ABSTRACT BOOK

CROSS AMERICAS

PROBING DIS GLOBAL NETWORKS

SANTIAGO, CHILE

JUNE 29-JULY 1

Architecture/Practice: Pre-Modern Training For a Postmodern Practice Architecture as Territory

Date: Wednesday, June 29, 2016
Time: 2:30:00 PM - 4:00:00 PM
Location : Auditorium FADEU

Arquitectura como alteración del territorio.

Eduardo Aguirre, Escuela de Arquitectura Universidad de Talca

Territorio
La idea de una arquitectura del territorio constituye el afán de la Escuela de Talca, y el Valle Central de Chile no ha sido otra cosa que el soporte de su quehacer (Román, 2012). La acción de perseguir esa idea en un ida y vuelta constante entre el territorio, el proyecto y la obra, pareciera a ratos la única e inevitable manera de aproximarse a una enseñanza de la Arquitectura que asuma, en palabras de Zygmunt Bauman, la liquidez que caracteriza las condiciones en las que el desempeño de un arquitecto ocurre en nuestros días. Hablamos entonces de una escuela en tanto manera contemporánea de enseñar Arquitectura y de territorio entendido como un continuo espacial, material, ambiental, económico, cultural e histórico.

Alteración
En reemplazo de una aproximación naturalista, en el que el proyecto de arquitectura en el territorio surge de ciertas condiciones dadas por la planificación, propongo una lectura en el que el proyecto de arquitectura puede entenderse como una alteración del territorio. La imagen que sugiere aquello es la del proyecto como detonador o intervención estratégica que - por imbricada en la trama que lo soporta- es capaz de catalizar procesos en curso y de uno u otro modo, cambiar el estado de las cosas; en palabras de Prygogine, una condición lejos de un estado de equilibrio.

Complejidad
De este modo, se encuentra en la idea de complejidad un aspecto central en la proyectación de una arquitectura del territorio. Entendamos por complejo, aquello en lo que coexisten de manera simultánea una serie de dominios de naturaleza diversa, en convergencia y yuxtaposición. Se sitúa en el opuesto de lo simplificado, donde predomina la eliminación de variables, al apagado de capas, el fenómeno aislado, la abstracción. En la acepción de Edgar Morin, es característico de lo complejo el encontrar algo del total en sus partes y algo de sus partes en el total. Podría decirse entonces que un desafío de la enseñanza de la Arquitectura tiene que ver con encontrar maneras de aproximarse a la complejidad y a su naturaleza incierta.

No_solicitado
Lo de llevar arquitectura a donde no la hay y donde nadie pareciera solicitarla, ha significado para estudiantes y profesores de la Escuela de Talca el ejercicio de la complejidad por necesidad. No queda otra. Cabe preguntarse por la manera en que estas obras han incidido en el territorio y viceversa. Ese es el objeto que propone este escrito, realizar una lectura retroactiva de una serie de obras, construyendo una imagen en la que en el frente está el lugar y en el fondo, en segundo plano, la construcción.

Learning from Aravena

Michael Zaretsky, University of Cincinnati

The announcement that Alejandro Aravena was the recipient of the 2016 Pritzker Prize highlights a critical shift for the discipline of architecture. The Pritzker jury stated, “Aravena is leading a new generation of architects that has a holistic understanding of the built environment and has clearly demonstrated the ability to connect social responsibility, economic demands, design of human habitat and the city.” (Pritzker Jury citation) This is the first time that a designer who is doing socially engaged work for low-income communities has received the Pritzker Prize.

According to Aravena, “[o]ne of the biggest mistakes that architects make is that they tend to deal with problems that only interest other architects….The biggest challenge is to engage with the important non-architectural issues – poverty, pollution, congestion, segregation – and apply our specific knowledge.” (Guardian, 01/13/16) The future of architectural education must directly address this “specific knowledge” if we want to remain relevant. Projects such as the half-house housing project in Iquique, Chile by Elemental require technical knowledge in areas that are rarely addressed in school such as budgets, cost estimation, demographics, code and policy. But they also require more ephemeral experience and training in collaboration, community engagement, flexible thinking, material innovation and empathy.

How do we prepare students for the future of architecture? Empower them to participate in real world projects with individuals and communities that can challenge them to expand their knowledge and skill set. At our institution we are addressing the future of an engaged practice through our public interest design/build program. Our program has three principles:
1. Learning through the process of making
2. Applied design research and innovation
3. Community engagement and impact

This program provides opportunities for our students to work on real projects that are developed with non-profit groups in our city. These projects provide the skills and experiences that are missing in traditional architectural education. Students work on-site within community settings, working with the people who are directly impacted by their work. They work at full-scale, building prototypes and testing them and rebuilding them. Drawings are only produced to document what has evolved in the prototyping process. The results are transformative for the students and the communities.

These projects are complex, time-consuming and are often politically loaded. In traditional studios, students are safely closeted from the realities of architecture. In public interest design/build studios, students come face to face with the consequences of design. Learning from the community, working with other disciplines and innovating at full-scale are one vision of the future of architectural education. We are following these students as they enter practice and so far, they are challenging the status quo.

In this paper I will address how architectural practice is evolving and how public interest design/build prepares students for this evolution.

LOS MÉTODOS DE DISEÑO ARQUITECTÓNICO POSITIVISTAS YA ESTÁN AGOTADOS. Enseñanza con paradigmas modernos no prepara arquitectos para el mundo posmoderno

Jorge Carlos Parga Ramírez, Universidad Autonoma De Aguascalientes
Alejandra Torres Landa López, Universidad Autonoma De Aguascalientes

La exposición de la enseñanza positivista y sus métodos surgieron como reacción a la tradicional Ecole des Beaux Arts, presentándose la faceta positivista como intentos desesperados para justificar el diseño arquitectónico, principalmente el aspecto artístico/espontaneo, sin embargo hoy en día parece haber un agotamiento de ambas posturas, lo que desemboca a identificar la realidad actual y la condición o visión presente Posmoderna.

Hay que recordar que la filosofía positivista considera como verdad absoluta únicamente lo que puede ser captado por los sentidos y que puede ser sometido a una verificación científica, de ahí surge el método científico. Esta postura permitió desarrollar metodologías de investigación con buenos resultados para su época, sin embargo la sociedad ha cambiado de moderna a posmoderna. Donde la sociedad moderna se caracterizaba por desconfiar del sujeto y sobrevalorar al objeto, donde la objetividad era la verdad absoluta, proporcionando un sentido de seguridad; en cambio, la sociedad postmoderna se caracteriza por la incertidumbre, la globalización, la sociedad de consumo y el uso de las tecnologías de información y comunicación. Dicha posmodernidad imperante se ve reflejada en la arquitectura y en consecuencia se presenta la necesidad de una propuesta de flexibilidad ante las tendencias anteriores.

Dicha flexibilidad tendrá que manifestarse tanto en el proceso de diseño arquitectónico como en su enseñanza y aprendizaje, procesos que se ven afectados por las posturas Educativas Internacionales que resaltan el cambio de un modelo conductista a uno constructivista, en el que el primero el profesor era el centro del proceso educativo, el poseedor del conocimiento y donde el alumno era únicamente el receptor, una figura pasiva que recibía lo que el maestro le enseñaba; a diferencia del constructivista, donde el estudiante es protagonista del proceso educativo, responsable de su propio aprendizaje y el profesor es guía y facilitador, proponiendo estrategias de aprendizaje que ayuden al estudiante a construir nuevos conocimientos, desarrollar habilidades y promover nuevas actitudes al autoaprendizaje, al trabajo colaborativo, responsable con la sociedad y el medio ambiente. Sin embargo, pareciera que sólo se queda en el discurso, ya que en los salones de clase se crean conflictos que impiden ponerlo en práctica.

El interés por conocer y entender esta problemática, específicamente en la licenciatura de arquitectura de la Universidad Autónoma de Aguascalientes en México, llevó a proponer una investigación que busca explicar cómo la flexibilidad en un método de diseño arquitectónico puede ser un recurso para favorecer el modelo educativo constructivista y lograr aprendizajes

significativos, de tal manera que se formen arquitectos que respondan las necesidades del mundo posmoderno. El propósito de este texto es compartir con personas interesadas en el tema los avances de dicha investigación.

Mass Dwelling: Tijuana/San Diego domestic Lifestyles and systems of appropriation
Marcel Sanchez-Prieto, Woodbury University

Housing is based on the idea of singular and possible construct of pluralities, involving the fundamental condition of territory of inhabitation and the rights of the individual, degrees of privacy and its relation to the larger collective. From this condition knowing who has control over the site and the ownership rights to exercise become the primary condition of government and its citizens. The latest economic crisis has once again asked us how we need to re-engage our habitat either by being more environmentally conscious, restructuring our urban interaction, or by redefining our domestic space. As we are passing through this crisis, emergent and expedient housing strategies are of eminent relevance for alternative economic and social integration.

In the past economic recessions, academia has contributed to develop and test ideas for the future; this is no exception however in this case the need is to understand even further the contemporary modes of living under the skin of a built city. Parallel cities like San Diego and Tijuana were territorial rights and inhabitation contest our notion of dwelling bring to the forefront what does it mean to own/rent a home (i.e. Property) and how has rights of ownership evolved in both in the United States and Mexico? How does the law and policies in the two countries inform domestic lifestyle? And what are the opportunities of physical constructions of both Individual private space (Housing) and the public realm (government, collective, corporations).

In Tijuana, there is affordable housing at the edge of the city subsidized by the government that responds to the anarchic structures that have been born of areas of informal settlements and slums. In San Diego, there is homeless living within the urban core because of private non-profit and government organizations. Mass dwelling is the ability to formulate systems of appropriation and productive modes of territory. What to do when 60% of the housing residents have no car, a great majority of population creates some source of informal income and most of the cost of the development is spend in land preparation?

With an increasing driver for fast economic turn over investment, developers have basically relied on outdated parameters of FAR and western Image driven ambitions of suburban living where common areas turn in despair as soon the developer hands in the complex to the government. The proposal describes how the studio research in collaboration with developers implemented new parameters of TAR Transformation Area Ratio and PAR Productive Area Ratio to negotiate underutilized spaces adapting to the needs of their users, either by growth of its members, type of activities like live/works or other type of commercial/cultural activity. Ultimately creating City, a community that is measured by the capacity of transformation and the potential of public space becoming a generator of income and building community.

Mass Dwelling shows the work of two studios, demonstrating both exploration and results of the conditions of housing within the Binational region of Tijuana and San Diego, to reveal opportunities of creating community.

The Dark God of Efficiency and the Economical Forms of Eladio Dieste
Federico Garcia Lammers, South Dakota State University
Jessica Garcia-Fritz, South Dakota State University

"Efficiency is the dark god to whom we sacrifice so many things" 1
Since the rise of the Industrial Revolution in the eighteenth century, "innovation as progress" became a mantra of industrialized societies. As new materials and the methods for making them emerged, architectural education shifted from an École des Beaux-Arts education rooted in the principles of classicism to an arts and crafts based education definitive of the Bauhaus. This shift allowed architecture students the opportunity to work with new materials such as iron, steel, and reinforced concrete. Throughout the twentieth century, innovations came less in the form of the methods that impacted material and construction and more in the form of representational tools. By the end of the century, digital tools dominated both architectural education and practice. In the last half of the twentieth century Uruguayan engineer/architect, Eladio Dieste recognized a representational innovation fetish in architecture as he claimed that "current methods of construction and even our professional training teach us to build projects, not works."2 In his own practice, Dieste was able to collapse the space between representational tools and material knowledge by focusing on what he defined as Cosmic Economy.

Eladio Dieste did not fetishize innovation, rather his development of structural ceramics and reinforced masonry were greatly influenced by a sense of Cosmic Economy. Dieste defined the idea that economy was separate from finances or the movement of money and its affects on architecture and construction. According to Dieste, Cosmic Economy was a means to understand that the "things that we build should be in accord with the profound order of the world." 3 This definition may appear vague and in contemporary discourse could be a surrogate for sustainability. However, there is a pragmatic dimension to Dieste's definition of economy. In his definition, Economy refers not only to the inherent cost of materials and construction, but also to the formulation of innovation through the relationship between a specialized material and structural knowledge. According to his former colleague, engineer Sasson, Dieste's "remarkable intuitions" in such projects as the Iglesia del Cristo Obrero were framed by his interest in accelerating the construction process.4 This acceleration was initially tested in the centering and formwork used to construct reinforced structural ceramics systems in the form of ruled surface walls and gaussian vaults.
In a number of contemporary architectural practices and in academia, the idea of Economy has been telescoped into the role of sustainability or dismissed as "real world" financial constraints. In a post-industrial context, one way to fill the gap between teaching and professional practice is to ask for the hyper-specialization of professional knowledge to include a sense of Cosmic Economy inseparable from both the materiality of craft and its representation.

1. Dieste, Eladio. "Architecture and Construction", in Eladio Dieste: Innovation in Structural Art, ed. by Stanford Anderson, New York: Princeton Architectural Press, 2004), 189.
2. Dieste, "Architecture and Construction," 183.
3. Ibid. 186.
4. Silvestri, Graciela. "Una Biografía Uruguaya", Escritos sobre arquitectura: Eladio Dieste, (Montevideo: Irrupciones Grupo, 2011) 133.

Cities/Urban Tactics: Emergent Typologies

Date : Wednesday, June 29, 2016
Time : 2:30:00 PM - 4:00:00 PM
Location : Auditorium South

"Megaprojects" vs "Megaform": Contemporary Large-Scale Urban Projects

Tulay Atak, Pratt Institute

The Architectural Record issue on "Big" (2014) brought together diverse examples of "supersize design" (2014), raising the question: "Beyond a certain size, is real architecture possible?" The editors predicted that "as the world's cities grow and become more dense, supersize designs are going to be significant part of the urban fabric." As "supersize design" becomes part of the urban fabric, a number of design issues begin to emerge: how to maintain scale? how to deal with environmental questions? how to address urban transformation and uneven development? and most importantly, what role does architecture play at this scale and what are the tools available to architects to address bigness today?

In this context, it is worth considering the term "megaform." Kenneth Frampton has written about "megaform" as an urban intervention which "stands against" the agglomeration of the megalopolis and its built environment (1999). Yet the word itself has a longer history and comprises ambiguities in form and implication. Fumihiko Maki coined the term as a general category to describe the aggregation of smaller parts according to a structural organization in "Investigations on Collective Form" (1964). As the term was subsumed under megastructures, Oswald Matthias Ungers identified what he called "Grossformen" in a number of European housing projects (1966). According to Ungers, Grossformen redefined architecture's role in relation to the city due to their legibility as a whole. Between Maki's megaform and Ungers' Grossform, there was a divide: while Maki's megaform grew from within, Ungers' version emphasized the boundaries.

Situated at the rift between an internal organization and its relation to its outside, megaform also corresponded to different views regarding architecture as a discipline and practice. Alan Colquhoun described part of megaform's historical urban context as "superblocks," or "large pieces of real estate . . . financed and organized as a single entity" (1971). In this context, Reyner Banham located the impetus for "mega-" within a conviction in the capabilities of architecture as a comprehensive design profession. (1976). When Frampton revisited the term in "Megaform as Urban Landscape," he expanded it to a broader context. Detached from the technological utopia of megastructures, megaform became a project that provided an alternative to masterplanning and acquired a distinct definition that emphasizes architecture's potential to create a ground for the modern society.

Forty years after Banham named Montreal the megacity, the notion of megacity is once more prevalent and describes a reality that encompasses informal urbanism across the globe. Megaprojects, are part of the contemporary built environment. Whereas the earlier impetus for mega- may have come from a conviction in the comprehensiveness of architecture, today's mega- seems to refer to an ever-expanding economic condition. In this context, revisiting the history of "mega-" in architecture may help address questions of public space and territorial transformation. This paper will consider specific historical and contemporary examples such as the Confluence district in Lyon and Hudson Yards in New York to theorize current large-scale urban projects.

“Off-planning”, The Urban Tactic of Latin American Cities

Diana Maldonado, ACSA Introductory Member

Latin America is the most urbanized and unequal region in the world. According to the statistics, the South-continent has 623 millions of inhabitants, and approximately 187 millions of them live in poor conditions. This geographical number is manifested as squatter settlements. Still the general idea, the megacities of the region only concentrate 14 per cent of the population, while more than a half of urban inhabitants live in secondary metropolis. The “other urbanization” represents the linking element between this city-typology, thus, they are fundamental pieces to confront the new urban agenda.

The integration projects for the squatter settlements have been thought from the modern planning systems: “superblocks”; serial housing; habitat production by participation processes; public space; and architectural artifact as public space. Nonetheless the efforts of the spatial professionals, the “other metropolis” are built parallel from the “formal planned cities”; hence, concepts like sustainability, the right to the city, urban rights (Jordi Borja, 2013), have become complex ideas to challenge any urban future. Thus, this paper argues that

the squatter settlements represent the "planning of what if", meaning the Latin American "Off-modern". (Svetlana Boym, 2001).

The "off-modern urbanization" is not free of hegemony, oppression, power forces and spatial injustice (Edward Soja, 2010); however, it represents the urban resilience, the Terra Incognita where new planning ideas should be thought (Rob Shields, 2003). Using examples from Mexico, I firmly propose the theoretical concept of the "Off-planning" based on four hypotheses: 1) Squatter settlements as the proto-cities of the 21st century 2) Post maps as tools to re-shape the idea of city 3) Hyper-hybridity as the new urban condition 4) Putting the other urbanization first: for a reversed history of Latin American cities. This assemblage represents the initial step in the long way process to build another kind of engagement with the urban reality. Only from the "Off-planning" will be possible to create new urban strategies to face the post-global city-structure.

Estrategias para transformar la ciudad: Caracas del valle al mar, guía de arquitectura y paisaje

Ivan Gonzalez, Facultad de Arquitectura y Urbanismo - UCV

El ensayo propone revisar como la construcción de una guía de arquitectura, "Caracas del valle al mar," puede ser un valioso instrumento para liderar su transformación urbana. ¿Como aproximarse a la complejidad de una ciudad? ¿Cual es su forma, como ha crecido, que elementos y que obras de arquitectura le otorgan sentido?

Mas allá de explicar su fisonomía mediante la representación de su trazado, la manera en que se "presenta" a cualquier visitante en una estructura tan compleja como una ciudad, requiere repensarla. En ella se superponen distintas capas de lectura, que abarcan desde la historia, su identidad, su marco geográfico, su crecimiento, evolución y estructura urbana, su arquitectura, su patrimonio, sus principales obras de infraestructura o sus iconos arquitectónicos y paisajísticos.

Conocer su forma ha sido históricamente un problema complejo, hasta el punto que muchos urbanistas y arquitectos han declarado que su entendimiento de las ciudades solo fué posible gracias a la aparición de Google Earth.
Las guías de arquitectura se sustentan en dos axiomas: "observar para poder descubrir" y "conocer para actuar".

Autores señalan que "la idea de recorrer la ciudad ha perdido su aire de aventura espiritual" . Ante esto, una guía puede ser útil para recuperar la fe en la posibilidad del descubrimiento y de que éste nos resulte relevante y transformador, frente a la saturación de imágenes que nos ha hecho creer haberlo visto todo. La construcción de una guía de arquitectura y ciudad, bajo la mirada espiritualizadora del arquitecto, que es quien otorga sustancia al hecho de la forma, es muy distinta a una construida con fines turísticos. El arquitecto busca con vehemencia imágenes que lo sorprendan y, una vez que aparecen, trata de entender las estructuras y sistemas que las originan y sustentan, para luego armar un relato propio.

Una guía es también una narración de múltiples lecturas y acercamientos sobre la ciudad y puede ser un instrumento estratégico para tomar decisiones sobre ella, enfatizando aspectos que a veces al ciudadano o al gobernante le son vedados o no le resultan obvios, despertando ideas que le den forma al futuro.

Si existe una ciudad privilegiada geográficamente, que necesita desesperadamente ser comprendida, retomar su brillo y ser consciente de su belleza innata e indestructible, esa es Caracas.

La capital que una vez estuvo volcada al futuro, optimista, moderna, y fue un emblema sudamericano en los años 50, gracias a la renta petrolera, hoy se encuentra fuera del panorama latinoamericano y mundial, señalada como una urbe caótica, maltratada, insegura y rezagada en la construcción de proyectos urbanos innovadores y transformadores, sin políticas públicas que promuevan el interés en ella. Una ciudad casi invisible, carente del pujante desarrollo de otras urbes latinoamericanas y que luce a veces ingobernable, e indescifrable.

Resulta útil entonces mirar a Caracas con una herramienta que condensa una forma de relectura, útil a propios y visitantes, que valora el pasado, evidencia el presente y delinea su futuro.

Self Storage Cities: a New Typology of (Sub)urban Enclave

Miti Aiello, NewSchool of Architecture and Design

Storage facilities are exhibiting an unparalleled growth in recent years: according to the Self Storage Association, the self-storage industry has been the fastest growing segment of the commercial real estate industry over the last 40 years. It has been considered by Wall Street Analysts to be "recession-resistant". As of yearend 2013, there are more than 48,500 storage facilities in the U.S, occupying a total rentable space of 2.3 billion square feet. This is an area three times the size of Manhattan, New York, and in continuous growth. From the economic standpoint, self-storage units are extremely lucrative: a non-climate controlled 10'X10' area of empty space has an asking rent of an average of $115/month . As of 2013, close to 9% of U.S households currently rent a self storage unit.

In The New Urban Sociology, Mark Gottdiener and Ray Hutchinson write that the contemporary metropolis is the consequence of the complicated and continuing interaction of economic, political, and cultural forces. This paper examines the phenomenon of storage facilities on a macro-level, as urban/exurban enclaves. It aims to confront storage cities both as "cities of stuff" and "housing for stuff" within North American urban ecology. In the periphery, arrays of storage facilities are part of the shipping/manufacturing landscape and assume an identity that goes beyond the sprawl model and anti-urban zoning laws. Within the urban fabric, storage buildings represent both container and camouflage architecture, and are perfect examples of what Professor Crawford calls "background buildings".

From the socio-economic point of view, storage facilities are fascinating: they embody currently popular issues of surplus, hoarding, and are a physical reminder of the consequence of conspicuous consumerism and planned obsolescence. The issue of "material excess" becomes an exurban pathology, endemic to a culture of wholesale commerce and warehouse buying experiences. The clutter culture can be mapped and becomes tangible in the form of the 'country of storage facilities', a veritable document to "stuff/ material obesity".
How do we, as architects and urban designers, confront and negotiate with the typology of the self storage facility and the new urban/exurban enclaves that these commercial containers of spaces , clustered at the periphery of cities, have created? How can we better understand the nature of the singularly camouflaged "housing of stuff" often found in the downtowns of second-tier U.S cities? The content of these buildings, the "user" if you wish, is constituted entirely of stuff we cannot or do not wish to fit in our homes. What is it that we store, and why?

The enclaves created by self storage cities demand a new terminology within the vocabulary of suburban sprawl, being often part of "light industrial " parks, finding their natural habitats in the no-man land left behind by city planners, shared by unwanted space of fenced lots, warehouses of dubious nature and non-descript sheds. This sanitized, privatized "secure" space embodies a new type of sprawl within the continuously shifting (sub)urban reality.

New Trajectories in Academia: Indeterminate Urbanisms

Date : Wednesday, June 29, 2016
Time : 2:30:00 PM - 4:00:00 PM
Location : Auditorium North

(re)Weave: Adapting Urban Obsolescence in the Great Lakes Megaregion

Gregory Marinic, Syracuse University
Matthew Leonard, Syracuse University

In the Great Lakes Megaregion, current socio-economic trends challenge the inevitability of new construction and look increasingly toward the adaptation of existing buildings and obsolete infrastructures. As urban environments become less dense, and subsequent base building opportunities more rare, architects and designers are embracing the inherent value of adaptive reuse. Shifting territories and scales, architects and designers have begun to develop a greater awareness on next-use opportunities for existing buildings and infrastructures which have grown more demanding and complex.

Within and beyond the region--confronting divergent issues of both growth and shrinkage—adaptive interventions at the scale of individual buildings and cities will migrate toward the center of contemporary design practice. Operating within the realm of existing conditions, adaptive interventions offer ways to address urban obsolescence in shrinking cities and higher densification in growing ones, resulting in a dynamic overlap of alternative practices. Increased focus on such contingency enhances the imperative for designers to view the built environment through stewardship–fostering connectivity among the environmental, economic, and social dimensions of design practice at the scale of the city. Like a form of urban acupuncture, small and incisive actions facilitate broader resilient strategies within established buildings and urban forms. To address this new adaptive design practice, our field must advocate for expertise bridging disciplinary territories as its primary distinction.

This proposal presents an urban scale project addressing obsolescence in the Great Lakes Megaregion, more specifically, an interstate viaduct that cuts across the heart of downtown Syracuse. In 1944, the passage of the Federal Highway Act initiated the era of interstate highway construction that came to redefine urban life in the United States. In 1947, the Urban Area Report for the Syracuse metropolitan area proposed a north-south highway for the region that was later incorporated into a federal plan that would become the Interstate Highway System. In 1958, the I-81 corridor though central Syracuse was aligned along Almond Street to coincide with the site of the Near East Side Urban Renewal Area. The elevated viaduct was constructed in three phases opening between 1959 and 1969. The construction of the final section, a 1.4-mile elevated viaduct, was delayed due to issues of property acquisition and relocation of residents.

Controversial from the very beginning, I-81 tore a divisive swath across the heart of the city. Today, portions of the 3.75 elevated section which bifurcates the central business district are nearing the end of their lifespan. This speculative design-research based undergraduate studio forecasted an alternative future by investigating adaptive reuse and deployable architectures as a way to remediate the I-81 CBD viaduct. Rejecting tabula rasa approaches to urban design, these projects sought to rethink an obsolete infrastructure through the introduction of deployable housing, public space, pedestrian amenities, and bicycling infrastructure. The project offers a case study on the impact of infrastructural obsolescence on shrinking cities, reforming urban renewal, and resilient growth strategies mobilized through adaptive and incremental means. The lessons learned here are transmutable to cities across the Americas.

Breaking Architectural Boundaries: Collaboration with Landscape Urbanism in Architecture Education

Tae Seo Koo, Hanyang University

Architectural education in an academic environment has clear academic disciplinary boundaries. Students are educated within these restricted disciplinary settings usually called by the name of “Major.” However, in the “real world” situations, architectural problems need collaborative design solutions including Urban Planning, Landscape Architecture, Civil Engineering, and many other design disciplines.

Global scale environmental problems have emerged with the definite demand to cooperate with an interdisciplinary design approach, and it is hard to define what disciplines are responsible for solving these environmental issues. Architecture as one of the most important

leading environmental design disciplines has the fundamental responsibility to create space with sustainable stability in a variety of scales within urban context.

Landscape Urbanism produced a new implement to generate design ideas, to expose students to contemporary design ideas, to explore the relationship among various design disciplines, to develop an understanding of the theoretical and pedagogical contexts, and to explore the potential research and critical thinking benefit from the previous processes. It is also used to learn the methodological and analytical outcomes between architecture and landscape architecture. Through this structural and systematic approach in education, more critical and practical design ideas were revealed and architectural design education is applied to this new trend to provide ideal environmental solutions for the next era. Through the lens of landscape architectural perspectives, architectural solutions have the opportunity to expand the architectural perspectives usually limited to its own boundaries. Such developments require sophisticated understanding of natural and urban processes, as well as interdisciplinary and collaborative design considerations.

This paper will present the current educational development of the conceptual application of Landscape Urbanism to Architecture education at Hanyang University, the first university providing a Landscape Urbanism major in Korea. The mission, the trials, the challenges, and the academic curriculum structures are investigated to indicate the current situations of the laboratory of Landscape Urbanism.

Through the rapid economic growth and physical development process, numerous cities in Korea were developed without considering the hierarchy of the city, green space, open space, public space, and city parks. Environmental problems are associated with this rapid development of the city; and scholars, researchers, and city developers have tried to find urban scale solutions. In response to this question, landscape urbanism is used as one of the most successful tools for providing academic interpretation not only for architectural perspectives but also for landscape architectural ones.
This paper will also discuss the interdisciplinary role of architecture and landscape architecture to build integrated built environments that have both physical and theoretical meanings within Korean urban contexts.

Design Anthro Africa 101
Donna Cohen, University of Florida
Brenda Chalfin, University of Florida

Employing the combined lens of Architecture and Anthropology to explore the changing forms of Africa's built environment, this paper reports on preparations for local "in-the-field" engagements. Given the need for cross-cultural communication and models of cooperation as well as understanding of political and economic processes that underwrite global inequality, the time seems ripe for Architecture to embrace issues and methodologies of contemporary Anthropology. Is this truly a viable proposition productive of new partnerships and architectural projects bridging diverse locations, identities and positionalities? This paper explores these concerns by sharing the activities and outcomes, including the failures, of an academic collaboration between North American and African Architecture and Anthropology faculty and students around Africa's Built Environment: Design Anthro Africa 101.

Unquestionably, Architecture is emerging as the centerpiece of development design across a rapidly transforming Africa. This is a function of unprecedented capital and population mobility, urban growth, climatic and cultural shifts, and transfers of knowledge and technology that reposition the agents and endpoints of development around large-scale and sustainable improvement in standards of living and structures of opportunity.

Integral to these trends is a continent-wide effort to expand architectural education. Architecture schools and practicing architects are acutely aware of their role in educating students along with citizens, government officials, donors, and investors about the importance of the built environment in relation to development ideals. These efforts increasingly draw attention to the merits and possibilities of popular and vernacular architectures, community participation, and the mobilization of indigenous materials, construction techniques and design-solutions to enhance and enable development outcomes. By no means are these inward-looking, strictly nationalist or nativist agendas. Rather, they are bound-up with highly cosmopolitan circuitries of personnel, plans, funds, and fabrication techniques. Architecture schools and practitioners are likewise engaged in a pan-African conversation to create methods and curricula appropriate to future needs and the common challenges of artistic and aesthetic aspiration in a world where power and resources remain unevenly distributed.

