



2018 ACSA/COAM INTERNATIONAL CONFERENCE
ABSTRACT BOOK

Disruption

Topic Chairs:

Shawn Rickenbacker, City College New York

Martha Thorne, IE University

“Disruptive” digital economies and their impact of the social economic fabric of cities:
“Disruptive” economies are transforming our cities. Uber, Amazon, Airbnb, etc. are changing the social and economic fabric of cities often displacing the disenfranchised. An example of which were the recent citizens’ revolt against Airbnb as new tourist protocols are transforming cities and disrupting the essence of a community.

Transformation of Tourist Cities and Small Business Development at World Heritage Sites

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William Dupont, University of Texas At San Antonio

Transformation of Tourist Cities and Small Business Development at World Heritage Sites
Tourism is one of the fastest growing industries in the world. San Antonio is one of the Texas' top tourist cities, and a major tourism destination nationally. The city has a rich and unique historic urban landscape characterized by its river with its famous 'Riverwalk', historic neighbourhoods and San Antonio Franciscan Missions which is inscribed as a UNESCO World Heritage Site in 2015. Local government has completed a multi-year project to restore and enhance 13 miles of the San Antonio River both north and south of downtown. It is expected that the river improvement project will reinforce the connection to the San Antonio Missions, and encourage visitors to circulate along the river beyond the downtown area. This paper discusses how tourism transforms cities and how locals can be a part of this transformation on a case study of San Antonio, TX.

World Heritage designation usually brings international attention and increased tourism with both positive and negative impacts. Cultural heritage tourism can bring many benefits to a local economy but it can also disrupt the quality of life of the local inhabitants therefore it requires deliberate planning. The prosperity brought by the tourists tends to destroy the authentic cultural heritage experiences they seek. Yet, the economic prosperity of tourism can threaten the heritage that attracts the tourists. Business and real estate development pressures increase as the tourist market expands, bringing changes that occlude and displace the local heritage. This paper posits that cultural sustainability correlates to a robust heritage tourism economy, and provides a legacy of positive sustainable development within the Missions Historic District that sustains the local culture.

Due to the particular nature of the San Antonio Missions World Heritage Site, the intangible heritage embodied in the existing population is an integral component of the "outstanding universal value" of the place. Consequently, there is a need for creative thinking on use of existing tools, incentives and programs, as well as new ideas that could extend opportunities for prosperity to exiting residents and businesses, thereby mitigating potential for population displacement, and foster increased pride of place in the heritage zone. This research assesses existing businesses, identifies opportunities and target areas for investment of future effort, and promotes the potential benefits for small business owners to connect to the growing heritage tourism economy of the San Antonio Missions Historic District.

This research is a funded project done by the Center for Community and Business Research (CCBR) at UTSA Institute for Economic Development, in collaboration with the UTSA Center for Cultural Sustainability (CCS) at UTSA College of Architecture, Construction and Planning.

Testing the Urban Stack: Sidewalk Lab and Toronto's Eastern Waterfront

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Testing the Urban Stack: Sidewalk Lab and Toronto's Eastern Waterfront

The City of Toronto's recent award to Alphabet's Sidewalk Lab for design services has sparked a heated controversy among urban planners and citizens alike [i]. Toronto's decision not only signals a different model of practice, but it also represents a conceptual shift away from citizen to urban consumer. By engaging a private technology company, one that passively captures data on its customers and then re-sales that data to third parties, Toronto's Eastern Waterfront points to a significant change in the understanding and practice of contemporary urban planning and design.

Acknowledging the city as a site of disciplinary disruption, this paper begins with a discussion of Henri Lefebvre's notion that the modern market economy is characterized by contradictory tendencies that [1] increase standardization in everyday life (a regularity in work and objects through a general commodification) at the same time as [2] social inequalities are increased (the intensification of class, race, gender, or age hierarchies) [ii]. We build on Lefebvre's position by examining twenty-first century theories related to the Internet, privacy, and the dominance of big data. Seen through that particular lens, we argue that Toronto's Eastern Waterfront project has internalized relations of colonization whereby the economic objectives of a multinational technology company take on new configurations at a local level of human (and non-human) information extraction – thereby transforming not only public land, but also everyday life into a zone of unmitigated consumption.

- i. Google LLC is a technology company that specializes in Internet-related services and products. These include online advertising technologies, search engines, artificial intelligence, cloud computing, software, and hardware. In August 2015, Google reorganized its various interests as a conglomerate called Alphabet Inc., one of which includes Sidewalk Labs. Sidewalk Lab's goal is to improve cities vis-a-vis their suite of urban products which include Google's Pixel 2 phone, search tools, mobile mapping, the autonomous car, and all of the data captured therewith.
- ii. Ben Highmore, "Everyday Life and Cultural Theory," (NY Routledge 2002), 119.

Demonized tech companies as allies. The case of Riyadh and the impact of technological platforms in public and private spheres.

Beatriz Villanueva, bRijUNi architects

Francisco J Casas, bRijUNi architects

The Kingdom of Saudi Arabia is going through a period of massive changes following the Vision 2030 that is trying to achieve a number of significant objectives in order to adapt the economy and consequently the society to a new global paradigm of no-oil dependency, which will lead to a decrease of revenues for the country. As a result, the whole society is involved in a continuous flow of new and more relaxing rules that, at the level of the urban form and the public spaces, is also going to be affected.

Surprisingly, since the new technologies related to social media and global services companies are under surveillance in the rest of the world and some negative disruptions such as low income jobs, unprotected workers, underserved areas and gentrification have been pointed out in our cities, the citizens of major cities of Saudi Arabia have embraced these technologies as an opportunity to defeat some barriers related to religion and societal control. If we look at the biggest city and capital of the Kingdom of Saudi Arabia, Riyadh, we can identify a number of facts that contribute to this optimistic and high acceptance of companies such as Airbnb, Uber and alike, contrarily to what it is happening in other big cities where governments are taking measures and imposing limits to the development of these large new economic model linked to non-local companies that jeopardize former traditional models such as hotels and taxis.

One of the first examples of these welcomed changes occurred when one of the most transited streets of the city offered free Wi-Fi and teenagers flooded the sidewalk with the aim of swapping messages and contact details with females challenging the strict policies about gender segregation. Also, and although to a smaller extent compared to other big cities, Airbnb offers to locals the possibility of sharing their own properties with others, something very common elsewhere but legally borderline in this country where gender segregation applies severely. In a similar way, Uber allows national drivers to get in touch with female customers who cannot drive as it is forbidden by law (prohibition to be removed by June 2018) and many youngsters not in the need of an income but just for fun or eager to socialize, have become occasional drivers.

This paper aims to discuss how such disruptions have contributed to social life and notable changes in Riyadh and to what extent these have been possible whereas in other cities have been demonized and how the urban form and public and private life are being examined and transformed upon these new forms of inhabiting the spaces of the city.

The Paradox of the New City

Marta Rodriguez, University of Houston

While urban planners nowadays are trying to recycle a concept of the city that is already dead, socially constructed phenomena like Airbnb are reshaping the cities worldwide and begging the question: is the traditional concept of urbanism still vital?

Japanese architects decided to abandon the city as a project after the collapse of the urban utopias of the Metabolism in 1970. Consequently, in the 1970s, they developed an introverted architecture that has contributed to turn Tokyo into a city where context is irrelevant to design. More than two decades later, in 1995, Rem Koolhaas—a European previously fascinated by the delirium of the American city—claimed, in his manifesto S,M,L,XL, that "the city no longer exists" and that urbanism was replaced by architecture. During the 2000s, he meandered through preservation and ended the decade with a concession that Metabolism is the last avant-garde movement in architecture. Currently, Koolhaas is focused on "everything that is not a city" at the precise time when the countryside has been digitized and the city is trying to incorporate a romantic idea of agriculture through concepts such as urban gardens.

Nowadays, while kilometeric buildings inhabited by sophisticated machines lay next to each other in Reno, the utopian concept of City of the Future has drifted into slogans such as Smart Cities, Sustainable/Resilient Cities or Responsive Cities. Compulsive international competitions are looking for urban renewal under calls such as Reinventing Cities, Cities of Tomorrow, or even Cities For a Flying World. Hiding behind this propaganda, urban planners are mired in a past that it is no longer valid.

In parallel, the online social construct, which includes social media, ridesharing, home sharing, and classifieds is transforming the city. Airbnb has become a global urban planner, reshaping cities, from small suburban ones in the desert, such as Palm Springs or Marfa, to old and dense European cities, such as Amsterdam, Paris or Madrid. Cities worldwide are desperately seeking solutions to deal with the "Airbnb phenomenon," blamed for accelerating gentrification and displacing local residents. European cities are even proposing new concepts such as Productive City, which advocates for the integration of production into housing to deal with the battle between tourists and residents for the supremacy of urban space.

If we assume that the city is a paradox today more than ever, then what role is left to contemporary urbanism? Nomadism has become an incipient social reality. In parallel to cultural migration, people are also displaced by economical, political, or natural disasters. In order to attend to this increasing population movement, should the new urbanism focus on solutions such as urban adaptability and flexibility, and concepts like superposition, integration and regeneration? At the same time, it is becoming necessary to live permanently with man-made and natural catastrophes, including overpopulation. Should catastrophe be considered a core context of the urbanism of the future? This paper explores nomadism and catastrophe as the driving forces in rethinking the city.

New data-driven analysis and policies to regulate commerce and tourism: the examples of Barcelona and Madrid

Mar Santamaria-Varas, 300.000 Km/s

Pablo Martinez-Diez, 300.000 Km/s

The regulation of economic activity is a question of the utmost relevance in urban planning as urbanism means to support coexistence of citizens' necessities (residence and commerce) while preserving the health of the economic fabrics.

The model of diversity embodied by European cities like Barcelona and Madrid -where commercial and leisure activities play a fundamental role in constructing the social, civic and economic values generated at street level (Jacobs, 1992; Gehl, 2006; Solà-Morales, 2010)- is under discussion. Urban uses are transforming rapidly, and this variation has a direct effect on the loss of services for residents, the substitution of symbolic establishments that may be social cornerstones, and the modification of the urban landscape in many cities (Massey, 2005; Lees et al., 2005; Cocola-Gant, 2015).

In parallel, the irruption of the p2p economy acts as a powerful transforming agent as recent studies have demonstrated with the Airbnb phenomenon (Baron, Kung and Prosperpio, 2017). Aside from raising rents and displacing preexistent inhabitants, long-term housing being transformed into p2p apartments generates an increase in the number of visitors to residential neighbourhoods with consumption habits that do not correspond to local businesses and who attract commercial activities tied to the tourism industry that have identical storefronts all around the world. This eventually ends up creating a uniform image on cities' ground floors.

Both the saturation of public access activities, food retailers and tourist services and the irruption of collaborative economy in the housing market is seriously affecting the habitability and the quality of life in central cities, especially in most vulnerable areas. In this context, there is still a lack of analysis and planning tools to describe and control these rapidly changing phenomena.

Throughout this article, the Authors intend to present two case studies in Barcelona and Madrid: 1) the 'Barcelona Central District land-use plan' regulating public access and commercial activities and 2) the 'Atlas of Touristification' that describes the disruption of Airbnb in Madrid in comparison with several European cities. Both projects use open data/Big Data and apply KDD in the field of urban planning to defend an urban model where the urban fabric must provide the maximum conditions of comfort and habitability while preserving a healthy economic milieu.

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How the knowledge economy is transforming the city from the inside?

Mar Santamaria-Varas, 300.000 Km/s

Pablo Martinez-Diez, 300.000 Km/s

The knowledge economy is transforming our cities. The return of big companies headquarters to city centers and the proliferation of innovation districts in cities around the world represent a paradigm change: from the isolated research hub to a new model based on compact zones in central areas with many facilities and public services, good enterprise mixture and slow mobility - engaging in competition with other non-productive land-uses such as residence. With the rise of teleworking, paradoxically, the physical workspace has lost its functional requirements and has acquired a symbolic value ('the celebration of being together to meet up'). As a consequence, the location of companies and how they are grouped together is a matter of the utmost interest.

In this sense, it is important to measure which are the variables that influence the positive implantation of knowledge/innovative activities in the city and how social and economical benefits are transferred to the urban milieu. To flourish, innovative activities need both a complex economical environment formed by a variety of stakeholders and resources - companies, investors, researchers, universities, business development services and other educational facilities – and a central, mixed and dense urban fabric.

Today, scientific literature focuses in the metrics of innovative activity either from the point of view of human capital and creative workers (Florida 2009), global economic indicators (Beerg 2004), characteristics of companies (Guzman & Stern 2015), the scientific production (Elsevier 2015) or the urban implantation (Katz & Wagner 2014). However, there is a lack of research that demonstrates that knowledge/innovation economy has its own urban form that depends on the characteristics of the site – innovation activities appear with higher probability when given some specific urban conditions.

This paper intends to frame the irruption of innovative urban economy in an international context and explain a case study (by the same Authors) in the metropolitan area of Barcelona, in the line of the previous hypothesis, i.e., place matters in the leverage of innovation.

The research is based on the analysis of a database of 2,500 stakeholders, gathered through massive scraping of information from official sources (listings of companies participating in national R & D programs, repositories of academic and scientific infrastructures, etc.) and dynamic data portals (creative jobs offers). The Authors have studied the density, diversity and innovation field of big companies, research centres, support infrastructures and startups participating in the innovation ecosystem. The authors have analysed the variables of urban fabrics with more density of knowledge activities using data mining techniques, they have classified the urban fabrics according to its innovative potential and they have develop a predictive model to detect other suitable places in the territory to leverage the new economy in the future.

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No-stop Shopping City: Supermarkets and the Logistics of the Quotidian

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"Lock up a department store today, open the door after a hundred years and you will have a museum of art".

Andy Warhol

The history of market places is intrinsically linked to the history of cities. The city's reason of existence was the market, which the rural vicinity didn't have, and didn't need. As Max Weber pointed out: to be considered a city in the economic sense, there must be a local market at which the local population fulfills the majority of its daily needs.¹ Today, ubiquitous and extraordinarily familiar, the supermarket is a quintessential part of the global contemporary quotidian. Hosting an exceptional concentration of biodiversity that cannot be paralleled by the natural world, this engineered landscape of perishable goods is constantly being challenged, optimized, and transformed. Currently, a typical supermarket is 46,000 square feet and carries around 42,000 products. Supermarkets operate within vast infrastructural networks as containers and conduits of both people and merchandise.

In 2011 South Korea's Tesco branch "Home Plus" opened virtual supermarkets in a number of subway stations in Seoul. A series of billboards illustrating real scale images of edible products covered the walls of mass transit stations. Customers could browse the "aisles", scan bar codes with their smart phones, and have groceries delivered directly to their homes. "Waiting time becomes shopping time" explains Tesco's promotional video. In 2012 Tesco tried the system at Gatwick's North terminal, travelers could make their grocery shopping while waiting in the departures lounge and schedule to receive the groceries at home after their vacation. The same year, Peapod introduced virtual storefronts at select SEPTA stations in Philadelphia. At the same time, chinese supermarket giant Yihaodian (China's largest online grocer, 51 percent owned by Wal-Mart), launched 1000 augmented reality supermarkets to be located in parking lots, parks and a number of landmarks in major cities across China. The challenges of delivering fresh produce in congested city centers is slowing the proliferation of online grocery shopping platforms.

Archizoom Associati's dystopian project "No-stop city" manifesto affirmed: "Architecture no longer represents the system, it is the system" "...Production and consumption poses one and the same ideology, which is that of programming." No-stop city portrayed the future of the capitalist metropolis as an endless supermarket/factory interior space, where production and consumption coalesced into a singular and infinite isotropic field. Against Archizoom's auguries, actual production continues to be, in most cases, an increasingly remote condition. However, with the potential introduction of virtual market spaces in high transit commuting areas, Archizoom's dystopic overlap of production and consumption is becoming real for tertiary sector workers. Augmented reality markets can potentially occupy any space, in fact, online shopping already does. How is the city responding to this disruptive and entropic mixture of production and consumption? This paper looks at the transformation of the space of the market (the stomach of the city) derived from new design instrumentalities in the form of logistics driven design

Productive Housing: Spatial Structuring and Social Division in Urban Centers

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Productive Housing: Spatial Structuring and Social Division in Urban Centers

In his insightful 1995 text *What Ever Happened to Urbanism?* Rem Koolhaas criticizes the failure of architecture and urbanism to design cities after modernism, precisely at a moment when rapid urbanization everywhere begins posing accelerated challenges to urban areas, and when urbanists are left to one side in an endless world race for growth and concentration of people and power. 'If there is to be a new urbanism', he writes, 'it will no longer be about the imposition of limits'.

More than twenty years later, the digital revolution has erased global boundaries and innovative business models expand, mostly across urban centers, with disruptive services related to the increasing flows of capital and people between cities. The appearance of the sharing economy is not only connected with advances in technology but also with sociological and generational shifts in behavior, especially after the gradual yet consistent decline of the welfare state following the financial crisis of 2008.

In this context of stressed middle classes, new possibilities arise for a productive use of housing, beyond capital investment or workplaces, made possible by the platform economy. Boundaries between life, work and commerce disappear while housing is rediscovered as a rental asset. On one hand, it becomes safe and simple to earn vital extra income in a very flexible and customized way. On the other, unique and personal living experiences can be enjoyed at competitive rates.

It all started ten years ago when Airbnb co-founders rented out air mattresses in their own San Francisco apartment to raise money from local conference-goers in one of the cities with highest rent prices in the world. It has now become a startup valued at over \$30 billion and present in the main touristic destinations in almost 200 countries. In the meantime, the utopian vision of urban cooperation has turned into political turmoil as city authorities set out restrictions and global concern grows over driving up rents and broken communities.

This paper proposes to examine how Airbnb dynamics have altered spatial structuring and social division in urban centers. Specifically, it will analyze the way policymakers in global metropolis like New York, London or Barcelona, where there is an enormous strain on rental prices, attempt to confine the accelerated expansion of the platform amidst scrutiny from local dwellers and businesses. It aims to foster a broader understanding of contemporary urban condition, where digital and physical spaces converge, lines between public and private blur, local and global processes interact, and top-down and bottom-up concepts meet, from a spatial and social perspective. It seeks to explore opportunities for developing new approaches to designing and planning today's uncertain cities, further than the use of limits.

Being Wholly Digital: An Architecture of Parts

Mollie Claypool, University College London

If General Motors had kept up with the technology like the computer industry has, we would all be driving \$25.00 cars that got 1,000 miles to the gallon.[1]

The way in which contemporary architectural practice uses digital technologies has, without a doubt, transformed the way in which the creative and cultural production of the discipline is disseminated. These technologies have the power to be able to compute huge amounts of information in order to test structural, environmental, formal and material variables, constraints and possibilities. More data about artefacts, objects, people, places and buildings can be collected and utilised in the design process than ever before, at a scale and detail unimaginable in previous decades. When it comes to building practices, advanced digital fabrication technologies – including, importantly, technologies such as industrial robots and 3D printers – have so far been used most commonly as mere representational devices; representative of form rather than the building practice appropriate to that form. In addition, powerful and not-so-subtle political and legal structures maintain this as the status quo in building design and construction – for example, the legal system has not caught up with this evolution in the built environment professions where all parties are simultaneously an author and owner of a design.

The work in this paper challenges these notions. It ascribes to a belief that architecture has not yet been digital, and that it should be wholly digital in order to move beyond the current reality of the discipline – from the scale of the micron and particle to the brick, beam and building, from design to construction. This embodies a fundamental shift in architecture and design thinking that is unique to our projects. We argue in this paper that architecture that is wholly digital is one which would radically rethink the building practices within the discipline as both a design research practice and as a professional practice. The paper will explore this both at the scale of a part; i.e. the brick or beam, and the whole; i.e. the building through several projects. These projects each develop a set of parts in relationship to a specific digital fabrication technology. These parts are defined as open-ended, universal and versatile building blocks, with a digital logic of connectivity. Each physical part has a male-female connection which is the equivalent of the 0 and 1 in digital data. The design possibilities – or the way that parts can combine and aggregate – can be defined by the geometry and therefore, design agency, of the piece itself. This discrete method advances a theoretical argument about the nature of digital design as needing to be fundamentally discrete, and at the same time responding to ideas coming from open-source, distributed modes of production. To think of architecture as wholly digital is to substantially disrupt the way that we think about design, authorship, ownership and process, as well as the building technologies and practices we use to produce contemporary architectural design.

[1] Bill Gates at COMDEX, 1997.

Framing Television as Landscape Practice

Marc Miller, Pennsylvania State University

Landscape architecture relies heavily on images to demonstrate its agency in transforming environments, synthesizing ecologies, and re-contextualizing spaces. Traditionally, mediums like drawing and painting, followed by photography have been used to demonstrate this. In the 20th century, film and to a lesser extent television, developed into media platforms that were also capable of presenting iconic landscapes through rarified and popular representations.

Concerning design practice, film and especially television present opportunities for world building and speculation that are not possible with methods of conventional practice. As immersive media platforms they allow the viewer to see the space as it is used by describing the both the intended spatial outcomes and imagined behaviors. Historically, film and architectural design were considered to be as analogous activities given that both were thought to provide social critique. In contrast, television has conventionally been seen as a more common platform akin to vernacular construction.

The assumptions regarding the significance of film versus television reveal differences in how we treat both architecture and landscape architecture in that one relies upon genres or types, why the other is capable of producing diegetic narratives or serials. Serials create an opportunity to articulate story arcs as a changing landscape and allow the viewer to evolve and mature with the changing landscape passively, something film less capable of doing. Concerning landscape architecture, the ability to use serial narratives instead genre based stories is advantageous given that it allows both the designer and the viewer to speculate concerning time. The deference to film over television dismisses the advantages of using serial imagery as a means of design speculation and public advocacy without the need for iconic imagery, thus revealing shared everyday problems of landscape architecture.

Given this, it is the intention the author to establish a case for television as a speculative design practice to expand the agency of design into a broader audience. Referencing a series of critics of popular media including Stanly Cavell and Leslie Fiedler, along with examples of critical television, he will describe a framework for television as a popular design media capable of revealing the agency of landscape architecture.

Project-Artificial Disruptions: Noumenology of Architectural [Re]Production in the Digital Postmodern

Kaveh Alagheband, University of Nebraska-Lincoln

"Copy Paste, the recent book from MVRDV's Winy Maas, is a clear argument against the originality syndrome and an invitation to treat the past as a vast dataset on which design not only can but must be built. The version of repeating that Copy Paste's retrospective look advocates for is good fakes which are more original than their references. The title- Copy Paste- however, demonstrates the digital roots of this type of extending the loss of the aura (endless cycles of the more original) to the past. For contemporary designers, repeating the underlying design systems do not necessarily lead to replicating the physical/spatial results, and in fact, repeating the exact same object in complex coding ranges from challenging to impossible. Such automated codes are, nevertheless, adept at devouring datasets and producing "the optimal" which is the digital version of the aura.

This study is a deeper look at this ironic retrospective/futuristic re-production by using machine learning in architecture as a basis. Combining the ideals of objective beauty and optimal performance, this type of coding fits well within the paradigm that Copy Paste defines. On the one hand there is the mechanics of it: a) inputting objects as varied as plan-layouts, furniture distributions, façade-designs and even ecological responses that are available from the archive of the past experiences, and b) outputting "the optimal" without "explicitly" writing a program to look for it, as it is data itself that ultimately evaluates and organizes. On the other hand, there is the politics of it: the challenges here are beyond the implied pre-evaluation, usually summed up in the "garbage-in-garbage-out" slang, and more significantly include a legitimizing and normative semiotic closure that justifies its own existence, coupled with necessitating the quantified experience.

The hope is to expose the gap that exists between the idealized image of such re-production (its fame as a system that solves the unsolvable) and the practical side of it that ends up encouraging, even demanding, behavioral repetition (online shopping is a pervasive example) and normative identities based on the gravitation towards the mathematical/statistical center that is embedded in its mechanics."

Environmental Crisis

Topic Chairs:

Jane Hutton, University of Waterloo

Andres Mignucci, University of Puerto Rico

Comprises management of environment and resources, and the challenges of consumption and resiliency. We have enumerated multiple flanks of attacks on the city and we have yet to broached perhaps the most grave ones. As Houston floods, Miami sinks and Beijing chokes, the changes brought about by climate change and resource management are beyond palpable, already catastrophic.

Urban Instrumentality: Pedagogy in an Era of Ecological Design Challenges

José L.S. Gámez, University of North Carolina at Charlotte

Urban Instrumentality: Pedagogy in an Era of Ecological Design Challenges

In 2014, NASA projected higher than previously predicted global sea level rise due to irreversible climate changes. Sea levels are expected to rise 1 to 2 meters worldwide by 2100. Along the way, as the London School of Economics' Urban Age Project has publicized, the global population will become 75% urbanized by 2050. Much of this urbanization is occurring in developing countries, which will account for approximately 4 out of every 5 city dwellers. This rapid urbanization and its environmental impacts have given rise to an era in which resource management and resilience are threatened due to climate changes. This paper reflects upon a two three-year collaborations between our Master of Urban Design program and universities in parts of the world that are undergoing the brunt of this process of global urbanization: Tongji University in Shanghai; and the Pontifical Catholic University in Rio de Janeiro. Through a discussion of a series of summer workshops, which were each a part of three-year design-research initiatives, this essay describes fundamental challenges to the integration of ecological strategies into design pedagogies.

Using cities in China and Brazil as laboratories of investigation, teams explored the design, ecological, and socio-cultural dimensions of building resilient cities in their attempts to address important questions such as the relationships between density and social vitality, the integration of horizontal and vertical dimensions of design, and the ecological changes and social adaptability of combinatory urban forms. The teams (including US and Chinese or Brazilian students) faced considerable challenges stemming from historical and cultural traditions that critically bounded the workshops. Our summer research and design workshops in both China and Brazil aimed to explore localized urban transformations while also introducing questions of global forces, ecological challenges and cultural differences. In many ways, these three-year programs were designed to provide opportunities for students to engage a range of topics not often studied in western design programs precisely because the rapidly transforming urban contexts facing the profession lie outside the United States. Framed by themes of verticality and compactness, complexity and density, and sustainable development, the programs focused upon emerging patterns in Chinese urbanization as our first set of case studies. In the case of China, highly centralized processes of growth provided additional contrasts to contexts in the U.S. These studies were followed by a series set in Brazil in which urbanization is best characterized as poorly controlled and often informally driven in thereby raising questions regarding relationships between environment and urbanization. These expanding territories of human agglomeration point to the growing scale of urban systems and the need to intertwine infrastructure and ecology, which, in turn, may change the processes of urban intensification. This global condition requires a reinterpretation of development, architecture, and ecology in which an integration of urban components is essential if the management of the environment and resources is to result in resilient and livable cities.

Building Resiliency in the Time of Super Typhoons, Evaluating the First Filipino Design-Build University Program

Anna Lee Koosmann, University of Arizona

In 2013, Super Typhoon Haiyan was one of the strongest storms to strike the earth, reaching wind speeds up to 195 mph, causing massive destruction in the Philippines. Situated in the Pacific Ocean "ring of fire", the Philippines is vulnerable to extreme weather and earthquakes. This is challenging Filipinos to reform architecture education for resiliency. "Building Resiliency in the Time of Super Typhoons" evaluates the first, university design-build program in the Philippines. Estudio Damgo (Dream Studio) is patterned after those in the United States. Founded in 2012, Filipino architecture students are given the chance to put theory into practice; by researching, designing, and constructing a small structure for a chosen community. Students gain hands-on experience using native materials in a context of community input and support. Furthermore, the program provides the beneficiary with a unique, sustainable and affordable asset that showcases innovation in the changing face of architecture. Currently, 26 graduates and 5 community projects have been completed. The research (spanning 2012 - 2015) evaluates the impact of the program on the university students and their target communities. Projects include a preschool classroom in a rural mountain village, a multipurpose building in a farming village for 100 displaced flood survivors, and a floating structure at the marine sanctuary. Qualitative studies were conducted over a 5-month period in 2015 that utilized questionnaires, post-occupancy evaluations, onsite observations, and interviews. The results were documented and summarized into best practices, lessons learned, and comparative case studies that were presented to the university to improve and institutionalize the program for long-term success. The study also helped improve stakeholder partnerships with the community beneficiaries. This research provides insights into the complexities of adapting a design-build pedagogy to reform Filipino architectural education. This is a paradigm shift, and it has raised the bar in architecture education in the Philippines with acclaimed initiatives and international recognition since its launch in 2012. Storms like Super Typhoon Haiyan are becoming stronger and more frequent, putting the Philippines seasonally at risk. It is time to adopt an all-inclusive, grassroots approach to build resilient communities in developing nations from the inside. Educating emerging professionals within their local context serves as an alternative to the global initiatives that tackle catastrophic crisis from the outside. This program fosters the spread of a local, architectural language inherent to Filipinos' place and cultural values, and it can serve as a model in developing nations worldwide.

