and allied fields at the earliest stages of the design process. She became a Certified Passive House Consultant in 2009 and is also a USGBC LEED AP. She is co-author of the Green Studio Handbook: Environmental Strategies for Schematic Design, now translated into Chinese, Korean, Portuguese, and Spanish languages, and Mechanical and Electrical Equipment for Buildings, 10th 11th and 12th ed, and numerous case study books of building performance investigations. She is active in mentoring the next generation of students through research, design, and outreach. She serves on several advisory boards, design juries, and technical committees for the American Society of Heating Refrigerating and Air-Conditioning Engineers (ASHRAE), the American Solar Energy Society (ASES), Society of Building Science Educators (SBSE), and the US Green Building Council (USGBC). She was principal investigator of the Agents of Change Project which trained faculty and students to investigate actual buildings, conduct post-occupancy surveys, and develop exercises to implement at their home institutions. She currently serves as Graduate Studies Director, PhD Program Director, and Technical Teaching Certificate Director

keynote one
 Alison Kwok



keynote two Upali Nanda

The Changing Paradigm in Architectural Practice: Research Comes of Age

Published author, speaker and researcher, with a background in architecture, minor in health, and focus on human perception.

Experience with developing and conducting research studies, and educational modules, for healthcare art and architecture. Expertise in qualitative and quantitative methods, translational research, and cross-disciplinary projects. Responsible for leading one of the first research departments in the industry on visual art and health. Interested in core issues in health that pertain to creating a better environment for all through intentional, and innovative design- informed by research. Upali hold a Phd in Architecture from Texas A&M University, a Master of Architecture from the National University of Singapore, and a Bachelor of Architecture from the School of Planning and Architecture, New Delhi, India.

In recent years, we have seen a growing trend toward in-house research departments in architectural practice. What has prompted this change, and will it be sustained? How will this affect the fundamental way we teach, learn, and practice?

While R&D has been a key component of most industries, it is not the case for our industry. Research has frequently been relegated to theory, and delegated to academia. The chasm between theory and practice, and research and design, has stayed in place, with a few notable exceptions. Today, in-house research initiatives and symbiotic relationships between academia and practice are beginning to bridge this gap, and focus on making research actionable. Through a discussion of evidence-based design, a performance-focused marketplace, and a new generation of analytical and accountable professional we will explore the shifting paradigm that places research at the core of architectural practice.



A Logic of Learning to Draw

Teaching hand drawing to beginning design students who have little or no history of drawing is common to architecture/design programs. Most beginning students have no developed practice of drawing and many have never drawn more effectively than doodling. Some have “drawn” only by way of digital applications or within art classes. In many architecture/design programs, curriculum is structured for learning drawing by hand prior to and as a basis for learning and using digital modeling and drafting software. This paper advocates a position that drawing pedagogy - teaching students how to draw - must be developed from the learner’s perspective of what is encountered in learning to draw. It must first be recognized that learning to draw necessitates transformation of the learner. Students new to architectural drawing tend to believe that drawing means depicting literally what one sees, as a naïve representation. However, in order to learn to draw one must become open to a new way of looking at and seeing the world systematically. This transformation is also intimately tied to a new way of thinking involving representations as abstract stand-ins for reality. Secondly, learning to draw must be taken on by each individual through two main components - practice and comparative logic. Most who draw well understand practice – learning to draw improves only with more drawing. However, drawing well occurs only when drawing as an act of will and perseverance is transformed into thoughtful and purposeful activity. Architectural drawing requires an understanding of representational transformation as a logical connectivity of drawing types to the visual configuration of built form. A progressively developing structure of drawing learning as a comparative structural logic connects drawing methodologies to what is being seen/drawn, thus re-informing drawing practice beyond mere “skill repetitions,” outlined as: LINE; VALUE; FRAME; GEOMETRIC ARMATURE; DESCRIPTION; PROJECTION; PARALINE; PERSPECTIVE; COMPOSITE DRAWING.

