ALTERNATIVES TO THE PRESENT

AMPS Proceedings Series 16

AMPS PROCEEDINGS SERIES 16

AMPS, Kent State University
1–2, November, 2018

Alternatives to the Present

A Conference on Architecture, Urbanism, Sociology, Development & Planning

ARCHITECTURE_MEDIA_POLITICS_SOCIETY

Amps

EDITORS:
Jeff Kruth & Steve Rugare

SERIES EDITOR:
Graham Cairns

PRODUCTION EDITOR:
Eric An

AMPS PROCEEDINGS SERIES 16 ISSN 2398-9467

INTRODUCTION

This publication is the product of the conference Alternatives to the Present held at Kent State University's Cleveland Urban Design Collaborative in the city of Cleveland, USA, in 2018. The premise of the conference and this publication is captured in the original call:

The New Urban Agenda of the United Nations presents itself as a blueprint for governments globally. Through it, UN-Habitat seeks to combine the material, social and environmental agendas molding the urban world. The American Planning Association reflects this, advocating for planning that promotes social equity, inclusive communities, and expanded opportunities for all. The International Union of Architects speaks of revolutionizing design to ensure sustainable human settlement, while the AIA champions livable communities. In the UK, the RIBA links housing design and social inclusion and the National Housing Federation connects the provision of homes to public health. All this reflects the field of sociology and geography with the ISA identifying cites as the principle site of social conflict and political contestation and the American Association of Geographers linking the notions of resilience and urban justice.

This apparently holistic view suggests that 20th Century top-down and disciplinary reductive understandings of the urban condition, such as those attributed to the Athens Charter, are a thing of the past. It also suggests a scenario in which social equity is fully integrated into notions of development. However, even a cursory glance at the reality of early 21st Century urbanism shows this is clearly not the case. On the one hand, individual disciplines still tend to work in isolation and even in competition, while on the other, Neoliberal agendas still represent the raison d'être of most development projects. The Alternatives to the Present conference seeks to critique the dichotomies involved in this increasingly confused scenario by bringing together various disciplines to interrogate the diversity of factors either limiting or activating the possibilities of an equitable urban future.

This publication, and the conference which it documents, were organised by the research organisation AMPS, the academic journal Architecture_MPS, the Department of Architecture at Kent State University and the Cleveland Urban Design Collaborative. It formed part of the AMPS program of events, Housing – Critical Futures.

TABLE OF CONTENTS

FACTORS AFFECTING THERMAL COMFORT LEVEL IN BUILDINGS - A COMPARATIVE STUDY OF TWO BUILDING IN THAILAND

Author:
ARIYA ATTHAWUTTIKUL

Affiliation:
KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG, THAILAND

INTRODUCTION

Design of functional spaces that suits the needs of various residents is a very important aspect of low-income residential building design. At present, in response to a new government policy, low-income housing projects are classified into 5 categories: (1) small house in a crowded community, (2) commercial residential building, (3) low-price condominium, (4) council flat housing, and (5) apartment or dormitory. The space in all the buildings in these projects is divided into 3 zones: sleeping zone, multi-purpose zone, and toilet and laundry zone. Architects utilize different design principles in designing buildings with various kinds of functional spaces that suit different needs of individuals. To achieve a good design, several analyses need to be performed first such as an analysis of the building location, of the building functional characteristics, and of the surroundings.[1] At present, the amount of energy consumption in Thailand has doubled the amount consumed 30 years ago, and the trend is still continually increasing soon. Public concern about this aspect has made conservation of energy become a general interest of every sector, including building architects.[2] In this country especially, a huge amount of energy is used for providing thermal comfort during the days for various office buildings and for a lot of residential buildings during the nights. Therefore, the focus of modern architects is on designing buildings to provide enough thermal comfort while consuming low energy. As for a minimum standard for thermal comfort that a building designer in tropical countries should aim for, ISO7730 suggested predicted mean vote (PMV), an air temperature (t_a) under 30^{o}C, and an air velocity in excess of 1 m/s. In terms of social equality, planners and developers of low-income housing should ensure that their buildings should provide sufficient thermal comfort level; designing such buildings should focus on cooling areas in the building with natural ventilation and reducing electrical energy consumption on lighting and air-conditioning.

Architecture design for tropical zone

This kind of design is based on high humidity of tropical climate, low level of in-building ventilation, and high temperature during the day and night.[3] Typical local architecture shows clearly the components of buildings that can be adjusted to face the changing weather on an annual basis. These components

are such as highly elevated ceiling for the space under the first floor (The first floor of a Thai house is typically constructed at least 2.5 meters high above the ground and the ground floor functions as a living room) highly extended eaves for preventing the rain from falling into the house and for providing ample shade for the house, steep roof for keeping the temperature low inside the building, semi-open terrace for getting close to the nature, and selection of building materials that provide good ventilation.[4] The authors of these two papers reported that several architectures have designed buildings to maximally prevent heat from sunlight to enter the buildings and to maximally cool the buildings by copious ventilation in the afternoon to at dusk according to the local climate as well as to reduce energy consumption inside the buildings.[5]

Psychrometric chart

The process of architectural design for constructing a building that suits a local climate starts from investigation of design options. A basic tool for investigating thermal comfort is psychrometric chart. This kind of chart, shown in Figure 1, gives insights to architects regarding climate and thermal comfort. Specifically, it graphically shows a thermal comfort zone in a special plot of temperature versus humidity.[6]

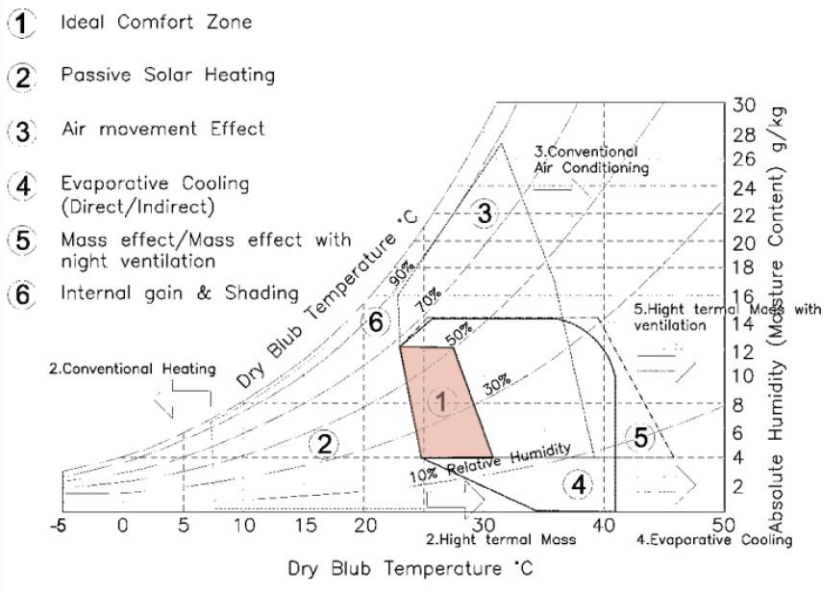


Figure 1. A psychometric chart for building design that does not require usage of air conditioners

Figure 1 shows a psychometric chart for building design. It is commonly used for improving thermal comfort for buildings in the tropical zone. The chart informs architects that a building design needs to take ventilation, air movement, and air flow speed inside the building into account. Factors pertaining to this chart include air movement effect. It suggests increased air movement speed to compensate for the heat generated by users' activities. Since the temperature inside a tropical building during February to October should not be over 33°C, natural air movement inside the building may not be enough for effective heat dissipation and a mechanical air conditioning system may be required to maintain a proper thermal comfort level.

Passive cooling

This kind of design are on two major factors: (1) physical requirements of a passive design without a mechanical air conditioning system and (2) mixing of architectural components for good ventilation that strongly affects the thermal comfort in residential buildings in the tropical zone.[8] The minor factors associated with this kind of design are such as the following: Large shading component for blocking direct sunlight; Sufficient insulating component for indirectly lowering the high temperature from direct sunlight; Opening in ceiling and window components for better ventilation; Mass reduction of wall component for minimizing heat accumulation; and Thermal comfort is a concept of environmental standard pertaining to temperature and level of comfort in the context of tropical zone, especially in the Southeast Asian countries such as Thailand.

Buildings of two case studies

The two case studies are a case study of a student dormitory of King Mongkut's Institute of Technology Ladkrabang (KMITL) and a case study of a government-supported at Romklao residential building, Ladkrabang district, Bangkok, Thailand. The weather condition of these two cases was the typical hot and humid condition found in a tropical zone. The average temperature was 21-35 °C; the average wind speed was ~2.0 meters/sec; the relative humidity was 45-95%.[7] The local winds were of two types: a northeastern monsoon wind during winter season and a southwestern monsoon wind during summer and rainy seasons. The directions of these winds, shown in Figure 2, were used as a variable for comparing the thermal comfort levels associated with various components of the architectural design of the buildings.

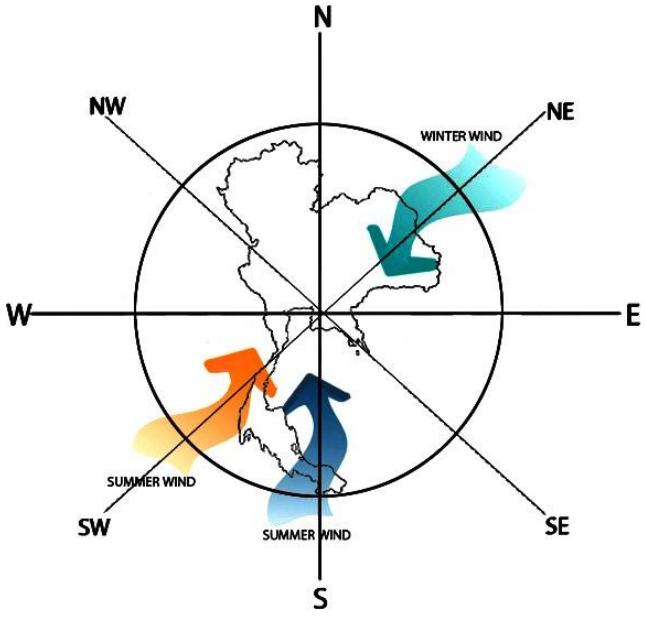


Figure 2. Directions of the local winds blowing through Thailand

KMITL DORMITORY AND ROMKLAO RESIDENTIAL BUILDING

This study was an investigation of design components that affected the thermal comfort in a building in a tropical region, with a main objective of developing a guideline for designing buildings in tropical and similar regions. The steps in the investigation procedure are as follows. (1) Surveying and collecting

preliminary data: these data were of 2 types: (1.1) primary data from surveys, experiments, and simulations; and (1.2) secondary data from documents, books, and related technical papers. (2) Construction of 2D and 3D models for simulation with AutoCAD software then using them in a simulation with Revit BIM software to find the data on thermal comfort level in these two buildings. (3) The data were compared with respect to the components of the two buildings that affected the thermal comfort level, i.e., the temperatures, light intensities, and relative humidity's were compared and related to the components in both buildings. The locations and directions of which the buildings faced the sun and local winds were also compared, as shown in Figure 3.

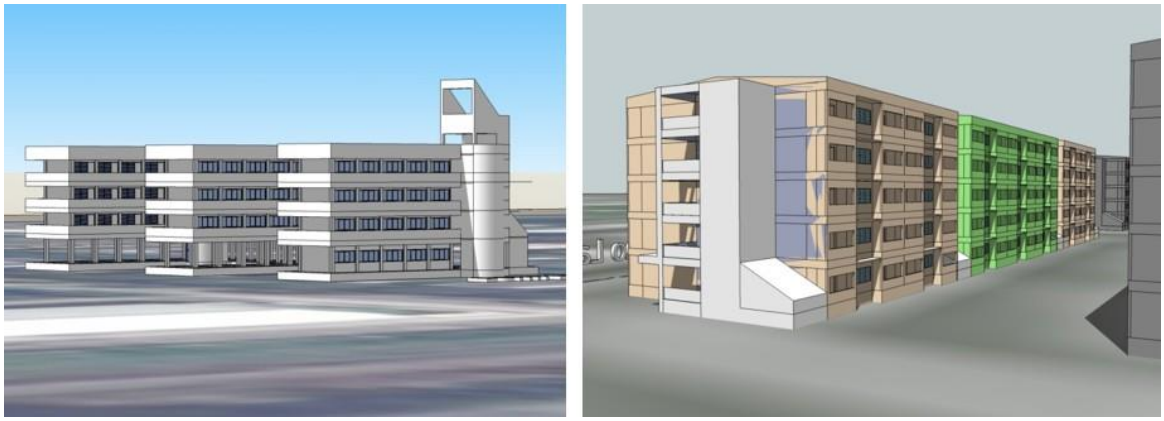


Figure 3. AutoCAD models of:

(a) KMITL dormitory and *(b) Romklao residential building*

The KMITL dormitory faces the east whiles the Romklao residential building faces the north. In July, the local wind blows in from the southwest, bringing with it some heat, and another local wind blows in from the south, bringing with it some humidity, as shown in Figure 4.

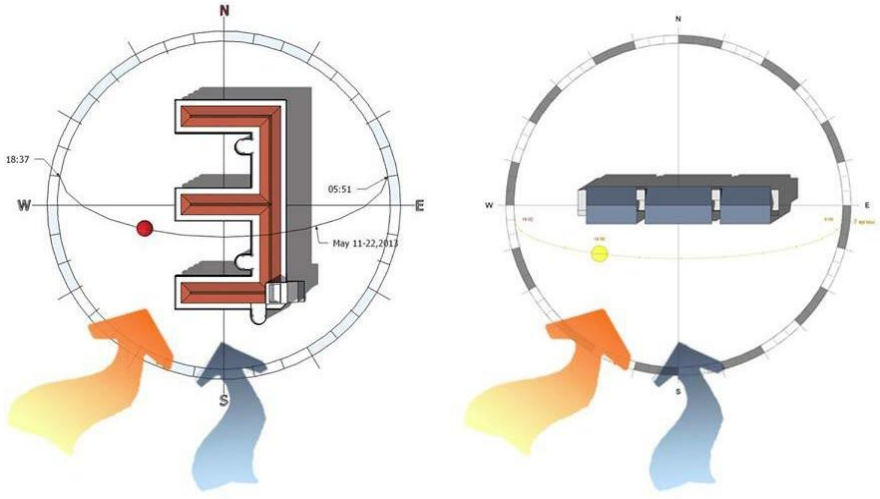


Figure 4. The directions that the two buildings faced the sun and two local winds;

(a) KMITL dormitory, *(b) Romklao residential building*

The local winds blow into the south and southwest sides of KMITL dormitory while they blow into the back side of Roamklao residential building. Openings to the wind on the walls of these buildings were different. Thermal dispersion by local winds was simulated on 3D models of the buildings with architectural Revit BIM software. The objective was to investigate the thermal convection around and into the buildings. The results, illustrated in Figure 5, show that the southwest and south winds blowing at the buildings would flow into the openings in the wall of the buildings and ventilated hot air out through the openings at the top of the buildings. The cold local winds represented by a green color blow at the buildings, and the vented air coming out at the top of the building are much hotter, represented by the orangey-red color.

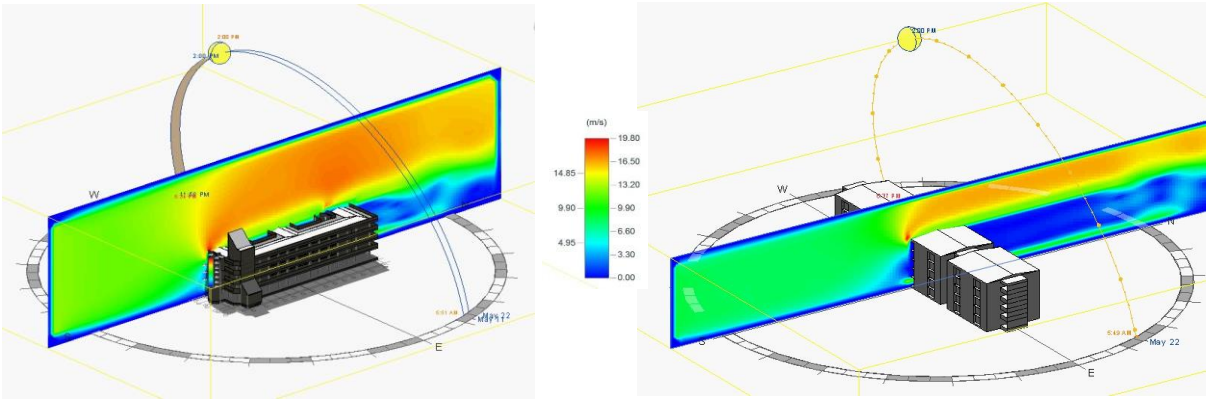


Figure 5. Direction and temperature of the airflow around

(a) KMITL dormitory and *(b) Romklao residential building*

Figure 6 shows a bird-eye-view of the simulated thermal and wind flows around the two buildings. It was found that the local wind got blocked because the openings on their walls were closed during the day as the sun moved overhead from east to west, so very little wind flowed into the buildings. The cold wind blowing into these buildings is depicted by the blue regions in the figure while the hot wind leaving the buildings is depicted by the orangey-red regions.

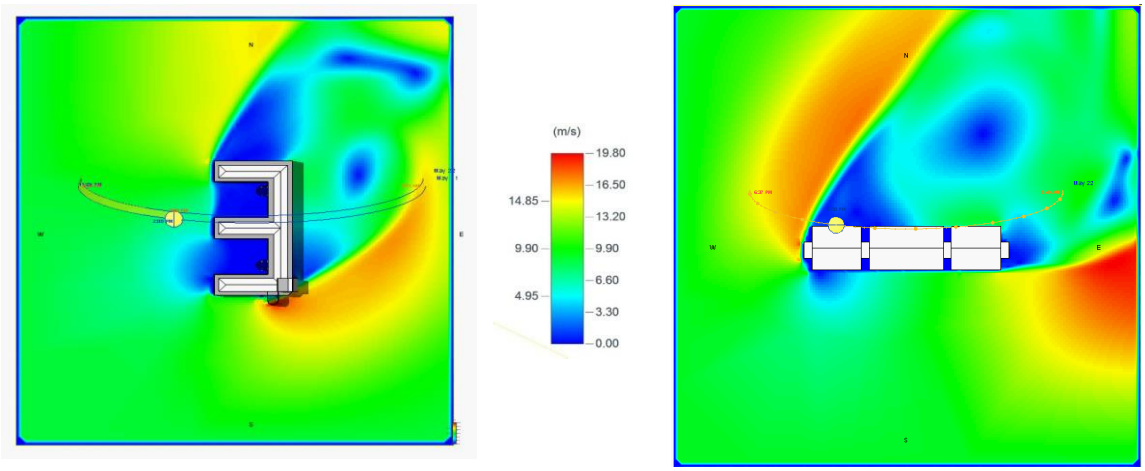


Figure 6. Direction and strength of the airflow when coming contact with 2D and 3D models by showing on the top-view of

(a) KMITL dormitory and *(b) Romklao residential building*

Figure 7 shows a side view at the ground level of the two buildings. Cold (blue) wind blew in from the left of the buildings and hotter (orangey-red) wind flowed out of the building back in the same direction. The speed of the cold wind was 9.90 knots/sec.

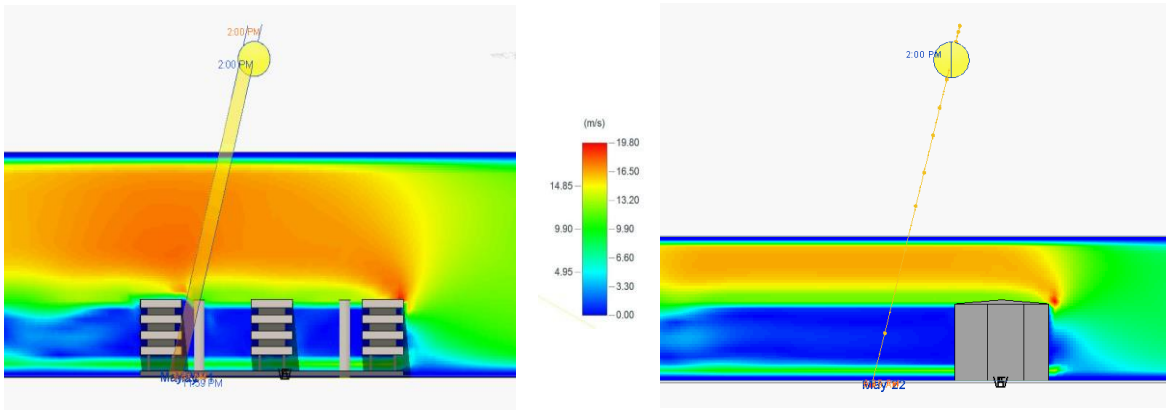


Figure 7. Direction and speed of the airflow when coming contact with 2D and 3D models by showing on the side-view of

(a) KMITL dormitory and *(b) Romklao residential was building*

The ground floor of the KMITL dormitory was unblocked by any big area of walls, so the wind could flow through it relatively easily, making the thermal comfort level of the ground floor higher than any other floors in the building. Temperature and humidity were collected using DATALOCKER modules for temperatures. The study of the temperature changes during each time of the day covered the temperature outside the building and inside the rooms of the second and fourth floor in the north, south, east, and west sides of KMITL dormitory and outside the building and inside the rooms on the third and fifth floor in the north and south sides of Romklao residential building. The components of the building design in each direction of both buildings were also explored. The results revealed that the temperature in each room on each floor was different. The researcher referred to the time in which the heat from the

sun conducted into the rooms e.g. the rooms on the higher floors of the buildings receive higher solar intensity and temperature than those in the lower floors as shown in the 3D models (Figure 8).

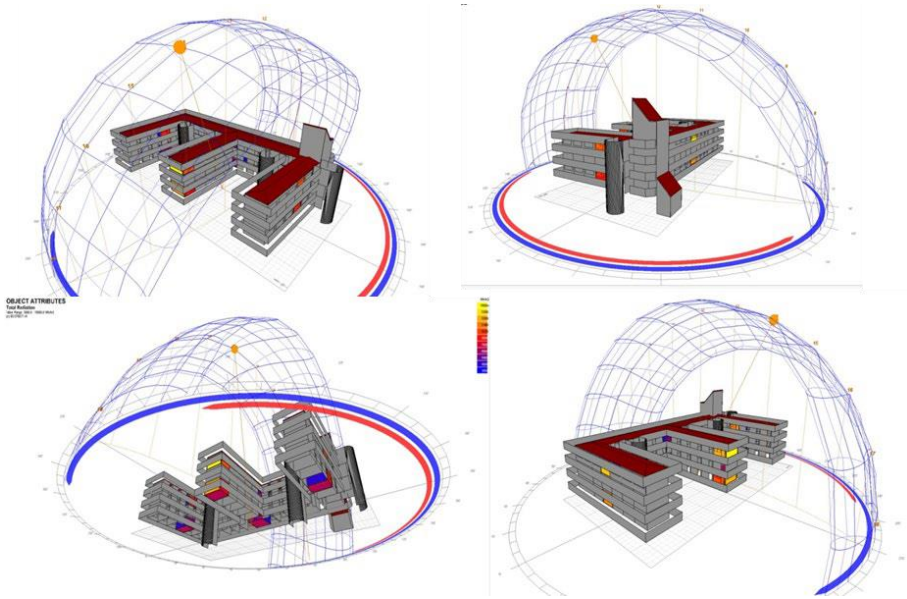


Figure 8. Light intensity around KMITL dormitory

(a)

(b)

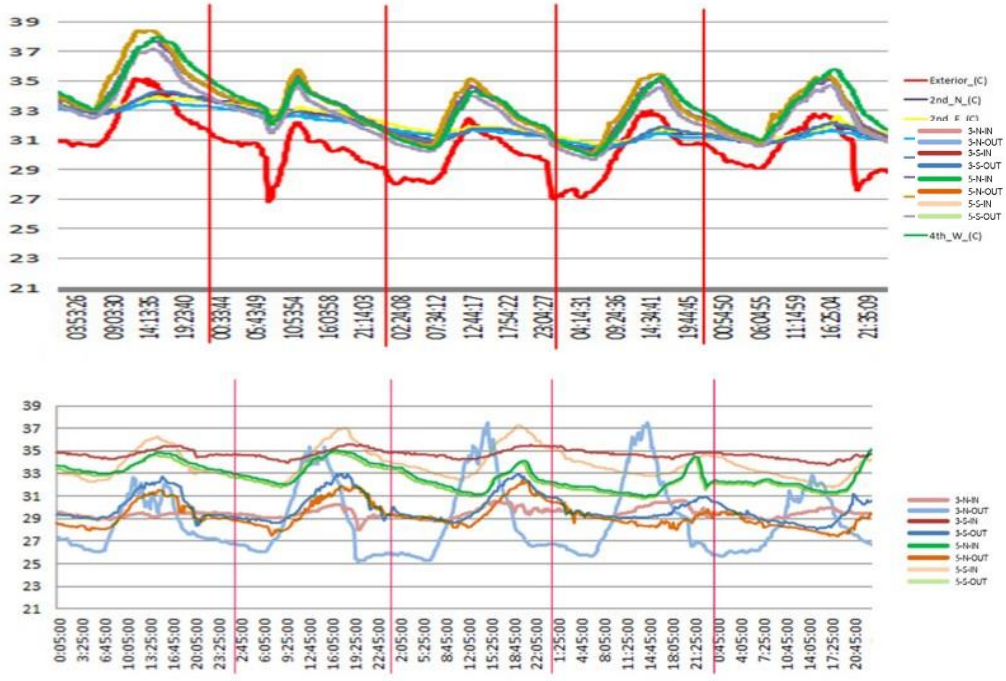


Figure 9. Direction and temperature intensity inside and outside of

(a) Romklao residential building and

(b) KMITL dormitory during different times of the day

Figure 9 shows direction and temperature collected from Romklao residential building and KMITL dormitory during different times of the day for 5 days. It was found that the temperature inside the rooms on the third and fifth floor in the north and south sides of Romklao residential building changed uncertainly throughout 5 days. However, the temperature change outside the building was similar, yet, delayed e.g. if the outside temperature was highest during 12.00-03.00 PM, the highest temperature inside the rooms would increase during 02.00-07.00 PM, especially during 01.00-04.00 PM due to the accumulation, ventilation, and radiation of heat from wall and roof of the building. The lowest room temperature throughout the day on the third floor in the north side was 29-30.5 °C, while the outside temperature was about 25-37.5 °C. It can be inferred that rooms in the directions that are not exposed to the sun throughout the day are not affected by thermal energy radiated from the roof. The temperature inside the rooms on the fifth floor in the south side, however, changed the most throughout the day from 32-37.5 °C. The rooms on the highest floor are exposed to the sun and directly affected from the heat radiated from the roof throughout the day. The temperature inside KMITL dormitory was classified into 2 groups; (1) the temperature inside the rooms on the fourth floor changed profoundly throughout the day from 28 °C in the morning to 38.5 °C during a hot day and gradually decreased during the evening to nighttime, and (2) the temperature inside the rooms on the second floor gradually changed from lowest temperature of approximately 30 °C to 34 °C. The temperature inside the rooms on the second and fourth floor in the north side was the lowest throughout the day due to the openings for wind ventilation and the building materials that block the direct sunlight. However, the temperature inside the rooms on the fourth floor changed considerably throughout the day due to the direct thermal radiation from the roof and the sudden temperature decrease from the local winds that ventilated the heat from the walls of the building.

The comparison of temperature throughout 5 days revealed that the building design and the directions of 4 selected rooms in Romklao residential building have different thermal comfort levels. On the other hand, 4 selected rooms from KMITL dormitory have similar thermal comfort levels as the building promotes a better thermal comfort to its residents. However, the building needs to control the thermal radiation from the roof on the fourth floor in order to achieve the thermal comfort standard, as shown in Figure 1.

CONCLUSION

An examination and analysis of 8 selected rooms in both residential buildings revealed that Room 3-429 North and 3-421 North were exposed to sunlight the most, while Room 3-204 South, 3-213 East, and 3-221 West received equal solar intensity. It can be inferred that sunlight shining into Room 3-429 West and 3-421 North provided an appropriate thermal comfort condition for the residents.

Regarding the temperature and light intensity in the three areas of the rooms in both residential buildings — (1) the door area, (2) the center of the room, and (3) the window area, Room 3-204 South and 3-213 East were exposed to the highest intensity of sunlight in the window area and the door area of Room 3-221 West was exposed to the highest intensity of sunlight.

The light intensity inside KMITL dormitory during the day was sufficient for daily activities such as reading, conversation, and eating, which do not require strong artificial light. However, excessive light intensity in some rooms such as Room 3-426 West could be reduced by curtain. Light reduction in some areas of the room should be sufficient for normal residents' activities but some efficient openings in the walls could help minimize residential lighting energy consumption.

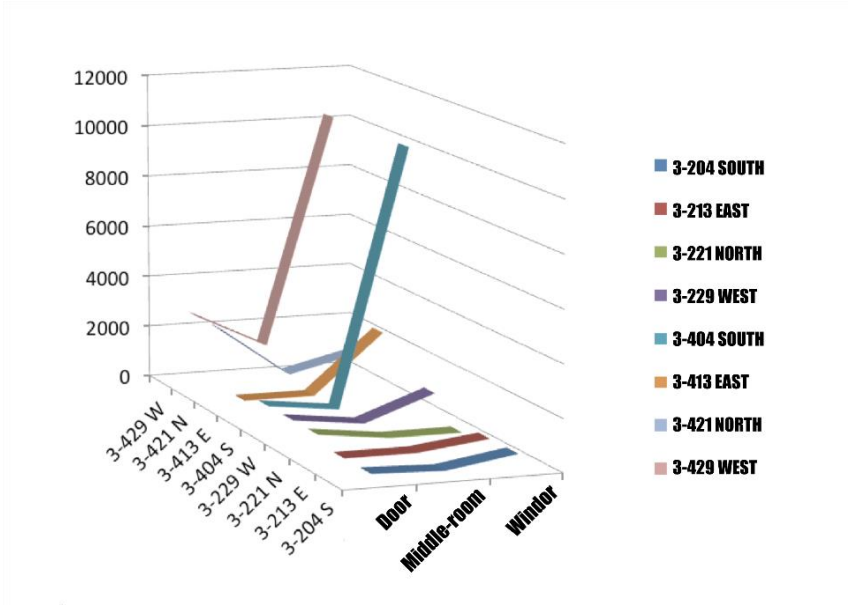


Figure 10. Light intensity in 8 selected rooms in KMITL dormitory

The elements of the building design that affect human thermal comfort in tropical countries can be classified into 4 factors as follows: (1) integration of various architectural components that affect human thermal comfort such as the direction that the building faces, local winds, and humid climate in tropical countries, and walls and openings should not block air ventilation or else the temperature inside the building during the day may be too high; (2) design of awnings should minimize direct sunlight incident on the walls, which will reduce heat accumulation in the walls; (3) design of open space to allow local winds to circulate inside the building and minimize heat accumulation in the walls; and (4) design of openings such as windows, doors, and balconies, especially in the north and south sides of the building, to permit only sufficient sunlight to shine into the building for the residents to do their normal activities.

NOTES

[1] Ratanaporn, D and Punpairoj, P. *Design Guideline of Low-Income Housing with Prefabrication System and Vernacular Characteristics*, Master of Architecture in Architecture and Planning, Thammasat University, Thailand. 2016.
[2] World Resources Institute. *World Resources 2008: Roots of Resilience-Growing the Wealth of the Poor*, Washington, DC: WRI. 2008.
[3] Givoni, B. (1981). *Man Climate and Architecture*, New York: Van Nostrand Reinhold.
[4] Tantasawasdi, C. *Calculation of Fluid Dynamics for Natural Ventilation Design: Guidelines for Home in Thailand*, *Journal of Architectural/ Planning Research and Studies (JARS)*, 1(1) 2002: 43-63.
[5] Keoneil, N and Moorapun, C. *The Management Modeling Towards Interior Thermal Comfort: An Architectural Element Manipulating Case Study on Detached Houses in Bangkok*, Doctoral of Architecture in Multidisciplinary Design Research, King Mongkut's Institute of Technology Ladkrabang, Thailand. 2013.
[6] Bhattachaya, Y and Milne, M. Psychrometric Chart Tutorial: A Tool for understanding human thermal comfort conditions. 2011. http://www.energy-design-tools.aud.ucla.edu/papers/ASES09-Yasmin.pdf.
[7] Tantasavasdi, C et al. Natural Ventilation Design for Houses in Thailand. *Energy and Buildings*, 33, 2001: 815-824. https://www.researchgate.net/publication/222530034_Natural_ventilation_design_for_houses_in_Thailand.
[8] Jones, A.N. and Larkham, P. J. *The Character of Conservation Areas*, London: Royal Town Planning Institute. 1993.

BIBLIOGRAPHY

Asawapitayanont, A and Varodompun, J. 2010. *Energy Conservation Performance in Building with Tilted Envelope in Hot-humid Climate*, Master of Architecture in Architecture and Planning, Thammasat University, Thailand.

Bhattachaya, Y and Milne, M. Psychrometric Chart Tutorial: A Tool for understanding human thermal comfort conditions. 2011. http://www.energy-design-tools.aud.ucla.edu/papers/ASES09-Yasmin.pdf.

Brown, S. *Tropical forests and the global carbon cycle: estimating state and change in biomass density*, The role of forest ecosystems and forest management in the global carbon cycle, NATO Series. New York: Springer Verlag, (1996): 135-144. https://link.springer.com/chapter/10.1007/978-3-642-61111-7_13.

Givoni, B. *Man, Climate and Architecture*, New York: Van Nostrand Reinhold (1981).

Horayangkura, V. Behavior and Environment: Behavioral Norms for Design and Planning, Bangkok: Chulalongkorn University Press. 1998.

Jones, A.N. and Larkham, P. J. *The Character of Conservation Areas*, London: Royal Town Planning Institute. 1993.

Keoneil, Nuchnapang and Moorapun, Chumpon. *The Management Modeling Towards Interior Thermal Comfort: An Architectural Element Manipulating Case Study on Detached Houses in Bangkok*, Doctoral of Architecture in Multidisciplinary Design Research, King Mongkut's Institute of Technology Ladkrabang, Thailand. 2013.

Lechner, N. *Heating, Cooling, Lighting: Design Methods for Architects*. New Jersey: John Wiley & Sons, Inc. 2001. https://www.academia.edu/8577865/Heating_Cooling_Lighting_Sustainable_Design_Methods_for_Architects_4th.

Nittaya, S. *Building Design for Hot-humid Climate*, Bangkok: Chulalongkorn University Press. 1998.

Ratanaporn, D and Punpairoj, P. *Design Guideline of Low-Income Housing with Prefabrication System and Vernacular Characteristics*, Master of Architecture in Architecture and Planning, Thammasat University, Thailand. 2016.

Sahachaisaeree, Noppadon. *Behavior and Environment: Learning-documentary*, Multidisciplinary Design Research Program, Faculty of Architecture, King Mongkut's Institute of Technology Ladkrabang, Thailand. 2003.

Tantasawasdi, C. *Calculation of Fluid Dynamics for Natural Ventilation Design: Guidelines for Home in Thailand*, *Journal of Architectural/ Planning Research and Studies (JARS)*, 1(1) 2002: 43-63.

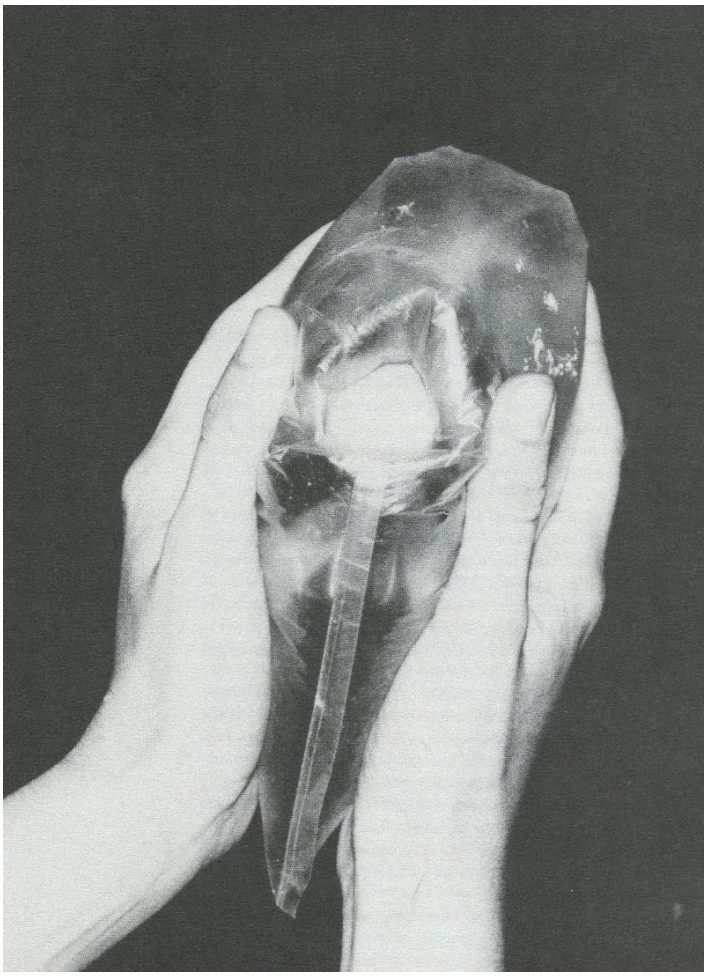
Tantasavasdi, C et al. Natural Ventilation Design for Houses in Thailand. *Energy and Buildings*, 33, 2001: 815-824. https://www.researchgate.net/publication/222530034_Natural_ventilation_design_for_houses_in_Thailand.

World Resources Institute. *World Resources 2008: Roots of Resilience-Growing the Wealth of the Poor*. Washington, DC: WRI, 2008.

ON ALIENATION - CARNAL KNOWLEDGE, MATERIALITY, AND LYGIA CLARK'S "STONE AND AIR"

Author:
MARIA EUGENIA ACHURRA

Affiliation:
UNIVERSITY OF CINCINNATI, USA



Clark, Lygia. 1966. Air & Stone (Multiple). Inflated plastic bag and stone.[1]

Political art, in order to be efficient, had to allow for a different role: I knew this much, but did not quite know where to go from there. My own attempts… did not satisfy me.[2]

INTRODUCTION - "STONE AND AIR" AS A THERAPEUTIC TOOL

Neo-Concretism emerged in Brazil between the 1950s and 1960s to counteract the influence of Swiss architect/artist Max Bill (1908-1994) and his "Concrete Art" tendency. For Bill, a concept or work of art relied on the human intellect for its production. At the end of his career, Bill stated,

I know better that mathematics is only a part of the methods to be adopted for the regulation of so-called works of art. I know that a concept has to conform to its inner organization and its visual existence. This means that a concept and the finally executed work have to be a unity. This unity is the result of the logical approach to the solution of the problem and its realization.[3]

At the time, Neo-Concretism became a viable alternative to "Concrete Art" and its precepts. It aimed at perception, existential reconfiguration, and general thinking, to create dialogue, exchange. For neo-concretists, a work of art derived from the act of creation itself [4], rather than being regulated or dictated, paraphrasing Bill, through precise mathematical calculations and causes for its expression. To share their artistic insights with audiences, neo-concretist artists made use of "propositions" -i.e., glimpses of material duration in which the past, present, and future become evident as authentic understanding.

In this context, Brazilian artist Lygia Clark (1920-1988) and her neo-concretist work, "Stone and Air" become relevant. In 1966, she produced this unique "proposition" for the first time. It consisted of a pebble floating on top of a full plastic bag that Clark held on her hands. Together, plastic bag and stone became a real event where tissue and humanity interacted as carnal knowledge, touch and flesh. Clark's work was both therapeutic and self-explanatory: the rock opened a field for its descent and became alienated by each spectator.

A few questions emerge at this point. How to reiterate the existential mechanics of "Stone and Air": as a bouncing object that has weight and light plumpness? As a body drenched with materiality, such as a child resting on a brother's/sister's arms amid crossfire? As a corpse that has been thrown into a thick black bag and buried in a mass grave? As a geopolitical entity (such as an alienated country) experiencing strict economic and political sanctions?

Or, do all these "propositions" come together like a balloon that has been plucked from a birthday party?

"Stone and Air" Carnal Knowledge and Alienation

How shall we start defining "Stone and Air"? Shall we start through the concept of place, and thus, through its existential qualities such as softness and roundness? For Norberg-Schulz, place is some concrete reality humans must face and come to terms in their daily lives[5]. Using place as a phenomenological concept, "Stone and Air" becomes something palpable and material yet being performed repeatedly and effortlessly such as an attitude or habit.

This habitual, customary quality of place is etymologically related to the Latin verb *habitare*, to reside, to dwell. Dwelling evokes what is emotional and familiar to spectators; states of mind where they can linger or tarry on (such as underground meanings or collective memories); caresses, aromas, whispers, and shadows where attention keeps attracted or suspended and that bring forth a defined spirit of place.

If this is the case, shall we also define Clark's "proposition" through a place's inauthentic mode of being such as alienation? Alienation refers to a non-object segregated from a given situation. For Heidegger, alienation seizes authentic materiality from audiences, driving them into a mode of being known as "falling" (decline; deterioration).