Cities on the Sea: A Crisis of Limits

Catherine Ann Somerville Venart, Dalhousie University

This paper focuses on Cities in the Rhine–Meuse–Scheldt Delta along the North Sea. It looks the expected consequences and transformations posed by climate change, and a recent study, which suggests that by 2100 sea levels are predicted to rise up to 3 – 3.5 meters instead of the 1.3-meter expected by the 'extreme scenario' of the Dutch Delta Program. These cities are especially at risk as large portions are well below sea level (-.8 to -2 meters) and so they are not only threatened by an increase in sea level from the North Sea, but as well an increase precipitation and seasonal river floods from within from an increase in intensive rain events. This paper using examples from two graduate level design studios at TU Delft & Dalhousie, asks - How do we prepare, adaption for this new future and What might change look like? It is important to remember that here in the Delta, Land is not a given, it is in fact formed - landscaped or land 'schop' - literally the act of shovelling 'land' - a continual construction, which along with the pumping of water produces 'Ground'. It is these works "of topographical construction... the foundation of ... most cultural practices," that are the base of all Urban Form, and like Amsterdam/Antwerp formed around a dam or twerpen mound, it is these systems, that trace the struggle over territory. The long and on-going process of making land, cultural history, and which is the story of the battle between nature, the North Sea and the inhabitants of the Delta. A battle where sometimes lands are lost and other times won (IJsselmeer/Biesbosch) and where land is accrued through planning, organizations (water boards) and technological innovation locally, provincially, nationally & transnationally are in fact regulated and social contracts. These dynamics between the natural and cultural is a constructed one –where the Delta 'Landscape', a dynamic equilibrium, of ecosystem - peat bogs, estuaries - now erased and fragmented by human activities - activities creating increased urbanization through the consumption of 'Land' and displacement of Water are now again being re: natured. Nature is replaced by technological mechanisms, or is restructured creating a "hybrid that is neither human nor natural, and where "there is no such thing as either man or nature only a process that produces the one within the other and couples the machines together".

In exploring these ideas for a future geography of the North Sea in a shifting position between land and water, nature and urbanity, machine and nature perhaps these transnational 'new grounds' also hold potentials for climate adaptation. As a 'landscape' the North Sea-Delta is also a coupling - the product of processes, of climate change issues and urbanization can be developed through another coupling where both real proposals by the EU like OMA's Roadmap 2050 (2009); or Nations as MUD's Mare Meum(2005) or Happy Isles by West 8(2006) and the fictitious works of J.G.Ballard, or Squint/Opera2, and Constant's New Babylon or Soak City (2009)] inform visions for the future 2050 -2070.

Project-Design as Play: Sea-Level Rise Planning Board Game

Gabriel Kaprielian, Temple University

The waterfront along the San Francisco Bay is facing a growing threat from sea-level rise. Over the years, the Bay Area has seen a large portion of the historic wetlands filled or leveled off for residential, commercial, and industrial land uses. According to current sea level rise projections, water will once again reclaim the bay lands that have been filled. The issues presented by sea level rise along the urban edge of the San Francisco Bay involve a complex series of challenges including: regional versus local governance, built versus natural environment, vulnerable local and regional infrastructure, diverging interests with diverse stakeholders, and population growth. With each possible future scenario come multiple outcomes with winners and losers. How can the best policy and design be selected and tested? How will distinct communities learn about different options and strategies for adaptation and be empowered to act? By creating and playing a sea level rise adaptation “game,” student were able to explore these different scenarios and inform future urban planning and design decisions.

To address the complex issues presented by sea level rise along the urban edge of the San Francisco Bay, we choose to play. More precisely, students designed board games to play out various scenarios of sea level rise adaptation to determine the best strategies for future resilient development. The process began with site analysis to create a base map of past historical ecology and urban morphology, present built and natural environment, and future sea level rise scenarios and population growth projections. Next, students researched various potential adaptation strategies and identified local stakeholders that became the “players.” In teams, they created game pieces of housing development, shoreline protection, natural environment, and public infrastructure, playing cards of chance events that included economic, environmental, and governmental occurrences, and finally they developed the rules of game play.

By designing the game, students conducted complex site research, identifying site factors past, present, and future. Through a mapping of the past transformations that have taken place, they were better able to understand the present built and natural environments and diverse interests of local stakeholders. With an open-end approach to determine potential future outcomes, students were more likely to experiment with innovative resilient urban development strategies. Through play, students were able to test out various scenarios of development and sea level rise adaptation. The game play enabled discourse between the students on which outcome were the best for each of the “players” or local stakeholders based on their stated goals. Students identified the stakeholder goals that were competing with each other and those which could be collaborative to create a shared vision for the future.

An architecture of disPLACement: a transitional inhabit module [TI_module] for the Puerto Rico housing crisis after hurricane María.

Eugenio Ramirez, Universidad De Puerto Rico
 Farzana Gandhi, New York Institute of Technology
 Matt Krajewski, New York Institute of Technology
 Yazmin Crespo Claudio, Universidad del Turabo

Architecture has the capability to reduce the disturbance caused by displacement. Through design, we are able to identify effective ways in which to visualize ourselves as citizens and rebuild. The abstract underscores that Architecture plays a fundamental role in the environmental crisis responding to global emergencies from a local perspective.

disPLACement

Puerto Rico's geographical location and the incidence of atmospheric systems is governed by what is known as the "Hurricane Alley", an area of warm water in the Atlantic Ocean stretching from the west coast of northern Africa to the east coast of Central America and Gulf Coast of the Southern United States. Many hurricanes form within this area. As Puerto Rico turnOFFs, the changes brought are afar tangible. Hurricane María slams Puerto Rico as an aggressive Category 5 Hurricane with 175mph sustained winds (National Weather Service, 2017) destroying many structures including "informal construction", where building codes or permits were not observed. Over 900,000 structures were destroyed partially or entirely.

TI_module

Design-build pedagogies may be motivated by vastly different aims and methodologies. In the aftermath of Hurricane María, the Master of Architecture at the International School of Design and Architecture at the Universidad del Turabo design TI_module; an instrument for the Puerto Rico housing crisis. What emerge in the crisis was a collaborative ecology involving faculty from the Department of Architecture, Professor Yazmín M. Crespo Claudio and her collaborative design methodologies, Professor Eugenio Ramírez and his design-build professional experience and from the New York Institute of Technology, Professor Farzana Gandhi and her research on displacement architecture, allowed new pathways for design thinking and the mechanics of building from a estate of emergency.

Making ROOM

FEMA housing assistance offers the citizens assistance with the rent, repairs of the structure and temporary housing. In August and September 2005, FEMA spent \$2.7 billion to buy 145,000 mobile homes and trailers after Katrina and Rita hit the Gulf Coast paying a bulk-rate price of about \$19,000 per trailer, on average.

Learning was accelerated by purpose. The TI_module budget was established at \$20,000. The transitional inhabit module is a twelve by twelve by twelve structure equivalent to 1728 cubic feet. The project is design to be inhabited by a family for up to six months following FEMA standards. Nevertheless, the unit can be disassemble, store and reuse for a future emergency. The entire volume is usable integrating personal and communal space for the family. Storage is essential because families at the time of displacement take with them all they believe is indispensable. It is important to accentuate the structure has a balcony area. The balcony is a meaningful space in traditional Puerto Rican architecture. It has historically been a space for gathering and for this specific situation a space for empathy and remembrance. Although the project is transitional, it acts as a guarding space in a disaster area providing social encounters and the sensing of community again.

NEW INSTRUMENTALITIES

2018 ACSA/COAM International Conference

After Lisbon

Elijah Huges, Wesleyan University

After Lisbon

Announced by the unplanned, synchronous ringing of bells throughout the city, a series of tremors shook Lisbon on the morning of All-Saints Day, November 1, 1755 in what would become an era-defining urban calamity. Beyond the immediate destruction, the earthquake precipitated a tsunami and widespread fires that collectively killed approximately one quarter of the city's population and destroyed nearly all of its buildings. Both the King, Joseph I, and the Prime Minister, Sebastião de Melo, later named the first Marquis of Pombal, survived.

In the years following the Lisbon earthquake, the city would be replanned, modernized, and rebuilt. The royal palace would not. Under de Melo's supervision, earthquake-resistant, "Pombaline" wooden framing would be developed, tested, and deployed to reinforce the masonry construction of new city buildings. Military troops, instructed to march in unison, were used for the simulation of earthquake conditions to test the performance of these early developments in flexible, lateral bracing. Meanwhile, the king would develop a fear of architectural enclosure and aversion to urban living. In his Historical Memoirs, Sir Nathaniel Wraxall recounts his astonishment, during a visit to the court of Portugal nearly two decades after the earthquake, at the discovery that "Joseph had never slept under a house, properly so denominated, during near seventeen years. Wherever he moved, either wooden barracks or tents were provided for his accommodation. I have seen tents pitched for his reception, in the fields adjoining the palace of Maffra, while that immense and costly edifice was totally abandoned, neglected, and unfinished." Rather than return to the palace, the king and his family took up residence in a growing complex of tents and wooden pavilions on the outskirts of Lisbon, colloquially named the Real Barraca.

These remarkably different responses to the earthquake's aftermath represent divergent architectural engagements with environmental crisis. They presage an Enlightenment-era dialectic between technological instrumentality - fueled by nascent forms of performance testing, materials science, and systems integration - and a retreat from technological "overcoming" in favor of a softer, transient, ephemeral built environment. In turn, both responses foreshadow architecture's current attitudes towards the slow crisis of climate change and offer a pre-history, at the dawn of the scientific age, of the range of positions that have emerged within the discipline relative to unstable and unpredictable climatic conditions.

More nuanced than a reductionist distinction between architecture as technological artifact on the one hand and a withdrawal from instrumentality on the other, these two paths could be understood to outline a disciplinary spectrum wherein architecture is either enhanced through technological "grafting" (prioritizing stability) or retooled for temporality (prioritizing utility). Using the legacy of these architectural responses to environmental crisis as a backdrop, the paper will examine the ways in which architecture's role in emergency is represented and the mercurial relationships between prediction, projection, imagination, invention, and testing that characterize the invariably speculative activity of building for the catastrophic moment.

Boundaries Crossed: The Role of Mapping in Architectural Practice

Christopher Meyer, Wentworth Institute of Technology

Oliver Curtis

“MacKaye was among the first to use the word environment, but for him, environment was an expanded site with physical, temporal, and visual strata. He crafted a set of virtual sites within cultural paradigms and persuasion, developing, primarily through his writing, a means of shifting or inverting perceptions to introduce new values and protocols for development. The approach involved a kind of noninvasive means of altering the landscape by changing attitudes about it, and MacKaye treated the practice as simply another practical and resourceful means of cultivating the landscape. Designing an adjustment to the landscape often involved the identification of a dormant existing condition that might be shifted into a new more effective position, so that the projects involved not holistic prescriptions, but partial reversals or adjustments with radiating but not entirely predictable influence.” (Easterling, 17)

If architecture is to contribute in a meaningful way to macro—global issues—then its practitioners must integrate the tools of parallel disciplines. The primary challenge is to move from generic information graphics to science- and place-based environmental arguments. This transition from the project site to city-scale, to territorial, and finally global, must extend outside of academic theory and into applied building logics. Everyday, architects build systems of representation, specifications, and material flows that have concrete geographies. Materials are gathered, harvested, heated, pressed, stretched, merged, and transported tremendous distances. These flows are invisible, why?

The transfer of visual information from the design disciplines are applicable to the wicked problems inherent to material flows. Drawing, or rather, mapping these flows is fundamental to discovering and deciphering the dependencies, vulnerabilities, risks, and opportunities that are difficult to express at the individual site or project level. The new process starts with simultaneous investigations of a place at multiple resolutions and scales. The discovery phase, departing from traditional precedent studies, requires accessing data from scientific domains. Information is then overlaid raising a series of new questions in an iterative cycle. This process exposes the design disciplines to the nuances of ecological and social science methodologies and datasets. Design responses broaden from basic planometric concepts to non-Cartesian, fluid environmental reasoning. There is an opportunity for new ideas to emerge that transcend a narrow territorial approach to building resources; It engages and aligns environmental systems with building logics. This paper will use examples of how these connections may change based on the evolving relationship between designer and their environmental understanding.

Using the cartographic process—data acquisition, cleaning, interpretation, and visualization—will lead to a reconfiguration of the system boundaries across design disciplines. This proliferation of spatial information has become abundantly available at finer resolutions. Scientific data used to inform design decisions displaces aesthetic and formal agendas providing the disciplines with an alignment to larger ecological processes.

Alternative Grounds

Zaneta H. Hong, University of Virginia

At the beginning of the 20th century, seventy-five percent of industrial and consumer products were manufactured with renewable materials – these predominantly included forest and agriculture-related materials, such as wood and natural fibers. By 1980, seventy percent of materials originated from nonrenewable resources, most notably minerals, ores, and petroleum. Today, these numbers continue to rise and have been further stressed by the effects of severe environmental problems – air and water pollution, soil contamination, habitat destruction, land degradation – that have deepened our global fate.

Natural aggregates – including gravel, crushed stone, and sand – have become the world's second most heavily exploited natural resource, after water. In a 2014 report, the United Nations Environmental Programme detailed that the mining of these natural minerals have only exponentially increased as a result of rampant urbanization, economic growth, and non-equitable competitive markets stemming from Asian countries. To the degree that China – as the main culprit – over the last decade, has excessively consumed this natural resource to the equivalent of the United States' usage over the entire last century.

From megastructures to major metropolitan cities, the construction industry adds more concrete to its urban footprint at a rate of approximately one Hoover Dam every eighteen months. In isolating elements of the urban network, one kilometer of highway requires approximately 25,000 tons of aggregate; one kilometer of railway requires approximately 2,000 tons of aggregate; a high-rise building requires 1,000 tons of aggregate per floor; and a typical house requires little more than a hundred tons of aggregate for the construction of its concrete foundation, basement, garage, and driveway.

As the most common end-products, aggregates are the fundamental ingredient for the production of ready-mix concrete (approximately eighty percent) and asphalt (approximately ninety-five percent) – as well as the primary base course material for which both concrete and asphalt are laid on in the construction of roadways, parking lots, airport runways, etc. Between these two ground materials – concrete and asphalt – they have become the most widely used man-made building materials, in which modern life would seem inconceivable without their existence.

With rapid urbanization comes with it, the simultaneous surge of a potential environmental waste crisis. Buildings constructed today are expected to last only 30 to 50 years; likewise, concrete pavement for a mere 30 years. Extending the lifespan of building materials may be the best way to reduce our environmental impact, but this might in some ways be averted by designing towards a closed-loop system, where materials from one product or process becomes the source or feedstock for another, resulting in minimal to no waste.

This paper presents work from a design research studio, where students explored buildings materials as individual parts, as built assemblies, and as integrated systems. Through information mapping and material experiments, students negotiated between associative and generative design methodologies to establish a critique on how designers can utilize particular knowledge sets to make more informed decisions for future construction.

“Per-Form-A(c)tive” Territories

Giovanni Santamaria, New York Institute of Technology

The flow of people, resources, material and immaterial goods, and at the same time of powers, and strategies of control, have always shaped/reshaped our geographies and processes of urbanization. Therefore built and inbuilt landscapes have been characterized by gradual or dramatic changes, leading to new architectural typologies and urban morphologies corresponding to the transformation of means of production, distribution, circulation, consumption and to the shift of political, economic and ideological realms.

Focus of this paper is the exploration of the complex reciprocities between processes of urban transformation –informal growth, shrinking phenomena- and environmental risks, through the lens of landscape urbanism, for a better understanding of our current urban ecologies and their inner tensions. This integrates the scale of architecture in a new dimension, concerning diverse fragile constructed environments of the post-industrial era. It includes issues not only related to the history of urban settlements and their evolution, to the rules of politics, economics, sociology and technologies, but also effects connected to natural phenomena, pollution, waste, space reclaiming/ reuse/ recovering, material recycling, land productivity and consumption, and alternative processes of energy production for a more sustainable growth. These elements define a new systemic and coordinated vision for urban design which, encompassing multiple dimensional scales and defining new landscape structures, includes infrastructure, urbanism, natural resources, agriculture within a new frame of relationship between public administrations, communities and private organizations in often frictional contexts. They are subjected to several forces with their own nature, order and rules, and their evolving processes. The recognition of the palimpsest of forms and structures becomes inspiration for proactive design proposals at the urban/metropolitan scale, crossing boundaries between codified disciplines and strategies. New methodologies and regulations for performative and networked operational procedures need to be created and experimented through critical designs proposals capable to deal with processes of territorial transformation. New urban morphologies and building typologies need to be strategically integrated and coordinated into our landscapes with a deep understanding of their sensitive nature, and of their proactive rule in defining and modifying a wider complex environmental system, initiating and/or promoting specific processes of actions and reactions. The consequences of these processes on the structure and quality of spaces and life could be described as part of a complex “urban metabolism,” which looking at the city and its territory as a complex organism, should be systematic, creative and participative, identifying material and “immaterial” issues that give form to rhizomatous and diverse process of change. This new dynamic landscape has reached a high level of complexity where natural environments (geology, hydrology, topography) and cultural environments (productive lands, urban settlements, infrastructural networks) need to be synergistically understood as part of an articulated ecological system, with both micro and macro implications. This determines the need for new tools and methods to observe, record, analyze, critically select and clearly represent and communicate data and info –physical and ephemeral- concerning urban phenomena, to strategically and sensitively localize minimal interventions capable of to obtain the most meaningful and effective results.

Resiliency through Networked Urban Interiors

Deborah Schneiderman, Pratt Institute

A set of urban interiors can comprise a networked infrastructural system that aids in the resiliency of a city. When one considers infrastructure, the typical association is with physical places of interconnectivity, for example transportation, communication or utilities. In a more current definition, infrastructure can be understood to include replicable building models that maintain an organization or information network. According to Keller Easterling, as individual buildings become reproducible products no longer uniquely designed by architects but rather engineered for function they can be defined as a networked infrastructure.¹ Likewise, a reproducible interior element set within an architecture can transcend that architecture and become a networked infrastructural interior condition. These interior networks can be implemented to minimize waste by preserving existing building stock as well by being activated in environmental crisis. The hypothesis will be analyzed through case studies of two typologies of urban networked interiors, parking garages and libraries (with a layered program for disaster relief). It will be evidenced through student work.

Parking Garages are nodes in infrastructural transportation system. By design they are regulated by a ruleset, consequently, parking garages can be reconsidered as an adaptively reused infrastructural interior. The systematized construct of the parking garages primes them for ready adaptive reuse through prefabricated and/or mobile interior insertions.² Recent strategies to eliminate personal car ownership including better biking conditions, car sharing, and more robust public transportation, have reduced the need for parking garages leaving many under-occupied.³ This diminishing requirement for parking, allows for either a complete or partial programmatic shift.

With radically shifting weather patterns we have learned first-hand that the interiors of urban mega-structures are utilized as sites for disaster shelter, but other than being inside are radically unprepared for inhabitation. Simultaneously, libraries spatial requirements continue to diminish as books become more readily available in digital format. This has led some to question whether, in the near future, a physical site will be necessary for libraries to function. The integration of two critical programs makes the existence of each more viable. Disaster relief can be layered onto an already established networked system, the library. The library is by its programmatic intent a networked information system, its interior components are typical, replicable, standardized elements such as, card catalogs, bookcases, carrels, etc. Disaster relief can piggyback onto this existing networked interior system and retrofit into a further connected and transformative interior system. The libraries interior spaces, which are already linked as part of an information network, can then take on a secondary program and transform to operate as a disaster relief shelter as required.

A robust consideration for the design of infrastructural interiors is critical to sustainable and resilient building practice. The implementation of adaptive reuse or shared use for an infrastructural interiors can prevent the demolition of underutilized structures and possibly allow the initial program to continue with a new symbiotic relationship. Outcomes span from readily and systematically extending the life of a structure to creating a spatial and support network for environmental disaster relief.

Wetness and the City: A Critical Reading of the Dry and Permanent Ground

Labib Hossain, Cornell University

The city is addressed in many different ways – it is seen as a body, a machine, an organism, a second nature and now a third or even a fourth nature. These readings of the city (or settlements), however, have been conceived on 'dry ground' separated from water as an element that is managed or controlled. Indeed, the city's relationship with water is defined with the latter contained in an entity, whether a river, sea or pipes and drains.

The cities in the Bengal Delta, a monsoon-fed landscape that defies articulation in terms of streams, tributaries and rivers challenges dry ground. An effort has been made for about 200 years (colonial period) to draw these rivers in lines and the land has been predicated on certain dryness. The dichotomy of land and water found its firm base after the colonial interventions in the sub-continent. This misguided separation is followed by tragedies in the form of floods and other threats. This is not just the case for cities in the Bengal Delta but for many other cities in general. Global city population is increasing rapidly and the challenges of contemporary cities especially those that are located in vulnerable landscapes and critical ecologies require deep understanding of context and its cultural, social, political, economic and environmental phenomenon. To face those challenges needs new kind of city thinking and therefore new kind of investigation integrating disciplines.

Looking at certain traditional practices in the monsoon landscape of Bengal Delta can offer an alternative reading of human habitation, one that challenges the dry and permanent ground. For example, muslin weaving in Bengal embodied the unique landscape of a particular place (Dhaka). Muslin is a kind of cotton fabric, delicate and palpably transparent, that attracted the entire world. During the spinning process, the finest thread was spun in intensely humid conditions, usually in the morning and evening, with water bowls around to moisten the air, or else besides river-edges or on boats to capture humidity. The wetness in the atmosphere was one of the main reasons why this practice was unique to Bengal. Is it possible that this practice is a mode of habitation? In this monsoon-landscape, where much is submerged during the rain, when the lines of riverbanks are erased, when towns established by the colonizers are washed away by the changing course of rivers, what is the point of reference? Can this landscape serve to open a new imagination that shifts us from a divided landscape of contained waters to a 'ground of wetness' that requires a new vocabulary of habitation?

The first part will investigate the traditional practice of weaving that acknowledge the landscape of certain locations. In the second part, I aim to explore the discourse of 'contained water' and 'dry/permanent ground' in the cities of Bengal Delta during colonial and midcentury modernization. In the third part, I will discuss, what connections can be drawn from the traditional practices to the present landscape to explore wetness as intrinsic to the ground of habitation.

DAM[N]ED: Mechanizing a sacred river landscape

Dhara Mittal, University of Michigan

María Arquer de Alarcón, University of Michigan

Nishant Mittal, University of Michigan

Olaia Chivite Amigo, University of Michigan

Restructuring water landscapes in the interest of prosperity and national identity building continues to govern contemporary Indian ideology, and has displaced close to 40 million people over the years. [1]. Adding to the social implications of these massive, politically driven migrations are the ecological consequences of the drastic transformation of the landscape to serve productive and economic purposes. As India gears up to initiate the implementation of the National River Interlinking Project, termed by several experts as a disaster in waiting [2-4], revealing the narratives of struggle and resistance generated by the Narmada Valley Development Project (NVDP) could place design agency as a means for a more resilient and just transformation of the territory.

First envisaged in the 1940s, the NVDP comprises 30 large dams, 135 medium dams and 3000 small dams and aims to provide potable water to almost 40 million people, irrigation for over five million hectares of land and hydroelectric power for the entire region. The largest amongst these components is the Sardar Sarovar Project, which will bring additional irrigation capacity, drinking water and 1450 megawatts of hydro power to Gujarat and Rajasthan.[1, 6, 7].

Resisting this narrative of national progress, the NVDP has been widely questioned, raising the need for more stringent environmental protection measures to seize the impact of such mega-development projects. [1, 6] At the center of this, were massive protests from local, national and international agencies to the World Bank's initial support to the SSP in 1985. Despite the unprecedented World Bank withdrawal from the project by 1994 and the national pressure led by the Narmada Bachao Andolan- a coalition fighting for the rights of the native settlers - and the local processes of civil resistance, the Indian Government reinstated its power moving the project forward. As a result, with thousands of people already displaced without proper compensation, recent approved plans will submerge 245 additional villages.[8]

Through a series of cartographic studies and photographic inventories, this project traces the contrasting narratives of modernization and massive public works, and physical and spiritual belonging, to the river intangible landscapes. The journey pauses in Omkareshwar, an important destination in the Narmada Parikrama, where pilgrims visit the many temples and encounter the Narmada holy waters in the ghats and the Sangam. As pilgrims engage in their bathing rituals with decreasing water levels, the daunting presence of the Omkareshwar Dam hides behind a large reservoir that submerged many villages and sacred sites in its making.

In a landmark ruling last March 2017, India's courts conferred the Ganges and Yamuna Rivers the status of "living entities." As the Indian National Government plans to redraw its entire terrain of water in the name of national progress, giving the rivers human legal rights has global significance and gives hope to those who have long battled to address decades of environmental and social injustice. By bringing together the conflicting nature of the water, energy, human and spiritual landscapes, this visual narrative calls for more just patterns of hinterlands urbanization.

Reclaimed! The Past, Present, and Future of Contested Urban Waterfronts

Gabriel Kaprielian, Temple University

Land reclamation has defined urban waterfronts in cities around the world. The process of filling in waterways and wetlands has extended the urban landscape, made the waterfront profitable and productive, and defined a hard boundary and a fixed edge condition. While cities continue to augment their territory through land reclamation, this process has often occurred decades and sometime centuries before. The location and ecology of the historic coastline has been obscured over time by the present urban fabric; it is precisely these areas that are most prone to flooding due to sea-level rise and increasingly severe storm events related to climate change. This paper proposes a process of examining the past waterfront transformations to contextualize the present condition and inform a future urban edge that is resilient and inclusive.

The use of land reclamation and sea abatement strategies negate the natural functions of shoreline ecologies. Shorelines by their very nature are not lines, but rather transition zones from water to dry land, which vary in thickness and form. In contrast, the static urban edge of waterfronts that are built on reclaimed land operate on the notion of a fixed line, which reinforces a false sense of permanence and runs contrary to the natural shifting of a coastal topography and tidal fluctuations. Rethinking the urban edge is fundamental to developing a new waterfront form and function that is resilient in the face of climate change. As sea-level rise threatens to reclaim land that has been filled, this also presents an opportunity to redefine the edge condition of the waterfront and the relationship between urban life and shoreline ecology. This challenge offers the potential for innovative strategies that return natural functions to the shoreline with porous and soft infrastructure, while introducing new architectural and urban form that is uniquely defined by the site-specific characteristics, combining ecological and infrastructural functions that adapt to continued sea-level rise.

This paper will compare and contrast urban waterfronts along the San Francisco Bay to other cities across the country and around the world, investigating how land reclamation has shaped the urban edge past and present and what this means for the future. Waterfront cities face many similar challenges and marked differences. Particular focus is given to areas of post-industrial landscape that present an opportunity for the city to reclaim public space along the water's edge. Questions remain how decisions will be made for future waterfront redevelopment and whether sea-level rise adaptation strategies include protect, accommodate, or retreat? It is unlikely that the same toolbox of city making that created many of these problems will be useful in developing effective future strategies. Visions for new approaches to waterfront design are discussed through case studies of built work, speculative competitions, and a contemporary theoretical framework. The paper concludes with a call for interdisciplinary and inclusive platforms for collaboration and creative discourse, offering specific examples of projects that incorporate place-based knowledge past and present, to collectively reclaim the waterfront of the future.