Though decidedly forward-looking, today's architectural engagements in Africa unfold against the backdrop of an earlier history of architecture-based development interventions, and the longer legacy of architecture as a field of practice by and for elites. Taking stock of this common heritage of European colonial and post-colonial influence and more recently, a host of Chinese-built and funded architectural projects, architecture schools and professionals in Africa are now making a self-conscious move in a new direction attuned to the promise of international partnerships yet driven by on-the-ground conditions and priorities and wary of the lingering positioning of Africa as laboratory for better endowed actors and institutions.

How then might we reach our goal of entering this arena as architects and anthropologists? The preparatory process of disciplinary crossing itself questioned assumptions and informs our response. This paper reports our studies in Design Anthropology, including student-conducted "key-informant" interviews; considers curricular transformations now in evidence in 3 African programs in transition; underlines commonalities in our disciplines; and proposes strategies for productive engagement within the intrinsic contradictions of locale and place.

New Architectural Trajectories-Operating at the Intersection(s) of Rupture(s) Recovering Architectural, Cultural and Ecological Landscapes through Design Acupunctures

Shannon Bassett, University At Buffalo, SUNY

How might we recalibrate the processes and methodologies in which we teach and design in order to address the pressing environmental paradigms and global stresses, both within a global perspective framed within broader academic discourse, while simultaneously addressing the local?

This paper posits that these processes and methodologies might operate at the intersection of rupture(s) through design acupunctures. This includes working across scales of investigation, as well as multiple directions of flows, beyond that of architecture simply as object. Additionally, this includes the dispelling of binaries still prevailing in architectural discourse and practice and, rather, working at the very ruptures of these contexts. Included are: the informal vs. formal; rural vs. urban; constructed vs. landscape, western vs. non-western… I will discuss these new architectural trajectories through the lens of key design research, as well studio projects, which I have conducted within China as a test bed for these methods of working.

China is, arguably, currently facing some of the worlds most challenging global and environmental stresses, Design frameworks for recovery might exist across multiple scales of intervention, operating within larger global contexts, simultaneous to local contexts. These projects operate at the intersection of ruptures, proposing alternative forms of design and development through the intersection of architecture, culture, and ecological systems. Speculative Surfaces for the Tianjin eco-city, proposes an alternative form of development for the coastal/delta city of the Tianjin eco-city through landscape and ecology as urbanism; Shanghai Water Urbanisms, recovers of the Shanghai post-industrial waterfront through public design and ecology, Village Acupunctures, examines a critical re-thinking of the prototypical Chinese village, through a architecture research studio located in an Anhui village, Adopt a Farm engages architecture as strategic design, re-connecting Shanghai urban dwellers to the countryside through organic food, including choreographing the overlay of new digital networks and situated technologies.
The recent eco-city, as well as low-carbon city project in China initially presented the potential to address a number of issues of sustainability. This project, operating at once at the global scale, at the highest governmental scales, a "model city" in a collaboration between the Central Chinese and Singapore governments. It can be critiqued that they have been lacking in an entirely integrative sustainable design and that their construction and development have, undermined their actual landscapes and the eco-systems services in which they provide, in addition to being disruptive to local ecologies and economies at the local scale.
The Village design studio proposes a series of architectural interventions with ecological planning in a rural village in China. Typological interventions at the architectural scale re-interpret village archetypes with hybrid programs, working simultaneously at the scales of the global and of the local.

In conclusion, these projects offer frameworks for new processes and methodologies for designing and teaching architecture, addressing predominant paradigms of pressing environmental issues and global stresses, while addressing both global perspectives within broader academic discourses while at the same time as addressing the local. This includes the dispelling of binaries and the working at the very ruptures of these contexts.

Cities/Urban Tactics: Strategic Engagements

Date : Wednesday, June 29, 2016
Time : 4:30:00 PM - 6:00:00 PM
Location : Auditorium FADEU

From Crisis to Projects: The Warren case study of a shrinking first suburb in Metro Detroit

Anirban Adhya, Lawrence Technological University

Global urban development is currently characterized by varied combination of metropolitan growth and urban core shrinkage. While much of the shrinkage is concentrated in central cities, first suburbs are now facing the same problem. The Detroit metropolitan region is an illustration of dynamic urban condition shaped by prominent forces of housing market dynamics, new suburban demographic, labor-market restructuring, and metropolitan fragmentation. In this paper, Warren, the oldest first suburb of Detroit, is examined as a case study of a shrinking city facing crisis of economic downturn, automotive restructuring, high unemployment, and real estate foreclosures. Within this context of foreclosure crisis, the research questions are: how existing agencies and institutions (like local governments, community organizations, business groups, and schools) might work at the neighborhood, city, or regional level to address foreclosures? How it might help or reduce foreclosures? How can we reuse and revitalize foreclosed properties and abandoned lands? And what specific lessons can be learned that might be applicable in other cities?

These questions are specifically explored through documentation and analysis of existing resources and current efforts in Warren. The salient features of the Warren case study can be described as: (a) examining problems of shrinkage and challenges due to foreclosures in the City of Warren, (b) focusing on the existing assets and resources in Warren, (c) understanding current efforts of existing agencies and institutions in Warren to address the challenges of shrinkage and foreclosures, and (d) applying multiple data collection tactics (such as literature review, interviews, and mapping) focusing on different stakeholders (county and city government, community members, business organizations) and their activities in specific urban settings.

The empirical methodology reveals current efforts in Warren to (a) control the decline in neighborhoods and maintain quality infrastructure using federal grants, (b) nurture a diverse environment leveraging local religious institutions, (c) encourage entrepreneurship using strategic design projects for incubator space, and (d) develop shared public infrastructure and service utilizing creative partnerships and strategic collaboration in the region. The Warren model is a narrative of (a) maintaining the status quo while increasing flexibility in policies and planning (to maintain stability in old shrinking neighborhoods amidst foreclosure problems), (b) fostering cultural initiatives (to support the new suburban demographics), (c) promote economic diversity based on new technology (to address changing labor market restructuring), and (d) strategic collaborations and creative partnerships for shared resources and services. The questions raised here and the findings in Warren allows continued examination to better understand the processes of shrinking city, the agencies and institutions working to address the problem, and role of multiple-scale projects in sustenance of first suburbs and their vitality in the metropolitan United States.

With the help of these tactics, the first suburbs—strategically located between the urban core and the suburban periphery—could become new models for adaptive reuse, smart growth, economic entrepreneurship, and social diversity. The Warren case study illustrates strategic opportunities for flexible policies combining rightsizing, shared maintenance, and incremental development in struggling first suburban communities, which are less studied and often ignored.

Growing landscapes in the Shrinking City. Infrastructural Governance and Other Agents of Change

María Arquero de Alarcón, University of Michigan
Jen Maigret, University of Michigan

"Water lies at the intersections of landscape and infrastructure, crossing between visible and invisible domains of urban space. Water forms part of the material culture of modernity, ranging from the private spaces of the home to the vast technological networks that have enabled the growth of cities, yet it is also powerfully inscribed in the realm of imagination." - Matthew Gandy, 2015

Located in the most densely urbanized sub-basin in the Great Lakes, the cities of Cleveland and Detroit are paradigmatic cases of Rust Belt Urbanism. After decades of sustained loss of

urban tissue and population, these urban landscapes currently comprise a mix of outdated industrial, commercial and residential fabric underserved by archaic infrastructure. Learning from the work championed by smaller urban areas in the region, a series of initiatives are starting to infiltrate the pervasive condition of the urban wilderness to reimagine vacant land as an opportunity for infrastructural innovation. Ranging from strategies at the metropolitan scale, to tactics that activate a parcel at a time, these efforts to reintroduce performative landscapes are building a new land stewardship agenda in North American post-industrial, legacy cities.

This paper elaborates on the dual nature of these emerging landscapes, and their institutional and civic relevance. On one side, as environmental infrastructure, they recast exhausted land use typologies to augment the ecological performance of the city's grounds, alleviating the environmental crisis around water quality in the region. On the other, as civic infrastructure, these landscapes operate in a cultural dimension able construct new identities and urban imaginaries. Furthermore, the paper reclaims the potential for design practices to participate in a scientific, engineer-dominated arena, through the synthesis of environmental and cultural opportunities and advocating for new models of collaboration and community engagement.

As the physical nature of infrastructure evolves, the institutional frameworks and agents involved also transform. Mirroring this shift from a technocratic and bureaucratic approach to infrastructure to a hybridized matrix of green + grey, the governance of these growing landscapes now includes a myriad of actors involved in their design, financing, implementation, programming and maintenance. Examining a series of initiatives under development, this paper illustrates the interplay between the public administrations, philanthropic organizations, local non-profits, community associations, and private sector constituents acting as sponsors. The complex financial structure that these initiatives demand requires novel partnerships and challenges old models of single expertise and mono-functionality.

Ultimately, we illustrate how our creative practice and teaching initiatives enact design to catalyze the interplay between natural processes, infrastructural intelligence and civic engagement. A series of speculative proposals synthesize disciplinary approaches, address typological considerations, and employ formal and material tactics to transform the physical, performative and experiential qualities of around the imagination of the urban waters. The projects emerge as a spatial expression of civic opportunities that signal a new era of public works where decentralized and multifunctional infrastructural systems instigate a new paradigm of landscape governance for long-term declining American cities.

La arquitectura como sistema. Catalizadores urbanos para Lynchburg, Virginia

Luis Pancorbo, University of Virginia
alexander Wall, University of Virginia
Iñaki Alday, University of Virginia

Este artículo propone un análisis crítico del taller de proyectos "ARCH 2010. Introduction to Urban Architecture studio". El taller se enmarca dentro de una estrategia general de la escuela de arquitectura que trata de subvertir el método tradicional de la enseñanza del proyecto arquitectónico. Este proceso lineal, en el que normalmente se parte de un objeto arquitectónico de pequeña escala para posteriormente proyectar en escalas progresivamente mayores, se transforma en una transición escalar sinusoidal, que surge de la escala urbana. El objetivo final del estudio es proponer un proyecto de arquitectura urbana que utilice el objeto arquitectónico y el paisaje urbano como catalizadores para el cambio dentro de la ciudad. La propuesta arquitectónica debe ser una respuesta estratégica y reflexiva a la investigación previa y al diseño urbano, y debe apoyar la revitalización de la vida pública en su entorno inmediato y en el conjunto de la ciudad.

Dentro de esta estrategia general descrita, el curso que se analiza supone el primer estadio dentro de una secuencia de cursos posteriores. Por ese motivo su adecuado funcionamiento es vital para el éxito del proyecto educativo completo y se ha prestado especial atención no solo a los diferentes ejercicios enlazados que lo componen, sino también a las transiciones entre estos elementos. Se pretende que que el alumno entienda y sea consciente de la coherencia total del proceso en cada momento de su desarrollo, por lo que una de las prioridades del curso ha sido producir zonas de solapamiento entre ejercicios consecutivos de cambio de escala para evitar la existencia de lapsos y saltos que pudieran entorpecer la visión constante del marco global de acción.

En el artículo por tanto se analizaran con igual atención crítica las distintas fases del curso y estas zonas de solape, que se definen por medio de micro-ejercicios de cambio de fase o de

sutura, pensados para evidenciar constantemente la coherencia y sistematicidad del proceso total y vencer la inercia tradicional en la enseñanza del proyecto basada en los axiomas de la pura objetualidad, completitud y autonomía del objeto arquitectónico.

La primera parte del semestre se organiza en torno a una serie de proyectos que se han diseñado para desarrollar la capacidad de reconocer y comprender sistemas complejos, energías y transformaciones posibles para la ciudad. Estos ejercicios incluyen el análisis interpretativo de precedentes urbanos, la síntesis de información objetiva y la construcción de conceptos y estrategias de diseño a partir de las que pueda surgir un proyecto final considerado como un catalizador de la vida urbana. En la segunda parte del curso, el proyecto se ubicará en Lynchburg, Virginia, una ciudad con unas excepcionales cualidades orográficas e hidrográficas y con un rico pasado cultural e industrial que proporciona un marco que ejemplifica perfectamente las derivas urbanas actuales que tienen lugar en muchas ciudades norteamericanas.

New Orleans: A Model 21st Century Cross-American Water City?

Derek Hoeferlin, Washington University in St. Louis

Much has been accomplished – and much debated – since Hurricane Katrina made landfall outside of New Orleans in 2005. There have been many successes – and many failures – in regards to the recovery, rebuilding and resiliency of the unique "Cross-American" port city. Social, economic and environmental justice issues have been brought to the forefront, in the wake of an unprecedented human-altered "natural" disaster. This paper will not attempt to regurgitate what has been critiqued and promulgated about New Orleans in relation to status quo rebuilding. Rather, the paper will focus on water management efforts and proposals since the storm; and, how these water-centric efforts have challenged existing decision-making regimes, in turn advocating for new governance partnerships, funding streams and design methodologies.

The paper will decipher connections between the myriad approaches – and oftentimes disparate efforts – for water management in the deltaic city. However, all seem to be after similar results: the designing of innovative, multi-scaled urban initiatives with new complimentary governance structures, both publicly and privately supported, that are partnering with design. Each advocates for a paradigm shift of how citizens live with water, over the long-term, cognizant of a tenuous relationship within a disappearing deltaic context.

The efforts range in scale, program and venue from the lot/house scale of raingardens and bio-swales; to neighborhood clustering proposals around retention areas; to district level "floating street" networks; to citywide passive circulating systems supplementing existing "pipe-and-pump" regimes; and, to 100-year coastal restoration visions engaging contrarian interest groups. Out of necessity, the efforts oftentimes blur distinctions between academic and professional agendas, prioritizing entrepreneurial efforts in absence of political will and funding streams. Innovative efforts include, but are not limited to: Dutch Dialogues (citizenled advocacy effort led by Waggonner & Ball Architects, American Planning Association and Royal Netherlands Embassy, Washington D.C.), Ripple Effect (non-profit partnering with the city, developing a water literacy certificate for New Orleans public school students), Gutter to Gulf: Legible Water Infrastructure for New Orleans (academic design-research collaboration advocating for integrated water management strategies), Greater New Orleans Water Collaborative (network facilitating water management technologies, public policy, funding opportunities, partnerships), Propeller (non-profit incubator to launch social and environmental ventures), Public Lab (D.I.Y. citizen-science), among others, such as the Environmental
Defense Fund/Van Alen Institute sponsored Changing Course: Navigating the Future of the Lower
Mississippi River Delta competition; Tulane City Center, LSU Coastal Sustainability Studio; and, Groundwork New Orleans. Many ultimately helped advocate for the Greater New Orleans Water Plan, a massive American-Dutch collaboration led by Waggonner & Ball Architects. Interestingly enough, the plan's client is not a jurisdictional one; rather, it is Greater New Orleans Inc. — aka, local Chamber of Commerce. The plan is meant to forge a long-term economic strategy based on water as security and amenity metric for development. As such, Mayor Mitch Landrieu elevated the plan as a centerpiece project for the Rockefeller 100 Resilient Cities Initiative, timely unveiled at the 10-year anniversary of Katrina and at the COP21 Paris climate change talks.

Ecology: Resource Territories

Date : Wednesday, June 29, 2016
Time : 4:30:00 PM - 6:00:00 PM
Location : Auditorium South

Aesthetics of Pacific Ecologies

Rania Ghosn, Massachusetts Institute of Technology
El Hadi Jazairy, University of Michigan

Ecology is tightly tangled in the capitalist imaginary of the Earth. Dating back to the nineteenth-century conception of an "economy of nature," the etymology of the term ecology, in Greek oikos meaning house or home, is also the root of economy, with the two terms translating as the study and the management of the household. To live in an epoch that is shaped by extensive environmental activities is to be confronted with a home at the scale of the Earth. In Homo Geographicus, Robert Sack notes that "we humans are geographical beings transforming the earth and making it into a home, and that transformed world affects who we are." He adds that the consequences of our geographical agency are more pressing because we are now "geographical leviathans."

The question of resource territories has expanded the scale of the architectural project to that of the Earth. Today the Pacific Ocean, the largest of the planet's oceanic divisions, is the next great frontier, as countries race to claim resources made newly available in international waters through anthropogenic climate change. Oceans are among our biggest resource for life on earth, and also our biggest dumping ground. This transformation of the ocean into a "resource" differentiates between surplus economic value (fisheries, minerals) and unproductive or by-product environmental costs (marine pollution, the great pacific garbage patch). Some projects that respond to the "resource imaginary" have proposed to reconcile the imperatives of the Economy and Ecology. Such visions however contain political disagreement on how to organize the world and its resources: they do not put in question the socio-spatial contradictions inherent to the production of all environments, let alone aspire to transform them. Ultimately, by reproducing technological fixes, such projects are likely to yield similarly (uneven) future worlds. In this worldview, Homo Geographicus is Homo Economicus.

How can we think of the space of the ocean –of both resources and waste- beyond techno-scientific solutions or fixes? Beyond the economic, what is there in Homo Geographicus that deserves our attention, imagination, and agency? Can the political arts, which include architecture, destabilize a taken-for-granted space of 'reality,' 'economy,' and of the 'community of common destiny' that ecology has come to portray? This paper proposes a geographical framework through which design can account for the forms of life, art and politics that are constructed through our relations with the Earth's matter. In a series of projects that explore the nexus of resource-trash in the Pacific Ocean, we explore a speculative aesthetics approach to ecology. These projects reclaim the production of the space of nature into public controversies to connect political ecology with the energy of collective aesthetic experience. If politics is the art of the possible, then the multiplication of the possible requires a reconnection with the many available formats of the aesthetic.

Cross-American Experiences in an Ambitious Energy Reduction and Policy Implementation Project

Thomas Spiegelhalter, Florida International University
Camilo Rosales, Florida International University

This paper is a summary of cross-American experiences while researching and implementing a considerable energy reduction grant in three Latin American municipalities: Valdivia, Chile; Goiania, Brazil, and Port of Spain in Trinidad and Tobago. The project involves over 400 buildings in three different bioclimatic zones. The grant's purpose is to demonstrate how no-cost or low-cost strategies could be deployed as efficient examples of energy savings and greenhouse gas reduction in municipal buildings. The program, conducted through pilot projects, has been designed to influence many other cities in the participating countries and beyond. (Fig.1)

The three year grant finishing in September 2016 has been carried out with the help of three partner universities: Universidad Austral in Valdivia, Chile (UACh); the Universidade Federal de Goias in Goiania, Brazil (UFG); and The University of the West Indies in Trinidad and Tobago (UWI). The three universities involve the participation of architecture and engineering professors and students. The combined expertise in each geographic area, gave the teams considerable capacity to act on the realities of each municipality and individually select what

is practical, expeditious, relevant and efficient for each project. (Fig.2.) The grant is sponsored by the U.S. Department of State, Bureau of Western Hemisphere Affairs based in Washington, D.C. and the managing university, Florida International, is located in a subtropical climate zone in South Florida with notably experienced faculty in international architectural and engineering practices.

The paper analyzes the disglobal realities between U.S. based research and local practices. Even with an open mindset, the cultural differences, labyrinthine bureaucracies, and the variety of building practices and codes have been bewildering. But many lessons and opportunities have also been found. Among those is the different attitude to thermal comfort among the three countries, and especially between our Latin American case studies and the United States. (Fig. 4) While benchmarking baseline consumption with sensing equipment and digital simulations, we have found much lower energy consumption per square meter in Latin America than in the United States. (Fig.3) This has made us reconsider our own green policies and how different environmental attitudes would psychologically influence energy usage despite similar thermal conditions.(Fig. 5)

The Seams Between
Troy Schaum, Rice University

This paper explores a set of projects and practices that respond to the varied urban and wild ecologies of Taiwan. Taiwan is a densely populated and intensively developed urban system set within a varied alpine terrain so rugged that it leaves two-thirds of the small island a lightly inhabited forest. Of nations with populations greater than 10 million, Taiwan's density is second only to Bangladesh. The shift in the island's industrial base has spurred massive investment in new infrastructure and a series of extra-large public architectural projects by global practices such as UN Studio, Toyo Ito, OMA, and RUR. In the shadow of these more renown projects are several important local practices that work along the seams of Taiwan's extreme local ecologies. In this paper, I will investigate several local practices including traditional D'ao Housing of Lanyu Island and the work of Huang Sheng-Yuan of Fieldoffice in Yilan that use the logic of the hyper-local at the seams between the severely urban, intensively cultivated and dramatically wild. These practices deploy formal, temporal and material techniques to penetrate the thin veneer of typical urban development to produce thick surfaces that force redefinitions of categories like natural and developed. Taiwan's ambiguous international status—Taiwan's government has long operated with de facto sovereignty, yet is not officially recognized by the UN— and its island geography makes it uniquely suited for studying the role of architecture in creating a global identity. This persistence of the architectural project situated in an increasingly multifarious urban context forms the basis of investigation into emerging modes of subjectivity and better definitions of architecture's relationship to post-industrial and natural landscape systems.

Because of its long colonial history, strategic location and contested political status—Taiwan's government has long operated with de facto sovereignty, yet is not officially recognized by the UN—it can be alternately and accurately described as any of the following: an independent nation; a mountainous island; an outpost for the exiled government of China; a 200-mile linear city of 23 million; an engine of global manufacturing. Under the strangest condition of all, Taiwan completely disappears; its unrecognized global, diplomatic status relegates it to a geopolitical oblivion.

Urban Farming: Localizing Narratives
Ayad Rahmani, Washington State University

Among the many fascinating attributes of "Broadacre City", its commitment to farming is the most poignant. We may recall that in conceiving of the city F.L.Wright gave each of its residents a one-acre parcel of land, designating part of it to building a house and the rest for cultivating a garden. The produce was to sustain the family of course, keep it independent of central financial and political institutions, but also to empower it to traffic in small business, selling its surplus somewhere in the middle of town, under a communal open air shed.

Wright's experiment benefited from that by Henry David Thoreau who, acting upon the words of R.W.Emerson and other transcendentalists, spent two years out in the woods testing, among other things, self-reliance, including cultivating a major garden. The experiment by and large worked yielding the author enough surplus of food to make money, a modest amount but enough to make it clear that you can live off the land. So passionate was Thoreau about yields and numbers, he at times turned his Walden into a work of math and accounting. Among the many issues he railed against, big industrial farming was the loudest, claiming that it had "deformed" the landscape, "degraded" husbandry and caused the farmer to lead "the meanest of lives."

Today we are finally coming around to act upon these thoughts, perhaps not word for word but in essence, not the least through a revolution in urban farming, often turning brown fields into attractive and productive pieces of land. Dorothee Imbert, writing in Ecological Urbanism, says: "small plot intensive farming has become a viable transformer or colonizer of urban vacant land. Cultivating abandoned or underused lots offers ecological economic social and health benefits."
From New York to Seattle, just to speak of cities in the united states, previously neglected lots, between buildings and on the edge of town, have been repurposed to grow food and help communities develop social and economic bonds. In Detroit, for instance, where communities have been decimated by poor employment and population flight, in 2014 the city "produced 400,000 pounds of produce, enough to feed more than 600 people." (Elizabeth Royte for Food and Environment) And in Camden, New Jersey, another city plagued by poor development, in 2008 "community gardeners at 44 sites harvested almost 31,000 pounds of vegetables." (Ibid)

This paper will look at the historical and contemporary narratives behind urban farming. It will start with the transcendentalists and their manner of seeing in the return to the land the capacity for social reform, and end with an examination of the ideas that have not only blurred the distinction between the urban and the rural, but that in doing so have spawned a new awareness and appreciation in local culture, including local food and slow food movements. Today p-patch community gardens across the United States are busy forging relations with nearby outfits, including restaurants and schools, serving as stewards of social, economic and intellectual growth.

New Trajectories in Academia: Contested Settlements

Date : Wednesday, June 29, 2016
Time : 4:30:00 PM - 6:00:00 PM
Location : Auditorium North

A river runs through it: territory of opportunistic coexistence

Marcel Sanchez-Prieto, Woodbury University
Adriana Cuellar, University of San Diego

To understand urban development is to see the actions of an opportunistic environment enabling social progress. Binational border regions have been characterized by contested territories of desires in constant struggle to the limits that confine them. Usually adaptations react to the pressures of the contested territory, but if seen instead as survival tactics that amplify urban regeneration, we can see illicit acts of urbanism as primary sites of innovation.

In the context of the binational border region between San Diego, USA – Tijuana, Mexico, this region is no exception of witnessing many characteristics of other border regions. Although very few have encountered the constant massive migration of Latin America, these two cities share the Tijuana river watershed and the site of divided dialectics. Until the early 70s the majority of the basin base was constituted by Irregular settlements, rapid urban growth that surpasses urban planning ideals coupled with the national mandate to modernize the city, the river was channelized to sanitize the structure of the city; now once again is at the center of polemic, where new settlements have sprung up of people who have been deported and are living in the channel.

The channelized river has tangibly revealed the mutations and interactions of opposing realities that exposed overtones, exigencies and cutting edges of cultural movements. It is at the hotbed and funneling point of two countries of accepted illicit acts of urbanism; emblematic of an opportunistic landscape were opposing modes of operations are in some cases ignored for the sake of coexistence.

In the midst of this context with thousands of everyday cross-border commuters, binational academic research, architectural practices and governmental agencies overlap in interest to speculate and/or operate, yet still unable to intersect the potential of the region's opportunistic landscape. The river continues to oscillate between legal and illegal actions, becoming an important platform for both students and practitioners to question the role of inner city infrastructures and the urgency to identifying palpable negotiations between utilitarian and social/cultural actions in infrastructures.

The research exemplifies the role of opportunistic landscapes in urban development as social progress, bringing at the forefront academic projects of local universities in San Diego and Tijuana, speculative projects by firms in both sides of the border and competitions by government and publishing agencies.

Delta Building: Science, Engineering, and an Opportunity for Design Leadership

Jeff Carney, Louisiana State University

Trans-disciplinary design research is leading to significant academic production, pedagogical innovation, and in the process transforming architectural design practice. Melding parallel movements of "design thinking" and "team science" , architecture is centrally positioned to achieve significant agency in the increasingly urgent effort to adapt to climate change. In the university setting this has enabled new institutes to develop rapidly, creating new opportunities and challenges for architectural education, research, and practice.

In the face of tremendous environmental challenges ranging from climate change adaptation, large-scale environmental restoration, and storm protection, architects have found opportunities to lead efforts to develop and implement solutions where science and engineering alone have fallen short. Following a series of powerful Hurricanes striking the Gulf Coast and Sandy's devastation of the East Coast the effective integration of design thinking with scientific research is increasingly urgent. This paper argues that academic research programs engaged in this movement are seeing benefits that extend beyond immediate research products. Funded design research can focus curricula, build crucial influence in collaborative academic research, and restore political agency for a profession often lacking a voice. At a time marked by substantial university reorganization, often around funding issues, architecture schools should value this work and leverage it for the benefit of the field.

First, this paper will present the structure of trans-disciplinary design-led research through a series of program case studies. These studies will reveal synergistic relationships as well as institutional barriers to success that schools of architecture should address (or at least debate) in order to move forward. Second, we will present the institutional structure and research projects of the XXXX University Research Center (URC). Through state funded contracts, grants, and competitions the URC has achieved a significant position in shaping the coastal landscape through design leadership. This institute has developed a design based approach that brings together designers, scientists, and engineers to intensively study and respond to the interdependent issues surrounding human settlement, coastal restoration, and flood protection. Four themes will be discussed:
1. Multi-disciplinary design based curriculum development – Implementation of the "Delta Research Minor" housed in the school of architecture,
2. Data communication and visualization – Design of the permanent exhibition called "Shifting Foundations" in the state funded Center for River Studies,
3. Community design, planning, and Outreach – Synthesis and engagement through the Louisiana Resiliency Assistance Program (LRAP)
4. Design speculation within a scientific framework – "The Giving Delta", a winning project in the "Changing Course" design Competition.

In conclusion, the integration of design thinking, team science, and significant funding opportunities for integrated and applied research is empowering architecture schools to not only participate but lead climate change adaptation efforts presenting a transformative opportunity for the field.

The City is a Tree: Doctoral Studies in Sustainable Urbanism

Bruce Lindsey, Washington University in St. Louis

Sustainable urbanism can be defined as the design and management of cities with respect to environmental, social, and economic sustainability and concern for the integrity and preservation of all ecological systems. As a design condition, sustainability requires thoughtful strategies for the distribution of resources and organization of settlements, which are driven globally by the development of urban environments. Sustainable urbanism brings an increasing emphasis on health and resiliency – the ability of cities and citizens to equally flourish and recover in the face of a rapidly changing and unequally resourced world.

Urban designers must effectively lead the multidisciplinary teams that collaborate on urban scale projects and also synthesize the expertise of government agencies, non-profit organizations, and the voice of the community. While current urban design education is structured around the design studio and theory of the urban environment, advanced study regarding the empirical, multidisciplinary, and legal structure of cities allows urban designers to practice more broadly and effectively in contemporary practice.

Riffing on Christopher Alexander's seminal essay "The City is Not A Tree," this paper will present research and ideas which have led to the development of a new doctoral program which, will welcome its first students fall 2016. The paper will also outline the structure of the program and its relationship to other programs in the school and across the university including the school of social work, the institute for public health, and the center for humanities. The Doctor of Sustainable Urbanism (DrSU) program offers a 72-credit hour doctoral degree in Urban Design. With a strong foundation in applied research, the program will prepare graduates to contribute to the design and redesign of cities that are more environmentally integrated with natural systems, healthier, less dependent on scarce natural resources, and more socially just.

By 2050, 75% of the world's population will live in cities. It is clear that the future of architecture and landscape architecture is sustainability and the future of sustainability is sustainable urbanism.

We Are The Stories We Tell

Clare Cardinal-Pett, Iowa State University

The history of architecture and urbanism refuses to budge from its Eurocentric narrative. While calls for a global approach continue to challenge details of a very durable tale--adding more details to an unchallenged armature--the problem of flawed and patently false fundamental assumptions remains the dominant pedagogy of architectural history at most institutions worldwide. Using examples from the history of architecture and urbanism in the Americas, this paper demonstrates how a revised account of the evolution of the built environment in the Western Hemisphere serves as a model for rethinking what and how we teach. Although the author acknowledges the value of more comprehensive global

perspectives and supports those efforts by scholars and teachers, this paper focuses its attention to a region that has been especially misrepresented, the Americas. It strives to demonstrate how some elements of the Eurocentric structure do not survive scrutiny in a history based on information gleaned from recent scholarship in disciplines outside the circle of architecture's traditional texts --archaeology, anthropology, geography, and environmental history.