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Associate Professor
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2014 Design
Communication Association
Conference

published in the conference
proceedings
2014



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Growth Impact Study for the Poth Independent School District and the City of Poth, Texas

This report presents an analysis of population and housing growth trends for the Poth Independent School District and the City of Poth, Texas. The purpose of this plan is to assist the city and school district in their efforts to accommodate expected population growth in future decades while also maintaining the quality of life enjoyed by the community and the quality of education offered to its students. This study was undertaken by the Center for Urban and Regional Planning Research (CURPR) within the College of Architecture at the University of Texas at San Antonio, (UTSA), and the Texas State Data Center (TxSDC) within the Institute for Demographic and Socioeconomic Research (IDSER) at UTSA. Several outcomes are expected through this study. The information provided by the demographic and land use analyses will: (1) provide the Poth Independent School District and the City of Poth with a better understanding of the underlying dynamics of the changes that the city and the school district are experiencing; (2) enable the school district to develop a comprehensive strategy to effectively manage its growth; and (3) contribute to the empowerment of the stakeholders in the community (residents, business owners, and government officials) and of the Poth Independent School District (students, parents, and teachers) in shaping their future.

Professor Urban and Regional Planning

co-authored with
Lloyd Potter

Center for Urban and Regional Planning Research
2013



Movin' On Up: Strategies for Social Success in Sixteenth-Century Milan

Gian Paolo Della Chiesa's biography demonstrates how social advancement occurred in sixteenth-century Italy. Although he was not a nobleman, Della Chiesa used education, abilities, connections and hard work to serve rulers and attain the offices of Milanese senator and cardinal. Through careful planning and questionable financial dealings, he accumulated real estate, luxury items and liquid assets. Prior to being named cardinal, he had married and fathered two daughters. With his offices and wealth, he was able to contract noble marriages for them. Della Chiesa's professional career, accumulation of wealth and marriage strategy suggest the underlying goal of attaining noble status, and document success.

John Alexander

Associate Professor
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South Central Renaissance
Conference, Tucson

published in the
conference proceedings
2014



**John Alexander
Rahman Azari**

Assistant Professor
Architecture

published in
*Energy and Building
Journal*
2014

Integrated Energy and Environmental Life Cycle Assessment of Office Building Envelopes

Building envelope, which separates the interior conditioned from exterior unconditioned environment of a building, is the key determinant of thermal and energy performance in many types of buildings. The building envelope is primarily designed to restrict the heat transfer between inside and outside in order to regulate the thermal characteristics of the interior environment and reduce the heating, cooling and electric lighting demand of buildings.

The key goal of the present research is to examine the life cycle energy and environmental performance of building envelopes by conducting a comparative energy and environmental life cycle assessment (LCA) study of several envelope scenarios in which some of the major components of building envelope vary. The varying components include insulation material, window-to-wall ratio (WWR), window frame material, and double-glazing cavity gas. The generic building model used in this study was a hypothetical 2-story office building with 335 m² (3600 ft²) of floor area. The results revealed scenarios with low to medium WWR and fiberglass window frame result in the lowest impacts. The research also shows that use phase of the life cycle is the primary contributor to most environmental impact categories for all scenarios.



www.sciencedirect.com/science/article/pii/S0378778814005234

Barcelona's first Town Hall: Crisis and the Evolution of a Mediterranean Civic Type

Barcelona's first town hall was built late in the history of the development of this civic building type in Europe. An early proposal for the town hall was conceived by Barcelona's first city council in the 1350s as a "town hall-loggia", one that joined municipal and mercantile government in one location, and could be seen in many parts of Europe. However, ultimately, the construction of this meeting hall did not happen as planned; the building site was chosen and construction started inadvertently in reaction to an emotional and spiritual crisis on the part of the city councilors. As was local custom with other nascent institutions in the city, Barcelona's city council met in public spaces for the first one hundred years of their existence, most often in a chapel the city council had built within the Dominican church of Santa Caterina. In 1369, in opposition to a verdict put forth by an Inquisition held in the Dominican church, the city council abandoned their meeting place and was invited temporarily into the home of the council's scribe, where the municipal records were already being stored. In this moment of crisis, the city councilors realized the imperative of establishing their own meeting hall, set apart from the influence of the church. In the immediacy of their need, the council's scribe offered his house to be transformed into the new meeting hall. Although the design of Barcelona's town hall evolved from a forced set of circumstances, rather than from a pre-planned design concept, ultimately Barcelona's town hall fits within a category of civic buildings whose plans were inspired by the defensive, circulation, and spatial arrangements of typical Mediterranean medieval residential palaces, such as can be seen in the design of Florence's town hall, the Palazzo Vecchio.