Oyster Hack

Evelyn C. Tickle, James Madison University

Locally, nationally and internationally, the oyster, its shell and its habitat, the oyster reef, are critically endangered and in some areas functionally extinct. This unique habitat works to stabilize the sand floors and shorelines of our estuaries and bays keeping waters from rising to a level that threatens coastal communities, and their built and natural environments. Together, the oyster, its shell, and its reef are responsible for purifying our waters, structuring our shorelines, feeding millions of people, and creating jobs for tens of thousands of people. The endangerment or extinction of this species has critical impacts at both the local and global scale. Addressing the effects of climate change and water pollution, the construction of new artificial reefs, the restoration of existing reefs and the creation of sustainable practices of oyster farming is now urgent. My paper will set out the challenges that must be confronted when working on reef design as an architectural issue, the opportunities that are offered by an approach based on bio-mimesis, and the impact that modular, fractal, reef assembly protocols can have in the restoration of coastal and estuarine habitats.

For the past twenty years, working as an architect, designer and inventor, I have built a substantial body of work using concrete. In 2008, I began to research oyster habitat and the concrete formulation that oysters make naturally and use to adhere to hard substrates, including other oysters, eventually forming an oyster reef. In what became a profoundly life-changing experience I discovered a design focus, that is simultaneously bio-chemical, bio-mechanical and architectonic, and must work at multiple scales - the precise architecture of a substrate that can initiate and enhance oyster growth, and can be built incrementally. I am committed to two fundamental principles: 1. that it should use a concrete formula based on the chemical analysis of oyster shells and secretions, 2. the behavioral and structural analysis of oyster colonies, as evidence of the oysters' innate ability as an engineer, parametric designer and 'wet computer' should guide the architectural design. I have developed reef building products and built a business, Grow Oyster Reefs, to provide these products to scientists, NGOs, government agencies, oyster farmers and homeowners. My concrete formula and products are being used by The Nature Conservancy for one of the first artificial substrate oyster reefs in the state of Maine and by the Chesapeake Bay Educational Center and US Fish and Wildlife Agency in the Upper Chesapeake Bay. In December 2017 I started work on the design and fabrication of an artificial reef in Florida, that will become a demonstration of sustainable oyster reef development in one of the most threatened coastal areas of the USA. This project is being built in the context of an underwater museum, allowing public access, facilitating education programs in schools and colleges, and is being executed in collaboration with a team of architectural design students. Research and design approaches are continually updated in response to feedback from these sites to inform new work.

Hydromorphosis: Rethinking Water Collection from Droplet to Vapor

Christopher J. Beorkrem, University of North Carolina at Charlotte

Garrett Herbst, University of North Carolina at Charlotte

Hydromorphosis: Rethinking Water Collection from Droplet to Vapor

Hydromorphosis focuses on addressing the global water crisis, specifically the increasing shortage of potable water in urban centers, by rethinking water collection from traditional rooftop rainwater systems to facade-based fog harvesting systems. By utilizing the significantly larger square footage of the urban high rise facade, fog harvesting mesh provides the building a greater opportunity for water collection not only through rain droplets but also through water vapor.

This paper describes a computational tool that would provide the user the ability to calculate the annual water collection potential these harvesting systems could provide, given a site, building mass, and orientation. The tool integrates this massing information with a computational fluid dynamics software to analyze the aerodynamics of the buildings form and to accurately measure not only the amount of fog moving past it but also the efficiency of the mesh systems located on it. Based on those CFD variables the tool can then inform the user of optimal locations to place the harvesting mesh onto the facade.

Used during the schematic phase of a project, the tool's intent is to analyze and subsequently re-generate an Autodesk Revit Conceptual Mass. The development of the mass utilizes inputs from local weather data to manipulate its orientation and form to be best suited for fog harvesting. Weather data, provided by the National Oceanic and Atmospheric Administration (NOAA), extracts daily records of prevalent wind direction and velocity, fog indication markers, rainfall, and dew point depression to provide a base assessment of water collection for the initial Revit mass geometry.

The Dynamo graph linking between REVIT and CFD begins by initially subdividing the facade of the mass into a square meter grid of points, which is utilized throughout several areas of the calculation. Using the imported velocity (converted to meters per second) a calculation is performed to acquire how many meters of vapor would be moving past the mass at each location. A cubic meter of fog holds within it a certain amount of water, known as its Liquid Water Content (LWC), and a study done by NASA measured the amount of LWC held within several types of fog clouds (United States 1994). This calculation sums up the total amount of liquid water that will impact each individual point on the facade. Each total is multiplied by an efficiency coefficient, generated through a formula written based on a MIT study, which is dependent on each the individual velocity at each respective point on the facade.

The tool was tested through a series of mesh design proposals based on an analysis of the Salesforce Tower currently under construction in San Francisco. These tests demonstrated that a fog harvesting mesh could collect 14% of the approximately 75 million gallons of non-potable water needed for this building from fog harvesting alone. Several façade iterations were designed to show the variation of architectural aesthetic as well as the differing daylighting and programmatic influence the mesh could provide.

Inequality – People and Capital Flows

Topic Chairs:

Neeraj Bhatia, California College of the Arts

Josep Bohigas, Barcelona Regional

Historical and emerging people and capital flows are contributing to the city as a stage for augmented inequalities. The growing global inequalities as generated by real estate speculation and migrations are finding in the city a territory to intensify rather than abate a sense of equality and community. The migration trends have recently intensify beyond the rural to urban migration to include a growing number of refugees of war.



Positioning Urban Neighborhoods for Prosperity

Mo Zell, University of Wisconsin-Milwaukee

In the book *The Temporary City*, Peter Bishop and Lesley Williams describe tactical urbanism as a reciprocal relationship between the economy and urban vacancy. They state: “the obsolescence of post-industrial sites and the impact of the economic crisis on private and public investment have produced an abundance of vacant property. The availability of urban vacancies proves significant in allowing temporary activities to unfold.” (Bishop and Williams, 2012) Tactical urbanism provides bottom up community engagement strategies that look to improve distressed neighborhoods.

Milwaukee is experiencing unprecedented development in downtown, but the benefits of which is not extending to economically vulnerable communities. As a form of tactical urbanism, the Mobile Design Box (MDB) was initiated in 2014 as a partnership between the School and community allies in select commercial corridors to activate vacant storefronts in neighborhoods surrounding downtown. MDB is a partnership between residents, BIDS, arts organizations, Milwaukee's DCD, cultural institutions, and the School to convert vacant commercial spaces in three neighborhoods into temporary hubs for community, arts, and education. The long-term intent is to generate a new lessee for the space, then relocate the MDB into another vacant storefront in the neighborhood and start over.

Each corridor has undergone a resident engaged planning process for redevelopment that is aligned with several comprehensive commercial corridor plans articulated within a citywide initiative called MKE United. This action plan works to ensure that investments are extending from downtown into neighborhood corridors towards a more inclusive and vibrant community. The arts and culture are a strategy embraced across the three selected neighborhoods as a way to demonstrate pride and strengthen the social and economic vitality of the corridors.

Key objectives are to attract investment in commercial corridors and reduce vacant properties; improve the quality of life for residents; make each corridor safer and change negative perceptions; attract new tenants and potential investors; provide high-quality arts, design, and opportunities for civic engagement for residents; build social cohesion and strengthen the unique identity of each corridor, and connect students from the School to real world projects and venues for community engagement.

Although the identity of each MDB is unique, highlighting local assets and amenities, the strength of the program is the formation of a network of neighborhood and institutional support structures that work to improve all three communities simultaneously.

This paper details successes and failures of the collaborations as a form of tactical urbanism (including references to Lehtovuori - *Temporary Uses as Means of Experimental Urban Planning* and Pagano - *DIY Urbanism: Property and Process in Grassroots City Building*) and highlights one local program tackling global issues by artist Kirsten Leenaars and her young collaborators. (Re)Housing the American Dream: A Message from the Future is a 3-year community based project, commissioned by Marquette University's Haggerty Museum of Art. Structured annually as a three-week summer camp – the 2017 iteration was based in the MDB. The project provided a collective forum for refugee and American-born children to engage critically with the intersecting issues of immigration, segregation, housing, and happiness.

Over, Under, In-between: Worker housing within an industrial ecology

Jason F. Carlow, American University of Sharjah

Housing is a particularly sensitive issue in a country with a large expatriate, working-class population and a large income gap between groups of residents across the socio-economic spectrum. Although develop-able land is seemingly limitless in the United Arab Emirates, due to tight governmental control over land policies and a relatively high cost of living, the demand for comfortable, affordable housing for working-class expatriates is great. Many working class individuals are forced to live in corporate labor camps or within industrial areas of the city that offer few public amenities or open space.

The research presented in this paper represents an effort to identify key issues in the development of affordable housing and presents new housing solutions through design iterations. The research was organized and conducted through an advanced design studio at a school of architecture. The premise of the studio was to create new housing units specifically designed for low income workers who are not eligible for corporate worker housing in the UAE and not permitted to live in family-designated, residential districts. These low-income workers often struggle to find affordable housing within the industrial zones of the rapidly growing urban metropolis surrounding Dubai. A key design research question asked how housing could be built on spatially confined sites within an industrial zone that could provide not only secure and healthful shelter for the residents, but programs and amenities that build a sense of community as well.

The studio title, "Over, Under, In-between", therefore not only refers to the activation and occupation of space for housing within the city, but how affordable housing must work above, below and in spite of socio-economic obstacles within the global culture and local space of industrial production. How can architecture move beyond the mere provision of shelter and allow residents opportunities to advance their livelihoods and improve the overall built environment? Design solutions are intimately tied to site conditions as researched and seek opportunities to add amenities to the industrial zones and social and economic mobility to the residents.

Urban analysis plays a key role in the development of housing prototypes for an underprivileged element of society in a complex site. Analytical maps and diagrams were invented and developed to record patterns of mass, void, flows, movement, exchange, production and inhabitation. Resultant maps and drawings (see attached site analysis drawings) identify social, economic and spatial issues that aided the selection of strategic sites for architectural intervention. Design projects test new sites, programs and opportunities for affordable housing that may create or activate new types of space within industrial areas. The design of new prototypes for living challenge the typical housing types in the greater Dubai region to respond more thoughtfully to environmental, social, economic, urban and architectural conditions.

Urban Density as Definition, as Image, and as Political Medium.

Cem Kayatekin, IE University - Instituto de Empresa

The subject of urban density is often discussed under the fog of a range of hidden assumptions. These assumptions form part of the buried ideological fabric underpinning much of contemporary urban thought and practice, with specific implications on the short- and long-term behavior of cities in the areas of equity, inclusivity, and socioeconomic resilience. This paper looks to focus at three of these buried, and in many circumstances untested, discursive points, namely: (1) how we as a discourse tend, and have historically tended, to define the notion of density within the urban condition; (2) the form which we tend to assume such density will take on within the urban fabric; and (3) the municipal methods that are frequently put in motion in order to achieve these former two points.

This paper aims to investigate these underpinning assumptions, specifically focusing on: (1) how density as a definition is tested when countered by other, potentially more precise definitions (e.g., the notion of densities of diversity, rather than simply, density); (2) the myths and misconceptions surrounding the actual verticality needed to attain “high density” urban conditions, using case studies of some of the densest urban areas observed globally; and (3) the varying methods commonly used for the top-down manipulation of the urban fabric, specifically Euclidean Zoning, Form-Based Codes, Smart-City Strategies, and Performance-Based Codes, in order to understand their short- and long-term impacts upon the behavior of cities, as political mediums, as fabrics of equity/inequity and inclusivity/exclusivity, ultimately framed in the context of the pursuit of the proverbial “resilient city.”

Built Inequalities in Rural America. The Leisure Colonization of the Southern Appalachians.

David Franco, Clemson University

Despite the claims by voices as diverse as Henri Lefebvre, Raymond Williams or, more recently, Rem Koolhaas, about the crucial role of the rural in shaping the spatial qualities of capitalism, architects and planners have consistently ignored its importance in the production of space and architecture. While the urban is commonly acknowledged as the spearhead of cultural and technical innovation, the rural remains locked as a subordinate reality within the global system of capital and population flows. An essential element of this dialectic perception is the fact that, as part of the process of industrialization, the largest migrations in early modern societies were those of rural populations towards cities. However, within the recent context of economic instability and increasing inequality, we have been witnessing a fundamental change in the demographic and capital flows between the urban and the rural. As Koolhaas has pointed out, after finding in the rural landscape a new territory for leisure, the urban classes are investing heavily in properties that remain mostly unused, creating with it an unexpected pressure in the local population. As part of this process, the most valuable landscapes, such as lake fronts or creeks are being slowly colonized by gated communities and second houses. This trend signal to how rural space is deepening its condition as a subsidiary territory whose people suffer the worst side of the social and economic inequalities intrinsic to neoliberalism.

This paper explores the way in which these new scenarios of inequality that emerge from the relationship between the rural and the urban reflect directly of the built environment. With that end I will concentrate on the housing crisis that the Southern Appalachian Region is experiencing right now. Paradoxically, the movement of material and social capital from the urban to the rural has produced an acute lack of affordable housing, radically changing the relationship between the built environment and its occupants, creating contrasting realities within the spatiality of the rural: between abandoned downtowns and brand-new golf courses in Northern Georgia, between luxurious gated communities and decaying trailer parks in South Carolina's upper state, or, finally, between the hipster haven of Ashville (North Carolina) that materializes in a vibrant city life, and the massive problem of substance abuse in its immediate surroundings, with the terrifying result of the new phenomenon of rural homelessness. Can we imagine scenarios in which architectural and spatial thinking may alleviate the extreme inequality existing within the Southern Appalachian region? Can we find new synergies that make possible a more positive effect for these flows of population and capital? Or, alternatively, should we concentrate on denouncing the way in which the transformation of the rural landscape by these capital flows is being a determining factor in worsening and already depraved situation?

Spatializing Debt: A Visual Auditing

Marcelo López-Dinardi, New Jersey Institute of Technology

The complex colonial political condition that binds Puerto Rico to the United States have also an economic implication that have clear manifestations in the spatial landscape of the decreasing 3.5 millions population of the Caribbean island. Local and US bond holders have challenge, as in many other territories, the location and value of their bonds—capital flows unlimited between mainland and the island, as well as their people, but harsh un-equivalences exist above all. Migration has been a constant, exacerbated now by the systematic violence over the territory. Architecture and city making is highly complicit as well as a victim of financial predators, the local people are, however, the ones most affected. The H.R. 5278 Act signed by President Obama removes all power from an apparent sovereign territory, by implementing an oversight control board, similar to what has happened in other places, like the city of Detroit, or also, as it has been compared, to Greece, but under very different conditions. Puerto Rico cannot file for Chapter 9 (bankruptcy) and bond holders' debt have to be paid first before any public service by the government, a clear defeat to an apparent sovereign territory with its own constitution since 1952.

Spatializing Debt: A Visual Auditing examines Puerto Rico's current critical situation at the intersection of city making with the logics of state-financial debt, by giving territorial an spatial dimension to the so-called debt. On June 30, 2016, President Barack Obama signed into law the Puerto Rico Oversight, Management, and Economic Stability Act, or PROMESA as the ironic acronyms reads, utilizing the word "promesa" which in Spanish means promise, the promise to operate "in the best interests of creditors." This research and visualization project, in its earlier stages, maps and identify the location and agents of the debt transactions, following the documentation put together by the Center for Investigative Journalism of Puerto Rico, aiming to territorialize the debt, producing a visual tool to help locate what until now is partially known yet abstract or lost in the complex economic equations of this non-audited debt. This project is animated by an expanded architecture field as critical tool for the construction of complex social, political and economic imaginaries in the form of laws, policies, governance and human rights that, when critically inquired, can cast knowledge about its capacities and limits in territories of contestation.

Opportunistic landscape: land speculation and cross border filtering segregation

Marcel Sanchez-Prieto, Woodbury University

Land speculation has been an opportunistic approach to development patterns in the San Diego – Tijuana Region and significant contributor to the changes of economic segregation. Despite segregation by race and ethnicity that have been observed in cities, this border region is no exception, exemplifying even further the intricacies of segregation by income and the affordability of housing that has increased in recent decades by one sided land policies. The study reveals how neighborhoods in both sides of the border have been impacted since the economic crisis of 2008, In Tijuana there is a substantial increase of North Americans and citizens with double nationalities gentrifying neighborhoods near the city center and along the border; in San Diego with the politics of smart growth to support inner city development and halt growth at the periphery has created a land speculation frenzy where household rents have increased to a level not affordable to 40% of the population. This type of exodus from San Diego to Tijuana has been the latest trend in trying to acquire affordable housing, a low income housing subsidized by a market provided in Tijuana. This filtering system has gentrified areas of Tijuana and pushed the affordability of housing markets, middle class to low and low to squatters.

San Diego and Tijuana straddle between the advantages of capital gain in an opportunistic border landscape and is trying to address that part of society that is too weak/poor to be of direct interest to the market, but has sufficient potential to be attractive to the market when either government provides directly or indirectly through private developer's adequate incentives/interventions. The border region has been perceived as two separate cities or as fragmented urban landscapes, but also in this perception it has influenced the practice of opposites attract, engendering a blending of two approaches, a territory on the continuum of autonomous policies to extremely codependency.

The study is based upon census data and real-estate agencies, tracing neighborhoods on both sides of the border, measuring income segregation by neighborhood and the neighborhood level coefficient. This research finds economic segregation consistent with various significant indicators of suburbanization such as any other city, urban density and density gradient, rapid growth at the periphery areas relative to the city centers, zoning regimes, homogeneity of new growth and accessibility to jobs. What is unique is the geographical position and the intricacies of two international cities, planning on the U.S.–Mexico border has been mainly in the federal arena, local planning has been more a de facto activity based on good intentions rather than an institutionalized way with local formal agreements, a cross-sectional analyses and the effects of these suburbanization aspects on economic segregation reveals variables characterizing the demographic disparities of neighborhood composition, duplicities of metropolitan context, structural economic transformations, and a dysfunctional binational political landscape collaborating for the sake of opportunistic coexistence.

Transient Spaces_ Building Community in Crisis Contexts

Loukia Tsafoulia, City College of New York

Severino Alfonso, Barnard College & Columbia College

Transiency no longer appears as a condition of exception, but rather as the predominant mode of existence. The increased tension across and beyond national borders and territorial divisions has drawn the attention of designers across the globe and densified our reflections on questions of identity, equality, politics and economic exchange, expanding the reach of design from the realm of physical forms, into modes of interaction in social spaces.

The paper will present the methods employed and the experience gained as part of a research based advanced design studio developed and taught during 2017. The studio triggered an international call for contributions and it is currently under development for a book publication that explores the concept of impermanence in global contemporary society and aims to stimulate conversations about the potential of an expanding public realm.

The studio research and design investigations used as case studies four distinct sites in Athens, Greece. The selection was based on various degrees of temporality ranging from hyper-temporal hotspots to spontaneous or planned refugee camps and outside of camp contexts such as dense urban settings. In the outskirts of Athens, “Schisto” a former military camp, and “Skaramagkas” a former shipyard facility, are newly developed camps in the size of small towns hosting people for unknown amount of time. In the center of Athens, the studio engaged with the “Eleonas” Camp, a former industrial neighborhood and the “Prosfigika Alexandras” complex, built to host the 1922 Asia Minor disaster refugees and currently partially abandoned and appropriated by squats.

The studio developed strategies for disaster response that show economic and social sustainability through community integration strategies. It concerned the design of community driven systems approach and provided alternative ways for addressing every day, context-based issues that are less dependent on the global relief industry. How can design disrupt power structures in relief response? Could our methods adopt to the ever-increasing need for sheltering amidst ongoing crisis? How can architects optimize the capacity of people in acute need of protection while ensuring a high degree of livability and a sense of community and equality? These are some of the questions the studio addressed. Issues of temporality and space adaptation were investigated. The tactics of appropriation, severance, fragmentation and cultural identification of urban space were examined both, as forces and reactions in the physical space in order to construct an ideological position.

In an effort to establish bridges between academic research and the various professionals involved in the humanitarian support mechanisms, the studio connected with members from the Danish Refugee Council, the Greek Ministry of Immigration Policy and the UNHCR. This interdisciplinary inquiry inspired the book publication, as a way to rethink disciplinary boundaries and to identify radical tools that do not contempt, but rather acknowledge and respond to contemporary tropes of instability, precarity and transience. Based on these, the paper suggests possibilities of operations, tactics and methods as a way of researching and generating awareness, thus allowing our expertise to contribute with more potency.

Spaces for the Displaced

Aaron Paul Brakke, University of Illinois, Urbana-Champaign

Decades of civil war has driven many Colombian ‘campesinos’ from the lush rural landscapes towards urban concrete jungles, such as; Cali, Medellin and Bogota. Exile and displacement have become the reality for 15% of the Colombia’s citizens according to the Internal Displacement Monitoring Centre. Though still growing, the numbers of people flocking towards these cities is slowing down after a milestone victory occurred on August 26th, 2016 when the Revolutionary Armed Forces of Colombia (FARC) and the National Government reached an agreement to the terms of a peace treaty. An issue to be addressed is the precarious living conditions for the nearly 5 million internally displaced citizens. A great number of these people have sought refuge in the urban centers and have populated the informal developments found at the periphery of cities, which has created complicated social and economic tensions. The favelas have also absorbed the problematic without the proper tools or resources to navigate this situation in a satisfactory way. At the intersection of my research, civic engagement and teaching, I am working to understand the complexities of this situation using the methodology of participatory action research. Places in such a state of flux do not permit strategy to be enacted. Maneuvering changes in politics, economic conditions, zoning and trade agreements are but a few of the variables that affect the building industry in the post conflict era. As these issues are outside the control of a designer, it is futile to develop a strategy that is obsolete before it can be carried out. Therefore, the focus must be on tactics. In *The Practice of Everyday Life*, Michel de Certeau explains that a tactic is set up “on and with a terrain imposed on it and organized by the law of a foreign power.” As architects, we understand that we “must vigilantly make use of the cracks that particular conjunctions open in the surveillance of the proprietary powers. It poaches in them. It creates surprises in them.” Students are involved with the analysis of these symptoms, identification of cracks and take action at the scale of urban acupuncture. Tactics are used to exploit gaps in the playing field and to form projects of co-creation that have the potential to generate novel and inventive outcomes. One particular example is the work we are doing with a community in Cazuca. We are constructing a park with displaced communities in the periphery of Bogota. This research is ongoing and so in lieu of results; this paper will further articulate how we are probing dis-junctions in the post-conflict context of Colombia that has left a massive amount of people displaced and living in precarious habitats. The tactical acts being undertaken will be highlighted to illustrate innovative forms of developing stronger communities through conversation, collaboration, co-creation, design and construction.

SPECTROMETRY: Rethinking Serge Chermayeff's Spectrum Diagrams In the Context of Wicked Problems.

Dulmini Perera, The University of Hong Kong

In 1971, as a culmination of 15 years of experimentation on ways of framing the postwar housing crisis resulting from significant changes in migration patterns, architect and educator Serge Chermayeff introduced a series of tools under the broader title the Yale model. Historically, Chermayeff was one of the first architects who reframed the postwar housing crisis not as a simple architectural problem but instead a wicked problem that cannot be understood separately from the broader socio-economic and environmental questions of the period. Within the Yale model Chermayeff introduced a relatively simple architectural diagram that appears as a simple sideways figure 8 etched against a lighter square grid. The grid is defined with parameters such as economic, social and technical issues, theoretically representing all possible contradictions within the discussion that relate to the housing design question. The curve flows across the grid touching the entire spectrum of the contradictory conditions presented in the grid. It exhibits a dynamic order of interactions (open- systemic) where all the apparent contradictions also become complementarities. Although Chermayeff's experiments were not completely successful the spectrum diagram was an instrument (more specifically a diagramming tool) that attempted incorporate the spectrum of varying degrees of value commitments that were necessary in dealing with intensifying inequalities in the urban context. At present, architects/educators working with design and education experiments that deal with the housing crisis in cities such as Berlin affected by significant changes of migration patterns within the last few years (due to multiple crisis such as environmental, war, economic) are faced with the lack of tools/devices that enable students to grasp and engage the spectrum of issues at hand without resorting to an overly simplified idea of integration. As a result the students tend to resort to either/or logic, converting what is a wicked problem to a tame problem. It is in this context that this paper revisits Serge Chermayeff's experiments on diagramming in order to propose a new theoretical framework that I call "spectrometry" as a unique modality of working with both/and logic in relation to the intensifying urban questions in relation to migration in the three contexts of architects' thought processes, organization of the architectural object and creation of collaborative frameworks between professionals. In order to do so, the paper will be developed in two sections. In the first part I will position Chermayeff's less known "spectrum diagram" historically within other trajectories of program diagramming practices emerging in the postwar period. The intention here is to rethink the spectrum diagram not as a tool within a modernist functionalist / neo-functionalist tradition nor as a tool for digital programming experimentation but rather as an instrument that is related to experiments on crisis and wicked problems (an ecological tradition). In the second part I will discuss spectrometry and its relevance to the present with special reference to a design-education studio experiment (Autopoietic city) on the refugee-housing question conducted in the context of Berlin.

Project-Transient Spaces: Building Community in Crisis Contexts

Loukia Tsafoulia, City College of New York

Transiency no longer appears as a condition of exception, but rather as the predominant mode of existence. The increased tension across and beyond national borders and territorial divisions has drawn the attention of designers across the globe and densified our reflections on questions of identity, equality, politics and economic exchange, expanding the reach of design from the realm of physical forms, into modes of interaction in social spaces.

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Nascent Material Conscience

Topic Chairs:

Sunil Bald, Yale University

Nader Tehrani, The Cooper Union

Nascent material conscience has emerged aiming to empower local resources, addressing the economy of means and the need for new identities. The lack of real estate in some cases and busting economies in others, have increased the need of repurposing what already exists, reinforcing strategies of adaptability, transformation and reuse, therefore rising awareness of the behaviour and evolution of architecture over time.

Towards the emergence of a new material ethic: The work of Eladio Dieste and Vilanova Artigas

Julian Palacio, The Cooper Union

This paper aims to draw a parallel between the work of the Uruguayan engineer Eladio Dieste and that of the Brazilian architect João Batista Vilanova Artigas. It looks specifically at how both Dieste and Vilanova Artigas challenged the ways in which certain materials and technologies were used at the time—brick and prestressed concrete respectively—adapting them to their local economic and social context. This produced a remarkable body of work consisting of innovative wide-span structures that radically transformed the character of the public buildings they designed in their native countries during the second half of the 20th century. In these projects, the liberation of entire floors was fundamental for the emergence of a new type of communal space for socialization and expression, what Vilanova Artigas once described as the "spatialization of democracy."

Dieste and Vilanova Artigas approached the problem of architectural form as an issue of synthesis in which structure, material and local culture were components of an interrelated whole. In the case of Dieste, instead of opting for concrete as his material of choice, like most of his contemporaries did, he decided to capitalize on the availability and affordability of brick. The use of brick in the long-span structures he designed allowed for these projects to insert themselves within a long tradition of adobe construction in Latin America, echoing the culture of his native Uruguay. And by creating sophisticated vaulting systems in ceramic for churches, warehouses, schools, and other public buildings, he established a bold new material narrative that pushed back against the homogenizing aesthetic of the Modern movement, in alignment with the principles of his theory of a "cosmic economy."

Although prestressed concrete was first developed in the late 19th century, it had remained for many years a technology primarily used for the construction of bridges, roads, and other major civil engineering works. However, it was in Brazil, and more specifically in São Paulo, that a new generation of architects led by Vilanova Artigas embraced the potential for concrete to create large public spaces redefining and shaping the collective character of buildings. Indeed, it was the instrumental use of wide-span concrete structures and its strategic deployment that differentiated the Paulista School from their peers in Rio de Janeiro. These new types of civic spaces emerged at a time of particular urgency and need, since Brazil was experiencing the consequences of a military junta that ruled the country from 1964 until 1985.

Revisiting the legacy of Dieste and Vilanova Artigas will contribute to an important debate in our discipline today, offering a potential reference framework for work in which local identities and cultural traits can be instrumental in challenging and transforming means and methods of construction to produce the emergence of a new material ethic.

The potent material of buildings: Lina Bo Bardi's SESC- Pompéia (1977-1986)

Cathrine Veikos, California College of the Arts

The potent material of buildings: Lina Bo Bardi's SESC- Pompéia (1977-1986)

The Image is not an idea – it is ... a vortex, from which and through which ideas are constantly rushing.

- Ezra Pound

In 1969 Lina Bo Bardi mounted an exhibition called “A Mão do Povo Brasileiro” (The Hand of the Brazilian People) where Brazilian popular craft enveloped the viewer in a world of simple materials and gestures that nonetheless provoked a sense of the monumental and the power of the social collective.