"Falling" takes for granted our everyday existence without questioning our daily activities, flushing them into the oppressed flow of the world. Such phenomena as a temptation (fomenting hope or desire for a

hopeless cause), tranquilizing (lobotomizing; pacifying for a "just cause"), and entanglement (manipulating the media during wartime; hiding civilian casualties and creating hostile environments) define its mechanics.

Listening to Bob Dylan's "Like a Rolling Stone," Clark's "proposition" can be interpreted as follows:

How does it feel
How does it feel
To be without a home
Like a complete unknown
Like a rolling stone? [6]

Following this kind of alienation, audiences experience estrangement from their *axis mundi* by enduring and accepting the will of those in control. This alienation, which tears us away from authenticity, can turn into a violent situation, a state of anarchy, or a dispassionate lack of satisfaction. Also, because of the abuse of power, alienation can throw audiences into the "they"[7]; into oppression. Finally, alienation can eventually deprive viewers of the "flesh of the world;" that is, of carnal knowledge.

"Stone and Air" and the Materiality of the former Panama Canal Zone

"Stone and Air" is a useful tool to understand, from a material standpoint, the alienation of the old Panama Canal Zone outside the United States. It helps to therapeutically describe the fluctuating and tumultuous geopolitical and historical relations between Panama and the United States of America between 1903 and 1999, years during which the North American superpower occupies and controls the Central American waterway. Due to out-of-date and unilateral treaties, those in control of the Zone ban Panama's right to enter the waterway and its complementary installations. The Canal Zone is then wrapped up with chain-link fences; guarded with military bases and checkpoints.

Withdrawn from the foundation of its world, the former Canal Zone became an artificial limb; a full plastic bag that camouflaged itself in the middle of the jungle. Like a foreign object inside an eyelid, the former Canal Zone exerted alien pressure on the Isthmus of Panama and permanently altered its original geopolitical configuration. This state of alienation prevailed in the old Panama Canal Zone for over 90 years; an arrangement that, as years went by, became obsolete for both nations and was deposed in 1977 by a new bilateral set of treaties.

The 1903 Panama Canal Treaty, named Hay-Bunau Varilla after its co-signers, John Milton Hay, U.S. secretary of state, and French engineer Phillipe Bunau-Varilla, first Panamanian foreign minister to the United States, became one of the first international legal documents to sanction this alienation. This treaty was never signed by a Panamanian and offered poor economic remuneration to the Central American nation for the use of the waterway and its immediately adjacent area. It also stipulated continued U.S. presence in Panama. The former Canal Zone, then, occupied the position of the full plastic bag; an inflamed blister in the Americas; an air bubble that could explode at any time (and that eventually exploded during the events of January 9th, 1964, and more recently, during the U.S. invasion of Panama in 1989.) The full plastic bag was expected to be stagnant, uncritical of its condition. Who would dare to re-appropriate and to transform such a geopolitical and historical "proposition"?

With regards to those who illegally attempted to trespass the former Canal Zone fence, they had to endure severe consequences. Many of them were either killed or wounded by the rifles of unknown American soldiers. For instance, on January 9th, 1964, a Panamanian high school student named Ascanio Arosemena tried to jump the fence, to hoist a Panamanian flag on Canal Zone soil. What kind of force triggered the dynamics of his rebellion? Was it prohibition, rejection, or anticipation? What kept

Arosemena from crossing alive the barbed wire and chain-link fence of the Canal Zone? In other words, did the foreign occupation of Panama (such as that of the U.S. Army and Marines during the 1989 invasion) involve liberation, freedom? Or was this another kind of colonialist exploitation learned from former U.S. administrations?

"Stone and Air" and its Spatiotemporal Parameters

Circa 1966, Clark represents "Stone and Air" for the first time. After that event, one can reproduce any number of air-filled plastic bags, topped with a pebble and placed on spectators' hands. Thus, what are its spatiotemporal parameters? Are they on par with its neo-concretist components -air, plastic bag, stone, and hands? Does a dynamic force propel a swirling motion upon them -i.e., an intermittent, diagonal tension, produced by the space between the object that gets closer and the object that avoids contact? And if so, how is this power exerted?

As a therapeutic and didactic tool, "Stone and Air" and its components define the state of alienation between the Isthmus of Panama and the former Canal Zone. This spatiotemporal arrangement shares a similar modus operandi with Clark's "proposition": both become "political" and "non-political" at the same time. A diagonal tension between plastic bag and stone is present in "Stone and Air," akin to the desire for building the Canal and bringing the world closer.

With regards to the Panama Canal and its ever-present materiality, it permeates the psyche of all Panamanians. From the time of its initial digging and inauguration (1903-1914) to the opening of the new post-Panamax expansion (2014), unique territoriality exists in the Americas. With sophisticated technology that constantly flips mechanic gates and their water levels on-and-off, such territoriality always detaches and attaches both latitudes of the Western Hemisphere. Indeed, Panama's coat of arms motto, *Pro Mundi Beneficio* (For the Benefit of the World) encapsulates such give-and-take existential condition. Only a few bridges running across the Canal hold both sides steadfastly.

Following "Stone and Air," Clark's hands work as the banks of the Canal, as well as the position of the United States of America as a superpower. The pebble can symbolize the isthmus, struggling to overcome hardship and gravity. Between Clark's hands, her "proposition" blossoms as a "zone of desire," representing the Canal, its installations, and adjacent areas. The components of "Stone and Air" have interchangeable roles: at any moment, the pebble can symbolize either the waterway or the proposition.

As the former Canal Zone, the air contained by the plastic bag withdraws itself from its external spatiotemporal condition, from carnal knowledge or the foundation of its world. Through its materiality, audiences try to resist the bag's alienation, bouncing the stone on its soft and smooth surface, and finding at times a tender spot where the pebble can rest due to its weight. Through air passage, the plastic bag "breathes," it is "human," and therefore, "authentic." Thus, the proposition becomes a convector; a cathartic "event." The bag's transparency allows different hues of flesh to penetrate the "proposition," concealing its artificial nature.

Crucial to "Stone and Air's" act of creation, the act of breathing is described by Clark as follows:

Fullness. I am overflowing with meaning. Each time I breathe, the rhythm is natural, fluid. I have become aware of my "cosmic lungs." I penetrate the world's total rhythm. The world is my lung. Is this fusion death? Why does this fullness have the taste of death? I am so incredibly alive… How to connect these two poles always? [8]

Looking at the stone, does it always imply the mechanics of alienation? In other words, does it also draw us back to nature? Can "falling" overcome gravity? When and where does alienation between stone and air start? When and where does it end? Do skin, and plastic bag hold something "in between" -e.g., air,

water, blood, or human secretions? Paraphrasing Clark, are "those two poles" (stone and air) interconnected in an on-and-off motion, simulating the dynamics of constant intercourse? How to avoid relinquishing power to the mechanics of alienation – for instance, what if the size of the pebble is insignificant to that of the bag? How much air or pressure is needed to make the plastic bag explode – i.e., what if a larger, heavier rock replaces the original one? Will the proposition exist without air? Will it endure without a plastic bag or a stone?

Time grants survivors of past rebellions and wars the ability to expand and abide their horizons at the same time. Via Clark's "proposition," the pebble regains gravity and loses its capacity to bounce on an air-filled plastic bag simultaneously.

"Stone and Air" and the sense of Vertigo

Air, plastic bag, hands, and stone also share opposing forces as non-objects. The feeling of vertigo is also a primary element of Clark's "proposition" and is related to carnal knowledge. It has several components, among them, the awareness of fear as a repressive emotion, and the careful inspection of memories.

First, the perception of fear, exerted by the spectator's/active participant's hands, is crucial for overcoming power. In this context, fear conveys to the hands a dispassionate expressiveness that eventually destroys the alienation between the plastic bag and the air contained by it. Second, a careful inspection of memories allows spectators to experience the proposition, disregarding those in control entirely. Both kinds of material awareness bring forth a post-modern arrangement.

How does vertigo occur? Being dystopic and entropic at the same time, the dynamics between dissipation of strength and strengthening of gravity from "Stone and Air" and the former Panama Canal Zone bring forth its existence. When spectators become aware of the swirling, turbulent effect of dizziness, their corporeality gets disoriented, falling from their rigid, vertical status into a convulsive, ecstatic state of mind.

In "Corpus Delicti," Krauss exemplifies vertigo through a photographic machine as follows:

There is a device, then, that produces this image, a device that the camera makes simple: turn the body or the lens; rotate the human figure into the figure of fall. The camera automates this process, makes it mechanical. A button is pushed, and the fall is the rest.[9]

Akin to the spirit of a place, which acts upon what is familiar to spectators, the sense of vertigo promotes personal emotions, increasing the variety of distinctions between memories (signifiers) and images (signifieds) and allowing propositions to last longer as personal experiences. The sense of vertigo extends to spectators the ability to therapeutically conceal an event or "proposition."

December 1989. She experiences vertigo as she opens a local newspaper and sees a black-and-white photograph of a 4-year-old girl. The girl's body is lying in a pool of blood, along with rows of civilian corpses, at a Panamanian morgue that has maximized its capacity during the U.S. invasion. She can still remember the whiteness of the child's ruffled dress and the tender arms and legs of her fragile figure, appropriately extended on the floor. The picture marks an existential boundary between the paleness of the child's corpse and the deep tint of blood, between broken dreams and death.

The photograph is so pervasive that it has disappeared from all records: it is easier to keep it clean; to deny children casualties and justify future military confrontations. Children war images are piercing, corrosive. They immediately disarray any "just causes." What kind of war is this? Is the girl's death preventable? Or is a child's innocence as dirty as war can be?[10]

CONCLUSIONS: AMERICAN COLONIALISM IN THE FORMER CANAL ZONE

American expansionist visionaries conceived and erected both the Panama Canal and its buildings. They rested their dreams on the use of large machinery and logistics and made use of international and local human force for their construction. For the sake of progress, and to open the new ditch or give birth to new public and housing complexes, many Panamanian towns were either flooded or erased from the map. Thus, since its early days, the American corporation called "Panama Canal Commission" had placed its trust in short-term profits. The "land divided/world united" motto had enough intensity to create an American colony in a foreign land, and an identity struggle in the minds of all Panamanians.

Even as of today, and almost twenty years after the former U.S. Canal Zone reverted to Panama in 1999, neutrality clauses of the 1977 Carter-Torrijos Treaties sanction the intervention of US troops in Panama, in case that "continuous operations of the canal become jeopardized." This is how the 1989 "Just Cause" Operation became an overwhelming, "legal" invasion of Panama. More than putting Noriega out of power, it brought in jeopardy tenths of thousands of lives of innocent Panamanian civilians in the middle of a crossfire. According to Human Rights, more than 3,000 Panamanian civilians died amid crossfire during the invasion.

More than an attempt to bringing democracy to Panama, "Just Cause" was an immense deploy of then-state-of-the-art American military weaponry. Instead of pursuing any "justified cause" as an accomplishment, this U.S. occupation sought for colonial possession, entitlement, ownership, and paraphrasing Said, domination. Indeed, the 1989 invasion of Panama laid out a benchmark for a complete U.S. control of the Western Hemisphere.

Meanwhile, in Panama, memories of colonialist occupation are still fresh. Our past still calls forth what is already there: a pair of hands that hold tight a full plastic bag and on top of it, a stone.

How does it feel?
How does it feel?
To be without a home
Like a complete unknown
Like a rolling stone?[11]

NOTES

[1] Yve-Alain Bois and Rosalind Krauss, *Formless: A User's Guide* (New York: Zone Books, 1997), 159.
[2] Yve-Alain Bois*, Geometric Abstraction: Latin American Art from the Patricia Phelps de Cisneros Collection* (Cambridge: Harvard University Art Museums, 2001), 83.
[3] Sara Pendergast and Tom Pendergast, *Contemporary Artists* (Detroit: St. James Press, 2002), 179.
[4] Michael Asbury, "Neoconcretism," in *UECLAApedia* (Colchester, U.K.: University of Essex Collection of Latin American Art, 2005).
[5] Christian Norberg-Schulz, *Genius Loci: Towards a Phenomenology of Architecture* (New York: Rizzoli, 1980), 5.
[6] Bob Dylan, "Like a Rolling Stone," in *Bob Dylan's Greatest Hits* (New York: Columbia Records, 1967).
[7] Martin Heidegger, *Being and Time* (San Francisco: Harper and Row, 1962), 223.
[8] Yve-Alain Bois*, Geometric Abstraction: Latin American Art from the Patricia Phelps de Cisneros Collection* (Cambridge: Harvard University Art Museums, 2001),161.
[9] Rosalind Krauss and Jane Livingston, *L'Amour Fou: Photography & Surrealism*, (Washington, D.C.: The Corcoran Gallery of Art, 1985), 60.
[10] Author's insights of 1989 U.S. invasion to Panama.
[11] Bob Dylan, "Like a Rolling Stone," in *Bob Dylan's Greatest Hits* (New York: Columbia Records, 1967).

BIBLIOGRAPHY

Asbury, Michael. "Neoconcretism." In *UECLAApedia.* Colchester, U.K.: University of Essex Collection of Latin American Art, 2005.
Bois, Yve-Alain. *Geometric Abstraction: Latin American Art from the Patricia Phelps de Cisneros Collection.* Cambridge: Harvard University Art Museums, 2001.
Bois, Yve-Alain, and Rosalind Krauss. *Formless: A User's Guide.* New York: Zone Books, 1997.
Dylan, Bob. "Like a Rolling Stone." In *Bob Dylan's Greatest Hits.* New York: Columbia Records, 1967.
Heidegger, Martin. *Being and Time.* San Francisco: Harper and Row, 1962.
Krauss, Rosalind, and Jane Livingston. *L'Amour Fou: Photography & Surrealism.* Washington, D.C.: The Corcoran Gallery of Art, 1985.
Norberg-Schulz, Christian. *Genius Loci: Towards a Phenomenology of Architecture.* New York: Rizzoli, 1980.
Pendergast, Sara and Tom Pendergast. *Contemporary Artists.* Detroit: St. James Press, 2002.

ARCHITECTURE AS AN AGENT OF PRIVATISATION AND DISPLACEMENT

Author:
GLYN ROBBINS

Affiliation:
VISITING RESEARCHER, SCHOOL OF SOCIAL STUDIES, LONDON METROPOLITAN UNIVERSITY, UK

INTRODUCTION

It's important to state, at the outset, that this is not an attack on individual architects, or even the discipline as a whole. Rather, it is a discussion of a particular aspect of architectural theory and practice, in the context of its place within a global, corporate property development industry where design and aesthetic considerations are often subordinated to the drive for profit. As such, architecture is not neutral. On the contrary, in the US and UK, architectural arguments have been deliberately enlisted to bolster a massive demolition programme of non-market rented homes and the destruction of the working-class communities that lived in them.

REPAIRING MODERNISM

The key driver for this deliberate project has been a repudiation of the concept of Modernism and the way it was applied, on both sides of the Atlantic, to the design of large-scale public housing in the post-war period. There is, of course, a voluminous academic literature about the nature of Modernism and its theoretical antithesis, Post-Modernism.[1] This subject is beyond the scope of this paper. Suffice to say that, in the 20th century, US and UK urban policy were significantly influenced by shifting perceptions of the nature of capitalism and the industrial – and then post-industrial – city.

The late 1800s and early 1900s brought widespread attempts to ameliorate the conditions of rapid, uncontrolled urbanization. Alongside measures to improve public heath, governments began to intervene directly to improve housing, in particular by building homes, through local municipalities, that were outside of market provision. The style of these homes varied, but can broadly be described as traditional, brick-built, low-rise and low density, using in situ construction methods. Good examples of this first generation of municipal homes are the Boundary Estate in east London[2] and Lakeview Terrace[3] in Cleveland, Ohio, both of which remain in public ownership. However, a shift took place in architectural approaches to public housing in the 1950s. Inspired by the work of Le Corbusier[4] and the Congress International d'Architecture Moderne (CIAM), but motivated by political and financial imperatives, this second generation used non-traditional, concrete, off-site and pre-fabricated construction to produce high volume, high density, often high-rise blocks that could be completed

quickly, in response to growing and urgent housing need. As well as its structural, design and aesthetic qualities, this Modernist approach had an underlying ideology that was reputedly in tune with a more socially progressive, egalitarian era.

In both the US and UK, a significant moment catalysed the wide-spread and long-lasting discrediting of and backlash against Modernist mass housing. On May 16th, 1968, Ronan Point, a 22-storey tower block in Newham, east London, partially collapsed following a gas explosion, killing four people. The accident, two months after the block was completed, prompted a public inquiry which critcised the role of private contractors and the short-cuts they took during construction in order to maximize profits. But it also led to wider anxiety about the suitability of high-rise blocks. The parallel incident in the US was the demolition, in 1973, of the Pruitt-Igoe public housing development in St. Louis which architectural historian Charles Jencks described as the beginning of the end of Modernism,[5] but without taking account of the endemic problems – including systematic ethnic segregation – that beset the scheme from the outset.[6] These cases contributed significantly to a discourse suggesting that mass housing based on a similar model had failed and needed to be replaced with something more reflective of the complexities and nuance of the late 20th century.

DEMOLITION DERBY

Fast-forward four decades and thousands of high-rise and non-traditional developments of non-market rented housing have been demolished. This policy decimated US public housing, particularly in Chicago, but also in other big cities. In the UK, a similar process is in train. A variety of justifications have been used for this onslaught, embracing arguments that public/council housing foster and institutionalise crime, immorality and poverty. Running through these dubious pathological and cultural theories has been the suggestion that architectural form is also a determinant of the behavior of those living in those places. Ben Austen describes some of the objectives behind the wholesale destruction of Chicago's high-rise public housing: "…neighborhoods too long under the pall of towering public housing would finally be imbued with vitality and reconnected to the rest of the city. The very landscape would be remade, the skyline altered, the street grid restored. The replacement housing would be built on a 'human' scale…breaking up the old concentrations of poverty…"[7] In the UK, former Prime Minister David Cameron announced a new wave of demolitions by presenting a litany of prejudices against council estates: "Some of them, especially those built just after the war, are actually entrenching poverty…in bleak high-rise buildings…you're confronted by concrete slabs dropped from on high, brutal high-rise towers and dark alleyways that are a gift to criminals…"[8]

Currently, at least 80 council estates in London alone are threatened with full or partial demolition,[9] often with architecture used as a justifying narrative. Many have already been lost, including the Heygate estate in Southwark, a notorious example of Modernist design becoming a cipher for an agenda of privatisation. Built between 1970 and 1974, the original 1,194 homes provided spacious, light-filled, secure accommodation for rents working class people could afford. The project architect, Tim Tinker, recalls that for many years, Heygate was not perceived as a "problem estate", but like many of its type, suffered because of poor maintenance.[10] As Lees and Ferrerri argue, the real drivers for demolishing Heygate were financial, not aesthetic.[11] Their suggestion of "state-sponsored gentrification" is supported by the results of the estate's demolition. Of the 2,704 new homes built on the site, only 82 were for social rent, resulting in large-scale displacement of the former residents.

THE RESPONSE OF THE ARCHITECTURE PROFESSION

On the whole, with some exceptions (discussed below), the architecture profession has either remained silent on the question of demolitions or has been complicit in them. Rather than defending fellow practioners whose work was, in effect, being denigrated and destroyed, the architectural establishment has been passive in the face of attacks on Modernism and uncritical of its preeminent stylistic replacement, New Urbanism. The new housing where the Heygate estate used to be, received the following tribute from the Royal Institute of British Architects (RIBA): "…a clever mix of types of properties…the scheme feels like a collection of homes like a small village. A strong placemaking philosophy was used…which led to a variety of architectural forms and typologies being employed that provide each of the nine buildings with their own distinctive character".[12] RIBA turns a blind eye to the social tensions of the new scheme. Elsewhere, a new Tesco convenience store, with private apartments above, on the edge of a former council estate where the design team had explicitly talked about "repairing the 1970s", was eulogised by a leading London architect as "…a development that is both stylish and integral to the social and economic regeneration of a relatively deprived neighborhood. The northern façade against the busy Bow Road has a strikingly tough, odeonesque imagery that will become a landmark…it's a scheme that works at every level".[13] Again, no mention of the issues that lay behind the façade.

When architectural and establishment voices have been raised in defence of post-war, Modernist-inspired mass housing, it has tended to be in the form of conservation as artefact, rather than the principle of not destroying people's homes and communities without good reason. The Twentieth Century Society was unsuccessful in preventing the demolition of Robin Hood Gardens in east London, but a section of the Smithson's brutalist building has been purchased for display at the Victoria and Albert Museum.[14] Something similar is happening in Chicago, where a habitable former public housing block is due to become the National Public Housing Museum.[15]

The bias against Modernist architecture and high-rise, non-market housing are fully revealed by perceptions of buildings whose financial exchange value transcended their appearance. The Barbican estate in the City of London comprises deck access and high-rise concrete blocks, including three 42-storey towers. But their design is not associated with the behavior of their residents, some of whom pay millions of pounds to live there.[16] Keeling House, the first council tower block to be listed for its architectural qualities, was once described as "a symbol of everything wrong with doctrinaire post-war planning".[17] Following privatisation and refurbishment, the building is described as "iconic" and a two-bedroom apartment costs over half a million pounds. In Chicago, the land where the Cabrini Green public housing development once stood is now abandoned, but is surrounded by monolithic, multi-storey, private apartment blocks.

FROM KATRINA TO GRENFELL

Many of these issues converge in the ghastly forms of post-Katrina New Orleans and the Grenfell Tower fire. Within days of the 2005 hurricane, hostile forces – politicians, urban planners, architects and developers - began to circle around New Orleans' public housing. It quickly became apparent they wanted to use the "natural" disaster as a pretext for rebuilding the city, without the thousands of public housing apartments that had been home to some of the city's poorest residents, the vast majority of them African Americans. Since Katrina, 3,000 homes have been demolished at the city's four biggest public housing developments. Spurious technical arguments were used to justify demolition, ignoring the high architectural and construction quality of the homes that had withstood the storm far better than

others. In a rare example of architectural expertise being used in defence of public housing. John Fernandez, a professor of architecture at MIT, inspected some of the homes due for demolition and concluded there was "…no structural or non-structural damage…that would reasonably warrant any cost-effective building demolition…justifications for demolition on the grounds that these buildings can no longer function as safe and humane housing for the people of New Orleans are not credible".[18] The reality that public housing in New Orleans, as elsewhere, was the subject of prejudice and bigotry was exposed by Louisiana Congressman Richard Baker who said "We finally cleaned up public housing in New Orleans. We couldn't do it, but God did".[19]

The perspective of non-market rented housing needing to be "cleaned up" had tragic consequences at Grenfell Tower. The 24-storey brutalist council block suffered similar stigma to others of its type but accentuated by its location in the wealthiest borough in the UK, where private homes in the surrounding area sell for millions of pounds. As Lucy Masoud from the Fire Brigades Union told an anti-racism conference in October 2017 "The moment the wealthy people living near Grenfell decided they didn't want to look at an 'ugly' building, the residents' fate was sealed". This is a reference to the decision to cover Grenfell Tower in cladding panels that were, it transpires, highly flammable. Whatever the marginal energy-efficiency gains, the real motive for covering-up Modernist council housing blocks is the attempt to disguise their true identity. This impulse is based on long-held, often class-based prejudices against council housing and the appearance of its buildings and residents.

"MAKE THIS NEIGHBORHOOD MIXED INCOME"

Architectural, aesthetic and political disapproval of Modernist public/council housing are invariably counter-posed by uncritical acceptance of New Urbanist-styled mixed income housing. Although some have questioned the evidence supporting the proposition that "making communities more mixed improves the life chances of the poor",[20] in general, architects have joined what has become an "unquestioned gospel in policy discourse".[21] In contrast to the sterile impersonality associated with Modernist mass housing by its critics, New Urbanism claimed to recapture a lamented community through the built form, with high-rise concrete blocks and walkways replaced with townhouses, picket fences and traditional street layouts.

The influential design philosophies and practices of New Urbanism are founded on an essentially dystopic reading of the modern city as "unsustainable", epitomized by modernist municipal housing estates. However, as Michael Barnard argues[22], there is an implicit contradiction within New Urbanist theory and practice. The attempt to inject suburban domestic styles and values into urban areas cuts against the vitality and diversity that define cities. Moreover, New Urbanist claims to environmental sustainability are more relevant to car-oriented, low density, privatized suburbs than they are to high density housing estates where space and services are often shared.

Furthermore, the contradiction (or hypocrisy) of the hegemonic mixed income community narrative is that it is one directional. It argues that the "monocultures" allegedly produced by rented public/council housing are problematic. But this theory is not reversed to include the areas where there are monocultures of affluent private home ownership. This iniquity was the impetus behind a protest by displaced New Orleans public housing residents who visited a wealthy area of the city with a sign reading "Make this neighborhood mixed income".

URBAN REGENERATION AS SOCIAL CLEANSING

The physical, political and social intersection of mixed income communities, with demolition of public/council housing, comes in large-scale, government sponsored urban renewal/regeneration projects. HOPE VI in the US and its UK counterpart, New Deal for Communities (NDC) - and their successor programmes - have broadly continued the policy objective of replacing non-market, publicly owned rented housing with mixed income communities within which private housing has a disproportionate profile. The "official" design approach to these programmes has been New Urbanist-inspired architecture, receiving, for example, endorsement by the Department of Housing and Urban Development in the US and the Prince of Wales in the UK. But New Urbanism's benign image is challenged by those who see large-scale demolition and regeneration programmes as "social cleansing", with architects complicit in this endeavour, prompting an interesting, if limited, debate within the profession about the ethics of regeneration. [23] Alex Ely of the mae practice says: "…architects don't run the economy, so taking the Robin Hood moral standpoint using private income to pay for social benefit seems reasonable." This suggestion of social detachment is disputed by Nick Johnson, a former director of Urban Splash, who argues: "Architects are complicit in a deceit widespread in the built environment, in the industry formerly known as regeneration – it's why I stepped out…We need to remind ourselves that decisions in the built environment affect people's lives…We have to…start to behave like human beings, driven by issues that matter and not by diktats from policy perverts…"

CONCLUSION

David Harvey has argued that New Urbanism offers a false hope of reversing urban decay through design, thereby repeating the technological and spatial determinism of the Modernism it sought to displace by privileging form over social process. To the extent that architects adopt an uncritical position in relation to current neoliberal urban policy, they stand accused of the same naivety, which could also be seen as cynicism. Arcane debates about modernism and brutalism have contributed to a narrative of justification for attacks on public/council housing. Typically, these debates have excluded the people whose homes and communities are under discussion. Attempts to "fix" modernist design, often by replacing it with New Urbanist-inspired "mixed communities" have provided lucrative work for some architects, but invariably led to displacement for tenants and a net loss of genuinely affordable rented homes.

To some extent, the co-option of architecture to a government and corporate-driven privatisation agenda can be attributed to commercial self-interest. However, there is a deeper ideological facet to this question that speaks to the place of housing and home in our society. Architects can play a role in a more humane and sustainable housing future, an alternative to the present tyranny and brutality of the failed market model.

NOTES

[1] Marshall Berman, *All That is Solid melts into Air*, (New York: Simon and Schuster, 1982). Alex Callinicos, *Against Postmodernism: A Marxist Critique,* (Cambridge: Polity Press, 1989.
Charles Jencks, *What is Post-Modernism?* (London: Academy Editions, 1986).
[2] Sarah Wise, *The Blackest Streets: The life and death of a Victorian slum*, (London: Vintage Books, 2008).
[3] Carol Poh Miller and Robert A. Wheeler, *Cleveland: A concise history, 1796 – 1996*, (Bloomington, Indiana University Press, 1997), 140 – 141.
[4] Kenneth Frampton*, Le Corbusier*, (London, Thomas and Hudson, 2001).
[5] Charles Jencks, The Language of Post-Modern Architecture, (London: Academy Editions, 1991).
[6] Katherine G. Bristol, "*The Pruitt-Igoe Myth"* in *American Architectural History: A Contemporary Reader*, edited by Keith Eggener, (London, Routledge, 2004).
[7] Ben Austen, *High-Risers: Cabrini Green and the Fate of American Public Housing*, (New York, Harper Collins, 2018), 255.
[8] David Cameron, "Estate Regeneration", January 10th 2016, *Gov.UK*, https://www.gov.uk/government/speeches/estate-regeneration-article-by-david-cameron
[9] Zack Adesina, Claire Brennan & George Greenwood, "Dozens of London council estates earmarked for demolition*", BBC Inside Out*, September 3rd 2018, https://www.bbc.co.uk/news/uk-england-london-45196994
[10] "Why pull down a perfectly good housing estate, asks its architect", *London Evening Standard*, March 10th 2011, https://www.standard.co.uk/news/why-pull-down-a-perfectly-good-housing-estate-asks-its-architect-6575907.html
[11] Loretta Lees and Mara Ferreri, "Resisting gentrification on its final frontiers: Learning from the Heygate Estate in London (1974 – 2017), *Cities*, 57 (2016), 14 – 24.
[12] Maccreanor Lavington, "South Gardens", *RIBA*, https://www.architecture.com/awards-and-competitions-landing-page/awards/riba-regional-awards/riba-london-award-winners/2018/south-gardens
[13] Ben Derbyshire, "Talking about our regeneration", New Homes Awards 2008, *East End Homes*, (December 2009).
[14] Mark Brown, "V&A acquires segment of Robin Hood Gardens council estate", *The Guardian*, November 9th 2017.
[15] Maya Dukmasova, "The National Public Housing Museum's long journey home", *Chicago Reader*, July 5th 2017, https://www.chicagoreader.com/chicago/national-public-housing-museum-abla-jane-addams-homes/Content?oid=27428793
[16] Colin Wiles, "A tale of two brutalist housing estates: one thriving, one facing demolition", The Guardian, January 13th 2016, https://www.theguardian.com/housing-network/2016/jan/13/brutalist-housing-estates-private-barbican-social-london
[17] Rowan Moore, "A high rise faces a hard fall: An East End tower block is a victim of prejudice", *The Independent*, January 27th 1993, https://www.independent.co.uk/arts-entertainment/art/news/architecture-a-high-rise-faces-a-hard-fall-an-east-end-tower-block-is-a-victim-of-prejudice-argues-1481047.html
[18] Bill Quigley and Sara H. Godchaux, "Locked Out and Torn Down: Public Housing Post Katrina", https://billquigley.wordpress.com/2015/06/08/locked-out-and-torn-down-public-housing-post-katrina-by-bill-quigley-and-sara-h-godchaux/
[19] Susan Saulny, "Clamouring to come home to New Orleans projects", *New York Times*, June 6th 2006.
[20] Paul Cheshire, *"Policies for mixed communities: faith based displacement activity?"*, *International Regional Science Review*, 32 (2009), 343 – 375.
[21] Loretta Lees, "Gentrification and Social Mixing: Towards and inclusive urban Renaissance?", *Urban Studies,* 45 (2008), 2449 – 2470.
[22] Michael Barnard, "New Urbanism: A bandaid on a failed urban form", *Medium*, May 12th 2018, https://medium.com/the-future-is-electric/new-urbanism-a-bandaid-on-a-failed-urban-form-d318fe6a876e
[23] Richard Waite, "The ethics of regeneration: architects react to protest claims", *Architect's Journal*, June 19th 2015.

BIBLIOGRAPHY

Adesina, Zack, Brennan, Claire & Greenwood, George, "Dozens of London council estates earmarked for demolition*", BBC Inside Out*, September 3rd 2018, https://www.bbc.co.uk/news/uk-england-london-45196994

Austen, Ben, *High-Risers: Cabrini Green and the Fate of American Public Housing*, (New York, Harper Collins, 2018), 255.

Barnard, Michael, "New Urbanism: A bandaid on a failed urban form", *Medium*, May 12th, 2018, https://medium.com/the-future-is-electric/new-urbanism-a-bandaid-on-a-failed-urban-form-d318fe6a876e

Berman, Michael, *All That is Solid melts into Air*, (New York: Simon and Schuster, 1982).

Bristol, Katherine G, "*The Pruitt-Igoe Myth"* in *American Architectural History: A Contemporary Reader*, edited by Keith Eggener, (London, Routledge, 2004).

Brown, Mark, "V&A acquires segment of Robin Hood Gardens council estate", *The Guardian*, November 9th 2017.

Callinicos, Alex, *Against Postmodernism: A Marxist Critique,* (Cambridge: Polity Press, 1989.

Cameron, David, "Estate Regeneration", January 10th 2016, *Gov.UK*, https://www.gov.uk/government/speeches/estate-regeneration-article-by-david-cameron

Cheshire, Paul *"Policies for mixed communities: faith based displacement activity?"*, *International Regional Science Review*, 32 (2009), 343 – 375.

Derbyshire, Ben, "Talking about our regeneration", New Homes Awards 2008, *East End Homes*, (December 2009).

Dukmasova, Maya, "The National Public Housing Museum's long journey home", *Chicago Reader*, July 5th 2017, https://www.chicagoreader.com/chicago/national-public-housing-museum-abla-jane-addams-homes/Content?oid=27428793

Frampton, Kenneth, *Le Corbusier*, (London, Thomas and Hudson, 2001).

Jencks, Charles, *The Language of Post-Modern Architecture*, (London: Academy Editions, 1991).

Jencks, Charles *What is Post-Modernism?* (London: Academy Editions, 1986).

Lavington, Maccreanor, "South Gardens", *RIBA*, https://www.architecture.com/awards-and-competitions-landing-page/awards/riba-regional-awards/riba-london-award-winners/2018/south-gardens

Lees, Loretta, "Gentrification and Social Mixing: Towards and inclusive urban Renaissance?", *Urban Studies,* 45 (2008), 2449 – 2470.

Lees, Loretta and Ferreri, Mara, "Resisting gentrification on its final frontiers: Learning from the Heygate Estate in London (1974 – 2017), *Cities*, 57 (2016), 14 – 24.

London Evening Standard, "Why pull down a perfectly good housing estate, asks its architect", March 10th 2011, https://www.standard.co.uk/news/why-pull-down-a-perfectly-good-housing-estate-asks-its-architect-6575907.html

Moore, Rowan, "A high rise faces a hard fall: An East End tower block is a victim of prejudice", *The Independent*, January 27th 1993, https://www.independent.co.uk/arts-entertainment/art/news/architecture-a-high-rise-faces-a-hard-fall-an-east-end-tower-block-is-a-victim-of-prejudice-argues-1481047.html

Poh Miller, Carol and Wheeler, Robert A *Cleveland: A concise history, 1796 – 1996*, (Bloomington, Indiana University Press, 1997), 140 – 141.

Quigley, Bill and Godchaux, Sarah H, "Locked Out and Torn Down: Public Housing Post Katrina", https://billquigley.wordpress.com/2015/06/08/locked-out-and-torn-down-public-housing-post-katrina-by-bill-quigley-and-sara-h-godchaux/

Saulny, Susan, "Clamouring to come home to New Orleans projects", *New York Times*, June 6th, 2006.

Wiles, Colin, "A tale of two brutalist housing estates: one thriving, one facing demolition", The Guardian, January 13th, 2016, https://www.theguardian.com/housing-network/2016/jan/13/brutalist-housing-estates-private-barbican-social-london

Waite, Richard, "The ethics of regeneration: architects react to protest claims", *Architect's Journal*, June 19th, 2015.

Wise, Sarah *The Blackest Streets: The life and death of a Victorian slum*, (London: Vintage Books, 2008).

ENVIRONMENTAL PLAINS AND PRAIRIE BLUFFS ALONG THE MISSISSIPPI RIVER ON SOUTHWESTERN ILLINOIS - THE CASE OF STOOKEY

Author:
ROLANDO GONZALEZ

Affiliation:
SOUTHERN ILLINOIS UNIVERSITY, USA

INTRODUCTION

Due to deep political and economic standstills, the state of Illinois is immobilized with few possibilities for statewide development, because of prioritization of funding and attention to its major city Chicago and little strategic distribution elsewhere. Although historical intents show reliance with its lesser urbanized areas, with a variety of industrial manufacturing, many areas indicate significant population and proportionate commercial loss, by returning to Chicago or leaving the state altogether.

As described by Tocqueville, decentralization "has not only an administrative value, but also a civic dimension, since it increases the opportunities for citizens to take interest in public affairs; it makes them get accustomed to using freedom. Moreover, from the accumulation of these local, active, persnickety freedoms, is born the most efficient counterweight against the claims of the central government, even if it were supported by an impersonal, collective will" (Tocqueville 2015). With modern-times moving trend off the rural extents to metropolitan areas, it becomes indispensable to search for balanced mid-size town structures as a State strength in order to consolidate a permanent economic robustness, instead of a contrasting centralization like the one happening in Illinois. It is not a matter of diminishing Chicago size; rather, of a recovery of eight or ten of what used to be promising townships all around the state, on a strong position to not only survive as self-sustainable but also to act together with the Windy City on a win- and-win relationship. This would surely strengthen the whole State by consolidating every one of them.

THE BACKGROUND

Illinois has persisted as one of the more intensely centralized on the U.S. if we consider that the city of Chicago, a major world financial center with the second largest central business district in the United States, and its metropolitan area often referred to as Chicagoland, has nearly 10 million people and is the third largest in the U.S. (US Census Bureau 2015). It has absorbed over the past 85 years about 87% of all business and commercial developments around the State. The Windy City is an international hub for

finance, commerce, industry, technology, telecommunications, and transportation: O'Hare International Airport is the second busiest airport in the world when measured by aircraft traffic; the region also has the largest number of U.S. highways and railroad freight (Rodriguez 2014). Chicago has the third largest gross metropolitan product in the United States—about $630.3 billion according to 2014-2016 estimates (US Metro Economies 2015). In addition, the Chicago metropolitan area recorded the greatest number of new or expanded corporate facilities in the United States for calendar year 2014 (Rasmussen 2015), and it ranks third in the U.S. in number of conventions hosted annually. Illinois is No. 25 in territorial extension within the 50 states that make up the nation, but more than half of the state's population lives concentrated in the Chicago metropolitan area.

There was a time, at the end of the 19th century, when having a solid focal location of development in the United States was a good strategy that benefited economically throughout a whole State. Cases like

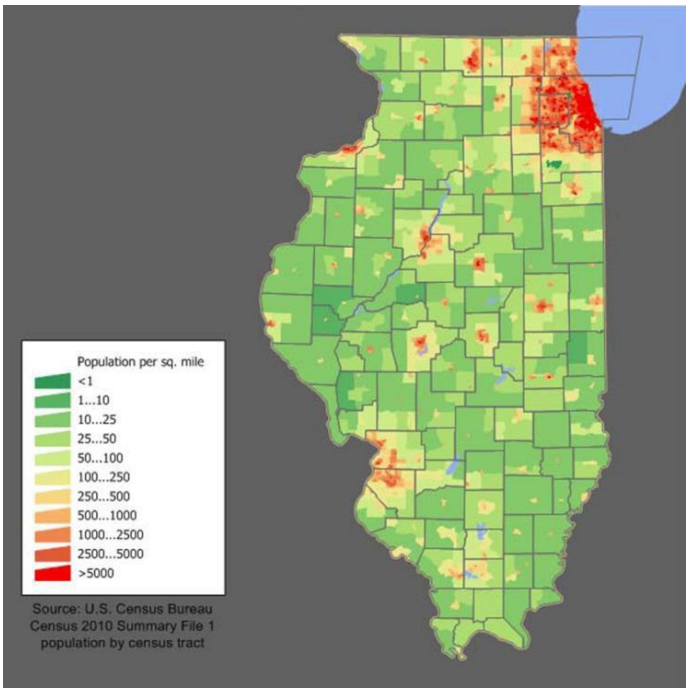


Figure 1. Illinois' population density according to the 2010 Census

Detroit, Baltimore, Los Angeles, Cincinnati, New York, Atlanta, Dallas, and, of course, Chicago, speak of important anchors of manufacturing production and generation of employment, as well as large sums of investment attraction. Thus, road networks and the establishment or growth of airports and other facilities to boost the development grew rapidly, usually favoring regions closest to the development centers, but in some cases also to distant areas within its own State. With this economic development led to the territorial development and strategic investment in each State according to its own characteristics, and each Government and Assembly developed strategies that were considered relevant. Markets, not only within the nation but also by opening channels for export to other countries, gave a major boost to many companies who settled in those industrial growing points. During the first half of the 20th century, States like California, Texas, Michigan, Pennsylvania and Florida, among others, chose a balanced distribution at

more than one strong point of development. This led to maintain a better balance of population and, most importantly, to establish lines of communication with other States for a better distribution of roads, and railroad from various locations within the State territory. As a particular case, the State of Wyoming, with its very low population, has not driven any growing Center since its foundation. On the other hand, States such as Minnesota and Illinois have been dedicated to strengthening only one large strategic center, which have found it very useful, but as a result the rest of the State is stagnating in underdevelopment for years and this is now ballasting more than ever because of changes in national and global economic strategies.

In California, there are 19 cities with more than 200 thousand inhabitants, of which five have more than 500 thousand, and despite being the most populated in the nation its population is very distributed through all the length of the State. The economy is strongly balanced at strategic points as Los Angeles, San Jose, San Diego, San Francisco and Fresno. In addition, in its ethnic distribution any race constitutes a majority of the State's population, because according to the American Community Survey of 2015 (American Community Survey 2015), 39% of the residents of the State are white, 38% are Latino, 13% Asian, 6% African American, 3% multiracial, and less than 1% Native American or Pacific Islander. Its rail network is the most efficient of the nation and its highway network connects splendidly with its neighboring states as well as with Mexico, not to mention the ports that provide contact by sea through the Pacific Ocean.