The argument put forth here is simple: understanding what actually happened in the Americas before 1492 enlightens our understanding of the contemporary architecture and urbanism in the Americas. While implementing a revised history--or histories--is not so simple, this paper assumes that the "increased contemporary need to develop strategies to cope with future stresses" can be addressed, in part, by rethinking the stories we tell about how we got to the present human condition. This paper hopes to make a contribution to the broad academic discourse about global issues by demanding we revisit false assumptions that do not serve to illuminate real places, people, and practices.

The paper anchors its position in the exposition of two fundamental and persistent myths. Building upon the work of archaeologist Tom Dillehay, the paper corrects a common misunderstanding about the first peopling of the Americas, which occurred much earlier than common knowledge allows and spread more people with more diverse life-ways more widely than conventional histories suggest. The very idea of very diverse cultural beginnings—geographically, ecologically, and sociologically—offers one important revision of perspective. A related myth that retains a false hold on the historical imagination is what geographer William Denevan called, "The Pristine Myth," in his revolutionary essay of the same name published in 1992.* The idea that the Americas were "a sparsely populated wilderness—a world of barely perceptible human disturbance" is a false assumption that allows historians to ignore thousands of years of human transformation of the Western Hemisphere, which "was a humanized landscape almost everywhere" when Europeans first arrived. Although disease quickly decimated indigenous populations and the consequential cultural collapse was profound, the indigenous presence did not vanish. This paper offers several examples of how preexisting urban form, transportation infrastructure, and construction methodologies helped remake the colonizers on the terms of the colonized.

*Denevan, William, "The Pristine Myth: the Landscape of the Americas in 1492," Annals of the Association of American Geographers, Vol. 83, Issue 3, 1992.

Architecture/Practice: Pre-Modern Training For a Postmodern Practice: Advancing Practice

Date : Thursday, June 30, 2016
Time : 9:30:00 AM - 11:00:00 AM
Location : Auditorium South

Advancing Practice: how can emerging models of doctoral study help support architecture and creative practice?

Sally Stewart, The Glasgow School of Art

Advancing Practice: how can emerging models of doctoral study help support architecture and creative practice?
Can doctoral study provide practitioners with a valid approach to expanding their understanding of personal practice, and to deepening and future proof practice thinking and agency? This paper aims to explore the potential for doctoral education to develop research for practice and to support the very development of architectural practice itself.
The formal education of architects has tended to end with the completion of professional accredited programmes, and at the point of entry to the profession. While providing a springboard into practice, the resulting trajectory appears of limited range. While CPD remains essential, few architects return to the Academy to develop specialisms or to interrogate and develop their own creative practice in a more robust and rigorous way. While the length of the formal education and a lack of funding have been seen as barriers to postgraduate and doctoral study, research degrees have often been focused on technology, history and theory where research activities and outputs more comfortably connect to accepted academic research norms.

But what can doctoral level study offer practicing architects, who see themselves first and foremost in engaged in a creative practice? How can creative practice in its many guises be embraced as a legitimate and vital form of research? Can that research be at " zero distance" from the practice itself and provide new knowledge and understanding to support the sustained development to maturity and master.

The ADAPT-r network of seven European schools of Architecture, aims both to build research capacity for creative practice through developing research training consistent with practice, and in considering how networks and peer review can best serve practitioner researchers. Initiatives such as the Scottish Graduate School for Arts and Humanities can provide insights from other disciplines as to how architectural research might form the basis for the shaping of future practice itself.

These projects point to the necessity to rethink how and where doctoral education and practice meet, particularly if our understanding of practice is to deepen and the range of disciplinary research necessary to support this is to be recognised.

If practice at its best is an activity that involves speculation, exploration, reflection and reflexivity how can Architecture schools develop structures that better engage with this dynamic activity, and support mastery in practice and in the profession. What are the opportunities and challenges this presents for schools of architecture in attracting and supporting research for practice?

The paper will also consider how developing models such as PHD by design and by practice currently emerging in architecture schools, which may offer both the opportunity for practitioners to evidence their mastery of practice, and to advance the discussion of architecture as a discipline and creative industry.

Builder of Enthusiasm: Shaping a New Profession for the Machine Age

Choon Choi, Seoul National University

A closer study of the profession of industrial design, as an antithetical practice to architecture, reveals more than what architecture is not; it brings to light some of the residual values in the architectural profession, and inert forces within it, responsible for the dilating disparity between architecture and society at large. The origin of such disparity can be traced to the pioneers of modern architecture, who were reluctant to revise antiquated values according to the ethos of new technology. During the post-war decade in America, the widening gap between architecture and society was perceived with more acuity as industrial designers shaped their new profession by donning with relish the garments of the Machine Age, while architects remained trapped in the past. By illuminating the historical context in which industrial design as a profession emerged in the post-war America against the backdrop of rapidly expanding middle class and unprecedented material abundance, architects can

recalibrate the future trajectory of the profession in alignment with shifting economic contexts.

International Design Build: Educational & Professional Experiments

Phil B. Gallegos, University of Colorado Denver

In order to bridge the radical gap between practice and education, the undergraduate program has experimented with strategic programs to model architectural practice and education. Our strategy has been to develop a curriculum in international design-build that can employ traditional studio skills of research, design and cultural criticism.
This paper explores the options and the outcomes of the strategic inclusion of international study and practice in the form of an undergraduate design/build course sequence.

In a paper presented to an international design build conference in Halifax, a comparison was made between educational design build programs and professional design build practices. This paper explores programmatic changes to an undergraduate design build study abroad program. It presents student data on expectations, collaboration, international context and pre-training tensions.

The earlier paper compared the differences between educational programs and professional firms. Comparisons included marketing, institutional support, team and individual personality requirements, and financial consequences, both business and institutional. This paper describes the corrections made to an undergraduate design build study abroad program. The newly designed program is in specific response to the previous professional comparisons.

The refined program sequence added a pre-trip class. The class was surveyed to determine student experiences, skills developed, expectations and tensions.

The study abroad portion of the program is to Jalapa Nicaragua. The pre-trip class required training, comparisons and testing of basic premises about the practice of architecture and construction. Those premises included the traditional areas of academic inquiry such as researching on political, economic, climatic, economic context and materials-construction techniques. The implied agenda was to deal with uncertainty of design that can only be addressed in the field. The studio format, as an individual and archaic craft model, was invoked as a means of dealing with uncertainly of individual and collaborative processes.

The students were surveyed in the preparation class to determine acceptance of the academic and design intent given the uncertainty of accomplishing a construction project in an unfamiliar environment. After the study abroad experience, the students were surveyed again to measure achievement of skills, perceptions and expectations.

In the study abroad trip, a working professional from the previously interviewed office volunteered to participate on site. An interview was conducted with her in order to include the context of the first paper's premise.

The initial conclusions include the need to deal with uncertainly as a system of studio and fieldwork integration. The lack of digital clarity requires more aggressive learning in the field about materials and its qualities. Local craftsmanship are often more important to achieving design goals then electronic innovation. However, when properly communicated, some visual innovation can also be accepted and powerful.

The results of the survey of the students, the interview of the professional and the acceptance of the community form a triad for investigation and discussion of global practice.

If strategically instituted, an educational experience has the potential to bridge the gap with practice, and can assist student's ability to deal with larger societal issues in a radically changing international environment.

Simulating Practice : The Value of Craftsmanship

Elizabeth Swanson, University of Kentucky

This paper will argue the importance of craftsmanship (i.e. making by hand) within architectural education lies specifically in its usefulness as a 'first simulation' of contemporary practice for beginning students.

The comparison of the architect to the orchestra director is apt, as each is responsible for the choreography of multiple, varied forces and players within a process that strives for excellence

via precision. Whether designing logistics, flows of information, or more 'traditional' architectural products such as buildings and places, the success of any project is founded on the exactitude of concept and methodology.

For practicing architects, precision is assumed as characteristic of the profession: we expect practitioners to be able to conceive, develop, and coordinate information precisely and effectively, no matter the form, service, or number of moving parts. The same expectation is true of upper-level within studios that emulate contemporary offices, where instructors pose broad-ranging, collaborative projects that inspire students to become hyper-specialized and serve as team expert for specific component of the overall. In both cases, craft can be understood as the skillful choreography of the process itself.

For the beginning student, however, the definition of craft most easily originates in the making of the object. Drawings, models, and other handmade artifacts stand in as client, contractor, and collaborator—demanding precision and exactitude, as well as an understanding of the many non-physical aspects of design processes that affect form (material costs, timing, logistics, partnership with others whose help is needed). Talking about craft in physical terms by asking beginning architecture students to literally make things---whether 2-dimensional or 3-dimensional—immediately manifests the consequences that Architecture, and leaders of Architecture Firms, must bear. While the conception of ideas may arise digitally or by hand, the fact of construction must always be confronted. Architecture is, no matter how we accomplish it, about materials. In making things, students learn that an 1/8" counts; that materials respond to each other in particular ways; that materials cost money; that the shop has hours and the bandsaw and CNC machines alike have long lines one must negotiate. They also realize that when the final, perfectly-crafted artifact exists, all of this choreography momentarily recedes. Like an audience enraptured by Mozart's Requiem, we are entranced by the affect of the object's form; we read the concept precisely because of its exactitude, its attention to detail and fineness of thought. Like the great conductor, the designer disappears. Or, if poorly crafted, we can't get past the fact that it's cardboard and foam with blobs of glue.

In the context of the beginning student, the realizations that accompany the accomplishment of making something well reveal the challenge and role of the designer, and teach one about process itself. A foundation that originates with a consciousness of materials through the handling of materials connects the architect to his end (the built work) and reiterates that all of our efforts in process---which eventually exist in the digital realm--serve the same goal: making things, and making things happen.

Design Strategies: Situated Creative Machines: Matrial Practices

Date : Thursday, June 30, 2016
Time : 9:30:00 AM - 11:00:00 AM
Location : Room A

Creatividad Sustentable: Estrategia de Diseño Integrado de Viviendas Inmobiliarias con Alto Desempeño Ambiental

Rodrigo Garcia Alvarado, U.Bio-Bio
Gerth Wandersleben, U.Bio-Bio

Se presenta una estrategia de diseño de viviendas masivas, integrando evaluación ambiental de la forma en fases tempranas del proyecto, para lograr altos desempeños, reducciones energéticas y aceptabilidad pública. Experimentada mediante un ejercicio con tres equipos de arquitectos que efectuaron diseños alternativos a un caso exitoso de vivienda inmobiliaria en la zona centro-sur de Chile, con simulaciones y modelaciones simultáneas, y revisiones consecutivas de expertos y representantes de potenciales usuarios. Los diseños mantuvieron el programa, localización y materialidad del diseño original, y desarrollaron modificaciones de la volumetría y distribución interior, con simulaciones integradas, buscando rebajar sustancialmente los consumos energéticos, conservando un confort interior permanente y valoración cualitativa de los ocupantes. Sin aumentar costos de construcción, solo ajustando la forma arquitectónica. Las evaluaciones energéticas enfatizaron la compacidad y adosamiento del volumen, así como la reducción de vanos y segmentación interior, mientras que las revisiones publicas plantearon ordenamiento de circulaciones y relación visual con el exterior. Los diseños evolucionaron planteando novedosas propuestas con mejor comportamiento ambiental, alta calificación y factibilidad de masificación inmobiliaria. Se implementó para el ejercicio una plataforma integrada de trabajo (BIM-BPS) y documentación digital, y se efectúo un seguimiento del diseño y revisiones públicas, orientado a analizar los conflictos entre la configuración formal y espacial, con respecto a las reducciones energéticas y aceptabilidad. Lo que revelo la utilización de cadenas de evaluación de alternativas en los diseños, dirigidas hacia ajustes de dimensión y organización de recintos, y una interoperabilidad expedita entre modelos de zonificación, esquemas de plantas y vistas peatonales de interiores al entorno. Considerando entonces una verificación progresiva de las demandas y niveles de confort estacionales, con estimación de gastos domésticos y pautas de calificación para comparar los diseños. Utilizando plantillas de análisis para las simulaciones y estimación de costos energéticos, documentos climáticos y operativos de base, recomendaciones y regulaciones de diseño residencial, como soporte a la utilización de software con capacidad para simulaciones dinámicas certificadas y detalladas y facilidad de uso en la transferencia y edición geométrica. Considerando para los proyectistas una preparación breve en conceptos bio-climáticos y gestión de simulaciones. La experimentación realizada permitió decantar una metodología integrada de diseño espacial y evaluación ambiental, que permite apoyar proyectos de alto desempeño y alcance masivo. Fomentando una creatividad sustentable en los proyectos arquitectónicos.

Local Materialisations

Daniel M. Baerlecken, Georgia Institute of Technology
Judith Reitz, DESIGNDEVELOPBUILD

The paper presents a project where university teams embark collaboratively in the design and construction of a guesthouse for aid workers in Have, Ghana working within a network of stakeholders. The project-based service learning methodology allows students to understand the context of another culture, the social-political environment as well as construction in another country and climate.

Starting with research of local material systems and the local environment to detailed design plans students experience the full range of a construction project. During the design and construction phase students as well as local workers learn how to deal with different construction materials and their specific application. Students learn to work with constraints such as the short construction time, limitations of available materials, budget constraints and local regulations. Students learn to develop a strong awareness for the built environment in the Ghanaian culture and the adequateness of applied construction methods. Students also learn how to work in a collaborative environment of German, Ghanaian and American students as well as work with the local NGO, international and local consultants, Ghanaian construction companies, the local department for planning and architecture and many other stakeholders.

The research focuses on architecture as an investigation of vernacular and neo-vernacular construction techniques that realize itself in a construction project. The appropriate use of indigenous materials in an industrial application process is foregrounded. Within research

labs different methods and standards for alternative building materials based on an empirical as well as scientific research approach have been tested. For an adequate design in a foreign culture, tropical climate conditions and a poor community the implementation of the right materials and construction methods is essential. Which materials are locally available? Is it possible to use non-industrial materials that need a lot of manual labor? Which possibilities are given for re-use, recycling and up-cycling? Can a strong design let a 'poor' material become 'rich'? Which potentials are contained in the material - constructively, energetically, and aesthetically? How can the selective use of high-performance materials and digital fabrication techniques improve an indigenous construction? Those questions were researched and documented in a prototyping catalog, which will be discussed in detail in this paper.

In a reversal of a traditional travelling studio, the program begins with a 1- year long Research and Design phase in the United States and Germany and then continues design and construction in Ghana. Construction is scheduled for Summer 2016. This paper will discuss the outcome of the research and design phase. During all phases the design of the project and its components are changing and evolving in response to local factors, but at the same time the project is grounded into a body of research that allows the design to adapt quickly. This framework will be discussed through the review of the prototyping catalog. The figures 1-4 show a prototypical exploration that focuses on membrane structures.

Panots + Mosaics: Crafting Expression and The Globalization of Hydraulic Cement

Jonathan Rule, University of Michigan
Ana Morcillo Pallares, University of Michigan

Originating in Barcelona in 1857, the inlaid colorful geometric abstractions (Mosaics) and the variety of embossed shapes (Panots) allow for a wide range of nested geometries and depth that generate a formal field condition within the limitations of a horizontal surface. The baldosa hidraulica or hydraulic cement tile was a revolutionary process fueled by the advent and wide spread use of Portland cement. Their production eliminated the need for firing to harden them, which consequently led to their exportation and fabrication throughout Europe and Latin America. This once "global" material today only exists in the local. Recently resurgence in their use has led to a renewed interest in resuscitating this almost forgotten art form. This research project emerged from an interest in preservation and the study of craft techniques as a point of departure to develop an experimental alternative method of fabrication based on new technologies and composite materials. The objective of the research was not to recreate a construction material through true and tested methods but to re-examine the physical properties of the material, the processing and its intersection with new approaches to making as an opportunity to explore alternative territories for fabrication and embedding functions.

The paper intends to reflect on the developmental trajectory of this research and explore a dialogue between Spanish modernist tile making and the architectural expression of Miguel Fisac. The juxtaposition of these two methods of making became the catalyst for the subsequent experimental technique that hybridizes local craft and a once global material with new global trends in making under the rubric of crafting expression through material technologies in hydraulic cement.

Baldosa Hidraulica:
Mosaics + Panots

The genesis of the study finds its origins in the mid 19th century craft of cement tile making and the rise of Modernismo, the Spanish version of Art Nouveau. These 2cm thick tiles made of a layered mixture of decorative and poor cement employed a wide variety of design elements, such as geometric shapes and organic motifs to create intricate flooring patterns.

Architectural Expression:
Miguel Fisac and Material Genetics

As a way to further probe the use of the material, the research began to adapt the exploration undertaken by the Spanish architect Miguel Fisac. The encofrado flexible or flexible formwork was a method developed by Fisac to capture the genetic biometrics of the material and expose its plasticity. This work led to a number of projects for which he developed large-scale concrete panel systems.

New directions:
Crafting Expression Through Technologies

The research currently being undertaken titled 'Panots and Mosaics: The Plasticity of Hydraulic Cement Through Making' is an attempt to fuse the vernacular technique for making cement tiles with the creative exploration by Fisac as a way to generate new approaches to working with this global material and local craft through digitally modifiable flexible formwork.

Ruled based constructions or the materialization of a line in motion
Olivier Ottevaere

Ruled based constructions and the materialization of a line in motion
Through the work of the Architect and Engineer Felix Candela on Hyperbolic Paraboloid surfaces for thin concrete shell construction, the paper retraces how ruled geometries (generalized by a sequence of rotating lines) directly regulate procedures of construction for concrete formwork, made of straight timber elements.

From the conception of the three timber structures, it is discussed how such geometrical principles are further explored spatially, structurally and materially. Finally, a series of subsequent physical experiments are put forward in search of new topologies, generated from the description of a line moving in space.

An initial investigation on timber formwork research is presented through the realization of three timber structures; The Pinch, Sweep and Warp.

Sequences of changing wooden trusses capture the movement of a line to support ruled decks performing as new active grounds. In doing so, the trusses are organized transversally for the Pinch, tangentially for the Sweep and longitudinally for the Warp.
The results are a series of three small scale social programs: a library, a play area and a roadside marketplace.

Located in remote mountainous landscapes (Yunnan, China), each project was designed with a strategy of maximizing the use and experience of the surrounding landscape.
They were each built with students and with the help of a local timber workshop, developing construction methods for adapting highly articulated geometries to simple traditional techniques.
Situated at the intersection of teaching and research, experimentation and on-site construction, complex geometry and local craftsmanship, these design-build projects engage with full scale construction in difficult sites through experiential learning.

A live prototyping exercise further speculates on the line as vehicle to describe geometries of revolution. With the support of a 5-axis custom-made automated hot wire, serving as the main research tool, specific protocols for synchronized motions (4 translations and 1 rotation) are inputted. As a result, new slab topologies defined by movement and time emerge, that would be difficult to preconceive through other means of (digital) fabrication. These protocols of motions are then put to use to section blocks of EPS foam into part-formworks for thin shell concrete casting. By virtue of being described by successions of straight lines, these intricate slabs retain effective structural properties and a direct link to timber formwork and to full scale construction.

As much prominence in (digital) fabrication has been placed on surface definition machined from sheet materials, the presented prototyping procedure seek to reinstate the merits of working with volumetric materials. To this effect, a parallel is drawn with stereotomy. The effective method of stone carving invented by Philippe De L'Orme also made use of 2d geometries to guide the stone cutter in the carving of a block. Although this time, by operating internally in the slicing of a block from the automation of a line moving in space, new spatial articulations in Architecture may emerge again from active geometries solely defined by time and movement.

The Choreography of Piling: Active Industry in the City
Marie Adams, Northeastern University
Dan Adams, Northeastern University

To pile is to accumulate things into a quantity by putting them on top of one another - the word refers both to the artifact and the process of its making. While many globally traded goods arrive anonymously in shipping containers or through pipelines; piles of material stored in open air are a relic of a more palpable era where rail yards and harbors abounded in the sights and smells of material flow. Today, the artifact of the pile is the manifestation of the disjunction between global flows and local environments. It is the architecture of the holding stage between a material's arrival and accumulation from one mode (such as ship or rail) and its distribution into the city through another (most commonly, the truck). As the net

differential between accumulation and dispersal, the pile is a direct expression of material consumption in the city.

Such piles are found in or around most cities. Gravel, salt, sand, cobbles, and scrap metal are piled materials fundamental to the making and maintaining of the built environment. Although they can approach the scale of large buildings and natural landforms, and their presence is a fixture in the built environment, piles in the city are notably overlooked as a matter of design. In recent decades, some artists and architects have explored piles and pile-making as an abstract formal condition or alternative to conventional modes of formal organization, but engaging the pile as an active form-making structure in the city has been confined to designating territories for piles through broad zoning protocols ("industrial"), or through the construction of containers to enclose them (sheds).

Both of these standard practices fail to negotiate the distinctive qualities of piles as a temporary, kinetic, and authentic architecture in the city, and inhibit the collective engagement between the city and the expression of its global material footprint. This paper will present alternative tactics for engaging material piles in pursuit of new notions of authenticity, monumentality, and temporality as a byproduct of global flow, through three realized projects that choreograph the architecture of industrial road-salt piles in Boston and New York. These projects involve the design of temporary public events, lighting installations, and protocols for everyday industrial operations that shape the kinetic form of the piles in dialogue with the city.

Technology: Habits of Craft, Here, There & Everywhere: Material Intensities

Date : Thursday, June 30, 2016
Time : 9:30:00 AM - 11:00:00 AM
Location : Auditorium North

Ethical scripters, beautiful scripts: the role of transparency in the establishment of computational craft

Nicholas Senske, Iowa State University

Is there a "craft" of computational design? How would one, for example, recognize a well-made piece of code? While most architects can appreciate craft in physical media such as sketches, drawings, and models, the discipline does not yet have the same taste and sensibilities with regard to immaterial scripts and software. As computational methods such as big data analysis, robotics, and simulation become increasingly dominant in architecture, there is a need to discuss whether and how craft traditions and craft-related concepts such as quality, rigor, and economy manifest in these new and powerful media.

Computational craft does indeed exist, but it cannot be appreciated exclusively through purely visual and/or physical criteria. While many architects recognize and appreciate complex forms as evidence of computation, this is a superficial perspective. Code is foremost a set of instructions and an instrument of rhetoric. A craft of computation, then, must engage procedural representation as well as visual representation. Unfortunately, it is difficult to critique designers' code because so few architects make it accessible to others in their projects.

A lack of transparency among computational designers inhibits the potential of computation within architecture. Without transparency, there can be no craft. In computer science and other fields with more exposure to computation, it is understood that computer code and other procedural artifacts are more than mere tools and are not the exclusive work of a single author. Open access and sharing are expected. Code is a living part of the community of practice and the evolution of the field, and so its design, structure, and implementation -- its craft -- matters. The same must be true for architects' code in the future.

To explore these ideas, the paper surveys the notion of procedural transparency and authorship in contemporary computational design projects. A criticism of these projects is that architects tend to present their software programs as a means to an end rather than as artifacts in their own right. For example, a designer might publish a beautiful building detail, but would never hold an algorithm in the same regard. This is problematic because privileging only the final, physical form of the architecture limits one's ability to fully appreciate its essential computational qualities and reflect upon a full accounting of its craft. Rather than considering digital work solely under the same terms as analog design, the author argues that a foundation for assessing computational craft can be found in the craft traditions of toolmaking and writing: ideals of organization, clarity of intent, and affordance. This change in values, enabled by greater transparency, would help define the qualities of computational media under more appropriate and useful terms. By looking at code as deeply and critically as one would the lines on a piece of paper or the joints of a model, designers can develop new habits of craft to better critique and influence the future of architectural representation.

Gradient Logics

Alvin Huang, University of Southern California

The paradigm of multi-materiality in architecture is not new nor novel. Architecture has a long standing history of employing the performative qualities of composite material assemblies such as the ancient practice of pairing rammed earth with fibrous straw in the production of adobe, the modernist combination of formed concrete with steel reinforcement, and more recently the infusing of glass fibers and resin in FRP panels. However, in each of these cases multiple materials are fused together to produce a homogeneous materiality - in both performance and appearance. The notion of a gradiated multi-materiality provides a potential new paradigm within which to frame design discourse and realize new opportunities for material agency. While the topic of gradients and field conditions in architecture have been theorized by writers and philosophers such as Deleuze & Guattari[i], Stan Allen[ii] and Manuel De Landa[iii] for many years, it has not been until much more recently that combined advances in both fabrication technology and computational process have enabled both the representation and materialization of gradients for fabrication.

Recent advances in 3D printing technologies have introduced the possibility of new multi-material gradient objects to be fabricated within a single monolithic build volume. This opportunity allows designers to not only express variable colors and finishes, but also to explore material performance as a gradient condition; one which could vary incrementally from opaque to transparent or rigid to flexible. This condition produces what is known in the material sciences as a functionally graded material (FGM) which can be characterized by the variation in composition and structure gradually over volume, resulting in corresponding changes in the properties of the material [iv]. Even more recently, software innovations by Michelatos & Payne[v] have enabled novel methods for representing material gradients through voxelization, while Richards & Amos[vi] have explored the development of generative computational strategies inspired by biological processes to inform material gradients. However, until very recently, there has not been an actual application of multi-material gradient 3D printing.

The Durotaxis Chair is a fully 3D printed gradient multi-material 1/2 scale prototype printed by Stratasys and designed by Synthesis Design + Architecture. The chair is inspired by the biological process of the same name, which refers to the migration of cells guided by gradients in substrate rigidity[vii]. The chair is an ovoid rocking chair which has two positions, as an upright rocking chair and as a horizontal rocking lounge. The volume of the chair is defined by a densely packed three-dimensional wire mesh that gradiates in size, scale, density, color, and rigidity. The varying gradient conditions are expressions of the combined formal, ergonomic, and structural properties of the chair.

Hydrophobic Paper Architecture: Studies in the Sustainability of Impermanent Structures

Shelby Elizabeth Doyle, Iowa State University
Leslie Forehand, Iowa State University

"The problem with a tent is that when you use it you throw it away, so it's money that melts." Alejandro Aravena

Aravena challenges architects to reconsider the design and delivery of refugee tents and temporary disaster-relief shelters. This paper explores a response to Aravena's provocation by exploring the materiality of refugee tent production as a means for architectural agency in the discourse surrounding design's relationship to humanitarian aid. What follows is a discussion of ongoing research that integrates nanoparticle hydrophobic paper applications into existing temporary architecture typologies.

Researchers in the Department of Material Science and the Department of Architecture are collaborating to explore the viability of hydrophobic paper as an alternative to plastic in the construction of temporary structures. This project expands upon initial applications from the Tokyo Institute of Technology (2012) who successfully prepared paper surfaces with a nanoparticle coating, repelling water and maintaining structural integrity.

Temporary structures are ubiquitous and highly wasteful in their material realization and have far-reaching applications from provisional refugee housing to disposable festival structures to trade fair booths. While these temporary structures are not designed for obsolescence due to their short-term needs, they are often highly resistant to decomposition. This unnecessary permanence is manifested in their materiality, typically utilizing cheap, toxic, and non-biodegradable materials. A common example is the tarp distributed as lightweight shelter for refugees and disaster relief victims. Most refugees remain in camps for 9-24 months and these tarps are not durable enough to serve as adequate transitional shelter, typically failing in 6 months. These plastic sheets are often made of polyvinylchloride (PVC) a compound that leaches toxins into soils and water and does not biodegrade. These tarp materials are chosen because of their low material cost and lightweight shipping costs.

Hydrophobic paper presents an opportunity to challenge this paradigm, generating a new form of temporary shelter. Paper is a similarly valued and weighted resource as a PVC tent, folding and stacking easily to meet the weight requirements for shipping and assembly. We propose a composite of nanoparticle coatings and paper modules that are assembled into temporary structures. This process allows for locally sourced materials (paper) and results in an increased habitation duration through repair and renovation. This nanoparticle treatment, which is sprayed on the paper in a controlled environment, does not contribute negatively to the environment: it can be burned after its use without producing harmful toxins. This system integrates hydrophobic paper surfaces and soy based biodegradable plastic hardware, providing adequate temporary shelter that can be similarly deployed in the event of a disaster, and renovated as necessary.

During Spring 2016 a full scale mock-up of a hydrophobic paper structure will be constructed, documented, tested, and preliminary analytic results will be available prior to the conference. Analysis will include: comparison of interior and exterior temperature, light and humidity, documentation of deterioration due to weather (rain, sun, and wind), interior air movement, and structural integrity. Alternative designs will be generated based on these analyses.

Towards an Empathic Architecture

Kristine Mun, University of Minnesota

Towards an Empathic Architecture addresses health concerns in an expansive context. Architecture can be viewed as a kind of material psychology as architects work with matter and form to comfort human beings. Modernists' response to health was the clinical white that pervaded 20th century aesthetics with a mechanical detachment to our senses. Our obsession with health today is found in the current health-centric technologies massively popular with biotech wearable designs.

As a discipline that by nature operates as a collaborative practice, advances in new technologies are opening new relationships to other specialized disciplines of engineering. Conventional engineering related to architecture such as structural and mechanical engineering are enhanced by another branch that probes deeper into the body. Hitherto, conventional engineering in architecture has addressed the topical surface of body, probing the five senses with the HVAC & lighting systems. Today we are seeing more relationships between body and space through an interface of new bio-sensing devices. Thus biomedical engineers and neuroscientists are collaborating with designers more frequently, creating new innovative integrations in architectural experimentations. We are finding that spaces and bodies are inextricably linked more than we are made aware. Mirror-neurons in our brain allow for empathy, which connects us with other beings as well as the built environment.

With biomed-engineering probing deep inside body, gathering numerous amounts of biological and chemical information from the body, new dimensional relationship between the body and space are forming. For example, based on neuroscience research, the human brain produces four EEG frequency levels - Beta, Alpha, Theta, and Delta – that are associated with different states of action/mood from alert consciousness to deep sleep. Environmental conditions such as light and sound can alter brainwaves to excite or soothe the mind, and it has become clear that new bio-sensor based machines integrate in homes is beginning to play a significant role in the development of innovative smart homes.