These themes are nowhere more apparent than in Bo Bardi's largest project, the Social Services for Commerce Building - Pompéia, (SESC-Pompéia), in São Paulo, Brazil (1977-1982/1986). The site was partially occupied by a 1938 building constructed in brick on the British Factory model that had been left a near ruin. Bo Bardi decided not to demolish the building, but to re-use it, engaging the Hennebique structure and shell in a strategy of transformation that turned the image of an abandoned factory into a well-loved and lively center for leisure and learning.

Lina Bo Bardi used unfinished concrete, roughly-finished mortar, and rough or plaster-coated masonry as the dominant surface materials of her new buildings on the site, but there are also hand-made furnishings and signage, heterogeneous pavers and carefully designed garden plots, walls with indexical markings, colorful murals, inscriptions, and hand-placed local pebbles and stones. These latter elements are especially paradigmatic of a practice that engaged local labor and material resources to evoke the memory of the activity of construction and the participants. The surfaces challenge the spatial limits of the picture plane, an inquiry that challenges the spatial status of the wall, related to occupation and to its representational and structural role. An analysis of Bo Bardi's use of materials, and treatment of surfaces, shows how she productively juxtaposed manual production with an architecture that used its material surface as an indexical image of the engagement of the individual with the work of architecture. Bo Bardi's work shows us that aspects of the bodily, tactile, and semantic attest to the persistence of architectural representation and its vital role in the production of architecture and the determination of its potency.

Re-calibrating the relationship between theory and practice, Bo Bardi told students that “theory is nothing more than a foundation for architectural problem solving, a synonym for practice.” It is the material surface of architecture that constitutes its presence, the surface appearance that establishes its identity and both produces and limits the range of possible interactions with its program, its occupants and its site. The idea of a nascent material conscience is supported not only by the building itself, whose restrained formal character highlights its expressive and communicative material surfaces, but by the recurring themes Bo Bardi elaborates in much of her writing and teaching.

Yielding Actions

Angel Martinez Garcia-Posada, Universidad de Sevilla

In 1992 Gabriel Orozco conceived the idea of his work *Yielding Stone*. The experience consisted in the construction of a plasticine sphere, of approximately the same weight as the artist, which was rolled through the streets of a city. Later, the sculpture has rolled through the streets of each city where it has been exposed, changing its shape slightly, trapping textually layers of urban waste.

Apart from the political reading of the work, like in other pieces in Orozco's trajectory, other arguments that the piece opens with success acquire special significance: the work in the place and the place in the work, or so many other questions of absolute validity in contemporary architecture, such as the notion of open work, the entropic understanding of creation, the theory of urban archeology and the value of waste.

It is interesting to look into the efforts of some authors to conjure the unavoidable second principle of thermodynamics, or to reveal the implicit beauty in certain mechanisms of energy transformation, from states of concentration to others of lyrical dissolution. In the case of the entropic analysis of this work by Orozco, the modest efficiency is singular: as the ball accumulates waste from the city where it walks, the loss of matter is balanced for each journey. It would be relevant for architecture to register the practice of some artists who carried out works in the same dialectic of matter and energy transfers. In 1969 Dennis Oppenheim performed *Ground Mutation-Shoes Prints*, the imprint of his steps on the ground, when he walked with shoes that he had modified by cuts in the sole and heel. By this time he had begun to carry out also his series of transplanted galleries, in which he moved the drawing in real-scale plan of some exhibition hall to some other receiving territory. Another work by him, *Identity Transfers*, went through similar codes, from the modesty of an apparently irrelevant action: Oppenheim's daughter transferred the imprint of her thumb to her father, who then did the same with his father, who had just transferred it to the environment, a kind of generational concatenation to reach the earth, exciting in its essentiality.

In his last article, "*Frederick Law Olmsted and the Dialectical Landscape*", Robert Smithson imagined a conceptual work that recreated the original process of creation of Central Park and at the same time restoring the park, and some other landscape needed in that New York in crisis: a sculpture of extracted mud from the pond and deposited somewhere in the city that needed fillings. Smithson would die right after and that mud sculpture remained a conception he would never realize. The path of artistic action of synthesis between ecology and industry for urban territories remains today a challenge for architects.

The research that I would like to show, cross-sectional and cross-linked, between architecture, art and territory, could point out resonant scenarios for contemporary architectural activity, something that seems opportune, in a situation in which it is necessary to optimize resources.

AFTERL/VES

Nikole Bouchard, University of Wisconsin-Milwaukee

For thousands of years humans have experimented with various methods of waste disposal — from burning, to burying, to simply packing up and moving in search of an unscathed environment. Habits of disposal are deeply ingrained in our daily lives, so casual and continual that we rarely ever stop to ponder the big picture effects on social, spatial and ecological orders. Rethinking the ways in which we produce, collect, discard and reuse our waste, whether it's materials, spaces or places, is essential to ensure more feasible futures. Italy is an ideal location to consider questions regarding the afterlives of objects, architectures and environments. For centuries, Italian makers have cultivated resourceful design ideas via various means and methods — from the boundary breaking-ideas of artists like the Arte Povera Group, to ancient roman building techniques that incorporate the use of spolia to the radical representations of reassembled relics by visionaries like Giovanni Battista Piranesi.

Object AFTERL/VES

Italian art critic Germano Celant coined the phrase Arte Povera in 1967 to describe a group of young, anti-elitist Italian artists who had been working in radically new ways to challenge the American consumerism ideas that were embedded in Pop Art practices. The group worked with a range of raw, natural elements like coal, fur, wool, vegetables, living creatures and live energy sources to create objects that interrogated the relationships between the natural world and humankind.

Architecture AFTERL/VES

The practice of recycling in architecture has a long history, pre-dating the now cliché buzzwords of “sustainability” and “green design”. “In late republican Rome (123 to 23 BC), the scavenging of building materials was a thriving business”¹ and likewise in the 16th century, Renaissance architects critically analyzed classical antiquities, then resourcefully incorporated these relics in their architectural interventions. This historical example of adaptive reuse uses spolia, or recycled bits of buildings, as a primary source of construction material. The use of spolia can be found throughout the entire Eastern Mediterranean area, from Turkey, to Croatia, to Greece, and of course throughout Italy and in Rome, The Eternal City.

Environment AFTERL/VES

The awe-inspiring capriccios of Italy's Giovanni Battista Piranesi combine Roman relics of antiquity with fanciful aggregates of monumental architecture to create whimsical environments and resource-filled landscapes. Piranesi's work, often described as “Ruin Fantasy”, was fueled by the remains of Rome and a burning desire to discover new forms of artistic expression. Piranesi is simultaneously considered an artist, an architect and an archaeologist who's seminal works straddle the fine line between fact and fiction.

This paper, titled AFTERL/VES, will present a close examination of these material practices and others alike that hack, sample and rearrange bits of historical and existing artifacts to challenge our tired and preconceived notions of sustainability and historic preservation and inspire design ideas that imagine fantastically pragmatic future objects, architectures and environments.

NOTES

1. Philip Jacks, “Restauratio and Reuse: The Afterlife of Roman Ruins,” *Places* 20, no.1 (2008): 11.

NEW INSTRUMENTALITIES

2018 ACSA/COAM International Conference

Public Domesticity

Tsz Yan Ng, University of Michigan

Wes McGee, University of Michigan

Long contested in architectural and artistic discourse, the domestic space of the single-family home has been addressed as a shaper of social habits, cultural identity, and, more recently, as the driver of economic stability. In Detroit (as well as in other post-industrial cities), a recent phenomenon has emerged where single-family homes – sold cheaply at auction – are rescued and transformed into artist residencies. Operated and managed by artists, these residencies constitute a form of social practice. These artists assume the role of the DIY builder, fixing and renovating the homes to welcome artists both local and international. Collectively, these residencies have affected not only the physical landscape of the city, but also have facilitated social interaction opposite that suggested by private residences. What was once formerly private is now made public.

Taking this phenomenon as a point of departure, this year-long thesis course (M. Arch level) examines constructs of “public” and “domesticity” against broader histories of artistic, architectural, and urban design practices. Of special note is the emergent nature of social engagement. Can this type of single-family residency foster community interaction? How can we envision the morphology of the single-family home in Detroit, particularly in relation to Detroit’s troubled economy? How are the roles of architects/designers redefined? What new instrumentalities are at work for alternative forms of design practice? Pedagogically, beyond its contemporary model for the design-build design studio, how do we integrate digital fabrication processes in design studio teaching - including prototyping as a form of tacit knowledge?

Partnering with a non-profit group that has one of the longest running residency programs in Detroit, our collaboration focuses on their future planning of the Back Forty, the overgrown, unused alleyway behind their residency. Back Forty aims to convert existing backyard garages and sheds into community art studios for craft, printing, ceramics production, woodworking, and community gardening. This area served as the site for our design-build explorations. Our partnership saw the value of linking with an existing community in Detroit, where the projects, after completion will have a second life for the residency’s use.

The overall intention of the course was to integrate social research with design-based initiative as a unique model of hands-on engagement with communities. The fall seminar focused on topics and issues including; history of the city of Detroit and artist residencies, public/common(s) versus private/property, questions of social practice and the space of participation, boundaries both conceptual and physical, and morphology of the domestic home that now collectively become public domain. Precedents examined the idea of boundary not as dividing condition but as a connector where exchange and inhabitation is possible. A design proposal at the end of the seminar positioned the theoretical and production objectives for the following term’s design-build studio. During the design-build studio, given the emphasis on new modes of production, architecture students were also enrolled in the Advanced Digital Fabrication seminar to explore contemporary methods of computational design and digital fabrication. The projects by student teams will be highlighted in the paper.

Symbiotic Urbanism: Looking Beyond Sustainability

Ting Chin, New York City College of Technology

The legacy of large-scale post-industrial sites is found in the thousands of acres of brownfields and myriad of abandoned structures that form vast vacant landscapes, within rapidly densifying urban areas, that are in lasting states of disrepair due to a lack of vision and unknown liabilities and rehabilitation costs. These sites have many significant valuable assets such as land and proximity to infrastructure, business opportunities, and labor, and thus have an intrinsic potential to contribute to a city's evolution. As cities' economies, societal and cultural norms, technologies, and environments change, post-industrial sites have the capacity to foster pioneering environments that harness and respond to these changes rather than linger as relics of the past. These sites can generate new industrial ecologies that use the synergistic relationship between a site and its environment, community, and city as stimulus to incrementally arrive at alternative modes of production. Within these industrial ecologies built and living environments work cooperatively to form productive landscapes that manufacture new artefacts and contribute to a symbiotic urbanism that simultaneously benefits people, place, economies, and the environment.

Given the inherent ecological damage associated with post-industrial sites, their remediation offers an opportunity to apply the concept of symbiotic urbanism, a type of urban development that not only prevents ecological degradation, but also restores the natural environment while concurrently benefitting adjacent communities and economies, to their rehabilitation. Sustainability in architectural research today centers around building performance and the technology and design principles that increase energy efficiency, reduce energy consumption, and minimize a building's impact on the environment. On the scale of cities, environmentally conscious urban design practices, as defined by sustainable development, sustainable urbanism, and ecological urbanism also seek to minimize or prevent further degradation of ecological systems. Analogous to symbiotic urbanism, definitions of regenerative urban development and regenerative cities capture the notion of a type of urban development that goes beyond preventing environmental damage to also encompass the replenishment of natural resources, but few case studies of how the entirety of the idea can be implemented exist. In contrast to commonly referenced examples of regenerative urban development this paper will discuss two applications of symbiotic urbanism that offer a proposal for the comprehensive rehabilitation of post-industrial sites that use their industrial legacy as inspiration for entering a new era of production that engages in the research and development of innovative technologies that simultaneously remediate existing environmental degradation while stimulating new economies and opportunities and reconnecting communities to long-abandoned places

Reassembly

Adam Fure, University of Michigan
 Ellie Abrons, University of Michigan
 Meredith L. Miller, University of Michigan
 Thom Moran, University of Michigan

The story of post-industrial urban decline in America is well known. Bustling cities fall victim to changing economic structures and globalization. Wealth moves out of city centers leaving behind evacuated buildings, sparse neighborhoods, and vacant lots where houses once stood. Municipalities deem abandoned buildings “blight” and assemble task forces to eradicate them. In response to this pressing urban reality, we have been developing a speculative approach to reusing buildings and materials called “reassembly.” Reassembly views a building’s materiality as a matter-of-fact, as a resource for architecture stripped of the negative assumptions commonly associated with disused properties. Building components are taken apart, moved around, piled up, and mixed with new construction to create alternative uses and forms. Distinct from other forms of architectural recovery such as adaptive reuse, preservation, and restoration, reassembly is not nostalgic. It builds the physical and aesthetic potential latent in a found building toward alternate futures.

In this paper, reassembly is presented in three projects—two speculative building proposals and one full-scale prototype. The first project is a proposal for Detroit’s Packard Plant, an automotive factory that has been abandoned for decades. Here, reassembly involves the selective demolition of the factory’s compromised structure and the use of this rubble as an unconventional aggregate. This brick and concrete debris is mixed with recycled plastic and other regional waste materials to create a new building material akin to concrete. This mixture is heated in large-scale molds and the resulting casts are placed within and upon the remaining structure. Programmatically, the new complex serves as a research and demonstration facility and a processing site for the region’s waste streams, recouping materials for future construction.

The second project stages a domestic landscape in an abandoned “big box” store. By partially disassembling the existing retail building, the design reclaims its material components and reassembles them in place, creating different scales of occupation. Piled up debris becomes a new ground for individual dwellings. The outer wall of the original big box creates a zone for shared domestic functions. An open-air civic space centers on the building’s excavated corner. These spatial modifications erode the boundaries between interior and exterior, allowing people, materials, and things to move freely.

Lastly, [project name omitted] is a full scale prototype of reassembled building materials. A ten-foot, hollow column is constructed out of waste plastics and demolition debris, formed in a moveable mold similar to slip-forming. The materials include recycled agricultural and industrial plastics, in abundant supply in the American Midwest. As such, the column reflects local material ecologies through its resultant colors and textures.

These projects demonstrate how new approaches to sustainable material practice can challenge existing notions of environmentalism and fabrication. Eschewing the drive for the new, reassembly attributes value to what often goes unnoticed in post industrial contexts: disused buildings and matter. Materials embody narratives, histories, and cultural associations—not just as physical artifacts but as a form of visual currency. Reassembly works on both material and its image to align them with alternate histories and cultures.

Resiliency, It goes beyond the hair

Marisa Isabel Oliver, American University of Sharjah

In the January article of The Guardian News 'How Hurricane Maria forced Puerto Ricans to change their hair', author Norbert Figueroa reflects on the devastating effects of the category 4 storm in the US territory. Besides the aftermath caused by floodwaters, massive electric shortage, and structural damages, Figueroa revealed how Hurricane Maria forced adaptations to everyday life, including the way Puerto Ricans styled their hair. (Fig. 1) Extreme conditions of heat and humidity, exacerbated by the lack of electric power, lead to the acceptance of natural hairdos, to the creation of sidewalk barber shops, and to the formalization of an underground economy where haircuts in the form of currency, were exchanged for power generators. Figueroa's simple but complex observation is key in the revelation of concealed realities that came forward after the hurricane hit the island on September 2017, and to the processes that lead to adaptations versus resilient solutions.

Similar to the hair, architecture has also been the most visible marker of the island's 'resilience' after Maria, yet, its presence has been the most ignored. Defined as 'the capacity to recover quickly from difficulties' and as 'the ability of objects to spring back into shape', resiliency cannot but arrive to political dimensions when central powers demand responsibilities on its 'resilient society' imposing on them futile short-term solutions to long terms problems. Puerto Ricans are not resilient, they are survivors that exceed the expectations of new realities while adapting to daily inconveniences. If the simple act of hair re- structuring convokes intelligent adaptabilities, spatial re-conceptualizations, and the creation of new underground economies, why isn't architecture transcending its heteronomous condition in order to achieve autonomous solutions?

The need of repurposing what already exists, while reinforcing strategies of adaptability, transformation and reuse, are some of the multiple ways in which architecture may seek transcendence. Relevant projects such as the incomplete urban transformation of the Parque Luis Munoz Marin (fig.2) by architect Andres Mignucci; the transformability of the Student Center (fig.3) and the Faculty of General Studies (fig. 4) in the University of Puerto Rico by Mignucci and Jose Javier Toro, respectively, and the re- purposing of the Ramey Military Base in Aguadilla through the new Aeronautical and Aerospace Institute of Puerto Rico (fig.5), also by Toro, attempt to transcend the narrow directives of the discipline and its 'sublime uselessness' in order to move beyond its condition of permanent function and existence. All four examples respond to a bigger context, becoming key pieces in the re-structuring of fractured economies and built realms. While the park weaves its autonomous functions to the surrounding urban context allowing for public transportation, relegated neighborhoods and pedestrians to work as a unit, the projects executed on the existing modern buildings of architects Henry Klumb and Toro y Ferrer at the University of Puerto Rico, as well as the existing buildings in Ramey, reveal an intention to unify the campus while supporting neighboring economies.

Planning from within and alongside informal urban metabolism: A multiagent approach to adaptive masterplanning

Trevor Ryan Patt, Singapore University of Technology and Design

The informal urban villages of Haizhu Island in Guangzhou are embedded within a former fruit orchard that used to cover the majority of the island and now serve as Guangzhou's 'green lung.' This buffer allows the villages to maintain at least a tenuous connection to their agricultural roots while holding back some of the pressures of the encircling megalopolis. In contrast to more central villages like Shipai and Xian that are ringed by high-rises, the villages of Haizhu appear on the map almost like islands, somewhat autonomous, with more distinct edges.

Still, the pressure of housing demands means a constant flow of construction material in and out, as older buildings are demolished, usable material is reclaimed and stacked to the side, and new, taller buildings rise to take their place. Given their compact size, the metabolism of these villages is stunning.

In legal classification, the urban village is classed as 'rural' land and lies outside the proper authority of urban planning agencies. The lack of any development oversight has led to a dense warren of narrow alleys and ad hoc utility infrastructures. Redevelopment efforts that have been put forward, at Huangpu for example, have emphasized 'beautification' (mostly a process of making-tourist-friendly) by widening central pedestrian paths and resurfacing buildings that face onto this promenade with a veneer of tiles that mildly evocative of historic style.

Meanwhile the bulldozers and tabula rasa reconstruction threaten. This approach appeals to the city planner because it resets a chaotic system to a manageable one. In fact, the planner cannot even begin to work within the urban village because the speed of informal redevelopment has outpaced the surveying of the village.

This paper describes a possible adaptive approach to redevelopment planning that taps into the churn of the existing village metabolism. Rather than attempting to control the entire plan (the 'geometrical space of urbanists' as de Certeau called it), this approach enacts a continuous flow of random walks within a multi-agent simulation, each agent analysing only a partial, localized fragment of the urban fabric. The multiple analyses of the agents are aggregated and form a fuzzy picture of the current situation from which small, punctual interventions can be proposed (new pedestrian passageways, small public spaces, etc.). Such proposals are paired to reconstruction methods already occurring throughout the village in order to not disrupt the unique character of the urban fabric. Furthermore, this allows the model to engage with the actual sociomaterial practices within the village (In contrast to the literal appliqué efforts described above), especially the recycling of material from demolished buildings into new structures. Of course, unprompted constructions are also able to continue alongside the model without issue as the redundancy of the multiagent system and its continuous evolution make it robust to aberrations and capable of adapting to exterior, or informal, changes whenever that information comes to light. The results of this model suggest that small changes to the pedestrian network effected through discrete and uncoordinated operations are an effective route to redevelopment.

Project-Limb: Rethinking Heavy Timber Joinery Through Analysis of Tree Crotches

Kasey Vliet, University of Michigan

Steven Y. Mankouche, University of Michigan

Peter von Buelow, University of Michigan

LIMB reconsiders historic heavy timber construction across cultures to develop new joinery methods by focusing on the natural occurrence of branch bifurcation in different wood species. Because of its low value, often the crotch of a tree is not harvested for commercial purposes. This project uses this vital element to design connections that replace traditional mortise and tenon or steel connections.

By replacing the joint with a single piece of wood that purposely grew for bifurcation in nature and moving the structural connection away from where vertical and horizontal members come together a stronger construction joint can be achieved. Beyond the reduction of waste and added value, this project has the following architectural ramifications:

1. Overall architectural design parameters relate to the natural angles of certain bifurcations. These restrictions have provocative formal implications.
2. A structural system that is scalable, from major tree bifurcations at the base suitable for larger buildings, to smaller bifurcations adaptable to furniture.
3. Different wood species sharing common structural capacities allow for cross-specie “crotches” as long as they share similar overall properties.

In the 17th century tree crotches were harvested for a variety of purposes from bracket systems in barn structures to structural joints in the construction of navy vessels (*Encyclopédie Méthodique: Marine*). In the 1960’s renown modern furniture designers such as Sam Maloof replaced two part mortise and tenon joints in their chairs with a singular bifurcated piece increasing connection strength and producing more sinuous form. More recently Whole Trees Architecture and Architectural Association program directors Martin Self and Emmanuel Vercruysse explore organic form aggregation using entire tree branches with bifurcations.

Our research sets itself apart by assuming a syntactical approach to design. We are not interested in unique form generation based on unique parts, something that is very well explored in the realm of digital fabrication, rather are constructing a reusable language of bifurcated joinery. There are a number of common natural angular occurrences in limb bifurcations and we have reduced those to a set of parts that can be “tuned” to develop diverse structural systems. The two types of crotches identified are: the “r” and “y” type. We have designed a digital fabrication workflow that extracts standardized milled parts from an inventory of salvaged material. The cataloguing of recurring angles and other physical properties inherent to different species of trees allows for further development of the structural possibilities of this system, which can be applied to nearly any type of tree bifurcation allowing for infinite combinations within the language of bifurcated timber joinery.

LIMB develops four spatially optimized structural systems that leverage the “r” and “y” crotch connection: branching nested structures, hexagonal organic dome, three-way triangulated columnar structure and two-way triangulated frame. By elaborating on the natural occurrence of tree bifurcation as a tectonic element using contemporary digital practices and combining different wood species and diverse cultural traditions to propose new timber construction systems. LIMB is simultaneously global and regional in its approach.

An Interdisciplinary Approach to Architectural Design of Building Envelopes by Reuse of Automotive Metal for Material and Energy Savings

Ahmed K. Ali, Texas A&M University

Patricia Kio, Texas A&M University

This paper seeks to rediscover the beauty of design thinking, exploring ways in which design can improve the use and value of industrial by-products. The research begins with a need to conserve materials with a focus on improving value by design. The aim is to find more avenues to apply design in treatment of waste materials. In this paper an experimental case study and analysis have been used. The method begins with the analysis of automotive material by-product, observations of procurement of new material and analysis of proposed designs of automotive material. This project is a multi-year collaboration applied research project between the academia and industry.

Metal sheets have been used for building envelopes since the nineteenth century. The Reliance Building which was finished in 1894 has metal as part of its building envelope. In the United States of America, over 7.6 billion tons of non-hazardous waste is generated yearly and the biggest source of metal scraps is from the automotive industry. Empirical evidence suggests that there are significant economic, environmental, and social benefits of reusing industrial waste than recycling it. Emerging ecosystem concepts such as cradle-to-cradle, design for disassembly, sustainable manufacturing, and circular economy promote the concept of reuse and recycling of non-hazardous waste materials.

Figure 1- The Reliance Building, 1894

The research project developed speculative designs and new solutions for building skins made from General Motors (GM) stamping operation cutouts. The goal of the experiment was to transform the linear approach in making building components, in particular, exterior metal skins and cladding systems, to a closed-loop approach, which ensures multi-dimensional economic, social, and environmental benefits. The results are expected to change the focus of the current waste management practices in the manufacturing industry from conventional recycling to creative reuse. The study introduces a novel approach to initiating a symbiosis between non-hazardous automotive waste and the building and construction industry. In particular, creating building skin systems from by-product galvanized sheet metal from the automotive industry, see figure 2.

Figure 2. General Motors Offal Sheet Metal into Breathable Building Skin

We argue that a resource revolution is making way for a new architectural paradigm shift, which is emerging through the integration of creative reuse, synergistic business processes, and circular economy.

Existing literature states that 30% of the energy consumed in the world comes from buildings. Increased reuse of industrial waste materials will reduce the energy consumed and thereby reduce the carbon footprint of buildings.

Case studies will demonstrate how by-products of galvanized sheet metal from automotive manufacturers could be transformed into building envelope systems by an interdisciplinary approach. The methodology will conclude with geometric analysis from mathematics, application of design principles by architects and establishment of energy values of manufacturing energy and embodied energy by engineers and construction scientists.

Project-Small Room / Big Window

Jesus Vassallo, Rice University

The city of Munich currently faces great demographic pressure, as it is expected to add 200.000 new dwellings over the next decade while facing a sharp shortage of available land. With that problem in mind, this project proposes to re-densify the suburban neighborhoods of the city of Munich built between the 1960s and 70s, taking advantage of the sparseness with which they were originally laid out.

The project focuses on the areas of Neuperlach and Taufkirchen, and proposes to understand them as an unfinished landscape, the product of unresolved tensions between different planning approaches at the time of their realization. It then proposes to re-interpret the existing fabric and to transform it into a more urban and complete whole by replicating existing typologies in order to create denser compositions and to reinforce the perimeter of each city block.

A construction system is designed, based on a three-dimensional prefabricated module made of Cross Laminated Timber panels. This system seeks to optimize construction speeds and to minimize disruption given the need to build intensely in consolidated neighborhoods. In its repetition of a constant dimension and proportion, the wood module lends the project a serial character and a sense of totality, while producing a diverse catalog of units that satisfies the highly demanding catalog specified by the social housing authorities.

Further decisions, pertaining the detailing of the project and the siting of programs additional to housing, are made with the intention to enhance the urban quality of the neighborhoods, that is to make them more urban and cosmopolitan, and to enrich the experience of living there for both their current inhabitants and the new arrivals.

Material Conscience as a Multivalent Instrument of Empowerment, Aspiration, and Identity for a New University Library in Malawi, Africa.

Kevin Jones, Virginia Tech

In December of 2015, a fire destroyed the campus library at Mzuzu University (Mzuni) in northern Malawi, Africa. The entire collection of nearly 50,000 volumes, much of the university's computing infrastructure, and an irreplaceable archive of Malawi heritage artifacts were lost. In a country where reliable access to books and data resources is scarce, the Mzuni library was a cherished repository of knowledge and a symbol of self-reliance for students, faculty, and the greater Mzuzu community. Beginning in the fall of 2017, a team of students and faculty in the US – with support from a multidisciplinary team of researchers from both universities – has been working to design a new library for Mzuni. The vision comprises the embodiment of technology and tradition, rendered in an architectural and material expression that balances institutional grandeur, environmental performance, and new horizons in construction technology.

Brick masonry defines the building culture of place in Malawi and many other resource-limited areas throughout the world. With the exception of a few 'modern' commercial buildings – typically rendered in glass and metal and almost always built by foreign investors – the language of architecture in Malawi is that of stereotomic mass brick walls and lightweight tectonic roofs. Ubiquitously available, so-called 'burnt bricks' are fashioned from clay dug and shaped on site and fired for up to 24 hours using extensive amounts of firewood. The firing renders the brick more resilient, a physical property that has taken on significant cultural importance as a marker of stability and wealth in even the tiniest of rural villages. However, the extensive use of this material has come at a high cost for Malawi, contributing to widespread deforestation and environmental degradation across the country. Recently, the use of burnt bricks was made virtually illegal by the government and there has been a concerted push to deploy stabilized soil bricks (SSB) as a replacement for fired brick. And while some inroads have been made, there remains a deeply held belief that these 'new bricks' just don't measure up – a reminder that material conscience must be considered through both performative and perceptual lenses.

These attempts to adapt and transform Malawi's building culture posits critical questions that are being investigated as part of the design of the new Mzuni Library. When the material that defines your sense of place is no longer available, how can you empower communities to harness existing – and often limited – resources in new ways? How does reconsideration of construction technologies open new territories of cultural identity? Can the reformulation of architectural expression be imbued with the environmental and educational aspirations of a country and its people? This paper seeks to document and interrogate the design (and eventual) construction of the new Mzuzu University library by positioning material conscience as a multivalent instrument of empowerment, aspiration, and identity for resource-limited countries.