The current population of Texas is 27.5 million and 62% of them are divided into 5 major urban centers: Dallas-Fort Worth with 6.62 million, Houston 5.63 million, San Antonio with 2.35 million, Austin with 1.25 million and El Paso with 1 million. The rest is distributed throughout the State, particularly in settlements along the border with Mexico and the Gulf Coast. In 2010, Site Selection Magazine ranked Texas as the most business-friendly state in the nation, in part because of the state's three-billion-dollar Texas Enterprise Fund (Site Selection Magazine Archives 2016). An efficient connection with its neighboring States and Mexico through its network of roads and railways grants it a significant advantage in trade and economic purposes, not only for its manufacturing but also for its numerous tourist visitors.

Meanwhile, Illinois has maintained its commitment for Chicago as its favorite. The city of East Saint Louis might have been a major economic development focal point along the Mississippi River, with a prosperous industry and solid communication means, but all of it has been buried in a failed town.

By mid-19th century Galena Illinois was the busiest port between St. Paul and St. Louis often boasting as many as fifteen steamboats at a time docked along Water Street. It shipped a record 54,494,850 pounds of lead (City of Galena 2015). Time changes, and with the decline of the lead mining industry and the start of the California Gold Rush, the population of Galena began to decline, and this was completely forgotten as soon as every attention came back to Chicago. In the 1920s Illinois was an industrial powerhouse building rail cars, rolling steel and slaughtering cattle. Peoria grew as a distillery and manufacturing center, while Quincy and Belleville produced stoves and Moline built plows, besides Peoria, Rock Island, and Moline built agricultural implements. By that time the sky over Chicago, Joliet, and Granite City glowed orange from steel mills. Rockford produced fine machine tools and knitting machines. Elgin made watches; Alton rolled brass and blew glass bottles. Meanwhile, rural southern Illinois enjoyed an oil boom, and refineries grew around East St. Louis (Historical Development… 2015). In Jackson County, coal was still mined from outcroppings along the Big Muddy River and shipped to New Orleans —since up to the 1950s— when coal was the nation's primary fuel, heating homes, forging metal, and powering locomotives. Several attempts have been done, but at the end Chicago has pulled predominance to its side.

The 1930's Depression forced many Illinois business firms and industrial plants to close, and tens of thousands of workers lost their jobs. But when World War II came, Illinois industry revived and aided the war effort. Aviation plants sprung up around Chicago. Ships were floated down the Mississippi to the Gulf, by those moments only Chicago and East St. Louis were perceived as strong and favorable production centers within the State. When the war ended, Illinois was a leading industrial state, although Chicago was clearly starting to be everything. Its manufacturing output had jumped from $2.1 billion in 1939 to $6.68 billion eight years later. The new television and electronics industry was centered in Illinois by then, where Zenith, Motorola and Western Electric produced the latest consumer goods. General Motors' diesel locomotives built in LaGrange replaced the nation's steam trains, a strong beat to coal dependency from the south. However, all this heavily industrialized output shifted in the 1970s when Southern Illinois coal no longer fueled the state; imported oil and natural gas took its place. Transportation networks still crossed in Illinois thanks to the new interstate highways and jet air travel, but railroads and the related industries started to suffer (Historical Development… 2015).

By the beginning of the 20th century, East St. Louis was a thriving industrial town built by the "great capitalists," including Andrew Carnegie and J.P. Morgan. The railroad played a major role in its economic growth. Factories ran 24 hours a day. Jobs were plentiful. The population not only grew but doubled each decade through the first half of the 1900s (Wildcat Roar 2015). In 1959, the National Civic League named East St. Louis an All-America City, honoring its culture of civic excellence and the cooperative spirit among residents, businesses, nonprofits and government (National Civic League 2015). It was by then a national leader in aluminum production. However, the city suffered later from the mid-century deindustrialization and railroad restructuring. As a number of local factories began to close because of changes in industry, the railroad and meatpacking industries also were cutting back and moving jobs out of the region. This led to a precipitous loss of working and middle-class jobs. The city's financial conditions started to deteriorate. Ironically, by that time, East St. Louis was on the precipice of disaster. Industries had already begun to abandon the city for greater economic opportunities elsewhere. Constant competition with Saint Louis and a furious growth of crime without proper control soon emptied the production centers and with them, many people move out in few years. Crime increased. "Brownfields" (areas with environmental contamination by heavy industry) have made redevelopment more difficult and expensive. Street gangs appeared in city neighborhoods. Like other cities with endemic problems by the 1960s, violence added to residential mistrust and adversely affected the downtown retail base and the city's income. Between 1960 and 1970, the city lost nearly 70 percent of its businesses. Unemployment soared, thus residents moved out of town and the population drain continued for years. Between 1970 and 2000, the city lost 55 percent of its population and by now, there is still no clear perception for its future (Theising 2003).

THE CASE OF STOOKEY

Starting with East St Louis area and moving southwards, the Illinois' side of the Mississippi River forms a 55-mile long, lowland floodplain strip around 3-miles wide to the point where the Kaskaskia River reaches the Mississippi. Known as the Northern Ozarks Mississippi Bluffs due the dramatic topographical differences between the floodplain and the upper lands, this zone offers wonderful views from the top to the basin. These 100K+ acres offer a great opportunity for the State to develop centers for recreational, touristic, urban agricultural and any kind of eco-friendly activities that could effectively serve St Louis'

crowded and busy urban life within mutual beneficial capacities through attractive landscape development investments. In the outskirts of East St Louis over the Illinois side there is Stookey, a low settled municipality located over the river-plain bluff with interesting possibilities for eco-system improvement, yet ripe for economic development. A recent case of redefinition is Valmeyer. This town happened to be southern East-Saint Louis within the Mississippi floodplains and after many years of flooding issues, they decided to move it uphill over the cliff, starting over, where they now enjoy of pleasing views of Saint Louis skyline and the historical river as foreground.

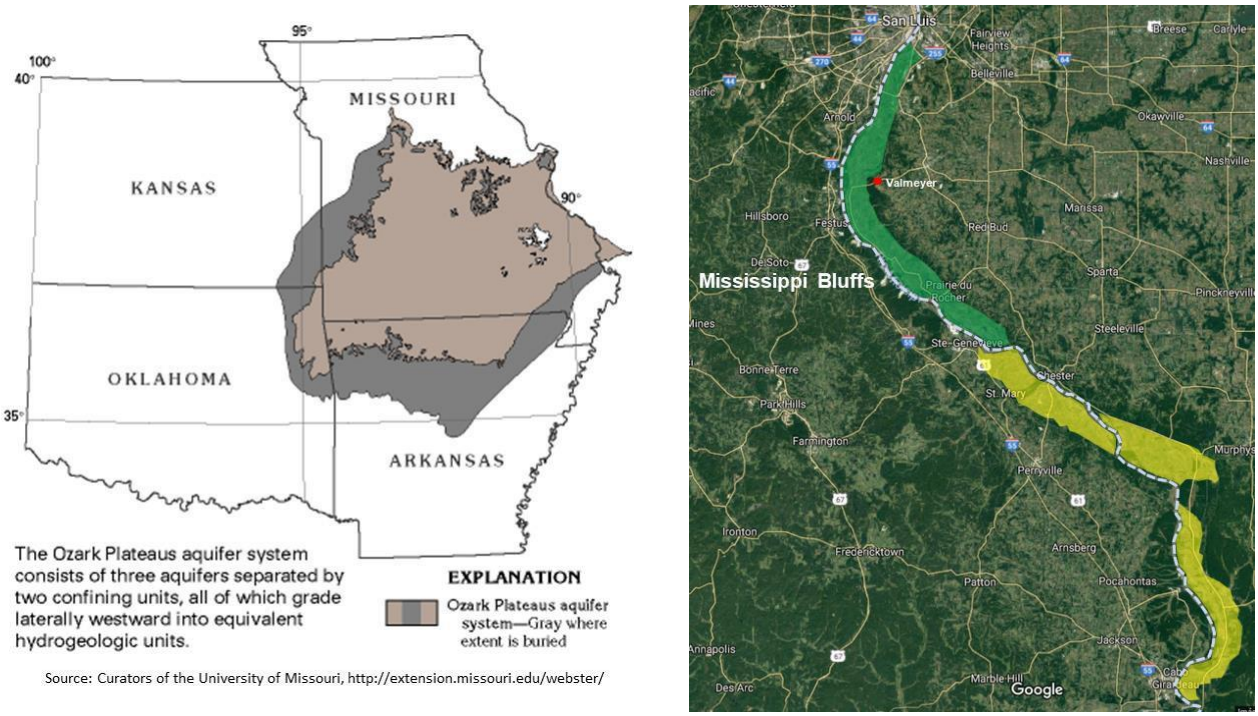


Figure 2. The Ozark region reaches the Mississippi River (left) and the Mississippi Bluffs extents (right)

Herein is presented research implemented by graduate students of SIUC Master of Architecture program toward identifying and establishing possible approaches for sparking radial change and statewide decentralization processes. The results are proposed designs of Stookey as a new urban satellite, strategically interconnected with the urban economic growth adjacent Saint Louis, Missouri and further satisfies its increasing needs, while also adding value to neighboring rural communities, like the potentially booming areas like Belleville and Edwardsville, starting with it a network of economic and eco-system resource development potential.

Some of the conceptual bases generated by the group, which led to assorted design ideas, were the following: focus on natural spaces and the connection of built spaces with the outdoors (connecting views, outdoor rooms, and pocket parks). Interweaving of architecture and nature, like a checkerboard; the building blocks and yards alternating with one another to create a symbiosis between architecture and the building blocks. Let the reason for abandonment (deindustrialization) be the driving force of the revitalization turn the

negative into the positive, while keeping the benefits of industry. In order to heal the area, look at the history and learn from the past. Distributing the programs in small proportions throughout the entirety of the site will promote a diverse mix-use typology, a concept highly celebrated in urban planning. The site has existing agricultural fields that have yielded crops for the past 40 or so decades. In an attempt to preserve the existing commodity and industry, promote the reformation of agriculture through modern applications. Biophilia as the inherent human inclination to affiliate with natural system and processes: natural lighting, natural ventilation and other environmental features. Explore the philosophy & application of access to amenities, recreation, and housing for everyone within short distances. Let natural structures influence design and reconnect the surrounding area (roots, plant cell structures, etc.). Wide walkways, narrow roads, human scale, autonomous urbanism (designing to allow for future adaptation). Connectivity as walkability, adaptability, navigability, relatability, interactivity, recognizability. Wilderness: active and aggressive; design kinetic spaces (bike trails, interactive exhibits, movable/reactive furniture and architecture). Use building materials that complement the site (look at surrounding building materials on adjacent sites, materials readily available in the area).

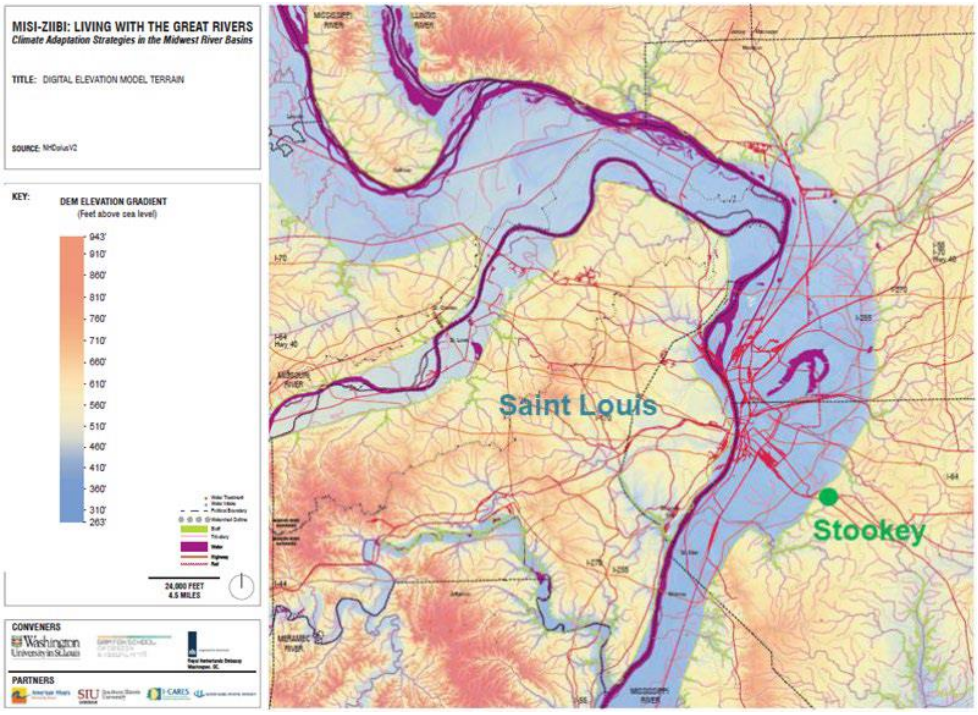
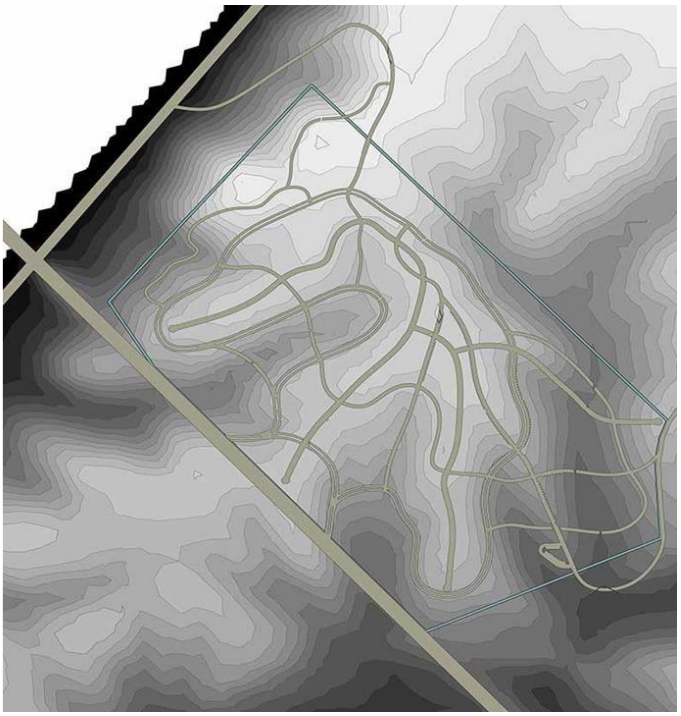


Figure 3. Floodplains of the Illinois, Mississippi and Missouri Rivers.

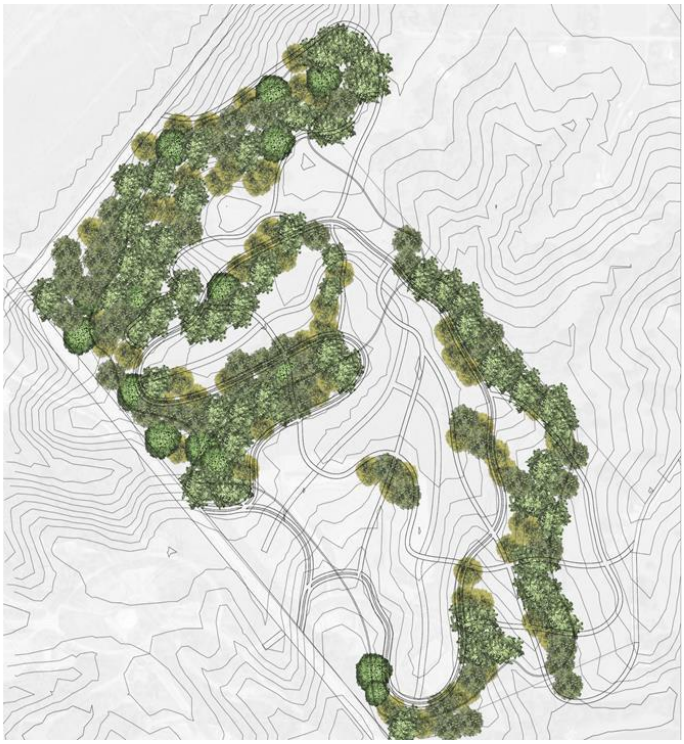
Eight master plan projects were created as the studio product and with them a strong response to that initial concern of a decentralization trend towards a more balanced and vigorous state. Below are shown some of one of the proposals' pictures.

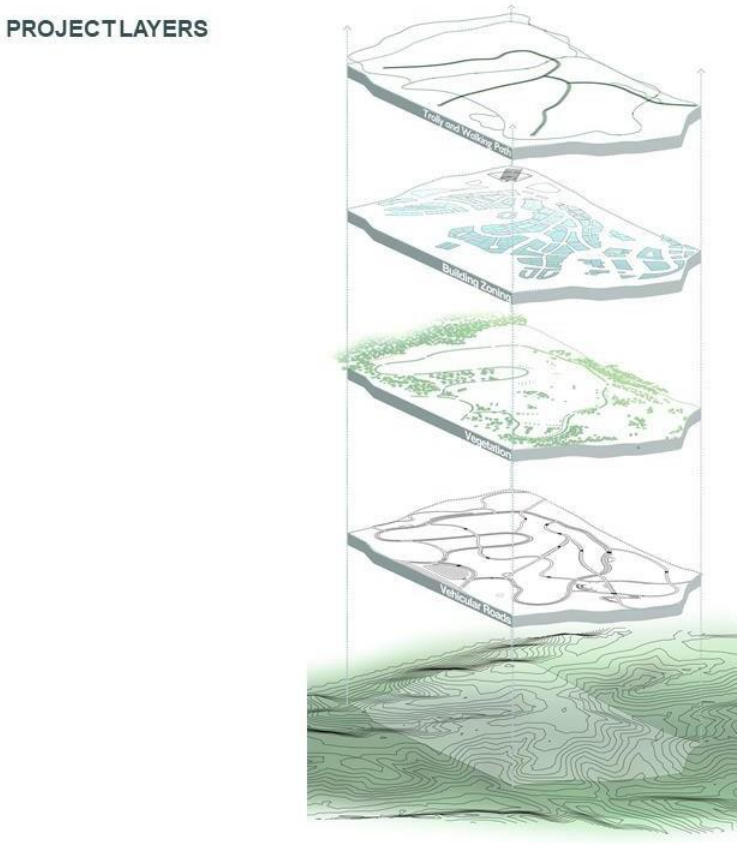
EXISTING SITE GRADES



Darker shades identify the lower elevations (600' to 420')

EXISTING VEGETATION



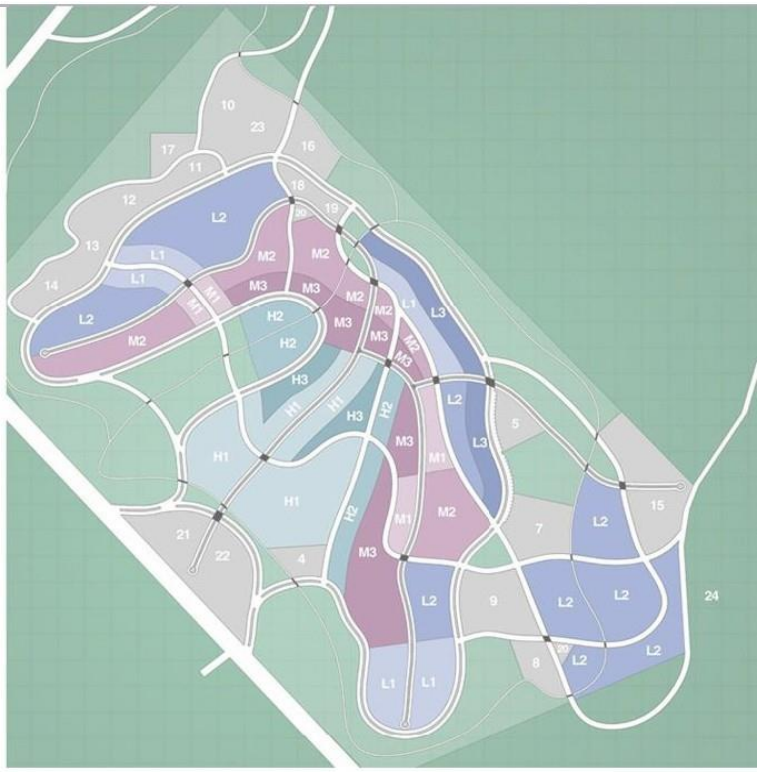


	1 Retail + Office	2 Residential + Retail	3 Residential + Office
L Low Rise	L1	L2	L3
M Mid Rise	M1	M2	M3
H High Rise	H1	H2	H3

Figure 4. Mixed-Use Zoning Matrix

ZONING

1. Retail-Office
2. Residential-Retail
3. Residential-Office
4. Hotel-Retail (one or the two)
5. Hotel
6. Parks
7. Community Center
8. Senior Living
9. Hospital
10. Rec Center
11. Pre-K School
12. Elementary School
13. Middle School
14. High School
15. Community College
16. Auditorium
17. Library
18. Police Station
19. Fire Station
20. Post Office (2)
21. Transit Station-Retail
22. Parking Garage
23. Ballpark
24. Fairgrounds



SITE PLAN

Figure 5.

BIBLIOGRAPHY

American Community Survey (ACS) of U.S., The. Census Bureau, 2015 Data Release. California Department of Finance. Retrieved November 3, 2015. https://www.census.gov/programs-surveys/acs/news/data-releases/2015/release.html

City of Galena, The. http://www.cityofgalena.org/en/our_community/galena_history/ Retrieved Oct 6, 2015.

Historical Development of Industry and Manufacturing in Illinois, The. Illinois Periodicals Online (IPO), a digital imaging project at the Northern Illinois University Libraries funded by the Illinois State Library. http://www.lib.niu.edu/1999/iht639941.html Retrieved October 6, 2015.

National Civic League, The. The All-America City Award. https://www.nationalcivicleague.org/america-city-award/ Retrieved October 11, 2015.

Rasmussen, Patty. Strength in Diversity. https://siteselection.com/ Retrieved March 7, 2015.

Rodriguez, Alex (January 26, 2014). Chicago Takes on the World. Chicago Tribune (Sec. 1 p. 15).

Site Selection Magazine Archives. 2016. http://siteselection.com/cc/texas/ Retrieved October 10, 2015.

Theising, A.J. *Made in USA: East St. Louis, the Rise and Fall of an Industrial River Town*. Virginia Publishing, 2003.

Tocqueville, A. de. *A History of Decentralization* Archived 2013-05-11 at the Wayback Machine., Earth Institute of Columbia University website, accessed October 4, 2015.

U.S. Census Bureau, Population Division. Estimates of Resident Population Change and Rankings: July 1, 2014 to July 1, 2015 - United States -- Metropolitan Statistical Area; and for Puerto Rico 2015 Population Estimates. Retrieved May 29, 2016.

U.S. Metro Economies. GMP and Employment 2014-2016. Global Insight. 2015. p. 15.

Wildcat Roar, The. A Fallen City is Easily Overlooked. March 26, 2013. Retrieved Nov 2, 2015. https://www.thewildcatroar.com/features/2013/03/26/a-fallen-city-is-easily-overlooked/

POST ZOO - ALTERNATIVE FUTURES IN THE ANTHROPOCENE

Author:
RUA ALSHAHEEN

Affiliation:
ARIZONA STATE UNIVERSITY, USA

INTRODUCTION

Considering the fast rate of environmental degradation, in the near future, zoos may become the only place left for wildlife. We have entered a new epoch titled the "Anthropocene" that postulates the idea that untouched pristine nature is almost nowhere to be found.[1] Many scientists and scholars argue that it is time that we embraced this environmental situation and anticipated the change.[2] Clearly, the impact of urbanization is reaching into the wild, so how can we design for animals in our artificializing world? Using Jim Dator's Alternative Growth Scenarios method (AGS) that argues that every future scenario includes these four alternatives: growth, discipline, collapse, and transformation[3], this research explores possible future animal archetypes by considering multiple possibilities of post zoo design.

SCENARIO PLANNING

Scenarios are multi-faceted; you need at least two, and they guarantee less certainty than different kinds of future predictions.[4] As far as probabilities, they can describe what might happen, not what is most likely to occur. "Unlike predictions and forecasts, scenarios do not imply a probability or likelihood."[5] Rather, scenarios have been characterized as conceivable portrayals of how the future maybe, using reasonable speculation.[6] The investigative nature of scenario procedures makes it a great method to explore vulnerable situations.[7] This is certainly helpful with regards to issues that are too dubious to ever be settled by conventional techniques. Scenarios have been utilized at the neighborhood to worldwide scales to encourage long haul consideration and investigation of social-natural frameworks.[8] This methodology has been embraced by various governmental and private organizations, think tanks, and NGOs for over 50 years.[9]

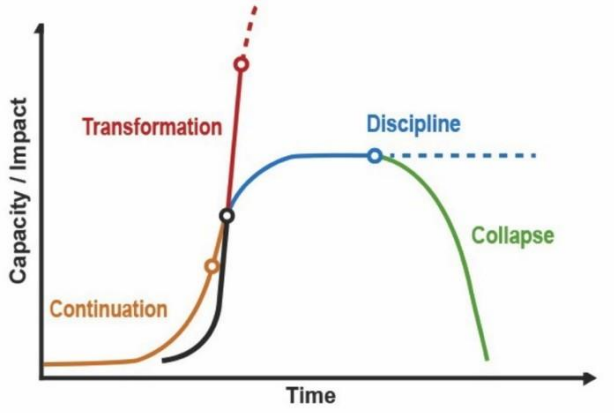


Figure 1. Alternative futures scenario model

Jim Dator, a prominent futurist, developed a scenario-planning model that presents alternative "images" of the future.[10] This Manao School method produces a quartet of scenarios that narrate alternative descriptions of the future. Each of the four scenarios is based on a different course of events describing the future change as growth, discipline, collapse, or transformation. In this paper, I use this method to explore possible futures of the zoo typology. The first scenario that I work through is a "Growth" scenario that sees a future driven by economy and development. In this scenario, the current recreational zoo will continue to grow as part of the entertainment industry. Under the "Discipline" scenario archetype, a second possible future zoo prototype could very well be re-wilding projects, where humans experiment with artificially created biomes. Discipline is a future scenario that sees human efforts to mitigate environmental crises and restore habitats. The "Collapse" scenario archetype investigates the extinction of wildlife due to "one of a variety of different reasons such as environmental overload and/or resource exhaustion, economic instability, moral degeneration, external or internal military attack, meteor impact, etc."[11] Collapse is a future scenario in which extinction of all animal species becomes a sad reality. The "Transformation" scenario "sees the end of current forms, and the emergence of new forms of beliefs, behavior, organization and perhaps intelligent life forms."[12] In the transformation scenario, people embrace technology and science to resurrect animals from the dead. After analyzing the four scenarios and their opportunities and challenges, I will propose a fifth "Synthesis" scenario.

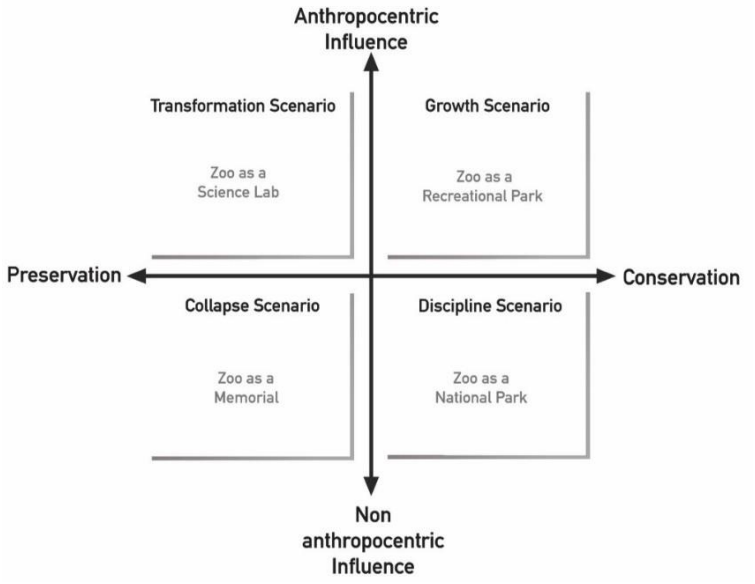


Figure 2. Scenario planning diagram

THE GROWTH SCENARIO

The history of zoos doesn't tell the story of a very considerate approach to animals[13], and that unsympathetic past is responsible in part for much of the opposition to the establishment. Studying the growth scenario through the past years indicates that economical and exploitation strategies were the impetus to human- animal interactions. Obsession with animal collection began long ago. The desire to interact with wildlife is still an inquisitive one especially now that we live in an age where life in the wild is broadly televised. Nature channels and programs continue to lift the veil of the pristine wilderness and its mysteries. We are provided with a platform where we can achieve some form of interaction with the wild world from the comfort of our homes[14]. However, this does not seem to be enough. We seem to still require that physical interaction with our nonhuman counterparts. The Animal Kingdom theme park situated in Florida is one of many human attempts to reinstate the status quo. Since 1998, this park has, in a sense, endeavored to accommodate nature and culture in the same space. It offers displays of animals in a safari enclosure, displays of mythical creatures that make use of high technology animatronics all the while working on virtual displays that when complete run the risk of replacing nature as we know it. Furthermore, the need to merge the two worlds has seen the creation of electronic zoos such as the Wildscreen in Bristol. Wildscreen offers its visitors a chance to interact with the natural world through wildlife films, ARKive and IMAX experiences[15]. Today, the vision of abundant nature is readily seen digitized on screens. This has opened us to a "zoomed-in" view of animal species in ways that were unthinkable a while back.[16] Today, individuals may only be in physical proximity to urban animals like pigeons and raccoons yet might possess wide knowledge on the lives of many nonnative creatures. "The real paradox is how a superficial and increasingly flat screen can trigger such a deep nature interest."[17] Although people may seem detached from nature in a bodily sense, they are likely to be more perceptually connected to nature. The inclusion of digital, film and telecommunication technologies offer a platform on which to reintroduce and rebrand the image of nature.[18] Virtual databases like ARKive.org imply that the disappearance of animals can be compensated by the storage and promotion of their images online. In this digital era, environmentalists believe that by partnering with ARKive they can use their comprehensive records on animals as a sort

of emotive tool to promote conservation efforts. Such zoos allow us to experience nature and the biodiversity without removing the species from their natural habitat.

THE DISCIPLINE SCENARIO

National parks have evolved over the years to include "a more open mode of *wilding*."[19] In Rewilding projects experts are restoring habitats by using existing proxy species such as livestock to take the place of similar species that used to exist centuries ago. Environmentalists have debated for a long time the notion that for nature to prosper, humans must be removed.[20] That is why rewilding projects involve minimal human intervention after the perimeters have been set and encourage wild behavior and predatory actions for survival. Hunting by animals is also not a pleasant scene for humans. However, in the wild the act of acquiring food by foraging or hunting takes up the majority of the animal's day and therefore should be reflected in the design.[21] The nature on display at the zoo is a human fantasized nature, and "the extension of the human idea to the wild will see in the behaviors and interrelationships among animals infinite cruelties."[22]Another direction has been the creation of "Earth Trusts" where nature is not treated as a commodity and interactions between humans and non-human others are unadulterated.[23] This futuristic stewardship of nature allows for experimentation with various policies, architectural designs and trends in order to come up with a working prototype. We must also understand that humans are equally influencers in the process of ecological change and consequently influence the evolution and development of our nonhuman counterparts whether or not we intended to do so.[24] Simply put, we need to look at our interactions with other species from a holistic perspective rather than a fragmented one. Only by so doing do we create room for innovative research into the designing of spaces where nature is not secluded or boxed off but incorporated into the very fabric of the space.

THE COLLAPSE SCENARIO

The art and science of taxidermy has evolved over the years motivated by different intentions.[25] For some, taxidermy is a means through which they can show off their hunting prowess, for others it is a way in which they can achieve continued interaction with their beloved pets even after death. From an artistic perspective, taxidermy is used as a medium and form of expression. In the scientific world, taxidermy is important in maintaining an inventory of nature's species and wonders. It also serves as a reminder that life is short and fleeting. So far, taxidermy has been used as an educational, conservational, artistic, as well as a nostalgic tool. It has been used to tell tales of the journey of mankind through time and the gains and losses that man has suffered. It is also a great reminder of man's recklessness that has seen a number of species driven to extinction. No matter what shape the drive behind the evolution and continued use of taxidermy takes, to create these shells of their former existence we attempt to defy life's natural processes. This desire stems from mankind's need to associate and be associated with the natural environment. Our actions are responsible for the extinction of a number of species, yet we strive to keep monuments of them. Taxidermy is perhaps our attempt to defy the natural order of life, death, and decomposition. By preserving animals, we hold on to what was, in the hope of extending its existence for times to come.[26]

Taxidermy has been used as a tool to tell the tale of who we are as a species from cultural, religious, political, and scientific standpoints.[27] We tend towards immortalizing creatures of parts of the natural world that have in one way or another played a significant role in our intellectual, aesthetic, and cultural evolution. It is through such species that we can completely tell the story of mankind. In the past we have associated animals with religious events, even carving out animal silhouettes in cave walls. This

awe and admiration of animals has seen the domestication of some as pets and the conservation of others in zoos. It is in the same awe-inspiring breath that we preserve these creatures as trophies, a mark of our conquest over nature.

THE TRANSFORMATION SCENARIO

Technology thus far has been important in defining natural life, culture, and beliefs. The central argument brought forward is that to better manage this fast-changing world, we need to put an end to the schism between the concepts of being human, technology, and of what is considered to be natural. The current anthropogenic era has surpassed the point of being defined by technology and has started manipulating it to define the systems of the earth and realize new life forms. "We could even see the growth of Jurassic Park-like safaris, where visitors can see animals in the flesh that had previously been long-extinct, bringing a whole new meaning to extinction tourism."[28] By combining knowledge of genetics, engineering, and agricultural sciences, mankind has been able to form a new hybrid scientific discipline known as synthetic biology.[29] We are now able to view biological pathways as pieces of a puzzle that can be shifted around to create biological templates that can be used to create organisms bearing the desired qualities. By doing so, mankind is now able to create different life forms from scratch; going beyond that which is naturally occurring. Nowadays, cloning methods are even being used commercially. By cloning dead pets and faster racehorses, breeders can "better leverage their most exceptional animals"[30]. Owning pets has actually helped in animal conservation, breeding, and research.[31] Hence, an open approach to raise de-extinct animals as pets maybe a likely future. In most de-extinction projects, the aim is to produce the closest replicas to the extinct species; "ecological proxies that are capable of filling the extinct species' ecological niche."[32] A functioning copy is sufficient; you do not need an exact replica in order to attain conservation goals. Those in favor of backbreeding aurochs are expected to release these animals into vacant farm areas near what was at one point the aurochs' grazing grounds.[33] Similarly, supporters of the mammoth revival aim to create hairy elephants that can withstand Siberia's brutal weather.[34]However, "it is not ethical to be purporting science fiction under the guise of science."[35]

THE "IDEAL" SYNTHESIS SCENARIO

	Discipline	Collapse	Transformation	Growth	Synurbization
Human Action	Non-human containment	Deliberate or unintended destruction of non-humans	Scientific investment	Sensationalist production	Usher animals in, accept risks
Animal reaction	Avoidance	Hostility	Surrender	Performance	Synanthropy
Exhibitory	Immersion Exhibits	Dioramas	Lab experiment	Cages	Urban intervention
Probable outcomes	Segregation	Misrepresentation	Fragmentation	Imposed profiteering	Co-existence

Table 1. Scenario synthesis

The ideal scenario should move away from the old standard of conservation to contemporary landscapes. An archetype that contests the science and procedure connected with the conventional typical conservation. It will be a primarily investigational space where there is a surrendering of power and the goal is not to reinstate a recognized and foreseeable ecosphere, rather to be exposed to a unexpected different one; a space far better capable to survive in the Anthropocene for it endorses a nature which depends neither on humans nor everlasting stability. The term synurbization was recently coined to describe the adaptation of animals to urban areas. This means that they are able to occupy areas where the conditions are favorable to survive (as well as breed) as they naturally would in their wild habitats. Synurbization goes beyond animals being introduced accidentally into urban spaces by humans (or otherwise) and thriving within these spaces in the short term. This concept is explored primarily for mammals and birds but is evident in other animal species.[36] With growing cityscapes around the globe, more animals are forced to acclimate to urban environments for their survival. The hooded crow, red fox, magpie, striped field mouse, red squirrel, and the black bird are living proof of wild animals' abilities to inhabit urban environments and thrive in them.[37] Successful cases of synurbization are proof of the ability of humans and non-human animals to co-exist and give hope for the management of wildlife species within city boundaries. Adaptation to the urban space is not only evident in urban hybrids, but also in humans. The growing numbers and frequency of interactions with nonhuman others and the fact that it is tolerated is a clear sign of adaptation on both sides of the nature-culture divide. Such relationships and interactions shed light on possible cordial interactions between humans and their nonhuman counterparts across a temporal geography.[38] It is for this reason that cordiality within the city space has to be designed for rather than engineered.[39] "Hence the spatial fetishism, the taxonomic absolutism, and nonhuman exclusivity of the 'wild' needs to be overcome."[40]

CONCLUSION

What would a revolutionized animal future look like and how would it come into being? At the risk of seeming too prescriptive, I postulate my manifesto of what a transformed animal future could look like.

1. Romanticized notions of nature are in continuous contradiction with current reality.
2. Our living space is constantly evolving by species moving into and through our urban fabric.
3. Architects need to design to cater for the ever-changing flux known as nature.
4. The urban fabric houses unseen synathropes. To manifest them is the challenge of this era.
5. The multispecies landscape requires higher exposure, compound unions, and public support.
6. Design ability is required to make the progressive relationship between humans and nature evident.
7. Unlike popular belief, human interaction with nature, while causing disruption, also enriches the living world and its inhabitants.
8. Investing in skill development, structuring policies, and science and technology can support cohabitation in cities.
9. Decision-making should involve all those that are part of the urban condition.
10. Building inclusive spaces requires tackling urban issues in all scales and temporalities.

Urban homogeneity led to a vicious run of anthropocentrism. Therefore, the modern ark has to challenge the interaction and interdependence of species beyond the basic survival of Noah's Ark.[41] The world is only as good as its various inhabitants, and animals and humans must interact on a deeper level if we are to share this world. Environmentalism, as we know it today, is stuck on the idea that we can retain and even recreate the romanticized conditions that were once present.[42] It is time we transport movements like Deep Ecology and the Gaia hypothesis to the context of the 21st century.[43] Today's environmental discussions are governed by a sense of doom and gloom.[44] With a long list of environmental disasters and extinctions, some have even argued that the world may be better off without humans, where slogans like "Earth Without Us" or Church of Euthanasia's "Save the Planet, Kill Yourself".[45] With changes in the way we interact with the environment on a cultural, social, or even technological level, there is a need to change the conventional concepts and principles of environmentalism. Conservation cannot freeze the present in time, should not be tackled only by charismatic animals, and must not enforce limits to conserved areas.