This paper will discuss the multidisciplinary nature of our field that is bringing neuroscience and architecture together to form a harmonizing environment for the inhabitant. We are seeing emerging technologies of 'smart homes' outfitted with bio-sensors in senior citizens' 'ambient assisted homes'. How can designing through and with new bio-sensing technologies change our understanding of spatial and environmental design? It is clear that advanced technologies must find a balance in our current times. The greater vision is to work towards the healthy state of bodies in the firmly intertwined human-machine relationship of our current times. Engaging with body/mind/machine relationships, machinic processes and machines are considered agents of thought that drive the design process. The paper will also present a few projects that create interactive responsive environments: Vitalized Geometry, a series of responsive sense-based machines that presents a tightly woven relationship between logic of paths, geometry, sensations and material performance that set up the conditions for an empathic architecture, architecture that feels. 'Cloud Therapy Room' integrates neuroscience and sonic acupuncture to de-pressure the mind in a cloud projected dome chamber.

Cities/Urban Tactics: Politics of Control

Date : Thursday, June 30, 2016
Time : 11:30:00 AM - 1:00:00 PM
Location : Auditorium South

A City Divided: "Fragmented" urban and literary space in 20th-century Buenos Aires

Marianela DAprile

When analyzing the state of Latin American cities, particularly large ones like Buenos Aires, São Paolo and Rio de Janeiro, scholars of urbanism and sociology often lean heavily on the term "fragmentation." Through the 1980s and 1990s, the term was quickly and widely adopted to describe the widespread state of abutment between seemingly disparate urban conditions that purportedly prevented Latin American cities from developing into cohesive wholes and instead produced cities in pieces, fragments. This term, "fragmentation," along with the idea of a city composed of mismatching parts, was central to the conception of Buenos Aires by its citizens and immortalized by the fiction of Esteban Echeverría, Manuel Mujica Lainez, Julio Cortázar and César Aira. The idea that Buenos Aires is composed of discrete parts has been used throughout its history to either proactively enable or retroactively justify planning decisions by governments on both ends of the political spectrum. The 1950s and 60s saw a series of governments whose priorities lay in controlling the many newcomers to the city via large housing projects. Aided by the perception of the city as fragmented, they were able to build monster-scale developments in the parts of the city that were seen as "apart." Later, as neoliberal democracy replaced socialist and populist leadership, commercial centers in the center of the city were built as shrines to an idealized Parisian downtown, separate from the rest of the city. The observations by scholars of the city that Buenos Aires is composed of multiple discrete parts, whether they be physical, economic or social, is accurate. However, the issue here lies not in the accuracy of the assessment but in the word chosen to describe it. The word fragmentation implies that there was a "whole" at once point, a complete entity that could be then broken into pieces, fragments. Its current usage also implies that this is a natural process, out of the hands of both planners and inhabitants. Leaning on the work of Adrián Gorelik, Pedro Pírez and Marie-France Prévôt-Schapira, and utilizing popular fiction to supplement an understanding of the urban experience, I argue that fragmentation, more than a naturally occurring phenomenon, is a fabricated concept that has been used throughout the twentieth century and through today to make all kinds of urban planning projects possible.

Mutant, Hybrid, Endangered Super Species / MHESS: The MHESSy Urbanism of Preservation, Tourism, and Neoliberal Nationalism in China, Korea and Japan

Yehre Suh, Seoul National University

With the chaotic pace of development and expansion of global metropolises, traditional endangered fabric of cities have become hybridized with the new to form mutant and hybrid species of the urban terrain. The new metropolitan city is a site of natural selection between the new, the old, the new old, and the old new through processes of transition, negotiation, mitigation, preservation, hybridization, erasure and reconstruction. And within the political, economic, social dynamic of urban environments fueled by forces of globalization, discussions of preservation and cultural identity can only progress under the rubric of nationalism, tourism and marketability.

Globally nationalism has been an essential mechanism of regional urban development and growth. And in an expanding world of neoliberal globalization, the hegemony of nationalism is a key director and generator of construction, demolition and preservation. With the pressures of global marketability and economic profit, architectural preservation and conservation have become strategic tools of states and cities in their attempt to attract tourism.

With blessings from both state and cultural nationalists, state and cities are remaking the fabric of the built environments under the banners of preservation and conservation. But things are not as clear cut in reality when having to determine what to preserve and how to preserve. The question of authenticity emerges as a contentious territory fraught with varying degrees of re-interpretation and re-representation. Old structures are re-made new and new structures are intentionally made to look old. New structures are placed as part of the new old and old structures are re-placed as part of the old new. What is "authentic" is constantly shifting as the "latest authentic" incessantly replaces the "previous authentic." And the smoke and mirror authenticity becomes an active apparatus of the social, cultural, economic and political construct of the city. This has produced an urban terrain where preservation and conservation have become active facilitators of an ecosystem where specific typologies of super species have been able to generate, hybridize, mutate, and propagate.

The metropolises of China, Japan, and Korea, is a unique habitat where environmental similitudes exist due to geographic proximity as well as a long history of religious, philosophical, social, cultural, economic and political relationships. Although the timeline of modernization and globalization are divergent, the urban fabric of its cities are comparable habitats that have breed a specific type of species that are more similar than different. The old and new capitals of the three countries, Xi'an and Beijing, Kyoto and Tokyo, Gyeongju and Seoul, as habitats of the Super Species, are investigated to document the conflicts and negotiations between the traditional fabric of the city and the new urban transformations of globalization and its agencies. In the turmoil of the urban survival of the fittest, strategies of negotiation such as territory, program, visual, tectonic, symbolism, typology, objectification and supplements are explored. The paper investigates the methodologies of survival between the old, the new, the old new and the new old to map and analyze the morphology and strategies of MHESS.

re-invention of public housing

Frederick Biehle, Pratt Institute

Introduction
In Public Housing that Worked Nicholas Bloom championed the success of the New York City Housing Authority. To stake this claim he had to elevate bureaucratic workability over anything architectural. He had to defend the architectural assumptions institutionalized by NYCHA:
-that "slum" clearance was a net positive
-that exclusive residential zoning was more rational
-that housing intended to look poor for the poor was acceptable
- that not shaping the residual space was also acceptable

In short, Bloom tells us that we should accept the NYCHA's public housing 'project' for what it is- 2600 buildings on 154 sites and over 400,000 tenants all living with "well maintained buildings, mature trees and green lawns, active recreation programs and first class play equipment …(which) have made NYC public high-rise housing a smashing success."

As positive as these observations may be, they still disregard the fact that the projects are a psychologically partitioned series of island wastelands, anti-cities within the city.

What makes urban urban
"A decent home and suitable living environment" may be important to housing, but the antagonism of housing advocataes toward the underlying fabric is remarkable. The structure of street and sidewalk had provided a tested framework for urban life, yet between 1932 and 1960 no architect or urban planner seemed cognizant of this.

Louis Wirth, Jane Jacobs and now Steven Johnson have offered their generational testaments to density, diversity, mixed use, and continuity- what they consider madkes urban life meaningful. Steven Conn summarized, tracing the consistent attack on the American city throughout the entire 20th century. By declaring this attitude to be ANTI-URBAN he was able to celebrate the qualitative values of urban life, and to lay down the futures challenge-
"the problem of the 21st century will be how we re-urbanize, how we fix the mistakes of our anti-urban 20th century."

The opportunities of the present
Three recent events have altered the perception of NYCHA's public housing estates and can offer a truly honest opportunity for change-
-The drop in crime
-A residential building boom that has run out of available land
-A 2012 RFP that opened the door to building within public housing estates
-deBlasio's Ten Year Plan, Housing New York which intends to build 200,000 new units

Possible solutions
The urban design studio, Reinventing Public Housing, is intended as one step toward meeting the challenge. It started with the question- - Must we really accept the super block public housing estate for what it is? Is there a way to transform and reinterpret it, and by doing so eliminate its stigma, its isolation, and anti-urban grip on the city?

Design Strategies: Situated Creative Machines: Extreme Territories

Date : Thursday, June 30, 2016
Time : 11:30:00 AM - 1:00:00 PM
Location : Auditorium North

Empowered Mobility: Supply Chain Thinking for High-Mobility Children in Foster Care

Deborah Richmond, Woodbury University

This presentation will relate the discursive history of the Mobile Village, a prototype delivery platform for educational programming, as it grew out of years of research and writing around supply chain logistics, culminating in an analysis of the challenges of fair trade shipping, to create design principles focused on the customization and re-invention of the unit of movement (and NOT the re-use of the conventional shipping container), to work within extant systems of mobility that capably distribute content throughout urban networks and beyond. A digital component around this mobility will also be discussed.

Arriving at the Ports of San Pedro in Los Angeles, shipping containers filled with consumer goods fan out through a local network of transportation corridors, marking the city indelibly with deep infrastructure. As a system of mobility, the containerized supply chain is without equal as a model of object-centered design thinking, efficiency and positive outcomes for the manufacturers and retailers it serves.

The application of global container logistics to high-mobility children, such as those in foster care, asks designers to consider an empathic, human-centered approach to an institutionalized system of involuntary mobility, which can result in as many as 3-4 family "placements" per year for some children. In spite of grim statistics for youth in foster care related to graduation, teen pregnancy, drug use and imprisonment, these children develop many positive resiliencies around adaptability, emotional intelligence, empathy and efficiency. Working with a non-profit serving youth in foster care in Watts, Los Angeles, called Peace4Kids, whose motto is "community as family," the concept of a "mobile village" was born. Following their lead, paired with a deep understanding of consumer culture's collective intelligence around moving goods through cities, an innovative strategy was used to create a literal delivery platform for educational programming, in partnership with other non-profits, around food equity, social justice and eventually other vocational skills such as apparel arts, machine arts, fine arts and early education.

The first Mobile Village trailer is a cooking school custom designed for truck transport. It delivers Peace4Kids' Saturday cooking lessons (one of a series of enrichment classes offered to kids each week at their fixed location), to youth throughout Los Angeles's five county districts, a roughly 12,300 square kilometer area. Framing the issues of adaptability and mobility as resiliencies that youth in foster care must and do cultivate to survive, the Mobile Village is a custom-designed trailer that transforms into a classroom wherever it is parked.

The Mobile Village is not so much "bricks and mortar" as "steel on wheels" component to act as intake points for non-identifying data to track and monitor the needs of this population so that it can be mapped and more effectively served by the Department of Children and Family Services in L.A. County. The Mobile Village reinforces Peace4Kids' core mission to create an "always on" network of support and care for children who experience constant disruption in their closest relationships, educational sequences and their fundamental sense of dwelling in place.

Great Salt Lake Exploration Platform

Chris Taylor, Texas Tech University

The Great Salt Lake Exploration Platform is a creative machine built to foster visual and performative research within the vastly under explored situated locale of the Great Salt Lake.

It can be difficult to imagine unexploited terrestrial sites for exploration. The remoteness of the Antarctic, Eurasian Steppe, and Sub-Saharan Africa have been challenged by the increasing ability of people with new media technologies to access and connect these once remote places. Despite the opportunity of new capabilities, much remains to be examined in our own backyards. The potency of primary research——first-person truth on the ground——remains paramount for architects, artists, and culture workers operating among the complex realities of the built environment.

The Great Salt Lake Desert is North America's backyard or "entropic sink" collecting land-uses, building programs, and expounding material history expelled from other parts of the United States. The Great Salt Lake is the lowest portion of this desert and a remnant of prehistoric

Lake Bonneville. As a fundamentally inhospitable landscape (no fish live there), the Great Salt Lake holds unique and extreme architectural challenges for even temporary occupation.

Great Salt Lake is essentially two bodies of water divided by a railroad first built on an open wood trestle in 1904 and filled with gravel in the late 1950's. While narrow cuts through the solid causeway allow lake levels to balance the earthen structure has created two distinct ecologies between the northern and southern arms. The majority of fresh water inflows to the southern portion, which runs three to five times saltier than sea water carrying a greenish appearance. Microscopic halophilic bacteria thrive in the super saline saturated northern arm giving the water its milky red cast——a key trait that attracted Robert Smithson to build Spiral Jetty in 1970. Given the shallow geomorphology of the basin, changes in the quantity of water entering profoundly impact lake size, shoreline location and chemical composition.

GLSEP was created as a modular, flexibly deployable craft for a small group of people to remain upon the lake for limited durations of time, make work, and not die. Given the remote severity of this landscape the final qualifier is significant. Storms appear quickly and can generate ten to twelve foot waves in tight oscillation. Coupled with the water's chemical density the lake is known to literally tear boats apart. Rather than being built and powered as a boat, with need of a marina to launch and a geometry to accommodate overland travel, the GSLEP was conceived as a deployment system to provide necessary life support and research infrastructure (shade, fresh water, food and waste storage, solar power, communications, and evacuation provisions) to researchers operating on the Great Salt Lake akin to off planet missions with immanent dangers and very limited rescue opportunities.

GSLEP initial test launch occurred in May 2015. Currently the 2016 field season is assembly a wide range researchers from artists, architects, and writers to designers, scientists, and historians.

Infrastructure of Dust - Managing Particulate in the Borderland

Stephen Mueller, Texas Tech University El Paso
Ersela Kripa, Texas Tech University

The paper posits the El Paso/Ciudad Juarez border region as a particularly vital 'situated creative machine', a binational metropolis separated by national security infrastructures, but joined by the geologic and climatological anomalies of the stark and rapidly changing Chihuahuan Desert. Seasonal dust storms enact shared infrastructures of security, control and response, forging a new territory of shared particulates - ingested by buildings, landscapes, machinery, and citizens alike - irrespective of the contested US/Mexico border. The dust itself can be seen as a primary vector, an 'abstract machine', which connects and organizes disparate political economies, transmits cultural and geologic material across different regimes of urban inhabitation, and acts as an engine for design.

Dust knows no borders. Dry lake beds, or 'playas', throughout the Chihuahuan Desert funnel dust indiscriminately across the international boundary. El Paso and Ciudad Juarez together form a critical node in the regional geology of dust. Recurring dust events sweep through the city on a seasonal basis. Dust devils,' haboobs', and dust storms reshape the experience of the city and landform. 'Microbursts', and 'dust plumes' appear locally as ephemeral manifestations of a shifting landscape. A distributed dust infrastructure is growing, including a constellation of monitoring stations, desert research facilities, broadcast sites, and emergency response facilities.

This emerging Infrastructure of Dust provides the geographic and theoretical framework for two simultaneous investigations, conducted concurrently in Spring 2016.

The first is my newly written design curriculum for undergraduate architecture students, who will privilege dust as an underexplored, often ignored, but essential component of the built environment, in their research and design of a Dust Institute located near the El Paso/Ciudad Juarez border. Students in the design studio will invent synthetic skins, building technologies which observe, collect, monitor, and transform the lived experience of dust within the Chihuahuan Desert region, addressing the changing political and environmental climate through design. Partnerships between building technology experts and experts in dust storm geology provide an intellectual framework for experimentation and invention within this focused investigation.

The second is my independent academic research which uncovers binational initiatives in the control of atmospheric dust, a growing interest and ability for national governments to manage particulate across shared borders. Strange partnerships expand the Infrastructure of Dust both geographically and programmatically, to address environmental and national

security concerns between the two nations. These interests act as another type of 'situated creative machine', resulting in a uniquely thickened 'managerial borderland', enacting territorial environmental manipulation through the calculated deployment of binational infrastructures. These unprecedented changes in our built environment seek to stem the tides of desertification, securing a shared ecological and atmospheric border for future generations.

Original research graphics, mapping, and design scenarios generated by the two investigations will illustrate the final presentation, arguing for the value of design research through the lens of the unseen, the banal, the insidious, and the invisible forces shaping the world around us – through the lens covered in dust.

Rewiring Territories
Neeraj Bhatia, California College of the Arts

In the South American context, we have witnessed how the processes, technological artifacts, and machinery of global resource extraction have often inadvertently set up the initial urban framework for future urban reappropriation, as in the case of Ciudad Ojeda and Nueva Lojo—undeterred by the incongruence between the value sets of the first and second phases of production. It is the permanence of the infrastructures that extraction processes yield, often in remote areas, that is a critical factor in the second production of these urban settlements. Understanding the lifespan of the oil industry as approximately twenty-five years, we must question how these new infrastructures can be deployed in a manner to account for their future production(s) by local inhabitants and systems—which involve cultural, political, geographic, and economic factors.

The disjuncture between a territorial infrastructure and local cultures is most overtly witnessed in the development of pipelines, which are large infrastructural conduits used to transport oil or gas, deployed primarily between points of extraction and refining. Currently there are over five million miles of pipeline in the world, dedicated to oil and gas transportation. Connected continuously, this would encircle the world's equator two hundred times. While the technical engineering and properties of fluid dynamics determine the internal specifications of the pipe—including the diameter, thickness, material selection, fittings, etc.—the outside of the pipeline needs to interface with the external environment, including its topography, climate, political policies, and local cultures. While the features of the external environment are typically viewed as secondary to the internal specifications of the pipeline, what if the local environment and inhabitants played a larger role in determining the location, trajectory, and design of pipelines and their associated infrastructures?

This article proposes to examine the typology of the pipeline and its relationship to both territorial and local systems. Specifically, it will examine the South American "Uruguayana-Porto Alegre Pipeline", which will unify a series of separate pipelines developed over the past two decades. Spanning 3,100 kilometers across Argentina, Bolivia, Uruguay, and Brazil, and linking northern regions to the southern cone once completed, this energy ring will redistribute flows of energy, wealth, and people across the territory. As new pipelines and their associated infrastructures cross the once remote hinterland, it exposes these rural settlements and local ecologies to development pressures. This case study will use three design-research projects to investigate how the pipeline can be leveraged to reassert local cultures, economies, ecologies, and values.

The effects of conduit infrastructures on the territorial and local landscape are often overlooked by designers, yet these have become the predominant infrastructural spatial type within globalized logistics. How can the regional and local relationships that are embedded in conduit infrastructures be leveraged through design approaches that while at the scale of architecture, have a widespread impact over the territory? While the conduit exists within a territory, it also creates new territories once built—a complex negotiation of the regional and local.

Technology: Habits of Craft, Here, There & Everywhere: Technology and Craft

Date : Thursday, June 30, 2016
Time : 11:30:00 AM - 1:00:00 PM
Location : Auditorium FADEU

Globalized Regionalism: the dual effect of digital technology on regional building practices.

Steven Y. Mankouche, University of Michigan
Joshua Bard, Carnegie Mellon University

While the homogenizing effects of globalization on cultural heritage, building practices and architectural design are well understood can globalization also be a positive force towards their preservation? This paper will address this question by looking at a number of contemporary architectural design and technology research case-studies from the United States, Chile and Japan that leverage globalized digital technology platforms from social media to CNC tools to augment and sustain historically regional construction methods.

Technology has been a major player in the acceleration of globalized building practices. For example “drywall”, a building product invented in the early 20th century and now produced around the world, has altered long held understandings of what people would consider a “wall”. Yet at the same time digital fabrication technology is offering architects and designers unprecedented control in being able to physically construct building elements directly from the scale of the model to that of the building. In the arena of industrialize materials such as steel and engineered wood products digital fabrication allows manufacturers of building materials to compete globally. Spanish, Russian or Chinese companies make components for building built in the United States. “Star” architects can maintain their brand by building the same way everywhere.

In recent years in the United States we have seen the development of the locovorian food movement and the resurgence in heirloom agriculture. Social media has united and empowered people to rediscover numerous forgotten cooking techniques. Where does architecture and the built environment stand in this larger shift in paradigm? While modernism has been the prevailing means of architectural expression from east to west and in both hemispheres, one can still notice a difference in the work of architects whose practice is regionally base . This is in great part because of architects’ reliance on local building practices and craft. However one cannot take this condition for granted. Whether it is the increasing cost of labor that has out price certain craft, a younger generation not interested in certain jobs or changing costs of products and materials, long held historic and cultural building traditions are being lost .

Using technology that is a significant driver of globalization, this paper will explore projects that use regional materials and “heirloom” building modalities. I remember visiting a small mountain village in Val Tallegio, Italy famous for it cheese and walking across a field of cows into a carpenter’s shop, where the most current German digital fabrication timber CNC tools were being used to fabricate custom windows; ensuring the longevity of a local building tradition. In other words digital technology can be a double agent for globalization and the preservation of regionalism.

Hybrid Architecture: Synthesizing Practice, Context and Scale

Caroline Shannon de Cristo, +D Studio
Pedro Henrique de Cristo, +D Studio

As the world continues to grow more urban, we can expect billions of structures from homes to stores, squares, schools, hospitals and other programs to be built.

This growth is and will continue to be concentrated in the majority world, Latin America, Africa and Asia.
The UN predicts that by 2050, one out of every three people will be residents of an urban slum. This comes as a result of intensive urbanization throughout the majority world (Latin American, Africa, and Asia). Although the challenge of providing shelter and services to the urban poor has drawn the attention of architects and urbanists, we have generally failed to anticipate this growth in any meaningful way. The application of basic design principles and construction techniques would greatly improve the health and safety for most residents of urban slums, but what has prevented it from happening?

The tendency within architectural discourse has been to maintain a separation between capital "A" Architecture and other forms of building. This has been coupled with a growing

anxiety about the relevance of this narrow definition of Architecture in a world where a very small percentage of the world´s buildings are designed and built by architects.

The authors argue that it is essential to both [1] keep evolving Architecture in a manner that integrates the capabilities and resources of the context with advanced design and building practices and [2] to create architectural solutions, programs and even spatial coding that are adaptable and scalable to different contexts, from landscape to wealth, as means of empowering communities and cities to compensate for the dearth of architects in meeting the massive demand for construction. The process of hybridizing architectural practice with self-building and designing scalable architectural buildings/codes should be seen as opportunities to improve people´s lives through design, rather than as a threat to the autonomy of the Architect.

This concept of hybrid architecture has been developed through close collaboration of the authors (with formal architectural training) with self-trained local builders in the favela of Vidigal in Rio de Janeiro and policy makers together with scientists and engineers from around the world. Their work has generated new strategies and that combine the most advanced architectural practice with self-building techniques to create scalable building solutions and new programs such as the Digital Agora. The innovative methodologies and material applications that have emerged are widely applicable in communities around the world.

The paper focuses on the application of the hybrid architecture concept in the design and construction of multifunctional structures such as retaining walls and a 112m2 public space that also serves as resilience infrastructure, built through the use of recycled materials (mostly tires and construction debris) at a park that was formerly a trash dump within the favela of Vidigal. Drawings, construction details, photos and cost estimates are included.

Programación y fabricación digital en procesos artesanales. El caso de América del Sur
Pablo Herrera, Universidad Peruana de Ciencias Aplicadas

Desde la mitad de la primera década del siglo XXI, América del Sur viene experimentando dos fenómenos que hoy impactan de algún modo en la historia de su arquitectura y diseño contemporáneo: la programación y fabricación digital en sus procesos; y el trabajo entre diseñadores y artesanos. Sin una industria automatizada de la construcción y de productos, la producción artesanal está inserta en diversos procesos. Así mismo, este proceso en América Latina no es exclusivo del área rural como lo es la artesanía en los EE.UU. y Europa, sino se concentran en la periferia de sus ciudades específicamente en asentamientos informales, donde colectivamente los artesanos operan en condiciones adversas (Borges, 2015).

Aunque la investigación sobre fabricación digital en América del Sur producida entre el 2004 y el 2014, representan sólo el 11% de los artículos publicados en el mundo (Luli y Minto, 2015), existen otras experiencias que por su carácter práctico y no académico no han sido documentadas ni publicadas. En ese contexto, y desde una primera clasificación de iniciativas en la región (Autores, 2013) y una exhibición que agrupó a 30 de los más importantes laboratorios de fabricación digital de seis ciudades latinoamericanas (Autores, 2015), se obtuvo nueva información de casos de estudio que usaron tanto la programación como la fabricación digital para potenciar procesos artesanales.

Tomando en cuenta que el renacimiento de la artesanía ha demostrado ser una promesa en América Latina (Borges, 2015), el objetivo de esta investigación fue analizar la diversidad de casos y seleccionar aquellos, en donde los diseñadores fortalecieron el proceso de trabajo de artesanos usando tecnologías de programación y fabricación en diversos campos como el mobiliario, cerámica y textil. Con la experiencia de implementaciones en arquitectura y diseño, la fabricación digital permitió optimizar procesos tradicionales con el fin de otorgar al artesano espacio para dedicarse al proceso creativo, proporcionando directamente un mayor valor al producto, y en el caso del artesano, mejorando su calidad de vida (Autor, 2012).

Por un lado, la fabricación digital se utilizó no sólo para automatizar procesos, sino para mantener el carácter tradicional del objeto y la mejora de la técnica, con resultados que podrían cambiar la historia del diseño contemporáneo de la región. Por otro lado, la programación permitió la permanencia del proceso de diseño en líneas de código (como en Rhinoscript, Python o AutoLISP) o en un diagrama (como en Grasshopper o Dynamo), lo que permite preservar la tradición de la representación para futuras modificaciones. Se encontró que los diseñadores y artesanos revitalizaron la identidad y la tradición cultural sin perder el origen de sus propuestas.

Esta investigación pone en relevancia casos de estudio en un momento en que la tradición artesanal parecía caer ante la producción industrial. Al preservar el uso de materiales tradicionales, las piezas siguen siendo únicas y, al mismo tiempo, personalizadas por usuarios finales, trascendiendo su origen local hacia nuevos mercados globales, beneficiando no solo al artesano productor sino a sus propios países aquí, allí y por todas partes.

Prótesis Robóticas aplicadas a la manipulación de pieles dinámicas. Hacia una integración de sistemas industriales de código cerrado a unos de programación de código abierto

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Rodrigo Garcia Alvarado, U.Bio-Bio
Mauro Chiarella, Universidad Nacional del Litoral- Santa Fe, Argentina
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RESUMEN
Las fronteras de la arquitectura se amplían cada vez más dificultando la detección de los límites del alcance disciplinar. El constante avance de la domótica en la arquitectura se debe en gran parte a la reducción de costos de los componentes electrónicos, esto sumado a la incorporación de software de programación algorítmica de código abierto (Open Source) tipo de Grasshopper / Dynamo en el proceso de diseño, como así también la utilización de máquinas de prototipado laser tipo CNC e impresoras 3D, han presentado un campo de experimentación para los arquitectos en el diseño de pieles dinámicas.

El estudio plantea principalmente la necesidad de adaptar los componentes dinámicos de un edificio existente a la realidad ocupacional del mismo, ya que dichos componentes se instalan más que nada por una expresión simbólica o expresiva ante que por una necesidad de responder a las conductas vivenciales y cambiantes de los ocupantes, las cuales no han podido ser programadas. Por otro lado estos componentes al ser fabricados en un sistema de hardware y software cerrado dificultan su integración a un sistema domótico centralizado y de programación de código abierto.

Gran parte del problema radica en transpolar de forma directa tecnologías que llegan a países de Latinoamérica por importación, en donde el grado de desarrollo tecnológico y cultural no es el mismo.
El objetivo es buscar de qué manera integrar conocimientos científicos en la arquitectura de forma imaginativa, que no sea meramente técnicos sino que contemple los factores culturales, climáticos y de recursos a fin de poder integrar estos sistemas a una realidad más acorde a la de los de países latinoamericanos.

Se aplica una metodología basada en trabajo de campo con encuestas a usuarios, mandantes y fabricantes, que combina el análisis del edificio existente de oficinas y la experimentación con un dispositivo a modo de interface con la celosía dinámica industrializada.

Las encuestas que se elaboraron sirvieron para dar sustento a la programación algorítmica en Grasshopper+plugin Firefly, el cual se comunica a través de una placa Arduino con una prótesis robótica que opera sobre un control remoto genérico de radio frecuencia de 433 MHz y 200mts de alcance.

EL resultado obtenido fue diseñar un sistema semi-automatizado de programación flexible en forma de prótesis. Este sobre control de carácter hibrido a modo de alegoría de la tecnología en las pieles de la arquitectura contemporánea.

Este concepto tomado de la medicina, define a la prótesis como un objeto artificial que reemplaza a una parte del cuerpo que está faltando y que debe cumplir la misma función. En este caso lo que se reemplaza es al usuario operando sobre el control remoto.

El aporte de lo investigado se podría incorporar tanto a la enseñanza de la arquitectura como también en proyectos, integrando lo dinámico y lo social de la actividad de los edificios. Problematizando situaciones específicas mediante el diseño estratégico y aplicación de "métodos computacionales" acordes a nuestras realidades latinoamericanas. La interoperabilidades de software y hardware hacia soluciones de código abierto es el camino iniciado.

The Gesture of Digital Craft

Jason R Crow, Louisiana State University

Placing craft within the context of digital technologies for architectural design and fabrication presents a philosophical conundrum. Theorizing digital craft raises two critical

questions: What is craft, and how does computation change our perception of the world? Traditionally, crafts are defined, at least in part, by the relationship between the body of the artisan, the material she works, and the tool or techniques she employs. Digital modes of manufacture appear to distance the body from material and tool, and interfere with the wisdom that scholars, such as Juhanni Pallasmaa and Marco Frascari, associate with embodiment. But milling a plywood form on a CNC router is an embodied experience, even if it is vastly different from carving an air-dried log. How do we define craft relative to the apparent change in embodiment?

Recent discourse on the history and theory of craft fails to address this difference between the tool at hand and the tool in hand. Glenn Adamson's body of work investigating craft approaches artisanship from a historical perspective. In his book-length study of the subject, The Invention of Craft, he asserts a definition of craft that can only exist in opposition to the industrial revolution. Adamson's limitation on craft, as-not an industrial practice, complicates any potential of craft to influence our perception of the world, and it ignores the long history of ritual craft practices from the ancient Egyptian use of recipe books to the ceramic alchemy of artists such as Bernard Palissy.

Richard Sennett's The Craftsman takes an opposite approach. His philosophical discussion of the role of craft in world-making establishes a primary importance to craft for our negotiation of the environment. However his theory of craft rejects any relationship to contemporary technology in a manner similar to architectural theorists focused on phenomenology such as Pallasmaa and Frascari. Sennett ignores the fact that the use of equipment still integrates with an embodied experience to which we can and have become conditioned in a peculiar way.