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Annual conference of the
Southeast Chapter Society
of Architectural Historian

conference presentation
2014



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co-authored with Carmen
 Fies and John Quarles

EAAE-ARCC 2014
 International Architectural
 Research Conference

published in the conference
 proceedings
 2014

Use of Augmented-Reality in Teaching Energy Efficiency: Prototype Development and Testing

Passive solar and energy efficiency concepts are usually taught through lectures, textbooks, or hands-on experimentation, but the relationship between these concepts is typically not effectively visualized. To address this, this paper reports on the design, development and preliminary testing of a prototype Augmented Reality (AR) application for residential energy use education. This tablet-based AR application simulates the impact of different residential building design characteristics on both indoor temperature (for passive heating/cooling) and annual energy use and cost (for mechanical HVAC). The application was developed by an interdisciplinary team of researchers/educators from three related fields: architecture, interdisciplinary education, and computer science. AR consists of additional information that is visible through a technology interface, shown on top of the images of the real world under study within a digital 3D space. The interdisciplinary model presented in this paper integrates three distinct lenses: 1) passive design and energy efficiency education 2) AR as an interactive modality and 3) a computationally complex building performance simulation model. In particular, the paper reports on the results of an experiment in which junior-level university students in a school of architecture used the prototype. Results from the pre and post knowledge surveys conducted within the experiment show consistent and high improvement in the students' confidence in their knowledge of the topics following the use of the prototype. Student feedback was also generally positive but some issues were identified which may indicate that this prototype would be more effective at the freshmen level. Plans for future development phases for this project include focusing on this new population. The project described in this paper also illustrates the considerable potential that interdisciplinary collaboration offers for architectural research through enabling architectural researchers to tackle more complex issues and developing a better understanding of the research approaches and expectations in other disciplines.

www.arcc-journal.org/index.php/repository/articleview/293

Strengthening of the Timber Roof of the Second Turkish National Assembly Building in Ankara

The Second National Assembly Building is one of the most significant examples of the Turkish Early Republican Architecture. Originally, it was built as the headquarters for the only party of the republic; however, its function was changed shortly after construction. It served as the parliament building for 36 years from 1924 to 1961. Even though it is mostly referred to as the parliament building, the structure had more changes in function over the years. The building has been used as "The Republican Museum". The study aims to assess the structural deficiencies in the timber roof and ceiling of the structure and explain the proposed strengthening process that is planned to start in the summer of 2014. Designed by Vedat Tek, who is one of the most important architects of the First National Movement, the building is among the few examples that reflect the characteristics of the period genuinely. It was constructed of masonry with two stories above the basement. The ceiling of the main meeting hall, which is 21 m x 15 m in dimensions, is supported by timber trusses at 3.5 meter intervals. The timber ceiling is unique with its historically invaluable engravings and ornamentations. However, due to the unexpected loads and material deterioration, the deflection on the ceiling exceeded 150 mm. Special work was performed on the ceiling to correct the deflection and reinforce the roof structure without disturbing the original unity of the adornments.

The process involved utilizing steel trusses during restoration. The study also explores the effects of these steel trusses on the masonry arches, which support both the roof and the masonry walls of the main meeting hall. A finite element model has been prepared to explore any possible damage from steel trusses to the structural unity of stone masonry walls and arches. For the analyses, the worst possible loading conditions in strengthening process and earthquakes have been assumed. This study also covers the principles of strengthening historical buildings so as to underline the importance of conserving the original unity of paintings, engravings and other elements of ornamentation.