NOTES

[1] Paul J. Crutzen, “Geology of Mankind,” *Nature* 415, no. 6867 (January 3, 2002): 23.
[2] J Lorimer, *Wildlife in the Anthropocene* (University of Minnesota Press, 2015); Frank Oldfield et al., “The Anthropocene Review: Its Significance, Implications and the Rationale for a New Transdisciplinary Journal,” *The Anthropocene Review* 1, no. 1 (December 3, 2013): 3–7.
[3] Jim Dator,” Alternative Futures at the Manoa School”, *Journal of Futures Studies* 14, no. 2 (2009):1-18.
[4] Edward A Parson et al., “Global-Change Scenarios: Their Development and Use,” 2007.
[5] Detlef P Van Vuuren et al., “Scenarios in Global Environmental Assessments: Key Characteristics and Lessons for Future Use,” *Global Environmental Change* 22, no. 4 (2012): 884–895.
[6] Joseph Alcamo et al., “Methodology for Developing the MA Scenarios,” *Carpenter, SR et Al. (2005), Ecosystems and Human Well-Being: Scenarios* 2 (2005).
[7] Angela Wilkinson and Esther Eidinow, “Evolving Practices in Environmental Scenarios: A New Scenario Typology,” *Environmental Research Letters* 3, no. 4 (2008): 045017.
[8] Elisa Oteros-Rozas, F Ravera, and I Palomo, “Participatory Scenario Planning in Place-Based Social-Ecological Research: Insights and Experiences from 23 Case Studies,” *Ecology and Society*, 2015.
[9] Angela Wilkinson and Esther Eidinow, “Evolving Practices in Environmental Scenarios: A New Scenario Typology,” *Environmental Research Letters* 3, no. 4 (2008): 045017.
[10] Jim Dator, “Alternative Futures at the Manoa School”, *Journal of Futures Studies* 14, no. 2 (2009):1-18.
[11] Jim Dator, *Advancing Futures: Futures Studies in Higher Education* (Greenwood Publishing Group, 2002):10.
[12] Ibid
[13] Barbara Woods, "Good zoo/bad zoo: Visitor experiences in captive settings." *Anthrozoös* 15, no. 4 (2002): 343-360.
[14] Derek Bousé. “False Intimacy: Close-Ups and Viewer Involvement in Wildlife Films.” *Visual Studies* 18, no. 2 (2003): 123–132.
[15] “Wildscreen Arkive,” Online Encyclopedia, accessed September 7, 2018, www.arkive.org.
[16] Karen D Scott, “Popularizing Science and Nature Programming: The Role of ‘Spectacle’ in Contemporary Wildlife Documentary,” *Journal of Popular Film and Television* 31, no. 1 (2003): 29–35.
[17] Frans J Sijtsma, Michiel Daams, and Samantha van der Sluis, “Nature on TV: Deep Interests on Flat Screens,” *Recreation, Tourism and Nature in a Changing World*, 2010, 258.
[18] Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge, MA: Harvard University Press, 1987).
[19] Ibid: 190.
[20] William Cronon. *Uncommon Ground: Rethinking the Human Place in Nature*. WW Norton & Company, 1996, 79.
[21] Heini Hediger, *Wild Animals in Captivity.* (London: Butterworth, 1950).
[22] Paul Shephard, *Thinking Animals: Animals and the Development of human Intelligence.* (Athens, GA: University of Georgia Press, 1998): 248.
[23] Helena Pedersen and Natalie Dian, “Earth Trusts: A Quality Vision for Animals?” in *Metamorphoses of the Zoo: Animal Encounter after Noah*, by Ralph R Acampora (Oxford, UK: Lexington Books, 2010), 171–92.
[24] Sarah Whatmore, *Hybrid Geographies: Natures Cultures Spaces* (Thousand Oaks, CA: Sage, 2002): 36.
[25] Helena Pedersen, “Animals on Display: The Zoocurriculum of Museum Exhibits,” *Critical Education* 1, no. 8 (2010).
[26] Dave Madden, *The Authentic Animal: Inside the Odd and Obsessive World of Taxidermy* (New York: St. Martin’s Press, 2011): 27.
[27] Rachel Poliquin. “The Matter and Meaning of Museum Taxidermy.” *Museum and Society* 6, no. 2 (2008): 123–134.
[28] Lucy Ingham, “Last to See: The Future Rise of Extinction Tourism,” Factor, February 2015, https://www.factor-tech.com/feature/last-see-future-rise-extinction-tourism/.
[29] Pier Luigi Luisi, *The Emergence of Life: From Chemical Origins to Synthetic Biology* (Cambridge, UK: Cambridge University Press, 2016).
[30] Matt Burgess, “Where Are the Human Clones? 20 Years since Dolly Was Unveiled, We Look at the Future of Cloning,” Wired, March 2017, http://www.wired.co.uk/article/human-cloning-technology-dolly-sheep.
[31] Laurie Hess, “Exotic Animals: Appropriately Owned Pets or Inappropriately Kept Problems?” *Journal of Avian Medicine and Surgery* 25, no. 1 (2011): 50–57.

[32] Beth Shapiro, "Pathways to De-Extinction: How Close Can We Get to Resurrection of an Extinct Species?" *Functional Ecology* 31, no. 5 (2017): 6.
[33] Erik Stokstad, *Bringing Back the Aurochs* (Washington, D.C.: American Association for the Advancement of Science, 2015).
[34] Sergey A. Zimov, "Pleistocene Park: Return of the Mammoth's Ecosystem," *Science* 308, no. 5723 (May 6, 2005): 796–98.
[35] David E Blockstein, "We Can't Bring Back the Passenger Pigeon: The Ethics of Deception around de-Extinction," *Ethics, Policy & Environment* 20, no. 1 (2017): 35.
[36] Maciej Luniak, "Synurbization–Adaptation of Animal Wildlife to Urban Development," in *Proceedings of the 4th International Urban Wildlife Symposium*, 2004, 50–55.
[37] Christian Rutz, "The Establishment of an Urban Bird Population," *Journal of Animal Ecology* 77, no. 5 (2008): 1008–1019.
[38] John Edward Wall, "Spaces of Co-Existence: The Processes and Prospects of Living with Endangered Species" (PhD Thesis, Carleton University, 2011): 18.
[39] Lisa Peattie, "Convivial Cities," in *Cities for Citizens: Planning and the Rise of Civil Society in a Global Age*, by Mike Douglass and John Friedmann (John Wiley & Son Ltd, 1998), 247–53.
[40] Thom van Dooren, Garry Marvin, and Susan McHugh, *Routledge Handbook of Human-Animal Studies* (London: Routledge, 2014): 240.
[41] Vicki Croke, *The Modern Ark: The Story of Zoos: Past, Present, and Future* (New York: Simon and Schuster, 2014).
[42] Rupert Read, "Culture, Nature, Ecosystem (or Why Nature Can't Be Naturalized)," *Feminist Interpretations of Ludwig Wittgenstein*, 2002, 408–31.
[43] Max Oelschlaeger, "Deep Ecology and the Future of the Wild in the Anthropocene," *Trumpeter* 30, no. 2 (2014): 231–246.
[44] Steve Vanderheiden, "Rethinking Environmentalism: Beyond Doom and Gloom," *Global Environmental Politics* 11, no. 1 (2011): 108–113.
[45] Marina Zurkow and Una CHaudhuri, "Animalizing Interlude: Zoöpolis," in *The Stage Lives of Animals* (London: Routledge, 2016), 115–130.

BIBLIOGRAPHY

Alcamo, Joseph, Detlef Van Vuuren, Claudia Ringler, Jacqueline Alder, Elena Bennett, David Lodge, Toshihiko Masui, et al. "Methodology for Developing the MA Scenarios." *Carpenter, SR et Al.(2005), Ecosystems and Human Well-Being: Scenarios* 2 (2005).

Atkins, Peter. *Animal Cities. Beastly Urban Cities*. Farnham, UK, & Burlington, VT: Ashgate Publishing, 2012.

Blockstein, David E. "We Can't Bring Back the Passenger Pigeon: The Ethics of Deception around de-Extinction." *Ethics, Policy & Environment* 20, no. 1 (2017): 33–37.

Bousé, Derek. "False Intimacy: Close-Ups and Viewer Involvement in Wildlife Films." *Visual Studies* 18, no. 2 (2003): 123–132.

Burgess, Matt. "Where Are the Human Clones? 20 Years since Dolly Was Unveiled We Look at the Future of Cloning." Wired, March 2017. http://www.wired.co.uk/article/human-cloning-technology-dolly-sheep.

Croke, Vicki. *The Modern Ark: The Story of Zoos: Past, Present, and Future*. New York: Simon and Schuster, 2014.

Cronon, William. *Uncommon Ground: Rethinking the Human Place in Nature*. New York: WW Norton & Company, 1996.

Crutzen, Paul J. "Geology of Mankind." *Nature* 415, no. 6867 (January 3, 2002): 23.

Dator, Jim. *Advancing Futures: Futures Studies in Higher Education*. Westoport, CT: Greenwood Publishing Group, 2002.

———. "Alternative Futures at the Manoa School." *Journal of Futures Studies* 14, no. 2 (2009): 1–18.

Dooren, Thom van, Garry Marvin, and Susan McHugh. *Routledge Handbook of Human-Animal Studies*. London: Routledge, 2014.

Hediger, Heini. *Wild Animals in Captivity*. London, UK: Butterworth, 1950.

Hess, Laurie. “Exotic Animals: Appropriately Owned Pets or Inappropriately Kept Problems?” *Journal of Avian Medicine and Surgery* 25, no. 1 (2011): 50–57.

Ingham, Lucy. “Last to See: The Future Rise of Extinction Tourism.” Factor, February 2015. https://www.factor-tech.com/feature/last-see-future-rise-extinction-tourism/.

Latour, Bruno. *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge, MA: Harvard University Press, 1987.

Lorimer, Jamie. *Wildlife in the Anthropocene*. Minneapolis, MN: University of Minnesota Press, 2015.

Luisi, Pier Luigi. *The Emergence of Life: From Chemical Origins to Synthetic Biology*. Cambridge, UK: Cambridge University Press, 2016.

Luniak, Maciej. “Synurbization–Adaptation of Animal Wildlife to Urban Development.” In *Proceedings of the 4th International Urban Wildlife Symposium*, 50–55, 2004.

Madden, Dave. *The Authentic Animal: Inside the Odd and Obsessive World of Taxidermy*. New York: St. Martin’s Press, 2011.

Mockford, Emily J, and Rupert C Marshall. “Effects of Urban Noise on Song and Response Behaviour in Great Tits.” *Proceedings of the Royal Society of London B: Biological Sciences*, 2009.

Oelschlaeger, Max. “Deep Ecology and the Future of the Wild in the Anthropocene.” *Trumpeter* 30, no. 2 (2014): 231–246.

Oteros-Rozas, Elisa, F Ravera, and I Palomo. “Participatory Scenario Planning in Place-Based Social-Ecological Research: Insights and Experiences from 23 Case Studies.” *Ecology and Society*, 2015.

Parson, Edward A, Virginia Burkett, Karen Fisher-Vanden, David Keith, Linda Mearns, Hugh Pitcher, Cynthia Rosenzweig, and Mort Webster. “Global-Change Scenarios: Their Development and Use,” 2007.

Peattie, Lisa. “Convivial Cities.” In *Cities for Citizens: Planning and the Rise of Civil Society in a Global Age*, by Mike Douglass and John Friedmann, 247–53. Hoboken, New Jersey: John Wiley & Son Ltd, 1998.

Pedersen, Helena. “Animals on Display: The Zoocurriculum of Museum Exhibits.” *Critical Education* 1, no. 8 (2010).

Pedersen, Helena, and Natalie Dian. “Earth Trusts: A Quality Vision for Animals?” In *Metamorphoses of the Zoo: Animal Encounter after Noah*, by Ralph R Acampora, 171–92. Oxford, UK: Lexington Books, 2010.

Poliquin, Rachel. “The Matter and Meaning of Museum Taxidermy.” *Museum and Society* 6, no. 2 (2008): 123–134.

Read, Rupert. “Culture, Nature, Ecosystem (or Why Nature Can’t Be Naturalized).” *Feminist Interpretations of Ludwig Wittgenstein*, 2002, 408–31.

Rutz, Christian. “The Establishment of an Urban Bird Population.” *Journal of Animal Ecology* 77, no. 5 (2008): 1008–1019.

Scott, Karen D. “Popularizing Science and Nature Programming: The Role of ‘Spectacle’ in Contemporary Wildlife Documentary.” *Journal of Popular Film and Television* 31, no. 1 (2003): 29–35.

Shapiro, Beth. “Pathways to De-Extinction: How Close Can We Get to Resurrection of an Extinct Species?” *Functional Ecology* 31, no. 5 (2017): 996–1002.

Shephard, P. *Thinking Animals: Animals and the Development of Human Intelligence*. Athens, GA: University of Georgia Press, 1998.

Sijtsma, Frans J, Michiel Daams, and Samantha van der Sluis. “Nature on TV: Deep Interests on Flat Screens.” *Recreation, Tourism and Nature in a Changing World*, 2010, 258.

Stokstad, Erik. *Bringing Back the Aurochs*. Washington, D.C.: American Association for the Advancement of Science, 2015.

Van Vuuren, Detlef P, Marcel TJ Kok, Bastien Girod, Paul L Lucas, and Bert de Vries. “Scenarios in Global Environmental Assessments: Key Characteristics and Lessons for Future Use.” *Global Environmental Change* 22, no. 4 (2012): 884–895.

Vanderheiden, Steve. “Rethinking Environmentalism: Beyond Doom and Gloom.” *Global Environmental Politics* 11, no. 1 (2011): 108–113.

Wall, John Edward. “Spaces of Co-Existence: The Processes and Prospects of Living with Endangered Species.” PhD Thesis, Carleton University, 2011.

Whatmore, Sarah. *Hybrid Geographies: Natures Cultures Spaces*. Thousand Oaks, CA: Sage, 2002.

“Wildscreen Arkive.” Online Encyclopedia, September 7, 2018. www.arkive.org.

Wilkinson, Angela, and Esther Eidinow. “Evolving Practices in Environmental Scenarios: A New Scenario Typology.” *Environmental Research Letters* 3, no. 4 (2008): 045017.

Woods, Barbara. “Good Zoo/Bad Zoo: Visitor Experiences in Captive Settings.” *Anthrozoös* 15, no. 4 (2002): 343–360.

Zimov, Sergey A. “Pleistocene Park: Return of the Mammoth’s Ecosystem.” *Science* 308, no. 5723 (May 6, 2005): 796–98.

Zurkow, Marina, and Una CHaudhuri. “Animalizing Interlude: Zoöpolis.” In *The Stage Lives of Animals*, 115–130. London, UK: Routledge, 2016.

SEEKING A RELATIONAL ARCHITECTURE IN THE WRITINGS OF CHRISTOPHER ALEXANDER

Author:
KEVAN KLOSTERWILL

Affiliation:
UNIVERSITY OF VIRGINIA, USA

INTRODUCTION

Christopher Alexander, most well-known for his "pattern language" approach to architecture, has always enjoyed something of an iconoclastic reputation, influential in some ways, and yet with an uncertain position in the lineages that usually structure the architectural canon. Alexander's biographer-interlocutor Stephen Grabow describes his work as a search for a "new paradigm" in architecture, applying historian of science Thomas Kuhn's model to interpret Alexander's project as a move forward,[1] one that would unsettle the terms of architectural thinking and production. Alexander himself positions his work as a rediscovery of older principles and a recovery of lost ways of designing and building. But Alexander is an unreliable narrator, whose passionately nostalgic rhetoric masks the novelty of his theorizing.

Consider the now-famous 1982 debate between Alexander and fellow architect-theorist Peter Eisenman. Eisenman asks Alexander whether his work resonates with that of French structuralists. Alexander coyly replies, "I don't know the people you're talking about."[2] Eisenman, well-versed as he is in contemporary theory of the time, tries to persuade Alexander that they have more in common than initially appears to be the case, that they are both operating on a critique of Western thinking over the last few centuries, dealing with issues of cosmology at the broadest levels. But, to the exasperation of Eisenman, Alexander does not concede this, and makes a distinction between how they both work. Despite the critical rhetoric of postmodernists, Alexander argues, the buildings aren't so different from those of the modernists that preceded them.

When it comes to Alexander's work and thinking, they're both right. The influences of continental philosophy are apparent in his work, among them Heideggerian phenomenology and structuralism.[3] And it really is a question of cosmology, one that is surprisingly congruent with contemporary thinking in the philosophical tradition Eisenman identifies, as will be shown below. Further, this theoretical tradition, as it has continued to unfold alongside Alexander's work, has much to offer those interested in the practice of shaping environments, in ways that enrich the initial formulations of Alexander.

But, as Alexander seems to suggest, architecture cannot continue to exist and has no particular value in the way Eisenman understands and practices it. In Alexander's view, a radically different cosmology demands radically different ways of working to produce radically different spatial qualities. In their

conversation, Eisenman the deconstructivist is arguing for architecture's necessary role in revealing the inevitable contradictions within our world, while Alexander is arguing for another world entirely.

How do we contextualize this debate—as a jockeying between two competing ideas regarding the future of architectural thinking? If so, neither seems to have been particularly fruitful. The deconstructivist paradigm that Eisenman operated within has come and gone, as paradigms do—particularly since critique has "run out of steam."[4] Meanwhile, Alexander has continued to publish and refine his thinking, but his method and built work remained largely on the sidelines and is unengaged with the discourses where it might find more fertile soil. Does this suggest an abortive paradigm, one that never created the Kuhnian revolution necessary to gain dominance? For Kuhn, scientific paradigms iterate somewhat more quickly than the multi-century chunks of time that Alexander and Eisenman are critiquing. Architecture has, since their conversation, seen a host of stylistic and paradigmatic moments emerge at various discursive scales—from green building to blobitecture and parametricism—but the broadest transformation, at the level of what we might, borrowing from Foucault, call an episteme,[5] has yet to fully occur. But this precisely the kind of rupture that Alexander seeks, the kind of idea that frames centuries. Perhaps we shouldn't be surprised that it has taken so long to take root.

In the sections that follow, this paper takes a generous reading of Alexander's work, alongside contemporary theorists seeking to inaugurate a new cosmology, asking how architecture and design might more rigorously engage with these theories—among them New Materialisms, Relational Ontologies, and Posthumanism—and avoid the trap that Alexander accuses Eisenman of falling into, namely of being all talk. Specifically, it identifies overlaps in the models that sustain these theories, particularly regarding their relational structure and their emphasis on performativity and affect; the ethics that flow from these understandings; and the character of the epistemic rupture they seek. These comparisons facilitate a reflection on the contributions that Alexander makes as an explicitly spatial thinker to these kinds of arguments, and the kinds of refinements to his own arguments that they facilitate. If design is going to contribute to the intellectual and cultural shifts that these thinkers argue for, and many designers often sympathize with, then Alexander's work provides a compelling starting point, in its comprehensive development of relational thinking to architectural form and practice.

CONGRUENCES

There are a number of philosophers who have written over the last century or so whose work is influential in forming a relational and new materialist ontology. These writers often fold together epistemological and ontological concerns and seek to resolve tensions between descriptive and constructivist accounts of the world. Spinoza and Leibniz are two early figures often cited as ancestral to this philosophical genealogy. William James, Henri Bergson, and Alfred North Whitehead make foundational contributions at the turn of the twentieth century, and more recently, figures like Gilles Deleuze and Bruno Latour have framed contemporary discourse. These figures often critique or are held up against Descartes and others who inform the Rationalist tradition that shapes our Modern world. One provisional litmus for membership in the relational and new materialist discourses is Jane Bennett's "creed" offered at the conclusion of her book *Vibrant Matter*, which states in part, "I believe in one matter-energy, the maker of things seen and unseen … that this pluriverse is traversed by heterogeneities that are continually doing things" and the "vitality of nonhuman bodies, forces, and forms" whose liveliness challenges notions of human mastery.[6] Alexander's writings follow much of this creed, and share a number of surprising congruences with theorists in this discourse, among them a focus on

dynamic relationships, as well as similar theoretical references. But there are a number of specific points worth mentioning that illustrate the overlaps between his work and this broader discourse.

At the core of Alexander's work is an interest in theorizing wholes, forms, the relationships between them, and the processes by which they emerge. Although his work has ranged widely, this has remained a continuing question, one with not only material and spatial but social and economic implications.[7] His early book, *The Timeless Way of Building*, introduces the "quality without a name," which he triangulates among a number of values, including wholeness and life. "This quality," he writes, "is the most fundamental quality there is in anything."[8] If his early work is more focused on building, later writings, most notably in the four-volume work, *The Nature of Order*, bring the foundational character of this investigation to the fore, and emphasizing that the status of matter itself is at stake. Critiquing Descartes, and citing figures like Whitehead, Alexander argues for a view that echoes Bennett's acknowledgement of matter's liveliness: "The cosmology which I describe … rests on the recognition of the I—the source of our own self—as something real, existing together with space and matter in the universe, something which must be given its status, together with space and time, as part of a new view of living structure in a more comprehensive material view of things."[9]

Animating Alexander's model is an interest in dynamic and evolving webs of relationships,[10] and an interest in developing the conceptual tools necessary to describe the built world in this way. His article, "A City is Not a Tree," is emblematic of this argument.[11] Here he applies set theory to argue for semi-lattices as a more accurate model of dynamic urban environments, and to argue more generally for complex and less tree-like models. Although more directly applied, the conceptual and metaphorical similarities with Deleuze and Guattari's adoption of the rhizome in opposition to the tree is compelling.[12] At a deeper level, Alexander understands buildings and spaces as emerging through specific and localized collections of patterns that range in scale and extent, and mirror notions of assemblage as used by relational thinkers.

What others might call performativity is also central to Alexander's model, which anticipates a co-productive and inextricable relationship between patterns of events—both human and non-human—and patterns of space. But Alexander's sense of performativity takes on a deeply material hue:

"…A large part of the "structure" of a building or a town consists of patterns of relationships … At first sight, it seems as though these patterns of relationships are separate from the elements … When we look closer, we realize that these relationships are not extra, but necessary to the elements, indeed a part of them. … When we look closer still, we realize that … it is not merely true that the relationships are attached to the elements: the fact is that the elements *themselves* are patterns of relationships."[13]

This argument overlaps significantly with Karen Barad's development of "agential realism" and its intra-acting phenomena.[14] Although they have distinct focuses, both share a sense of the inextricability of things and a focus on emerging and entangled agencies from the smallest levels of matter to the macro level of cultures and social patterns.

Posthuman discourse is broad, and these figures do not all agree with one another on all points, and neither does Alexander, but as these few examples illustrate, there is a substantial agreement between these bodies of thought. If we want to imagine what relational architectural theory looks like, Alexander's provides an initial sketch, at least at the ontological level. But, as Barad notes, ontology, epistemology, and ethics cannot be separated—all are material-discursive practices. And so, we now turn to the ethical criteria in Alexander's work and ask how they too might be compared with posthuman and relational theorists.

ETHICS

Ideas of affect are central to interpreting the role of agency in this model. How things become open or closed to one another and form beneficial relationships is central. One criterion for this in the posthuman discourse is an idea of more-than-human or multispecies flourishing.[15] This notion of flourishing extends Aristotle's *eudaimonia* as the highest human good toward an increasingly ecological perspective.[16] Ideas of care, originating in in feminist theory, are recast in a relational and multispecies light, with relational worlds and assemblages becoming the site where care is played out. As Maria Puig de la Bellacasa writes, care "includes everything that we do to maintain, continue and repair 'our world' so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web."[17]

In his debate with Eisenman, Alexander makes quite clear the ethical stakes he finds for architecture—he accuses one of Eisenman's favored architects of "fucking up the world," and Eisenman of "fucking up the whole profession of architecture" by creating and advocating for disharmonious and anxiety-inducing buildings. Eisenman implies that there is something therapeutic in gestures that aestheticize the underlying disharmonies of the world, but are otherwise neutral, while Alexander's position suggests that such acts nonetheless foster additional disharmony, unraveling the world further. "Don't you think there is enough anxiety at present? Do you really think we need to manufacture more anxiety in the form of buildings?" Alexander asks.

With Alexander's statements on the underlying life of spaces and relationships in mind, this exchange provides a window into Alexander's ethic—the fostering and maintaining of life as part of a broader sense of care for the world, and ultimately what others call flourishing. "In an environment which has living structure each of us tends, more easily, to become alive," he writes.[18] Like the posthumanists and relational thinkers, this sense of life is ecological, with right intervention by humans necessary to sustain our part of these worlds, as they contribute to sustaining us. Actions like those of Eisenman, in this light, are irresponsible. Alexander's work therefore is an attempt theorize a spatial practice that would meet this ethic. This practice is wholly incompatible with life-destroying activities, by definition, and ultimately requires large-scale transformation.

RUPTURE

In his most recent book, *The Battle for the Life and Beauty of the Earth*, Alexander proposes a split between two "world-systems." Each of these systems, A and B, embodies a way of thinking and working, and ultimately manifesting environments. System-A refers to a contextually-driven process that creates lively and whole environments, whereas System-B is a rationalist and ultimately destructive one.[19] Readers of Aldo Leopold may recognize a similarity to his "A-B Cleavage," which pits a commodity-driven agricultural system against a more holistic one driven by recognition of the liveliness of environment (ironically, A and B are reversed in the work of Alexander and Leopold).[20] STS theorist Bruno Latour names these two practices more descriptively, arguing that we must now choose between "ecologizing" or "modernizing."[21] Central to Latour's work is to imagine a "new constitution" that would resolve the binary thinking he associates with so-called Modernism, most notably by addressing the divide between humans and non-humans.[22]

In each case, these well-known figures, writing on their respective topics—building, agriculture, politics—present us with a distinction that demands a new set of assumptions, and reframes the world accordingly, by challenging the mental models of the last several centuries, which often focus on isolating and objectifying things, and instead attend to their liveliness and the concerns they bring with

them. In these statements, we see an effort to overturn the epistemic assumptions that structure our world and imagine one that is radically different. Such a new world will require new politics, new production systems, new agriculture, new economies, and many offering these kinds of critiques have offered contributions in this light. In each of these cases, a certain quality lies at the heart of any action, which can either be present or absent.

In addition to his more theoretical and ontological investigations, Alexander has also developed a number of writings regarding alternative methods of building and financing, with a focus on empowering individuals and communities to take control of environmental production. He aims for a more intuitive and adaptive approach that blurs the lines between designing and building (and therefore designer and builder). Likewise, his work challenges the fundamental unit of design, by tuning in to incremental additions and patterns, rather than whole buildings, as primary. But most explicitly, he has taken on questions of financing and ownership, which give his work an explicitly anti-capitalist streak. In a draft report titled the "Grass Roots Housing Process," which proposes an alternative method of financing that bars real estate speculation, he introduces the effort with comments that illustrate the ontological hue of the effort: "A house is an act or series of acts; it is not an object but an experience; it is not a commodity to be bought and sold but an activity essential to life."[23] This framing in a seemingly pragmatic document illustrates the extent of the rupture Alexander's work imagines, and the connection between theory and practice such a rupture demands. It also gives context to the inadequacies he identifies in the work of Eisenman and others, whom he associates with cheap talk.

CONCLUSION

Alexander has acknowledged the deficits in his own work, and its adaptations by others, which haven't always succeeded in generating the kinds of spaces he imagines.[24] This is due in part to the difficulties of our existing context which constrain possibilities. But even if his overall model is quite aligned with contemporary relational philosophy, there are methodological concerns to be raised about Alexander's work and the specific patterns and principles that emerge from them, which may explain the inadequacies of these efforts. For instance, while describing his method, which involves him reflecting on his reaction to pairs of photographs, Alexander rejects the "modesty of judgement typical in a pluralistic society," and instead assumes "with as much confidence I felt to be real and reliable, that what I measured here would also be share with others."[25]

In this moment, Alexander's quite insightful method for describing the spatio-temporal patterns of the world would benefit from the more nuanced arguments advanced by post humanist and relational thinkers. For instance, in light of Haraway's argument that situated knowledges embody a greater objectivity[26] renders Alexander's dismissal of the modesty of pluralism as naïve, and contrary to the broader argument he develops. The pattern language model and other tools developed by Alexander can be of great use to applying post humanist concerns to the built environment, but only if they are reinforced by a sensibility derived from feminist, postcolonial and other voices, who might be better tuned in to how different spatial patterns manifest different experiences for different bodies, rather than assuming Berkeley students and faculty as the universal measure for the experiential environment. Patterns simply cannot be universal and locally situated simultaneously.

If designers going to really take the work of post humanist and relational thinkers seriously, rather than simply aestheticizing those concepts, they will have to embrace new ontologies, ethics, and ways of working radically different than those they have been taught. This will present a challenge, when so much of the world is configured in ways that preclude such thinking. But, in collaboration with other

scholars in the humanities, perhaps new modes of working may emerge, drawn from the ongoing activities of communities struggling within this system. Those patterns may not be the ones that represent the almost utopian communities that Alexander envisions, but they may be the ones that help us survive, and perhaps turn toward that world.

NOTES

[1] Stephen Grabow, *Christopher Alexander: The Search for a New Paradigm in Architecture* (Stocksfield, UK: Oriel Press, 1983).
[2] Peter Eisenman and Christopher Alexander, "Discord Over Harmony in Architecture," *Studio Works* 7 (2000): 51.
[3] Yasser Elsheshtawy, "Searching For Theory: Christopher Alexander's Intellectual Roots," *Architectural Science Review* 44, no. 4 (December 1, 2001): 395–403, https://doi.org/10.1080/00038628.2001.9696920.
[4] Bruno Latour, "Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern," *Critical Inquiry* 30, no. 2 (2004): 225–48.
[5] Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (London; New York: Routledge, 2005), http://public.eblib.com/choice/publicfullrecord.aspx?p=240649.
[6] Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010), 122.
[7] Michael W Mehaffy, "Notes on the Genesis of Wholes: Christopher Alexander and His Continuing Influence," *URBAN DESIGN International* 12, no. 1 (March 2007): 41–49, https://doi.org/10.1057/palgrave.udi.9000182.
[8] Christopher Alexander, *The Timeless Way of Building* (New York: Oxford University Press, 1979), 26.
[9] Christopher Alexander, *The Luminous Ground*, vol. 4, The Nature of Order: An Essay on the Art of Building and the Nature of the Universe (Berkeley, CA: Center for Environmental Structure, 2004), 23.
[10] Christopher Alexander and Barry Poyner, "The Atoms of Environmental Structure" (Berkeley,: Center for Planning and Development Research, University of California, Berkeley, 1966).
[11] Christopher Alexander, "A City Is Not A Tree," *Architectural Forum* 122, no. 1 (1965): 58–62.
[12] Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1987).
[13] Alexander, *The Timeless Way of Building*, 87–88.
[14] Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham and London: Duke University Press, 2007).
[15] See for instance Haraway's use of the concept to organize the environmental ethic and practice she develops in her most recent book. Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene*, Experimental Futures: Technological Lives, Scientific Arts, Anthropological Voices (Durham: Duke University Press, 2016).
[16] Scot Barnett, "Living Well in the Anthropocene," *Rhetoric Review* 37, no. 4 (2018): 384–92, https://doi.org/10.1080/07350198.2018.1497882.
[17] To develop her definition, De La Bellacasa draws directly upon the work of Joan Tronto and Bernice Fisher. Maria Puig De La Bellacasa, *Matters of Care: Speculative Ethics in More than Human Worlds* (Minneapolis: University of Minnesota Press, 2017), 3.
[18] Christopher Alexander, *The Phenomenon of Life*, vol. 1, The Nature of Order: An Essay on the Art of Building and the Nature of the Universe (Berkeley, CA: Center for Environmental Structure, 2002), 372.
[19] Christopher Alexander, *The Battle for the Life and Beauty of the Earth: A Struggle Betwen Two World-Systems* (New York, NY: Oxford University Press, 2012).
[20] Aldo Leopold, *A Sand County Almanac* (New York: Ballantyne Books, 1966).
[21] Bruno Latour, Bruce Braun, and Noel Castree, "To Modernise or Ecologise? That's the Question," in *Remaking Reality: Nature at the Millenium* (London and New York: Routledge, 1998), 221–42.
[22] Bruno Latour, *Politics of Nature: How to Bring the Sciences into Democracy* (Cambridge, MA; London: Harvard University Press, 2004).
[23] Christopher Alexander et al., "The Grass Roots Housing Process" (Center for Environmental Structure, June 1973).
[24] Grabow, *Christopher Alexander: The Search for a New Paradigm in Architecture*.
[25] Alexander, *The Phenomenon of Life*, 1:144.
[26] Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991).

BIBLIOGRAPHY

Alexander, Christopher. “A City Is Not A Tree.” *Architectural Forum* 122, no. 1 (1965): 58–62. *The Battle for the Life and Beauty of the Earth: A Struggle Between Two World-Systems*. New York, NY: Oxford University Press, 2012. *The Luminous Ground*. Vol. 4. 4 vols. The Nature of Order: An Essay on the Art of Building and the Nature of the Universe. Berkeley, CA: Center for Environmental Structure, 2004. *The Phenomenon of Life*. Vol. 1. 4 vols. The Nature of Order: An Essay on the Art of Building and the Nature of the Universe. Berkeley, CA: Center for Environmental Structure, 2002. *The Timeless Way of Building*. New York: Oxford University Press, 1979.

Alexander, Christopher, Mike Cox, Halim Abdel-halim, Ed Hazzard, Ilhan Kural, and Marty Schukert. “The Grass Roots Housing Process.” Center for Environmental Structure, June 1973.

Alexander, Christopher, and Barry Poyner. “The Atoms of Environmental Structure.” Berkeley,: Center for Planning and Development Research, University of California, Berkeley, 1966.

Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham and London: Duke University Press, 2007.

Barnett, Scot. “Living Well in the Anthropocene.” *Rhetoric Review* 37, no. 4 (2018): 384–92. https://doi.org/10.1080/07350198.2018.1497882.

Bennett, Jane. *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press, 2010.

De La Bellacasa, Maria Puig. *Matters of Care: Speculative Ethics in More than Human Worlds*. Minneapolis: University of Minnesota Press, 2017.

Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Minneapolis: University of Minnesota Press, 1987.

Eisenman, Peter, and Christopher Alexander. “Discord Over Harmony in Architecture.” *Studio Works* 7 (2000): 48–57.

Elsheshtawy, Yasser. “Searching For Theory: Christopher Alexander’s Intellectual Roots.” *Architectural Science Review* 44, no. 4 (December 1, 2001): 395–403. https://doi.org/10.1080/00038628.2001.9696920.

Foucault, Michel. *The Order of Things: An Archaeology of the Human Sciences*. London; New York: Routledge, 2005. http://public.eblib.com/choice/publicfullrecord.aspx?p=240649.

Grabow, Stephen. *Christopher Alexander: The Search for a New Paradigm in Architecture*. Stocksfield, UK: Oriel Press, 1983.

Haraway, Donna J. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge, 1991. *Staying with the Trouble: Making Kin in the Chthulucene*. Experimental Futures: Technological Lives, Scientific Arts, Anthropological Voices. Durham: Duke University Press, 2016.

Latour, Bruno. *Politics of Nature: How to Bring the Sciences into Democracy*. Cambridge, MA; London: Harvard University Press, 2004. “To Modernise or Ecologise? That’s the Question.” In *Remaking Reality: Nature at the Millenium*, edited by Bruce Braun and Noel Castree, 221–42. London and New York: Routledge, 1998. “Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern.” *Critical Inquiry* 30, no. 2 (2004): 225–48.

Leopold, Aldo. *A Sand County Almanac*. New York: Ballantyne Books, 1966.

Mehaffy, Michael W. “Notes on the Genesis of Wholes: Christopher Alexander and His Continuing Influence.” *URBAN DESIGN International* 12, no. 1 (March 2007): 41–49. https://doi.org/10.1057/palgrave.udi.9000182.

IMAGINING SPACE AND ENVISIONING FUTURES - A BI-DISCIPLINARY APPROACH TO DIGITAL URBAN PLANNING

Author:
SOPHIE MÉLIX, **MARTIN SCHINAGL**

Affiliation:
LEIBNIZ INSTITUTE FOR RESEARCH ON SOCIETY AND SPACE, ERKNER
COLLABORATIVE RESEARCH CENTRE "RE-FIGURATION OF SPACE", GERMANY

INTRODUCTION

The planning profession, like any other professional field, has undergone profound transformations in the course of digitization since the late 1960s. Has it? Planners and architects have discussed these changes, but a socio-scientific investigation of changed planning practices and possible impact on the physical arrangement of the built environment is still missing.

We are set out to investigate both levels – the process of planning as practice and the results of planning as manifested in plans and planning products[1] – in order to grasp the interrelation of urban planning and digitalization. Processes and results of planning are here to be discussed in one paper written from the viewpoint of two different disciplinary perspectives. We argue for a reflection on epistemic core categories of urban planning, such as space, plans and maps, and an interdisciplinary methodology, including the mapping of discourses and actions as a processual and analytical tool.[2]

The way planners see the world shapes the world we live in. To approach the subject of planning is to approach actions and products of a process of spatial production directed towards the future. To define planning as a heterogeneous set of practices and culture of doing closely connects these to actions of spatial representation and imagination of space and spatial orders. The envisioning and imagination are central aspects to planning as an embodied and cognitive practice as well as on the level of discourses. By discourses we understand debates, imageries and paradigms as well as the materiality of planning products and built environments.[3]

Being an interdisciplinary team that consists of researchers with backgrounds in sociology and planning has implications on theorization, methodology, and the culture of working beyond disciplinary enclaves.

Interdisciplinary discussions between different disciplines can lead to misunderstandings and confusion. A common understanding of the interdependencies of planning actions, built environments, spatial imaginations and socio-material landscapes in which digitalization is embedded and within which planning actions take place requires to lay open the disciplinary concepts and methods. Comparing and combining different methodological approaches go hand in hand with theoretical considerations.

A SOCIOLOGICAL PERSPECTIVE

Spacing, Synthesis and Perception

Putting space on the agenda of sociological research means to reflect upon the social production of space and to understand society and social action through space. To planners, "space" is the central epistemic category which they literally "construct" as they structure, classify, dissect, arrange, understand, and visualize it "as such".[4, 5] Space thus generally tends to appear as a background or a box in which action takes place. Modernist concepts or the neoliberal discourses on "Smart City" producing "smart citizens" tend to convey an idea of space as intentional and determinant for a desired social behavior. [6]

It is worth reflecting on our thinking about space. Referring to Henri Lefebvre, Doreen Massey points out "that we often use that word space … without being fully conscious of what we mean by it. We have inherited an imagination so deeply ingrained that it is often not actively thought".[7] Doreen Massey conceptualizes space as a structure of relations and types.

Martina Löw's conceptualization of the constitution of space[8] is central to our relational understanding. Here, space is constituted through the social practice of spatialization as a two-fold process, consisting of i) the placing of social and material objects, goods, technology and people (spacing) and ii) the interpretative act of synthesis through which meaning is given to these human-thing-figurations. Via processes of perception, imagination and mental/embodied memory, objects and people are linked together (synthesis) to space and spatial formations that make sense and frame actions. Such formations may be a nation state, a city, a neighborhood or the arrangement of objects and activities that form a planning department. Space – Martina Löw builds on Anthony Giddens' *structuration* theory here – is an arrangement structuring action that again is subject to change by action[9]. Space is thus a structure through practice and the product of social action (of spacing and synthesis) as well as its prerequisite.[10]

"There is no social phenomenon free of space"[11]

The claim to make here is that the interrelations between perception, imagination and synthesis are technologically co-mediated through bodily incorporated practices and thus organize the way we relate to space. The contextual socio-material landscapes in which planning actions enfold consist of modes of convention and practices, imaginations and technology. The human-thing-relations "can affect subjects in various sensual ways, create atmospheres and acquire meaning", which are eventually translated "in such a way as to become part of assembled orders of signs (such as maps), of technologies (such as CAD) or objects, such as built architecture".[12] The question arising here is how technology shapes subjective spatial perception and the construction of space.

Digital Planning and Spatial Imagination

Nowadays, planning tools differ largely from those 50 years ago. Light table, paper maps, pencils and rulers have been marginalized if not abandoned altogether. Digital materialities and software led to the replacement of analogous techniques. The technical drawer was made obsolete by CAD, plotters, etc. As planning processes and design practices are reorganized around new tools, new techniques are acquired in order to communicate within the planning procedures and with stakeholders. This impacts the ways planning as an imaginative, embodied and technologically embedded practice comes into emergence. The development of software and tools, cut-and-paste functions, vector-based programs, the possibility of seamless zooming in and out of the design and the move towards forms of perspectivation and scaling that facilitate certain design practices and others not as much. Nevertheless, the relationing to space through planning practice still makes use of analogous tools. As one planner puts it: "(H)and sketching is very important for us, because when you go

through the process of sketching, you start to understand the details. You are looking through a certain lens when you are making a drawing. So, you start to notice the infrastructure that is on a sidewalk, like streetlights, you have to pay attention to the grids. … I have to start to understand all of the things that are happening."[13] Each technology co-constructs the relationing to space as it becomes part of the planner's processes of spacing and synthesis. Or as one of the informants in respect to working with CAD put it: "You are working on kind of a flat surface and you are in digital land".[14]

The imagination and conception of spatial structures are interdependent with socio-material settings. The widespread use of digital map services in planning allows the mediated inspection and evaluation of an area. Planning offices are now able to plan areas with the help of large data sets, GIS software and map services. It reflects an increase of complexity in planning issues where the amount of processed information exceeds the capacity of human cognition and analogous techniques. This builds on an increasing reliance and dependency on data stemming from a variety of different actors.[15] Yet the question for further exploration remains what exactly happens when instead of 20 blocks requiring site visits, a rezoning is done for 200 blocks at once by means of digital site evaluation. It is through such kind of changes that digitalization of planning processes and practices shape decision making, structural planning and design planning.

Geographic Information Systems (GIS), widely used in spatial analysis and structural planning, is attributed the ability to virtually reveal spatial information. This again might inform the interventions of planners thus shaping the process of decision-making. The superimposition of data and geometry enables the analysis and interpretation of complex spatial orders and dynamics. The combination of e.g. census data such as social diversity and package data such as spatial use within a district allows to visualize unequal spatial distribution of services. GIS works as an epistemic tool, meaning that its use and embedding into practice allows to access understanding of space. It functions as an instrument of knowledge and truth and can inform decision processes through calculation, visualization and interpretation. The logic of layers thus co-informs how space is understood, as different social goods (e.g. spatial data) are synthesized.

A PLANNING PERSPECTIVE

Taking a planning perspective on digitalization of urban planning, we ask to what extend – if at all – digitalization of planning processes is related to changes in the built environment.

In architectural and planning discussions, even if digital technologies are generally granted some impact on urban form,[16] a direct causal link between digital urban planning and urban form is often denied.[17] However, digital tools, such as CAD, GIS and new types of digitally distributed information find their way into urban planning processes since the 1960s and largely inform planning decisions. Debates in planning and design take these changes into account and often precede the development of digital tools.[18] This is especially true for the early stages of digitalization in the 1960s and 1970s.