Ladakh Dental Clinic: The Local-Imported Modularity - Negotiating Contradictory Material Practices in Remote Cities

Sasa Zivkovic, Cornell University

Leslie Lok, Cornell University

In admirably positivistic modernist spirit, modular construction is often praised as the harbinger or exporter of progress and, at times, architectural advancement. Regularly choking on its own ambitions, successful modular construction largely remains an architectural fantasy as it often struggles to overcome its totalitarian spatial tendencies and inherent inflexibility. Compared to local techniques and perhaps contradictory to its intent, modular construction has a tendency to operate top-down instead of bottom-up.

The Ladakh Dental Clinic project can be characterized as a result of its contradictory constraints and multi-client requirements. Necessitating both local construction and imported modular systems due to financial limitations, sponsorship opportunities, future expandability, and a tight schedule, the clinic emerges as a strange hybrid oscillating between local (de-facto imported) Indian cast-in-place concrete construction and (imported) German prefabrication. Building in remote cities such as Leh in India comes with distinct difficulties as there are few local resources and nearly all construction materials have to be trucked over treacherous mountain paths.

Materially referencing regional vernacular construction types, the dental clinic consists of two discrete architectural systems, a cast-in-place concrete frame structure and wooden modular programmatic elements which provide sanitary and climatic conditions necessary to house dental laboratory equipment. The lightweight structure is designed to perform as a flat-pack prototype for disaster relief shelters that require fast construction and minimum planning. Ultra-lightweight wooden SIP panel modules are prefabricated in Germany and shipped to India in overseas freight containers. All modules are connected with plug-and-play connectors adapted from concrete precast construction, allowing for the rapid assembly of a building in remote locations without tools or heavy machinery. The custom designed SIP panels weigh under 30 kg, measure 1.2 by 2.4 meters, and are complimented by a modular wooden frame system offsetting the material thickness of the panels. Structural dimensions of the concrete superstructure are based on information from the local contractor and the building is raised three feet off the ground to protect against flooding. Arranged linearly, the building deforms to site conditions, creating two distinctly different courtyards.

The project is simultaneously simple and highly complex when considering the entire architectural process. It is both local and foreign. It is anachronistic and forward looking. For better or worse, it merges “high-tech” and low-tech material economies. With humble means, the pro-bono project aims to innovate and advance disciplinary knowledge and material practices for development projects in remote cities and regions: through the design and implementation of a lightweight panel construction system, through integration of local construction techniques, through new modes of international volunteer collaboration, and through alternate models of architectural practice.

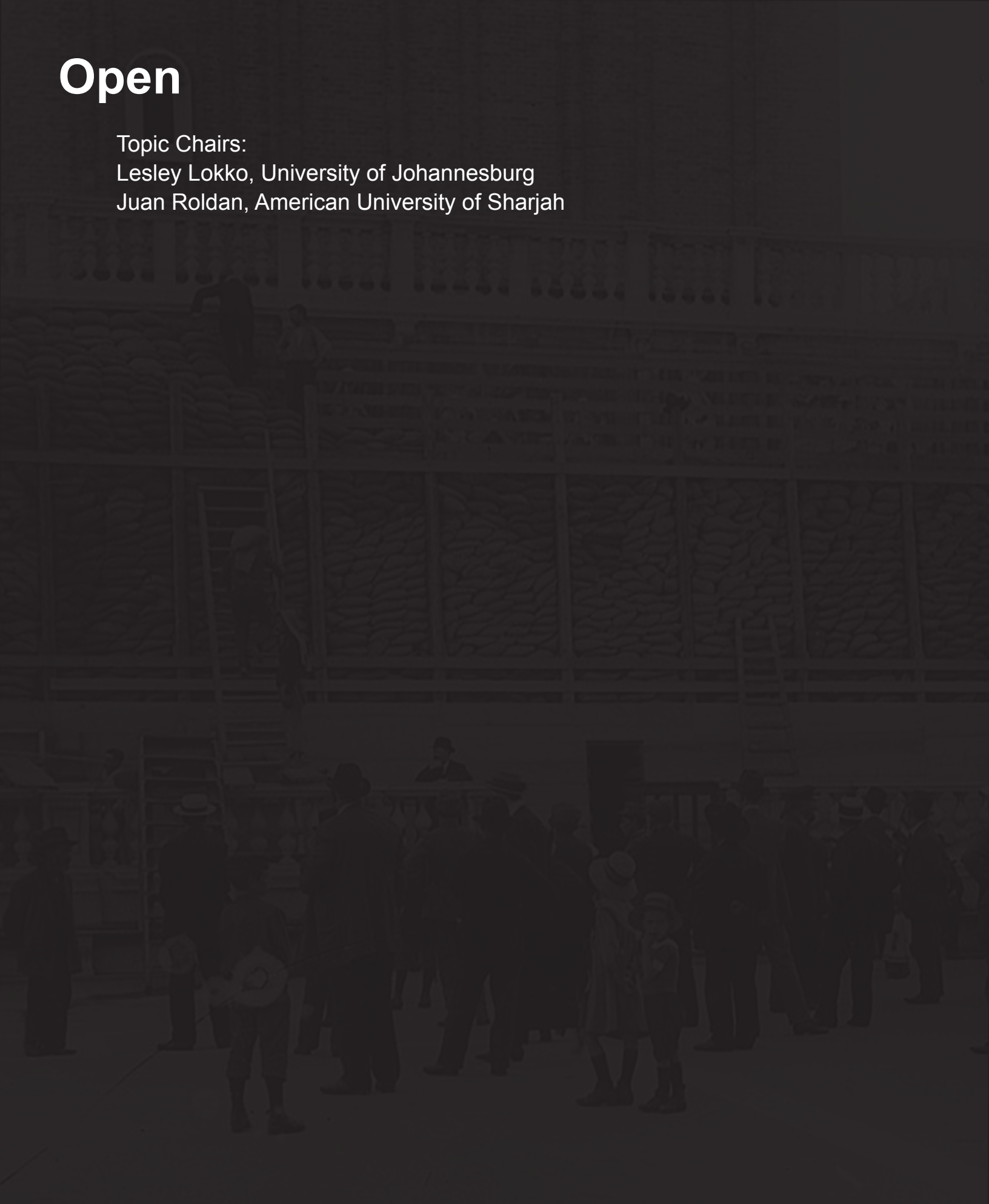
This paper outlines the design and construction of the Ladakh Dental Clinic project as a case study for hybrid local-imported material building practices. Referencing local vernacular types as well as comparable rapid assembly systems deployed in India for other development projects, the paper discusses opportunities and shortcomings of such building strategies.

Open

Topic Chairs:

Lesley Lokko, University of Johannesburg

Juan Roldan, American University of Sharjah



Architect's Cookbook: The Culinary Arts as a Process Model

Frank Richard Jacobus, University of Arkansas

Marc Anthony Manack, University of North Carolina at Charlotte

This paper expands architecture's understanding of its own design methodology and notions of authorship by looking to a creative practice beyond our disciplinary purview, the culinary arts. Like architecture, the culinary arts synthesize art and science to produce seductive sensorial responses, and ultimately, emotional affects. The process that chefs undertake during their act of creation provides a powerful analogy for architecture. Resourcefulness, combination, technique, sequence, and taste merge within the chef's mind to transform mere ingredients and energy into dishes, meals, and experiences. Architecture does the same with its ingredients: program, codes, materials, history, to name a few. The recipe is also strikingly similar to the architectural technical specification which contains three parts: General Information (Background), Products (Ingredients), and Execution (Instructions). In architectural design and construction, the specification has taken a backseat to the drawing. This paper discusses the benefits of the reversal of this existing hierarchy and how it might impact the conception of form and meaning, bringing new instrumentality to young designers. Like architecture, cooking is the product of multiple authors and actors working together in a delimited space that requires both orchestration and execution. Chefs build their disciplinary knowledge vis-à-vis the cookbook. We will discuss how embracing these new forms will ignite design creativity as a causal process, rather than as a mystical product with incomprehensible origins and futures. By learning from well-established practices outside of our discipline, we will help reconstitute design and production approaches that enable designers to situate themselves in a larger discourse about the creation of space. This work will help establish a critical foundation for how architectural ideas are translated into built form and will provide a pedagogical tool for young students and practitioners that become a means toward greater agency in their project development.

Constructing Interior Design Pedagogy

Michael Hughes, American University of Sharjah

This paper looks at the nascent state of hands-on pedagogy within Interior Design education. Examples from the ID programs at Parsons, Nebraska, Auburn and Marywood examine the impact and influence of design-build pedagogy born in architecture programs as well as ID faculty trained as architects are having on contemporary Interior Design education. These examples provide context for an in-depth case studio of the Beyond Surface initiative at the American University of Sharjah (AUS).

Located in a region unaccustomed to haptic production the AUS program is designed to introduce and extend tactile, full-scale learning opportunities across a four-year undergraduate Interior Design curriculum. The experiments conducted to date attempt to distill lessons from advanced fabrication courses common to architecture curricula and distribute them throughout the ID course sequence in order to better prepare students for the complexities of full-scale projects and contemporary, critical practice informed by contingent thinking and material craft.

Across the Middle East and North Africa the normative approach to Interior Design education is largely segregated from the building profession and construction process as a post-facto form of decoration. Domiciled within schools of fine art or situated as secondary options within engineering or architecture departments the discipline typically is framed in terms of applied aesthetics or styles and marketed almost exclusively to female students.

More broadly the ID program at AUS exists within a contemporary context largely divorced from the act of making. Beginning with the discovery of oil in the 20th century vernacular craft traditions native to the Arabian Peninsula have been in decline. The subsequent shift from subsistence production to importation and consumption coincided with a societal retreat from manual labor and material culture.

In this context, the Interior Design program at AUS sought to establish a gender-neutral program distinguished by an incremental and multifaceted approach designed to build student and faculty capacity over time. The goal is to augment the prevailing reliance on abstract studio projects and lecture-based instruction that Paolo Freire calls the “narrative character” of oppressive pedagogy.

Initially a single furniture design elective was introduced to test student and faculty capacity. The experiment started small both in terms of the scale of the projects and the capacity of the modest fabrication lab. Despite the hurdles posed by culture and facilities student response was positive and the outcomes, in terms of products, were qualitatively impressive. Building on this initial success 2015 marked the beginning of a new, expanded initiative to establish an area of distinction focused on fabrication and full-scale pedagogy through the introduction of a required design-build studio.

Augmenting underused spaces within the College of Architecture, Art and Design projects completed through the Interior Design-Build program enhance the educational environment while challenging local expectations in terms of disciplinary boundaries, student capacity, and gender roles.

Painterly Assemblies: Making Through Scavenging

Faysal Tabbarah, American University of Sharjah

Ibrahim Ibrahim, American University of Sharjah

The proposed paper describes an ongoing agenda and body of work that aims to disrupt prevailing tendencies within computationally design practices that privilege prefabrication and precision, as well as critique highly standardized modes of sustainable design production. The paper is structured in three parts. First, it will describe a theoretical framework built around the idea of painterliness in contemporary practice. Second, it will describe how this theoretical framework is deployed in project-based scenarios. Finally, the paper will project two avenues of development that this agenda is undergoing to expand its production scale and scope.

The paper begins by creating parallels between the radical shift from the linear to the painterly in the development of European representational art styles between the Late-Renaissance and the Baroque and the context of computational design methodologies and digital fabrication. In Heinrich Wölfflin's seminal work, *Principles of Art History: The Problem of the Development of Style in Later Art*, he defines the painterly, which emerged in the early Baroque, through allusions to limitlessness and merging, which are in direct opposition to the tangibility and solidity of the Late Renaissance linear style. Wölfflin describes the painterly as limitless, receding, open, lacking in linear hierarchy (ambiguous part-to-whole relationships), and finally of relative clarity, in comparison to the absolute clarity found in Late-Renaissance art (Wölfflin 1915).

Second, the paper presents a workflow through series of projects that are developed through a digital-analog relationship that moves between scavenging for natural material, 3D scanning, a custom computational system and resultant material constructs that exhibit painterliness through their open system logic that blur traditional linear part-to-whole relationships. These projects are situated as a critique of mass-customization and sustainable design, looking at the potential of scavenging fallen non-standard timber members from the deserts of the United Arab Emirates to produce an architectural material system. Here, the paper also situates the projects within the context of similar projects such as the work being produced at Architectural Association Design + Make program (Self and Vercruysse 2017). However, in contrast to those projects, the projects in the paper rely on self-supporting reciprocal frame typologies that requires no mechanical or subtractive connections.

Finally, the paper describes ongoing developments on two different fronts. First, a digital platform and workflow is being developed as a stand-alone package that would allow for existing 3D meshes to be sorted, matched and assembled based on designer criteria. This would allow for the democratization of construction materials, where anything can essentially become a useful raw material. The second front includes working on large scale constructs that apply the theoretical framework with the workflow to produce spatial constructs, further testing the viability of the theoretical framework and material system.

Physical and Digital Simulation in Material Practice

David Costanza, Rice University

In his latest book, *The Second Digital Turn*, Mario Carpo argues for simulation as a tool for digital prototyping that facilitates testing and iteration. He argues that the production of novel artifacts cannot rely simply on precedent when often no precedent can be found, “we can make and break on the screen in a few hours more full-size trials than a traditional craftsman would have made and broken in a lifetime.”

I would like to unpack the term simulation, in the context of Carpo’s argument. To simulate, we must understand the parameters we are defining digitally. These parameters include variables such as material properties, the capacity to replicate those qualities digitally, and thoughtful consideration of a means of manufacturing.

Typically, simulation in architecture is limited to modes of optimization, such as calculating a steel frame for the least amount of steel. This sort of simulation is relegated to quantifiable, predictable materials and structures. Some materials, such as textiles are much more complex to simulate with great accuracy. To construct a predictive model of how a textile will drape requires a knowledge of the type of fiber, the weave pattern and density, the elasticity of the fiber, etc.

In this context, we do not have a defined digital representation of that material assembly, which prevents the simulation of that material as a means of testing and iterating. As was the case not so long ago with the invention of reinforced-concrete, an anisotropic, statically indeterminate material system. Many physical tests needed to be constructed and analyzed to understand how the material behaves under various conditions over time.

This alignment of physical simulation through mockups and digital simulation, as initially a replication of the physical, quickly evolves, as we begin to understand how a material behaves, into a digital means of testing, failing, and iterating. This mode of operating is both a digital and a physical endeavor.

We are capable of modeling and simulating concrete as a material, but without thoughtful consideration of how the simulated mesh can be translated to a physical artifact, i.e., manufacturing, the project remains only digital. The limitation is not the material form, or a computational capacity, but rather the means of production.

I would argue that the role of technology in contemporary practice has shifted, we are no longer enamored merely with the capacity of the tools, computation and digital manufacturing, as was the case in the first digital turn, but instead seek to deploy the tools in a more integrated, nuanced, practice. Simulation allows for the digital reproduction of physical qualities and behaviors, ranging from modeling anisotropic materials to analyzing indeterminate structures.

Simulation allows us to move beyond personal preferences and produce an objective catalog of criteria that ultimately inform our design decisions. This is by no means an argument simply for efficiency or optimization, but rather a means by which to think through the digital model as an objective lens, giving agency to non-objective design decisions.

Identity Crisis: The Agency of Instagram in Schools of Architecture

Benjamin J. Smith, Tulane University

A consistent phrase used to explain what schools needed to consider for attracting students to their programs at a recent national conference by Ruffalo Noel Levitz on student recruitment, marketing, and retention in higher education in the United States was "buyer's motive." One way to analyze the phrase, "buyer's motive," for school's of architecture can be done by investigating curated images used in social media platforms. Two positions on how architecture schools represent themselves through social media, such as Instagram, are considered. The first position views this platform as a public tool to demonstrate accomplishments and themes. A second position addresses social media as a tool of neoliberalism serving the commercialization of higher education. On one hand, social media becomes a vital platform of communication that celebrates what schools do and how they articulate directions within a diverse discipline; on the other hand, social media emerges as a strategic mechanism to influence "buyers." Coupling analyses of Peter Cook's book, "Drawing: The Motive Force of Architecture," which articulated strategies within aspects of architectural representation to convey the motive of its subject, with texts from social philosophy, higher education, and social media marketing, including Henry Giroux's book, "Neoliberalism's War on Higher Education," David Harvey's book, "A Brief History of Neoliberalism," Michel Foucault's lectures from "The Birth of Biopolitics," Eric Anctil's book, "Selling Higher Education," Jeremy McGilvrey's book, "Instagram Secrets," and David Green's book, "Instagram Marketing," presents a way to examine social media branding as a dialectic between capitalist ambition and academic progress. In a contemporary context where architecture schools not only compete for enrollment but also for disciplinary attention, social media offers a lens onto which the crossroads of academia's mission converges in a synthesis of new knowledge and selling its image to students.

Spatial Writing: A New Mode of Architectural Representation

Seher Erdogan Ford, Temple University

Modeling, as an instrument of architectural design, delineates boundaries for new ideas and establishes a framework for approaching the unknown. Those boundaries, however, often leave out elements of the design process and the larger context of the project. How, then, could digital modeling embody the intangible dimensions of architectural production?

Recent developments in humanities-oriented digital scholarship suggest ways in which new technologies bridge quantitative (measured) and qualitative (interpreted) frameworks. Generally referred to as 3D digital humanities projects, research coming out of interdisciplinary endeavors leveraging expertise from archeology, architectural history, and visualization create interactive, three-dimensional models that intertwine textual, visual and even multisensory content to create information-rich virtual environments. Some salient examples are Digital Karnak, Digital Hadrian's Villa, and Virtual Paul's Cross undertaken by international research teams. Theorists like Johanna Drucker, who re-imagine visual forms of knowledge production, suggest a new term for this practice: spatial writing. Functioning as a dynamic repository of heterogeneous information, spatial writing projects create diagrammatic, associative, and constellationary digital spaces that implement the 3D model as a device to represent and generate new scholarship.

As a case study of a spatial writing project in architecture, this paper discusses the digital reconstruction of an architectural heritage site in present-day Istanbul, in virtual reality. The building was the Byzantine basilica Church of Stoudios from the 5th century that was converted by the Ottomans to the Mosque of Imrahor in the 15th century, and it has gone through a series of architectural modifications due to natural causes, programmatic changes, and regular repairs, currently standing as a ruin. In the recent years, the Turkish government announced it as candidate for a revitalization project that will convert the site to a functioning mosque, in effect erasing the material residue of its heritage. Thus, the site's complex history can only be reconstructed and made "accessible" through digital technologies. Scholarly work embedded within the virtual reality environment and connected through each "visitor's" interests yield multiple readings of the literature on the building, in a way to extend beyond the "boundaries" of the digital model to reach the building's changing context along the temporal axis. Conceived as an indexical environment, this spatial writing project specifically leverages multimedia annotation in the form of visual, textual, and auditory content, to offer unique possibilities for architectural representation by introducing three capabilities: multi-scalar representation of environments, multi-author process among collaborators/scholars, and multi-media integration of content. The paper offers a detailed discussion of the ongoing collaborative effort between architects, virtual reality technologists, and interaction/game designers working on the prototypical phase of the project and investigating the methodology with which virtual reality platforms can function as generative tools of research and not merely for the purposes of mimetic visualization.

Engaging in the interdisciplinary scholarly practice of spatial writing and implementing the large suite of technologies associated with it, can transform and advance architectural modeling as implemented by architectural designers and researchers, but also help reimagine the disciplinary boundaries of visual and multisensory representation.

Remote Control: The Natural Language of Architecture

Frank Richard Jacobus, University of Arkansas

Marc Anthony Manack, University of North Carolina at Charlotte

“The fundamental problem of communication is that of reproducing at one point either exactly or approximately a message selected at another point.” Claude Shannon

Architecture's instantiation as a discipline by Alberti assumed a natural distancing of the architect from the made object. Still today, the fundamental characteristic of design and construction involves a series of sometimes intuitive, sometimes explicit and rational, translations of raw data and information into built emotive form through a series of control mechanisms that are not immediate to the built object itself. This act of translation requires instruments of control, such as drawings and specifications, which are well established and discussed processes within the discipline, but which always presuppose a distance between the designer and the final constructed object. Robin Evans has asserted that this lack of control is the “peculiar disadvantage under which architects labor; never working directly with the object of their thought, always working at it through some intervening medium, almost always the drawing.” With the evolution of computational tools and specifically with the arrival of building information modelling, there's been a promise that architects will soon have more control, even complete control, over the nuances of the final built form. For centuries, architecture has been veiled behind the guise of compositional logics and over the past three decades has been seeking to discover its place within a world dominated by computation. We assert that architects often find their collaborative voices within the traditional distancing that occurs when a design and construction process was necessarily remote. Creative impulse is often driven by remoteness and by the nuances that emerge from muddy collaboration and occasional lack of clarity in the communication between architect and builder. This paper discusses how authorial practice can reclaim remoteness within a discipline that is so quickly evolving toward absolute control. How do we redefine practice in the emerging paradigm of collapsed distance between process and product? What gets lost in a process that is too subject to overt controls? We believe that it's necessary to advance a new instrumentality that embraces computational logics but is not beholden to them; one that embraces and subverts controls simultaneously. This is in fact a reclaiming of remote control, not as a new way of operating within the discipline, but instead as the natural language of the discipline itself. This is a reinvigoration of architectural practice that we will reveal through four works we've built using these processes. In a discipline that increasingly holds control as its highest aspiration, we demand that remoteness is in fact the new instrumentality.

Technologies of the Urban

Adrià Carbonell, Royal Institute of Technology, Stockholm

Roi Salgueiro Barrio, Massachusetts Institute of Technology

Over the last decades, questions revolving around the urban condition have been central to theories and practices of architecture, city planning and the social sciences in general. In the early 1970s, the publication of “La révolution urbaine” (Lefebvre, 1970) and “La question urbaine” (Castells, 1972) expanded the field of urban studies by shifting the focus from urban morphologies to urban ideologies, from the study of agglomerations to that of social relations. According to Lefebvre, the consolidation of an urban society having overcome an industrial era forcefully required a reformulation of what was considered urban, as a precondition to understand other major aspects of society, thus becoming “the episteme of an epoch”. On the contrary, following an orthodox Marxist analysis, Castells criticized the discussion on “urban problems” for being purely ideological under post-war managerial capitalism, therefore missing the real battle field of class struggles.

Since then, processes of planetary urbanization have propelled the use of a new urban lexicon within the disciplines of geography and urban studies, in an attempt to encapsulate in self-explanatory terms the otherwise boundless urban condition. From post-metropolis, exopolis and megacity to conurbation, city-region or urban-age, the rich repertoire of urban terminology reflects the vast transformations that have affected urban settlements and their operational landscapes (Brenner, 2016), but generally, they have remained at a meta-narrative level, failing to provide a precise definition of what the urban may mean, mostly identifying it either with the space of the city or with the space of urbanization.

This paper wants to contribute to the contemporary debates about the future of cities by addressing a very fundamental question lying at the core of all inquiries about global urbanization and sustainable development: what constitutes the ‘urban’ today, how it is defined, and how can it be instrumental to architecture. The central thesis will heavily draw on Ildefons Cerdà’s “Teoría General de la Urbanización” of 1867, and will argue that the urban is a category historically and politically produced, defined by the interplay of political, cultural and environmental technologies. Drawing on the latin *urbs* —i.e. the physical, ritual and legal constitution of the city—, Cerdà coined the term urbanism, with the ambition to establish a scientific discipline that aimed to unite spatial and social development in a technological and political nature. The famous expression “ruralise the urban: urbanize the rural...replete terram”, stated from the very first page of his monumental treatise a new understanding of the relation between the city and the countryside, i.e. between architecture and nature.

In a context where metropolitan areas have unfolded as uncertain geographies, where no correlation between urban morphologies and social life can be traced anymore, it is necessary to look at the reciprocal relations established between the different scales of spatial practices, between architecture, urbanism and landscape, striving to define new forms of instrumentality that can operate in larger territories, where the differentiation between the urban and the non-urban has disappeared.

Healing The City: Elemental Constructions and the Universal Language of Architecture

Mersiha Veledar, The Cooper Union

There is a bridge in the city I knew in my childhood, a bridge so breathtaking, one would not believe that within its layers of smooth tenelia stone, there lie millions of eggshells binding what was once known as the widest arch in the world of that era. Having lived through the disarray of former Yugoslavia and the 1992–1995 genocide in Mostar, (a city of ancient bridge-keepers ~1557) in Bosnia and Herzegovina, I've directly witnessed the effects of man-made architectural disasters as a strategic form of erasure in the war-coined urbicide. All schools, universities, theaters, hospitals, parks, markets, and six public bridges that highlighted its unique history were strategically destroyed as part of an initiative to erase a mélange of public structures needed to keep the city context functioning and its memory alive. After twenty-five years, Mostar still remains a divided city in Europe, split in half between the newly acquired 'Croatian' and the indigenous 'Bosnian' side. Concurrently, the city is suffering through another form of an architectural disaster in the form of urban preservation where post-war edifices are sterilized and rebuilt in an identical pre-war veneer that provides the perfect alibi towards architecture in denial. This year concurrently marks the culmination of the longest standing trial to-date at the War Crimes Tribunal in The Hague that sentenced key generals who committed crimes against humanity and acts of genocide on this ground. Having survived, I understood early on the deep resilience of architecture inside an impending structure of a city.

My early research and work in architecture and pedagogy started through my "Architecture could Heal: Universal Common Ground" hypothesis where I began to explore the universal link all cultures share through the mask of architecture. What do alternative nations share, have in common, and cannot politically corrupt? I began to view the fundamental language of architecture through a mask of universal elements of nature such as air, water, and wind which we all share, regardless of ethnicity, religion, or race. In parallel, domestic-scale universal elements such as walls, doors, windows, stairs, columns, skylights, and additional domestic objects were chosen as a foundational lexicon to be used and re-invented within the programmatic restrictions of unifying functions of nature. New programs included elemental categories such as the 'water door', 'wind roof', 'filter facade', and 'pinhole leaf window' to name a few.

These objects were implemented throughout existing universally public structures common to all city fabrics: facades, corners, roofs, pavements, and streets where these universal elemental transformations became an urban assemblage. The challenge of this project lies in the realization that variant cultures could remain physically separated, and yet through an introduction of an identical element, a mutual architectonic connection could instigate a new universal common ground. These elemental frameworks come with a particular set of disciplines, opportunities, challenges, and histories as the fundamental vocabulary of architecture that could be applied as a common ground prototype to post-disaster sites as a new experimental method of healing the city.

NOMADS and the Urban Collage of Abu Dhabi: Interfaces between ecology, identity, and utopia in the Anthropocene

Eugenia Lopez Reus, Abu Dhabi University

Miguel Jaime, Elisava/Universidad Pompeu Fabra

The goal of this study is to discuss how the concept of Anthropocene challenges the notions of identity, otherness, and habitability in the city of Abu Dhabi, a global urban settlement that 40 years ago was a natural desert scarcely inhabited by a reduced and sporadic community of nomads. This paper examines interfaces between architecture, city image, identity and modernization, in a place where 80% of the population are foreign workers that inhabit modern residential towers with a high turnover rate. Following Colin Rowe's idea of collage (defined in his seminal work "Collage City," [1]) - as a way of dealing with hybridization and self-determination, the research explores possible connections between modern utopia and tradition to recover and invigorate the urban realm. The methodology includes the theoretical review of social, architectural/urban and environmental changes in Abu Dhabi and the practice of photo collage as part of the research's outcome and process. The cultural context includes the dialectic opposition of concepts that foster ecological awareness (nomadic-sedentary; nomadic-urban; nomadic-rural) and social awareness (migrations; tribal-communal; local-foreigner; guest-citizen) in light of the Anthropocene, a notion that expands resonances between pre-history, the present and the future in an already glittering icon of global development. In Abu Dhabi, the capital of UAE, just as it happens in Dubai, there is a huge disproportion between local and immigrant population (almost 20% and 80% respectively). As a byproduct of global capitalist acceleration and mobility, traditional nomad tribes have created urban scenarios (sedentary?) in which expat population mainly from India, Pakistan, Philippines, Bangladesh, Nepal, Egypt, Syria, Palestine, etc., settles in rotation exclusively for professional and labor reasons and for a determined period of time. Emirati metropolis, impressive architectural and urban artifacts that are at the forefront of global modernization today, are inhabited by what authorities name as "guests" (and not citizens).