First steps toward the theorization of craft within digital design and fabrication as an architectural practice are beginning to emerge. Bob Sheil's conceptualization of the bespoke and Achim Menges' material computation suggest potential areas of study for better understanding what contemporary craft might be, but do not address with specificity the role of technology in our perception of world. However their oversight can be addressed through the careful examination of the gesture of computation within the context of craft to better expose how new technologies engage experience differently. Acknowledging that the use of new technologies still involved an embodied gesture, even if different, allows for a shift in focus relative to asking questions about what craft was historical and what it might be today. CNC milling wood may not the same as carving wood, but it still might be able to be called craft.

Cities/Urban Tactics: Simulated Territories

Date : Thursday, June 30, 2016
Time : 3:00:00 PM - 4:30:00 PM
Location : Auditorium FADEU

Copies of Copies Simulated Cities

Ersela Kripa, Texas Tech University

New types of urban forms are being created in order to manage the complexity of the developing city and predict its future. Simulated urban environments, some the size of actual cities, are being purpose-built for the use of logistics companies whose products require testing on a full-scale - driverless cars, commercial drone delivery and humanitarian aid organizations among them. This signals a shift from previous decades where simulated environments were managed primarily by the military and used for security training purposes, and towards a simulation of the city for commercial ends. While the military simulates the unpredictable, the chaotic, and the informal, these new logistics cities are designed to compute the opposite, optimizing civilian interventions and achieving high-efficiency solutions, perfecting the interface of new technologies, forms of commerce, and human behavior within a generic urban order.

DE-PLANNING THE CITY/
Both military and civilian uses of simulation suspend the idea of control of the city from traditional notions of 'policy', 'planning', and 'design'. For realistic training purposes, the military relegates control to 'insurgent' role-players, agents of chaos who enact the 'feral', informal, and uncontrollable conditions which threaten global security. The logisticians assume a technoscientific autonomy for the processes which will manage their simulated cities in the absence of authority, centrality, or a 'control center'. These two outlooks are manifest in the typologies most commonly deployed by the simulated citymakers - both share municipal buildings, without any municipal leaders. The simulated city, in order to be effective, is 'de-planned'.

ECHOES OF EMPIRE/
The simulated logistic city and its parallel in military training share parallel trajectories. Recent advances in military simulation demand increased realism, incorporating human actors, role players, and even displaced refugees into training scenarios. Logistics cities echo this demand, recognizing that even the most complete urban simulation, built ex nihilo and devoid of human life, cannot simulate the complexity and unpredictability that worthwhile testing demands.

The planners of both types of simulated environments share military backgrounds. Pegasus Global Holdings, the developer of the Center of Innovation Testing and Evaluation (CITE) is also a major US military contractor, dedicated to "commercializing military weaponry for the global market". The latest technologies are transferred fluidly on these sites between military and civilian space - drones, real-time sensing and feedback in driverless cars, remote surveillance, and facial recognition softwares co-evolve on site.

The article will uncover the similarities and differences between recent mandates in military doctrine for the design of simulated urban operations environments and parallel typologies of governance, monitoring, and communication in the simulated logistic city, using CITE as a primary example. The paper will provide original research graphics, mapping and on-the-ground photography of simulated military environments.

Digital Agora: Physical + Digital Space for Participatory Democracy at the City Level

Caroline Shannon de Cristo, +D Studio
Pedro Henrique de Cristo, +D Studio

Despite the differences in the recent protests around the world, from Egypt to Turkey to Brazil, there has been one common factor in this phenomenon: the demand for more participation in public decision making and the need of a new institutional design to support it.

This paper presents the concept of the Digital Agora (DA): a physical + digital space for participatory democracy that responds to this demand by integrating specific public policies for instruments of direct democracy with spaces for systematization, synthesis and articulation, and effective technologies to generate a new calibration between representative and direct democracy at the city level.

The DA is designed to decrease asymmetries of knowledge and information while improving civic engagement [agency], executing the Right to the City through the creation of new forms of public space [physical + digital] and gradually transitioning the city´s legislative body to direct democracy through participatory budgeting.

As architects push to evolve the typologies of libraries, schools, and other public architectures to meet the demands of the 21st century, the Digital Agora presents the idea of a new public program, one that mixes spaces for systematization (research, data collection, etc.), synthesis (designing, building, coding, etc.) and articulation (debate, dialogue, mobilization, exhibition, performance) with seamless integration of physical and digital space through high-speed public wifi and a data visualization platform connected to the city´s spaces.

The DA provides a physical space within which it is possible to access and act upon the data that many cities around the world are beginning to make public on-line. For those without the necessary education, space, infrastructure or bandwidth to do this on their own, the Digital Agora provides the necessary support.

The authors have developed the Digital Agora concept as a proposal for the city of Rio de Janeiro, demonstrating the system at a range of scales which are: [1] the equipment, [2] the community/neighborhood and [3] the city.

Strategies on the Landscape City: ReImagining the American Metropolis Beyond density

Juan Luis de las Rivas Universidad de Valladolid
Juan Miro, University of Texas at Austin

The main arguments in the debate about urban sustainability in the last two decades have advocated for the density of the 'Compact City' model. The same arguments point to the low density of American sprawling cities as an impediment to a more sustainable future. As a counter argument, we posit that there is in American cities a specific and structural relationship with Nature that is both culturally and historically significant. In this context, the concept of the Landscape City model emerges as a new thinking tool to transform the existing city, creating new values rooted in a more conscious relationship between the man-made and natural environment. Our working hypothesis is that the Compact and the Landscape City models must coexist: learning from the experience of American cities and applying technical and cultural approaches from both models. Loosening the focus on density and introducing principles from the Landscape City could enlighten the future vision for cities. The concept of Compact City was developed in Europe in the early 1990s as a counterpoint to the ‘unsustainable’ expansive urban model. It advocated for a more complex and diverse city characterized by an emphasis in mixed-use and a severe criticism of the effects of zoning, such as the specialization and fragmentation of urban areas. The Compact City is founded in the search for a more efficient urban model and the reduction of land consumption. All urban spaces must be rethought from this perspective. In response to the growing debate about what this “compactness” really means, European cities define this concept by their main strategy of “urban regeneration”, associated with the singularities of Western European cities. By tradition, they rehabilitate historic urban spaces: beginning from the old city centers to brownfields and blighted neighborhoods, urban edges and, slowly, to the entire city. This process of urban regeneration is based on a coordinated effort to, systematically, improve the existing city. It is a pragmatic approach that embraces the idea that the city's future form is rooted in its existing conditions.

In the Americas, Nature is deeply rooted in a distinctly different way than in Europe. The understanding of American landscapes juxtaposes cities and big territories with agrarian and natural landscapes. Nature not only belongs to remote landscapes, is also essential part of the cities ‘genius loci’. In the American experience, the discourse about land uses includes references to ‘man and nature’, to ‘ancient cultures’ lost in the wilderness, to ‘endangered life-support systems’, to the ‘restoration of disturbed harmonies’, to ‘Designing with Nature’. Even in North America, despite the significance of industrial landscapes, is often present the idea that the man-made must be involved with Nature in the construction of cities. We believe that we can find in the American conception of Nature a specific source of urbanity. This is radically different than the European model, based on the Renaissance concept of the city as a big artifact. To introduce this idea –the “landscape city”- we propose a tour through some American cities and their projected landscapes.

Vertical Urbanism: Re-conceptualizing the Compact City

Zhongjie Lin, University of North Carolina at Charlotte

Although the term “compact city” appears frequently in academic accounts on sustainable urbanism as well as in professional descriptions of planning projects, it is often used in a

general manner to indicate such ideas as high density, mixed uses, walkability, and transit oriented development, all linking to common principles of New Urbanism. This, unfortunately, misses some important points, as the concept of compact city possesses the power to generate dynamic urban forms, utilize cutting-edge technologies, address pressing environmental issues, and respond to distinctive geographical and cultural contexts that challenge conventional notions of New Urbanism. The awareness of these limitations leads to the introduction of Vertical Urbanism as an alternative discourse on the compact city responding proactively to the state of contemporary metropolises characterized by density, complexity, and verticality. The reinvented concept of vertical urbanism moves away from the Modernist notion promoting tall buildings as dominant urban typology to explore physically interactive and socially engaged forms addressing the city as a multi-layered and multi-dimensioned organism. Informed by complex systems ranging from underground mass transit to futuristic ecology of vertical urban farm, this experimental urban design approach envisions a holistic organization of infrastructure, space, and ecology in a three-dimensional framework.

This paper derives from a series of urban design research studios under the common theme of Vertical Urbanism conducted in four different cities in the United States and China during 2010-2014 and recently shifted to Rio de Janeiro in Brazil. These studios took on various sites and design questions including the regenesis of urban infrastructure, a new hybrid business district emerging around transit hub, the revitalization of historic area, and urban waterfront redevelopments, testing the concept in different geographic and cultural settings. Sensitivity to locality in both ecological and cultural terms was emphasized across these studios although the schemes often engaged speculative and innovative modes of design production. This paper examines a number of issues around the urban design approach of vertical urbanism, including the drive for density and vitality, the relationship between horizontal and vertical dimensions, space of flow and scalar shift, as well as ecological and social adaptability of mega-forms; but above all, it tries to explore the capacity of global urban tactics in providing localized design solutions.

Illustrations:
1. Redevelopment of Penn’s Landing, Philadelphia, 2011
2. SIP High-speed Rail Station Business District, Suzhou, 2012
3. Xiangmen Blocks Redevelopment Plan, Suzhou, 2013
4. Wuyuan Bay Waterfront Redevelopment, Xiamen, 2014

Design Strategies: Situated Creative Machines: Contextual Strategies

Date : Thursday, June 30, 2016
Time : 3:00:00 PM - 4:30:00 PM
Location : Auditorium North

Contextualized Metrics and Narrating Binaries: Defining Place and Process in Indigenous North America

Wanda Dalla Costa, Arizona State University

Indigenous people of North America are a land- and kinship-based society, where design of the built environment becomes embedded within a larger framework. Their unique positioning generates a distinctive design territory that is highly contextual, embedded with procedural logic, and continuously negotiating a binary space between endogenous and exogenous. These communities, while rarely analyzed from within, offer latent inventiveness in the formation of new design territories and opportunities. Four distinct processes emerge.

First, through a long history and interrelationship with territory, design becomes highly contextualized. Understanding place, with an emphasis on experiential knowledge, becomes paramount. The role of land is one of teacher but also maintainer of life, including the life of future generations. The role of human beings is that of observer and learner. Boundary-rider is a term that describes those with a keen perception of place. Traditionally, they offer the experiential perspective, viewed as a parallel knowledge to the expert (external or outside) perspective.

Second, due to the kinship- or community-based nature of tribal societies – a place where successive generations reside for lifetimes – the design of the built environment necessitate an expanded value-based analysis. Physical development exists within a network of systems where economics must be balanced with social, cultural and environmental values. Indigenous metrics are employed to assess the usefulness, appropriateness and success of intentions. In this aim, voice becomes critical. Indigenous narrative forms a vital role in the methodology. Design becomes process-orientated, not product-orientated.

Third, the aim of all development in tribal societies is focused on change, or trans-formative. Projects must demonstrate a method of giving back to the community. Post-occupancy analysis goes beyond measuring the functionality of operating systems, to valuations of societal, cultural and economic contributions. Praxis, or the process by which a theory is embodied, can be measured. Community goals could be as specific as capacity building or as broad as cultural preservation. Understanding the objectives, and systems of measurement, is essential.

Finally, as tribal societies continue to develop internal capacities in the field of architecture, a blend of exogenous (Western) and endogenous methods is called upon. The blend is as specific as each place and each project. While planning of the built environment is an old concept to indigenous people of North America, naming is new. Naming is the process of identifying traditional or cultural practices, processes and models that, when seen in parallel to Western processes, begin to respond to the myriad of new situations that tribal societies find themselves in. The nomenclature or language is a vital part of this tool set, allowing critical measurement and assessment of the built environment.

The land-based nature of tribal societies of North American, are highly contextualized and offer distinct conceptions of place. Moreover, the community-based focus necessitates a process-orientated, value-based and trans-formative approach to practice. The distinctive context and culture of tribal communities derails universal or global instruments, exposing innovative design methodologies that begin to address the diversity and expanded value systems in contemporary design.

Liquid Lines: between uncertainty and precision

Jen Maigret, University of Michigan
María Arquero de Alarcón, University of Michigan

For the designer, imagination travels in the line. Lines can redraw the present, defy conventions, recast new orders and shape the future. Lines establish territorial boundaries, communicate written language and construction intentions yet their delicate nature can veil this. When experienced in the world, lines can be ephemeral, dynamic and imprecise. The complexity of lines, and their ability to flicker between uncertainty and precision, is elucidated in Alessandro Barrico's novel, Ocean Sea. Set on a seaside hotel "perched on the last narrow ledge of the world," the novel's protagonist has set out to accomplish the impossible—to compile an encyclopedia of limits, including the line for where the sea ends.

In this regard, lines are liquid. Conversely, when liquid is represented through the act of drawing lines, a similarly incomplete view is formed. It is within these gaps between time and matter or certainty and precision, that lines can reveal opportunities for design. If we slip into a mindset that crosses, tests, traces and inhabits lines, then the limits of what is "in" or "out" and "here" versus "there" melt away. Instead, we might embrace an attitude toward design that revels in contingency and speculates on the temporal and material qualities that make architecture a thriving component of the dynamic, constructed world we share. This paper presents a collection of projects that are motivated by these questions and explored through the platform of an interdisciplinary design practice.

Liquid
Within the realm of water, uncertainty governs the ebb and flow of rainstorms, rivers and shorelines. Within the realm of terra firma, certainty is strongly preferred and bears systems of logic intended to bring order and stasis. What happens when a geography, composed equally of water and land, yet burdened with inflexible territorial demarcations, is re-conceptualized as dynamic, rather than static? Furthermore, how can the conceptual and physical loosening of lines reveal radically contingent design opportunities? The projects under this section address the limits of boundary, time, scale, material and geometry to reveal new grounds for collective spaces of civic infrastructure.

Lines
The realm of play is so elusive that Victor Turner found it to be a compelling consideration in his work on liminality explicitly because it "occupies a threshold between reality and unreality, as if, for example, it were on the beach between the land and the sea." The act of play and the space of the horizon share similar conditions of indeterminacy and are often associated with attributes of openness, creativity and expanded imagination. The conception of the line as a threshold is central to these ideas and, in this section, is explored through speculation and material fabrication.

Unlearning Architecture(s)

Ivan Delgado, Universidad Veritas

Much of an architect´s training occurs by a process of elimination. We must unlearn many things to learn the new ones; in our particular Costa Rican educational context learning to produce correct architecture seems to start with the assumption that most of what we see in our cities is wrong. But when it comes to construction we move between two traditions: the academic one and the informal one. These traditions seem to dismiss each other, an architect would consider the products of informality ingenuous, a person operating within the informal tradition in need of the materialization of the preconceived idea of a house would normally consider an architect a luxury. According to the National Architectural College 23% of overall construction lacked permits in 2014, a percentage slightly higher than the previous year, this nevertheless renders only partial understanding on the phenomenon.

Which of the two traditions accounts for the majority of what is built in this country ? What significant informal knowledge percolates to the present after a much longer presence than formal education and how is it transmitted ? What role does representation play in the informal tradition ? are instructions drawn or narrated ?... How do architects unlearn what they do not understand in full?

A house designed by the author in the rural North of Costa Rica functions as a catalyst for further investigation on how the upbringing of an architect collides with more traditional ways of building. In a village where no other architect has practiced before the author discovers several categories of construction, from the temporary huts vendors use to sell fruits and milking parlors, to houses that have been built following traditional "recipes". The house learns lessons of practicality from these structures and is informed by their aesthetics. It also employs the old "vara" (0.84 m) as the unit of measurement in an attempt to make itself communicable to local builders. In practice, due to the lack of skill for reading formal construction drawings, the instructions to build the house end up being narrated rather than read.

This paper will study informal construction in Costa Rica which is symptomatic of Latin America in general particularly in rurality where it occurs the most. It will collect information from specific cases on how decisions where made and how they were transmitted, and will look for ways to hierarchize them in order to identify which are part of a basic set of instructions (or recipe, meaning there can be small creative variations of the ingredients) and which occur as more significant deviations from those instructions, suggesting that they may be permeated by architectural trends . It will also propose ways to convey the graphic implications of this information that is compatible with the inflections that occur in the orality of these particular context, and finally it will put forward a discussion on ways for an architect to learn from and operate within it, anticipating that our built environment occurs as a trade-off between both traditions.

Open: Historical Parallels

Date : Thursday, June 30, 2016
Time : 3:00:00 PM - 4:30:00 PM
Location : Auditorium South

"Planetary Construction": Richard Neutra's School Lessons from Puerto Rico

Fred Esenwein, Mississippi State University

The conference description notes a tension between local knowledge, which infers traditional designs, and the dissemination of technical knowledge, which suggests technocratic design. Furthermore, it also suggests that this tension is between the global south (traditional) and the global north (technocratic). This tension pulls apart technocratic and traditional societies, but perhaps the architecture of traditional societies offer values technocratic ones have forgotten. Richard Neutra's practice in the 1940s responded to and learned from this tension while he was on the Committee of Design and Public Works in Puerto Rico during WWII.

Puerto Rico, while a U.S. territory, lacked the education, health, and sanitation infrastructure found in the continental United States. Neutra's task was to design facilities to improve the infrastructure. While the aesthetic of the buildings is considered Modenist architecture, Neutra was very sensitive to the structures of local communities. His school designs were didactic in the way people engaged the architecture by learning about fluid mechanics and sanitation through passive designs and planning. Gardens and agricultural practices were introduced to improve food and nutrition. Education and food reforms required local knowledge even though there is a broader scientific knowledge that understands how these conditions can thrive in a particular locality. Architecturally, Neutra adjusted the Modernist style to perform in tropical Puerto Rico.

Neutra also wrote about his observations from Puerto Rican architecture and community planning for the post-war boom in a 1944 article titled "Comments on Planetary Construction" in 1944. That same year, Neutra also published a plan for a community center, featuring schools, health care center, and agricultural fields. Neutra's description was romantic – recalling how the U.S. was primarily an agrarian society rooted in small town life. This was written between the various New Deal legislation during the Depression designed to improve rural America, e.g. the Rural Resettlement Administration, and the post-war economic boom contributing to suburban development, e.g. Leavittown. Having contributed to the development of Puerto Rico and anticipating the economic boom in the U.S., Neutra's proposal for the American community is one that was developed from the global south meant to conserve local values, and yet it was conceived as a model plan that was independent of a particular location – it could be in California or Maine.

The design is more revealing in the ways Neutra worked with the traditional-technocratic tension; the primary consideration was about respect to the human body. This was how Neutra challenges the assertions of the conference prompt. First, his architecture participated in the tension between the global north and south nearly 75 years ago because the tension is part of how human nature responds to technology. Second, his architecture was not dependent on the latest technology, but rather considered how to cultivate habits already present in the way locals lived and could be educated. Third, he adjusted Modernist architecture to embrace local conditions and small community planning focusing on health and education, whether it was an actual agrarian society like Puerto Rico or an idealized one for the continental U.S.

De-Coding Architecture's Geopolitics in Academia: Computation and Capitalism in apparent oppositions between North and South America

Pablo Lorenzo-Eiroa, The Cooper Union

The objective of this essay is to trace what structures certain aspects of contemporary architecture defined by academia in the relationship between North and South America measured by computation. Generally, South America is seen in contrast to and in resistance to, or even as an alternative to North America. What this essay intends to problematize is such apparent opposition and how computation and new technologies are defining the type of cultural resistance to such globalizing systems.

What determines architecture today after decades of disciplinary expansion? How can we de-code the geopolitical determination of computer platforms in architecture between North and South America? How is South America dealing with media reproduction usually originated or absorbed by North American standards? This essay will start by identifying the several expansions of architecture that took place since 1970's, initially influenced by an opposition to determinism by site specificity and that ended up, during the last decade,

expanding space to its relation with the environment by incorporating ecology. The notion of site specificity proposed a non-deterministic origin for post-structuralist architecture, often identified with the periphery, in opposition to the structuralism of the center. This condition of reference, of origin, has since shifted from a topo-logos to a predetermined, indexed computer picture plane. As a result, the condition of origin of any architecture has been displaced by the predetermination of digital, representational structures. Such problematic relationship between determination and open logic is now challenging culturally South America, which encounters no means other than dealing with, resisting and intending to displace imposed systems and new technologies.

Software interfaces and computer codes constitute implicit frames were artistic expression is originated. Marshall McLuhan was one of the first ones to identify that the medium constitutes, in reality, the message. Alain Badiou critiqued the logic of systems, addressing the impossibility of arriving to solutions outside of their structure. North America is able to continuously impose systems to the world. And part of this problem is how a project starts, as the first sign in a project may be already structured by systems of representation. The system of measurement defines what is being measured. New technologies enable the manipulation of data and visualization strategies that open up new possibilities, but by doing so, they impose a new structure as they inform new disciplinary discourses.

The methodology of inquiry of this essay is based on questioning, through problems of representation, assumed systemic relationships between North and South America. The essay proposes to discuss that computer algorithms as well as interfaces constitute today the origin of the structures that define contemporary architecture. Moreover, this essay aims to recognize how much of the progressive and revolutionary aspects of Capitalism are embedded in computation. On the other side of this same representational spectrum, the essay will also trace how contemporary architecture is structured in terms of its mediatic destination.

Foreign Objects
David Salomon, Ithaca College

For over a decade architectural history has been subjected to the forces of globalization. Within American architectural education, a global perspective on architectural is now a legally binding condition. According to the current (2014) guidelines issued by the National Architectural Accreditation Board (NAAB), students must

"… understand the parallel and divergent histories of architecture and the cultural norms of a variety of indigenous, vernacular, local, and regional settings in terms of their political, economic, social, ecological, and technological factors."

Textbooks like A Global History of Architecture (Jarzombek, Prakash and Ching) were created to directly address this requirement. Its inclusive, chronological, and encyclopedic organization forgoes the conventional nationalistic, stylistic or teleological narratives. In fact, it appears to eliminate narrative altogether. If there is a story, it is of globalization itself; a story about the exchange of seemingly equivalent ideas and objects without regard to previous borders or hierarchies. In doing so it doesn't challenge the canon as much as expand it.

The question of the canon is a charged one; so charged that it, as well as "design" and "nation," have been abandoned as organizing ideas from the NAAB guidelines. Such changes suggest that the focus of the "histories of architecture" will be on sub-national, even sub-regional, cultural factors rather than on design. In short, architectural history is thus understood as delivering social, rather than stylistic, knowledge.

Given this agenda, this paper asks the question: What are the current methods and functions of architectural history in the age of globalization and what are their effects? It presents three strategies currently being deployed. They are: 1) History is being mobilized to introduce architects and architectural students with a wide variety of practices and contexts that they are increasingly coming into contact with. Its goal is to make what was foreign familiar. Its danger is that it can fetishize differences. 2) History is used to examine the many precedents where vast transportation and communication networks influenced architecture. This method seeks to make the past recognizable to the present by focusing on their affinities. Its danger is that it collapses differences. 3) Architectural history uses formal and functional typologies as a means for understanding the differences and similarities across cultures and eras. This strategy seeks to uncover where historical overlaps do and do not exist. Its danger is that it can slip into ahistorical modes of analysis and conclusions.

This paper focuses on the third option. It does so because it is the one that uses architectural form to understand and create social differences and continuities, rather than using form as an illustration of a society. It understands architectural form not only as an historical effect, but as a historiographical device. In doing so, it will be argued that this method enables the historian and the architect to simultaneously study global and disglobal processes through the evaluation of architectural artifacts.

Clorindo Testa's Brutalist Bank of London building in Buenos Aires will be used as a case study to test this hypothesis.

Latin Lessons
Brett Steele, Architectural Association

As part of a longer, damning 1951 critique of North American architecture, the Italian émigré Lina Bo Bardi attacked the increasingly predictable and familiar qualities of mid-century modernism. Assessing the state of play from the vantage afforded her after five years of living and working in free-wheeling Brazil, Bo Bardi declared war, and not just wariness, on what was happening to the north. 'Make no mistake', she wrote, 'formulaic does not just apply to historicism it also extends (even more dangerously) to the so-called "modern" – modernism as a "habit".'

The subtext to Bo Bardi's assessment was as original as her own unprecedented projects. In Bo Bardi's view, Latin America had gotten things right, and sooner, than America could ever hope to by adhering not to dogma but rather the necessity of experimentation. Thirty years after her initial essay on America, and during a remarkably productive period that saw the realisation of her SESC Pompeia, Bo Bardi can still be seen articulating a suspicion of America's architectural institutionalization of modernism, which she observed had become predictable to the point of becoming imperialist.

In his 2010 book What if Latin America Ruled the World Oscar Guardiola, a Columbian Philosopher living in London, echoes Bo Bardi's insight while providing a broader cultural framework through which to see Latin American cultural importance. Instead of portraying an emerging continent whose cultural impulses are led by those advanced economies it finds itself 'dependent' upon, Guardiola turns the tables (much as Bo Bardi decades before), by seeing instead the social and political upheavals of 20th century Latin America as explanation for how and why that continues to advance modernisms of all kinds – in ways uniquely suited far beyond its locale.

This paper will offer a summary overview of how the decidedly multi-cultural conditions of Latin American planning, building and construction – forged in the conditions of cold war imperialism, rampant economic and political strife, and remarkable degrees of expatriation and immigration, can now be seen to have given rise to not only a counter culture of architectural modernity, but as well to an architecture of incredible depth, intensity and relevance today.

LIna Bo Bardi: Evolution of Cultural Displacement
Smilja Milovanovic-Bertram, University of Texas at Austin

LIna Bo Bardi: Evolution of Cultural Displacement
In recent years much has been written and exhibited regarding LIna Bo Bardi, the Italian/Brazilian architect (1914-1992). This paper aims to look at the phenomenon of cultural displacement and the dissemination of her design thinking as a major female figure in a male dominated profession and society. This investigation is distinguished from others in that it addresses the importance of regional and cultural influences that affected Lina's design philosophy in her early years in Italy. Cultural displacement has long played a significant role in the creative process for artists. Often major innovators in literature are immigrants as elements of strangeness, distance, and alienation all contribute to their creativity. The premise is that critical distance is paramount for reflection as a change of context unfolds unforeseen possibilities.

Displacement was a consistent element throughout the trajectory of Lina's architectural career as she moved from Rome to Milan, from Milan to Sao Paolo from Sao Paolo to Bahia and back to Sao Paolo. Viewing this form of detachment and dislocation permits insight into her career and body of work as displacement mediates the paradoxical relationship between time and space.

The paper will examine three distinct periods in her career. The first period is set in Rome, where she assimilated Roman life, showed artistic aptitude and spent her university years

studying under Marcello Piacentini (proponent of Italian Rationalism) and Gustavo Giovannoni (preservationist and contextualist). The second period is set in Milan, where during WWII, for lack of architectural work, she developed impressive editorial and layout skills in publications work with Gio Ponti, Giuseppe Pagano, and Bruno Zevi (and the influence of Antonio Gramsci's socialist writings). The third period is set in Brazil, where she builds and evolves as an architect via what she absorbed in Rome, wrote in Milan, and finally realized in Brazil.

After the collapse of Fascism in WWII Lina writes, draws, edits, explores the Italian need for better housing and improved social conditions. She leaves Milan with her new husband, PM Bardi (a prominent journalist, art critic) for Brazil. In Sao Paolo she absorbs the optimism and positive direction of Brazil again working in journalism. Her early design work in Brazil (Casa de Vidro, 1951 and MASP, 1957-68) echoes European modernism, but when she travels to Bahia and experiences that region's difficult conditions first hand, she draws from her Italian experiences (Casa Italiana) and ideas of transforming lives through craft. Her architectural projects become directly responsive to the culture of Bahia and the politics of poverty. Lina's design thinking evolves and parallels the essence of George Kubler's study, The Shape of Time, and the history of man made objects by bridging the divide between art and material culture.

The impressive story of the evolution of Lina, a female architect, has the power to resonate with architecture students and foster their interests, passions and attitudes of how they might shape their future work in tomorrow's world.

Architecture/Practice: Pre-Modern Training For a Postmodern Practice: Models of Pedagogy

Date : Friday, July 01, 2016
Time : 9:30:00 AM - 11:00:00 AM
Location : Auditorium South

A Slippery Slope of Authorship and Attribution: The Atelier Model and the Design/Build Conundrum

William G. Sarnecky, American University of Sharjah

This paper will explore authorship and attribution in academia, focusing on the Atelier model and design/build pedagogy. While the legal question of copyright and authorship of creative work in architecture has been addressed legislatively and through adjudication, there is no analog to this clarification for academics. In many cases, the question of academic attribution of authorship remains murky. This uncertainty poses a particular problem in academia (and in pursuit of tenure) where authorship remains the primary form of currency. A case study of three design/build projects at different scales will shed light on the complicated relationship between teacher, student and the creative work emerging from the Atelier model.

Defining three archetypal student/teacher relationships helps unravel this complex relationship—Mentor/Critic model, Collaborative model and Atelier model. A self-directed student who enters a competition and seeks out mentorship from a trusted teacher best exemplifies the mentor/critic model, and authorship clearly remains with the student. The collaborative model between teacher and should be no differently considered than any professional collaboration (i.e. authorship is shared). Much of the potential ambiguity in authorship and attribution in academia emerges from the Atelier model.

Historically in an art atelier, a group of apprentices, students or assistants worked under the supervision of a master to complete a project in the master's name. Most architectural offices follow some form of this atelier model. In either case, there is no ambiguity about authorship—it is credited to the master artist or the principal of the architecture office. In the best-case scenario, attribution is given to members of the project team, while authorship is assumed to belong to the principal unless otherwise established. The U.S. academic model diverges from this clear hierarchical condition. Unless the work relationship with students is explicitly defined as a collaboration (a relatively rare phenomenon) or retains a distinct mentor to student relationship, the otherwise clear delineation of authorship and attribution is not so clear. Perhaps an argument can be made for the divergence from professional norms in a normative studio environment, but what about in a design/build studio?