Urban planning and design are practices that combine different ways of thinking about the future. They can be seen as a way of elaborating directives in order to realize utopian ideas or at least a certain vision of the future.[19] Visions of the future as they emerge in these debates can be linked to processes of digitalization in urban planning (including the debates about digital practice) and the planning practice itself. We strive to gain an understanding of the interdependencies between changes in planning practice in the course of digitalization, the resulting planning products and, possibly, built environments.

The aforementioned research questions about digitalization in urban planning and possible changes in the built environment should consider two threads of thought:

i) A review of existing literature from the fields of urban planning, urban design and architecture in order to establish a historical overview of relevant discussions with relation to the development of technologies in those fields and ii) an urban design based practical approach to study planning products.
Visions of the future are formative elements of debates and planning practice itself. They are closely related to the genealogy of technologies[20] and are placed at the center of investigation in both threads. It is thereby intended to discover parallels or interrelations between disciplinary debates about digitalization in urban design and architecture on the one hand and the results of planning processes on the other.
Digitalization in planning is not determined by a linear development of continuously adding new software and hardware into the process. Rather, we see it as a dynamic and ongoing debate that informs planning practices just as it is influenced by them. The use of digital devices is not necessarily directly related to the visions of the future that they help to develop. The development of digital tools though may be influenced by professional debates, the evolution of the planning profession and its ideals. Digitalization of urban planning shall therefore be understood in relation to and as an integral element of the development of planning theory and practice, rather than a determining phenomenon of its own.

Mapping Visions of the Future

First results from our planning literature review indicate the need for a historical perspective on digitalization and urban planning by tracing the discursive genealogy.
Digital tools for planning are often perceived as innovative and new developments but are usually part of a certain evolution that can be understood historically. The same goes for recent concepts such as the "Smart City" or "parametricism".[21] As most critique of the "Smart City" paradigm notices, the debates around it often convey an overly optimistic technological view lacking a convincing idea about the built environment, its socio-spatial conditions and the conditions under which it is produced.[22] A historical perspective on digitalization in urban planning is important because "the digital itself is historical".[23] Robert Goodspeed detected a continuity between discussions around cybernetics in the 1960s and today's "Smart City".[24] In the 1960s, computer scientist Ivan Sutherland already worked on predecessors to today's virtual reality systems.[25] And as early as 1972, Nicholas Negroponte, co-founder of the MIT Media Lab, described a computer communicating with an information network or server as well as three-dimensional virtual modeling.
Can mapping trace back visions of the future over time and unfold the intentions of planners? Building on James Corner regarding the potential of mapping for determining sets of relationships[26], mapping shall not be restricted to making visible relations in the physical world but planning documents themselves can be mapped in order to extract the forces that shaped them.
By analyzing different planning products like plans, maps, visualizations and project descriptions, we seek to extract the visions of the future that formed these products.
The planning profession tends to read maps mostly in order to evaluate planning proposals and their implementation and to make deductions for planning practice. Thorough readings of plans in terms of a visual interpretation is rather uncommon. "Factual readings", as Brent Ryan suggests, "depend on understanding the relationships among different elements, and reveal information about the plan and its framers that may not otherwise be readily apparent".[27] He points to the different levels of analysis like the "factual reading" of its features, the "contextual reading" of the forces that shaped it and the "temporal reading" with regard to the evolution of the planning profession.[28] And he sees a need for this kind of approach from scholars with a design oriented background.[29]

We suggest a combination of architectural and design methods of surveying and analyzing the built environment with sociological methods. The mix of document analysis and the use of mapping as an analytical tool seems to be promising.
Sociologists like Nina Baur argue that there is a need to investigate the creation of space from an interdisciplinary perspective and thereby contribute to the methodological debate.[30] A combination of methods from different disciplines helps to reflect upon urban design and planning. Mapping and a thorough reading of planning products, understood as products that are made by certain stakeholders and can be read in relation to discourses on planning and digitalization, can help to trace and unfold the planners' visions of the future.

CONCLUSION

The bi-disciplinary approach to the topic of digitalization of urban planning allowed for two different focal points in the discussion. Any discussion between two disciplinary perspectives is likely to enrich theoretical and methodological thought and lead to new questions and insights. We have looked at spatiotemporal implications of digitalization on creative, imaginative and visionary planning and design. The outcome of our thinking though is in contrasting opposition: the sociological approach concludes with greater acknowledgment of material aspects within planning action whereas the planning position promotes the necessity to include historical discourses into the research and consider their relationship with planning products. The difference in theoretical conceptualization stems from different academic discourses that the two approaches refer to.
To conclude, we embrace the method and analytical tool of mapping for eliciting knowledge, visions, imaginations and narratives. It is not so much the product of the map that we are interested in but mapping itself as a process and as a tool for analysis.
As maps and plans are central to planning and design and "part of our cognitive orientation towards any given space which thus affects our power to act within it",[31] why shouldn't we try to make use of its potentials to help us find orientation in interdisciplinary fieldwork and analysis. Mapping helps to make interrelations visible and simultaneously acts as a visual device to communicate across disciplinary boundaries. Mapping as such has been largely discussed in architecture, planning, geography and anthropology. Sociology has for the sake of the written long neglected visualizations and mappings despite the ever so influential Chicago School having used them prominently. There is a large variety of methods at hand that we might draw inspiration from for our specific field of research. We suggest the combination of mapping and document analysis to foster interdisciplinary research and thereby reconsider methods of spatial analysis.

NOTES

[1]Bernd Streich. *Stadtplanung in der Wissensgesellschaft: Ein Handbuch.* (Wiesbaden: VS Verlag für Sozialwissenschaften, 2011), 24

[2] *This text discusses the use of maps and mapping as a tool for analysis in general. Our example focuses on the analysis of the creation of space by urban planners, neglecting the impact of digital planning on society and inequalities in cities for the sake of clarity and briefness in this paper. Specific case studies are yet to be done and should develop the presented methodological thoughts further, as well as take a position on the specific contexts of planning processes.*

[3] See also Joachim Fischer and Heike Delitz. *Die Architektur der Gesellschaft: Theorien für die Architektursoziologie.* (Bielefeld: transcript Verlag, 2009).

[4] *This reflects on the Vitruvian ideas and the geometrical conception of space and stereometrics which it is based on.*

[5] Stephan Günzel. *Raum: Eine kulturwissenschaftliche Einführung.* (Bielefeld: transcipt Verlag, 2017), 22

[6] Cf. Cardullo, Paolo; Kitchin, Rob: "Smart urbanism and smart citizenship: The neoliberal logic of 'citizen-focused' smart cities in Europe". Environment and Planning C: Politics andSpace0(0) 1–18, 2018.

[7] Massey (2005), 17. In Christina Hilger, *Vernetzte Räume: Plädoyer für den Spatial Turn in der Architektur* (Bielefeld: transcript Verlag, 2011), 38

[8] Martina Löw and Donald Goodwin. *The sociology of space: Materiality, social structures, and action. Cultural Sociology.* (New York: Palgrave Macmillan, 2016), x

[9] (ibid.: 116)

[10] Martina Löw. *Raumsoziologie. (*Frankfurt / New York: Suhrkamp, 2001)

[11] Martina Löw and Donald Goodwin. *The sociology of space: Materiality, social structures, and action. Cultural Sociology.* (New York: Palgrave Macmillan, 2016), x

[12] Hubert Knoblauch and Martina Löw. "On the Spatial Re-Figuration of the Social World." *Sociologica*, no.2 (2017), 4

[13] Urban planner. Interview with Martin Schinagl. 10 December 2018

[14] Urban planner. Interview with Martin Schinagl. 10 December 2018

[15] A critical examination is offered by Matthew W. Wilson "New Lines - Critical GIS and the Trouble of the Map" (Minneapolis, University of Minnesota Press, 2017).

[16] Katharine S. Willis and Alessandro Aurigi. *Digital and Smart Cities: Critical Introductions to Urbanism and the City*. (New York: Routledge, 2018),165

[17] see for example: Antoine Picon. "Histories of the Digital: Information, Computer and Communication." In *When is the digital in architecture?* Edited by Andrew Goodhouse, 79–98. (Berlin: Sternberg Press, 2017), 97

[18] Andrew Witt. "The machinic animal: Autonomic Networks and Behavioural Computation." In *When is the digital in architecture?* Edited by Andrew Goodhouse, 213–78. (Berlin: Sternberg Press, 2017), 220

[19] Bernd Streich. *Stadtplanung in der Wissensgesellschaft: Ein Handbuch.* (Wiesbaden: VS Verlag für Sozialwissenschaften, 2011)

[20] Katharine S. Willis and Alessandro Aurigi. *Digital and Smart Cities: Critical Introductions to Urbanism and the City*. (New York: Routledge, 2018),141

[21] Neal Leach and Patrik Schumacher. *On Parametricism - A Dialogue between Neil Leach and Patrik Schumacher*. Published in: T + A (Time + Architecture) 2012/5, Digital Fabrication, International Architectural Magazine in China, 2012.

[22] Ola Söderström, "From a Technology Intensive to a Knowledge Intensive Smart Urbanism." In *Beware of smart people! Redefining the smart city paradigm towards inclusive urbanism*. Edited by Jörg Stollmann et al., 63–70. (Berlin: Universitätsverlag der TU Berlin, 2016)

[23] Antoine Picon. "Histories of the Digital: Information, Computer and Communication." In *When is the digital in architecture?* Edited by Andrew Goodhouse, 79–98. (Berlin: Sternberg Press, 2017), 84

[24] Robert Goodspeed. "Smart cities: Moving beyond urban cybernetics to tackle wicked problems." *Cambridge Journal of Regions, Economy and Society* 8, no. 1 (2015): 79–92.

[25] Katharine S. Willis and Alessandro Aurigi. *Digital and Smart Cities: Critical Introductions to Urbanism and the City*. (New York: Routledge, 2018),158

[26] James Corner. "The Agency of Mapping: Speculation, Critique and Invention." In Mappings. Edited by Denis E. Cosgrove, 213–52. (Critical views., 1999),

[27] Brent D. Ryan "Reading Through a Plan." *Journal of the American Planning Association* 77, no. 4 (2011): 309

[28] Brent D. Ryan "Reading Through a Plan." *Journal of the American Planning Association* 77, no. 4 (2011): 309-27

[29] Brent D. Ryan "Reading Through a Plan." *Journal of the American Planning Association* 77, no. 4 (2011): 312

[30] Nina Baur, Linda Hering, Anna Laura Raschke and Cornelia Thierbach. “Theory and Methods in Spatial Analysis.” *Historical Social Research* 39, no. 2 (2014): 7–50

[31] Debra B. Shaw. *Posthuman Urbanism: Mapping Bodies in Contemporary City Space.* (London, England: Rowman & Littlefield International Ltd, 2018), 181

BIBLIOGRAPHY

Baur, Nina, Linda Hering, Anna Laura Raschke, and Cornelia Thierbach. “Theory and Methods in Spatial Analysis.” *Historical Social Research* 39, no. 2 (2014): 7–50. doi:10.12759/hsr.39.2014.2.7-50.

Cardullo, Paolo; Kitchin, Rob: “Smart urbanism and smart citizenship: The neoliberal logic of ‘citizen-focused’ smart cities in Europe”. Environment and Planning C: Politics andSpace0(0) 1–18, 2018

Corner, James. “The Agency of Mapping: Speculation, Critique and Invention.” In *Mappings*. Edited by

Denis E. Cosgrove, 213–52. Critical views., 1999.

Farías, Ignacio. “Epistemische Dissonanz. Zur Vervielfältigung von Entwurfsalternativen in der Architektur.” In *Wissenschaft Entwerfen: Vom forschenden Entwerfen zur Entwurfsforschung der Architektur*. Edited by Sabine Ammon and Eva M. Froschauer, 46–77. München: Wilhelm Fink Verlag, 2013.

Goodspeed, Robert. “Smart cities: Moving beyond urban cybernetics to tackle wicked problems.” *Cambridge Journal of Regions, Economy and Society* 8, no. 1 (2015): 79–92. doi:10.1093/cjres/rsu013.

Günzel, Stephan. Raum: Eine kulturwissenschaftliche Einführung. Bielefeld: transcipt Verlag, 2017.

Kim, Annette M. “Critical cartography 2.0: From “participatory mapping” to authored visualizations of power and people.” *Landscape and Urban Planning* 142 (2015): 215–25. doi:10.1016/j.landurbplan.2015.07.012.

Knoblauch, Hubert. Die kommunikative Konstruktion der Wirklichkeit. Wiesbaden: Springer Fachmedien Wiesbaden, 2017.

Knoblauch, Hubert, and Martina Löw. “On the Spatial Re-Figuration of the Social World.” Sociologica, no. 2 (2017).

Henderson, Kathryn. “Flexible Sketches and Inflexible Data Bases: Visual Communication, Conscription Devices, and Boundary Objects in Design Engineering,” Science, Technology, & Human Values, 16 (4) (1991).

Hilger, Christina. Vernetzte Räume: Plädoyer für den Spatial Turn in der Architektur. Bielefeld: transcipt Verlag, 2011.

Leach, Neal, and Patrik Schumacher. “On Parametricism - A Dialogue between Neil Leach and Patrik Schumacher.” Published in: T + A (Time + Architecture) 2012/5, Digital Fabrication, International Architectural Magazine in China, 2012.

Löw, Martina. Raumsoziologie. Frankfurt / New York: Suhrkamp, 2001.

Löw, Martina, and Donald Goodwin. The sociology of space: Materiality, social structures, and action. Cultural Sociology. New York: Palgrave Macmillan, 2016.

McFarlane, Colin, and Ola Söderström. “On alternative smart cities: From a technology-intensive to a knowledge-intensive smart urbanism.” *City* 21, 3-4 (2017): 312–28. doi:10.1080/13604813.2017.1327166.

Negroponte, N. *The Architecture Machine: Toward a more human environment*. 2nd ed. Cambridge Mass.: MIT Press, 1972.

Picon, Antoine. “Histories of the Digital: Information, Computer and Communication.” In *When is the digital in architecture?* Edited by Andrew Goodhouse, 79–98. Berlin: Sternberg Press, 2017.

Ryan, Brent D. “Reading Through a Plan.” *Journal of the American Planning Association* 77, no. 4 (2011): 309–27. doi:10.1080/01944363.2011.616995.

Shaw, Debra B. Posthuman Urbanism: Mapping Bodies in Contemporary City Space. London, England: Rowman & Littlefield International Ltd, 2018.

Söderström, Ola. “From a Technology Intensive to a Knowledge Intensive Smart Urbanism.” In *Beware of smart people! Redefining the smart city paradigm towards inclusive urbanism*. Edited by Jörg Stollmann et al., 63–70. Berlin: Universitätsverlag der TU Berlin, 2016.

Streich, Bernd. *Stadtplanung in der Wissensgesellschaft: Ein Handbuch*. 2nd ed. Wiesbaden: VS Verlag für Sozialwissenschaften, 2011.

Suchman, Lucy A. Human-Machine Reconfigurations: Plans and Situated Actions. 2nd ed. Cambridge, Massachusetts: Cambridge University Press, 2007. doi:10.1016/B978-044482046-4/50058-4.

Weiser, Mark. “The Computer for the 21st Century.” http://www.ubiq.com/hypertext/w, 1991.

Willis, Katharine S., and Alessandro Aurigi. *Digital and Smart Cities: Critical Introductions to Urbanism and the City*. New York: Routledge, 2018.

Witt, Andrew. “The machinic animal: Autonomic Networks and Behavioural Computation.” In *When is the digital in architecture?* Edited by Andrew Goodhouse, 213–78. Berlin: Sternberg Press, 2017.

SOCIAL AND ENVIRONMENTAL EQUITY ISSUES IN ARCHITECTURE AND PLANNING: - THE ECONOMIC AND SOCIAL IMPACTS OF GLOBALIZATION

Author:
DANIEL L. FAORO

Affiliation:
LAWRENCE TECHNOLOGICAL UNIVERSITY, USA

SOCIAL AND ENVIRONMENTAL EQUITY

Environmental actions are founded in part to focus on our efforts to be diligent stewards of the earth. This is grounded in social and political action to promote concepts of environmental equity, social equality and those found in basic human rights. Sustainability has a social component as related to Human Rights is found in “Our Common Future", (the Brundtland Report, 1987) the outcome of the UN World Commission on Environment and Development, where environmental equity and sustainable development were first introduced. "Sustainable development is considered as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” It is based on two key concepts:

“The concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and

“The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."[1]

This notion of meeting the needs of the poor is seen as a 'priority'. The primacy of economic interests should be meeting the needs of the poor and is embedded in issues of social and environmental equity.

Popular Media and Perceptions of the Poor

Human beings are so made that the ones doing the crushing feel nothing; it is the person crushed who feels what is happening. Unless one has placed one- self on the side of the oppressed, to feel with them, one cannot understand.

Simone Weil

The quote by Simone Weil is for some perhaps a disturbing comment on the current preoccupation with wealth and status and the notion that the poor deserve the effects of poverty as they contribute less to society, a view that is pervasive in many societies. Economic development should not result in depravation of the poor. Ecological and environmental matters are even more of a concern for the poor who struggle not only from the shortage of these basic resources, are often exploited for low wages by development, and exist in areas where the effects of pollution are unchecked and impair their health

and survival. Religious and secular leaders have called for a change and bring to an end global development practices that deplete resources, create climate change, and pollute the water and air. In brief individuals need to reconnect the precepts of humble piety with their daily life to share the world's resources with underserved populations and to provide environmental equality.

Philip Allston in his *Report of the Special Rapporteur on extreme poverty and human rights on his mission to the United States of America*, explains this perspective relative to America as follows: "In thinking about poverty, it is striking how much weight is given to caricatured narratives about the purported innate differences between rich and poor that are consistently peddled by some politicians and media. The rich are industrious, entrepreneurial, patriotic and the drivers of economic success. The poor are wasters, losers and scammers…If the poor really want to make it in the United States, they can easily do so: they really can achieve the American dream if only they work hard enough. The reality, however, is very different. Many of the wealthiest citizens do not pay taxes at the rates that others do, hoard much of their wealth offshore and often make their profits purely from speculation rather than contributing to the overall wealth of the American community." [2]

Economic Systems and Consumption

An attitude to life which seeks fulfilment in the single-minded pursuit of wealth -in short, materialism - does not fit into this world, because it contains within itself no limiting principle, while the environment in which it is placed is strictly limited.

E.F. Schumacher

Economic systems are cited as to blame for economic inequality, economist Lester Thurow author of remarks that "capitalism runs on greed and hubris". In short government stewardship is needed to balance the interests of the advocates of a free market economy. In his 1996 book, *The Future of Capitalism*, he points to the urgency of environmental conditions as to fatal environmental consequences of capitalism, i.e., for long time horizon problems (global warming etc.), if no actions will be taken to avoid them and when they are imminent (and past the tipping point) it will be too late to prevent them.

The noted city planner, Kevin Lynch in his final work "Wasting Away" states that Marxists insist that "capitalism requires a steady acceleration of wasting and abandonment, in order to maintain a scarcity of goods. The boom (growth) and bust (recession/ depression) cycles in the economy are fueled by advertising, and changing fashions or styles, when capitalism is connected into the mass market, consumption is therefore inevitable." According to Richard A. Smith, we have no choice but to "democratize the economy, construct the institutions of a practical socialist democracy, or we face ecological and social collapse." In whatever form future economies take there is a need to address the present condition where "… economic powers continue to justify the current global system where priority tends to be given to speculation and the pursuit of financial gain, which fail to take the context into account, let alone the effects on human dignity and the natural environment."[3]

When capital enterprise and governmental agencies are linked, they argue environmental abuse is inevitable. Business leaders argue that market competition requires them to expand or risk being overtaken by aggressive competitors and officials of state agencies benefit from a 'pro-growth mentality' as it leads to an increasing tax base, promotes job growth and in turn the potential for re-election. These all create a cycle ("treadmill of production") see figure 1, of expanded resource consumption and eventually more pollution all nations need to reconsider their past practices of

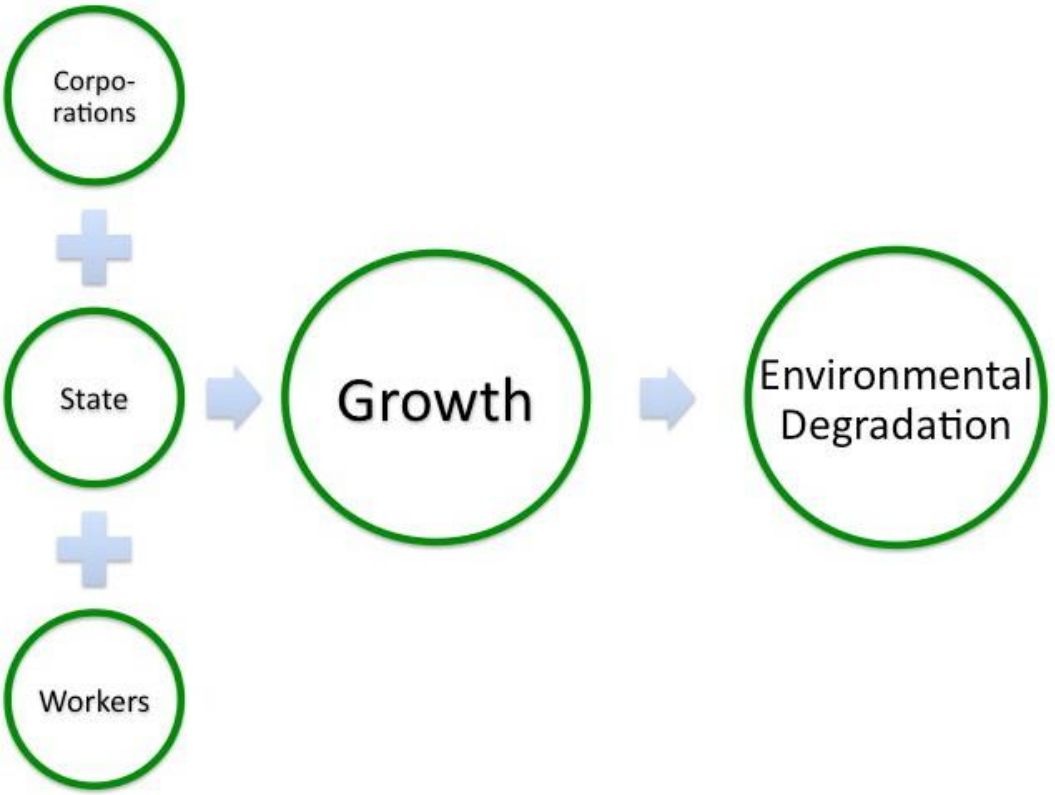


Figure 1.The Treadmill of Production Diagram.

development and growth and move towards adopting sustainable practices to reduce environmental deterioration and to bring a new commitment to renewing our planet.[4]

Economic expansion has promoted the issue of rapid growth and change. The growth and westernization of pacific rim countries, and India are examples where massive construction and infrastructure projects will change global resource demands. The statistic often cited is that the industrialized Western nations that represent 25% of the global population yet they consume 80% of the resources. The critical issue is that as large populations in China and India desire a western lifestyle global demand for fossil fuel will escalate, these countries also have high birth rates.

Pollution controls and regulations are needed to reduce the use of toxic chemical and pollutants that often enter the water and air as well as a reduction and control of waste which is a result of excess consumption and a throw away culture. The focus in production of goods should be on recycling and use of renewable resources based on the natural process of waste and decay in which does not contribute to negative ecological consequences.

Ecological Movements and Human Interventions

Discussion about the environment may appear to have some common values with various groups and establish a common ground between with others it has acute distinctions. The argument to overcome the primacy of the human race over all other species reaches the extreme position in the writings of the *Deep Ecology* movement by the Norwegian philosopher Arne Naess in his work, *The Shallow and the deep long-range Ecology Movement* (1997).[5] The author while sharing a number of conventional

arguments of the environmental movement also argues the following: there is no ontological divide. Humans are fully a part of nature, and there is no ontological separation between our species and other ones. In addition, the goal at an individual level is to fully realize one's identification with nature. This involves neither a sense of an independent self nor the loss of the self in the oneness of nature. Self-realization is the full awareness of the self-in-self.[6] An extreme example of environmentalism is the *Voluntary Human Extinction Movement* (VHEMT) formed in 1991 that calls for humans to cease reproduction and leads to voluntary human extinction, whose motto is: "May we live long and then die out". This is in opposition to a creationist world view, where our role in the world and our relationship to creatures and concepts of human settlement, subduing the earth where land is tilled for agriculture, and dangerous wildlife is moved to non-human inhabited areas. This pantheistic view was influenced by Spinoza and replaces -some theocentric religious views of God -with nature and omits a definition of humans (as both natural and transcendent) who seek the place in the afterlife as their true destiny.

The balance between growth, development and population and economic expansion remains at the center of issues regarding sustainable development. Richard Horwath refers to the work of Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens, III, in their 1972 book, *The Limits to Growth.* Based on the wasteful methods of consumption and growth at the time they predicted that natural resource depletion and environmental degradation would lead to an irreversible collapse of the global economy by the early twenty-first century and avoiding catastrophe would be possible if:

- Human fertility was limited to the replacement rate to stabilize population.
- Natural resource use and pollution per unit of industrial output was cut by at least 75 percent.
- Industrial production was stabilized at the level prevailing in the late twentieth century.
- Goods and services were redistributed from the rich to the poor to provide a high quality of life for all members of the global community.[7]

Population control according to Malthus based on his work, *Essay on the Principle of Population* (1803), proposes the principle that human populations grow exponentially (i.e., doubling with each cycle) while food production grows only at an arithmetic rate. Unless population growth is in check famine may result unless disease or warfare reduce the population. He proposed that the population increase should be kept down to the level at which it could be supported and preventative or positive checks on population growth were in place. However, Malthus's work predates the green revolution and productive industrial scale agricultural production, however if unchecked can lead to problems of soil fertility and the environmental consequences of fertilizers and pesticides.

Petroleum is more likely a cause for international conflict than wheat.

Simone Weil

Consumption of global food resources is area where excess consumption and global inequality is manifest. In recently the growth rates of world agricultural production and crop yields have slowed, raising fears that the world may not be able to grow enough food to ensure that future populations are adequately fed. However, the slowdown has occurred not because of shortages of land or water but because demand for agricultural products has also slowed. This is because world population growth rates have been declining since the late 1960s, and high levels of food consumption per person are now being reached in many countries, beyond which further rises will be limited. It also true that a high share of the world's population remains in poverty and lacks the income to translate into effective demand. "As a result, the growth in world demand for agricultural products is expected to fall from an average 2.2% per year over the past 30 years to an average 1.5% per year for the next 30 years. In developing countries, the slowdown will be dramatic, from 3.7% per year to 2% per year, partly as a

result of China having passed the phase of rapid growth in its food demands. Global food shortages are unlikely, but serious problems already exist at national and local levels and may worsen unless focused efforts are made."[8] Food shortages and malnutrition do exist today, in the 2013 Global Hunger Index, India ranked 63 out of the 78 countries experiencing hunger. The issue however is not a lack of productive agriculture, but a food waste attributed to inadequate food storage and preservation.[9] Recently critics have accused developers of crop-based ethanol fuel as contributing to the loss of food based agricultural resources. Ethanol based fuels now can be produced without land-based crops and has been extracted from seaweed and algae.

Human population and the tragedy of the commons

Evil, when we are in its power, is not felt as evil, but as a necessity, even a duty. ~ Simone Weil

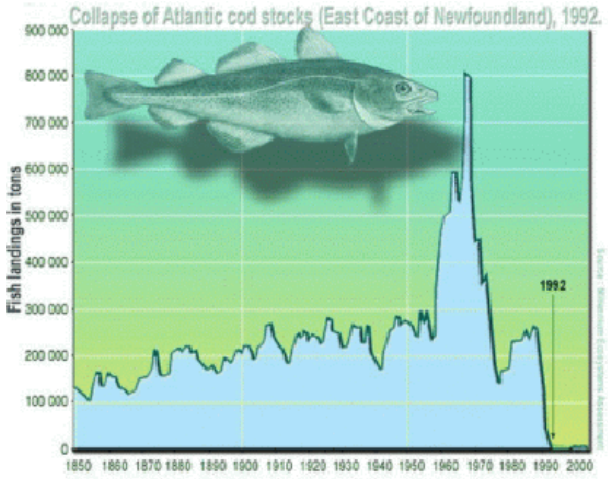


Figure 2. The Depletion of North Atlantic Cod stocks over time until its ban in 1992

Behavioral Scientist Garret Hardin refers to his theory "The Tragedy of the Commons "with regard to over consumption of common resources that occurs when populations are unchecked. He states: "The tragedy of the commons develops in this way. Picture a pasture open to all. It is to be expected that each rancher will try to keep as many cattle as possible on the commons. Such an arrangement may work reasonably satisfactorily for centuries because tribal wars, poaching, and disease keep the numbers of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long-desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generates tragedy." Hardin states the only solution is population control, "The most important aspect of necessity that we must now recognize, is the necessity of abandoning the commons in breeding. No technical solution can rescue us from the misery of overpopulation. Freedom to breed (along with freedom to consume) will bring ruin to all. "In Hardin's consumption based view little distinction is made between them as both man and cattle as consumers of resources.[10] See figure 2 as an example of fish over harvesting.

However, some societies hold a belief that large families and the birth of children are to be desired. In contrast to those arguing for global birth rate declines as a means to decrease global resource rates of depletion author demographer Philip Longman (author of "The Empty Cradle: How Falling Birthrates Threaten World Prosperity") states that "The ongoing global decline in human birthrates is the single most powerful force affecting the fate of nations and the future of society in the 21st. century."[11] He argues that the population crisis has been overstated. Advocates of this view cite that fertility rates are

falling in many countries to 11 billion (which was the UN estimate around 1990) to now 9 billion, and soon, perhaps less. The population replacement rate is estimated to be 2.13 children per household. Advocates for not decreasing new births argue that there are now 59 nations, with 44% of the world's population, with below- replacement fertility - largely in Europe and North America- and that The United Nations Population Division says that, worldwide, we could achieve below- replacement fertility by 2030.[12]

Population Declines and Economics

Longman argues that low replacement rate societies will suffer economic decline and stagnation and low production demands as the birth rates decline citing post WWII Japan as an example. An example of this today in the US as the baby boom population (1950-60's) ages and draws on social security funds for income, while the current working population is in decline and not contributing funds to the social security system now projected to result in future deficits, see figure 3. Population increases however have implications as with this increase will come the increased demands for natural resources. The economic growth arguments are problematic, as some argue that economic growth will occur if emerging economies -with a savings orientation- move to a consumption orientation.[13] This could be detrimental, trading short term economic gain (trade balance) for long term resource shortages.

The issue of depletion of resources is not based on population alone but the consumption pattern/level of a given population. The British architect David Dunster argues that if all nations consumed resources at the rate of the western developed nations, we would need three times the resources we have available to us to meet that demand.

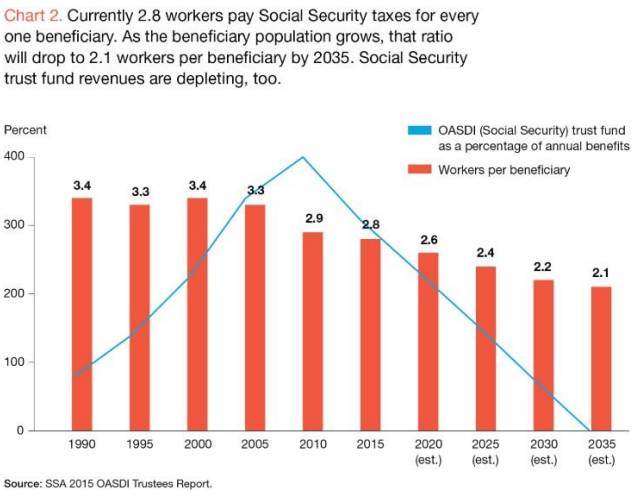


Figure 3. American Institute for Economic Research

ECOLOGY AND URBAN / REGIONAL PLANNING POLICIES

The advancement of social and environmental justice in architecture, design and planning has been is now moving to practice and in higher education. British policy makers in urban and regional planning call for three major quality of life measures to be addressed: social, environmental and economic. The premise is that all economic activity should service all human beings and that safe- guarding the biophysical system is necessary for long term human survival.[14]

After the Earth Summit in Rio de Janeiro in 1992, attention has been on sustainable development in urban areas. Today 47 per cent of the world's population lives in urban areas and forecasts estimating

that about 60 per cent of the population will be living in them by 2030 (Population Reference Bureau, 2004).[15] In Europe the most urbanized region in the world, 79 per cent of the population is living in urban areas.[16]

Sustainable planning and architecture and engineering practices and standards are now widespread in western nations, and under development in emerging nations. Often advanced or mandated by planning laws and building codes and ordinances. Professional societies have emerged, and multiple organizations now promulgate what are called 'green building or sustainable development metrics'; e.g., EPI, ESI, LEED, BREAM, etc. Non-governmental agencies, professional societies, and educational institutions also participate in civic and community based urban and rural renewal and sustainable design and planning projects in many areas. According to Caroline Davey, et.al, model sustainable planning and design guidelines typically identify core features and participants of the design process and outcomes for cities and regions and local areas that should be addressed as the following:[17] Government and Local Community Participation, Economic and Fair Trade policy, Ecological conditions, Human Health, Education, Safety and Crime.

The Effects of Globalization / Local Solutions in Community Development

The negative side to globalization is that it wipes out entire economic systems and in doing so wipes out the accompanying culture.

Peter L. Berger

Globalization efforts spearheaded by major multi-national corporations are motivated to provide profits for investors by reducing labor costs. According to the US investor Warren Buffet the largest expense associated with business is labor at approx. 50%. To maximize profits, companies seek out the lowest cost labor possible often moving plants from one country to another. To foster international agreements contract terms are often developed to provide low paid or subsistence level labor. If a nation tries to provide regulatory efforts to improve workers conditions these corporations relocate to other nations where there are less measures in place. Improving working conditions will always be at odds with the cost reduction /profit maximization interest of the large companies.[18]

Globalization and the need for companies to compete, both nationally and internationally has resulted in a shift away from local authorities being providers and guarantors of services to being enablers, intermediaries and change agents. Starting In the 1960's new academic fields linking ecology to culture and anthropology were formed.[19] These promoted emerging disciplines often concerned with the negative conditions anthropological, social and ecological factors resulting from globalization. Today these ethno ecologies dominate the living conditions of indigenous populations. Due to multiple factors associated with globalization, indigenous ethno ecologies faced challenges such as, "migration, media, and commerce, information, and technology".[20] In the face of national and international incentives the lack of regulatory controls can contribute to the exploitation and degradation of ethnological systems that once preserved local and regional environments that today are increasingly considered irrelevant"[21] these threats exist often as a result of commercial logging, industrial pollution, and the imposition of external management systems on local ecosystems.

CONCLUSION - ENVIRONMENTAL/SOCIAL EQUITY IN DEVELOPMENT AND ARCHITECTURE

The goal is to train the poor and landless in this Muslim community, improve hygiene, work on education, reduce child mortality and ensure economic independence eventually making the financial support of the Pani foundation superfluous.- Architect's Statement

Figure 4. Pani Community Center-interior classroom. Photo by Schilder Scholte Architects.

Projects such as the Pani Community Centre in Bangladesh, a pro bono work by the Dutch firm Schilder -Scholte architects, provides an example of how architects can assist local communities with low incomes and design in a manner that responds to the use of local resources. The project materials used are within 15 miles of the site and were considered free of fossil fuels with an emphasis on dur- ability, renewables, and vernacular construction methods. The architect's approach reflected "Muslim values" to establish an active engagement of residents. It employs appropriate technology, passive climatic responses and functions that provide long-term benefits to area residents.[22] These types of projects and the values behind them may well be a means to address the ethonecologies of a region, respect local cultures with opportunities for self-advancement and building community welfare.

NOTES

[1.] See, *The Bruntland Report – Our Common Future,* (http://www.dac.dk/en/dac-cities/sustainable-cities/historic-milestones/1987--brundtland-report-our-common-future/).
[2.] Allston, Philip, *Report of the Special Rapporteur on extreme poverty and human rights on his mission to the United States of America* 2017 See link: (https://ibw21. org/editors-choice/special-rapporteur-on-extreme-poverty-and-human-rights/)
[3]. SEE, The *Eco –Suicidal Economies Of Adam Smith*, By Richard A. Smith,
[4.]Schnaiberg, Allan, Pellow, David and Weinburg, Adam, *The Treadmill of Production and the Environmental State April 4 2000, Chicago, IL See* https://www.ipr.northwestern.edu/publications/ papers/urban-policy-and-community-development/docs/schnaiberg/treadmill-of-production.pdf
[5.]See http://www.rewildingfoundation.org/rewilding-through-vision/deep-ecology-stewardship-and-holistic-nature-conservation/.
[6].*(Barnhill, David and Kalof-http://www.eoearth.org /view/article/151670/).*
[7.]*Howarth, Richard,(Sustainability, Well-Being, and Economic Growth*, 2012. See, *http://www.humansandnature.org/sustainability--well-being--and-economic-growth-article-116.php.)*
[8.]World Health Organization, Global and regional food consumption patterns and trends, Section 3.7-http://www.who.int/nutrition/topics/3_foodconsumption/en/index6.html).
[9].Biswas, K, Asit, *India must tackle Food Waste*, August 12 2014, Pub. World Economic Forum, Source (https://www.weforum.org/agenda/2014/08/india-perishable-food-waste-population-growth/).
[10].Hardin, Garret*, "*The Tragedy of The Commons*"*, Science**,** 13 December 1968**:** Vol. 162 no. 3859 pp. 1243-1248 *http://www.sciencemag.org/content/162/3859/1243.full.*
[11].See **(**The New Economic Reality, Demographic Winter (http://www.theneweconomicreality. com/learn.html).
[12].*See World Population and Aging 2015* (http://www.un.org/esa/population/ publications/ worldageing19502050/ index.htm.
[13.] Yixue, Wu, (Encourage spending, not saving, updated: 2012-11-24 07:49 (China Daily) http://usa.chinadaily.com.cn/opinion/2012-11/24/content_15957538.htm).
[14.] See, (Building a better quality of life: A strategy for more sustainable construction. London: DETR. Department of Environment, Transport and the Regions, 2000). https://pdfs.semanticscholar.org/ 4e8b/ 73711e271fc 74f368491f740d66feb9ae04f.pdf
[15]. http://www.prb.org/Publications/Reports/2004/WorldPopulationHighlights2004 PDF320KB.aspx
[16.]Gibbs, D. (1997) —*Urban Sustainability and Economic Development in the United Kingdom: Exploring the Contradiction*s. ‖ Cities, Vol. 14. No. 4, pp. 203-208, see the citation for Fowke and Prasad, 1996.
[17].Davey, Caroline, B. Wootton, Andrew, Boyko, T. Chris and Cooper, Rachel, *From Sustainability to Socially Responsible Design***,** (A Paper produced for the Design Synergy 21 Group, Design for the 21st Century programme) (02-11-05)**.** Based on the summary found in. See also "A New Model of Socially Responsible design, (SRD)", http://www.sociallyresponsibledesign.org/srdModel.htm
[18].Stiglitz E. Joseph, *Globalization and Its Discontents,* the author discusses the policies and practices of the International Monetary Fund (IMF) that favor the economic interests of the wealthy western nations. Pub. WW Norton Company, (2002).
[19]. Kotak, Conrad P., *Environmental anthropology: from pigs to policies* (2nd ed.). Prospect Heights, Ill.: Waveland Press. p. 104.
[20]. Op.Cit., Davey et, al.
[21.] Ibid.
[22].*Pani Community Centre / Schilder Scholte* Architects, 21:00 - 24 February 2015 ArchDaily.com (http://www.archdaily.com/600713/pani-community-centre-schilderscholte-architects).

BIBLIOGRAPHY

Allston, Philip. *Report of the Special Rapporteur on extreme poverty and human rights on his mission to the United States of America* 2017, accessed October 15, 2018, https://ibw21. org/editors-choice/special-rapport eur-on-extreme- poverty-and-human-rights/.

Barnhill, David Landis, and Roger S. Gottlieb, eds. *Deep Ecology and World Religion: New Essays on Sacred Ground*. Albany: State University of New York Press, 2001.

Biswas, K, Asit, "*India must tackle Food Waste"*, August 12 2014, Pub. World Economic Forum, accessed Oct. 18, 2018, (https://www.weforum.org/agenda/2014/08/india-perishable-food-waste-population-growth/).

Building a better quality of life: A strategy for more sustainable construction. London: DETR. Department of Environment, Transport and the Regions, 2000). https://pdfs.semanticscholar.org/ 4e8b/ 73711e271fc74f368491f740d66feb9ae04f.pdf. Accessed January 21, 2018

Davey, Caroline, B. Wootton, Andrew, Boyko, T. Chris and Cooper, Rachel, *From Sustainability to Socially Responsible Design***,** (A Paper produced for the Design Synergy 21 Group, Design for the 21st Century programme), Date: 02-11-05)**.** Accessed April 12, 2018. https://pdfs.semanticscholar.org/fa21/ 83dde3 cab95553 dc3eea338f1794d3a05406.pdf.

Davey, Caroline L., Wootton, Andrew, Thomas Angharad, Cooper, Rachel, "*Design for the Surreal World? A New Model of Socially Responsible Design*." Proceedings of the 6th International Conference of the European Academy of Design, EAD06 University of the Arts Bremen, 29–31, March 2005, Bremen, Germany. ISBN 3897572907.The University of Salford, UK Mike Press, http://www.sociallyresponsibledesign.org/srdModel.htm. Accessed, May 1st, 2018.