John Alexander
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Assistant Professor
 Architecture

9th International
 Conference on
 Structural Analysis of
 Historical Constructions

published in the
 conference proceedings
 2014



John Alexander
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Mark Blizard

Associate Professor
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co-author
Curtis Fish

published in *Enquiry:
The ARCC Journal Of
Architectural Research*
2013

An Archaeology of the Street: A Cinegraphic Analysis of Streets in Urbino, Italy

This article presents the issues, questions, and discoveries of an experimental design studio, conducted in Urbino, Italy during spring semester of 2013. Utilizing high definition video cameras and their digital ecosystem of hardware and software, the students focused on uncovering the identity, or genetic code, of the street by examining its spatial and temporal extension. An archaeological method composed of traditional spatial analysis, typological studies, and cataloging of elements provided the initial framework for a cinegraphic inquiry. What emerged was a sense that the street was an urban artifact—a place itself rather than merely a conduit or path between places—whose spatial and temporal characteristics informed our perception of the city. The street, perhaps only understood in our movement through its sequential elements and spaces, seems critical in shaping the city's identity. Traditional means of analysis by themselves are limited in that they only isolate fragments of a much more complex whole. Throughout the inquiry, we found that the digital analytical methods that were employed and the digital tools themselves provided new insight into the analytical process while expanding our understanding of the street and its relationship to the landscape and the larger urban fabric of Urbino. By extension, cinegraphic analysis may contribute to our ability to uncover the qualities and structure that constitute the identity of a city, or any place.



Semiotics of the Known and Unknown

Venetian Resort Hotel in Las Vegas, Nevada and Prime Outlets in San Marcos, Texas are two of the modern-day replicas of Venice, Italy. Though both intentionally created in order to signify the same referent, these replicas differ in levels of reproduction from exterior to interior space, from components, materials used to detailing. They also differ in regards to less tangible socio-spatial and spatial-temporal dialectics of urban geographies. What meanings do these replicated urban spaces make for their users? How are these replicas read, understood and interpreted by ordinary people? With the purpose of obtaining data on signification of these replicas, a survey is conducted by two small focus groups of users. In this paper, this survey data is analyzed through a conceptualization of known and unknown. Semiotics is used as a research method to assess the levels, layers and dimensions of meaning making of users for the modes of Venice.

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Assistant Professor
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published in
*Semiotic Society of
America, 2013 Yearbook*



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Assistant Professor
 Architecture

Harvard University Press
 2013

New Geographies 5
The Mediterranean: Worlds, Regions, Cities and Architectures

Most literature on the Mediterranean regarding architecture and urbanism has focused on the idea of the Mediterranean city and its history, but the spatial aspect also merits attention. This region, at the intersection of three continents, is one of the most complex areas on earth—culturally, politically, and ecologically. The *Mediterranean: Worlds, Regions, Cities, and Architectures* aims to recast “the Mediterranean” as a contemporary phenomenon and spatialize its formation as a larger geographic entity in the twenty-first century. The book recovers the Mediterranean as a model for global interaction and critically examines how the migration of complex architectural and urban formations, micro-geographies, new infrastructures, and demographic flows revise geopolitical boundaries and actively reshape cities, regions, and hinterlands beyond recognized geographic borders and boundaries. The collected writings aspire to activate critical questions about the formation of regions and to address philosophical, cross-cultural, and interfaith relationships, preservation, cultural identity, trade, and geopolitics—all elements that influence processes of urban and regional restructuring in relation to questions of how architecture as an expanded and geographically inspired idea structures, shapes and produces complex territories.

The Architecture and Cities of Northern Mexico from Independence to Present: An Overview of Tamaulipas, Nuevo León, Coahuila, Chihuahua, Durango, Sonora, Sinaloa, and Baja California