In the academic realm, design/build most closely models the professional work environment—and consequently falls squarely within the Atelier model. The studio professor often functions as project architect, in many instances legally signing drawings. Larger projects frequently extend beyond the duration of a single studio and involve multiple groups of students. The professor provides the only consistent involvement from pre-design through construction. Even in smaller projects, it is the professor who establishes the conditions and provides necessary expertise for a successful outcome.

Despite these obvious realities, conditions arise that erode an academic's ability to establish authorship in design/build projects. A design/build studio project (figure 1), a project emerging from a course in furniture design (figure 2), and an exhibition booth design for SaloneSatellite in Milan (figure 3) provide examples of how the slippery slope of attribution and authorship defy the professional Atelier model—and provide an opportunity to open the discussion about how academics should manage this issue.

Bringing Bauhaus Back: Digital Architecture + Contemporary Craft

Shelby Elizabeth Doyle, Iowa State University

The Bauhaus was founded in 1919 by German architect Walter Gropius. Its core objective was a radical concept: to reimagine the material world to reflect the unity of all the arts. Contemporary digital tools, techniques, and materials make possible this in new and profound ways thereby extending the potential of the Bauhaus project into the present day as a meaningful model for architectural education and digital craft.

Gropius explained this vision for a union of art and design in the Proclamation of the Bauhaus, which described a utopian craft guild combining architecture, sculpture, and painting into a single creative expression. The reemergence and refinement of this vision can be seen in interdisciplinary (anti-disciplinary) design research groups such as the MIT Media Lab which exists at the convergence of technology, multimedia, science, art, and design. This

paper explores architectural models for reviving Bauhaus pedagogies that adapt and further the project of digital architectural and its education.

Examples include architectural pedagogies, research labs, and degree programs that rely upon the arrival of digital fabrication shops in architectural departments and the emergence of new and exploratory design/build programs. These educational approaches invert the gap between teaching and professional practice by introducing direct production control, digital craft, speculative projects, and methods for re-centering the architect's role around the act of construction rather than coordination. These curricular models endeavor to expand studio education beyond hypothetical projects and to directly engage with the 'wicked problems' of the 21st century such as climate change, waste, or social injustice. (A wicked problem is a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize.) Consequently, design/build and digital fabrication projects avoid a client/service model and provide a path to circumvent the capital-to-service relationship indicative of contemporary practice.

These questions demand an architectural education model that explores shifting boundaries between the physical and electronic worlds. This paper concludes with an examination of how the Bauhaus provides a framework for this transition. In an age of digital social networks, the future of built and public spaces will depend to a large extent on an architectural education that navigates interaction between the physical and the virtual. This digital realm is an extension of the imaginary space of design, rather than the replacement for architecture or physical space.

Digital walls do not keep out physical rain or as Malcom McCullough states there is "the seeming paradox of intangible craft." Rather, digitally controlled manufacturing and fabrication extend digital architecture into physical space and lead to a realization of the architect-craftsman that John Ruskin sought to revive, but through methods Ruskin could not have anticipated. The future of architectural education should include reflections on the Bauhaus architect-craftsman: "The ultimate goal of all visual artistic activity is construction!... Let us establish a new guild of craftsmen without the presumption of class distinctions building a wall of arrogance between craftsmen and artists." Or more simply put: "Build, don't talk." (Ludwig Mies Van Der Rohe)

Composing Composers: Design Instruction for Student Empowerment
Benjamin Smith, University of Michigan

One argument for architectural education can be the degree to which methodology supersedes a representative style. Style is important, but important relative to the designer, not how well a designer adopts and performs the style of their instructor. Architecture school is not working in an office though it can appear that way. This paper develops topics on architectural instruction in three ways: (1) analysis of authenticity in the design studio, (2) evaluation of high- and low-level intentions, and (3) proposing an advanced studio developing design sensibility.

Using Nelson Goodman's text, "Art and Authenticity," to address how knowledge about a work affects aesthetic judgment raises important distinctions regarding decisions for results. Goodman described conditions that differentiate autographic from allographic mediums. An autographic work, like a painting, delivers a unique sensibility with respect to its author. An allographic work, like music, interprets a primary source such as the composition. Architecture, especially in an environment for training and education, can become complicated with respect to these qualities and deserves scrutiny.

Considering design instruction relative to music composition reveals considerations for instructor and student roles. Randall Dipert's essay, "The Composer's Intentions: An Examination of Relevance for Performance" illustrated the aesthetic consequence of composition in music. Dipert queried if a conductor for a performance should maintain aesthetic consistency (high-level intention) with respect to a composer's intentions or historical consistency (low-level intention) with respect to its reproduction. Reflecting on Dipert's terminology relative to work produced in the design studio, an analogy for instruction should be to compose composers who discuss intentions through architecture. Design education should direct students' sensibilities to execute their own explorations, creating projects from accumulated knowledge guided by their instructors.

In architecture schools a division exists in advanced design studios between technique driven studios and sensibility driven studios. Using Dipert's terms, high- and low-level intentions, the technique driven studio assumes the high-level intentions of the instructor ipso facto which are executed through low-level means. This type of work tends to be dominated by

architectural trends masquerading as high-level intentions. In a sensibility driven studio, high-level and low-level intentions become points of negotiation. A proposal for an advanced studio to develop sensibility relates Wittgenstein's ideas on perspicuous representations and seeing connections through invention of intermediate cases to Kant's discourse on beauty in purposiveness. Foregrounding design this way avoids simplified reduction while straddling ideas about architecture through its relation to purpose, mediating fundamental attributes of architecture.

Design education balances technique and sensibility. Students need skills to communicate their work effectively. They also need freedom to be creative with their ideas. Learning self-reliance empowers students' connection to discourse. Methods for design instruction need to be robust enough to accommodate alternative approaches for production. Instructors need to have enough dexterity to teach outside of their own sensibility. Education in architecture must teach students to become architects, not employees.

Giving up control: What we know doesn't matter anymore

Blair Satterfield, University of British Columbia
Swackhamer Marc, University of Minnesota

The practicing architect views the design process as a precursor to form making and material construction (architectural design as planned assault). Once an idea is conceived and documented (drawn or modeled as a complete by the architect) it becomes fixed. Aside from adjustments made on site during construction and allowances for occupation, the finished product does not anticipate, yet alone accommodate, any type of variation in form or assembly. Architecture as practice strives to limit variation. Processes are refined, compressed, and restricted to increase regulation and eliminate unpredictability. Our inherited strategies strive for ultimate control over a building's conception as it simultaneously stunts the ability to accommodate and leverage the unanticipated. In Extrastatecraft, Keller Easterling describes variables of standardization that go beyond "design". Rules of restriction are codified and multiplied around the globe as curb cut widths, nominal lumber dimensions, and screw thread sizes, which keep the engine of construction whirring smoothly along. Standards of global industry are employed because of their ease, not their effectiveness. This strategy is outmoded and needs to change.

"A consulting civil engineer … admitted to me that much of what you need to know in that field is online, and that their corporate clients were a new breed who didn't so much want what he and his colleagues already knew (since that was easily available), as what they didn't know." (Harvard Business Review)

We are forty years removed from the invention of the microprocessor and the modern Internet is nearly two decades old. Digital fabrication tools are almost as ubiquitous as the software that runs them. Information has become increasingly democratized, and expertise has been replaced by novelty. The notion of the lone author becomes increasingly problematic in a world where systems, people, and machines become more and more interconnected. Are authorship and the idea of being in "control" a late twentieth century casualty of the Information Age?

We reject this notion. The individual is still critical to design process, as a catalyst or curator for example, but the role of the designer is increasingly that of negotiator or facilitator. This is not presented in this paper as a loss. Instead, we argue that it presents opportunity for an architect, and the ability to have meaningful impact on a project increases when our bias shifts away from the willful determination of authorship. Embedded in this line of argument is a redefinition of strength. Strength is no longer associated with deterministic outcomes of domination and resistance, but instead resides in a more calculated environment of long-term collaboration. There is strength in the ability to relinquish control and accept input, to distribute tasks or, to be deferential, to outside voices and unpredictable outcomes. Architects are learning this and ideas ranging from literal mimetic design to long-term strategies for occupant driven influence over buildings point to this understanding. By relinquishing control over the narrow domain of the formal, material, technical, and/or programmatic decisions in their work, architects can impact decisions typically made outside their jurisdiction.

On the (Extra)Ordinariness of Drawing

Luis Carranza, Roger Williams University

One of the most profound investigations of modern culture deals with the relationship between the solid and void, between presence and absence: within the space of the page, painting, sculpture, or the silence between musical notes. Present in the poetry and graphic design of Mallarmé, in the work of Malevich, Oteiza, and Cage, to name three. In

architecture it can be found in the condition of poché but also in Loos' raumplan. Because of architecture's obvious ideological complicity to efficiency and market forces, the radicality found in the other arts regarding the problem of absence has seldom been addressed and considered as a viable alternative to architectural practices. Yet, it is this absence –this space– where our experience and our lives take place; were human agency is active and alive.

Because of its simultaneous distance and proximity to practice, the academic design studio is where space and absence can be explored and materialized through the use of representational and discursive strategies in the same way that Milorad Pavic suggested through Atanas Svilar, the main character, in Landscape Painted with Tea: "While still an architecture student, he noticed that one of the striking virtues of great writers was their silence on certain important matters. And he applied this to his own profession: here the unused space, equivalent to the unsaid word in a work of literature, had its form, the emptiness had its shape and meaning, just as strikingly and effectively as space filled with buildings."

Representation and explorations with representation allow us to alter and modify our perceptions and understandings of the space. They do so more pointedly when we treat the very elements and idea of representation as amorphous and open ended; allowing the page to be one element in an ever-changing puzzle of possibilities. One of the means is through the Drawdel (DRAW-ing mo-DEL), a representational strategy that consists of thinking that drawings can be extrusions of the drawing page into three-dimensionality. This allows the drawing surface to continue operating two-dimensionally (that is, it can still be drawn upon, collaged, etc.) in order to integrate into its three-dimensionality the complexities of space, materiality, experience, etc. that the simple drawing surface simply cannot express. In some cases, "drawdels" can be considered "drawings without paper," as the German-Venezuelan artist Gego defined some of her work, in order to reproduced synthetically the material and tectonic effects and operations that define space.

Given the highly labile nature of our present modernity, the academic design studio is the site to explore the very limits of space through "drawings" that address the realities and possibilities of spatial experience. The aim of this paper is to present how to innovation can be taught by proposing that the manipulation and rethinking of the handcrafted "drawing" –a slow but methodical production that addresses not only the imagination but architectural space itself– is not only indelibly linked to the real world but it informs us, as makers and thinkers, of what the real world is and can be.

Design Strategies: Situated Creative Machines: Situated Practices

Date : Friday, July 01, 2016
Time : 9:30:00 AM - 11:00:00 AM
Location : Auditorium North

"Apparatuses & Constructed Narratives: The Imaginary Life Of Cappadocia"

Carla Aramouny, American University of Beirut
Sandra Al Rishani, American University of Beirut

In "The Fairies' Pits and Towers", an undergraduate travelling design studio, the 'natural' land formation of the region of Cappadocia, Turkey, with its complex matrices of subterranean dwellings, were the initial inspiration. Our interest was to tackle such complex topological landscapes, from both, a morphological / historical understanding and a design perspective inspired by fiction. This paper will discuss three levels of design inquiry: local landscape, spatial constructs and user narrative, around which the studio evolved in active explorations, moving between dynamic time/space relations to physical and spatial interventions. It will detail and present the work done throughout the semester from the conceptual and analytical standpoints to the design application.

Cappadocia, a region in Central Anatolia known for its unique landscapes of soft rock formations or "fairy chimneys", was created through processes of erosion and volcanic deposition forming a vast landscape of hills and valleys. These geo-morphological conditions have long dictated the spatial organization and cultural development of these historical landscapes, where locals inhabited their land by burrowing and forming continuous chains of underground dwellings. The quality of the rock, soft ash in the center with a solid basalt layer on top, created both a soft yet structurally consistent forming material that allowed inhabitants to modulate intricate and distinctive dwellings. Constant prosecution in the zone's history led to a proliferation of these complex subterranean constructs, extending to vast distances and depths. The recent status of Cappadocia as an UNESCO World Heritage site, enforced another shaping influence, one that favors tourism over culture, and promotes landscape as a commodity.

The methodology of the studio was to first partake a detailed analysis of the different shaping processes that have occurred in time, whether geological, environmental, historical, or cultural, and to use such processes to create visual and physical spatial constructs. These conceptual yet analytical apparatuses were considered as active design machines, capable of informing and inducing spatial and organizational logic into a potential architectural proposal for the area. Coupled with a detailed understanding of the region, the students then utilized their apparatuses to propose fictional user narratives that formulate a programmed architecture proposal. Their narratives were visualized as complex collages of lines, drawings and texts. Drawing, again like the physical constructs, was conveyed as an active design tool, rather than a mere representation. It was envisaged as the basis of the idea, a "body without organs" that organized, programmed and imagined a new fiction for the landscape.

This initial process was all done without visiting the region of Cappadocia, with the intent of constructing an imagined or alternate understanding, based on popular culture and readily available information. After the construction of the narratives, the studio traveled to Cappadocia, to reconcile the imagined with the tangible. From that point on, the students actively re-articulated their apparatuses and narratives, inputting new-found understandings and on-site observations. Accordingly, their apparatuses evolved into localized architecture proposals, defying the expected and forming locally bound interventions that mediate between the topological landscape, local culture, and the influx of tourism.

Preserving What? Design Strategies for a Post-Revolutionary Cuba

Gabriel Fuentes, Marywood University
Jayashree Shamanna, Marywood University

The Cuban Revolution's neglect of Havana (as part of a broader socialist project) simultaneously ruined and preserved its architectural and urban fabric. On one hand, Havana is crumbling, its fifty-plus year lack of maintenance inscribed on its cracked, decayed surfaces and the voids where buildings once stood; on the other, its formal urban fabric—its scale, dimensions, proportions, contrasts, continuities, solid/void relationships, rhythms, public spaces, and landscapes—remain intact. A free-market Cuba, while inevitable, leaves the city vulnerable to unsustainable urban development. And while many anticipate preservation, restoration, and urban development—particularly of Havana's historic core (La Habana Vieja)—"business-as-usual" preservation practices resist rampant (read: neoliberal)

development primarily through narrow strategies of exclusion (where, what, how, and why not to build), museumizing Havana as "a city frozen in time."

Seeking a third option at the intersection of this socialist/capitalist divide, this paper describes the work of THE CUBA STUDIO, a collaborative urban ecology studio at _____ University's School of Architecture. Over the course of 16 weeks, students in THE CUBA STUDIO speculated urban futures for a post-revolutionary Havana—strategizing ways of preserving Havana's architectural and urban fabric in the face of an emerging political and economic shift that is opening, albeit gradually, Cuba to global market forces. And rather than submitting to these forces, the work critically engages them toward socio-cultural ends. Some driving questions were: What kind of spatial politics do we deploy while retrofitting Havana? How will the social, political, and economic changes of an "open" Cuba affect Havana's urban fabric? What role does preservation play? For that matter, what does preservation really mean and by what criteria are sites included in the preservation frame? What relationships are there (or could there be) between preservation, tourism, infrastructure, education, housing, and public space?

As opposed to heroic form-making or one-size-fits-all master planning, students established systematic research agendas to reveal opportunities for integrated "soft" and "hard" interventions (i.e. siteing and programming), constructing ecologies across a range of disciplinary territories including (but not limited to): architecture, urban design, historic preservation/ restoration, art, landscape urbanism, infrastructure, science + technology, economics, sustainability, urban policy, sociology, and cultural/political theory. An explicit goal of the studio was to expand and leverage "preservation" (as an idea, a discipline, and a practice) toward flexible and inclusive urban design strategies that frame precise architectural interventions at a range of temporal and geographic scales.

RioLab: Interdisciplinary Strategy for Urban Innovation
Caroline Shannon de Cristo, +D Studio
Pedro Henrique de Cristo, +D Studio

Today, as humanity lives its most intense period of urbanization, the largest and fastest growing cities are increasingly concentrated in the Majority World [Latin America, Africa and Asia]. Whether in Rio de Janeiro, Medellin, Cape Town or Mumbai, the prevalence of the Divided City Program inhibits equity of opportunities, limits productivity, and foments insecurity. Anticipating growth within these cities, integrating their slums to formal areas and making them sustainable and resilient are the main urban challenges of the 21st century.

This paper presents RioLab: a strategy designed to generate responses to the most pressing challenges of urbanization, inequality and climate change. Since 2013, a group of professionals have defined the favela of Vidigal in Rio de Janeiro and its surrounding ecosystem as a laboratory to research, design and develop (R&D2) evidence-based architectural, policy and technology interventions. Each project measure their impact, improve performance and scale proven solutions. It is led by a pair of antidisciplinary design professionals with projects being developed in collaboration with the local community and interdisciplinary experts from around the world.

Situating a practice that works globally in formal and informal settings in the heart of an urban slum has provided a base for learning and acting that has enabled professionals from different fields to engage with common purposes, closing the gaps that often remain between concept and practice. RioLab has produced five major concepts, evaluating their relevance and potential for scale in the context of the Majority World :
[1] Hybrid architecture: Combining high and low density technologies with formal and self-built architecture to develop effective building solutions;
[2] Connected environments: Creating integrated physical + digital spaces throughout the city;
[3] Symbiotic economy: Activating informal capital in the formal market;
[4] Cyclical grid: Improving resilience and sustainability through decentralized systems;
[5] Spatial Democracy: Engaging citizens to participate in public decision making at the city level through physical and digital spaces.

Tactical Urbanism in Underserved Communities
Sally Harrison, Temple University

Tactical urbanism has been around as long as there have been cities. The street vendor, the sidewalk lounger, the child at play, the graffiti artist, the squatter, the guerrilla gardener – all have taken their corner of the city and reinvented it for individual or collective use. Most have

found necessity to be the mother of their creative interventions, and have used the city opportunistically finding unclaimed space, using available materials, bending the rules to accommodate needs unmet by the powers that plan and organize their environment. Without self-celebration these urban tacticians operate in what De Certeau calls the drifts and ellipses of the urban order.

Though there is a certain kinship, tactical urbanism in underserved communities is not the same as the movement that has gained cachet in the design world in recent years; rather it is a way of life in the margins of society that compensates for lack of adequate economic and social opportunity. Indeed the activism that drives designers to collaborate on these small-scale projects with communities is only part of the story. As Sharon Sutton has so eloquently asserted these creative human appropriations of the pregnant zone between public and private the city are a call for public policy reform even as they are evidence of the local imaginary.

Pop-up parks with hammocks, shipping containers and painted pallets, beer gardens, dinners in white, parking days and movie nights: all have exploded on the scene in center cities and in gentrifying neighborhoods and carry with them the paradox of their success. Intended as a means of informal event-making and camaraderie built with innovative use of ordinary materials these seasonal installations bring vibrancy to undeveloped spaces in the city. The mantra of "quicker, cheaper, lighter" that they represent has been well recognized by mayors as an effective and efficient way to inculcate a sense of place ownership among the citizenry. This is a positive democratic impulse but these temporary event-architectures tend to attract and cater to the sought-after creative class, have often evolved toward an implied exclusivity. And they last as long as the season or interest permits. How can the successes – and failures– of the tactical urbanist movement be understood, and reconsidered to advance the goal of a just and vibrant city? What is it that architect, planners, landscape architect and artists can do to address the specific poverty-related needs found in underserved neighborhoods? And how can we ensure these short-term interventions more permanent change?

This paper will focus on three case studies in the Philadelphia region where critical sites and local constituencies have been engaged in building for social and civic engagement, education, play and health. Included are: a literacy parklet adjacent to a branch library designed and built by members of NOMA and a local community; a playscape constructed by children with the Public Workshop; a parking lot-turned-public plaza facing the city hall of Camden New Jersey, and a teaching garden at the Village of Arts and Humanities.

Ecology: Material Innovation

Date : Friday, July 01, 2016
Time : 9:30:00 AM - 11:00:00 AM
Location : Auditorium FADEU

Active Façades. Thermodynamic mechanisms

Javier Martin, Pontificia Universidad Católica de Chile

We are unstoppably going toward a highly technological and mechanized society. Already in 1948, Sigfried Giedion published Mechanization Takes Command. With this book, he wanted to show how technology was increasingly transforming architecture as new gadgets and mechanical elements were becoming part of our daily environments. Years later in 1969, the British historian Reyner Banham published The Architecture of the Well Tempered Environment, which also tackled the mechanization suffered by buildings. In this case, Banham was not only addressing issues about functionality, but related to environmental control. Specifically, his study was focused on the evolution of mechanics for interior comfort.

To greater or lesser extent, both authors analyzed how the mechanization of our environment introduced changes in its design; how the mechanization of architecture was producing a new kind of architecture. One could say that Gideon focused on the mechanization of the interior of buildings, whereas Banham, did it on the "in between".

Since then, technology has highly evolved and mechanics have not only improved, but spread out exponentially as well. Accordingly, the process of mechanization has reached the exterior part of architecture, and from the 1970's, different examples of mechanic façades have appeared. The emergence of the so-called active façade opened an important field of exploration. This new avenue for research leads not only to pure bioclimatic innovation- which translates into energy savings; but also to new ways of architectural expression.

Architecture is essentially a thermodynamic discipline, as its related processes of construction, maintenance and use; exchange, consume and accumulate energy (Prieto, 2015).Throughout the last decades important examples have shown how mechanics can improve and change our built environment. Therefore, in the same trend of Banham's research, this paper explores the mechanization of the architectural envelope from a thermodynamic and architectural point of view. It will critically review four relevant works, which propose the innovative inclusion of mechanisms in their façade to optimize energy flows. They stand out as examples of «ecolomy» (Ingels, 2010) and of remarkable architecture, presenting a vast field for sustainability and design exploration.

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An Ecology of Innovation: Adapt, Reuse and Reimagine.

Peter Stapleton Raab, Texas Tech University

Likely one of the first dwellings man resided after the caves was made of earth. Even today, tens of thousands of years later, approximately thirty percent of the world's population lives in earthen structures. While the soil components and technology of these ancient artifices have advanced and adapted over the years, it is this adaptability that best exemplifies the success of human organism. Recent advances in earthen buildings – the addition of cementitious binders, steel and fiber reinforcement, and engineering modeling, to name a few – has allowed a recent resurgence in this ancient building material to grace even the most contemporary structures in the Americas. This paper is not positing that all future buildings be made of earth, however the re-imagining of archaic building materials in new and innovative ways can benefit from being more sustainability derived, locally sourced and emergent from existing ecologies and cultures. With rapid deforestation, rising global temperatures and rampant air and water pollution occurring across the world, a conscious effort to utilize local materials [whether that be refuse, dirt or other innovative materials] in more resourceful ways is imperative.

Historical limitations of site-based materials and methods have long departed the necessity of sourcing local materials for architectural design. With the relative ease of transporting and

advance of industrial capabilities, globalization has led to homogeneity amongst architectural product in the Americas – often at the expense of local cultures. With the passage of time come rapid technological advances, and posit that the design problem is no longer 'how', but 'why'. Why build out of industrialized, non-local materials? Can we learn from the historical building practices in order better understand the importance of existing ecologies? Can we couple innovative practices with historic norms? If the architectural intervention lies solely on short-term benefits [or cost] without being cognizant to the longer-term realities of climatic, environmental and cultural - then we are truly only concerned object-centric thinking.

This paper will look at three, small but impactful projects that investigate local cultures and ecologies to design and build three site-specific interventions in order to share several of the lessons learned and best practices used within each of these unique sites, cultures and programmatic issues to become fully integrated within the local environs. The first, a small design/build effort that combined local masons and community with architecture students, professors and artists to create a residential compound for the Yaqui Indians in the Sonoran Desert, Mexico. Integrating local, adobe infill walls with American engineering of reinforced concrete pier and beam construction to create a more resilient structure that was tuned to the place. The second, a sukkah designed and built with the local Jewish Community Center that used a rope enclosure and recycled wood to create a place of reflection. The third, an ice hut designed as a Warming Hut in Winnepeg, Canada.

Concrete Oysters
Evelyn C. Tickle, James Madison University

A new business type has been developed by an architect who designed and patented ecological concrete and products that are used to restore oyster reefs and marine habitats worldwide and by commercial oyster farmers. The oyster, its reefs and shell are at the top of the marine species extinction list worldwide; we have lost 80% of our world's reefs since colonization. The Nature Conservancy's reports and mappings of oyster reefs in most countries determine that most oyster reefs worldwide are labeled only in fair condition or functionally extinct. North America's east and west coast along with Europe's coasts depict oyster reefs rated as poor to functionally extinct with only South America, New Zealand and North America's Gulf reporting reefs in fair condition.

The oyster acts as a marine engineer and is responsible for keeping our waters across the planet clean, as each mature oyster is responsible for filtering 50 gallons of water per day. At one time the Chesapeake Bay, the largest bay in North America, was entirely filtered in one day by the oysters in the bay. The oysters and their reefs are also responsible for keeping shorelines intact by reducing wave energy and holding back the silt from sliding into the bottom of the water body. The oyster shells have been removed from the waters up until recently further causing the demise of the oyster and its reefs while roads in Texas were paved with crushed shell. The embryonic oyster, Spat, attaches itself to another oyster shell's surface within the interstitial spaces of the oyster reef using its own concrete to cement itself to another's shell. From embryo to adult, the oyster absorbs the calcium contained within the shell for its nourishment. The shell and its calcium carbonate act as a large "Tums" to lower the levels of nitrogen in the water. The restoration and rebuilding of oyster reefs and sustainable oyster farming practices are critical in order for our world to have clean water in our bays and oceans, to keep water levels from rising along all countries coast lines and to de-acidify the world's oceans and bays.

I have invented three new products including a calcium enhanced, new type of sustainable concrete tying together research and practices in architecture, marine biology, industrial design and marketing. The desire is to create portable and affordable concrete products that emulate the substrate, surface and formula of existing shells and oyster reefs. And in turn, to use these tiles and disks made of our proprietary concrete to restore reefs, assist scientists with products to use in their research, and aid commercial growers with new systems and products that not only grow oysters but also allow the oyster to be the engineer it was originally designed to be.

A twelve inch by twelve inch by eight inch concrete tile, weighing eighteen pounds and a hand size disk weighing one pound made with a nature-inspired concrete formula have the capacity to change the world, one oyster at a time.

Edible Materials Lab
Igor Siddiqui, University of Texas at Austin

Situated within an increasingly complex global reality, any critical consideration of materiality in contemporary design requires an eco-systemic approach to resources and their circulation

in space and time. Through their lifecycles materials travel not only geographically and temporally, but also flow across seemingly incompatible industries, technologies, and markets. Architecture as a practice has the potential to operate beyond its conventional role of form-giving to existing building materials by actively participating in the design of materials "from-scratch." Such a disciplinary expansion—by both zooming in on material substances at the molecular scale, while also zooming out to track global material flows—architecture and its allied disciplines open up new opportunities for their influence and effectiveness.

Our project Edible Materials Lab focuses on a set of possibilities for material innovation by investigating relationships between the constructed environment and the food supply system. The project was first launched as an advanced architecture design studio, resulting in an exhibition and a series of public programs presented at a creative place-making event associated with a planning charrette for a ecologically sensitive urban site. The notion of edible materials inspires fantasy and elicits a sense of wonder. Edible Materials Lab utilizes this natural predilection to encourage designers, students, and the greater public to reconsider the materiality of their constructed environment. A common perception is that the materials that surround our bodies significantly differ from edible ingredients that we consume. Perceived differences between materials and edibles are a result of their inherent properties, but are also formed by cultural values, social rituals, and technological processes. Variable and evolving, however, such factors can also establish new commonalities between material substances that we build with and those that we ingest. Motivated by environmental concerns while leveraging emerging technologies, today's innovators increasingly link previously disconnected modes of production and consumption.

The selected material samples and prototypes produced by our research team demonstrate a range of possibilities for material innovation using common edible ingredients. Animal and plant-based polymers, microbial cellulose, mycelia, minerals, fibers, and natural gums found in ordinary foods are transformed through experimentation and iterative tests. Through a combination of advanced technologies and do-it-yourself methods, we examine what it means to design materials from-scratch rather than simply working with existing ones. In the age of mass-customization, the project argues, the consideration of materials as designed rather than found opens up tremendous opportunities for design and its impact on the lived environment. For designers in general, working with edible ingredients provides a sense of immediacy, an experience that the exhibition relayed to its audience. Open-ended and experimental in its premise, Edible Materials Lab offers a selection of material alternatives as a means of soliciting questions about the future of our spaces, buildings, neighborhoods, cities, and the environment at large. How may material production, for example, integrate design with food supply infrastructure without competing with food sources or displacing food-based agricultures? For architecture, such questions open up new trajectories of influence in the global age.

The Ecology of Concrete Sausages

Sasa Zivkovic, Cornell University
Leslie Lok, Cornell University

Additive manufacturing is a growing technology which, along with other types of digital mechanization, has the potential to re-define manufacturing at a global scale. This shift towards localized and digitalized systems of manufacturing has been coined the Third Industrial Revolution, allowing for the production of mass customized goods and the fabrication of products by the consumer (e.g. through the use of desktop 3d printers). In architecture, 3d printing is currently being explored by various university research groups, often in collaboration with the building industry. 3d printed houses and projects are beginning to emerge. Recent research efforts by NASA have rendered 3d printing the most likely technology to be utilized for extraterrestrial Mars habitats. On Mars, 3d printers use local materials to build economically adept and structurally efficient housing facilities. It is the thesis of this paper that 3d printing on Earth will continue to gain importance as a construction method based on its advantages related to the use of local materials, the implementation of mass customization strategies, the recycling of concrete, the optimization of material usage, and the potential for a smaller, "hyperlocal" scale of manufacturing through a fleet of on-site 3d printing facilities.

The ecological effects of concrete can be horrendous: the concrete industry is among the largest producers of carbon dioxide globally, contributing to environmental pollution and global warming . However, usage of concrete in architecture and construction is steadily rising - especially in developing countries. For example, large numerical quantities of social housing units in Brazil are planned and constructed using modular precast concrete systems. Precast construction requires large factories, large amounts of concrete, and the

transportation of parts to the building site over often long distances. 3d printing concrete on the other hand, is potentially local and of a much smaller scale. A 3d printing gantry can be set up directly on the construction site, eliminating the need for transportation. Local materials such as recycled concrete, gravel, or other additives can be used for 3d printing.