Deep Ecology, Stewardship And Holistic Nature Conservation, http://www. rewildingfoundation.org /rewilding-through-vision/deep-ecology-stewardship-and-holistic-nature-conservation/. Accessed March 1, 2018.

Gibbs, D. (1997) —*Urban Sustainability and Economic Development in the United Kingdom: Exploring the Contradictions*. II Cities, Vol. 14. No. 4, pp. 203-208, with reference to the citation for Fowke and Prasad, 1996.

Hardin, Garret*, "*The Tragedy of The Commons*"*, Science**,** 13 December 1968**:** Vol. 162 no. 3859, *accessed May 28th, 2018, http://www.sciencemag.org/content/162/3859/1243.full.*

Howarth, Richard, Sustainability, Well-Being, and Economic Growth, 2012. Accessed June 12, 2018, http://www. humansandnature. org/sustainability--well-being--and-economic-growth-article-116.php.

Kotak, Conrad P, *Environmental anthropology: from pigs to policies* (2nd ed.). Prospect Heights, Ill.: Waveland Press.

Lynch, Kevin, *Wasting Away - An Exploration Of Waste: What It Is, How It Happens, Why We Fear It, How To Do it Well* , Random House, April 16, 1991.

"Pani Community Centre / Schilder Scholte Architects," 21:00 - 24 February 2015 *ArchDaily.com* (http://www. archdaily.com/600713/pani-community-centre-schilderscholte-architects). Accessed, December 2016.

Schnaiberg, Allan, Pellow, David and Weinburg, Adam, *The Treadmill of Production and the Environmental State April 4 2000, Chicago, IL., Accessed May 14, 2018* https://www.ipr.northwestern.edu/publications/ papers/urban-policy-and-community-development/docs/schnaiberg/treadmill-of-production.pdf.

Schumacher, E.F, *Small Is Beautiful: A Study of Economics As If People Mattered, Blond and Briggs, 1973.*

Stiglitz E. Joseph, *Globalization and Its Discontents*. Pub. WW Norton Company, 2002.

The Bruntland Report – Our Common Future. Accessed March 23, 2018, http://www.dac.dk/en/dac-cities/sustainable-cities/historic-milestones/ 1987--brundtland-report-our-common-future/.

The New Economic Reality, Demographic Winter, http://www.theneweconomicreality.com/learn.html, accessed Feb. 20, 2018.

Thurow, Lester C. *The Zero-Sum Society,* Basic Books. 1980.

Thurow, Lester, C. *The Future Of Capitalism, How Today's Economic Forces Shape Tomorrow's World,* Morrow/Harper Collins, 1996.

World Population Aging, 2015, United Nations Report, Department of Population and World Affairs, https://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf

Yixue, Wu, 'Encourage spending, not saving', updated: 2012-11-24 07:49, China *Daily*, http://usa.chinadaily. com.cn/opinion/2012-11/24/content_15957538.htm). Accessed, Feb. 18, 2018.

IMAGINING AND DEMOCRATIZING FUTURE MOBILITIES LEARNING FROM STUDIO DESIGNS FOR INTEGRATED MOBILE MATTERS OF CONCERN

Author:
DITTE BENDIX LANNG, OLE B. JENSEN

Affiliation:
AALBORG UNIVERSITY, DENMARK

INTRODUCTION

"We can […] develop alternative possible scenarios for the future and open these up to public debate and democratic decision – insisting always on the provisionality, reflexivity and contingency of what we are able to imagine, and in full awareness that utopian speculation is formed always in the double squeeze of what we are able to imagine and what we are able to imagine as possible."[1]

Professor Ruth Levitas, in her work on *Utopia as Method*, insists on the value that lies in utopias, when we understand them not as blueprints for a scripted future, but as *method*. This is utopia as a hermeneutic method, she argues. Utopia, here, should not be understood as irrelevant fantasies or totalitarian nightmares (though these are traps that we must regard!), but rather as method to disrupt the *"taken-for-granted nature of the present."*[2] As method, utopia brings with it an ethical demand; it is an *"expression of the desire for a better way of being or of living, and as such is braided through human culture […] utopia in this sense is analogous to a quest for grace which is both existential and relational."*[3]

This quest for existential and relational "grace" is accentuated in the opening quote above, in which Levitas brings forth a vision of *democratizing futures* through utopia as method. This is a vision that resembles calls for deep ambitions of democracy, social and ecological responsibility in architecture and urban design – ambitions that do not only rest in an avant-garde past but are also evident and debated in contemporary streams of work. Rather than short-term problem-solving, "political ennui" and a "blind pursuit of the market"[4], there is acknowledgement that urban design needs to redirect its resources to explore genuinely *other* possibilities.[5]

It is this proposition of *democratizing futures* that we trace and discuss in this paper through a specific case of utopia as method in design - in the form of an Urban Design master program studio that engages utopia as a provisional, reflexive, contingent and dialogical method to democratize future mobilities.

THE 2017 IMAGINE MOBILITIES DESIGN STUDIO

The 2017 IMAGINE Mobilities Design Studio at Aalborg University's Urban Design program involved approx. 25 master students with backgrounds in architecture, urban design and urban planning from

countries across Europe. It explored infrastructures of the city of Aalborg, Denmark, and aimed to give "designerly" input to open agendas for urban mobile futures. Positioned within a lineage of critical, inventive urban mobilities imaginaries, the studio investigated how existing infrastructural systems in Aalborg – designed for the 20th Century (and in some cases currently on the edge of maximum capacity and collapse) – might be modified and mobilized to address needs and desires of the 21st Century and beyond.

Taking its outset in the tangible material infrastructures of Aalborg – such as a bridge across the fiord (fig. 1), the studio produced design scenarios for the future. These mobilities design imaginaries examined urgent "matters of concern"[6] of infrastructural systems, their critical challenges and opportunities, and how they can contribute to the future of the city in socially, ecologically and aesthetically responsible ways:*How can we re-imagine the urban infrastructures of the city of Aalborg and offer alternative responses to the present situation of (increasing) path-dependency with too much automobility-dominated, people-hostile and single-minded urban infrastructure?*

Figure 1. View from existing car bridge, Aalborg (Photo: Ole B. Jensen 2018).

Along these lines of questioning, students worked with future hybrid mobilities designs, choosing to include as diverse considerations as technological development, climate change implications, cleaner future power production, access and more sustainable lifestyle choices.

A Didactic Space of Experimentation and Reflection

The studio was organized according to principles of Problem-Based Learning (PBL)[7]. In addition to the authors of this paper, with backgrounds in urban design, mobilities studies, urban theory and sociology, the educators' team consisted of two research colleagues from traffic engineering. The studio ran through a period of approx. 4 months, and we had four intense joint workshops as milestones in the process:

1) *Futures of the past* was a two-day workshop mapping out realized projects and unbuilt utopias of Aalborg in the past. It was a didactic means to animate engagement not only with "the future", but with a critical understanding of imagination and matters of concern in the continuum of past, present and future. The workshop thus aimed to extend historical consciousness and delve at the possible value of "looking back to look forward".[8]

2) *What if...?* was a two-day workshop during which students explored what issues (or "problems") and urban sites to work with. Students engaged in a processual cycle of exploring open and imaginative questions for the future while simultaneously developing a grounding in the materialities, technologies and spaces of the present and a critical attunement as to what to do *now* if the future is to look more responsible and sustainable (fig. 2).

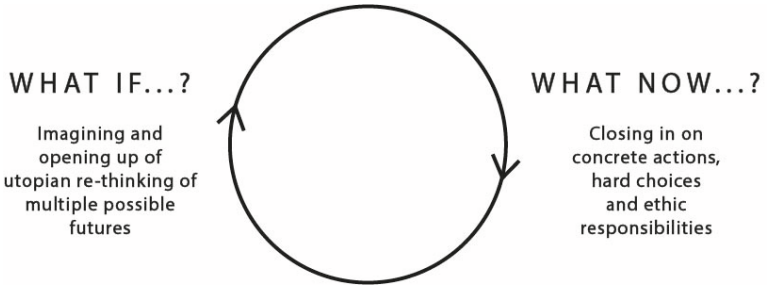


Figure 2. What if? – What now? (Diagram by Ole B. Jensen and Monika Büscher).

Workshops 3) and 4) concerned development of design concepts and detailed designs. Along with these workshops, the process involved a range of activities drawing on interdisciplinary urban design methods, e.g., digital and analogue sketching and modelling, diagrammatizing, mapping and site analysis, literature studies, desktop studies, calculations and participatory methods, in a continuous engagement with imagination and fiction.

As a didactic space of experimentation and reflection, the studio aimed to contribute to educate critical-creative urbanists who can co-facilitate the democratization of possible social futures. As planning scholar, Leonie Sandercock asserted, "*we cannot just produce planners"*[9]*;* critical thinking about socio-spatial processes and their historical, cultural and institutional relationality is key. This is indeed so when concerned with the *"multiple unknown unknowns"* of futures and their democratization, as mobilities scholar John Urry has argued: *"[I]t is necessary to distinguish between three kinds of futures: the probable, the possible, and the preferable […] what is preferable may turn out to be the least probable. At the very least, that a particular future is preferable is no guarantee that it is the most probable.".*[10] The studio is one attempt of experimentation and reflection in a "wicked field" of probability, possibility and preferability; one that follows a tall order of imagination, democracy and responsibility in urban design.

Turning the Tide - a mobilities design imaginary

Turning the Tide is one of five mobilities design imaginaries of the IMAGINE studio, made by a design team with disciplinary backgrounds in urban planning, architecture and urban design, from Italy, Germany, Norway and Denmark.[11] It taps into a local and national controversy about a third connection across the fiord in Aalborg, a 700m wide water stream that - while being extremely impactful on the city (asa huge ecosystem, an attractive recreational space, the historical and economical raison d'être for the city) - in mobility terms it tends to serve as a barrier. Since the middle of the last Century, efforts have been made to establish a new link across the fiord. The aim is to relief traffic loads and congestion from the other three connections – the inner-city bridge (for cars, cycles and pedestrians), the western city bridge (for trains, cycles and pedestrians), and the eastern city highway tunnel (for cars) where capacity has long been reached. The official visions for a new connection propose a new car infrastructure, a highway bridge, projected to bring more cars across the fiord. Current plans suggest

that this bridge should be a western link. However, some matters of concern are raised in relation to these plans. These include the fact that the link will cross an ecologically vulnerable island (Egholm, a Natura 2000 area). There are also concerns, that - while a new highway connection will probably provide an immediate relief of the existing connections from traffic and make more car traffic flow better - it is likely, that in relatively few years, this new car infrastructure will generate more car traffic and thus congestion problems will reoccur. The real effect of the new highway will then be to re-produce path-dependency with even more cars, and more congestion, on the roads in Aalborg. Multiple studies from other places documents this effect of road capacity increase.

The studio imaginary explores an alternative vision. It examines how this new huge infrastructure could possibly be different. In other words, it examines the gap between what *is* and what *could be*: how a new connection may include other and wider agencies and give more back to the city and the citizens than the suggested traffic solution can do. To these ends, the imaginary models a "socio-technical-spatial" infrastructure hybrid - a new bridge - as a medium for public mobilities that integrates various functional, spatial, environmental and social considerations (figures 3-4), including the following:

- It suggests a combination of physical movement by foot and bike with (clean) power production through turbines in the fiord waters harvesting energy from the east-west going tidal current. This is envisioned as a base for further usage of more sustainable electric urban solutions in the city.
- It integrates facilities that exemplify some of the city's ambitions for research environments, for water mobilities (a ferry terminal), and for city-integrated recreation (a kayak club).
- It integrates a gateway system for larger ships to move through, as well as an elevated bridge for smaller ships to sail under, hence accommodating the importance of mobile inhabitation both across and along the fiord.
- In the bridge design, the imaginary integrates spaces and affordances for social interaction and embodied (mobile) experiences. The imaginary visualizes a bold future vision for the embodied experience of "dwelling-in-motion"[12] on the new infrastructure: "*You are not moving over water (as on a bridge) but on water. Imagine biking to work, hearing the sound of splashing water, smelling the salt of the sea, and witnessing the green and renewable energy production from the water's current*."[13]

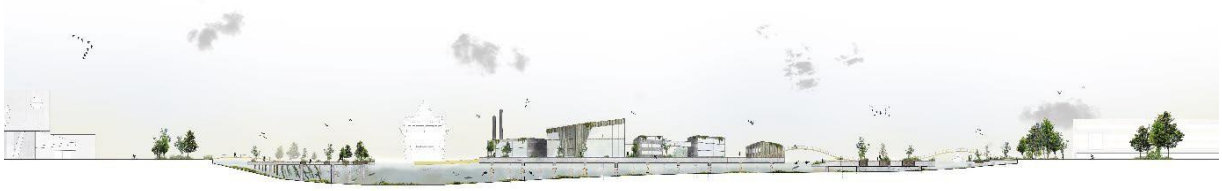


Figure 3. Sectional representation of "Turning the Tide"[14]

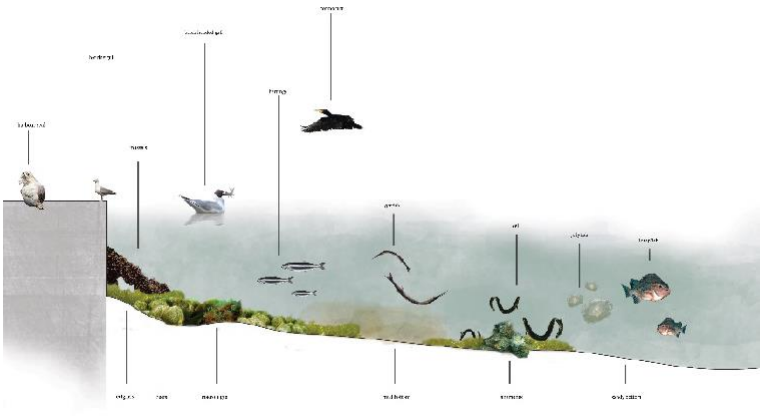


Figure 4. Example of diagramming "matters of concern": flora and fauna of the fiord ecosystem.[15]

MOBILITIES DESIGN

TtT explores the future of Aalborg mobilities through a spatialization of this infrastructure. This approach suggests inserting it properly in its future urban network and contains serious attention to societal matters of concern (see, e.g., Stoll and Lloyd's volume on *Infrastructure as Architecture*[16], and Ruby and Ruby's volume on *Infrastructure Space*[17]). It includes performance of the bridge as a technical infrastructure (though in mobility terms for cycles and pedestrians only), as a series of places, as a site for (mobile) embodiment, interaction, and sensory experience, and for the wide span of urban functions, production and exchange of knowledge, power and culture. TtT is thus an example of an analysis of what it could mean to approach a new bridge design through its "possible" and, we suggest, "preferable" relational hybridity.

We term the relational, hybrid approach to analyzing and designing infrastructures exemplified through TtT above, "mobilities design".[18] With mobilities design we seek to identify and examine critical issues of the agencies of infrastructure – to move beyond technical-only transport demands and explicitly work to open up a space for discussing (and including in future designs) the wider host of social, cultural, political and affective formations of which these infrastructures are part. The critique that we bring forth with mobilities design includes concerns for lack of meaningful and responsible ecological agency of infrastructures, for lack of social agency, seen fx in the apparent deficit of design consideration for the needs and aspirations of individuals as well as collective populations who live with and in infrastructures, and the inequalities that infrastructures tend to co-produce or sustain, and for lack of relational aesthetic agency, e.g., lack of contextual specificity. Working with an outlook for these serious deficits of ubiquitous infrastructure, mobilities design is a research program that aims to ask questions, produce knowledge and shape a conversational space around futures of mobilities spaces and structures.

TtT is a studio-based example of mobilities design, in the form of a critical and future-oriented counter-image to how infrastructures are most often designed according to minimum standards of traffic engineering. As an urban design imaginary, it employed tools of urban design, such as *mapping* the situation (fig. 5), *diagramming* matters of concern (fig. 6), *modelling* a new bridge (fig. 7), in correspondence with an informed "design fiction" building a vision of a future world,[19] and accordingly

visualizing how it could feel to travel across that bridge (fig. 8). Through this process, studio participants were immersed in a particular multi-sited and urban designerly mode of analytical inquiry into future mobilities.

Who's utopia? - opening up to the public

The inquiring nature of the studio points to the provisionality, contingency and dialogic commitment of the utopian method, and it urges us to insist to ask the reflective question: *Who's utopia?*

Future-making has always been power-vested and tends to be entrusted to "specialists of the future."[20] Social futures are contested and saturated with conflicting interests. In Urry's quest to "think and democratize futures",[21] he encouraged social science to become more critical of simplistic and linear forecasting (e.g., the "predict and provide" paradigm of mainstream transport planning). Elsewhere Urry[22] argues that we are facing complex phenomena characterized by path-dependencies, "lock-inns", thresholds, positive feedback loops, "tipping points", phase transitions, cascading effects, non-linearity and non-determinism all leading to dynamic, processual, unpredictable and interdependent systems and futures.

We cannot, and should not, escape that futures are vested with complexities, difficult if not impossible to grasp by any utopian counter image. Simply put, this implies that any design teams' utopia may be another person's or group's dystopia, as well as any utopia arguably include multiple biases, black boxes and eradications.

As we outlined in the section above, the IMAGINE studio as well as the TtT design team worked in particular ways with their contingent, provisional, reflexive and dialogic notions of ecological, social and aesthetic agencies of future, more sustainable, equal and kinder mobilities design. As such, it is one instance of an analytical inquiry that results in a tangible and visually accessible counter image to current plans. Intendedly, this counter image has raised new site-specific questions, e.g. at a local public event during the Danish Architecture Festival in May 2018 (fig. 9). The point is that the design works as a manifestation of a complex problem field, and that its aim as a method is to facilitate understanding and debate about issues and conflicting interests of a new infrastructural connection.[23] Site-specific questions to the design included: will the harvest of tidal energy have negative consequences on the ecosystems in and connected to the fiord? Will the connection have any positive effect on the pressure on car infrastructure? Could this connection meet the desires and needs of future publics in the city of Aalborg?

Figure 5. Photo from public exhibition and debate, Aalborg, May 2018 (Photo: Camilla Bech Pedersen)

CONCLUSION

In this paper, we have reported and reflected upon a mobilities design studio that explores futures through a relational, hybrid mobilities design approach including diagrammatic, visual and modelled ways to examine, expose and share present and future matters of concern. We have discussed this studio as an example of a method that acknowledges the built-in provisionality, multiplicity, and contingency of utopias, a method that has a democratizing potential in several ways.

First, the IMAGINE studio set up a didactic space for an analytical process of inquiry, that generated much knowledge, dialogue and reflection among the studio participants – urbanists of the future - with critical-creative analyses on the directions in which responsible agencies of future infrastructures may be extended.

Second, the imaginaries articulate explicit alternative scenarios for the future, that - according to Levitas - are fundamental to any kind of democratic debate. By visualizing alternative futures that claim infrastructure as a public resource, the design imaginaries unleash utopian energy and capacities to inform and re-orient the way in which local publics (professionals and civil society) can know the complex problem field of infrastructure development and engage in and reflect upon future possibilities.

Third, the studio concretizes a case of researching infrastructure logics different from predict-and-provide extrapolations. Through using design utopia as analytical method it exposes wider technical, ecological, social and aesthetic agencies of infrastructure, and hence it is an instance of unpacking the "black box" of powerful, relational impacts of infrastructure and suggesting the urgency to reorient these impacts towards more sustainable futures. This studio and mobilities research is connected to a wider global discussion that increasingly includes a critique of a 'One World' epistemological hegemony that is still a Western perspective on urbanism and architecture. Rather we want to connect to an emerging acknowledgement of a 'Pluriverse' and a 'World of many Worlds'.[24] In the words of Escobar, there is a need for critically engaging with "designs for transitions" that are based on other ways of knowing and being than the current dominant Western model. We end this paper with expanding the agenda of future mobilities design through the question: "*can design be reoriented from its dependence on the marketplace towards creative experimentation with forms, concepts, territories, and materials, especially when appropriated by subaltern communities struggling to redefine their life projects in a mutually enhancing manner with the Earth?*"[25]

Fourth, and in prolongation of this, our account here is an invitation to dialogue and reflection across a global community of scholars and designers. Surpassing to regard urban design and mobilities design

as aesthetic and technical rendering of fixed realities or as developer-assistance, we seek to examine methods and concepts to engage publics in an attempt to democratize future mobilities.

NOTES

[1] Ruth Levitas, *Utopia as Method: The Imaginary Reconstitution of Society* (Basingstoke: Palgrave Macmillan, 2013), 19.
[2] Ibid., 4.
[3] Ibid., xii-xiii.
[4] Roemer van Toorn, "No More Dreams? The Passion for Reality in Recent Dutch Architecture…and Its Limitations," in *The New Architectural Pragmatism,* ed. William S. Saunders (Minneapolis: University of Minnesota Press, 2007), 70.
[5] See, e.g., the anthologies *The New Architectural Pragmatism*, ed. William S. Saunders (Minneapolis: University of Minnesota Press, 2007) (footnote no. 4 above) and *Ecological Urbanism*, ed. Mohsen Mostafavi and Gareth Doherty (Zürich: Lars Müller Publishers, 2010) debating the reason d'etre and possible effects of architecture and urbanism through essays and projects by prominent observers and practitioners, as well as Anthony Dunne's and Fiona Raby's *Speculative Everything. Design, Fiction, and Social Dreaming* (Cambridge Mass.: MIT Press, 2013).
[6] Bruno Latour, "Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern," *Critical Inquiry*, 30(2) (2004).
[7] PBL is the didactic method of teaching at Aalborg University. Students work with a "problem" in a project group. The "problem" establishes the adequate methods, theories, and approaches.
[8] Ole B. Jensen and Malene Freudendal-Pedersen, "Utopias of Mobilities," in *Utopia: Social Theory and the Future,* ed. Michael H. Jacobsen and Keith Tester (Farnham: Ashgate, 2012), 214.
[9] Leonie Sandercock, *Towards Cosmopolis – Planning for multicultural cities* (Chicester: Wiley, 1998), 226.
[10] John Urry, *What is the Future?* (Cambridge: Polity Press, 2016), 13.
[11] Our thanks to Lars Dyve Jørgensen, Serena Salvi, Lydia Immanuela Oehlwein, Sofie Worning Løgstrup Jensen and Kent Olav Hovstein Nordby for their careful work in the IMAGINE studio and for permitting us to use their work as case in this research.
[12] John Urry, *Mobilities* (Cambridge: Polity, 2007).
[13] Lars D. Jørgensen et al., *Turning the Tide* (unpublished studio report, MA2URB, Aalborg University, 2017).
[14] Ibid., n.p.
[15] Ibid., 51.
[16] Katrina Stoll and Scott Lloyd, eds., *Infrastructure as Architecture: Designing composite networks* (Berlin: jovis Verlag, 2010).
[17] Ilka Ruby and Andreas Ruby, eds., *Infrastructure Space* (Ruby Press, 2017).
[18] Ole B. Jensen and Ditte B. Lanng, *Mobilities Design: Urban designs for mobile situations* (New York: Routledge, 2017).
[19] Paul Coulton et al., "Design fiction as world building." in *Proceedings of Research through Design Conference 2017* (Edinburgh, United Kingdom, 22-24 March., 2017).
[20] John Urry, *What is the Future?* (Cambridge: Polity Press, 2016), 18.
[21] Ibid.
[22] John Urry, *Global Complexity* (Cambridge: Polity, 2003).
[23] Erling Bjögvinsson et al. "Design Things and Design Thinking: Contemporary Participatory Design Challenges," *Design Issues* 28 (3), 2012.
[24] For an elaboration of the emerging critical debate on multiple epistemologies and 'pluriverse thinking' see for example: Arturo Escobar, *Designs for the Pluriverse. Radical Interdependence, Autonomy, and the Making of Worlds* (Durham: Duke University Press, 2018) and Marisol De La Cadena and Mario Blaser (eds.) *A World of many Worlds* (Durham: Duke University Press, 2018).
[25] Aturo Escobar, *Designs for the Pluriverse. Radical Interdependence, Autonomy, and the Making of Worlds* (Durham: Duke University Press, 2018), xvii.

BIBLIOGRAPHY

Björgvinsson, Erling, Pelle Ehn, and Per-Anders Hillgren. "Design Things and Design Thinking: Contemporary Participatory Design Challenges." *Design Issues* 28 (3), 2012.

Coulton, Paul, Joseph Lindley, Miriam Sturdee and Mike Stead. "Design fiction as world building." *Proceedings of Research through Design Conference 2017* (Edinburgh, United Kingdom, 22-24 March, 2017).

Dunne, Anthony and Fiona Raby. *Speculative Everything. Design, Fiction, and Social Dreaming.* Cambridge Mass.: MIT Press, 2013.

de La Cadena, Marisol and Mario Blaser (eds.) *A World of many Worlds*. Durham: Duke University Press, 2018.

Escobar, Arturo. *Designs for the Pluriverse. Radical Interdependence, Autonomy, and the Making of Worlds.* Durham: Duke University Press, 2018.

Jensen, Ole B. and Malene Freudendal-Pedersen, "Utopias of Mobilities." In *Utopia: Social Theory and the Future*, edited by Michael. H. Jacobsen and Keith Tester, 197-217. Farnham: Ashgate, 2012.

Jensen, Ole B. and Ditte B. Lanng. *Mobilities Design: Urban designs for mobile situations*. New York: Routledge, 2017.

Jørgensen, Lars Dyve, Serena Salvi, Lydia Immanuela Oehlwein, Sofie Worning Løgstrup Jensen and Kent Olav Hovstein Nordby. *Turning The Tide*. Unpublished studio report, MA2URB, Aalborg University, 2017.

Latour, Bruno. "Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern." *Critical Inquiry* 30, 2 (2004): 225-248.

Levitas, Ruth. *Utopia as Method: The Imaginary Reconstitution of Society*. Basingstoke: Palgrave Macmillan, 2013.

Mostafavi, Mohsen and Gareth Doherty. Eds. *Ecological Urbanism*. Zürich: Lars Müller Publishers, 2010.

Næss, Petter, Martin J. H. Mogridge and Synnøve L. Sandberg. "Wider Roads, More Cars." *Natural Resources Forum*, 25 (2001): 147-155.

Ruby, Ilka, and Andreas Ruby, Eds. *Infrastructure Space*. Ruby Press, Berlin, 2017.

Sandercock, Leonie. *Towards Cosmopolis – Planning for multicultural cities.* Chicester: Wiley, 1998.

Stoll, Katrina and Scott Lloyd, eds. *Infrastructure as Architecture: Designing composite networks*. Berlin: jovis Verlag, 2010.

Saunders, William S. Ed. *The New Architectural Pragmatism,* Minneapolis: University of Minnesota Press, 2007.

van Toorn, Roemer. "No More Dreams? The Passion for Reality in Recent Dutch Architecture…and Its Limitations." In *The New Architectural Pragmatism,* edited by William S. Saunders, 54-74. Minneapolis: University of Minnesota Press, 2003.

Urry, John. *Global Complexity*. Cambridge: Polity, 2003.

Urry, John. *Mobilities*, Cambridge: Polity, 2007.

Urry, John. *What is the Future?* Cambridge: Polity Press, 2016.

ARCHITECTURE & SOCIOLOGY: MOVING PRACTICE BEYOND THE NON-SOCIAL INDIVIDUAL AND THE ABSTRACT PLACE

Authors:
ANITA BAKSHI, ZAIRE DINZEY-FLORES

Affiliation:
RUTGERS UNIVERSITY, USA

INTRODUCTION

Contemporary architecture has been compared to an iceberg: "The excesses of signature icons are just the bit that sticks above the surface, whereas the really intractable part is the great mass that lurks beneath, invisible to public scrutiny. It is no use simply condemning without understanding."[1] Our research project, based at the Society&Design Lab at Rutgers University, aims to develop greater understandings of why our cities look the way they do and the impact this has on social life. While social scientists, theorists and historians often critique design practices and the common lack of engagement with social context, these critiques have had limited impact on practitioners and students of architecture, landscape architecture, and urban design and planning. It remains difficult to build strong connections between these texts and the design studio. To address this gap, our research project investigates tools and methodologies by which we might participate in the process of spatial production in a more comprehensive way, beyond critiquing from the sidelines. Changing the way design practices operate requires opening up more robust direct lines of communication between design and sociology. We investigate a range of related questions: Since many contemporary designers and urban scholars have a general working understanding that design should always engage with a sense of place and context - both physical and social context - why is it that this does not always (or even often) happen? What goes wrong? What tools are missing? In order to address these questions, we must first look at the assumptions that practitioners and scholars from each discipline are likely to make.

In this paper we, an architect and a sociologist introduce our joint research project for investigating means for cross-pollinating tactics and tools of analysis between our disciplines. We begin by summarizing how buildings work to structure social relations, and then describe the common range of assumptions made by designers about what people want. These assumptions lead to a range of problems in terms of how building projects take form, how they are represented visually in the design process, and how these norms are inculcated in educational institutions. We conclude with a few thoughts about the need to bridge architectural and sociological imaginations.

BUILDINGS STRUCTURE SOCIAL RELATIONS

According to sociologist Thomas Gieryn, "Buildings structure social relations by making it difficult to conceive of other arrangements of architectural spaces - which are, at the same time, social relations." [2] This structuring force comes in part from the ability of architectural spaces to "routinize" everyday interactions and to steer "patterned behavioral responses."[3] In short, buildings and city spaces influence and instill routines, they guide the movement of bodies through spaces in ways that become absorbed into the routine background of everyday life. People move through available passageways, and they avoid locked doors or spaces that are coded as inaccessible. The spaces they move through serve to structure social relations by the impact they have on the convergence of pathways of movement with others, or the divergence into separate paths that do not intersect. They do this quietly in the background, in ways that we may not notice. Additionally, buildings conceal the debates, conflicts, and competing interests that informed their design through the manner in which people usually experience and understand them.[4] Through post-occupancy interviews with scientists at a Cornell University laboratory building, Gieryn learned that most occupants found the architecture of the building to be irrelevant to the activities that took place there - it was merely an innocuous backdrop. They focused on the building's functionality and on its aesthetics - an appreciation of its bright and airy quality.

Buildings…do as much to structure social relations by concealing as by revealing, and therein lies their distinctive force for structuring social relations and practices. Once completed, buildings hide the many possibilities that did not get built, as they bury the interests, politics, and power that shaped the one design that did.[5]

When the design process is underway, spaces are still flexible, and many decisions are made about where to place and link programmatic elements. There is a process of negotiation between the architects, the clients, the developers, and various other parties. Multiple versions of floor plans and elevations are created and cycled through, the changes and compromises of the process becoming concretized in the final version that is translated into construction documents, and then finally into the built environment. This process of negotiation is not apparent in the built, material forms of constructed spaces. As such, they "stabilize social action by concealing the politics and interests inherent in their design behind interpretative registers that focus on instrumental efficiency, cost, or possibly aesthetics."[6] Another means by which buildings stabilize social action is by increasing the cost of making significant changes to forms or uses. Built material artifacts accumulate momentum over time, as it becomes more difficult and costly to change what has been put into place. People move around and work around these objects, while the logics and negotiations behind their creation are forgotten. Subsequent interventions in the city dodge around what has been built, and the existing forms and interventions are questioned less and less.[7] This accumulation of the "inevitable" is compounded by the design and construction industries - which operate on the logic of the bottom line - usually achieved through economies of scale, repetitive forms, and modular elements which are commonly repeated.

Certain spatial forms do at times seem inevitable - glazed walls for office buildings, front lawns consisting of long stretches of grass, and kitchens with granite countertops. The strong evidentiary facticity and presentness of what has been built dominates the conversation. The material presence of these existing forms makes it difficult to image other types of spaces - and the other kinds of social lives they could enable. Alternatives are unthinkable because of the dominant discourses around efficiency, cost, and given aesthetic norms. The presence of other interests or ideologies underlying the construction of these efficient, economical, and attractive buildings is rarely questioned.

This is not to say that, once constructed, the built environment is not open to different interpretations and perceptions. Mario Small's ethnographic work in the Villa Victoria public housing project in Boston has demonstrated that the same place can be interpreted through vastly different lenses by residents from different cohorts or generations. The generation of activists that fought to save this site from urban redevelopment view it as beautiful and connected to pride of place. Yet the cohort of more recent residents have a different view of the neighborhood, which has declined in terms of maintenance practices and material wear and tear since it was first built. Each cohort reads the same environment in divergent ways, both with a bearing on their perceptions of themselves. Small connects these differences to "neighborhood narrative frames," which are the "continuously shifting but nonetheless concrete sets of categories through which the neighborhoods' houses, streets, parks, population, location, families, murals, history, heritage, and institutions are made sense of and understood."[8] Perceptions of the residents are filtered, as they highlight and ignore different aspects of their material background. This framing then affects how residents will act in or toward the neighborhood. At Villa Victoria this manifested as different levels of participation in community groups, acts of stewardship, and gatherings in public space.

Villa Victoria is an interesting case study because it has many of the elements that *should* make it work incredibly successfully in the city. The Puerto Rican residents were heavily involved in the construction of the buildings and open spaces - bringing references from Puerto Rican towns into the Villa. It features mostly low-rise three-story housing with front stoops, iron railings, backyards, and pitched roofs. There is a small brick plaza, a cobblestone *paseo*, permanent benches and tables, and a park with a basketball court and play equipment. It is well connected in terms of infrastructure, transportation, and services. Yet, the material decline has had a large impact on the younger cohort's narrative framing of the site.

Here we see how the built environment, and narratives underlying spatial experiences, affect perceptions of self and others, informing actions and democratic practices in urban space. Existing, commonly used methods of investigation for studying places fall short. The assumptions that architects, landscape architects, and planners would make would not be helpful as they question how design practice could contribute to addressing the problems at this place. We need other methods to investigate what people want, and what could work for people, to go beyond assumptions. It is important for designers to develop more familiarity with how such narratives are constructed, and how they manifest in relation to designed environments. Working without the benefit of such a framework, the sculpted material of architecture, garden, or public space will likely fall short of the intended impact on residents' lives and the overall social ecology of the city.

The Architectural Profession

The architecture profession is dominated by a stasis of the social imagination and a perpetuation of old forms under new guises. Jeremy Till calls out the "the new formal complexities" for being "just as conservative as the stabilities they would try to overturn…"[9] His is but one of the voices critiquing the understanding of architectural design and production as an autonomous practice, with attacks against this approach gaining in amplitude from the early 2000s with critics such as Kenneth Frampton, Marc Trieb, and Juhani Pallasmaa, among many others. This positioning allows architects to detach themselves from the human element that is always involved in any design, enabling an understanding of the world as an abstraction; the realities and contingencies of the world are neatly folded into simplified models. Such an initial conceptual abstraction creates challenges for real world implementation, and architectural history is littered with many good formal designs that have not

worked as intended because they did not take the political or social situation into account. Although spaces may be sculpted with avant-garde forms, this does not imply any kind of radical, or even political, stance - let alone engagement with any social possibilities beyond the normative.

Even though the production of architecture is by its very nature relational - architects have to work with clients, city officials, and a multitude of consultants - architectural education and theory often operates in a vacuous, self-referential space. There has been much criticism of the production of images by architects for architects. Such images are coveted by city officials and are circulated with signature projects that are increasingly used for the global marketing of cities. The presence of the iconic image is given precedence over the experiential quality of the space.[10] Blinded by an emphasis on the formal, other important aspects of spatial experience are neglected. Even after the production of the building is completed, renderings and photographs that emphasize certain selected aspects of the project circulate broadly - furthering the afterlife of the images used to sell and market the proposed building.

Dominant trends of architectural theory and practice have led to a focus of architectural design on form. Less attention is paid to materials and details - the elements that actually form the points of engagement between individuals and places. Objects are inserted, moved around upon the abstracted field of the computer screen, and many assumptions are made about how the spaces created will be used. This process rarely happens the other way around - where assumptions are questioned, desired uses and cultural associations are determined, and then the built environment is wrapped around human lives.

ASSUMPTIONS OF THE DESIGN PROCESS

It is important to understand how assumptions come to be made and explore how they enter the design process, starting with design studio education. As has been pointed out by a number of architecture educators, design studio courses will often privilege and reward dramatic forms, beautiful renderings, and bold statements - which may or may not be strongly connected to context, culture, or history. We both experienced this as students of architecture and urban planning - a vague mystique around what qualifies good design. There certainly are people with an intuitive knack for design, who have a seemingly innate understanding of proportion and delight and can develop solutions that address multiple design problems including circulation, natural lighting, and program. But many times, it seemed as if the more opaque, the more indiscernible, and more difficult the drawings were to understand, the better the reception. It felt as if the student was being applauded for tapping in to some obscure code for the creative imagination that led to new and difficult to explain forms. These are drawings and designs that would be almost impossible for a non-architect to decipher, and quite honestly, we struggled, and still do, to understand these coded ciphers. These experiences echo with Grant Kester's description of the autonomy of art practice in the latter half of the 20th century. This was an art that was autonomous, separate from other impure realms, and set at a distance, in an almost "antagonistic" relationship of deep suspicion of the viewer.[11] The role of the artist was to challenge, shock, or confuse the viewer - who is always held at arm's length - in order to inculcate in them some kind of internal change or shift.

Translated to the built environment, this is the sense that the public does not know what a good design is - they cannot recognize the formal tricks, historic references, and structural manipulations, the references the designer might be making to the shape of a flower, or a molecule, or a tetra helix. And they might not recognize these things. But they well know the qualities of good shelter and of a good forum for gathering - places where they feel comfortable and welcomed, protected and delighted. Yet, in many ways the design process reduces "the public" to an abstraction, whereby assumptions are made

about how the typical viewer or visitor would respond to some given content. As John Dewey has said, "the nonsocial individual is an abstraction arrived at by imagining what man would be if all human qualities were taken away."[12] Places are often designed for such "nonsocial individuals," who are photoshopped into rendered perspectives that are used to communicate designed spaces to municipalities, design review boards, and community meetings. Yet, buildings and neighborhoods are populated by people with distinct social lives.

There is a connection between these assumptions and architects' emphasis on form. This allows for a detachment from considerations of human use and inhabitation of place - enabling an understanding of the world as an abstraction, one that includes only what can fit within the boundaries of the site drawing. Such an approach does not challenge assumptions, but rather squeezes the realities and contingencies of the social world into an ideal abstract model. Architect Mark Wigley associates the prioritization of visually interesting form-making with architecture's conservative tendencies, claiming that the "radical" new formal complexities to be found today share a conservatism with the more stable forms that preceded them. When such priorities are in place, it is difficult to create room for considering existing urban networks or social meanings connected to places.

A number of scholars have drawn attention to the important role that images and renderings play in moulding our imaginations of space. They do cultural work and are used to imagine specific urban lives and ways of living in the city, despite a pretense of documentary innocence.[13] This critique happens outside or alongside but is rarely brought in to design curriculum or into the design studio. This discourse of critique runs parallel to, and mostly separate from, design discourses, techniques, and practices. By not addressing this in the design studio, educators perpetuate this unquestioned cycle. The appeal of beautiful drawings and clean white models is clear, yet this attraction can cause us to ignore the fact that such drawings might actually obscure information and make the city harder to understand; and the precise geometric abstraction of models might not allow for thinking about material and sedimentation and social process. In his discussion of architectural education, Jeremy Till describes how the drawing is privileged as both the means of communication and the basis for assessment, whereby **"…**virtuosity is rewarded over other aspects of production." [14] We have certainly seen this to be the case in our experiences as students and in professional practice. But the impact that this privileging of the drawing has on the built environment can be felt by anyone walking through a city today. Many urban environments are populated by forms that work well from a distance, but are less appealing when experienced up close, from the street. This can be linked to industry conventions, whereby the city is often represented from a distant, aerial perspective, "unpopulated and disconnected from sidewalk life."[15] We should not underestimate the power of such images. As Dianne Harris points out, it is the very seeming innocuousness of architectural renderings that leads to their being "critically unobserved," and as such they "constitute powerful ideological devices."[16]

If sociologists do not take space seriously as an analytic category, having limited engagement with design - and architects have trouble designing at the interface between the building and social - then we can see the roots of the impoverishment of our designed urban spaces today. Both designers and social scientists who study the city need to pay attention to more than just the location of massed objects in space and the three-dimensionality of built form. More attention needs to be drawn to the details and the small-scale, everyday points of interface. This needs to begin with rethinking pedagogical approaches. There is an opportunity to provide training on how to become engaged observers in school curricula, and many benefits to be gained from stronger dialogues with sociology towards this end.

NOTES

[1] Miles Glendinning, *Architecture's Evil Empire? The Triumph and Tragedy of Global Modernism* (London: Reaktion Books, 2010), 15.
[2] Thomas F. Gieryn, "What Buildings Do," *Theory and Society* 31:1 (2002): 61.
[3] Ibid, 37.

[4] Ibid, 61.

[5] Ibid, 38-39.

[6] Ibid, 43-44.

[7] Ibid, 43-44.

[8] Mario Luis Small, *The Transformation of Social Capital in a Boston Barrio (*Chicago: University of Chicago Press, 2004), 70.