In the particular context of our proposal, the use of the concept of the Anthropocene seeks to foster critical awareness about how modernization, technology and local policies of migration and urban development have radically changed –over the last 40 years- the social organization and the natural ecosystem of Abu Dhabi. We take advantage from the fact that the Anthropocene changes the scale of human history, translating it into geological terms, which is compatible when discussing a nomad-Bedouin's culture that can be traced 10.000 years ago. This study suggests that the way nomads have inhabited the earth might become an ethical pointer to the current ecological crisis. In this context, the photo collages become a strong reminder of human impact on the environment, social and natural, and an invitation to re-envision the current urban development, and the way we relate with others in the ecology assemblage.

[1] Rowe, C.; Koetter, F. 1978. Collage City. Cambridge: MIT Press.

Saving the City

Elijah Huges, Wesleyan University

In 1752, the year Benjamin Franklin is credited with the invention of the lightning rod, he also established the first American fire insurance company. The coincidence of these innovations prefigures the parallel development and interwoven relationships between invention, building insurance, and legislation that underlie the production of architecture today. Industrialization brought new threats to the city (e.g. electricity, speed, explosives) while also dramatically increasing the scale of historical perils (e.g. flood, fire, theft). In turn, these threats gave rise to a field of new products, accessory to conventional building. In their early forms, the automatic sprinkler, exterior fire escape, panic bar, emergency light, and theft alarm were, like Franklin's lightning rod, ready for production and deployment on a large scale, without definitive spatial identity, and suitable for use in new or existing construction. Negotiating the thresholds between the developing infrastructures of the city and its private spaces (as insured and legally defined), these devices may be understood collectively as a crumple zone intended not to prevent architectural emergency but to absorb, limit, and contain its effects.

Emergency devices encourage architecture's participation in the elaborate mythology of safety. From the 100-year floodplain to maximum occupancy metrics, hypothetical calamities set the design standards for real buildings. Architecture is implicated not as a source of shelter, but as the site of future disaster from which one will inevitably need to escape. The result is a "paradoxical dualism," or a "double-coding," clearly not in the sense that Jencks meant, of architecture as both "architectural" and catastrophic, shifting at a moment's notice between these two states. Against architecture's literal firmness, emergency devices collectively operate to re-code architectural space, collapsing interiority and reshaping enclosure. Culminating in their current ubiquity, the integration of these devices into the spatial and psychological landscape of the city is the story of the Encyclopedia.

Carnival Cruising

Paulette Singley, Woodbury University

Jean Baudrillard identifies a progression in capitalism from carnivalism to cannibalism, where “power is slowly undermined, devoured or ‘cannibalized’ by the very people it ‘carnivalizes’.” For Baudrillard, carnival whets the appetite for self-consumption. Taken all too literally, the inexorable dynamic between the carnival of cruise lines and the environmental cannibalism they exact upon their destinations describes the destructive dynamic of commercial cruising. From the extraction of supplies from their port cities to the artificial insemination of tourist populations into these very sites, large passenger cruise ships transform the land from sea.

Two parallel theories concerning the origin of carnival converge in the space of ritual and festival. The more common etymology derives from the Latin *carne* and *vale*, meaning “farewell to meat,” referencing hedonistic festivity before abstinence marked by special times on liturgical calendars such as Fridays or Fat Tuesdays. A less common interpretation of carnival comes from the Roman assimilation of ancient Egyptian religious practices into a festival of Isis called the *Navigium Isidis* (after the vessel of Isis), also referred to as the *carrus navalis*, a naval wagon that played a central role in a festival celebrated on March 5. Taken in combination with each other carnival involves excess and ships.

Royal Caribbean International has officially seceded from land and established itself as “the Nation of Why Not,” as advertised to the tune of Iggy Pop’s “Lust for Life.” Depending on the ship and port of departure it is possible to select from the following menu of entertainment options: aquatheaters, basketball courts, Broadway shows, casinos, fitness centers, water parks, ice skating rinks, nurseries, ripcording, rock climbing walls, solariums, spas, and specialty restaurants. Comprising floating cities of permanent carnivals, “the Nation sails to over 284 ports worldwide, and is home to over 20,000 resident citizens (also known as the crew), responsible for showing the ways of ‘Why Not’ to more than 50,000 guest citizens each week.” Whether it is bidding adieu to meat or charting navigation calendars, carnivalized cruising promises pleasure, convivium, and excess.

When they don’t result in Norovirus outbreaks, sea sickness, or sinking, carnivalized cruises, deliver wide-eyed tourists to, instead of from, cities. Cruises form a new urban paradigm of parallel programs emerging from ship entertainments wherein the eros of carnival moves toward the thanatos of cannibal. Today moving walls of debarked tourists march shoulder to shoulder through cities cannibalizing public space as ersatz cattle that once marked public carnival celebrations. It is not just the damage caused to fragile sites such as Venice, Italy that describes carnival cruises as a cannibal enterprise devouring cities in their wake but also the natural resources consumed in the process of providing excess indulgence on board. As semi-quarantine archipelagos begin to emerge to counter the cannibalization of host cities, the new architectural paradigm also emerges of the artificial archipelago, the isolation of the ship and its passengers on simulated islands..

Dubai Before Dubai. The Pietiläs and the City Coastline

Rubén García Rubio, Al Ghurair University Tiziano

Aglieri Rinella, American University in the Emirates

In the global imaginary, Dubai is a charming and futuristic international capital projected to the future. Only 50 years ago, nevertheless, the city was just a small fishing village settled around trading and pearl diving. The discovery and commercialization of oil in the 60s was a turning point in the history of the emirate: suddenly, a large number of concrete and curtain-wall hi-rise buildings started to arise from the sand of the desert, till transforming that 2 km² small village (1950) into a 150 km² global city (2005).

The extension of Dubai's boundaries has not only happened in a specific direction but has widespread in any direction. The city has reached the limit with the emirate of Sharjah on the North and with the one of Abu Dhabi on the South, has conquered a large part of the desert on the East and also expanded its domain towards the sky with the tallest building in the world, the Burj Khalifa. The only remaining side to further expand was the coastline on the West side, and the city has also reshaped it. Therefore, manmade islands have become a distinguishing mark of Dubai. The islands of Burj Al Arab, Palm Jumeirah or the World are among the most world well-known hotspots to visit. This expansionist desire has reshaped the coastline of the emirate from its natural 67 km to the more than 1500 km of nowadays.

Actually, land reclamation as a tool for urban expansion is not new for Dubai. One the first accomplishments of Sheikh Rashid, when he became ruler of the emirate, was to renew the old natural harbor (the Creek) and to start the construction of modern ports (Rashid and Jebel Ali). Since that moment, the coastline of the emirate has been continuously reshaped until nowadays. One proposal should be highlighted among all projects designed or built to reshape Dubai's coastline: Pietiläs entry for the competition for the master plan of the Deira Sea Corniche in 1974.

The main idea of the Pietiläs' proposal was to protect the city waterfront with a chain of connected islands, which included housing, commercial, educational, cultural or sportive areas, separated from the original coastline by a longitudinal lagoon. This new offshore-city would have also interpreted the traditional Arab city in density, orientation, scale, etc., with a sustainable approach to design able to deal with the local climate issues.

This paper will attempt to unfold the value of land reclamation as an instrument of urban planning. To achieve this goal, Dubai will be investigated as a case study, disclosing the contents of the Pietiläs' proposal for the Deira Sea Corniche, the first to provide artificial islands in Dubai. Describing the history of the coastline and analyzing Pietiläs' project for its innovative and forerunning ideas, the paper will finally consider the value of land reclamation as an instrument of urban development -with its strengths and weaknesses- in order to avoid land consumption and to allow the preservation of the coastline.

On the Liminal Fertility between the Sacred and the Profane in the Sin City of Neon Lights

Alberto de Salvatierra, University of Nevada, Las Vegas

Samantha Solano, University of Nevada, Las Vegas

On the Liminal Fertility between the Sacred and the Profane in the Sin City of Neon Lights
Learning from Las Vegas could easily be regarded as one of the most significant architectural publications in the last half-century. Excavating an unusual depth from Las Vegas' (much criticized) superficiality, it brought attention to a new set of architectural ideologies. However, rather than spurring further investigations into the city, Las Vegas has largely languished in discourse isolation. Other than the brave Denise Scott Brown et al, few have returned for serious play at the city of gaming. And at first glance—however provocative an exploration of signage and casinos was—what else is there to a city built on monetizing hedonism, excess and pure id delight? What can be gleaned from yet another sprawling “failed” suburbia in the middle of a desert? How are a sea of parking lots and a dearth of sidewalks helpful insight for the 21st century, human-centric, walkable city? In fact, perhaps it should come as no surprise Las Vegas elicits such caustic contempt as a site for investigation—let alone speculative and projective exercises from its unique composition. Therefore, as any reader might ask themselves, how is Las Vegas relevant? While this is the central question we seek to explore, our departure point begins with the identification of a unique characteristic inherent to Las Vegas: the sin city of neon lights is an often impossible agglomeration of strong and contradictory binary landscapes—and it is these liminal conditions in between that both reveal an epistemic fertility that clamors for further study and reflects back the whole of civilization on itself.

Scorching heat of an arid city stands in direct contrast to its thirsty lawns and an annual “monsoon” season. The bombastic and flashing façades of the strip are exacerbated by the surrounding “adobe” monotony of the suburbs. The marriage capital of the world lies within the only American state that sanctions prostitution. Even the immediate vicinity of Las Vegas is a contradiction between the preservationist attitude of the wildlife reserves and destructive tendencies of the military bases with a legacy of nuclear detonations. In short, the sacred and the profane coexist in a manner unlike any other American city.

This paper examines and deconstructs these dialect relationships (wet vs dry, sawdust vs stardust, forever vs for now, death vs life) and concludes with an exploration of the sacred vs the profane—opening up a new critical lens by which to examine both Las Vegas, and other cities across the world seeking to emulate it.

Instrumentality of the labor: Architectural labor and resistance in 19th century India.

Bhaswar Mallick, University of Cincinnati

Hasty urbanization of non-metropolitan India has followed economic liberalization policies since the 1990s. To attract capital investments, such development has been compliant of Globalization. However, agrarian protests and tribal Maoist insurgencies evidence the resistance, amidst concerns of internal colonialization.

For the local building crafts, Globalization has brought a 'technological civilizing'. Facing technology that competes to replace rather than supplement labor, the resistance of masons and craftsmen have remained unheard, or marginalized. This is a legacy of colonialism. British historians, while glorifying ancient Indian architecture, argued to legitimize Imperialism by portraying a decline. To deny vitality of native architecture under colonialism, it was essential to marginalize the prevailing masons and craftsmen – a strain that later enabled portrayal of architects as cognoscenti in the modern world.

Over the last few decades, the Subaltern studies group, originating in India, have critiqued post-colonial theory as being a vestige of and hostage to colonialism. Instead, they have prioritized the task of de-colonialization by reclaiming the history for the subaltern. A similar study in architecture is however lacking. This paper thus proposes to initiate this work through an enquiry anchored on F.S. Growse's, 1883 book, "Bulandshahr: Sketches of an Indian district". The book is opportune, for it argued that architecture in India remained a living art, especially identifying the agency of masons and craftsmen. The colonial Government saw the book as advocating for native autonomy. Further prints of the book were prohibited, and its author subsequently transferred.

This paper would focus on situating the architectural subaltern in 19th century India, not as timidly transitioning and transforming, but in dignified confrontation with colonialism. It aims to establish the continued vitality of non-metropolitan Indian architecture, by legitimizing the role of local masons, craftsmen and architects – the subalterns of contemporary architecture. It would show British administrators facing similar resistance, and question if a working compromise then established, can be a guiding light now.

The research, although aligning itself with the Subaltern studies group, finds their litterateury deconstructive methodology unsuitable. However, their way of understanding history as storying – historying, and alternate history as an alternate storying, particularly insightful. As such the research would read Growse's book with the intent of: discerning and documenting facts versus observations and propositions, discarding the structure of the book's argument to rewrite a commentary of the situation described, steps undertaken and goals idealized, and critiquing Growse's proposed model for its colonial advocacy as well as its implications for urbanism today.

The situation of architectural labor in 19th century India would be established as a vital instrument that confronted colonial rule. Removing the stigma associated with supposedly backward building practices and uncivilized labor would facilitate decolonization of colonial Indian architectural history. This would help ignite a discourse on labor's significance in architecture, not just as a mode of production or idealized form, but as an agency essential for its continued vitality. In doing so it would encourage further critical historying, for the marginalia in India, and for architecture everywhere.

Emancipating Urban Elements from Alexander Doxiadis' Grid in Riyadh.

Sukhee Yun, Prince Sultan University

This paper introduces an experimental urban studio work done with female students in Riyadh, KSA in 2017.

The project was an attempt to escape from the superblock grid of Riyadh. The rapid and unprecedented urban growth required the modern urban grid to accommodate population and followed commodities. The fear of losing cultural identity and adjustment related social custom adapted the modern urban grid symbolizing Islamic value with a specific condition, private vehicles only. The efficiency of 2km x 2km superblocks has supported the explosive urban growth of Riyadh successfully. However, the internal layout and its spatial structure disintegrated social, cultural, and environmental engagement that could be an essential urban element nurturing its growth. Furthermore, the pending public transportation network and social changes on women status direct us to be actors laying out urban situations to register various users' involvement. Aligned with government agenda such as Saudi Vision 2030 and Future Saudi Cities, University Town was selected for the theme of renovating the typical residential block adjacent to a block comprised with institutional programs; Ministry of Higher Education, Prince Sultan University, and Riyadh Technology University. There are two metro stations and two transit bus stations between the two blocks each laid in 1km x 1km. As Doxiadis' masterplan was superimposed on the natural topography of Riyadh, students produced their fields of action by transforming ordinary objects into five different conditions under the task; From Homogeneous to Heterogeneous. At the same time, students should select their one urban element from Riyadh Metro Design Manual published by Ad Riyadh Authority to investigate. The second superimposition of individual urban elements reveals hidden forces and guides us to propose a master plan for University Town in Riyadh generating accidental collisions of programs and urban conditions. The wilderness of the masterplan with emancipated urban elements continually changes and forms themselves into new conditions which lead us to leave specific programs undecided by us but by users defying the superficial urban grid.

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Project-Architectural Ghosts : Storytelling & the Urban Imaginary

Zoe Lynne Cope, University of Nebraska-Lincoln

'Architectural Ghosts' proposes architecture as a series of eleven speculative cities that function as characters engaged in a theatrical masque set in contemporary Rome, Italy. The project challenges traditional methods of architectural preservation and memory by presenting a new way to imagine history at the intersection of narrative and architecture. 'Architectural Ghosts' seeks to qualify experiences of architecture, performance and the social imaginary as catalyzed by the urban environment.

A re-imagining of the novel *Invisible Cities* by Italo Calvino, this project utilizes narrative storytelling as architectural medium, method and site. The framework of the original novel was analyzed, collapsed and re-written in a contemporary context. The project offers a critique of the use of the novel in architectural education and challenges the marginalized role of women presented in both the original text and throughout much of architectural history.

Calvino's cities were metaphors for women conquered by two powerful male explorers. In this project, each city was designed and illustrated relative to site, theme and the work of a prominent female storyteller, philosopher, or architect as a way to presence their ghosts. Much of the research was oriented around unearthing the accomplishments of women engaged in a partnership wherein a male counterpart received credit for much of the work. The plot is structured by an overarching conversation between a female narrator and a male character. Desire for what her voice brings into being creates a tension that drives the entirety of the plot, representation and sequencing of architectural experiences. Eventually, it is revealed that she herself is also a city; she too is a ghost catalyzed by architectural and phenomenological experiences that imply presence.

This project explores 'architectural ghosts' as allegory for the presence of the absence of presence that reveals architecture as performance. The universal gap between lived experience and representation is explored as primary function of the paradox of human desire. Literary narrative is utilized as structure for the gap of philosophical lack and as active agent for the discrete, conditional alignments that generate and inform productive encounters with the architectural imaginary. The masque, as performance between complex and layered characters, reveals the individual and collective nature of architecture, cities and the stories we tell about both.

Thick Roofs: Technological Containment and Symbolic Form

Michelle Chang, Rice University

A hypothesis of this paper is that the fragmentation of building parts in contemporary architecture stems from perpetuating building conventions from post-WWI construction technologies. The invention of load-bearing frames and reinforced concrete made systems like the Maison Dom-ino possible. As the design of facades and plans were freed from structure, however, the design of roofs became entangled in what had previously been the obligations of floor plates. The conceptual clarity of modernism's total building systems, coupled with evolving environmental and security standards in the present day, have necessitated the design of architectural exceptions. A building's integral components, like MEP and HVAC, are regularly designed as elements that sit proud of a coherent envelope. This paper investigates ways these detached parts can be conceptually and materially absorbed into a single volumetric roof.

The roof is one of architecture's primary constituent elements. Whether its origins stem from functional, moral, or political purposes is uncertain, but the design of roofs has historically engaged form with performance. In Laugier's account of the primitive hut, the roof was created to shield humans from nature; Semper contends that it came about to protect the hearth; and Koolhaas suggests that, from the beginning, roofs were made to signify of power. Though these origin stories leave out the complex relationships between cultural, economic, and technical contexts, their reductive clarity serves as a lens for judging architectural qualities of scale, shape, and proportion.

These formal questions fundamentally changed at the turn of the 19th century when advancements in construction technologies made thin and flat material systems viable. The plane, in the form of pre- and post-tensioned slabs, stronger steel frames, and pre-cast panels, freed architecture from some of the financial and programmatic constraints that came with formal specificity. With the standardization of flat and thin parts, the formal qualities of the roof became increasingly synonymous with those of the floor plate. This shift opened up the possibility for Le Corbusier to translate a roof deck into a park at the Unite d'Habitation and for Mies to connect the Bacardi Office Building with Cuba's infinite horizon. But, as the roof became an upward succession of the floor, many architectural components had to find somewhere else to hide.

Looking at the aerial view that Google Maps affords us reveals how often air handling or mechanical units protrude from roof planes (fig. 1). An inspection of Mies's Crown Hall or MLK Library shows that without a thick roof, mechanical units, vents, and other unforeseen complexities in modern building codes are concealed by staying away from parapets, going to the basement, or relocating elsewhere.

If we consider the possibility that the paradigm that once liberated façade design, plan, programming, and space is out-of-date, what new framework can accommodate contemporary architectural demands? If being thin is no longer viable, how can architecture engage models of thickness?

Framing Shulman

Gerard Smulevich, Woodbury University

The Photographic Frame as an instrument for the re-presentation of urban landscapes

This paper is based on a series of seminars focused on photographic visualization as an instrument for understanding urban landscapes. Attempting to go beyond the purely formal and data-based description of cities, it looks comparatively at photography, painting and cinematography through both a Romanticist and then Modernist lens, leading into an in-depth exploration of the work of the photographer Julius Shulman and his translation of Modernist models into essential landscapes of human activity.

Representation: "It is ultimately a resurrection". (R. Barthes)

Representation here is studied as an instrument for re-presenting, reintroducing something we already know. It resurrects (Barthes) something we don't know about a place we already thought we knew. The territory in which the photographer designs and simultaneously constructs this representation of space is contained within The Photographic Frame.

The frame here is seen as a threshold, a border between the chaos of natural space and the fluidity of a representational universe where an idea is crafted via tools such as composition and visual narrative. The Frame is both a portal to a re-imagined reality or mere sample of a larger implied cosmos. It can be a modulated visual journey or a mere stop in a larger, even infinite meta-world that exceeds its confines.

The study starts by examining The Romanticist Glance (a re-imagined reality) reviewing the paintings of C.D. Friedrich, K.F. Schinkel, the photography of L.A. photographer John Humble and screening Ridley Scott's 1977 Napoleonic War period film "The Duelists". The second stage of the course explores The Modernist Journey and the abstraction of space, time and montage through Picasso's Cubism, Alexander Rodchenko's challenge of the photographic frame and finally screening Sergei Eisenstein's "Battleship Potemkin" and its invention of the time-sequenced spatial narrative.

With both precedent studies completed, the documentary film Visual Acoustics on the life of Julius Shulman is screened by the class, proceeding to the analysis of Shulman's work and his particular photographic instrumentation. The class then seeks to "un-pack" concepts and ideas embedded in Shulman's compositions, analyzing his work vis-à-vis the earlier Romanticist and Modernist precedent studies.

The paper further explores photographic instrumentality and how lighting, shade/shadow ("follow the light") as well as focal distance ("going wide") become tools for the description of urban surfaces, landscapes, forms and spaces. These analysis are also discussed as techniques for the representation of 3-D modeled spaces, where the designer applies photographic technique as an instrument for digital visualization.

The conclusion of this paper addresses the relationship between the instrumental and conceptual instances of the creative process, where a photograph becomes a drawing-in-reverse and narrative, composition and the frame itself become tools that relate art and architecture across time and diverse media. It attempts to demonstrate that Architectural photography can exceed the condition of the simple documentary and, as Julius Shulman's work teaches us, become a rich creative cultural media when it becomes conscious of the pursuit of beauty through its own instrumentality.

NEW INSTRUMENTALITIES

2018 ACSA/COAM International Conference

Architecture, Sustainability, Infrastructure, Interventions

Kenneth Schwartz, Tulane University

The Small Center for Collaborative Design (formerly known as the Tulane City Center) was founded in 2006 shortly after the disaster of Hurricane Katrina. As the community outreach arm of the Tulane University School of Architecture, the center has produced over 100 projects in the last twelve years. All of these projects involve students and faculty design leaders and all are done in collaboration with non-profit organizations and neighborhood groups. These projects are fully funded by the School of Architecture through our work in "development" and various forms of funding that we solicit and receive to support this work.

This paper identifies the key ingredients for successful engagement with the low-income communities that are served by this initiative. Our work involves a special emphasis on sustainability (both cultural and technical) and many of these interventions also address infrastructure and various environmental challenges, particularly those that involve water.

Small Center for Collaborative Design

Public Interest Design is increasing in prominence in the United States among schools of architecture. The post-Katrina environment dramatically exposed many pre-existing conditions of inequity, declining population and extensive vulnerability in an already challenged city. Tulane University, as the largest private employer in this medium-sized city, stepped forward and has become one of the national leaders in engaged education. The School of Architecture has been a leader in Public Interest Design. This social entrepreneurship enterprise has succeeded in growing from a small operation of two staff members to one that includes six full-time staff and approximately \$800,000/year in funding, all secured by the School in support of this community-based work. The focus has been on strategic interventions, and the cumulative effect has led to several stellar examples of neighborhood turnarounds.

Hollygrove Neighborhood as an Example

We will highlight one low-income (and below sea level) neighborhood through several specific examples. The first involves the Hollygrove Food and Farmer's Market, including a master plan and subsequent design-build implementation. This project was completed in 2009 and it has been catalytic in spurring economic activity, community revitalization, confidence and pride in the neighborhood's "return" after the storm. The second is a master plan and implementation of the recovery and repurposing of an abandoned 1-kilometer rail line that had bisected the same neighborhood. Instead of a chain link fence blocking off this disruptive swath through the community, the plan is implementing their removal and the introduction of a series of green spaces including rain gardens, pocket parks and a water pavilion that demonstrates ways in which water can be reintroduced into the groundwater/water table as a community amenity rather than piping and pumping it away, out of sight. The Hollygrove Greenline Shade-Water Pavilion is an excellent example of an award-winning design and intervention that has also been transformative for the neighborhood. Both of these projects will be presented.

Impacts

Demonstrable impacts include stability, positive and inclusive economic growth, and sustainability metrics in terms of water runoff. Neighborhood organization and empowerment has led to sustained benefits over the past ten years.

In Vitro City: A Laboratory without Experiments

Loukia Tsafoulia, City College of New York

Severino Alfonso, Barnard College & Columbia College

The paper states the relationships between the instrumentality of building systems, the aesthetics and politics of software and the digital technologies impact on the built environment. It explores the space between the architect's intentionality and the changing modes in architectural production. The text proposes a critical awareness of the epistemological and technical dimension of the digital instruments as a way for architects to better appropriate the expanding array of digital tools in an ever-increasing urban complexity.

In the context of growing intricacies in the management of our cities, the body of information and specialist involvement in the design process has grown exponentially and cannot be grasped intuitively. To tame these forces, the built environment has mutated into a system of technological optimization performing at a planetary scale. Under this scenario, the ignition of any significant urban experimentation is inconceivable. As Kenneth Frampton points out, "today the practice of architecture seems increasingly polarized between on the one hand a so-called 'high-tech' approach predicated exclusively upon production and on the other hand the provisions of a compensatory facade to cover up the harsh realities of this universal system".

Following this polarization, the paper identifies two actual figures that have come forth because of architecture's digital disintegration: the digital manager and the digital craftsman. The digital manager perpetuates the disintegration process of architecture, by first separating and cataloging the different building organs and then by reshuffling them according to alternative principles that are utterly unrelated to architecture itself. The digital craftsman on the other hand, operates in response to the high level of fragmentation in the architecture production line and supplies the digital manager with conceptual and material sub-systems. These two figures underline a basic disciplinary principle: to understand architecture as a framework of parts that come together into a final product. Their focus is not concerned with architecture's comprehensive nature and therefore eludes any theoretical entitlement to it. The lack of collective agency in the architectural process explains why even though, there is an abundance of independent arguments shaping the discipline today, there is an overall halt in the production of contemporary urban manifestos.

The city as a project is consumed within the managerial boundaries of the digital information. Its actions emerge from socioeconomic forecasting protocols that consolidate into a series of script-controlled outcomes. Architecture doesn't participate in a wide range of interlinked environmental and ecological processes, it is rather limited to technologically facilitated exchanges. The site is not perceived as a physical place for the integration of architecture, but rather a virtual one for digital appropriations. A mental projection of the city fancies everlasting aesthetic images, hyper-realistic materials and a gleaming identity. These come together in conforming to a virtual urbanscape that is defined in a computer laboratory. A digital realm that includes algorithmic protocols, computational operations and data archives, all collaborating in the making process of an in vitro architecture byproduct.

Boundary Problems: Reclaiming Thought Space in the Attention Economy

Emily Baker, University of Arkansas

Boundary Problems: Reclaiming Thought Space in the Attention Economy

There is a problem of boundaries in our current time that hasn't been adequately addressed, nor widely acknowledged. It's not a problem of boundaries between countries nor classes, though those are certainly issues. The problem is much closer to home, and thus more insidious. It could be described as a problem of the boundary between private and commercial, or even between sacred and profane. But it's not about physical walls. It is the lack of boundaries that would create and protect space for unmitigated thought. The mind has been trespassed and hijacked through the influences of the attention brokers—those whose business it is to catch and hold hostage our thoughts, our attention, our focus. Attention is the scarce resource in this new economy. When every click equals money, a battle ensues, and we are losing. We are conceding minutes, hours, days of our lives to worthless information, and ignoring the thoughts that we might want to pursue or need to address. We have lost the space in which to get in touch with our personality-forming inner worlds. Stream-of-unconsciousness describes our insatiable media diet, and we've traded countless hours behind the screen for the ability to sustain focus, to hold an in-depth conversation, to notice the rhythms of our surroundings, and to be ok being alone and quiet. The consequences are both personal and societal—epidemic insomnia, depression, ADHD, lack of social connection to name a few. Should architecture be implicated in such matters? Does it have a role to play in drawing healing boundaries so that the space for free thought can reemerge? Since the proliferation of electric lighting, the spaces of our cities and our dwellings have allowed for, accommodated, and welcomed technologies that act to alter our evolutionarily-engrained patterns of behavior. These behavior-altering technologies, seemingly innocuous at first, have now shifted our behavior so drastically away from its evolved state that we are suffering physical, psychological, social and cultural consequences. Screen time is no longer a choice, but an inevitability. This paper posits that we are building an environment in which we are maladapted to thrive, and it will introduce design ideas that seek to challenge the inescapability of behavior-altering technologies in dwellings and cities; design that reasserts free choice in their use. We can revise the current "standard of comfort" into a "standard of wellbeing" that imposes limits on certain behavior-altering technologies, requiring less investment in the power grid and decreasing the cost of living. Thus, a happy side effect of this healthy environment is that it is healthier for the environment. The kind of forethought that preserved large non-commercial spaces within the fabric of urban life (Central Park) is needed as we seek to design for thought spaces that are unencumbered by commercial interests. This is not a Luddite plea to leave these technologies behind, but a humanist plea to find the boundaries in which we can thrive while using them.