During the 3d printing process, wet concrete is extruded through a nozzle in the form of a long continuous "sausage". This sausage of material is then applied in an additive process, layer by layer, to build up a form. The advantage of 3d printing is that through the use of fast curing additives, the "sausage recipe" can be altered to use local material or reuse old concrete. 3d printing also allows for material optimization minimizing waste and excess structure. Like printing a house on Mars, it is also possible to construct entire houses using local clay and soil on Earth. This method is not unlike traditional South-American (or trans-American) rammed earth construction. Drawing connections between local vernacular construction techniques and additive manufacturing strategies, this paper will explore the potential for 3d printed architecture across the Americas.

Design Strategies: Situated Creative Machines: Tactical Instruments

Date : Friday, July 01, 2016
Time : 11:30:00 AM - 1:00:00 PM
Location : Auditorium North

Emerging Fields of Architectural Research + Practice

Dale Clifford, California Polytechnic State University

Increasingly, federal funding agencies (Department of Energy and the National Science Foundation (NSF), in the United States) are recognizing the potential of architects and design professionals to provide solutions to problems once considered solely the territory of the sciences. Through revision of their scientific agenda, these agencies are beginning to include architects and designers in fundamental research. In parallel, the boundary of architectural practice is expanding as academics, practitioners, and industry form new design contexts by entering more diverse research collaborations and engaging in technology transfer from established and emergent disciplines. The project described in this paper is an example of the contribution of architectural skills, and broad and multi-scalar design thinking to scientific teams. This paper describes the development and initial outcomes of an NSF funded collaborative effort between the disciplines of architecture and computational mechanics to transfer materials and technology from advances in in-flight shape-shifting aeronautics (wing design) to architecture. The purpose of the project is to design building facades that are more able to sense and respond to local environmental fluctuations by varying surface texture. The team, composed of interdisciplinary faculty and undergraduate students of architecture, is applying shape memory polymers to develop shape-changing tiles that respond to multiple solar insolation states rather than a single optimized state. Initial results are presented that incorporate knowledge exchange between disciplines with description of the role of architectural research in the project development. The implications of correlating aesthetics and performance criteria, during the decision making process are presented. Please note that this paper is targeted towards building confidence amongst designers, as they are broad and multi-scalar thinkers, such that they can make significant contributions to scientific teams.

Responsive Spatial Prototypes: Engaging the Senses through Making

Michael Gonzales

The widespread use of sensor-based technology and personal computing devices has redefined the way people engage and interact with their environments and each other. With the rise of interactive and responsive design the relationship between the body and technology is increasingly blurred requiring new spatial and social considerations. This paper focuses on a series of interdisciplinary design/build projects undertaken during our digital media seminar using the body and personal data sets as a generator for interactive and responsive architectural prototypes.

Through discussions, coordinated theoretical readings and a series of rigorous interactive workshops, students explore how data and the human body influence the design, construction, scale, performance, experience and occupancy of interior architectural installations. Using a graphic programming interface (Grasshopper and Firefly), students are introduced to concepts of sensor-based networks, microcontrollers, biofeedback, computer vision and various other input/output devices as a strategy for developing interactive and responsive architectural prototypes. Students work collaboratively to develop spatial prototypes based on weekly themes. At the start of the semester, students are introduced to computer programming through the Arduino interface to develop small-scale responsive systems. These initial prototypes are scaled up throughout the semester as the students learn to integrate personal data sets and sensor networks to create more complex and responsive spatial interventions. Integrating data-visualization methods and digital fabrication, students are able to bridge between the digital and the physical, testing the potential for responsive environments to mediate experience, perception, and social interaction.

Through the act of making, students are asked to investigate, elaborate and implement complex attitudes toward materials and objects in space, especially as they relate to the human scale. Learning through making allows for the investigation of the complexity of spatial human relationships beyond standard requirements and as they relate to the emerging field of responsive and interactive environments. Engaging directly with their own bodies moving through space and time and focusing on ‘self’, encourages a diversity of solutions. Architecture and the human scale have always been linked however recent advancements in biofeedback and human computer interaction have allowed architects a new method of inquiry and analysis. By including both the physical body and their personal data sets students are able to expand upon the shifting spatial territory of the body in

architecture. A critical approach to making causes students to be aware of their bodies as a valuable reference point for understanding the complexity of interactive spatial relationships.

We believe that making is inextricably linked to architectural thinking. Through projects that privilege the critical perspective of the body, applied design research and the act of making, the relationships between body, technology and architecture are revealed.

The Capacity of Discrete Parts to Form Continuous Assemblages
Kory Bieg, University of Texas at Austin

This paper will introduce a design-build installation that addresses the theme of Situated Creative Machines in two ways. First, the project itself is the assemblage of discrete parts, each part with its own logic and properties, which combine to form a whole that both affects and is affected by the parts. I will argue that this is a new type of machine; a continuous assemblage in which formal continuity is the constraint that ties otherwise independent parts into a collective, as opposed to an aggregation of self-similar units or a hierarchically bound composite in which the whole is somehow greater than the parts. Second, the project as a whole engages the site through formal and cultural relations that are both familiar and unfamiliar to the place, eliciting new revelations of both site and object.

The part to whole ethos is not new and has been a central polemic of architectural discourse for generations, however recent contributions of Object Oriented Ontology (OOO) philosophy have placed a renewed interest in how part to whole relationships might guide – in both practice and theory – new methodologies for architectural design. In his book, The Democracy of Objects, Levi Bryant argues that objects "in their virtual proper being," or not yet realized in the physical world, are "withdrawn(n) from any of their actualizations in local manifestations, nonetheless local manifestations are often highly constrained by the exo-relations an object enters into with other objects." Thus, every object that is realized in the physical world is simply one manifestation from a range of alternatives that might have been, given different circumstances or other constraints imposed by neighboring objects.

The project presented in this paper, is an experimental installation that is one local manifestation of a fully parametric digital model which includes many potential other manifestations. In The paper will explain why a particular iteration was selected for fabrication, the affect of each part's properties on the whole and the constraints the whole imposed on each part in order to achieve a continuous assemblage. The selection process is mostly self-guided by the parts themselves in relation to what the whole demands and by contextual cues that promote some versions of the whole over others. Thus, through its own logics, the installation is an intelligent creative machine.

This project also provides a new take on a conventional structure system – the waffle rib system. By treating each part as an independent self-structuring, uniquely formal object, this project disentangles the parts from a top-down structural scheme. Consequently, the assembly of multi-directional waffles contained by the surface of each part, once assembled, produces a whole that is much stronger than had a conventional rib system been used. Furthermore, the manifestation of each part's particular structural solution is, like the object itself, guided by an internal logic that relates to other properties of the part in which it is contained, as well as conditions imposed by the whole and contextual cues (including occupation, views and environmental/cultural responsiveness).

The Mestizo Robotics Project
Gustavo Crembil, Rensselaer Polytechnic Institute
Paula Gaetano-Adi, Rhode Island School of Design

"Of earth, of mud, they made man's flesh. But they saw that it was not good. It melted away, it was soft, did not move, had no strength, it fell down, it was limp, it could not move its head, its face fell to one side, its sight was blurred, it could not look behind. At first it spoke, but had no mind. Quickly it soaked in the water and could not stand". (Popol Vuh)

This paper seeks to present Mestizo Robotics, a collaborative research project aimed to revise some paradigms regarding the artificial life narratives.

Inspired by the mythologies of the Mayan Popol Vuh, Mestizo Robotics is a "territorial" robotic installation / network comprised of a community of autonomous agents "made out of mud" distributed across the Americas. They are a series of self-propelled robotic spheres that establish subtle interactions with both their immediate environment and other remote agents.

Far from the utopias shown in Hollywood sci-fi movies concerning artificially intelligent, anthropomorphic, and responsive machines, we attempt to contest this imaginary and embody Latin America's anthropophagic, post-colonial, and hybrid nature (mestizaje). Man's quest to replicate living beings goes back thousands of years. In every instance, the discourse of robotics has resembled creationist mythologies, as if the idea of creating artificial beings was a way to emulate and supersede God or evolution.

Under the framework of mestizaje, we propose to deconstruct the system of art, crafts, and technologies upon which the modern/colonial world was built, and to restore different decolonial histories, designs, and materialities. We aim to develop a set of tools that not only provides tactics for understanding how technology is created / transferred / appropriated in Latin America, but also offer instruments that might allow to envision the emergence of a situated, embodied, and enactive paradigm for the co-creation of artificial life creatures in collaboration with local partners and their local ecologies. Therefore the project since its origin as a traditional installation has evolved into current a network of artistic and research collectives across the region. Current partners are institutions from Brazil, Argentina and Unites States.

This paper will present its main conceptual underpinnings, current status and partners, while inviting interested groups to join the network's project. It will discuss Mestizo Robotics as a technological project inspired by indigenous Latin American roots that echoes their creationist myths and attempts to use both digital and updated native materials and craft techniques to create an artificial but autochthonous robotic landscape.

This project has been developed in different stages by the grants from VIDA Art & Artificial Life (Telefónica Foundation, Spain) and the Jaffe Fund for Experimental Media & Performing Arts (USA).

Ubiquitous Simultaneity: A Design Workflow for an Information Rich Environment

Jason S. Johnson, University of Calgary
Matthew Parker, University of Calgary

Introduction
In June of 2014 over 1700 entries were submitted to a competition for a proposed Guggenheim Museum in the Finish capital of Helsinki. Winners had no guarantee that the project would even be built and yet architects from around the world spent huge amounts of capital and time to produce what was described by the Director of the Solomon R. Guggenheim Foundation as "an unprecedented volume of design information that is now freely available for study and use". Just like that the intellectual capital of nearly two thousand architects was essentially distributed free of charge to the public. This is not particularly novel or unique as clients and institutions have long asked architects to stake their reputations and share their ideas with potential career making projects on the line. What is becoming clear however is that the digitization of the profession and its design outputs coupled with the emergence of computer vision and image stitching technologies are offering the potential for new design processes that leverage massive amounts of widely distributed visual data as source material.

Description of Research
This paper will focus on the development of one such design process. A design process made possible by a condition that we would describe as ubiquitous simultaneity. It is a condition characterized by the availability of constantly updated visual information about the built and natural environment, enabled by satellite data, street level image capturing and image aggregations, coupled with additional layers of real time metadata related to the various regimes of control and user interaction. This information is already used by many design professionals as a way of understanding the both the physical and regulatory contexts that proposed projects might exist within. In this case we focus more on potential for the use of workflows used by Google and others to inform a technique for the production of form that uses speculative content vs existing content as the basis from which the workflow operates. We have essentially produced a machine for the production of architectural proposals based on aggregating the digital assets made available through the Guggenheim foundation.

Methodology
The workflow we will present builds on past research that focused on the production of formal assemblies using computer vision, image SIFting techniques and algorithms for producing 3D models. Past research focused on mapping surfaces of existing buildings and producing combinations that resulted in hybrid conditions that embedded logics from both projects inside of a 3 dimensional artifact.

In this case we refined the approach to allow us to aggregate larger collections of images from competition submissions (which share functional and contextual parameters) to produce a series of plans, sections and elevations that are then reinserted into the workflow to produce a series of volumes that embed the functional aspects of the projects inside of the speculative proposals. Outcomes We will present a series of projects or prototypes that emerged from the process and discuss the future directions of the research.

Ecology: Tactical Infrastrucures

Date : Friday, July 01, 2016
Time : 11:30:00 AM - 1:00:00 PM
Location : Auditorium South

Buoyant Clarity

Chris Meyer, Harvard University
Shawna Meyer, ACSA Introductory Member

Two decades ago James Corner proposed the transformation of a traditional concept [landscape] through the association, and partnership of principle themes: urbanism and infrastructure, strategic planning and speculation, culture and design. Corner's selected grouping of critical essays published in Recovering Landscape, explored the potential of these interrelationships, and set forth two important trajectories:

_ Environment is irrevocably bound to culture-i.e, nature and ecologies are not 'culture-less', instead, dependent with societal context.
_Landscape Agency- landscape not as a product of culture but an active agent enriching and producing culture.

The binding of environment to culture resulted in a shift: Landscape is no longer an isolated concept, a residual condition to be negotiated or an object to merely be acted upon, but instead landscape repositioned as a core tool to actively engage environment, linking of cultures, context and societies.

In Chris Reed and Nina-Marie Lister's Projective Ecologies, landscape is charged as an active agent through the lens of 'ecological thinking'. Bolstered again by the writings of Corner, designers and practitioners are challenged to engage in a 'dynamic' model that seeks to reframe a new environmental agenda, further evolving the concept of landscape through the framework of ecologies. The use of the term ecologies, engages infrastructures, landscapes, society, culture, habits, materials as a singular attitude or method of interacting with environment.

Ecology: an interdisciplinary analysis and study of interactions among organisms and objects- often working together as a series of networks- in an environment

The role of the paper will be to use the framework of ecology to question the role of performance within infrastructure, looking both at the existing networks and the potential in future ecological systems. The paper title, Buoyant Clarity, aims to question performative criteria in the creation of infrastructure and the deployment of infrastructural components as a system for engaging in existing networks, specifically through marine navigation and safety buoys.

Infrastructure: a network of similar instruments performing together to support, an environment-often viewed as an artifact from society
Infrastructural agency: a generative tool actively engaging in the ecology of its environment through a defined agenda: energy, culture, information, preservation.

Buoyant Clarity will focus on an existing global infrastructure: buoys and navigational markers, and their latent agency as generative components within the landscape. Buoyant Clarity will extract and expound upon two topics: the traditional concept of infrastructures, a 'global' approach tied to a generic set of parameters and the proposition of infrastructural agency, a 'dis-global' approach of activating existing infrastructures through a defined agenda specific to ecology and environment. Using marine specific artifacts as precedent, and established global network linking national and international waterways, the paper will define the existing 'performance' criteria of the network. Buoyant Clarity will then overlay performance criteria based on a set of needs defined by a site specific ecology: cultural, material, and energy. The association with performance generates the architecture of the infrastructure and defines a projective framework of ecological responses.

Low-Res

Michael Jefferson, Cornell University
Suzanne Lettieri, Cornell University

Climate change's paradoxical condition - that global increases in temperature and sea level have disparate effects on marginalized and vulnerable territories - demands innovations in architectural thinking that engage formal, temporal, and material practices. While much of the discussion surrounding climate change and sea level rise has rightfully centered around

efforts to make cities more resilient through robust and inventive infrastructures, the absence of large-scale protections for areas peripheral to cities or that are economically challenged has left isolated architectures to fend for themselves. With this in mind, it is valuable to examine architectural-scales of resilience across climates and culture that are remote and outlying. Doing so reveals strategies of local response that leave imprints on architectural form, material, and experience. More importantly, it suggests that indigenous processes could be absorbed and interpreted in other locales to generate radically productive results. Whereas flood defenses are conventionally understood as large-scale, heavy-handed, and deterministic infrastructures, this paper will confront resilience at architectural and local scales in comparing marginalized territories in the United States and the remote conditions of Suriname's Amazonian rainforest where, by definition, the local condition is synonymous with flooding and isolation.

Despite the radically differences of Suriname's hinterland and the United States' outlying territories, they share the common attribute of being low-res - the authors' term for local, architectural-scale strategies of resilience. In the United States this is characterized by the raising of typical houses where coastal and riverine areas encounter rising seas and frequent flood events. The resulting elevated house relinquishes its ground-dwelling contingent relationships with its site and neighbors in favor of preserving the image of the ideal American home, subsequently performing independently rather than as a constituent of a larger whole.

Contrast this with architecture of the Amazonian hinterland of Suriname where elevating in a tropical climate yields productive shaded spaces in the non-flood periods. These strategies are at times complemented by minimal infrastructures (such as sluices) influenced by the country's time under Dutch colonial rule. These strategies already do more than their American counterparts, but what if we look beyond the obvious climatic differences between the countries and, instead, observe the processes informed by climate? There is value here that provoke questions that at the heart of the architectural discipline: How is temporal space addressed and what performative relationships can it engage? How can minimal infrastructures (water-based and landform) be productively inscribed in architecture (form)? What types of material practices exist that might take advantage of environment (water absorbent polymers and landscapes, for example)?

The paper will examine the increasingly distorted effects of climate change on architecture and posit that these effects relate beyond a reactive climatic response and, instead, provoke new opportunities in temporality, responsive materials, and infrastructural landscape solutions. The paper will feature projects from the Low Res studio currently in progress and ask: How can the analysis of responses to climate and environment generate innovative procedures for architecture as it is forced to respond to a changing climate?

Securocratic Ecologies
Ersela Kripa, Texas Tech University

SECUROCRATIC ECOLOGIES
The paper suggests that recent transformations in US and Mexican energy policies have enabled a new geography of codependence, a binational shared-resource territory which strategically crosses the contested borderlands, in order to manipulate regional ecologies and atmospheres in the name of national security.

BINATIONAL RESOURCE TERRITORY/
After the recent liberalization of the Mexican natural gas economy, U.S. and Mexican energy interests have begun a rush to connect natural gas supplies in the southern U.S. with power facilities in northern Mexican states. A cross-border network of transnational gas pipelines is reshaping the border territory, mapping a geography of shared resources and codependence. A spatial counterpoint to the impervious border wall, which fosters security through logics of exclusion, surveillance, and physical defense, the emerging permeable resource boundary belies another side of national security, securing demand for the products of newly exploited shale plays in the Permian basin as a means to promote energy independence through soft infrastructures.

ENVIRONMENTAL MANIPULATION/
This network seeks to manage more than just the economy; it is a calculated play to secure the purity of domestic ecologies and atmospheres. According to binational energy advocates, more Mexican power plants, burning clean American gas, means less pollution from outdated coal, oil, and wood-burning plants entering domestic airspace. Less pollution in turn secures biopolitical futures in major US cities and the continued viability of federally-managed national parks. The network, in this sense, can be seen as a continuation of a legacy of

environmental control experiments conducted by the US security interests at the regional scale (see figures attached).

CASE STUDY: TRANS PECOS PIPELINE/
The paper will focus on the infrastructure of the proposed Trans-Pecos Pipeline (TPP), a natural gas pipeline scheduled for construction in 2016, which will connect the Waha gas distribution hub in West Texas, to Presidio, a border town in the pristine Big Bend region. The pipeline, the paper proposes, maps a trajectory of trade-off , a frontier within a new regime of environmental security. With its proposed construction easements and support facilities disrupting the pre-anthropogenic ecologies of the largely non-industrialized Big Bend region, advocates argue that the pipeline is actually the lesser of two ecological evils, enabling the reduction of atmospheric pollution and haze throughout the larger west Texas region while securing the legacy of Big Bend as one of the clearest and darkest 'unspoiled' regions of the country.

The paper will outline the many infrastructural, architectural, and technological instruments which will manage this 'securocratic ecology', as a means to better prepare designers and advocates for the changing shape of environmental control. The effects of air pollution and particulates generated by the energy industry, on the particular ecology of the Big Bend region will be highlighted, as well as the effect of haze on regional 'dark sky' tourism.

The paper will include original geospatial analysis and mappings of the region (example attached) and original photography demonstrating the various infrastructural typologies and ecological conditions involved in the emerging cross-border resource territory.

TERRITORIAL FILTER The Peri-Urban as a Separating/Connecting Device
Agustina Gonzalez Cid

Food shapes territory. With almost 7.4 billion people living on our planet, the astronomical demand for food transforms some countries into global productive hinterlands forcing them to dedicate huge percentages of their land to harvest the 7.605 tons of food that are produced per minute worldwide. This global demand for quantity and quality stresses the soil, making it difficult for it to meet the expectations without additives. In order to obtain the most from the soil and to protect crops, farmers use fertilizers and pesticides, some of which may bring undesirable effects on neighboring people's health.

This paper analyzes food production and its coexistence with rural urbanity in the Argentina's Pampas, an area that was once considered the world's granary and is still capable of feeding a population ten times the country's current size. Since the beginning of its agricultural history, the area was populated by towns that hosted both European immigrants to work the land and grain harvested in the area. Today the situation has changed and these towns are almost totally disconnected from the production that surrounds them. However, because of their location, they are still forced to deal with its externalities. In these towns urban and rural are present as a binary situation with no in-betweens and the imaginary bodiless line that separate these two worlds does not protect people's health and well-being.

Different laws have tried to solve the conflict between the two main neighboring activities: productive and residential. However, by trying to address the problem with one very simple diagrammatic scheme based on distances, these laws are missing an interesting urban opportunity. It is then necessary to question the solution and suggest another approach: Is it possible to manufacture a space that works as an in-between that gradually filters the effects of extensive rural production? And, is it possible to use this opportunity to add different public and private programs, creating new ways of inhabiting rurality?

The Peri-Urban has the potential of becoming both a gradual territorial filter, separating fertilizers and pesticides from people, and an encounter area for different situations to meet and coexist, creating a space from were to experience both present situations as one. The paper analyzes on the one hand, the current situation with peri-urban areas in Argentina and, on the other, different case studies with strong rural presence that can help understand the potential behind creating these intermediate spaces. From Garden City of Tomorrow to Agrónica, the paper revises historical utopian models that work as a hybrid between production and living and that could potentially shed light on the Peri-Urban as a separating/connecting devices.

Open: Systems' Limitations

Date : Friday, July 01, 2016
Time : 11:30:00 AM - 1:00:00 PM
Location : Auditorium FADEU

Cross American Traverses: The Triangular Practices of Ecosistema Urbano and Fake Industries

Sabir Khan, Georgia Institute of Technology

The “disglobal” and “postglobal” conditions that the conference call posits appear rushed and undercooked -- discussion and debate at the conference could perhaps flesh out what is for now a scanty premise. What is true, however, is that the architectural traffic “cross americas” is shockingly, if not surprisingly, limited to elite discursive exchanges and to architects moving north, part of the larger movement for greater economic opportunity. North American architects rarely venture south; when they do it is quite often as part of a “mission”, service learning, and non-for-profit volunteer work.

For all the talk of global or post-global networks and relationships, the many "borders" -- financial, epistemic, ideological, pedagogical, cultural, institutional -- suggests how complicated, and fraught, an endeavor "cross-american" architectural crossings, from north to south, are. The five-year self-assessment by Ingenieros Sin Fronteras Colombia, the first “global south” franchise of the American organization Engineers without Borders, makes for a chastening read as it carefully and precisely fillets the problematic, in a manner that architects rarely do.

European architects, especially young Spanish practices post-crisis (2008), however appear to triangulate the Americas with tantalizing ease. Their cultural and educational provenance -- ETSAM and ETSAB, especially -- gives them equal purchase in the metropolitan centers of the USA and in South and Central America.

This disciplinary fluency is especially intriguing: their architectural positions are a carefully calibrated balance between the formal and the social, neither privileging the autonomy or the contingency (situatedness) of disciplinary knowledge.

This paper takes a close look at two contemporary practices -- Ecosistema Urbano and Fake Industries Architectural Agonism -- in order to make provisional sense of their very successful traversal of the Americas, via the very specific post-1978 architectural culture of Spain. The paper analyzes their work as well as their working mode -- their precise rhetoric and sensibility that simultaneously gives their work a gravity, grounded in particular situations, and a lightness, provocative and ahead of the pack.

Design in a Culture of Fear: A Photographic Unmasking of São Paulo’s Residential Sphere

Matthew Dudzik, Savannah College of Art and Design

Purpose
In São Paulo, fear grips the super-wealthy as the gap between that material rich minority and the growing population of the deprived poor increases exponentially [S1]. Domestic architecture and interiors that previously existed as refuge from public/social life have increasingly acquired characteristics of the public/social sphere as they offer protection from dangerous realities. As the outside world becomes increasingly closed, the residential sphere becomes increasingly vital.

Framework
This research investigated the psychology of personal space within a fear-laden society. The photographic lens was used as the frame for comparative visual analysis for the interactions between interior space, personal identity, and the complex spatial, social, and class relations in São Paulo, Brazil (Harper, 1994). These documentary photographs explore the creation of personal space that is notoriously guarded and rarely available for viewing by outsiders.

Method and Scope of Work
An understanding of the interaction between socio-economic conditions and environmental psychology served as the foundation for this project. In-field examination culminated in a collection of photographic documents unlocking the spatial responses to personal fear and showcasing the realities of its affects on design. These images captured this private-public face through their expression of order and exploration beneath the surface of the architecture’s explicit agendas. More than demonstrating architectural relationships, these

photographs showcase the visual manifestations of the psychology of space in a culture of fear.

These works maintain the tension between image and representation, idealization and idiosyncrasy, while refusing to provide a mimetic depiction of reality. Photography never shows a complete image of a reality, but instead exhibits one possible variant of a multiplicity of constructed perceptions (Rose, 2007; Sanoff, 1991). The photograph becomes the defining power, presenting a series of fragmented views and thus itself forging a new spatial order within its frame. From detail to overview and back again, this collection of photographs explores the discrepancies between contemplation and ultimate utilization through continuously overlapping and superimposing scales of magnitude.

As São Paulo has become increasing dangerous and the divide between extreme wealth and extreme poverty has widened, Paulistanos have turned to the creation of for-tified residences as means of protection. Fear has created a city of endless walls and gates in an effort to create for its inhabitants a sense of security. This design response has deadened pedestrian activity and compounded the problems associated with crime.
Locked within the interiors of these modern fortress/palaces however, are cosmopolitan communities pulsing with creativity and culture.

This examination contributes to the understanding of cultural and sociological approaches to the examination of residential architecture and interior space, an aspect worthy of examination by designers. In contrast to the photography of shelter magazines which display staged images focused on the conveyance of design intent and the capturing of aesthetic qualities for evaluation, these photographs are candid, spontaneous images that investigate the actuality of environmental stresses and their accompanying coping mechanisms. The images contain a sense of the residents' environmental preferences, their stresses, and their coping mechanisms. This presentation exhibits and discusses these photographs to further exploration of these culturally vibrant spaces of paranoia.

Fronts and Backs: The Question of Authenticity and the Limits of Critical Regionalism
Gonzalo Carrasco Purull, Pontificia Universidad Católica de Chile

El arquitecto Freddy Mamani Silvestre ha alcanzado cierta notoriedad en los últimos años debido a sus obras arquitectónicas construidas en la localidad de El Alto, Bolivia. Poblado ubicado a las afueras de La Paz y que durante los últimos cincuenta años ha recibido una importante migración desde el interior de población fundamentalmente de origen aymara. De ahí que Mamani ha intentado a través de sus edificios, ofrecer una versión contemporánea de una arquitectura andina que pudiera expresar una pretendida identidad aymara. En un ejercicio que ha recibido fuertes críticas, principalmente por la supuesta inautenticidad de las propuestas de Mamani ante una identidad aymara "real".

El presente trabajo busca profundizar justamente en este desajuste que se produce entre autenticidad e inautenticidad en la escena arquitectónica contemporánea latinoamericana. Especialmente dado el fundamental rol que tuvo el discurso de la autenticidad en la idea del Regionalismo Crítico, concepto que principalmente a través de la labor de difusión del historiador Kenneth Frampton, sirvió desde los años ochenta como una categoría para describir buena parte de la producción realizada en regiones alejadas de los centros, como resulta ser Latinoamérica.

Basándose principalmente en las categorías de "frentes" y "traseras" propuestas por Dean MacCanell, es que se propone una lectura crítica del concepto de Regionalismo, colocando énfasis en los alcances políticos, culturales y disciplinares que trae la búsqueda de la autenticidad como valor en la construcción de una supuesta identidad local "real". Y sobre todo, en como esta determina las propias lecturas que sobre la producción arquitectónica latinoamericana se realizan en el contexto de una escena globalizada en donde la diferencia resulta un importante valor de consumo. En donde los límites entre lo auténtico y lo que no lo es, aparecen más difusos que lo que se cree.

The Politics of Memory: Constructing Heritage in Havana, Cuba
Gabriel Fuentes, Marywood University

Since granted world heritage status by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 1982, Old Havana has been the site of contested heritage practices. Critics consider UNESCO's definition of the 143 hectare walled city center a discriminatory delineation strategy that primes the colonial core for tourist consumption at the expense of other parts of the city. To neatly bound Havana's collective memory / history within its "old"

core, they say, is to museumize the city as "frozen in time," sharply distinguishing the "historic" from the "vernacular."

While many consider heritage practices to resist globalization, in Havana they embody a complex entanglement of global and local politics. The Soviet Union's collapse in 1991 triggered a crippling recession during what Fidel Castro called a "Special Period in a Time of Peace." In response, Castro redeveloped international tourism—long demonized by the Revolution as associated with capitalist "evils"—in order to capture the foreign currency needed to maintain the state's centralized economy. Paradoxically, the re-emergence of international tourism in socialist Cuba triggered similar inequalities found in pre-Revolutionary Havana: a dual-currency economy, government-owned retail (capturing U.S. dollars at the expense of Cuban Pesos), and zoning mechanisms to "protect" Cubanos from the "evils" of the tourism, hospitality, and leisure industries. Using the tropes of "heritage" and "identity," preservation practices fueled tourism while allocating the proceeds toward urban development, using capitalism to sustain socialism.

This paper briefly traces the global politics of 20th century development in Havana, particularly in relation to tourism. It then analyzes tourism in relation to preservation / restoration practices in Old Havana using the Plaza Vieja (Old Square)—Old Havana's second oldest and most restored urban space—as a case study. In doing so, it exposes preservation / restoration as a dynamic and politically complex practice that operates across scales and ideologies, institutionalizing history and memory as an urban design and identity construction strategy. The paper ends with a discussion on the implications of such practices for a rapidly changing Cuba.

Transamerican Migrations toward a Critical Optimism: featuring Fake Industries' Velodrome in Medellin, Pedro y Juana's Randolph Square in Chicago and El Alto's Cholets by Freddy Mamani Silvestre

Andrew Santa Lucia, School of the Art Institute of Chicago

"Critical optimism is the belief that the specific conditions which exist at one moment be they comparatively bad or comparatively good, in any event may be bettered."
- John Dewey, 1929

"I believe in an international community of interests, in a concert of all the private voices. Now it makes no sense to think of a language that is common to all the people if each of them do not deepen their own roots, which are different."
- Lina Bo Bardi, excerpt from Lina Bo Bardi: Together at Graham Foundation, 2015

A contemporary strand of Transamerican architects working freely, in and across the American continents have developed a discernible attitude towards architecture culture, a Critical Optimism, a radical agenda of novel social interaction encompassed by graphical aesthetics and technological experimentation. This work that is being produced runs counter to the more accepted genealogies of Latin American architecture and its utilitarian, political or contextual focus associated with critical projects of the second half of the 20th century. This essay will define a Critical Optimism through the work of New York/Madrid/Sydney's Fake Industries Architectural Agonism, Mexico's Pedro y Juana and Bolivia's Freddy Mamani Silvestre.