This book is the first comprehensive overview of the architecture, urban landscapes, and cities of Northern Mexico that border the United States from independence from Spain in 1821 to the present day, in either English or Spanish. Focusing on the time period when Mexico emerged as a modern nation, the text documents, discusses, and analyses a body of work that has been largely ignored by previous scholars. A concise geographical and historical summary of the region provides a useful background for the discussions of the works of architecture that follow. Beginning with the intertwined relationship of geographic context, history of the city, and urban form; the text systematically examines significant works of architecture in both large cities and small towns in each state, from the earliest in the urban core to the newest at the perimeter. The most memorable works of architecture in each city are discussed in greater detail in terms of their spatial organization, composition, materials, and sensory experience. The book concludes with a brief commentary on lessons learned and possible futures for the architectural culture of the region as well as the first comprehensive biographical summary of the architects practicing in Northern Mexico during this era. Profusely illustrated with over 520 scarce color and black and white photos, maps, and new analytical plan drawings of urban cores of major cities; the text offers essential information, vivid descriptions, and useful lessons of those who have built well before in the region. It will appeal to a wide audience on both sides of the border and beyond, including scholars and students in architecture, the arts, and humanities, professional architects, urban designers, and builders, local residents and government officials, as well as travelers to Mexico, including up to 16 million per year from the U.S. alone

John Alexander
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 Saadet Beeson
 Mark Blizard
Edward Burian

Professor
 Architecture

accepted for publication
 University of Texas Press
 2014



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Assistant Professor
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Shoppingscapes 13
International Conference,
Lisbon

published in the
conference proceedings
2013

Changescapes: Walmart Supercenters As Catalysts For Territorial Change

This design research examines the cycle of growth and decline associated with Walmart Supercenters as a way to reconsider the transformation of suburban territories. The project utilizes casestudy sites in San Antonio, Texas to establish three distinct Walmart Supercenter typologies: urban, suburban, and exurban. The central thesis asserts that many of the negative externalities that emerge from commercial big box developments result from the difference between the financial lifecycles of the building structures and the surrounding urban landscape. The project seeks to re-align these life-cycles: first, by examining the increments of change related to the various components of the big box development; and second, by re-proposing a framework within which the requisite change can be more productively managed.



Developing a Professional Internship for Faculty in Construction Higher Education Programs

The Associated General Contractors of America's Education and Research Foundation (AGCERF) launched a professional paid internship initiative for construction faculty starting on the summer of 2013. Prior to the official program launching, a pilot program was tested in the summer of 2011, with an AGC member contractor hosting a single faculty member selected from an ACCE accredited institution. The internship was designed as a three-way partnership between the AGC-ERF, the faculty host institution, and the host company. The initial budget of the program was \$30,000 funded in equal parts by the three internship partners. The internship was for a period of two months, and the faculty was a member of the jobsite management team at a level similar to a project engineer or assistant project manager. This paper presents the model followed for the implementation of the internship, as well as evaluates the results of the pilot program from the perspective of the academic side of the partnership. The internship was an excellent opportunity to develop closer ties between academia, the construction companies, and AGC; by promoting the free exchange of information, knowledge, and ideas that benefits the construction industry as a whole.

John Alexander
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Material Exploration - Fabric

My work with material in design is to identify the authenticity of the material, new or conventional. The authenticity of the material does not always reveal itself when it is applied in a conventional or premeditated way. It involves a degree of innovation in process that conditions the material's responses and eventual outcome. In my design and fabrication work of lighting fixtures and a site specific installation, the material behavior of particular fabric was explored. The fabric's spontaneous yet precise characteristics were examined and demonstrated through crease forming in relationship to other physical conditioning such as the fabric hardening process and gravity. As the objects and installation involved lighting as the theme, the interaction of the manipulated fabric with light had a particular emphasis in the making.

www.evolo.us/architecture/pina-is-a-exploration-of-fabric%E2%80%99s-behavior-in-lighting/

Consumption of Resort Hotels and Renovations Towards Sustainability

Changes in the economic, political, social, cultural, and organizational areas have, apparently, changed and altered the demands of consumers of resort hotels. It clearly can be observed that it is no longer sufficient merely to meet the need for accommodations. Besides that, consumers expect more in the way of entertainment, adventure, and boundless facilities, and as a result, resorts aim to make consuming something to enjoy. Resort hotels host an endless variety of functions, such as temporary experiences, and frequently make changes to the types of consumption they offer. To meet consumer and tour operators' expanding demands, to increase their market share and ensure repeat business, to keep up with recent developments in management, technology, and design, to adhere to international environmental standards, provide new, popular, and different experiences, and ultimately to survive in this environment, resort hotels have to transform.