[9]Jeremy Till *Architecture Depends (*Cambridge, MA and London: MIT Press, 2009), 21.

[10] Anna Klingmann, *Brandscapes: Architecture in the Experience Economy (*Cambridge and London: MIT Press, 2007); Andreas Huyssen, "The Voids of Berlin," *Critical Inquiry* 24 (1997); Michael Sorkin, "See You in Disneyland" in *Variations on a Theme Park,* ed. Michael Sorkin (New York: The Noonday Press, 1992).

[11]Grant Kester, *The One and the Many: Contemporary Art in a Global Context (*Durham and London: Duke University Press, 2011), 38.

[12]Tom Finkelpearl, *What We Made: Conversations of Art and Social Cooperation (Durham &* London: Duke University Press, 2013) 344.

[13] Diane Harris, *Little White Houses: How the Postwar Home Constructed Race in America (*Minneapolis & London: University of Minnesota Press, 2013)

[14] Till, *Architecture Depends,* 111.

[15] Annette Miae Kim, *Sidewalk City: Remapping Public Space in Ho Chi Minh City* (Chicago & London: University of Chicago Press, 2015), 70.

[16] Harris, *Little White Houses: How the Postwar Home Constructed Race in America,* 2.

BIBLIOGRAPHY

Finkelpearl, Tom. *What We Made: Conversations of Art and Social Cooperation.* Durham & London: Duke University Press, 2013.

Gieryn, Thomas F., "What Buildings Do." *Theory and Society* 31:1 (2002) 35-74.

Glendinning, Miles. *Architecture's Evil Empire? The Triumph and Tragedy of Global Modernism.* London: Reaktion Books, 2010.

Harris, Diane, *Little White Houses: How the Postwar Home Constructed Race in America.* Minneapolis & London: University of Minnesota Press, 2013.

Huyssen, Andreas. "The Voids of Berlin." *Critical Inquiry* 24 (1997): 57-81.

Kester, Grant. *The One and the Many: Contemporary Art in a Global Context.* Durham and London: Duke University Press, 2011.

Kim, Annette Miae. *Sidewalk City: Remapping Public Space in Ho Chi Minh City*. Chicago & London: University of Chicago Press, 2015.

Klingmann, Anna. *Brandscapes: Architecture in the Experience Economy.* Cambridge and London: MIT Press, 2007.

Small, Mario Luis. *The Transformation of Social Capital in a Boston Barrio.* Chicago: University of Chicago Press, 2004.

Sorkin, Michael. "See You in Disneyland." In *Variations on a Theme Park*, edited by Michael Sorkin. New York: The Noonday Press, 1992.

Till, Jeremy. *Architecture Depends.* Cambridge, MA and London: MIT Press, 2009.

INDUSTRIAL CLOUD COMPLEX

Author:
ANTONIO FURGIUELE

Affiliation:
WENTWORTH INSTITUTE OF TECHNOLOGY, USA

INTRODUCTION

The industrialization of 'the cloud' from 2008-2011 propelled a massive development of information-technologies into the everyday lives of people, the objects they use, and the institutions, municipalities and governments that serve them.[1] A result of its own success, cloud computing networks have since formed an Industrial Cloud Complex creating constant pressure and vested interest between the corporate sector, institutions, and governments influencing public policy towards further cloud investment. The scale, value, and ubiquity of cloud technologies have developed a feedback loop of constant investment, reinvestment, maintenance, and need for increased financialization of data. The Industrial Cloud Complex confirms a new technopolitics of data as a premiere driver for the global economy, a perpetual necessity for system growth and maintenance, and as critical infrastructure to technical and social systems.[2]

The text below develops the concept of the Industrial Cloud Complex through three vantage points: a definition of cloud computing and how it aggregates to become 'too big to fail'; a comparison of the 20th-21st century military industrial complex; through its ability to reposition global cities and impact current conceptions of urbanism.

Defining a Cloud

To define the Industrial Cloud Complex and its impact on urbanism it is necessary to understand the fundamental characteristics of cloud technologies, how they gain value and wield influence. Cloud computing is a utility service for users to access information storage and program applications remotely. They are now the defining element of the Information Age and have catalyzed a mass migration of capital and resources into its information technology infrastructure.

All cloud technologies are composed of five key factors. The National institute of Standards of Technology (NIST) defines these as the following: *On-Demand Self Service*, or the modulation of time that user controls; *Broadband network access & resource pooling*, connectivity and mobility through aggregation of shared resources and shared infrastructure; *Rapid Elasticity*, (aka Scalability), a flexible scale of data file storage and applications; and, *Measured service,* or the standardization and monetization of data protocols.[3]

These five points are shared principles for cloud technologies that underpin the logic of cloud types: stored data (Dropbox - 2007, iCloud - 2011, Google Cloud - 2011, Microsoft: Azure – 2008, Amazon

Web Services - 2006), program applications (Microsoft 365 - 2011, Adobe Creative Cloud - 2013), entertainment (Netflix - 2007, Amazon Prime Video - 2011), digital resources platforms (Sound Cloud, 2007, Google Docs), and smart devices (iPhone - 2007, Nest Thermostat – 2011).[4]

Each of these cloud types require massive forms of social and technical infrastructure (data centers, fiber networks, cell towers) energetic resources (electricity, fossil fuels, renewables, electricity transmission, power substations), managerial infrastructure (physical and virtual security, maintenance, risk management protocols), and bureaucratization (regulation, management, financial subsidies, oversight). These data structures are typically understood as the 'top-down' infrastructure of cloud technologies, they compose the primary computing networks and allow for the storage, distribution, and transmission of cloud data and applications.

These cloud networks now facilitate large growth expectations: It is widely projected that the world will be producing and storing 165 zettabytes of data a year in 2025, a 1.2 trillion-dollar market that will consume 20% of the worlds energy resources, or 700 billion kwh of electricity (equivalent to 80 dedicated nuclear reactors):[5] This represents a ten-fold increase from 2016. Projected growth is due to the transition of cloud data production from business data into 'life-critical' data applications. 'Life-critical' cloud data being a data infrastructure that is essential to everyday functioning of global citizenry and its societies, sometimes referred to as critical infrastructure.[6] In 2025 it is projected that a person in the US will interact with cloud data 4,800 times per day, or one interaction every 18 seconds.[7]

A total of 1/3 of all spending in the US is on cloud services.[8] The US is the largest market for cloud services with 97 bn dollars spent annually or 60% of total global spending. The industries spending the most on cloud services in 2018 are the manufacturing sector (19.7 billion), professional services (18.1 bn), and banking industries (16.7 bn). Reports predict that a majority of all working environments within the US, approximately 90 percent, will rely on a cloud product.[9] The mass migration of various types of users fueled in part by the growth of the Internet of Things (IoT), the smart product & service sector that allows for home, work, smart cars, smart city technologies, connected health devices, to collect data and manage their users and environments.[10] By some estimates 100 billion smart devices will be active in 2025, a 6.5 trillion-dollar market in hardware, each connected to cloud storage and applications.[11] These smart home products from home door locks (Yale Living Lock, 2013), refrigerators (Samsung Family Hub, 2016), light bulbs (Philips Smart Lighting, 2012), televisions (Samsung Smart TV, 2008), home security systems (NestCam, 2015), thermostats (Nest, 2011), home control & virtual assistant (Amazon Alexa, 2014). The 'bottom-up' growth of IoT products integrated with 'top-down' cloud infrastructure has propelled its ubiquity in everyday lives. Most new smart products aim to take advantage of both the market hype around smart products' informatic possibilities to be tethered to other forms of information control. A user's lights, refrigerator, thermostat, security, can all be controlled via a smart-phone, and be programmed to respond to other types of information: lights can be programmed to respond to stock-market fluctuations, to give flickering lights new meaning; a refrigerator can perform surveillance and notify a user when and what has been consumed, to provide discipline and possible punishment to the delinquent dieter. It also, importantly, opens up new revenue stream of cloud service for added systematicity.

All cloud technologies are utility services that have the ability to produce excess data about each individual users' interaction with program applications.[12] This excess data, an individuals' digital footprint is colloquially referred to as a 'data shadow', can be bought and sold as an available resource to 3rd party data vendors, or 'data brokers' (Acxiom, Experian, Epsilon, CoreLogic, Datalogix, Groundtruth).[13] Data footprints are both a commodity and a monetizable resource. They can be

combined and recombined in aggregate, by various actors to gain informatic-power over individuals or environments. This form of data can be assembled in various combinations to render opacity and clarity to aspects of individuals lives or their everyday environments (consumptive habits, interests, political Institutions, social networks, location data).[14] Companies like Acxiom own and broker data for 10% of the worlds' population, an average of 1500 pieces of information of each of the world's 7.7 billion individuals. The data broker industry is currently estimated to be 200-billion-dollar annual industry.[15] This data resource allows these companies to have a unique relationship with data as commodity: as a data-technical proprietary it may own a specific type of data through a unique means of capture, or it may be territorial, as some of these companies have exclusive data-rights for a city, zone, or virtual space. Cloud computing, while it provides a service for its users, it transforms its users' interactions into a monetizable resource and further subdivides types of spaces and time for increased finacialization.[16] The cloud as a utility, allows value to be extracted from its users, which further incentives further growth.

While users are constantly being captured, transmitted and monetized by cloud services, users are processed by the five cloud factors: on-demand self service, broadband network access & resource pooling, rapid elasticity, and measured service. The constant ubiquitous interaction with these characteristics allows them to be the defining and memorable aspects of cloud technologies, and increasingly define essential cultural values. Because the cloud lacks a figure and definable form, it is best understood by the public as a mode of interaction with information. While cloud technologies increasingly produce 'real-time' interactivity, on-demand, we in turn become a function of it, becoming on-demand to embody the nebulous and ubiquitous characteristics of the cloud.

Too big to fail

In the shadow of the US economic collapse of 2008 the cloud industry embodied a global system cliché with techno-optimism: big data was too big to fail.[17]

Its large success in transforming the Information Age was achieved through massive investment and consolidation of 'top-down' data infrastructure with 'bottom-up' integration of cloud smart technologies. This also created an important form of risk, the vulnerability that comes with large scale system interconnectivity. Any interruption of service scales up in risk because of the broad systematicity that the cloud relies on in order to mitigate both virtual and physical cloud system risks (cyber security, physical security, energy resource access & stability, environmental catastrophes) the cloud demands constant investment of security and redundancy.[18] The Industrial Cloud Complex affirms the cloud's perpetual need for added system certainty through continued investment.[19]

The Complex

The Industrial Cloud Complex can also be positioned through a comparison with the Military Industrial Complex.[20] These two industries produce feedback loops that influence public policy through the monetization of key social-technical systems within the nation-state and global city. The Military Industrial Complex instrumentalizes the modern nation-state to produce and facilitate perpetual war. It magnifies the production of lethal war-machines, as a premiere commodity of advanced technological knowledge, through mobilizing its industrial sector. While the Military Industrial Complex is still an active agent within US political economy, the Industrial Cloud Complex can be understood as part rival and enabler.[21] Department of Defense projects, most importantly the 10 billion contract for the Joint Enterprise Defense Infrastructure computing contract (JEDI Cloud), evidence the important overlap

between these two industrial complexes. The Industrial Cloud Complex defines the 21st century as a perpetual state of data-control and the production of informatic-power through its industrialized data sectors.

The Military Industrial Complex, is colloquially defined as "A country's military establishment and those industries producing arms or other military materials, regarded as a powerful vested interest."[22] It developed as a product of the emergent nation-state from the New Deal era that had retooled and integrated its manufacturing sector to accommodate the necessities for industrialized scale war production between 1914-1945, the two World Wars.[23] After the wars, the Military Industrial Complex helped to advance the US post-war economy.[24] It allowed for continued job creation at home, and to wield political-economic influence to other nation-states. It allowed this industrial-manufacturing sector to continue to produce a premiere technical commodity. It used this to propagate and project national strength and sovereignty, and propelled continued technological & scientific research and innovation.

Cloud technologies, originally conceived of in the Cybernetic age, then referred to as a 'computer utility', became an industrialized technology from 2008-2011.[25] The shift in economy marked a moment of 'creative destruction', which has propelled further growth along all sectors within the information economy.[26] The Industrial Cloud Complex promises to advance a post-industrial economy, to propel continued job creation and wield political-economic influence to other nation-states. While it shares many of the industrial promises and rhetoric, framed by the Military Industrial Complex, it significantly differs in its composition. The Military Industrial Complex emerged from a singular discourse amongst corporations, politicians, and public policies. It is singular in its feedback loop to create conspicuous and trackable budgets, deals with countries for the purchase of weaponry, funding of specific US manufactures (Lockheed Martin, Boeing, Raytheon, General Dynamics, Northrop Gunman, BAE Systems), governmental grants to research universities (MIT, John Hopkins, Caltech) and campaign promises by select politicians to fund weapon facilities in their home states (Marietta-Georgia, Palmdale-California, Everett-Washington);[27] The Military Industrial Complex is hierarchical and diagrammatically shaped like a tree that advances the nation-state's power and local municipalities financial coffers. It can be rendered legible by "following the money".

The Industrial Cloud Complex, because of its wide discourse network, has already become a decentralized industry rendering it difficult to track and nebulous to imagine.[28] Its funding comes from many sources and while it relies on governance, for regulation and oversight, its heterogeneity can allow global cites, corporations, institutions and other users to create informatic-power and to secure financial benefits. Its diagram is a network of shifting actors, but the agents that hold the biggest informatic-power are agents that have access to big data 'top-down' data infrastructure (Google, Amazon, Digital Reality Trust, Rackspace, Microsoft, Apple, IBM, Facebook, Digital Ocean), and 'bottom-up' resources (Cisco, Siemens, Itron, Facebook, Amazon, Microsoft, Apple, Adobe, Nest). A new age of 21st century city, state, and federal governance requires these technocrats and the resources they provide.

Urbanism

While the focus of cloud technologies had been primarily on individuals, organizations, and governments, from 2008-2011 the emphasis had shifted to the global city and urbanism, representing an important scaling-up of cloud-based systems. Present day technical advancements within cloud technologies coincide with increased urbanization: fifty percent of the globe now lives in urban areas and is likely to grow to 60% by 2025. The density of urban systems brings with it added levels of

complexity and opportunities for cloud computing. This has inspired urban centers to integrate 'Smart City' technologies utilizing sensors to collect information for the management of resources and systems. Following the trend for cities to wield global impact and seek out system efficiencies, smart technology allows for real and perceived advantages and important changes. It aims to make city systems more visible, manageable, and efficient through the real-time collection of data (on-demand), through connectivity (broadband network access and resource pooling), with the ability to scale up its data collection (rapid elasticity), and to change the types of data services (measured service).

Cities defined by their 'smart' system layers, are commonly referred to by the following eight service regimes: Smart Governance & Education, Smart Healthcare, Smart Building, Smart Mobility, Smart Infrastructure, Smart Technology, Smart Energy, Smart Citizen.[29]

The new capacity for cities to be a computable techno-managerial environment has placed increasing pressure on urban environments to be legible and capturable as data. The shift in focus for a cloud system to capture and compute a city as a dynamic environment, adds to the programmatic and computational complexity. Smart city computational factors can include the following: individuals (contact biometric, contactless biometrics), air temperature, air particulates (carbon dioxide, nitrogen dioxide, sulfur dioxide), barometric pressure, ambient sound intensities, material surface temperatures, pedestrian & vehicle traffic movement, and public transportation systems. Cities like Amsterdam, Barcelona, Chicago, Songdo, Shanghai, Singapore, are often referenced as pioneering smart cities through the various types of technological initiatives underway.

Cloud technologies promise to increase efficiencies through informatic control and management of the discrete elements that compose 21st century urbanism. Global cities increasingly privilege a quantifiable urbanism, designed with urban elements that have specific extensive data-filled properties that are easily recognizable, trackable, transmissible, and rendered legible as information, repeatedly.

Industrial Cloud Complex

The industrialization of cloud networks comprised of 'top down' data infrastructure and 'bottom-up' smart products have quickly transformed cloud technologies from a large-scale retooling of businesses, and everyday lives, to its integration as 'life-critical' infrastructure for both social and technical systems. The Industrial Cloud Complex evidences a new stage of the Information Age where the scale of data virtualization demands constant reinvestment to create necessary forms of system certainty. The scale, value, and ubiquity of cloud technologies commands massive investment, reinvestment, and further means to extract value from collected data.

The continued need for growth, ubiquity and value will further evidence the Industrial Cloud Complex in its ability to construct environments, individuals, and global urbanisms to concede to its logic. Cloud system certainty will require continued transformation of individuals and their environment into stored data and will necessitate an important trade: a near total consumption of global energetic resources.

The need for energy resources for cloud infrastructure will continue to double every two years, precipitated by a doubling of demand for data storage and program application usage; this requires an update to cloud infrastructure servers every two years to accommodate more traffic, offsetting any efficiencies because of the doubling of demand. As cloud infrastructures continue to consolidate, they become more homogenous making them more efficient and vulnerable, requiring more security and redundancy, which will require additional investment, and the feedback loop begins again.

To accommodate growth, the Industrial Cloud Complex will continue to advance the financialization of information through increasing its capture and monetization of data from individuals and cities. The

extraction of this data, will allow new forms of informatic power for management and control of systems, giving rise to a new age of governementality and corporate omniopticism:[30] A real-time surveillance of individuals and environments as a data resource.

The Industrial Cloud Complex's ability to aggregate and wield influence, its likeness to the military industrial complex, and through its current and future ability to impact urbanism through the real-time surveillance of individuals and environments as a data resource evidences a new phase in the Information Age. The Industrial Cloud Complex marks a transition of data's new role as a commodity, resource, and precarious agent of life-critical infrastructures of everyday life.

NOTES

[1] 'the cloud' is noted here in quotations because the cloud is not singular but is colloquially refer to as such. Many clouds exist through various public and private cloud computing providers. A cloud is a socio-technical system comprised of many aggregate technologies and provides data storage and/or program applications remotely to users as a service.

[2] Critical Infrastructure is a type of infrastructure that is essential to the functioning of national interests or the functioning of civil society. Cloud information technologies are a growing form or critical infrastructure in the Information Age and allow for the functioning of other types (nuclear power plants, electrical grids, transportation systems, health data, etc.)

[3] NIST cloud computing standards: https://www.nist.gov/sites/default/files/documents/itl/cloud/NIST_SP-500-291_Version-2_2013_June18_FINAL.pdf

[4] Antonio Furgiuele, "The Five Points of Cloud Architecture", Harvard Design Magazine, Shelf Life, Issue No. 43., 2016.

[5] For additional information about the energy intensively of cloud technologies, refer to the following: https://data-economy.com/data-centres-world-will-consume-1-5-earths-power-2025/

[6] The term 'life – critical', is colloquially used in reference to cloud technologies. For additional information refer to the following article. https://www.forbes.com/sites/andrewcave/2017/04/13/what-will-we-do-when-the-worlds-data-hits-163-zettabytes-in-2025/#13753728349a

[7] Refer to the following 2025 predictions about the frequency of user interactivity with cloud technologies: https://www.seagate.com/news/news-archive/seagate-advises-global-business-leaders-and-entrepreneurs-pr-master/

[8] For additional information on the impact of the cloud technologies on the manufacturing sector, professional services, and banking industries refer to the following article:
https://www.idc.com/getdoc.jsp?containerId=prUS43511618

[9] For additional information about the broad base integration of cloud technologies on work environments refer to the following Cisco Global Cloud Index forecast (2016-2021):
https://www.networkworld.com/article/3253113/data-center/cisco-says-almost-all-workloads-will-be-cloud-based-within-3-years.html

[10] User interaction should include recent reports of artificial intelligent systems to autonomously access and exchange through cloud systems. Artificial intelligent systems will increasingly rely on cloud data storage for data.

[11] The projected 100 billion smart devices should be contrasted with the 7.7 billion people on earth.

[12] Users broadly defined as a person, AI, institution, organization, municipality, government, but can be plastically assembled and reassembled into definable groups by socio-economic class, race, gender.

[13] For additional ontological theories of how virtual media transforms beings refer to the concept of 'dividuality': the concept developed, which described the way individuals are rendered through information refer to the following text: Deleuze, Gilles, "Postscript on Societies of Control", *Negotiations,* Columbia University Press, 1995.

[14] Informatic-power is a modality of power gained and exercised over a user (individual, institution, organization, corporation, municipality, government) through leveraging information (in type and/or amount) to be discursive to modify another's behavior, body, or actions. This type of power is editable and transformed over time because it is based on the type of data acquired, the amount, and its configuration/assembly.

[15] For more information on how cloud data has been monetized refer to 'Surveillance Capitalism', Shoshana Zuboff (2014).

[16] The term resource is used here because data can be purchased from a data broker, and therefore it is a commodity, it is divisible and able to be assembled into to aggregate configurations to elicit new value and therefore it is also a resource.

[17] The mantra 'too big to fail', became enigmatic popular phrase of the post 2008 US recession bail out of the bank industry. The phrase referenced the impossibility of allowing key banks to enter bankruptcy because it would catalyze systemic global economic collapse. The US government was then forced to make the calculation of which banks needed to be propped up with public funds. It evidenced two important lessons: the global systems were interconnected – networked, which allowed large vulnerabilities to threaten global systems; and that large global systems could rely on government intervention to safeguard it from total collapse. Bigness and interconnectedness could be an asset for a large systems and a strategy for risk management.

[18] Large scale systems come with large scale vulnerabilities. The consolidation of data infrastructure, and increased system homogeneity, allows for its systems to scale-up, a need constant investment and reinvestment. All signs point to continued consolidation to allow for energy efficiency, security, control and financialization.
[19] Technological advancement in servers has doubled computing capacity every 18-24 months (Moore's law), which allows for data centers to be constantly upgrading its processing power and reduce electricity demands. This constant technological advancement is met with a doubling of user demand every twenty-four months, which offsets the energetic efficiency advancements to accommodate doubling of data loads: The trend within the 'back-end' data infrastructure is to double the size of data centers and secure stable and secure energy sources.
[20] Note, the Military Industrial Complex is still active and it can be argued that the entire cloud IT sector helps to advance the weaponization of data, and therefore an essential component and new phase of the Military Industrial Complex. Given the broad industry adoption of cloud technologies it warrants a new formation in to the Industrial Cloud Complex.
[21] Industrial Cloud Complex as 'part enabler and part rival', implies the way the cloud technologies have been become past of the the weapons and defense industry. The Cloud IT sector itself also competes for governmental funds. Department of Defense projects like the the JEDI project, a 10-billion-dollar cloud system suggest the important overlap between the industrial Cloud Complex and the Military Industrial Complex.
[22] A country's military establishment and those industries producing arms or other military materials, regarded as a powerful vested interest. https://en.oxforddictionaries.com/definition/military-industrial_complex'
[23] While some historians, for example Merritt Roe-Smith, have argued for the importance of the Civil War for the beginning of a new phase of American modernity through its use of systems production of weapons and war supplies, the Military Industrial Complex discourse attributes its catalyst to the World Wars of the 20th century.
[24] While it helped the post war economy it also diverted public funds from other social and public initiatives.
[25] In 1995, the Cybernetic age had transitioned into the Information age with the rise of public internet networks. A transition from discrete computing to network computing.
[26] A nomenclature for a post-industrial economy where the labor is not directed to the production of a material or manufactured product but a service of value that involves information or communication.
[27] For additional information about the US expenditures on corporate and research universes refer to the following: https://www.thenation.com/article/heres-where-your-tax-dollars-for-defense-are-really-going/
[28] The term 'discourse network', is a reference to concept develop by F. Kittler in his text, 'Discourse Networks 1800/1900', Stanford University Press, 1990.
[29] While smart city lacks a viable and stable definition various types of smart city types have emerged, for a detailed list refer to the following text: https://www.forbes.com/sites/sarwantsingh/2014/06/19/smart-cities-a-1-5-trillion-market-opportunity/#2582aec06053
[30] The term Omniopticism, used with the data-community, is a concept adapted from Michel Foucault's Panopticism. In *Discipline and Punish,* Foucault describes the formation of disciplinary society in the Enlightenment creation of discipline through structures that model disciplinary power, namely Jeremy Bentham's Panopticon prison. Panopticism is a social theory of how to utilize power of surveillance to manipulate the behavior of others to establish disciplinary control. The concept of Omniopticism, requires increased mediation through digital virtualization of interactions, to create data and information, that can be them used to surveil others.

BIBLIOGRAPHY

Beck, Ulrich, *Risk Society: Towards a New Modernity,* Sage Publications, 1992.
Castells, Manual, "The Space of Flows" & "The Edge of Forever: Timeless Time", *Rise of Network Society,* Wiley & Sons, 2009.
Deleuze, Gilles, "Postscript on Societies of Control", *Negotiations,* Columbia University Press, 1995.
Jameson, Fredric, *Postmodernism, or, the Cultural Logic of Late Capitalism,* Duke University Press, 1991.
Lockwood, Dean and Rob Coley, *Cloud Time: Inception of the Future,* Zero Books, 2012.
Lyotard, Jean-Francois, "The Field: Knowledge In Computerized Societies" & "Postmodern Science and the Search for Instabilities", *The Postmodern Condition: A Report on Knowledge,* Minnesota Press, 1984.
Report to Congress on Server and Data Center Energy Efficiency Public Law 109-431, U.S. Environmental Protection Agency ENERGY STAR Program, August 2, 2007. Print.

Wilshusen, Gregory C. (director, Info, Security Issues) “Information Security: Government wide guidance to assist agencies in implementing cloud computing” US Accountability Office, Testimony Before the Committee on Oversight and Government Reform and Its Subcommittee on Government Management, Organization, and Procurement, House of Representatives, July 2010.

LEARNING FROM THE CRISIS - ARCHITECTURE, TOURISM AND THE CRISIS IN GREECE

Author:
ELENI GAGLIA

Affiliation:
INDEPENDENT RESEARCHER

INTRODUCTION

The economic crisis and the brand name of Greece as a summer destination, with the following intensive touristic development, composes an often conflicting and bipolar identity, which has been translated into the built environment and the architectural approaches over the years. The above aspects of the current reality in Greece are the main factors of the way the country is portrayed to the rest of the world. What will be attempted here is to examine architecture and crisis through the Greek example of tourism, trying to ultimately extract some general conclusions.

Tourism is a multidimensional phenomenon with broad political, economic, social, cultural and environmental consequences which are reflected on the society and the space. Thus, over the course of the past years it has become clear that it critically affects the configuration of the modern ethnographic identity of the places where it is developed[1], provoking a lot of discussion, concern and arguments.

The present research focuses on the spatial aspect of tourism. In the tourism industry the space that is designed and produced, is a space of spectacle, addressing to the society of the spectacle which is consuming it. Tourism, human circulation considered as consumption,[2] is an activity through which capital moves, political ideas can be applied, and behaviors and preferences can be directed. The perception that land is a product, which has a certain value and should be profitable, is also significantly related to tourism activity and the relations it creates. The land is sold, bought and consumed under the same procedures and ideas of mass production. It is not accidental that the speculative investments on land today are usually translated into real estate and complex touristic facilities in mature tourist destinations.[3]

Architects are significantly involved in tourist activity as promoters of tourism product, as they give form to the touristic interests and take part in the branding of places and the construction of tourism landscapes, synthesizing the space itself and a marketable imagery of it. Hence, architecture and tourism are very closely related activities and interdependent.

HISTORY OF TOURISM IN GREECE

Greece is a country that based its economy significantly on tourism. Therefore, tourism has affected the country's development, its built environment and formed "the vehicle for the modernization of the

country"[4]. The promotion of Greece as a tourist destination began systematically in the early 1950's under the supervision of the government,[5] as it seemed like the perfect chance for an economic post-war revival. Through an organized campaign, an idyllic image of the country was constructed, as specific natural, cultural and historical characteristics are chosen and composed together to serve a specific purpose,[6] excluding the ones that didn't serve this same purpose, composing ultimately a selective image which distorts the reality and crystallizes dominant ideologies of nation, culture, modernity and tradition. The Mediterranean climate, the sea, the sun, the bright light, the variety of the landscape, the history, the traditions and the lifestyle, that had been kept unspoiled, were components that were used to build this new image of "Greekness". The invention of this identity of Greece was about to define the self-identification of the country for many years to come. Greek history and the Greek landscape jointly made up the myth of contemporary Greece and provided the foundation for the country to enter the touristic activity and industry.[7] So, touristic development became one of the first priorities of the government, which took over the construction of touristic facilities, the reconstruction and protection of archaeological monuments, the construction of museums, the improvement of the transport infrastructure and the promotion of the country abroad through brochures, posters and travel guides.[8]

The first organized attempt for the development of tourism landscapes took place between the years of 1953 and 1974, when the Hellenic Tourism Organization took over the construction of around 40 hotels, called "Xenia", in different places of Greece, chosen because of their natural beauty and their proximity to historical monuments. The supervisor architect, for many years, was Aris Konstantinidis, a modern architect known for his respect to the simple traditional architecture. Thus, the first touristic facilities were designed based on the integration in the place that they were in, in simple and functional forms, suggesting an ascetic approach of living in the landscape. The suitable orientation, the views and the relationship between the indoor and the outdoor spaces were also elements that were taken into consideration during the design.[9] Konstantinidis believed that architecture *"should grow on the ground in the same way a tree and a bush does",* in a complete harmony and direct connection with its surroundings[10] and under these principles he tried to design his buildings. These buildings shaped a unique and recognizable architectural idiom which emerged from the combination of Greek local characteristics with references to the modern design.[11] Konstantinidis recognized an opportunity to use the Greek landscape as the engine for touristic development, but at the same time he warned of the dangers of a spread without measure and respect that would distort the sense of place.[12]

As the global economic development allowed more people to travel, due to the rise of the standard of living in many countries, increasing numbers of visitors flooded in to Greece to experience the Greek myth, which triggered a jump in scale and standards of the infrastructure. Mass tourism was promoted which demanded more luxuries, comforts and bigger sizes, to which Xenia Hotels couldn't respond so they began to decline.[13] The following years were characterized by intensive building and quick and unregulated development through which the perception of landscape changed and inevitably altered the relationship between building and landscape. As a result, new types of "tourism landscapes",[14] and a new culture of vacation, which dealt with the place in a utilitarian way, appeared and the landscape and culture were consumed as a product through the tourism industry. That period of the boost of tourists coincided with the military dictatorship (1967-74), which economically supported the private touristic development in order to consolidate its position and to gain community consensus[15]. To serve the tourism demands, permission was given for bigger facilities and building in the coastal areas. The tourism development transferred mainly to private initiatives[16] with little control on scale and form. The

coastal areas became heavily urbanized as multilevel hotels, complexes of vacation rooms, organized beaches, marinas, restaurants and clubs were spreading, usually without proper planning and appropriate spatial integration, cutting off the access to the sea for the non-clients.[17] The facilities of that period usually presented a clear separation from the landscape, incorporating luxury global standards.

After the fall of the Dictatorship, there was an attempt of reorganization and control of touristic development. For instance, the Tourism Organization launched a project (1975-95) of rehabilitation and touristic development of old, traditional houses and their transformation into guest houses, in an attempt to maintain and showcase the traditional architecture and establish a different approach of touristic development. Although it was a good initiative, it would later lead in some cases to the imposition of morphological rules and the superficial, iconographic redefinition of "local".[18]

In the decades that followed, with the entrance of Greece in to the European Union, the touristic identity of the country continued to be promoted and new approaches of tourism infrastructure appeared, usually influenced by global standards. Therefore, today there are various types of tourism infrastructures, deriving from different periods of touristic development and addressing to a variety of visitors of diverse social classes and groups, travel expectations and tastes.

GREEK PRESENT

Through the productive division that Europe imposed to the European countries, the tourism in Greece was promoted against other economic sectors, such as agricultural and industrial.[19] As a result, Greece is still significantly dependent on the tourism industry, as an ever-increasing number of the population is related to this activity. In fact, the crisis brought an even bigger economic dependence on tourism[20] and an even bigger surge of tourists and investors, as the prices have fallen and the circumstances for investments have become more favorable. This has caused another crisis, this time of over-tourism, as some places in Greece are reaching the breaking point of their carrying capacity, environmentally, socially and culturally.[21] We now face the issue that small places and communities struggle to accommodate millions of visitors during the short tourist season.[22] Environmental burdens, overconsumption and scarcity of resources, strained infrastructure, overcrowding, changes in the lifestyle, threats to local culture and exploitation of cultural heritage are some of the consequences which these places have to deal with.[23] Greece welcomed a record 33 million foreign travelers in 2018,[24] while the population is only 10.5 million. Most of the tourists flood the islands and the coastal areas, which are developing the problems of a city, without having the required supplies and infrastructure to cope with them.[25] All the above ultimately reflect back to the tourism activity, as they lead to a degraded tourist experience. It seems we have reached a point in which trying to overcome one crisis has led to a new one and tourism has become simultaneously the solution and the cause.

Greece concentrates all the desired characteristics of a Mediterranean destination that is not yet as saturated as others, such as the French Riviera and the coasts of Spain and Italy. So tourists flock to Greece to enjoy the 4S's of tourism (sun, sea, sand and sex), expecting usually to meet the same comforts and development as in their technologically and economically advanced countries, while at the same time demanding to visit a place that is expected to be "traditional" and "authentic".[26] In other words, they want the place of their vacation to be both exotic and familiar.[27]

Thus, to meet this demand, in recent years there has been a tendency to create a type of all-inclusive tourism, in which local customs and reality are adjusting to foreign consumer expectations in a controlled environment with mediated projections of authenticity. Big, autonomous and opulent

facilities, detached from the reality and everyday life of each place, provide the customers with a generic artificial type of experience, with some pre-arranged "local" traits. The development of this kind of resorts is based on the idea of sensationalism and contributes to false placemaking, bearing a danger of cosmopolitanism without roots and creating a paradox. On one side Greece gives up its unique characteristics, which are the main elements of promotion, in order to serve the globalized demands of mass tourism. On the other side, a false image is created about the economic and social condition of the country as it tries to serve wasteful lifestyles, but at the same time the country itself has great needs and problems.[28]

Apart from the big complex touristic facilities, examples of all-inclusive projects, but on a different scale, are extensive real estate investments, which have mainly shown up in the years of the crisis. In a way, it is the evolution of all-inclusive resorts to a new type of "urban spaces", which addresses a new type of tourist-settler, promising a total tourist experience and aiming to the consumption of recreational activities.[29] Two relative examples are "Hellinikon" and "Athens Riviera". Hellinikon is intended to be a 1,530 acres gentrification project on the coastal area of Attica, which will include hotels, luxurious residencies, athletic and educational facilities, shopping centers, casinos, golf courses, parks, marina etc.[30] It was one of the many public land properties that were sold during the years of crisis to private companies at a very low price.[31] Hellinikon is part of the Athens Riviera project, which is an even bigger gentrification idea that intends to sell and redevelop one long coastal area of approximately 70kms in Attica that will consist of many smaller investment projects.[32] Those types of projects, although they don't seem to correspond with the social and economic circumstances of the country, are quite popular today as they feature perfect chances for profitable investments. In these cases design is often featured as a major component of destination development, creating new touristic and iconic landmarks, which become the symbols and image of the destination itself and capture the attention of the world's media. It's "the war of the hot labels", as Jencks says, referring to the whole process of place promotion and marketing.[33] But this condition seems to create a split between the architecture and its location in terms of specific cultural roots, threatening the richness of cultural and territorial differences, which are the very source of tourism sustainability.[34]

So, after decades of non-controlled and intensive building, lack of general planning and architectural exaggerations, Greek landscape has lost, in some places, its identity and has become a generic resort landscape by the sea, despite the invocation of some local cultural and historic characteristics. This seems to be a common phenomenon of tourism procedures in the globalized world. While tourism has originally stemmed from the human need to meet other cultures and to experience heterogeneity of life, today it demands homogeneity to maximize fluidity of the capital and people.[35]

ALTERNATIVES TO THE PRESENT

The seeming success story of tourism in Greece during the crisis creates the feeling that the reconsideration of the manner that the country portrays itself is superfluous.[36] Tourism is presented as a paradox to the Greek society. While tourism has failed to contribute to the reduction of inequality in comparison to the other European economies, to be linked with the rest of the economic sectors of Greece and to meet the social expectations, Greek society is still condemned to persist in this effort.[37]

So the question now is how can we reinvent a touristic model which will not lead to a new crisis? Not a constructed image but a sustainable condition. And how architects, through design and spatial planning, can contribute to that?

Tourism certainly is a beneficial economic resource, but it can lead to an identity crisis, degradation and dispossession in the places applied.[38] It is also a very fragile industry and susceptible to the global political, social and economic happenings**.** Thus, to make it last and be effective, we should be talking about a model with social, cultural and spatial expansions that will benefit the place without exclusively turning it into a product for sale. Cultural and historical awareness, social integration of the local population, alternative architectural approaches, preservation of the natural wealth and resources and limiting the numbers of visitors are some elements that could create some positive conditions for tourism sustainability.[39]

It is essential that we create a model which will be the balance between the local and the global, integrating the global happenings to the characteristics of each particular society and place,[40] without leading to homogenization. The main concern should be the sustainable development of each place which will help the community thrive, will boost the local economy and will supplementarily attract tourism. From the side of the designer and the host, this could happen through the acknowledgment of the historical and the contemporary identity of the place and the development of infrastructure and procedures that will combine and respect them both adjusting tourism with the rest of the activities. From the side of the visitor, an informed and respectful kind of tourist is demanded who seeks for the particularities of each place and the integration in the local lifestyle. Inviting the visitor to live like a local, in small scale infrastructure integrated into the local life and customs, could contribute to the better understanding of the society and culture and help in bridging the gap between tourists and hosts created by the segregation that mass tourism lifestyle implied. In this way, the visitor could approach the place not as a product promoted under a particular label, but as a living multidimensional entity.

Sustainable development though requires sustainable design. Besides, architecture has the ability of defining spaces, influencing human behaviors and understanding, which as qualities can be an asset to sustainable development. The space of each society is constantly under reconstruction, reflecting the actions, the activities and the perceptions of the society which lives in it.[41] We have seen how architecture the previous decades has given shape to the dominant political and social tendencies and the economic interests. Today, the opportunity for a new and different approach arises, which will combine the cultural heritage, the modern culture and natural wealth. The crisis offers the opportunity to rethink architecture and planning and relink it with the social demands. There are many designers who are trying to find alternative and more sustainable solutions dealing with the existing and restrictive sometimes conditions. There is experimentation on new simpler forms and ways of living, there is restoration and reuse of existing infrastructure and use of local materials.[42] Architecturally speaking, there are some great counterexamples to all-inclusive resorts, where architects design based on the architectural idiom of each place, respecting and learning from the traditional vernacular architecture, without superficially imitating the forms and ensuring that the particular qualities are reflected on the design approach. Moreover, use of local techniques and craftsmen and adaption of the design in both the manmade and natural environment are some examples of sustainable design, which would maintain the authenticity of the place based on its genius loci and at the same time it will highlight their uniqueness and activate them touristically. Through this dispersed development of touristic areas, the pathogenesis of Greek tourism, which is the accumulation of the tourist activity along the coasts and the monothematic vacation based on the sea-sun product, could be alleviated.[43]

In conclusion, a new approach of tourism in combination with the redefining of architecture in the context of the current crisis could shed light on their intricate relationship. Maybe we should consider the crisis not as the end of architectural creativity and potential, as many believe, but as a new era for a

concerned architect to arise and new foundations to be set. Using Greece as an example and creating a model to deal with its current problems may offer answers to global questions. The present day situation of Greece has already been a reality in some places or is about to appear in others. So the aim is to find a way to reinvent not only Greece, but any place where tourism is at the same time its blessing and its curse.