Project-The Tobogan House

Ophelia Mantz, Texas Tech University

Rafael Beneytez-Duran, Texas Tech University

As both a practitioners and an educators there is not a strong division between these two activities in our work. Our research is the foundation of our practice and vice-versa; our practice is a laboratory for our research. Teaching is a journey that involves the transition between both.

We would like to present this project as a conversation that juxtaposes several different canonical precedents. After guiding our students in the critical use of precedents through teaching, conversations, and discussions, we asked ourselves: “how many of the decisions made originated with voices that we admire from the past?” With this question in mind we realized, through a client’s description of a commission for a private home, that several canonical projects could be directly referenced. We began the project by translating the client’s spatial desires and descriptions with regard to a specific selection of precedents. We thought that later on we could modify them to transform our commission into a unique solution.

However, during the process we realized that the project was actually being made through the selection of the specific precedents. They began to provide a solution critically organized into a spatial framework that carefully addressed the client’s list of needs and desires. Without mentioning the projects specifically, we found that the following works could truly represent the expectations of the client: the Morris Greenwald House, Connecticut, Mies van der Rohe 1956, Courtyard Houses (studies), Mies van der Rohe 1934-35, Villa Savoye, L’Corbusier, Poissy 1929, Case Study Houses, 1945-66, Maison a Bourdeaux, Koolhaas, 1998, Two-way Mirror Cylinder inside Cube, New York, 1991, Dan Graham, Chatsworth Greenhouse, Paxton, 1836.

The skin wraps the whole, gathering together this Atlas of canonical precedents while providing a unique lighting behavior that holds together a romantic narrative. This narrative stitches together relationships between past and present. The skin is designed as a membrane that is made of multiples layers and promote breathing instead of isolation, connection instead of division. It modulates the surrounding environment: sun radiation, the fluidity of light, and the impact of noise which comes primarily from the highway and a nearby school.

This project juxtaposes all of these matters together without a focused interest in form; it accepts the risk of the ‘exquisite corpse’, heterogeneous conditions, and eclecticism that all together constitute our cultural logics and patterns. From the outside we could conceive of the project as a formal architecture, while, from the inside, the forms are dissolved without a center of gravity.

A few other voices from the past such as Constant’s 1957 work ‘New Babylon’, a project that emancipates life from the soil, and Sigfried Ebeling’s ‘Space as Membrane’ from 1926 are present throughout. These work together to reinforce the deeper meanings of the house.

Not Molds but Modulators

Ophelia Mantz, Texas Tech University

Rafael Beneytez-Duran, Texas Tech University

Over the past thirty years there has been a sensibility emerging related to an architecture of screens and membranes. In 1995, Terrence Riley articulated an exhibition at MOMA entitled "Light Construction" that collected projects organized to the idea of "Architecture as condition". In opposition to the heritage of modern and postmodern architecture, this switch, from object to condition, opens up a debate that considers surfaces as more than merely molded skins: buildings are devices that modulate atmospheric conditions, rendering a division between 'space' and 'surface' invalid. Observing back the phenomenological architecture of Peter Zumthor or first Herzog & de Meuron, Maki and Ito works and sewing relationships with more currents works on environmental art and architecture by artist such as Doug Wheeler, Dan Graham, James Turrell or Olafur Eliasson or architects such as Pilippe Rahm, this paper will cross a recent architectural and art production to explore an architectural identity. An identity that questions the objectuality and the abuse of the use of stable forms in architecture to focus the notion of atmosphere as form in architecture. As a retroactive precedent of all these works is included in this narration the 1926 Sigfried Ebeling's manifesto: "Space as Membrane," a text largely ignored by historians writing on architecture. This groundbreaking manifesto is ambitious with its technological aims, devising an architecture as membrane. Architecture is represented as a set of conditions, mediums, or atmospheric constructions. Fritz Neumeyer writes that this work "opened up new horizons for Mies without forcing him to abandon his own convictions". Implicitly, Fritz Neumeyer sees the opportunity to revisit Mies' work with new understanding after a critical reading of Ebeling's text. In 2005 the work of Gilbert Simondon, "L'Individuation à la lumière des notions de forme et d'information" (The Individuation under the light of the notion of form and information), written in 1958, was published in french for the very first time. This book supports a new theory where form is presented as something dissolved in a potential state of equilibrium: something "meta-stable" between information and environment. Surfaces are not limits but fluxes of information: membranes or osmotic films that lets things pass between interior and exterior.

The relationship between Ebeling's manifesto and the theory of form and information of Simondon is key point missing in this debate that could open a new conversation on formal notions. This paper will attempt to bring to light a sensibility of "architecture as modulators" grounded in these understudied works, and helped by the expert's voices of George Teyssot, Alessandra Ponte, Walter Scheifelle, Spiros Papapetros, and the two French Philosophers Natalie Simondon and Marie Bardet.

Public Space

Topic Chairs:

Frederick Bonet, Obras

Momoyo Kaijima, University of Tsukuba

The changing politics and protocols of public space. Public space in the city is being continuously contested. The most egregious of these challenges comes from the recent terrorist attacks on cities across the world. More nuance challenges and opportunities are appropriations of public space and its monuments to legitimate or question power, history, memory, gender, cultures and race. Lastly, the public space of the city has become a regional and global destination for celebration and protest amply augmenting its scope.



Atrium Politic / Lost Models of Oversight Through Semi-Public Domestic Space

Jonathan Scelsa, Pratt Institute

Atrium Politic / Lost Models of Oversight Through Semi-Public Domestic Space

The twin atrium and courtyard of the Roman home have often been cited for their infrastructural service to the mat urban development of the Roman city, bringing both water and light through their compluviate roof covering. Politically, the atrium's instrumentality exists in the semi-public space it provided, visually and physically connecting the inner sanctums of the Roman economical and political elite to the public realm of the city; daylighting the conversations happening therein. The domus typology featured two centers, the peristylum as center of private domestic life, and the atrium the center of public life, with the tablinum, or owner's office occupying the space in-between capable of observing both. The atrium, connected directly to the street through the open corridor or fauces, serving as an extension of the public spaces of the forum and the market within the home. This architectural arrangement imbued these twin internal worlds with a juridical aspect: a place to witness petitions, where disputes between clients would be arbitrated, a space for legal advice and where senators would bring protégé to discuss matters of state. Several laws were implemented to ensure the maintenance of the domestic architecture's physical capacity for accommodating this social role.

Compare the Roman model to the state of spatial arrangements present in the world of contemporary state-craft and economic exchange. A most egregious example of which might be offered by the example of US president's New York residence before taking office as a modern day mercantile business owner and afterwards as a publicly paid politician. A direct formal analogy of 'the best architecture' offered on 5th avenue suggests that Trump Tower's ground floor lobby as the modern day fauces, while the equivalent to the atrium, the space of salutatio for greeting and business transaction, would be on the 66th floor. The elevator in this case deliriously severs the 'domain of the deal' from the space of public oversight that would have been granted by visual axis of the fauces through the atrium, tablinum and peristyle. While the tower typology could easily be dismissed as low hanging fruit of problematic domestic political space, there exists a litany of other examples of cloistered typologies offered under the American political built establishment ranging from the executive gubernatorial mansions (more typologically akin to Mar Lago) to the legislative apartments granted in the Nation's capital.

Each of these demonstrate similar, closed door, or edifice severing mechanisms not present in the original domestic political space of the Roman republic.

This paper seeks to investigate and demonstrate the juridical use of space offered by the typology of atrium and peristylum house within the domestic architectural practices of pre-empirical Roman Republic, to foster a better understanding of the agency of semi-public space in molding the psyche of business and state-hood life today. The paper will use diagrammatic examples of contemporary architectural precedent paired against of the roman counterparts as a means of questioning how we should insist on semi-public space within the architectural assemblage of the political realm.

Sutro's Glass Palace: The Encapsulation of Public Space

Nerea Feliz, University of Texas at Austin

Sutro's Glass Palace: The Encapsulation of Public Space

Public space has gradually changed from a truly public space to a conglomeration of multiple privately owned public spaces. As Public spaces progressively become privately controlled, the last century has witnessed the progressive interiorization of public activities. The extent of this interiorization leads Sloterdijk to define the world as a "grand interior" and to consider the Crystal Palace as the turning point marking "the tendency to make both nature and culture indoor affairs". The designation "palace" led the public to associate the Crystal Palace to the idea of a Palace for the People. Its transparency was interpreted as a call for accessibility for the entire public, and a promise of expansive universality. For the first time, the masses could actively participate in consuming the exhibited objects. It was a new form of consumption: mostly visual.

This paper looks at the Sutro Baths (1894-96) in San Francisco as another early example of the interiorization of public space, as an early "Fun Palace" and a stage of consumption. The Sutro Baths were an encapsulated microcosms, the delirious dream of an ambitious millionaire, engineer, and later mayor of San Francisco. Sutro, a German immigrant and entrepreneur managed to encapsulate the ocean inside a spectacular glass palace. The facility had capacity for 1,628 bathers and 7,400 spectators. The history of these baths is also a reflection of the problems of social inclusion and exclusion derived from the privatization of public space. Sutro fought to make the baths accessible via public transportation: "I had intended Sutro Heights as a breathing spot for the poor people as a benefit to the public." On the other hand, shortly after the civil rights "Dibble Bill" law was passed in California, the Sutro Baths were one of the first stages of racial litigation.

Besides being the largest interior space for bathers in the world at the time, the Sutro Baths are considered to be the first water park: a strange amalgam of bathing, hot dogs, a taxidermy collection, a wax museum and a winter garden aspiring to the hanging gardens of Babylon. The climatized atmosphere and the ocean were sheltered, altered, domesticated and commodified: "Always as balmy and summery as mid-June...Here's is the spot to loaf in tropic comfort like a Fiji Islander. No nudist and practically no missionaries, but everything else is Number One Triple A Tropical Style!"

The eclectic-Piranesian space inside this megalomaniac recreational center was a simple and multi-functional scaffolding system open to different uses that resulted in a novel and undetermined kind of space. An amphitheater for concerts and a series of landscaped avenues hanging over the baths provided for visitors to stroll through the complex and observe the pools (providing access to the clubs and restaurants). The concentration of people and the visual accessibility of multiple activities stimulated consumption and the spontaneous emergence of new uses. Part of the experience of consumption in Sutro's Glass Palace was seeing and being seen, the conscious pleasure of simultaneously consuming and creating a novel metropolitan experience.

The Politics of Space and its Shadows

Dongsei Kim, New York Institute of Technology

The paper examines the relationship between the representation and use of public spaces through the lens of emerging technologies. The paper investigates the potentials and predicaments of engaging the growing volume of publically available data on public spaces.

More than 8,800 Instagram images of the MVRDV designed Seoulo 7017, an elevated-road-turned into a pedestrian park in Seoul, Korea was analyzed during its first month of opening in May 2017.

The research explored how users, architects, urban designers, and city officials could learn about this well-known public space through data available from Social Networking Services (SNS). This research argues that we can understand 'big data' as a form of 'collective intelligence' that can provide proactive knowledge about public spaces.

The research engaged Instagram, one of the most popular photo image based SNS to collect images about the new public space in Seoul. "Semantic segmentation" was used to understand what kind of spatial qualities were captured in these images. Through the image segmentation processing, we were able to identify that the proportion of items contained in the images taken of Seoulo was as the following. Sky 16.9%; tree/plant 6.5%; building 12.9%; person 11.3%; floor 7.7%. Analysis of the most used hashtags for Seoulo in the Korean language was: "walk," "night view," "weekend," "selfie," "travel," and "date." Other meaningful words associated with the images from Seoulo were: "today," "photo," "here," "Seoul Station," "really," "like," "person," "walk," "night view," "I," and "at night."

Moreover, we collected over 8,000 Instagram photos from New York's "High Line," a similar public space. We were able to collect about the same number of images from the High Line by collecting a week's worth of images due to its popularity.

When "Seoulo" and "High Line" are compared we were able to say that "Seoulo" had less 'vegetation' than the "High Line" (6.5% vs. 16.8%). This number can mean that "Seoulo" is more exposed to the elements based on the photos generated by its users. This spatial quality is also illustrated by its higher percentage of the sky (16.9% vs. 12.0%) for Seoulo. Photos from the "High Line" include more buildings than the "Seoulo" (21.6% vs. 12.9%). Manhattan's higher building density and the photogenic architecture surrounding the "High Line" might be one of the reasons for these numbers.

We all know that these results have their limitations. However, this research investigated different 'methods' in how designers and users of public spaces can better understand their surroundings, public spaces in particular with these emerging data and tools.

To conclude, out of the 8,841 "spectacle" portrayals of the "Seoulo 7017," there was only one image that captured an "excluded" person. While it is important that we engage these emerging tools, these glorified 'big data' frequently overlook the "excluded" people. The research revealed some of the potentials in using these new emerging technologies, at the same time, it revealed that it is our important task to constantly reach out and hear the voices of the "others" behind these spectacular public spaces.

Design Strategies for Safer and More Inclusive Public Spaces

Maria Anton-Barco, ESNE Escuela Universitaria de Diseño

Public space in the city is being continuously contested. The most compelling of these challenges comes from the recent terrorist attacks on cities across the world. While the awareness of the need to 'design against terrorism' and a demand for greater safety in public spaces has entered into citizen's consciousness -given the perception of fear due to recent attacks- drastic security and surveillance measures usually go against a more open and inclusive public realm.

Whereas some initiatives have proven successful to prevent these attacks, security measures imposed upon citizen's can also detract from public spaces, discouraging gatherings, eliminating services, or even making public space more dangerous. Many cities are trying to tackle this issue; thus, their initiatives have proven to be extremely restrictive: jersey barriers, bollards, restricted areas, CCTV cameras, and security guards are the most common measures taken and they have transformed public space in many cities. In some cases, bollards are decorated or painted in an attempt to soften their impact or combined with flowerpots. Furthermore, new guidelines and rules have appeared in the last years and the European Union has established security as a new strategic objective. However, there's a critical component to these new security landscapes that has not been addressed: making people feel safe without having them feel like they're constantly living in a high-threat terrorism zone. Focusing on London, New York and Barcelona - all of them recent terrorist targets - the purpose of this paper is to identify design strategies to make public space safer, especially against unsophisticated low-tech attacks, while preserving the openness of these spaces and the ability of citizens to gather and move freely about the city.

This paper aims to catalogue and analyse security landscapes providing an empirical grounding to a Guide of Good Practices for Urban Security in the global West.

Wily Surfaces

Lily Chi, Cornell University

Sanpo-ji, a 16th-century Buddhist temple facing the famous Tokaido way, underwent a dramatic rebuilding in the late 1960s when its prestigious frontage was sold off for development. Sanpo-ji's wily priest wrested a good bargain from the developers, however. The temple would not stand in the shadows of a condo tower, surrendering its propitious elevation and historic frontage. Instead, Sanpo-ji was rebuilt five storeys above its original footprint, held aloft on a concrete frame. The new elevation connected the temple to a street higher up the slope, but the old priest was after something more. Raised to the level of the condo's flat roof, Sanpo-ji topologically invades the apartment building to reach the road below, layering itself upon the latter to recover its ritual ascent and temple precinct overlooking the Tokaido.

Sanpo-ji appears in Atelier Bow-Wow's *Made in Tokyo* as "Apartment Mountain Temple," so named for its conjoined-twin configuration. As the authors wryly note: "the forecourt of the temple is not pebbles or gravel, but the waterproof sheeting of the apartment roof terrace," and "ventilators aligned in parallel on the roof terrace are like lanterns." The resultant ensemble is a striking co-location of foreground and background, singular and quotidian, sacred and the profane, alternately manifesting in the same material surface.

"Interlappings" of program, structure, and surface in Tokyo open onto a wealth of compound logics well beyond the improvisations of entrepreneurial urbanites however. Rome's Palazzo Farnese, for example, is commonly known through its depictions as a compositional, urban figure. Rarely noted are the benches at the foot of the building. Embedded in the base's detailing, they only appear at a proximity of a few meters, when the facade as a whole is no longer visible. Few can enter the grand Farnese, but anyone can sit on it. Once noticed, facade benches emerge from the stonework in a wide array of locales from Extremadura's medieval churches to Seville's 1929 Plaza de España. In the Italian examples studied by Yvonne Elet, facade seating served as grandstands for formal public events, but also for informal social encounter, general loafing about, and even napping. A rich historical custom hiding in plain sight, wall sitting turns buildings into backgrounds and the spaces in front of them into urban living rooms.

This paper probes what these otherwise disparate examples share: a peculiar malleability whereby an urban monument, a figural artefact, can also be 'mere' furniture, background; a practice of building/thinking wherein architectural surfaces play host to multiple, sometimes divergent scalar, spatial and situational configurations. Fascinatingly 'other' to architecture's longstanding doctrines on compositional coherence and identity, they beg questioning of what such practice might entail as an approach to design and urban architecture. Analysis of the above and related examples will focus on temporality and scale as sites of appearance—in particular, the intriguing capacity of both/and ensembles to mask in plain sight. The paper concludes by speculating on the potential of these ideas for a tactical practice between world-city and corporate interests, and those of civic and right-to-the-city concerns.

Times Square, Times Out!

Ana Morcillo Pallares, University of Michigan

480,000 tourists and locals walk through Times Square daily. A global destination oversaturated by millions of visitors around the world, a space of discrepancy between local administrators, a space shared by families and street performers who aggressively solicit tips from them, and most recently a target of terrorist attacks; Times Square represents a case of study where public space is tested, produced and denied in everyday and extraordinary ways.

In 2009, the pedestrianization of Times Square was part of the NYC Plaza program which created more than fifty new plazas, in all five boroughs under the administration of Mayor Michael R. Bloomberg. However, six years later, the pedestrian space for everyone to enjoy seemed to fail. Mayor Bill de Blasio was considering removing the plazas from the area in order to address the proliferation of street performers, most notably topless women wearing body paint who panhandle tourists for tips. He said, "We're going to look at what those pros and cons would be. You could argue that those plazas have had some very positive impacts. You could also argue they come with a lot of problems." In light of this question of history, memory and controversy, the media epicenter of New York City faces another added pressure: terrorism. In 2017, attacks by individuals who improvised very low-tech explosive devices led the City implement unprecedented security precautions, beyond the traditional physical barriers, but increasing security in the nearby area and a closer surveillance in the public realm.

All these recent events point to a basic problem with public space: we are never quite sure what it is or what it is for. We have this naive sense that public space is something open, free and happy. However, the reality is very different. The "other" or the diversity is what is missing from the kind of public space in most of our squares, plazas, and pocket parks. And this is what makes it, at the same time, valuable and vulnerable. In this scenario, Times Square as an example of global public area holds a promise of a liberating space not only through its hospitality but rather through its daily battle waged over it by its various inhabitants. Today public spaces in New York, Barcelona, Paris, London and beyond face the new millennium as "secure" family-friendly crossroads of finance, tourism and entertainment. Focusing on Times Square, this paper intends to explore the conditions of the collective today in the face of new threats that requires the rethinking of how we use, design and implement public areas. These spaces need to respond to more than the ever-changing politics and city protocols and address the principles of what makes spaces public, what it stands for, and how to provide an environment for human interaction.

Appropriate, Adapt, Inhabit: The Re-Foundation of Public Space in The Republic Of Georgia

Claudio F. Vekstein, Arizona State University
Thomas Ibrahim, Arizona State University

The collapse of the Soviet Union marked the beginning of the difficult deconstruction of the regime and ideology which controlled the East for the majority of the 20th Century. In the Republic of Georgia, Soviet collapse catalyzed a series of ethnically prompted conflicts and civil war which prevented the unification of the country under a national agenda, thus creating fertile ground for corruption, privatization and sale of public space. The earliest example of the corrupt transfer of property was the sale of the former Palace of Ceremonies, in Tbilisi, to oligarch Badri Patarkatsishvili, which is still primarily used as a private residence by his family. After the Rose Revolution in 2003, Georgia faced rapid institutional reforms under President Mikheil Saakashvili, who legitimized his regime by unifying regions that continuously identified as Georgian (excluding territories Abkhazia and S. Ossetia), collecting revenues via taxation, and attracting the foreign investment that Georgia desperately needed.

The national project of the Saakashvili government was the rapid creation of the image of a westernized, contemporary state, with the aim of earning European Union membership. New stability coupled with laissez-faire policy towards foreign investment and development accelerated privatization of public buildings and the erosion of urban space in the capital city, Tbilisi, and across the country. Furthermore, the regime's approach to public and infrastructural projects were a manifestation of the arbitrary adoption of western values, while ignoring the existing Georgian urban and architectural context and identity. Former Soviet public buildings were (and continue to be) auctioned, and their demolition or retention are left completely up to the discretion of the new owners. One of the most extreme cases of destruction of public space was the near razing of the National Scientific Library, which holds some of the earliest printed books in the Georgian language, and is one of only three libraries in Tbilisi. The association of public buildings with the Soviet regime is used as the premise for their privatization and destruction, which in turn further alienates Georgians by eliminating much needed public institutional buildings.

There are several social issues remaining in Georgia, including ethnic discrimination lingering from the early post-Soviet period, and the issue of internally displaced persons (IDPs) who live in extreme poverty in former Soviet public buildings. In Tbilisi, these issues are most evident in the former Industrial Pedagogical Technicum complex, which embodies the depth to which the Georgian government addressed pertinent local issues. The building is currently occupied by approximately sixty (60) refugee families remaining from the Georgian-Abkhazian conflict and the Russo-Georgian war, who are living in separation because of ethnic friction. Though the complex is largely dilapidated, key buildings present opportunities for focal interventions which could house much-needed public functions for its inhabitants, while integrating the small communities within the building into the city. The appropriation, adaptation, and inhabitation of this significant Late-Soviet structure by the public and for the public good, presents the opportunity for changes that could be re-foundational for Georgia and prevent further cultural erosion.

Public Space: Activation v. DeActivation

Clifton Ellis, Texas Tech University

David Isern, Texas Tech University

Historically, the great cities of the world have built public spaces as venues for spectacle, displays of power, and displays of status. These public venues are part of the identity of these cities and have an importance and influence far beyond their physical dimensions or geometric shape.

These public realms can be thought of in three distinct ways, which can have different levels of public activation: Space as a platform with defined boundaries; Space as a non-physical platform with no defined boundaries; Space as a physical platform with no boundaries.

An example of space as a platform with defined boundaries is Beijing's Tiananmen Square during the 1989 protests. This monumental space is remembered by the famous image of the one protestor, the lone "Tank Man," who confronted a tank, causing it to stop in the square. In that moment "Tank Man" activated the physical space with bonafide boundaries with his actions of protest. Although the tank incident was known almost immediately around the world, the Chinese government suppressed images and news of the incident. In effect, the event did not happen. Rather than the "Tank Man" activating the space, it could be said that the public space was de-activated by hostile powers.

An example of space as a non-physical platform with no defined boundaries is the Arab Spring and Occupy Wall Street movements. In these cases, social media is its own public space. Digital technology, without physical form itself, can indeed give form and animate that form by harnessing the powers inherent in its medium. Twitter is a public 'space' that seemingly exists in the ether - until it is summoned and activated by anonymous choreographers who eventually give it a physical manifestation of a 'will' that morphs into physical form, dimension, and geometry. The twitter user is a lone actor within a non-physical space that gives agency, that becomes a catalyst to the creation of an actual space by allowing multiple actors to define a physical space for protest or celebration.

An example of space as a physical platform with no boundaries is the pedestrian mall of downtown Charlottesville, Virginia. In honor of the city's most famous citizen, Thomas Jefferson, the city has erected a "Free Speech Wall." The Wall is made of slate and the city ensures that chalk is always available for people who want to write their thoughts and ideas on the wall, no matter how offensive or banal. People are free to concur with what is written, or to erase or write over speech they disagree with. The Free Speech Wall has boundless ideas and is meant to be open to everyone, fostered by the power of the collective actors in a boundless public space.

This paper will address the current contests taking place in these spaces, and the effect they have in the larger city. Noting that there is an already established urban form that is inherent of the city, and determines how the actors or the people themselves choreograph the space.

Public Street Invading, Forbidding or Instructing: A Case Study of the University Avenue in Shanghai, China

Bolun Wang, Tongji University

This article comes up with a new management towards the street invading phenomenon: Instructing instead of forbidding, and expounds the intrinsic logic behinds it, taking the University Avenue for example.

The University Avenue (UA) , located in Shanghai, was built as a main street in the Knowledge and Innovation Community (KIC) since 2004. The street was flanked by mixed-use live/work buildings. In 2010 more food and beverage (F&B) commercial moved into the street and gradually merchants enlarged their business scope by putting Café umbrellas and outdoor seating outside the shop, occupying the pavement, in order to attract more customers. This phenomenon, as I called street invading, is a common social behavior in China. Merchants have their own business space, yet they occupy the public space, such as pavement, square etc., in order to have more profitable bargain or service. The deficiencies it brings overweigh more than its merits, such as illegal occupation of public resource and noise pollution. The local government tried to manage it by forbidding policy. However it failed, like the same situations in many other invaded streets

From the view of article, the street invading has its own interior essence under its low-end exterior appearance. To get clear on this matter, we need to dive into the phenomenon and find out the intrinsic essence behind. The street invading can be seen as a representative of urban informality. Hence to reach the essence of the former, we firstly should analysis the logic in urban informality.

The article then analyses the intrinsic logic in urban informality from two aspects. From the top-down aspect, the article points out that the lack of governing plans is the key reason. And from the bottom-up aspect, the article indicates two points. Firstly the citizens have their subjective initiatives and benefit-seeking psychology. Secondly the potential urban space has both spatial and social conditions of accommodating and developing the urban informality. All the three inevitable factors indicate that the urban informality has its reasons to exist: it is a survival strategy and a creative reaction to the urban issues, and a valid power to weaken the oppression from bureaucrats and the resist the colonization of daily life. It is an organizing logic which emerges under a paradigm of liberalization.

Using an analogy method, the article reveals that the essence of the street invading is a life style, a development pattern, a city experience and the logic to organize the city, which should be understood as a new urban culture that we should learn and protect. Though it has deviancies, we should instruct it instead of forbidding it.

The article finally summarizes “3I” strategies concerning how to instruct it based on the successful experience in UA: (1) Identification (2) Instruction (3) Inspiration.

Through the above analysis, this article tries to be enlightenment to the local government and drive them to rethink in a new way of the management towards the street invading: No forbidding but instructing.

Tactical Public Spaces: Between Illegal Actions and Well-Meant Place-Making

David Franco, Clemson University

Tactical Public Spaces: Between Illegal Actions and Well-Meant Place-Making

Since the effects of the 2008 global financial crisis started to be spatially tangible throughout cities all over the world, we have been witnessing the resurgence of a diverse collection of urban practices characterized by the informal, low-cost, and usually temporary, occupation of public space. Practices labeled under terms like Informal, Tactical or Pop-up Urbanism whose origins can be tentatively traced to two different strains of precedents: firstly to certain urban practices conceived by excluded social groups and minorities in order to create a space of their own without the support of the established power; and secondly, to certain counterculture proposals from the late sixties, in which transgressive politics and urban art were intimately entangled.

To fully understand these practices, we must acknowledge the correlation of rather different circumstances. On the one hand, the fact that their success followed the wave of protests that in 2011 took over streets and squares across the world-the Arab Spring, the Indignados in Spain or the Occupy movement in the US-, bringing again urban space to the center of the global political debate. On the other hand, we need to consider how, from being culturally closer to anti-establishment activism, these alternative forms of urbanism might have developed into primarily realistic strategies: praised by its cost-effectiveness, and fully incorporated to mainstream local politics. We should ask ourselves whether contemporary tactical urbanism has given up the struggle for public space that was intrinsic to its cultural precedents, to become one more item within the professional toolbox of planners, urban designers and architects.