This research discusses the consumption of tourist spaces, and the transformation of resort hotels through new additions and renovations. It analyses changing tendencies and design principles, new functional and spatial necessities, and the ever-evolving design process. In a case study of Antalya, Turkey, this research examines the reasons for and results of these changes, explores the spaces created by these transformations, and develops proposals for building a more conscious approach to the overall design process. In this framework, designers are called to envision this temporariness beforehand and reflect it in their designs, developing flexible designs that more easily comply with the shifting needs of tourist consumers. This need for flexibility and continuous transformation of functional spaces indicates that this new building typology should be redefined. As a result, the architect is challenged to search for design quality, uniqueness, and flexibility, while simultaneously accommodating the constantly changing nature of design input, as well as the functional and spatial requirements of resort hotels.

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Using Agent-Based Modeling to Investigate Goal Incongruence Issues in Proposal Development: Case Study of an EPC Project

A root cause of inefficiency in project proposal development is goal incongruence; i.e., different perceptions of behavioral standards and ranking of management criteria among stakeholders. Given the complexity of the unexpected behavioral and institutional consequences of goal incongruence, better understanding is required about the mechanism and impacts of goal incongruence during proposal development. This paper introduces a case study conducted on a large construction company. A behavioral simulation model previously developed by the authors, virtual organizational imitation for construction enterprises, was tailored to investigate goal incongruence issues in the proposal development of an engineering, procurement, and construction (EPC) project. Specifically, the direct impacts of goal incongruence were investigated, in addition to the combined implications of time pressure, task dependence, and micromanagement. It was found that an investigation of multiple human behaviors in a more comprehensive and more systematic manner is necessary for understanding goal incongruence concerns in project proposal development. This work contributes to the simulation school in the area of construction engineering and management by introducing a more comprehensive and systematic behavioral simulation.

Managing Heritage Sites While Accelerating Cultural Heritage Tourism in Antalya, Turkey

Antalya is characterized by historic sites and monuments of great importance dating from Hellenistic, Roman, Byzantine, Seljukian and Ottoman periods and is one of Turkey's most popular tourist destinations. Xanthos-Letoon, Antalya, is inscribed in the UNESCO World Heritage List since 1988 and the city has also seven nominated properties in the tentative list. In 1980, tourism was encouraged to constitute a new sector as an economic and political objective and now the number of tourists visiting Antalya has reached 10.7 million. Besides the positive effects of the tourism development, some other problems occurred, such as rapid population growth and the speedy consumption of the historical, natural, and cultural resources related to this rise. By the time tourism industry in the area has mostly focused on sea-sun-sand tourism. Historical, natural and cultural entities have almost been forgotten, and the heritage management has become an important issue to be considered seriously. Within this context, this paper focuses on how to put forward the real values of Antalya's identity and encourage heritage tourism as a sustainable alternative. This paper discusses the strategies to enhance and accelerate the heritage tourism in Antalya, to improve the interaction between historic heritage and tourists while managing heritage sites visited by tourist flow, and to re-interpret the identity of Antalya, Turkey, as a province of many notable urban/ archaeological world heritage sites.

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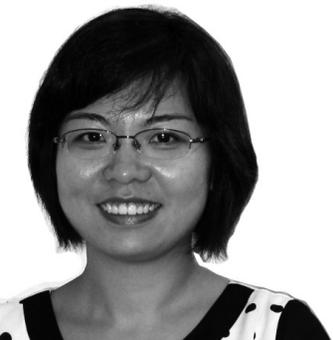
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Cloud-Based Deep Immersive Game for Human Egress Data Collection: A Framework