Through a close examination of their projects, this essay will attempt to (1) find Critically Optimist roots in the more radical and shapeful architectures of 20th century Latin America, such as the ones of Lina Bo Bardi in Brazil and Ricardo Porro in Cuba; (2) connect Critical Optimism to the advent of projective theories in the United States, but also differentiate it because of its dedication to culture and society; and (3) suggest a common connection between these radically different designers, such as their oscillation between color, pattern, shape, behavior, technology, techniques and aesthetics.

Fake Industries Architectural Agonism is in the process of completing a velodrome in Medellin, which creates a space of public interaction based on levels of projective participation that audiences might have with events at the stadium whether in use or closed. (fig. 1 - FAKE Industries -Velodrome Medellin) Pedro y Juana recently completed Randolph Square as part of the inaugural Chicago Architecture Biennial, where they transformed a late-19th century Beaux Arts room into an interactive space filled with micro-territories of study, leisure and play, transplanting ideas like traffic and networks into urban interiors. (fig. 2 - Randolph Square) Freddy Mamani Silvestre has produced an indigenous postmodern oeuvre in El Alto that exalts the shifting class dynamics after the election of Bolivian President Evo Morales and creates a cultural, supergraphic and shape driven public party architecture. (fig. 3

- Cholets) These designers are bridging culture, gender and identity by creating a new face for Transamerican architecture that defines itself through the hemisphere as Critically Optimistic about the future of the continents.

Cities/Urban Tactics: Contested Territories

Date : Friday, July 01, 2016
Time : 3:00:00 PM - 4:30:00 PM
Location : Auditorium South

Connecting an Urban Mosaic: Open Spaces and Sustainable Places of Belgrade

Jeanette Burman, University of Calgary
Sasha Tsenkova, University of Calgary

Following a rapid transition to markets, democracy and private enterprise, Serbia's capital Belgrade is emerging as a 'global city', but this ambition is coming at a cost to the environment and a loss of sense of place for its people. Diverse identities and changing values over time are being challenged as the city transitions out of a complex socialist past into a pervasively global economy, which by definition challenges locally embedded hybridity of place and puts strain on sustainable growth. Open spaces are required for city residents to live, work, and move efficiently, making the use, access, and ecological integrity of open spaces a city-wide priority. The dependence and attachment of city residents to these spaces provides an ideal baseline for analysis of different open space typologies integral to the urban fabric defining a wide range of urban regeneration strategies. This people-centered approach, coupled with an understanding of the contemporary and historical significance of open spaces, raises the question of how to improve and connect such forms to the urban fabric in a sustainable manner while respecting place identity. Currently, many of Belgrade's open spaces lack in place engagement and sustenance, as is seen in the highly contentious Waterfront Development—a Serbian and United Arab Emirates joint venture. This example transects the socialist utopian landscapes of New Belgrade and the city's historic Sumice public park. Other case studies demonstrate the systematic loss of open space taken over by private development and informal housing on one hand, but also people-driven initiatives reclaiming the ecological integrity of the urban landscape on the other. Using fresh empirical evidence and case study analysis at the neighbourhood and city-wide scale, this research develops an open space typology for sustainable place interventions for a connected urban mosaic of post-socialist Belgrade. The analytical framework draws on existing urban research in the context of post-socialist transition and advances a design matrix to analyze open space forms for connectivity in relation to place and sustainability.

Extimacy and Urban Space

Nerea Feliz, University of Texas at Austin

The progressive erasure of boundaries between the private and the public sphere are increasingly affecting urban dynamics. Growing accustomed to sharing personal data through a wide range of technology and social media, the traditional notion of privacy is being profoundly challenged. "Extimacy", the term coined by Jacques Lacan to refer to a psychological intimate exteriority, could be borrowed here to describe a shared intimacy taking place in the public realm.

Unparalleled migration movements of people towards cities, growth in population density and capitalist forces on the urban real estate market are increasingly reducing the space available for dwelling and putting pressure on public urban space to operate as a domestic setting. The less time we spend at home, the more we seek its comforts elsewhere. Eating out, writing in cafes and showering at the gym, are very common practices. Private activity, traditionally linked to the home environment, has exploded in fragments and is scattered around the city. Urban and Interior, two vastly distinct conditions, are increasingly operating in conjunction making urban-interiority a desired quality for public urban space in highly populated city centers.

The domestication of public environments to provide comfort, familiarity and a homely feeling in outdoor spaces once defined by prohibitions and exclusions can deeply change urban practices. Attention at the interiority and micro scale of the urban realm, is stimulating new tactics in municipalities and influencing the scale of urban interventions. Madrid's mayoress Manuela Carmena just launched a design competition to design street benches that foster communal outdoor sitting and socialization in order to replace the old 'anti-beggar' ones. The aim is bringing public space closer to an urban living room. Could the semiotics of the domestic eventually disguise the city's streets and squares? How is the entropic mixture of private and public practices altering the physiognomy of the urban fabric?

This paper looks at examples of urban projects that challenge the traditional association of interior with intimacy and exterior with public performance. "Extimacy" weaves together private and public, indoor and outdoor, as a modulated continuum. It can transform the outdoors borrowing from models of interior occupation: not streets but corridors, not squares

but rooms. It relies on the conciliation across its multiple nested scales, on how design is deployed to respond to the recursive relationship between the micro and the macro, between the individual and the collective.

Struggling for accessing a school at Peñalolén, Chile: The new role of space when not even good design is enough

Luis Valenzuela

In the understanding that design new challenges are not solely an aesthetic quest of a solution, but also to have the capacities, tools and knowledge to understand the true nature of a problem, design necessarily must develop new and adequate responses to such problems and its demands. Specifically, this is an acute challenge for the academia related to design and architecture, which has hold back to open such dimensions. Among design well-known capabilities that can contribute in this perspective, it also needs new instruments and measurements to cognize new problem's challenges and lead those towards architecture, urban, and planning design solutions. Since several of these tools seem to gradually amplify the boundaries of design approaches, at the same time increasingly needs of evidence and building evidence are more critical to achieve genuine progresses in relating real world demands to real problem solving.

In this millennium of intense urbanization disciplines linked to planning and design of cities are experiencing a defiant period to conventional theory, methodologies and solutions. Now, more than ever before, the value of design will strengthen its foundations and guiding principles around the assurance of gathering data, diagnosis hypotheses and its argumentation as evidence of complex urban problems and not solely regarding its own functionality. Until today, evidence based design has been related to a creative scarceness or creativity impoverishment, yet new dimensions of design has emerged form urbanism tactical approaches and technological innovations broadening the scope of discussion. In a certain way, design is not only related to a product or an experience, as two independent fluxes, looking at the mainstream of urban theory in all its variations, we can assert that evidence products and theoretical framework had experienced a progressive separation. Yet it can also fill the gap of the processes and strategies between the comprehension of a problem and the ending result. Evermore, such processes and strategies potentially contain crucial parts of the answer for today's complex social spatial problems.

The paper will seek such issues in places as the city of Santiago in Chile, of emerging economies the incremental accumulation of social problems summonses us to work toward the development of better capabilities for understanding them spatially and finding explanations for them in the built environment. Peñalolén is one of the most socio-economically mixed municipalities in the Great Santiago Metropolitan Area. In some of its most vulnerable territories dwell some of the lowest life quality standards in the city while neighboring high-income areas. Such paradox urges to improve the comprehension in an integrated and holistic way. In collaboration with local government officials from Peñalolén Municipality, the evidence uncovers the struggling routes for students of a public school to get to school through crime and violence performing territories. The strategy finds new spaces to for kids to access their education and the embryonic of an architectural and urban design approach.

The Public Square: Memory and Meaning

Gulen Cevik, Miami University

The term public has a rather ambiguous and broad meaning so does public space. Considering 'its full development as a product of modern capitalist society,' (Smith and Low 2006:4) public space is constructed alongside private space. Kostof points out the organizational and legal consequences of 'explicitly defining and articulating an outdoor space for the common good' in that 'the people assume a double responsibility: the upkeep of this space and its preservation as public property' (Kostof 1995: 45). As such, public spaces can serve as sites where public identity and meaning are negotiated in complex ways.

Today, even in countries governed by western style democracy, the use and access to public spaces are often restricted and policed. Public spaces can be highly politicized when they become the setting for the glorification of leaders, social activism, political uprisings, conflict and violence. In 2013, the Turkish government's decision to convert the only remaining public park in Taksim into a shopping center and a mosque resulted in Istanbul's Gezi Park protests. The demonstrations gathered people with diverse ethnicities, religious and political views from all walks of life.

Kevin Lynch suggests that city design is a temporal art: "Every citizen has had long associations with some part of his city, and his image is soaked in memories and meanings" (Lynch 1964: 1). Since public spaces are one of many settings where citizens experience their city, what happens when public spaces are under attack? What if the memory and the meaning are transformed into fragmented and irrelevant pieces by business interests or government? What happens to public life when public spaces are stripped off of their "spaceness"?

This article will explore the notion of public space; its design and role as a generator of urban context and memory utilizing Turkey as a case-study. Since 2002, the conservative ruling party in Turkey, AKP (Justice and Development Party), initiated major public projects in many city centers with no consideration of public opinion. Nigde, Bolu, Aksaray, Karabük, Adana, Konya and several other city centers shared the same fate. The intimately-scaled city centers were eviscerated to make way for vast "non-spaces"; places where no memory and meaning can possibly be constructed.

The enormous scale of these projects thus created reject the human body as a scale and a means to experience the city and its public spaces. The result was the production of psychologically threatening and unwelcoming city plazas.

In each case, the transformation of public squares started with demolishing the entire green space existing on the site. In addition, components which are vital for any successful urban space, such as seating, sculptures, etc., were not included in the new scheme for the most part. While most designs served well as a larger public meeting space for political campaigns, these newly formed non-spaces do not encourage daily use by city-dwellers. In the newly formed non-spaces people and their bodies become irrelevant. In these plazas, the individual and his memory no longer exists; the plaza becomes a container for crowds.

Workshop: Collective Architectures - International Meeting in Puerto Rico
Yazmin Crespo Claudio, Universidad del Turabo & Omayra Rivera Crespo, Universidad del Turabo

The city changes and canceled our memories. It is there, incorporated in our day-to-day determined to resist deterioration of its parts. It is disproportionate and the spaces require a new architectural pact for the opinions that doesn't meet. There's no need of masterworks but resilient processes in the public-space.

The WORKSHOP study local and possibly transient design and build proposals in the community of La Perla in Old San Juan. It does not include flamboyant nor star-architects but emphasizes that the masterplan is an anachronism of our society. Thus, is not architecture of mega-structures that occupy a prominent territory within a city or community, but specific, local and possibly transient proposals. During the workshop students, professors, and the collectives utilize and explore the mechanisms for recovering the position of the designer - more advocate - in the public sphere. It is about knowing and understanding that we need to be accomplices of new urban practices, self-organized work and site-specific projects.

The collectives (designers, students, residents) work in the public sphere as scanners from where sequences of implied networks and relationships are constructed. They overview, preview, focus and then scan. In the scanning operation public spaces are put in dialogue through the subject; the community of La Perla. The network questions the nature of architectural practice involving around forty students, three international designers [Todo por la Praxis from Madrid, Spain, Arquitectura Expandida from Bogotá, Colombia and FG Studio from New York City] in the process of participation and self-managing empty spaces in urban contexts. Thinking while building with residents help understand their differences, needs, discover patterns that identify new communities and create new narratives, identities, which give way to emerging projects. The significance of the projects is not the end result, but the process itself.

Although the projects are temporary insertions, they act as urban prostheses in deteriorated spaces of social encounters within the community. The "urban disobediences" organized through collectives, volunteers and students construct new "situations" to be added in unfinished urban cartographies. They are fragmented scenes of a community seen in frames, where each intervention becomes an event that forms part of an experimental urbanism, one that traces notes about urban practices. Through a scavenger hunt of images of place, dreams and identity the children of La Perla suggested the spaces of intervention. The workshop asked students to design projects inspired by the imaginary of the children. Each project emphasizes in the recycle of materials and the reoccupation of deteriorated spaces. For example, Luigi's Stair in the sector of waipao, of La Perla is an intervention that the students built on the beach to recuperate the access to the water. The project included the help of local surfers, children's from the sector and the collective Arquitectura Expandida.

We should not understand the city as a whole for the simple idea that there is not " a whole" . Its language is collective. It is place of multiplicity and dynamic relationships. It is a collection of countless events and sensations.

Ecology: Strategic Redistributions

Date : Friday, July 01, 2016
Time : 3:00:00 PM - 4:30:00 PM
Location : Auditorium FADEU

Affecting Change through Insurgent Architectures:

Timothy Gray, Ball State University

Like many Midwestern Cities, Indianapolis is a place of extremes. Tremendous investment has led to a resurgence of the downtown, and affluent suburbs thrive and grow. In stark contrast the historic neighborhoods that ring the city, the fabric of the place, continue to struggle with significant challenges. There is too much crime and too little neighborhood organization. High drop-out rates lead to low incomes. Poor access to health care exists alongside easy access to low nutrition foods. Indianapolis inner city neighborhoods report close to 10,000 vacant properties with 640 demolished in 2010 alone. Like many cities in the region and throughout the world, an eroding manufacturing base, marginal public schools, high crime rates, among other pressures, have all contributed to significant attrition.

While many see only the challenges in the blighted neighborhoods, others see opportunity as a range of interesting energies are emerging. Among these, a growing number of urban farmers are beginning to create a new urban economy putting vacant property to use and making temporary improvements. Income is derived through farmer's markets, CSA (community supported agriculture) shares, and sales to restaurants dedicated to a farm-to-table fair. Community members are empowered to participate, to benefit, to learn from, and often to expand these efforts.

This paper will learn from four projects spanning two institutions, all focused on supporting the efforts of urban farmers in the Indianapolis area. The projects were all designed and fabricated by groups of architecture students working in partnership with broad ranges of professional, community and business partners. All are legal but navigate within seams in the building code distinguishing between the temporary and the permanent. The projects bring together business, school and community around the concept of reclaiming impacted urban space and turning it into a working farm and urban greenspace. Three of the projects provide facilities to support farming operations, but also provide classroom and lab space for working tours and education and outreach initiatives. Each of the projects use repurposed materials and incorporate a range of sustainable building strategies intended to extend the discussion of sustainable food and sustainable lifestyles to that of the built environment.

Among the lessons discussed will be the reciprocal relationship between the University Students and the community members. In addition to learning a host of skills associated with ambitious design build projects; collaboration, construction skills, managing budget and schedule – the list goes on- students gained insight and empathy for community members living, surviving and often thriving in less than ideal conditions. Students entered the process often intending to teach, to share knowledge and expertise, and often left with an understanding that they had much to learn.

Dismantling the Zero Energy Building

Michelle Addington, Yale University

Initiatives devoted to reducing the energy and environmental impacts of buildings have increasingly shifted their focus from consumption toward generation. Whether labeled as net zero energy, carbon neutral, climate neutral, net positive energy, etc., these initiatives are problematic due to three key assumptions:

1. The assumption that an energy balance is appropriately done at a building boundary. Balancing at the building boundary arbitrarily truncates the larger domains of energy and ecological systems, thereby oversimplifying impacts and reducing opportunities for more effective actions.

2. The assumption that alternating current electricity is the preferred choice for both generation and consumption. Exergy analysis shows that alternating current should be the last choice, and only for those types of energy conversions that require high grade energy, which few conversions for building uses do.

3. The assumption that the building unit is the most strategic unit for intervention. In many developed countries, particularly those that privilege individual capital, shifting the focus

from public to private property allows for distribution of assets and division of risks. But for developing countries and economies in transition, such allocation is simply neither feasible nor scalable in a significant way.

While Europe and North America have been further standardizing their approach to distributed energy generation at the individual building level, many countries in the world have been facing critical shortfalls in electrical generation as well as inadequate distribution systems. Although several of these countries are pushing for zero energy and net positive energy building design initiatives, there is little that such approaches can contribute to the greater public need. There are, however, opportunities to make a positive impact on public welfare while reducing larger energy and environmental impacts by reconsidering the relationship between the built environment and the domains of different energy and ecological systems.

This paper will propose two cases of exergy mapping as a means to reduce dependence on alternating current and take greater advantage of local sources at the scale at which they are most effective. The first case will examine new city development currently taking place in Ecuador, including the development of new energy infrastructure as well as building specific interventions. This case primarily addresses strategies that are optimized to minimize energy consumption by analyzing at the scale that best matches the relevant domains. The second case addresses the existing urban situation in Bangalore, India where there is large disparity between the needs of the populace versus the services provided for the high tech private sector. In this case, exergy matching occurs via jurisdictional domains, thereby not optimized according to energy behavior as in the Ecuador case, but rather in terms of strategic utility.

By challenging the normative assumptions driving the contemporary approach to energy in building design, we may have the potential for more significant reductions in impacts while expanding the opportunities for a much greater portion of the world to reap the benefits.

Resource Industries in the Post-Industrial City

Dan Adams, Northeastern University
Marie Adams, Northeastern University

Resource industries are present in the post-industrial city in a mutable state, as the goods of global trade pass through in material form as interim piles (salt, sand, and gravel), in holding tanks (petroleum), and silos (cement). The flow of resources is fundamental to urban life and shapes the urban landscape, yet engagement with this mode of industry in the city has been largely outside the realm of the design disciplines.

If Reyner Banham's LA was made legible through the mediating lens of the windshield and the rear-view mirror, then the constructed landscapes of primary resources in the post-industrial city are only understandable today through the windshield of a front-end loader that works between ships and trains of global networks and the trucks of local distribution. The loaders and the material terminals they serve are landscapes classified by through-put, not permanent structures. The physical presence of these landscapes swell and contract in relation to the comings and goings, the supplies and demands, of the city.

This dynamic relationship of primary industry to the contemporary city is better understood through the relational terms of ecology than formal conventions of architecture (static sheds) and planning (single-use zoning). As such, the environments created by the flows of primary industry to urban centers require new modes of engagement from designers. This paper will examine four tactics of engagement, developed through a realized project with a global marine terminal in Boston Harbor, that translate industrial capacities, networks, cycles, and operations to serve new urban morphological and programmatic criteria. The Boston terminal is a gateway that links the resource demands of the Massachusetts region of the Northeast coast of the US to global resource suppliers, including Puerto de Patache and the Atacama Desert resource landscape of Chile.

Four tactics of translation between resource industries and the post-industrial city:
1-Capacity translation: Explores how facilities of primary industrial operations are comprised of assemblies of components with specific capacities - viaducts, silos, racks – that can be translated into new uses.
2-Network translation: Explores how architects can engage that industries material network for the realization of new architectural projects.
3-Cycle translation: Discusses how the inherent ebbs and flows of industrial operations can be calibrated and partnered with other urban systems and programs to create new models of shared urban landscapes.

4-Operations translation: Discusses how industries bring unique operational capacities into the urban environment that can be translated into new urban landscapes and events.

The Internet of Things: Making Cities – And the Way They Use Technology – Smarter
Wendy W. Fok, Harvard University

Minerva Tantoco was named New York City's first chief technology officer last year, charged with developing a coordinated citywide strategy on technology and innovation. We're likely to see more of that as cities around the country, and around the world, consider how best to use innovation and technology to operate as "smart cities."

The work has major implications for energy use and sustainability, as cities take advantage of available, real-time data – from 'smart' phones, computers, traffic monitoring, and even weather patterns — to shift the way in which heating and cooling systems, landscaping, flow of people through cities, and other pieces of urban life are controlled.

But harnessing Open Innovation and the Internet of Things can promote sustainability on a much broader and deeper scale. The question is, how do you use all the available data to create a more environmentally sound future? The term "Internet of Things" was coined in 1999 by Kevin Ashton, who at the time was a brand manager trying to find a better way to track inventory. His idea? Put a microchip on the packaging to let stores know what was on the shelves.

Technology has had real successes in changing city life — Medellin, Colombia, was chosen as City of the Year by the Urban Land Institute in 2013 in recognition of its turnaround from a symbol of the drug wars into a high-tech hub promoting civic engagement and innovation. The ability to limit the amount of energy and other resources we waste has real value. But the constant monitoring involved in collecting Big Data across urban areas also raises the specter of Big Brother, and those concerns shouldn't be ignored.

As architects and designers, we look at ways to generate smart cities, reducing carbon and moving to smart ways of digital mapping. We know Open Innovation and the ubiquity of networked electronics and other devices are affecting the world of architecture and design, construction and real estate development. But too often, we have found, city planners, designers, policymakers and others start their work in a vacuum. If we are to scale up the successes of smart cities, to truly take advantage of so-called Open Innovation by engaging knowledge and ideas across a wide spectrum, this work should be done cooperatively.

The environmental and financial costs of that can be great. Tough questions remain, in addition to privacy issues. Intellectual property often stimulates creativity, but at the same time it can hold back innovation. Issues of ownership and authorship play a role within the active use of data and privacy within the digital age. Architects and designers, as much as planners and policy makers, need to be held responsible for detailing the opportunities offered by the use of open source data and Open Innovation.

Open Innovation and the data created by the Internet of Things can offer a way for engaged residents to participate in the future design of their cities.

Toward an Asian Sustainable Urbanism A Comparative Study of Model Eco-city Projects in Japan and China
Zhongjie Lin, University of North Carolina at Charlotte

The past decade has witnessed an accelerated growth of projects translating the Western concept of eco-city into practices of city building. Eco-city is now a global phenomenon, yet Asia sees particularly notable development with strong governmental interventions characterized by comprehensive national initiatives of model eco-city. In Japan, the central government launched an ambitious "Eco-Model Cities" scheme at the 2008 G8 Summit, and has by far designated twenty-three Eco-Model Cities, ranging from major cities like Kobe to small towns like Minamata. Meanwhile, a massive eco-city movement is taking place in China, where hundreds of towns have laid out their plans to become an eco-city. Chinese government took the lead by creating a few high-profiled demo projects such as Tianjin Eco-city. In both countries, the eco-city is promoted as innovative urban policy and planning concept under the overarching agenda of sustainable urbanization and restructuring of post-industrial urban economy.

This paper compares the planning and development of model eco-cities in Japan and China, using Kobe and Tianjin for case studies to examine their common and contrasting approaches to ecological urbanism, their respective design strategies and technological measures, the

relationship between the eco-city building and local economic development, the roles played by the governments and the private sector in this effort, and the influence of such exemplary projects on the rest of the country. The comparative research method sheds light on several debates that we often encounter in the study of eco-city, say, between new town and retrofit, between top down directive and bottom up force, between eco-city as technology and as culture, as well as on the controversial role of "model" in contemporary urban forms. Through the analysis of the policies and implementations of model eco-cities in Japan and China, this paper aims to offer a critical insight into the changing ideas of urbanity in Asian society, and enhance understanding of the global issues of sustainable urbanism.

New Trajectories in Academia: Integrated Frameworks

Date : Friday, July 01, 2016
Time : 3:00:00 PM - 4:30:00 PM
Location : Auditorium North

Carbon-Neutral Design Education and Practice in the Caribbean Region: A European Union funded Holistic Integrated Project Delivery Approach

Thomas Spiegelhalter, Florida International University

Worldwide, global climate change threatens coastlines and the buildings and cities located along them. Hundreds of millions of people around the world live in low–lying areas near the coast that will be flooded as the sea level rises. Most of them will become climate change refugees and the number will top in the billions. Rising sea level will erode beaches and damage many coastal wetlands and make thousands of kilometers of Caribbean coastal areas inhabitable. Rising sea level and stronger storms caused by increased warmer oceans will completely wipe out certain beaches and islands. The urgent question is what can people do about it in the Caribbean? Sea level rise will have an immediate impact in economic terms on Caribbean Small Island Developing States (SIDS) as the tourism infrastructure is almost completely based along the coastline. Some of the for mentioned pressing questions received a recent boost of answers and protocols through the World Climate Change Summit deal of the 21st Conference of Parties (COP21) in Paris on 12. December, 2015. The treaty signed by over 280 countries initiates to limit the rise in human caused GHGs and global temperatures to less than 2C by 2050. For example, under the GOP21 terms of the Paris deal the Caribbean countries will come up with their own national proposals on cutting carbon and these will be reviewed every five years through the United Nations in an effort to increase ambition and benchmark the implementations per country. (Fig. 1,2)

This paper explores how the new exigencies of such a global climate change frame several issues for Higher Education Institutions (HEIs). What could be the best holistic and integrated project delivery approach for / in carbon neutral design education and how do the exigencies of such climate change must frame multiple issues for Higher Education Institutions (HEIs) and the profession in the long run? Which Caribbean HEIs programmes offer sustainability and energy efficiency courses in the built environment? (Fig. 3) The paper also investigates potentials for inter-regionally Caribbean Continuous Professional Development (CPD) and licensing strategies.

Even if this will be first voluntary, the key element for the Caribbean is the fact that this is a bottom up approach to tackling the challenges in carbon-neutral design education of the Caribbean HEIs. The bottom-up-approach includes stakeholders, governments and multidisciplinary associations of planners, architects, and engineers to better collaborate worldwide, national, regional and local to assist and mitigate these impacts, perform poverty alleviation within their communities, incentivize sustainability and energy efficiency, and create new jobs that help to sustain their both their economies and built environments. Existing policies need to be updated and new ones developed that include action frameworks for carbon neutrality, indicators, technologies and/or development programs that assist to best manage the Caribbean response.(Fig. 4,5)

The paper critically concludes with explorations to improve curricular content and professional practice in the Caribbean towards a future framework and directory of regional architect, engineering, and planning associations.

Systems and Design Thinking: Elements of 21st Century Architectural Education

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This paper proposes that the architectural education has to undergo a significant shift in order to reflect a changing landscape of today's world, by moving to eco-centric rather than ego-centric design teaching strategies. Architectural education focuses on the idea of a single appropriate response (with a linear progression in terms of design development); the importance of the authorship of a singular creator (or creators) is still very important. This deus ex machina approach is not reflective of the shifting forces and territories of our time, and it does not maximize education of a nimble and adaptable mind. Rather, it perpetuates the perception of an architect as a creative genius whose final product is design for the people, rather than design with the people, and whose understanding of humanity boils down to an academic exercise, rather than overarching philosophy.

In addition to an increase in collaborative and inter-disciplinary type of instruction, there are two specific strategies that can be integrated into design studio, as well as in other courses in architecture school curriculum. One strategy is introduction and application of systems

thinking. As late Donella Meadows states, "living successfully in a world of systems requires more of us than our ability to calculate. It requires our full humanity - our rationality, our ability to sort out truth from falsehood, our intuition, our compassion, our vision, and our morality."* Systems thinking helps students understand tangible and non-tangible layers of our built environment, and its focus on both relationship between elements (objects) as well as on elements themselves, provides much needed, and more complex reading of our environment.

Inclusion of design thinking methods, as popularized by IDEO, is another valuable strategy. While it may seem strange (initially) to look for inspiration in methods developed for non-designers, they nevertheless offer a refreshing change in scale and focus. By demystifying design process, and emphasizing, among other things, collaboration, participation, co-creation, continuous proto-typing (testing), and importance of built-in feedback, design thinking brings the human experience to the forefront of design. It is author's belief that this human-centric approach represents a key in addressing larger global, as well as local issues.

The paper will discuss some of the actual application of systems and design thinking methodologies into design studio type of projects. The author of this abstract is an architect and architectural educator who has been engaged in the process of setting-up a (non-architectural) design-based curriculum. This experience has greatly shaped his/her reflections on the state of architectural education.
* Donella Meadows, Dancing With the Systems, www.DonelaMeadows.org

Teaching Timber: The role of the architectural student and studio course within an interdisciplinary research project.
Catherine Sunter

Globally, the construction and operation of buildings contribute up to 30% of annual green house gas emissions. In addition, the building sector is responsible for approximately a third of global waste. In this context the utilization of renewable resources in buildings, especially materials that store carbon, will play a significant role in the growing city. These are two reasons for introducing wood as a building material with a growing relevance. A third is the potential economic value in countries with a forest industry that is not currently used to capacity.

In 2013, a four-year interdisciplinary research project titled "Wood Be Better" was created, with the principle goal to produce and publicise knowledge that would facilitate increased use of wood in buildings in urban areas. The research team consisted of architects, engineers, wood technologists and mycologists, both from research institutions and industrial organisations.

Five structured work packages were included in the initial research proposal. Work package 2 was titled "Design-based research" and proposed using architecture master courses as laboratories for systematic architectural exploration. The aim was twofold: to provide students with an interdisciplinary team of experts from consultancies and producers, as well as teachers and researchers, that could offer the latest information on wood technologies; whilst at the same time having the studio course test the effects of the use of wood on the functional, technical and tectonic quality within different architectural projects on an urban scale, providing results that could be fed back into the research material.

The aim of this article is to examine the successes and failures of this pedagogical approach in an architecture school, as well as the opportunities for greater integration between academic research projects, industry experts and studio courses in the future. This will be done through a set of qualitative interviews with researchers, teaching staff and students of the studio courses held each semester since spring 2013.

These will investigate: the value of the various experts to the course; the different themes of each course; the response to the urban scale, architectural form and construction detail; the effect of working with the goals of a research project; and the value of the studio projects to the research.

In addition, six sample projects will be presented as case studies. These will show how the projects related to the research and could be collected and further analysed, innovative solutions that were developed during the course, different architectural expressions that were enabled by timber, and how projects were used as an interdisciplinary testing ground for integrated architectural and engineering solutions between the participating institutions.

The conclusion will reflect on the original intentions of the studio courses, the opportunities and challenges faced by students, researchers and teachers, the educational implications, and on the transparent and inclusive discourse between the architectural researcher, the architecture student and the interdisciplinary experts.