This paper examines the outcome of such cultural transformation by questioning how these practices may have either derived into a mere aestheticization of direct citizens' action, or, alternatively, they might open new ways of creating public space that include the conflict inherent to contemporary cities. With that end I will compare the work and discourse developed by two European architectural offices, whose proposals exemplify these two opposite attitudes towards public space: On one hand the Danish firm Gehl architects, whose pioneering approach to place-making exemplifies a very optimistic outlook about the bottom-up connection between citizens and planned city. On the other hand, the Spanish firm Recetas Urbanas-directed by Santiago Cirugeda-, whose work challenges professional codes and city ordinances through small actions of repurposing or occupation, which take advantage of the undefined status of unregulated public spaces.

Finally, the comparison between the aestheticization and the politicization of public spaces created through people's actions will help determine if and in which way such actions really challenge traditional design methods.

Project-Co-drawing: Forms of spatial communication as formats for collective dialogue

Antje K. Steinmuller, California College of the Arts

Christopher Falliers, California College of the Arts

'Co-drawing' explores architectural drawings as co-authored, cooperative instruments to envision multivalent and collective public space. This situates the architect as the designer of forms of public communication, spatial frameworks and tools stimulating multi-stakeholder involvement to visualize, advocate, recapture, and design.

In public space design today, collaborations with multiple constituent stakeholders promote evolved architectural protocols and production. Masterplans and guidelines give way to architectural frameworks for collective action, evolving development strategies, and multivalent designs. This emphasizes the spatial product as an "interface vs. object,"¹ used to engage and harness the inhabited network of urban communities. This paper analyzes multi-centered representations as descriptions of rich, dynamic urban spaces freed of singular control, continuing utopian endeavors or developing realistic and democratic visions of urban space. It describes recent production of 'co-drawings' as co-authored documentaries of public space or cooperative frameworks stimulating citizen expression. It examines leveraging spatial communication typologies as sites for collective dialogue.

Multi-centered compositions visualize utopian speculation and depictions of public life. Art historian Hans Belting interprets Hieronymus Bosch's *The Garden of Earthly Delights* as both utopian and realistic. Its content reflects a "remarkably modern freedom with which its visual narrative avoids all traditional iconography."² Countering conventions "normally guided by compositional structure, here we become lost in an overfilled panorama whose motifs appear like a compendium but cannot be read like one..., revealing the illusory aspect of the way things look in reality."³ On Bosch, architect Jimenez Lai posits that "no single center of gravity to dominate the discourse"⁴ offers potential for plural visions of constructed space - "an investment in anecdotes: the parts will be more than the sum" vs. a more singular disciplinary vision or argument."⁵ Critic John McMorrough argues Lai's own multivalent work continues utopian dialogues addressing "questions of how architecture is represented - its social context, its possibility, and, finally, its continuing resonance - in pocket universes where possibility is unregulated."⁶

Other current practices use multi-focused, multi-authored drawings to further public space dialogues. *Raumlaborberlin's Stick on City* is a "responsive drawing, made to be permanently renewed."⁷ As a "training ground for utopians"⁸, visitors contemplate and/or add to a collective vision of an imaginary city. Exploring spatial behavior, Atelier Bow-wow's co-produced 'public drawings' document lived public environments. For Bow-Wow, the "practice of architectural design in accordance with the theory of commonality[...] must adopt an abductive role."⁹

Transformations of public communication typologies construct sites of collective dialogue. Artist Candy Chang's *Before I Die* series¹⁰ designs urban blackboards and written prompts to solicit and visualize community voices. Merging the graphic broadcasting of urban billboards with the kiosk's invitation for interaction, these transformed communication typologies designed forms/forums for public expression.

Expanding on these disciplinary trajectories, the techniques from these practices, and its implications for architectural expertise, this paper proposes a methodology for 'co-drawings' as interactive, spatial frameworks, pertinent tools to articulate multivalent public space and empower collective imagination. The authors have a 'co-drawing' installation in Berlin the week before the Madrid conference, and will report accordingly.

Riyadh: Saudi Arabia Capital City Loving & Hating Modern Urbanism: A Cultural Counterpoint

Beatriz Villanueva, bRijUNi architects

Francisco J Casas, bRijUNi architects

The Saudi Arabian way of life is specially evident in the organisation of the daily life in its capital city, Riyadh, house of the government of the nation. As many other significant new cities to be built after the second world war in the so-called developing countries, the master plan of Riyadh will be conceived by Doxiadis, according to the lines outlined within the TEAM 10. However, the modularly organised grid, with great prominence of the public space, will enter into a clear confrontation with the Wahhabi tradition and the legacy of the Bedouin way of life that makes up the particularity of the Riyadh citizen. With the aim of finding a space of encounter between the western ideas about public space, introduced by Doxiadis in Riyadh, somehow aligned with the modernisation of the country proposed in the 2030 vision for Riyadh unveiled by the Prince Mohamed bin Salman on April 2016, the present article analyse the preexistences and future possibilities of the particular society that lives in the capital city of Saudi Arabia.

Even though the failure of Doxiadis' strategy regarding the public space is evident, we also believe it necessary to note that in this article there is no clear conclusion. The fact that clear lines of action can not be established regarding the public space is mainly due to the complexity of the social relations that occur in the city. In spite of having an overwhelming Muslim majority, Riyadh is a multicultural city that, however, can not be cosmopolitan, since it prohibits any expression of culture foreign to the Saudi country. This fact, together with the obligatory genre segregation and the excessive desire for privacy of its inhabitants, leads to a feeling of distrust that makes it very difficult to imagine the ideal public space.

Nevertheless, the modernisation that the government, at the hands of the heir prince, is carrying out in the country, is having consequences that could be translated directly into the design of the public space. The overwhelmingly young population of Riyadh feels freer and is clearly showing their desire to increase the social relationship among the inhabitants of the city on the rare occasions when they can do so.

The woman, relegated to the background for too many years, is seeing her rights increase rapidly and she is becoming a key piece of this modernisation. Women and children are the protagonists of the public space and are outlining with their behavior the keys to the design of the future public space of Riyadh.

Urban planners should be aware to the Saudi woman, capable of giving the necessary keys for the design of a successful and inclusive public space that responds to the future needs of a growing, complex and interesting city like the capital of Saudi Arabia.

One Site, Many Public Spaces: Considering Hannah Arendt's Idea of Public Realm in Manshiya (Tel Aviv)

Tulay Atak, Pratt Institute

What makes our public spaces today? Is it the ownership of the land, or civic roles assigned to a place, or users and their interactions? What kind of role does architecture have to play in the making of public spaces? Does it provide monumentality, performing the role it has traditionally played in representing power and hegemony? Does it program rituals and activities, as it has done throughout history? Or is it a material assembly on the level of the ground plane from landscape to pavements? Furthermore, in a world where the word “public realm” connotes the immaterial, and the word “public” becomes interchangeable with “social,” what does the design of public spaces entail?

I will address these questions by critically considering the case of Tel Aviv's Manshiya neighborhood and its history from 1948 onwards. Initially a village where Jews and Arabs could live together, it was partially destroyed during the war of 1948. In 1963, it was the site of an important international competition organized by the Tel Aviv municipality. Competition entries included a proposal by Jaap Bakema who emphasized public spaces and their relation to private spaces in the making of cities. The project drew the attention of critics (and later historians) like Kenneth Frampton and Mafredo Tafuri. Bakema's project and other competition entries correspond to a moment when architecture had a role in the design of public spaces in the shape of megaforms and megastructures. Yet none of the competition projects were realized. In today's Tel Aviv, the area has become a park and boardwalk along the Mediterranean Sea, with private development marking its edges. Considering the history of this area along with alternate visions and designs for this site reveals a history of public space in a specific geography. It also reflects light on what roles architecture has assumed in the design of public spaces.

I will address the specific history of Manshiya with Hannah Arendt's theories of public realm. Arendt's idea of public realm corresponds to spaces that are not simply shared because they are in-between buildings or other privately owned structures. On the contrary her notion of public realm is one that is agreed to be shared and has clearly marked boundaries. For her the demarcation of boundary, *nomos*, ensures the existence of private realm. Her example is a table, an in-between that brings people together, but also, and by necessity, separates them so that everyone can occupy one place. Public space in her thought is a space that contains not just different viewpoints, but different projections as well.

Taking Hannah Arendt's idea of public and private realms as its basis, this paper will provide a critical analysis of the visions and designs for Manshiya. It will take landscape and ecology into account along with architecture and infrastructure. By focusing on Manshiya, it will provide an international panorama of urban design and a history of the roles architecture has played in the design of public spaces since the sixties.

An Intersectional Analysis of Urban Public Interiors

Karin Tehve, Pratt Institute

At first glance, the terms “public” and “interior” suggest an essential opposition, if we consider spaces only by physical type (“plaza”) or use (“assembly”), but it is a constellation of ideas, actions and physical characteristics that produce any public space. For educators and designers, the study of urban public interiors represents the opportunity to problematize normative and monolithic definitions of “the public” by looking at the production of “publics” across use, scale and typology; to do this effectively requires looking through methodological lenses as diverse as the spaces we hope to engender.

Between 1961 and 2000, New York City utilized a zoning resolution that offered private developers the ability to add area and height to building projects in exchange for space given back to its citizens. These spaces are now known as POPS (privately-owned-public-spaces). POPS include plazas, arcades and remarkably, many interior spaces (Kayden, 2001).

“Public” often refers to spaces in which free speech or assembly can be enacted; however, the US Constitution does not support these protections for interiors, whether publically or privately owned (Kayden, 2013). Extraordinary events of speech and assembly amplified by media are critical to the praxis of democracy, but they are not the only spatial manifestation of a body politic, only amongst its most visible. Interior public spaces support smaller everyday modalities. Their design should afford opportunities for sustained or habitual occupations to experience difference (Young, 1990) and to foster critical weak-social-bond networks (Granovetter, 1983). A multiplicity of public scales are critical to civic life.

What can be gleaned from the shortcomings of existing interior urban public spaces must be understood as an aggregate, as complex as the populations they are to serve. The best known interior POPS- the IBM Atrium and Trump Tower- have been held up as examples of the privatization of the public sphere (Kayden, 2001; Miller, 2007; Woodward, 2012; Stringer, 2017). Their critics emphasize the encroachment of private programs into public zones and violations regarding hours of operation. Limiting critique to these issues enables “public” to be defined as simply “physically accessible”, and does not assertively require a distinction between “public space” and “programs that require public access”. One could easily mistake these particular spaces for opulent corporate office lobbies. They exclude those with insufficient cultural capital (here, a combination of familiarity and privilege) to feel welcome to use these spaces (Bourdieu, 1979). When internalized rules inhibit entry to any space, neither those excluded nor that enculturation are evident to whom those rules do not apply; thus, the space might be erroneously understood as serving THE public, as those excluded and the problem itself are invisible (author, 2017).

Using the term “public space” without qualifications is in itself a form of appropriation, as the term occludes the complexity the issue. Analysis of urban interior public spaces requires a consideration of its nested scales and reveals subtle (yet effective) means of exclusion. These details, understood together, can inform the design of more inclusive public spaces across use, scale and typology.

Detroit Living Amid Ruins

Ines Martin, University of Virginia

Luis Pancorbo, University of Virginia

Public spaces and monuments act as the material representatives of historic memory of traditional cities. There is an international consensus to value, catalog and preserve these spaces and buildings, both for their heritage, as well as their cultural and historical value. In contrast, certain American urban agglomerations, like Detroit, which has a clear industrial origin, the historic memory of the city is materialized not in its public spaces, which it lacks, but in its productive spaces. Unlike the risk of terrorist attacks to public spaces, these productive spaces risk abandonment and progressive deterioration. They suffer this fate due to the lack of awareness, both by citizens and institutions, to their importance as carriers of the foundational DNA of these societies. This is leading to their disappearance in the not too distant future.

These productive spaces were initially linked to industrial structures that sometimes reached global relevance. This is the case of the Ford Motor Company. Their industrial philosophy that was able to rename an era of human civilization was of enormous influence in all areas of Western culture. They are the paradigm of this situation.

The city of Detroit is structured around the ruinous remains of this industrial civilization. In these ruins the memory of the city has been encrypted. However, the patrimonial valuation of this type of monument is far from that enjoyed by traditional monuments in other areas, such as Europe.

The lack of appreciation of the industrial ruins of Detroit is due to various factors that are discussed in the article. This attitude follows a historical pattern similar to the Kubler-Ross model in Psychology, including the following phases: denial, contempt, exaltation and acceptance.

This text exemplifies each of the phases of this pattern using authors such as WG Sebald, Peter Blake, and Camilo Jose Vergara, and artistic movements such as Ruin-Porn, and advocates to achieve the necessary acceptance and integration of these facilities in the urban heritage.

To achieve this last objective, this paper proposes a series of conceptual strategies that are based on the reformulation of these ruins as:

- supports for new ecosystems, using their material condition;
- supports of social activities hybrid between the public and the private, using their spatial condition; and,
- supports for new urban transportation nodes, reactivating the railroad network that linked these old industrial facilities when they were in use and which is now also derelict.

In a city devoid of public space like Detroit, the enormous ruins of the old automobile industry represent a unique opportunity for the articulation of spaces at the urban scale. The loss of these structures will indicate an irreparable damage, not only for the preservation of the memory of the city, but also for its possibilities of future evolution.

The Two Chamizal Parks

Ane Gonzalez Lara, University of New Mexico

Borders, and especially international borders, are usually represented as a very clear line in the space. These borders are also often conceived as static and accurate lines. But while nowadays some try to make these borders even more present and static in our country, the reality is that these lines have fluctuated with time and are frequently contested.

The Chamizal neighborhood in El Paso and Juarez is a zone that is currently divided between two countries, but that was once unified. The Chamizal dispute was originated by a change in the course of the Rio Grande river, which was originally defining the geometry of the US/Mexico border.

The result of this shift of land resulted in the United States giving 600 acres of land back to Mexico. This land contained the Chamizal Park that is now divided by the US/Mexico border. The park spans on the two sides of the border, it is divided by the Cesar Chavez Border Highway and flanked by the Cordoba Crossing bridge and its two adjacent Border Customs.

The US side of the park is not very active nor a celebrated space in El Paso. However, it hosts the Chamizal National Memorial Cultural Center that according to its website is “a reminder of the harmonious settlement of a 100-year border dispute between the United States and Mexico. We celebrate the cultures of the borderlands to promote the same mutual respect that helped to diplomatically resolve an international disagreement.”

While this cultural center tries to celebrate the cultures of the borderland, prototypes of a concrete wall dividing these two neighboring countries are being tested. A wall that would be one mile away from the center.

The Mexican side of the park is greatly used by the neighbors of the area. The park is the biggest public space in Juarez and it contains an archeology museum. During the weekends, the park is activated by performances, street vendors, joggers and, families.

Using this park as a background, I have asked the students enrolled in the architecture studio that I am currently teaching to think about possibilities to inhabit, re-connect, remember and activate the two sides of this contested and divided public space.

Following the outcome of the studio and analyzing other proposals, this paper studies the history of the Chamizal Park, its current condition and describes proposals created by students to utilize this space as a laboratory of ideas to celebrate the links between the United States and Mexico.

Domesticated Landscapes. Urban Appropriations and Liminal City in the UAE

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Over the past 45 years, the United Arab Emirates has had a remarkable rapid transition that has encompassed a wide spectrum of change -social, urban, economical, etc.-, achieved without serious dislocation. Its seven emirates have grown over time. In their construction remains their original motives, but with time they have solidified and modified the motives of its very development, in many cases with monumentality driven by the vision of their leaders but without monuments that time provides in a natural manner. Trying to define its urban dimension, or to adequately discuss it, requires a laborious and extensive research, we will limit ourselves here to specific aspects that we believe enter into the consideration of the subject, domestication of urban voids. We want to shine light about the continuous process of influences, of exchanges, often of contrapositions between the urban facts and the ideal proposals of people inhabiting it. The UAE and its emirates, as other urban cities, can be studied as the product of the functional systems that generate its architecture, and therefore of urban spaces, and as a spatial structure. Indeed, these cities go beyond urban designs that host building environments, since they are also a recollection of human behaviours that assist in reshaping spaces lodged with history and cultural meaning. Every building, alley, empty land -space-, is a place that carries intentions more or less noble, more or less conscious, and more or less aesthetically expressed. These inanimate spaces are the scenarios that give life to the memory of the city, within these structures come the knowledge of the city. These spaces are the ones that we consider relevant, as they become instruments of social discourse for inhabitants in the UAE.

The paper focuses its attention on a specific “terrain vague in Sharjah, where we can find a vacant plot of land of around five km²; a former military plot of land that used to be a helicopters training field that now has become a hectic set of 32 cricket grounds. The difference with other improvised cricket grounds in the UAE is that this one is now legally available for migrants (from India, Pakistan, Bangladesh and Sri Lanka mainly) through a complex self-managed leasing formula.

This new urban landscape is managed by the users themselves, shaping a new landscape (cricket pitches and circular limits), maintaining their surfaces by raking them every week or installing seating areas, light floods or light architectural elements.

The paper will explore how many of these exterior conditions (not strictly defined as public space) of the UAE, is occupied by migrant groups in order to establish a sense of belonging and as a way to extend their social private activities into the public realm due to a lack of intimacy within their own dwellings.

These vacant spaces become, somehow, a new domesticated landscape through these “rituals of belonging” as a way of appropriating the city.

The Politics of Repair in a Post Colonial Context: A Minor Case Study

Cathi Ho Schar, University of Hawaii At Manoa

Daniel S. Friedman, University of Hawaii At Manoa

The University of Hawai'i at Mānoa is the flagship campus for the country's most remote and westernmost state. It lies over two thousand nautical miles from the nearest continent, roughly in the center of the Pacific Ocean, the largest division of the world hydrosphere. Notably, until 1893, Hawai'i was a sovereign kingdom. In 1959, the federal government annexed it as the last and newest of its fifty states. This context—Pacific, Asian, Hawaiian, American, postcolonial—constitutes both geographical and cultural orientation. These singularities vividly connect local and global realities, resulting in a uniquely Hawaiian place of learning.

This paper follows a single case study at Manoa, where the senior leadership of the university invited the newly established University of Hawaii Community Design Center to address the chronic disrepair of campus buildings and public spaces through low-cost, high-impact design interventions aimed at transforming the perception of public space and campus character. While this request was conditioned by the half billion dollar deferred maintenance backlog facing the university; the more significant issue is campus identity and experience in a postcolonial reality, framed by the expectations and entitlements of Hawai'i's indigenous population, and by pressure on the university' to act as "an indigenous serving institution."

Our projects introduce alternative methodologies for campus design through scaling operations that explore the effects of wear and tear in four rectangular transects and inventories of the small aberrations and interruptions that detract from campus legibility. Based on the analysis of these four transects, we develop a taxonomy of defects, and strategically leverage repair and maintenance protocols that can simultaneously transform campus identity, wayfinding, and placemaking.

Native space is smooth, colonial space is striated, to use terms popularized by Deleuze and Guattari. In *A Thousand Plateaus*, Deleuze and Guattari expressly reference Polynesian navigational practice in contrast to European cartography, evidence of smooth space par excellence. The case study describes and critiques our application of these subtle distinctions in the repainting, repaving, and resurfacing of selected campus locations, creating public space that seeks to embody indigenous systems of wayfinding and visual nomenclature, in particular through references to Polynesian navigational stick maps and the Hawaiian star compass. Through tactical interventions and interpretation, our use of indigenous artifacts "reprogram" the surfaces and fissures of Hawai'i's contemporary campus. These minor but connected interventions define a public space within and between indigenous and conventional western understandings of position, direction, and orientation.

Copacabana Non-public

Eduardo Aquino, University of Manitoba

The devastation of the Amazon forest by multinational meat producers, the launch into space of a Tesla Roadster by Elon Musk, shootings in public schools, and the development of a new Trump tower in a big city somewhere in the world are just some examples of spaces being taken over by the relentless neoliberal advances into places that were once shared or not claimed at all, or simply considered “public.” This process of takeover happens persistently in our cities, through ever-subtle or overstated methods by corporations and governments, by disfranchised groups or simply disguised by over-regulation. Starting from the premise that, in fact, “public space” does not exist this paper will explore the notion of “non-public” as a critical foundation for the new reclamation of our cities. This paper will play the devil’s advocate to counterpoint the frequent academic discourse that reference public space as a normalized urban entity. Taking on a shifted direction Non-public challenges the notion of what constitutes “public space” to change the standpoint that public space in fact does not exist. Instead of dancing around the subject, this paper will exercise the mapping of conditions that make public space in reality non-public—its constituencies and jurisdictions, its stakeholders and claimants, its crisis and promises. Non-public seeks to map out the real actors of public space to locate new strategies of engagement to transform its pseudo-public character by identifying policy and design strategies that reclaim urban spaces for more democratic citizenries.

Non-public will explore this venue through the example of Copacabana Beach in Rio de Janeiro, Brazil, as one of the most reclaimed and intensely occupied urban places in a large metropolis. This urban beach circumscribes a type of space endowed with a flexible mechanism for negotiation between people and places, economies and cultures, architectures and the city, differentiating from more stable urban structures defined by buildings or infrastructure, and circumscribed by the limitations and rules of the “public.” The city organization and enhancement of the urban experience can find more resources in the fluxes located on the beach. Fluidity, mobility, spontaneous feedback, and nonlinearity offer alternatives to the stability, predictability, and rationality of the city. Non-public identifies a territory characterized by a dynamic space, where urban agents are in constant transformation, generating a field of possibilities in the face of the stagnation of urban life. Through critical readings of this renowned “public space” and respective art and design projects that shrink and stretch its “public” qualities, this paper will propose alternatives to the organization, involvement and allocation of urban places. Non-public reclaims the return of a post-urban possibility to reflect on new notions of “public,” seizing upon the dynamics of the beach, looking back to the city, and through the example of Copacabana envisions a strategy to propose another design, another public space, reclaiming the urban precinct to a new constituency, to invest on the promise of a new role for urban design, architecture and urbanism as new forms of resistance.

Economic Impact generated by the Public Open Space: Case Study of Klyde Warren Park

Koichiro Aitani, Texas A&M University

Shohei Yoshinaga, Texas A&M University

“Editing Urban Design” is defined as the methodology of urban development with continuous partial developments and upgrades that maintain historical and community context. This discussion was focused on the “Urban Catalyst” methodology. The word ‘Catalyst’ is originally a chemistry term; however, in this research an “Urban Catalyst” is what stimulates a positive chain of effects within urban areas for regeneration.

Its characteristics are different from the conventional land development method such as the “Scrap & Build” approach that is applied widely in urban regeneration. An Urban Catalyst is used to prompt a chain reaction and positively affect the surroundings beyond the limits of the developer’s intentions or actions. It also discusses the characteristics and issues of the Urban Catalyst methodology including; how to find an input location and effect, transformation of the immediate context, and neighbors after the chain reactions. Four strategies of Urban Catalyst are also discussed briefly: Conservative Surgery, Minimal Intervention, Urban Acupuncture, Urban Infill.

Klyde Warren Park is Dallas’s new town plaza which has literally and figuratively bridged the city’s downtown cultural district with the burgeoning mixed-use neighborhoods to the north, reshaping the city and catalyzing economic development. The park brings Dallas-sites together in new ways, with dozens of free activities and amenities to offer every week, from concerts and lectures to games and fitness/yoga classes, all within a beautiful five-acre urban oasis.

The park decks over the sunken Woodall Rodgers Freeway, which had been an imposing barrier between downtown and the densely populated Uptown neighborhood. Spurred by a study in 2002 that confirmed the feasibility of a “deck park” over the freeway, leaders of the Dallas business community formed the non-profit Woodall Rodgers Park Foundation, which was responsible for the operations and maintenance of the new park with its operating hours from 6am to 11pm. After ten years of planning, design, fundraising, and construction, Klyde Warren Park opened in the fall of 2012 and was immediately embraced by the community, cementing its place as a world-class urban park.

In conclusion, this paper discusses how the economic impact spreads from the location of the park to the surrounding neighborhood, by the analysis of amount of visitors to the districts and increases of property values. And those impact will be visualized on the urban map.

Public Domesticity. The Beach as a Model

Silvia Colmenares, Universidad Politécnica de Madrid

It could be stated that the postmodern vision of interlocking contradictory categories has affected the public/private dichotomy, perhaps more than any other. With the loss of faith in the collective that came by the hand of the end of WWII, the individual became more and more ubiquitous while at the same time more homogeneous in the new globalized context.

The blurring of the identification of the private with the interior has run parallel to the increasing development of information technologies. Today, there is not such a thing that can be defined as private in its own right, because it depends on the condition that the individual gives to it. Domestic attitudes can happen everywhere. They no longer need any physical filter to be defined as intimate.

The temporary appropriation of public spaces has become a way of pointing out the failure of their institutional management. This kind of citizen involvement in the collective construction of public meaning - that flourished for the first time during the sixties as 'action urbanism'-received several names through the following decades: 'tactical urbanism', 'guerrilla urbanism', 'pop-up urbanism', 'hand-made urbanism' or even 'ecological urbanism'... Through the whole system of locally produced opportunities of engagement, a tendency to execute this appropriation by the performance of domestic scenes can be identified.

Therefore, the aim of this paper is to describe a set of strategies that reclaim what is public by showing its capacity to be used as private, and among those, the 'beach' will be described as a model. Being the perfect incarnation of the idea of human fellowship in the open air, the beach regulates itself through its very unprogrammed usage. This might be the reason why its genuine conditions have been tentatively replicated at the core of some highly urban scenarios. However, this experience oriented design examples seem to be just a rehearsal of what a real beach should be. Relying on the physical properties of the sand and the colourful atrezzo accompanying sunbaths, they fundamentally fail to engage the radicalness of the beach concept. If the topical image of relaxed individuals is superseded, by-default distribution of space, access control, cleansing and security issues come to the fore. At a time when it is no more 'under the pavement', the beach can still gear the debate about public space in our cities.

Paradox of Public Space : Chapter 91 and the Clean Water Act

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This essay discusses two pieces of US legislation, roughly 100 years apart, as they relate to shaping radical formulations of public space today. Chapter 91 of 1866 and Clean Water Act Section 303(d) of 1948 are founded on conceptualization of the sea as a shared and unifying public space. Many regulations of public space are bounded by cities, nations, populations or species. However, these two legislative acts result from recognizing the atmospheres and flows through which all things are co-dependent – a fundamental, yet profoundly under-regulated and under-designed conception of public space.

Hugh Ferris's 1916 NYC zoning code drawings evaluate shadow casting by built mass on the public domain of the street. These drawings morph depictions of solar angles into buildings. Architecture and atmosphere are mutually influential. This is a localized environmental 'footprint' – an indirect, yet calculable influence between a constructed artifact - the building, and resultant public atmosphere - the street.

The legislative acts dissected here radicalize this conception of public space by considering environmental footprint as globe encompassing. As the global urbanized community is increasingly aware of the magnitude of its collective footprint - where agricultural practices along the Amazon River have measurable impacts on Canadian fisheries - regulations of environmentally expansive consciousness must be progressed. As with Ferris's work, such legislation only has effect if architectural counterparts-to and manifestations-of such legislations are designed to reconcile cities with vast environmental territories.

This essay focuses first on describing and analyzing these two legislative acts.

Chapter 91 of Massachusetts of General Law, enacted 50 years before Ferris's work, derives from US Colonial Ordinances, which hold that air, sea and shore are public. Wherein lands are bought and sold, the shore is not: it is set aside to serve public good beyond parcels, neighborhoods or cities. Urban waterfronts are to serve the public good of a vast global constituency united through the sea.

The Clean Water Act(CWA), Section 303(d) enacted 30 years after Ferris's work aims to reduce degradation of globally shared and valued water resources by regulating pollutant discharge caused by local urban activities. As such, while Ferris's drawings predict architectural form, the CWA incrementally retrofits cities to account for new conceptions of global participation.

This essay focuses next on introducing two types of projects as direct manifestations of these legislations in the urban environment. The projects are dissected to discern how architectural devices and forms negotiate the city with a new conception of the globe encompassing environment as a public realm.

The conclusion of this essay is apparent yet under-actualized. The truest public space – inclusive, indirect, and vast- is the field and flow of global resources, participated in by all. To recognize this public space, legislation must eclipse all conventions of urban boundary. Yet, to realize this public space, the consideration of global resource must be designed into even the most discrete space of the city- a paradox of public space.

Images: Global networks of land and sea; pipe end connections from roadway; duckweed bloom from roadway outfall.

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