Human behavior is one of the most important yet hard to capture factors in emergency evacuation simulation. It is difficult and most of the time virtually impossible in reality, to conduct an evacuation test to study human behavior in buildings during emergency situations. Various research efforts have determined that serious games integrated with rich building information can provide an effective and efficient alternative of real emergency situation. However, as different people may react very differently, real human behaviors in emergency scenarios need to be determined for a vast number of human beings in emergency scenarios to test and validate these games. Consequently, the development of a library that contains validated human egress behaviors is the key to the simulation of evacuation in an emergency environment and developing an accurate emergency evacuation analysis. This study develops the framework to build a human behavior library through a BIM based cloud gaming environment, which grants players accessibility to games via thin clients. As a result, such games have the possibility to solicit and collect human egress behavior data from a larger pool of human beings. The repository of the human library is based on the framework of Agent Based Modeling (ABM) where human behavioral data is encapsulated as methods of agents. To overcome the limitations related to individual human factors, the hypothesis is that human behavior can be explored in an immersive serious game and that the decisions made by the humans in the game scenario are identical to the decisions made during the same situation in the real world.



Collaborative Learning Experience in a Construction Project Site Trip

Even though construction management is a practice-oriented profession, it is not always easy to cover practical aspects of the content. Construction Management I at the University of Texas at San Antonio is a lecture-based course and includes many project-related administrative topics. Most students who take this course have no previous construction project experience. This type of course is typically instructor-centered, i.e., it is taught with passive learning methods. Recognizing this fact, different strategies were developed every semester to make the lecture more interactive and learner-centered. This study is about a construction-site trip experience including an integrated, collaborative learning exercise covering the request for information (RFI) content of a construction-management course. This content is previously covered in class with a teamwork exercise and is also covered with a teamwork exercise during the construction-site trip with examples of technical problems encountered during the execution of the construction project. To measure the effectiveness of the site trip, a survey was conducted with participating students. The findings indicate that students favored the learning experience. In addition to class, this type of exercise is a good supplementary method for learning. The integration of a collaborative technical exercise during the site trip is the novel portion of this study.

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Suitability for Infill Development: A Multi-criteria and Spatial Assessment Approach

Studies on the capacity of vacant sites for infill development have been limited to the analysis of parcels potential for infill, rather than a systematic measure of the accurate amount of parcels suitable for this type of development. Mostly, central city development has been the locale for potential developable sites, yielding only a very few parcels suitable for infill. Additionally, very limited studies have examined infill development in the context of suburban areas (Wiley, 2009) or small towns. This paper, as part of a broader funded research on unincorporated communities in Zapata County, develops a multi-criteria analysis method for parcels' suitability for infill development; this method could further be applied to other areas and regions. A spatial analysis method using Geographic Information Systems (GIS) was utilized to develop the assessment model. Pertaining to the theme of this year's conference, this method extends beyond the institutionalization of the inquiry within the discipline of architecture; it intersects with other disciplines such as urban planning, and housing and land development. The inquiry includes: a review of relevant studies and applications of GIS in sustainable urban planning, the creation of a code system for developable sites through the evaluation of eligible parcels in accordance with eight criteria, and a summing up of parcels' composite scores. A compartmentalization of this final score – using an ordinal scale - is what created each parcel's ranking for suitability. This ranking method, unlike the preceding assessments, retrieved a larger amount of vacant parcels suitable for infill by intertwining GIS with multi-criteria coding. The method is feasible and traceable at both the county and city levels; it creates visual mapping outputs that could easily be adopted by other communities in urbanized and peri-urbanized areas alike. City architects and planners could utilize this method to support future policies for land development, rezoning, and land use that leverage smart growth principles.



CPT/PCPT- Based Organic Material Profiling

Cone and Piezocone Penetration Test (CPT and PCPT) based analysis and modeling is a popular and handy tool for geotechnical engineers for subsurface investigations and soil characterization. However, effective identification and extent of organic content proves to be a challenge based on traditional CPT and PCPT data and methodologies. This paper presents a comprehensive CPT/PCPT-based organic content identification method using Zhang and Tumay (1999) probabilistic soil classification method. The probabilistic method employs a non-traditional modeling approach that takes the uncertainty of correlation between the soil composition and soil behavior into account. The method is based the conformal mapping of the Douglas and Olsen (1981) classification chart which results in the soil classification index (U) and in-situ behavior index (V). The organic content identification method proposed in this paper uses the in-situ behavior index (V) in combination with the compositional soil classification index (U) to estimate the organic content. A detailed description of the proposed methodology and a discussion of effective applications are included in the paper.

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