NOTES

[1] Vasiliki Moutafi, «Προσεγγίσεις του τουρισμού το επινοημένο και το «αυθεντικό»», [Approaches on Tourism the invented and the "authentic"], *Sygxrona Themata* 55 (1995): 37
[2] Guy Debord, *The society of Spectacle*, (Athens: Eleftheros Typos ,1986), 126
[3] Costis Chadjimichalis*, Κρίση Χρέους και υφαρπαγή γης, [Debt Crisis and Land Dispossession],* (Athens: ΚΨΜ, 2014), 40
[4] Yannis Aesopos, Introduction to Tourism Landscapes: Remaking Greece (Athens: Domes Editions, 2015), 14
[5]"The History of EOT," Ministry of Tourism, accessed January 7, 2019, http://www.gnto.gov.gr/el/history/1950
[6] Alexandra Moschovi, "This is Greece: Visualizing Greekness in the Work of Nelly's and Voula Papaioannou", in *Tourism Landscapes. Remaking Greece*, ed. Yannis Aesopos (Athens: Domes Editions, 2015), 242
[7] Aesopos, Introduction to Tourism Landscapes, 15
[8] Vassilis Kolonas, "Tourist Facilities in Greece 1950-74", in *Tourism Landscapes. Remaking Greece*, ed. Yannis Aesopos (Athens: Domes Editions, 2015), 63-64
[9] Aris Konstantinidis, *Για την Αρχιτεκτονική*, [Towards Architecture], (Athens: Agra, 2004), 155-156
[10] Aris Konstantinidis, *Η αρχιτεκτονική της αρχιτεκτονικής*, [The architecture of Architecture], (Athens: Agra,1992), 226-227
[11] Yannis Aesopos, "Tourism Landscapes. Remaking Greece", in *Tourism Landscapes. Remaking Greece*, ed. Yannis Aesopos (Athens: Domes Editions, 2015), 114-115
[12] Konstantinidis, *Για την Αρχιτεκτονική*, 221-231
[13]Myrianthi Mousa, «Η Αρχιτεκτονική των Ξενία», [The Architecture of the Xenia Hotels], *GreekArchitects*, August 13, 2009, accessed January 8, 2019, https://www.greekarchitects.gr
[14]Aesopos, Tourism Landscapes, 116-117
[15] Michalis Nikolakakis, "The Tourist Paradox: On the history of Tourism in Greece, from 1950 to the present day", in *Tourism Landscapes. Remaking Greece*, ed. Yannis Aesopos (Athens: Domes Editions, 2015), 41-42
[16] Dimitris Philippides, "Architecture in the era of mass tourism", in *Tourism Landscapes. Remaking Greece*, ed. Yannis Aesopos (Athens: Domes Editions, 2015), 94
[17] Kolonas, Tourist Facilities, 81-82
[18] Aesopos, Tourism Landscapes, 119-120
[19] Giorgos Papagkikas, «Τοπία Τουρισμού: μια κριτική παρουσίαση της ελληνικής συμμετοχής στη 14η biennale αρχιτεκτονικής της Βενετίας», [Tourism Landscapes: a critical presentation of the Greek participation in the 14th Venice Biennale of Architecture], *Αριστερή Κίνηση Εργαζόμενων Αρχιτεκτόνων*, April 14, 2015, accessed January 7, 2019, https://akea2011.com/2015/04/14/topiatourismoukritiki/
[20] Oliver Smith, "Is Greece on the brink of an overtourism crisis?", *The Telegraph*, June 4, 2018, accessed January 8, 2019, https://www.telegraph.co.uk/travel/destinations/europe/greece/articles/greece-overtourism-santorini/
[21] Ibid
[22] Helena Smith, "Greece tourism at record high amid alarm over environmental cost", *The Guardian,* June 3, 2018, accessed January 9, 2019, https://www.theguardian.com/world/2018/jun/03/greece-tourism-at-record-high-amid-alarm-over-environmental-cost
[23] Johny Jet, "How is Overtourism impacting travel to popular destinations?", *Forbes*, August 20, 2018, accessed January 9, 2019, https://www.forbes.com/sites/johnnyjet/2018/08/20/how-is-overtourism-impacting-travel-to-popular-destinations/#5dafb4da35b8
[24] Renee Maltezou, "Surge in visitors to boost Greece's 2018 tourism revenues – minister", *Reuters*, November 7, 2018, accessed January 7, 2019, https://uk.reuters.com/article/uk-greece-tourism/surge-in-visitors-to-boost-greeces-2018-tourism-revenues-minister-idUKKCN1NC2C3
[25] Kara Godfrey, "Santorini at the breaking point as island struggles under influx of tourists", *Express*, August 31, 2017, accessed January 5, 2019, https://www.express.co.uk/travel/articles/847945/Santorini-tourism-greek-island
[26] Moutafi, Προσεγγίσεις του τουρισμού, 38
[27] Lois Papadopoulos, "Greek Tourism: A Blue Itinerary without a (Blue) Guide", in *Tourism Landscapes. Remaking Greece*, ed. Yannis Aesopos (Athens: Domes Editions, 2015), 307
[28] Theano Terkenli*, Το Πολιτισμικό Τοπίο: Γεωγραφικές Προσεγγίσεις*, [*The Cultural Landscape: Geographical Approaches]* (Athens: Papazissi, 1996), 121
[29] Lorena Tselemegkou, «Νέες μορφές αστικοποίησης και τουριστική ανάπτυξη. Επενδύσεις στο Κάβο Σίδερο.» [New forms of urbanization and tourist development. Investments in Kavo Sidero], *Geographies 28* (2016): 128,129

[30] "The Hellinikon- Urban Development Project", LAMDA Development, accessed January 7, 2019, https://www.lamdadev.com/en/investment-portfolio/the-hellinikon.html
[31]Costis Chadjimichalis, «Η υφαρπαγή της δημόσιας γης στην Αττική» [Public land grabbing in Attica], *Athens social atlas, December 2015, a*ccessed January 9, 2019, *https://www.athenssocialatlas.gr/*
[32] Kostas Ketsietzis, "Αλλάζει πρόσωπο η Αθηναϊκή Ριβιέρα", [Athens Riviera is being transformed], *Insider*, August 17, 2017, accessed January 8, 2019, https://www.insider.gr/eidiseis/ellada/58142/allazei-prosopo-i-athinaiki-riviera-pics
[33] *Terry Stevens,* "*Placemaking. Build and they will come", C*LADbook *1 (2017):199, accessed March 28, 2019, http://www.cladglobal.com/architecture-design-features?codeid=31276&ref=n*
[34] Murat Çetin, "The Role Of Architecture On Tourism Industry: The Problem Of (Mis)Use Of Building Technology And Language Of Heritage", In *Digital Culture And E-Tourism: Technologies, Applications And Management Approaches*, Ed. Miltiadis Lytras Et Al. (New York: Igi Global, 2011), 158.
[35] IBID, 160
[36] Papadopoulos, Greek Tourism, 305
[37] Nikolakakis, The Tourist Paradox, 49
[38] Noel Salazar, "The unbearable lightness of tourism… as violence: an afterword", *Journal of Sustainable Tourism* 25 (2017): 705-706
[39] Terkenli, *The Cultural Landscape*, 126
[40] Roberto Capone and Antonio Di Giulio, "Urbanisation of coastal in Mediterranean areas and renewable natural resources", in *Medit* 12 n.2, (2001): 37
[41] Henri Lefebvre, *The production of Space*, trans. David Nicholson- Smith, (Cambridge: Blackwell, 1991), 73
[42] Fotini Xyrafi, «Αρχιτεκτονική: Οι επιπτώσεις της κρίσης και η επόμενη μέρα», [Architecture: The impacts of the crisis and the next day], *Euro2day*, December 17, 2014, accessed January 7, 2019, https://www.euro2day.gr/specials/opinions/article/1284669/arhitektonikh-oi-epiptoseis-ths-krishs-kai-h-epom.html
[43] Marilena Papageorgiou, «Θεωρίες, αρχές και πρότυπα χωρικού σχεδιασμού της τουριστικής δραστηριότητας: Η ελληνική εμπειρία και πρακτική.» [Spatial Planning theories, principles and paradigms for tourism activity: the Greek experience and practice], *Aeihoros* 26 (2016): 51,62

BIBLIOGRAPHY

Aesopos, Yannis. Introduction to Tourism Landscapes: Remaking Greece. Athens: Domes Editions, 2015

Aesopos, Yannis. "Tourism Landscapes. Remaking Greece". In *Tourism Landscapes. Remaking Greece*, edited by Yannis Aesopos, 108-123. Athens: Domes Editions, 2015

Capone, Roberto, and Antonio Di Giulio. "Urbanisation of coastal in Mediterranean areas and renewable natural resources". In *Medit* 12 n.2, (2001): 30-37

Çetin, Murat, "The Role of Architecture on Tourism Industry: The Problem of (Mis)use of Building Technology and Language of Heritage". In Digital Culture and E-Tourism: Technologies, Applications and Management Approaches, edited by Miltiadis Lytras, Patricia Ordóñez de Pablos, Ernesto Damiani and Lily Diaz, 158-170. New York: IGI Global, 2011.

Chadjimichalis Costis*. Κρίση Χρέους και υφαρπαγή γης [Debt Crisis and Land Dispossession].* Athens: ΚΨΜ, 2014

Chadjimichalis, Costis. «Η υφαρπαγή της δημόσιας γης στην Αττική» [Public land grabbing in Attica]. *Athens social atlas,* December 2015. https://www.athenssocialatlas.gr/

Constantopoulos, Elias, Korina Filoxenidou, Katerina Kotzia and Lois Papadopoulos, eds. *The Dispersed Urbanity of the Aegean Archipelago.* Athens: Ministry of Culture Publications, 2006

Debord, Guy. *The society of Spectacle*. Athens: Eleftheros Typos ,1986

Godfrey, Kara. "Santorini at the breaking point as island struggles under influx of tourists". *Express*, August 31, 2017.https://www.express.co.uk/travel/articles/847945/Santorini-tourism-greek-island

Jet, Johny. "How is Overtourism impacting travel to popular destinations?". *Forbes*, August 20, 2018. https://www.forbes.com/sites/johnnyjet/2018/08/20/how-is-overtourism-impacting-travel-to-popular-destinations/#5dafb4da35b8

Kapetanios, Antonis. «Το ελληνικό τοπίο» [The Greek landscape]. *GreekArchitects*, January 21, 2014. www.greekarchitects.gr/gr/γαιας-αναγνωσμα/το-ελληνικό-τοπίο-id8372

Keeley, Edmund. *Inventing Paradise: The Greek journey 1937-47.* Athens: Exantas, 1999

Ketsietzis, Kostas. "Αλλάζει πρόσωπο η Αθηναϊκή Ριβιέρα" [Athens Riviera is being transformed]. *Insider*, August 17, 2017. https://www.insider.gr/eidiseis/ellada/58142/allazei-prosopo-i-athinaiki-riviera-pics

Kolonas, Vassilis. "Tourist Facilities in Greece 1950-74". In *Tourism Landscapes. Remaking Greece*, edited by Yannis Aesopos, 62-87. Athens: Domes Editions, 2015

Konstantinidis, Aris. *Για την Αρχιτεκτονική* [Towards Architecture]. Athens: Agra, 2004

Konstantinidis, Aris. *Η αρχιτεκτονική της αρχιτεκτονικής* [The architecture of Architecture]. Athens: Agra,1992

LAMDA Development. "The Hellinikon- Urban Development Project". Accessed January 7, 2019. https://www.lamdadev.com/en/investment-portfolio/the-hellinikon.html

Lefebvre, Henri. *The production of Space*. Translated by David Nicholson- Smith. Cambridge: Blackwell, 1991.

Maltezou, Renee. "Surge in visitors to boost Greece's 2018 tourism revenues – minister". *Reuters*, November 7, 2018. https://uk.reuters.com/article/uk-greece-tourism/surge-in-visitors-to-boost-greeces-2018-tourism-revenues-minister-idUKKCN1NC2C3

Ministry of Tourism. "The History of EOT". Accessed January 7, 2019, http://www.gnto.gov.gr/el/history/1950

Morris, Ian. "Mediterraneanization". *Mediterranean Historical Review* 18:2 (2003): 30-55

Moschovi, Alexandra. "This is Greece: Visualizing Greekness in the Work of Nelly's and Voula Papaioannou." In *Tourism Landscapes. Remaking Greece*, edited by Yannis Aesopos, 234-242. Athens: Domes Editions, 2015

Mousa, Myrianthi. «Η Αρχιτεκτονική των Ξενία» [The Architecture of the Xenia Hotels]. *GreekArchitects*, 13 August, 2009, https://www.greekarchitects.gr

Moutafi, Vasiliki. «Προσεγγίσεις του τουρισμού το επινοημένο και το «αυθεντικό»» [Approaches on Tourism the invented and the "authentic"], *Sygxrona Themata* 55 (1995): 28-39

Nikolakakis, Michalis. "The Tourist Paradox: On the history of Tourism in Greece, from 1950 to the present day". In *Tourism Landscapes, Remaking Greece*, edited by Yannis Aesopos, 38-53. Athens: Domes Editions, 2015

Özgen, Sinan. "Designing for Sustainable Tourism Developments. Case Studies of Greek Islands". Paper presented at the 5th European Academy of Design Conference, DESIGN WISDOM, Barcelona, April 28-30, 2003.

Papadopoulos, Lois. "Greek Tourism: A Blue Itinerary without a (Blue) Guide". In*Tourism Landscapes. Remaking Greece,* edited by Yiannis Aesopos, 304-323. Athens: Domes Editions, 2015.

Papageorgiou, Marilena. «Θεωρίες, αρχές και πρότυπα χωρικού σχεδιασμού της τουριστικής δραστηριότητας: Η ελληνική εμπειρία και πρακτική.» [Spatial Planning theories, principles and paradigms for tourism activity: the Greek experience and practice]. *Aeihoros* 26 (2016): 37-66

Papagkikas, Giorgos. «Τοπία Τουρισμού: μια κριτική παρουσίαση της ελληνικής συμμετοχής στη 14η biennale αρχιτεκτονικής της Βενετίας», [Tourism Landscapes: a critical presentation of the Greek participation in the 14th Venice Biennale of Architecture]. *Αριστερή Κίνηση Εργαζόμενων Αρχιτεκτόνων*, April 14, 2015. https://akea2011.com/2015/04/14/topiatourismoukritiki/

Philippides, Dimitris. "Architecture in the era of mass tourism". In *Tourism Landscapes. Remaking Greece*, edited by Yannis Aesopos, 88-95. Athens: Domes Editions, 2015

Salazar, Noel. "The unbearable lightness of tourism… as violence: an afterword". *Journal of Sustainable Tourism* 25 (2017): 703-709

Smith, Helena. "Greece tourism at record high amid alarm over environmental cost". *The Guardian,* June 3, 2018. https://www.theguardian.com/world/2018/jun/03/greece-tourism-at-record-high-amid-alarm-over-environmental-cost

Smith, Oliver. "Is Greece on the brink of an overtourism crisis?". *The Telegraph*, June 4, 2018. https://www.telegraph.co.uk/travel/destinations/europe/greece/articles/greece-overtourism-santorini/

Stavridis, Stavros. *Η Συμβολική Σχέση με το χώρο* [The Symbolic Relation to Space].Athens:Kalvos,1990.

Stevens, Terry, "Placemaking. Build and they will come*". CLADbook 1 (2017):*186-199*.* Accessed March 28, 2019. http://www.cladglobal.com/architecture-design-features?codeid=31276&ref=n

Terkenli, Theano. "Landscapes of Tourism". In The Wiley Blackwell Companion to Tourism, edited by Alan Lew, 282-293. Hoboken, NJ: Wiley Blackwell, 2014

Terkenli, Theano. *Το Πολιτισμικό Τοπίο: Γεωγραφικές Προσεγγίσεις* [*The Cultural Landscape: Geographical Approaches*]. Athens: Papazissi, 1996

Tilley, Christopher. «Χώρος, Τόπος, Τοπίο. Φαινομενολογικές προσεγγίσεις» [Space, place and landscape: phenomenological perspectives], translated by Pelagia Marketou. In Υλικός Πολιτισμός, edited by Gialouri Eleana, 215- 250. Athens: Alexandria, 2012.

Tselemegkou, Lorena. «Νέες μορφές αστικοποίησης και τουριστική ανάπτυξη. Επενδύσεις στο Κάβο Σίδερο.» [New forms of urbanization and tourist development. Investments in Kavo Sidero]. *Geographies* 28 (2016): 127-131

Xyrafi, Fotini. «Αρχιτεκτονική: Οι επιπτώσεις της κρίσης και η επόμενη μέρα», [Architecture: The impacts of the Crisis and the next day]. *Euro2day*, December 17, 2014. https://www.euro2day.gr/specials/opinions/article/1284669/arhitektonikh-oi-epiptoseis-ths-krishs-kai-h-epom.html

MUTUAL-AID COOPERATIVE HOUSING AS A BRIDGE BETWEEN SELF-PROVISIONED AND THE FORMAL PRODUCT DELIVERY MODEL - LESSONS FROM URUGUAY

Author:
NADIA SHAH

Affiliation
ILLINOIS INSTITUTE OF TECHNOLOGY, DEPARTMENT OF ARCHITECTURE, USA

INTRODUCTION

In cities where the formal sector remains unable to provide land and resources at affordable rates, individual households or groups of households in need of housing organize themselves to occupy a piece of land and self-build their homes. After inhabiting the initial rudimentary structures for some time, they slowly and incrementally convert these structures into houses that best fit their needs. Often times these individuals or groups of households are able to align themselves with the local and national housing movements, if available. This description presents a basic and a very simplistic view of the making of informal settlements through self-help efforts. However, considering the massive scale of informality that already houses about 30 percent of the world's population[1], it is imperative now to understand the contextual complexities of the informal sector and its workings.

The philosophical debates about self-help housing being a viable solution to overcome the global housing deficit of the 21st century, initially emerged in the mid of the last century from the experience of governments around the world trying to overcome the housing gap produced by World War II. John Turner and Charles Abrams are the often-quoted experts in this realm. They both worked on United Nations funded programs as consultants on house building in the Global South. The ideas that emerged from their work greatly influenced the policy of the two core institutions, the United Nations and the World Bank, that were spearheading all development projects around the world at the time. John Turner penned the experiences from his work in Peru in the 1950s on a USAID funded project, in a book, *Housing by People,* in which he promoted the role of the government as a facilitator to housing instead of a provider. He argued that the government should only help citizens build how they want and what they want, but guarantee them a fair share of resources, such as the provision of the infrastructure. However, self-help housing as a means to bridge the housing gap is still not given a serious place in the policy making of most countries, with huge housing demands.

This paper posits that self-help housing, whether formal or informal, has the capability to fulfill a range of societal functions, the most important of which is to provide shelter. Nevertheless, the biggest challenge for self-help efforts in housebuilding is to meet the criteria of adequate housing. Building upon previous research and case studies that show how the process of self-help construction has the

potential for marginalized communities to acquire skills, create employment and build equity in a home through a process that nurtures self-reliance, this research paper focuses on the mutual-aid cooperative model that supports the self-help efforts in housing in the Uruguayan context. It analyzes how the mutual aid cooperative model faired in the socio-political context of the South American country.

The Role of Self-Organization and Volunteerism in Self-Built Housing:

The contribution of non-government organizations (NGOs) to the self-housing process, whether simple or complicated and often times limited to serving only a small sector of the poor, has been historically eminent. Besides NGOs, when the members of a community in need for housing organize themselves as a group, it is the self-organization and volunteerism of the poor communities that is essentially what makes self-help efforts work. The workings of this group of voluntary organization may vary from simply invading an open area for housing, to providing technical assistance in an ongoing process of house building. Through such organizing actions homeless population turns into a 'social entity', and the members of the group agree upon meeting their housing goals collectively. Some case studies have shown that regular meetings may precede organized occupation of land. The members involved in such group activities often pay dues and pool money to fund future developments in the area. Studies around the world show how often times voluntary organizations negotiate with municipalities, so the homeless can access state-controlled land and form cooperatives. The residents' organizations, by formalizing into housing cooperatives, are able to create new housing, generate improvements, and carry out rehabilitation works of the existing structures.[2]

A United Nations study conducted in 2010 by the United Nation Volunteers (UNV), the only agency that supports, organizes and manages volunteer actions in UN's Development projects, categorized the complex self-help house building process into five tiers that are: *the spontaneous individualistic process; the facilitated individual process*; *the facilitated collective process; the comprehensively organized* and *facilitated collective process; comprehensive mutual-assistance cooperative process*[3].

The report suggests that the most developed process is the *comprehensive mutual-assistance cooperative process*, when the community organization incorporates itself as a not-for-profit entity through which it can receive and disburse resources from the government, get into legal contracts and represent community interests before courts and local administrative bodies. Therefore, United Nations Centre for Housing Settlements (UNCHS) now recognizes housing cooperatives as grass root organizations that have a greater potential to provide low-income households with improved access to adequate housing because they:

1. facilitate the pooling of resources and lower individual housing costs
2. foster collective action and self-help
3. increase creditworthiness
4. limit or prevent speculation

History of Housing Cooperatives

The housing Cooperative concept in essence is about shared ownership of housing which was prevalent throughout history. However, the concept gained most legal and organizational progress as a means for affordable housing in the last two centuries, starting from Europe.

The cooperative housing movement began in the 19th century primarily in Great Britain and France to overcome housing shortages created in the wake of industrial revolution and rapid urban growth. It was a response to the capitalist monopolies and unfair market structures that did not allow working class

families access to affordable housing, who were resorted to renting rooms or flats in tenement housing where the landlord was the sole controller of the premises.[4] The early cooperative model was in fact a business development structure to equitably meet people's needs[5]. It required members to pool their money and fulfill their needs such as, to buy better quality foods in large quantities at a volume discount, which they could not afford otherwise.[67] Later, because of the fact that self-help efforts reduced costs, the housing cooperatives offered sound shelters at affordable prices to their members. The cooperative model in housing has evolved ever since; the case of South America suggests that it can be a successful self-help and self-organized alternative for mere *site and service* programs that often miss out on the mobilization of human power by preventing people from engaging in the decision-making process[8]. Whereas Coop model of housing allows people through training and organization to be a part of collective decision-making and attaining self-management skills. But this effort also requires an advisory team that aims to develop self-knowledge in the member families so they can identify their needs and resources, understand the socio-political context in which they live. In this situation the role of the profession emerges more as that of a facilitator than that of an expert providing solutions and answers. Ward has stressed that in order to avoid *'urban chaos',* the professions concerned with building must actively engage in the phenomenon of self-building, so that the right technical advice can be given at the right time, making most of the limited resources available to the poor.[9]

The Uruguay Cooperative Experience

Uruguay is often quoted as the leader of housing cooperative movements in Latin America. The first mutual aid housing cooperatives emerged in the country in 1966, when a nonprofit private organization: the Uruguayan Cooperative Center (CCU) supported three pilot projects of labor movements, that ended up providing alternative housing solution for ninety-five families. The programs were financed by the national government and the Inter-American Bank (IDB) under the agreement to provide 4,100 housing units.[10]

The Cooperative Center of Uruguay (CCU) had initially started a chapter on housing in the aftermath of the 1950s economic crises in the country. [11] There was a shortage of housing and so this chapter was not for the poor exclusively, but the underlying objective of it was to make resources on housing accessible to the disadvantaged communities. The housing chapter of CCU helped the prospective settlers organize into resident committees and self-governing bodies. The CCU helped create links to NGOs in the housing movements and municipal authorities. Later, two umbrella organizations were formed under CCU, Federación de Cooperativas de Vivienda de Usuarios por Ahorro Previo (FECOVI) and the Federación Uruguaya de Cooperativas de Vivienda de Ayuda Mutua or the Federation of Mutual-Aid Housing Cooperatives (FUCVAM). FECOVI continues to function as the umbrella organization for housing cooperatives with individual properties for (lower) middle-income households and FUCVAM has been the umbrella organization for housing cooperatives that use mutual assistance from its members, who belong to low- and irregular-income households.[12]

The model of FUCVAM contributed significantly to the expansion of the cooperative movement in Uruguay. More than five-hundred housing cooperatives in Uruguay, representing about twenty-five-thousand families or hundred-thousand individuals were supported by the federation in 2017, that provides ideological, organizational, and educational assistance to the cooperatives that are involved in the mutual-help housing movement. In addition, FUCVAM searches for housing finance and develops networks and alliances.[13] The members of the housing cooperatives make their own decisions through

mutual consent, they build and manage housing with collective efforts and skills, and as members of FUCVAM, they are guided by the same principles of working and governance, that are:

- Members have communal ownership of the land and buildings.
- Members contribute equally to house construction and its maintenance.
- Members work constantly on the improvement of their capabilities.
- Members focus mutually on social and environmental development.
- Besides housing, the cooperatives also focus on co-living and co-working and development of united groups that learn what their rights are.

The success of FUCVAM can be contributed to its status as a social movement standing up for the rights of the working class, however, it was this very fact that the organization met with many setbacks in its path as well, during the dictatorship years. FUCVAM is often quoted as 'the most powerful urban social movements of contemporary Uruguayan history'; as the grassroots cooperatives organized in FUCVAM were involved in wider socio-political processes.[14] These grassroots had participated in protests against the authoritarian government before the 1973 coup. In twelve years of military dictatorship the cooperatives were suppressed because of their nature as social movements.

During this time period, as the democratic institutions collapsed, the investment in housing became low, dismantelling the framework to implement housing policies. The resultant large reductions in loans to cooperatives, worsened the housing problems. It was evident that the 'social aspect' of housing had been replaced by 'financial profitability,' when a financial institution, the BHU bank, acquired the central role in all aspects related to housing. The bank initially only granted loans to the cooperative member families, but now expanded its role and responsibilities to administration, recovery, building, selling, planning executing, and even providing social evaluation. The bank also limited the number of housing units that could be built per housing complex to only fifty (from a previous figure of two hundred) while making conditions to loans very strict. Between 1978 and 1979, the promotion of the private sector in the construction of houses further damaged the cooperatives' existence in Uruguay. In a snapshot, from the total number of cooperative homes built from 1968 to 1998 in Uruguay, sixty-three percent were built within the first decade, then from 1977 to 1983 only twenty-three percent and then from 1984 to 1989 only six percent were built. Over the years the national support toward cooperatives became restricted in Uruguay along with the land to build on.

After the end of the dictatorship period in the 1990s, the cooperatives were once again revived and resourced. However, in this new situation, there was an increased housing demand and growth in poverty. Since 1989, the municipality of Montevideo had initiated its own housing programs, based on private-public partnership providing resources to low-income groups. In the 1990s, FUCVAM was still negotiating with the Ministry of Housing to increase the participation of mutual aid cooperatives in the National Housing Policy. In 2010, after forty-two years, the Uruguayan Ministry of Housing, Territorial Planning and Environment (MVOTMA) officially recognized the cooperative model 'as an effective and sustainable means of ensuring access to housing.' [15]

The Role of the Architect and Social Workers as Key Players in the Cooperative Model

In Uruguay's housing cooperative model, the role of architects besides other professionals has been historically very crucial. It was an architect, Juan Pablo Terra, who effortlessly got the National Housing Law passed in 1968, so that housing cooperatives could be constructed under CCU's advice. The mutual aid cooperatives then consolidated into the federation called FUCVAM, that later shaped into a powerful social movement. FUCVAM had been providing technical support to Uruguayan cooperatives

from construction to management and even in material production for construction, since the 1970s. The Municipal department of Montevideo under the leadership of another architect throughout the 1990s was able to set up a land bank, that acquired and held land and buildings within the city's core to be developed later by the mutual assistance cooperatives. Loans were granted to individual member families equal to the cost of construction minus the mutual aid labor cost which is fifteen percent. Even in the times of military dictatorship the cooperatives continued contributing to human development. The experiences were called 'islands of freedom' reflecting collective participation.

Even today, architects, social workers, lawyers, accountants, assistants and secretaries, make up the advisory teams that help organize the cooperatives and oversee the process from the beginning until the houses are inhabited. Among the underlying objectives of these advisory teams is the training of the member families so that, through the management and organizational skills acquired, they are able to carry on other projects and future endeavors that may improve their quality of life. The member families of cooperatives obliged to work in the construction of houses, sometimes due to personal and social problems, are not able to fulfill these obligations and that may result in their exclusion from cooperatives. In these cases, social workers, communicators and psychologists, act as mediators who work with them to resolve these issues.[16] The member families often employed in unstable-income jobs of seasonal nature, are mostly dependent on these cooperatives as their only means to obtain a house. Nevertheless, sometimes their lack of knowledge about the cooperative's philosophy and their limited reach with the administration becomes problematic. The amount of work in limited time can further create strenuous conditions during construction period impacting their personal relationships. In these situations, training, organization, and the practice of collective decision-making are the key factors in attaining self-management competence which builds human capital. The advisory team also aims to develop self-knowledge in the member families; so, they can identify their needs and resources and understand the socio-political context in which they live.

The National Housing Fund, unlike the BHU bank, ensures the longevity of the process and enables the FUCVAM model to be a solution for a greater number of citizens in the long term. Besides that, the experienced personnel from one cooperative project assist in the formation or training of new cooperatives. FUCVAM, as an umbrella organization, also trains other member cooperatives to plan, make suitable decisions and learn evaluation and management control. By acquiring these attributes, the individual cooperatives are able to achieve mutual aid management goals such as: accessing loans; materials to build; managing volunteer hours of labor; and getting services like, electricity, water, gas and sewerage systems. The individual member families are able to get an affordable house exempted of all tax, by becoming members of a housing cooperative. The member family can live in the house for an unlimited time period; however, they are not the owner of the real estate, but only its users.[17] The cooperative, in fact, is the real proprietor of the housing unit, and thus the member families of the cooperative are the collective owners.[18] This model promotes the "use value" of housing over its "exchange value*,"* thus, breaking the cycle of unaffordability in the neoliberal market of housing. [19]

The Replication of the Uruguayan Mutual Aid Cooperatives Model and its Challenges

With the help of We Effect (the Swedish Cooperative Center) the mutual-aid housing cooperative model of Uruguay was replicated in other South American countries. It was also not only recognized as a viable and sustainable solution to bridge the gap of decent housing, but also adopted in Paraguay, Bolivia, Brazil, Argentina, Chile, Honduras, Guatemala, El Salvador, Nicaragua and Haiti, as housing cooperatives founded on the principles of mutual aid and collective property ownership. In 2012 the

World Habitat Award, was presented by the Building and Social Housing Foundation in partnership with UN-Habitat, to the international transfer of the FUCVAM model through the South-South Cooperation project.

CONCLUSION

In the self-help housing and self-help building processes many factors can inhibit the construction of adequate housing ranging from: immediate affordability of material; access to land on which to build; supply of public amenities and infrastructure; access to them at affordable prices and more. Among the most important seems to be the capacity of households and communities to maintain what they have built and the investments that they have made over a long period of time.

From the Uruguayan model of mutual aid housing many lessons can be learnt such as: the organization of communities; resolution of social and economic hurdles that arise in the way of self-build projects; the role of professionals and formal institutions such as banks. Most importantly the model professes that, even within the framework of a country's liberal market economic orientation, the concept of housing can be realized as a right and a public asset instead of a market commodity. Within thirty years, since the conception of Uruguayan cooperatives in 1968 to the 1990s, the transfer of construction skills down the generations was evident. The members had become apt in using prefabricated roofing and tiles for flooring and a large percent of women work force, skilled in tile and bricklaying, was created. A large number of builders also got trained in behind-the-desk official work of the cooperatives. This model was repeated in Brazil and other countries of Latin America. However, the available literature shows that there is a need for a systemized research and evaluation of these models to be able to gauge their international success in the realm of human development and empowerment of the disadvantaged self-builder communities.

The discussions on the construction of housing through self-building or self-help reveals the governmental bias of encouraging traditional forms of home ownership often shuns mutual-assistance cooperatives that promote mutual homeownership. Other reasons cited for the relatively small contribution of housing by this model include, complex governance requirements of cooperative housing, the small amount of public or private resources available to them and the dearth of institutional supports for cooperative housing. There is, however, a continuing interest in the mutual-aid cooperatives model of self-help housing for the poor in the South American region.

NOTES

[1] UN-Habitat. (2015b). Informal settlements. (Habitat III Issue Paper 22). Nairobi: UN-Habitat.
[2] David Westendorf, "Self-built Housing in Developing Countries," Current Contributions and Challenges to Local Development through Volunteerism,", accessed January 8, 2018, http://www.habitare.org.br/gmutirao/artigo1_ing.pdf
[3] United Nations Centre for Human Settlements (HABITAT), *Cities in a Globalizing World: Global Report on Human Settlements* (London and Sterling: Earthscan, 2001), 208-209.
[4] S. Rajagopalan, (ed), *Cooperatives in 21st Century. The road ahead*. (Hyderabad: Icfai University Press, 2007).
[5] Rochdale Pioneers model is often qouted as the beginning of modern cooperative movement. See Lewis, G. J (1992) Ameddle Way; *Rochdale Co-operatives in South Wales, 1859-1886*, Australian Association of Co-operatives Ltd, Sydney.
[6] Gary Lewis, *A Middle Way; Rochdale Co-operatives in South Wales, 1859-1886*, Australian Association of Co-operatives Ltd, (Sydney: 1992).
[7] Susan Thompson, 'The Quest for Heartful Environments; A Qualitative Researcher's Journey', Urban Policy and Research, Vol 24 (1): (2006), 17-38.
[8] The approach of 'sites and services' were endorsed by the UN and the United States and later joined by the World Bank in the early 1970s: it meant that the state would provide land and infrastructure to the households only or maybe even partially built houses. The approach implied a sequential, informal, and incremental construction process, realized by household members, based on their financial situation at the time.
[9] Colin Ward, *Housing: An Anarchist Approach.* (London: Freedom Press: Express Printers,1976).
[10] The National Housing Act, passed in 1968, bolstered and expanded cooperative housing solutions throughout the country. From 1969 to 1971, the number of housing cooperatives had increased to two-hundred-and-ten. National Housing Fund continued to provide loans to the cooperative movement until 1975 as the main lending body, till the National Mortgage Bank (BHU) joined in.
[11] CCU Centro Cooperativista Uruguayo (Cooperative Center of Uruguay) was an institution that was established in 1965, to develop and promote agrarian and credit cooperatives in Uruguay.
[12] The FUCVAM, a federation of housing cooperatives that was established in 1970, emerged as a very active social organization in the country that expanded its work on issues of urban development and social housing.
[13] Jan Bredenoord, "Self-Managed Cooperative Housing by Mutual Assistance as Introduced in Central America between 2004 and 2016; the Attractiveness of the 'FUCVAM' Model of Uruguay," *Journal of Architectural Engineering and Technology* 6 (2017): 188.
[14] "South-South Cooperation-FUCVAM- Uruguay," last accessed May 5, 2019, https://www.world-habitat.org/wp-content/uploads/2016/03/Report-South-South-co-operation-FUCVAM-WEB-5MB.pdf
[15] "World Habitat Awards," Building and Social Housing Foundation (BSHF), accessed October 29, 2018, https://www.world-habitat.org/wp-content/uploads/2016/03/Report-South-South-co-operation-FUCVAM-WEB-5MB.pdf.
[16] In the cooperative model of Uruguay, CCU's social workers enjoy the same esteem as the architects, lawyers and accountants.
[17] David Harvey, The Right to the City, *International Journal for Urban and Regional Research,* (2003): 939–941.
[18] Jan Bredenoord, "Self-Managed Cooperative Housing by Mutual Assistance as Introduced in Central America between 2004 and 2016; the Attractiveness of the 'FUCVAM' Model of Uruguay," *Journal of Architectural Engineering and Technology* 6 (2017): 188. doi: 10.4172/2168-9717.1000188.
[18] The ownership of land, its *exchange value* and use rights or *use value* are all connected to class disparities between wealthy landowners and the urban poor. The ownership of land and the related issues of increased land values are now considered structural problems that need to be tackled through policy reforms. In this view the privatization and commodification of housing and land are seen as the power play of monopoly of private owners and speculators over assets -a predatory practice of capitalists against the low-income classes. Such literature suggests that the shortage of adequate housing becomes a by-product of the neo liberal capitalist economic system that engenders poverty. See: Harvey, D, The Right to the City, *International Journal for Urban and Regional Research,* (2003). 939–941. Also, see Karl Marx. Capital Volume One: https://www.marxists.org/archive/marx/works/1867-c1/ch01.htm

BIBLIOGRAPHY

Bredenoord, J. "Self-Managed Cooperative Housing by Mutual Assistance as Introduced in Central America between 2004 and 2016; the Attractiveness of the 'FUCVAM' Model of Uruguay." *Journal of Architectural Engineering and Technology* 6 (2017): 188.

Harvey, D. "The Right to the City," *International Journal for Urban and Regional Research,* (2003): 939–941

Lewis, G. *A Middle Way; Rochdale Co-operatives in South Wales, 1859-1886*. Sydney: Australian Association of Co-operatives Ltd, 1992.

Rajagopalan, S. *Cooperatives in 21st Century. The road ahead*. Hyderabad: Icfai University Press, 2007.

Thompson, S. "The Quest for Heartful Environments; A Qualitative Researcher's Journey." *Urban Policy and Research*, Vol 24 (1): (2006), 17-38.

UN-Habitat. "Informal settlements". *Habitat III Issue Paper 22.* Nairobi: UN-Habitat, 2015b.United Nations Centre for Human Settlements (HABITAT), *Cities in a Globalizing World: Global Report on Human Settlements*. London and Sterling: Earthscan, 2001, 208-209.

Ward, C. *Housing: An Anarchist Approach.* London: Freedom Press: Express Printers,1976.

Westendorf, D. "Self-built Housing in Developing Countries," Current Contributions and Challenges to Local Development through Volunteerism,", accessed January 8, 2018, http://www.habitare.org.br/gmutirao/artigo1_ing.pdf

World Habitat Awards, "Building and Social Housing Foundation (BSHF)", accessed October 29, 2018, https://www.world-habitat.org/wp-content/uploads/2016/03/Report-South-South-co-operation-FUCVAM-WEB-5MB.pdf.

TRANSITIONING TO SUSTAINABLE URBAN REGIONS THROUGH LOCALIZATION AND DESIGN - THE CONTRIBUTION OF LEWIS MUMFORD

Author:
MARK LUCCARELLI

Affiliation:
UNIVERSITY OF OSLO, NORWAY

INTRODUCTION

Environmental reform to produce sustainable societies is a complicated process involving many spheres of economic and social life from energy production to the design and improvement of settlement patterns. There is no single key, but the character of human settlements, including cities, can play at least one critical role: the capacity to generate commitment by publics to reform by improvement of the relation to place. In recalling the work of mid-twentieth century urbanist Lewis Mumford this paper will argue that urban theory today is too ambitious n its search for a universal urban theory. Neither urban triumphalism nor planetary urbanization have described the conditions necessary to environmental transformation, while moving away from the actual potential choices we face, which are inherent in the potential to evolve existing urban forms, as well as in existing localized practices.

LOCATING THE CITY IN LANDSCAPE, ECOLOGY, PLACE

What is the city for and how should it be defined? The twentieth century was witness to a remarkable attempt to define cities as a humanist expression in the tradition of the cities of the late Middle Ages and Renaissance but reinterpreted in terms of landscape as expressed in natural ecologies and experienced as awareness of place. Against that project – in all its variations – we have been witness to a rather sad story of cities shaped by the exercise of technological mastery with the result of environmental deterioration. Lewis Mumford's *The City in History* (1961) undertakes a grand tour of urbanism as "concentrated attempts at mastering other men" whether as monuments to state power, machines optimized for production, or marketing schemes for what later came to be called "liveability." Domination works through consolidation and manipulation of public symbols. Cities develop symbolic economies, which became more important as mass urbanization and economic development displaced the discrete urbanism of the early modern period (ca. 1350-1600). The history of mass urbanism is also intertwined with the development of the modern state: it began in Europe with the capital city, the "instrument of the national state, and a symbol of its sovereign power" before morphing to the great nineteenth century cities of industry and commerce as expressions of national economic power. With

the re-emergence of finance as a consequence of the increasing economic importance of lending capital, we have a new kind of city that ironically uses the symbolism of the cosmopolis to tout its "diversity." Mumford sees the American financial city – whose emergence he dates back to the 1870s – as a vehicle for creating a "metropolitan monopoly" on culture expressed, for example, in chain stores and the great metropolitan newspapers, the beginnings of celebrity culture and electronic media. The result is that the power of the state, emerging in the U.S. and under modification in Europe, came to be invested in metropolitan "agglomeration" and "congestion."[1]

Arguably, the recent emergence of "global cities" as staging grounds for, and beneficiaries of, borderless financial flows, globalization of culture, and social and political convergence fits nicely into Mumford's schemata. Globalization in this perspective is merely a recent elaboration of the metropolitan culture now disseminated more widely by personalized electronic devices.

At this point, one might well ask how standing outside the present moment and advocating an endogenous theory of urban development could fit in a globalized world experiencing the speed up of time and massive urbanization? In part the answer is how Mumford's ideas are applied to current circumstances, but it is also worth noting here that Mumford managed a multifaceted take on urbanization that belies his sometimes-moralistic approach. On the one hand cities fail because they violate biological principles: "Failing to divide its social chromosomes and split up into new cells, each bearing some portion of the original inheritance, the city continues to grow inorganically, indeed cancerously, by a continuous breaking down of its old tissues, and an overgrowth of formless new tissue."[2] Mumford's conception of "organicism" means an ontological order operationalized as a measure of all human institutions and practices. Clearly mass urbanization fails the test. This conclusion reflects many other observations Mumford makes throughout his work about the character of culture versus the forces of civilization, the importance of regionalism versus centralization, the value of preserving agricultural life and so forth. On the other hand, Mumford strongly adheres to developmental theory. Human societies have the right to develop their inherent capabilities and talents, as well as to meet their material needs. Cities may not be organic, but urbanization is a result of the quest for human development.

The resolution of these counteracting inclinations is always tenuous. One solution, developed by Mumford's close associate Benton MacKaye, was to plan urban regions by using natural landforms as a container and barrier to population movement and settlement patterns. In this sense landform emerges to lend character to urbanization – as well as to foster a sensibility of place. Mumford was keen on the lessons of the nineteenth century conservation movement: the need to protect soils, maintain watersheds and forests in order to provide cities with fresh water and air. These are the fundaments of urban ecology. Landform, conservation, local agriculture, place awareness should become the foundation for a new urban renaissance, bits and pieces of which we have experienced in the contemporary world. The question raised in this paper is whether the Mumford's method of identifying cities and settlements as objects of deliberation and design can be helpful in today's quest for environmental transformation.

PROCESS OVER FORM

In a world that become painfully aware of the limits of human exploitation of natural resources while at the same time experiencing a vast speedup in the use of resources by hitherto less developed economies, much attention is given to the idea of an urban transformation. Geography has become a primary influence on urban planning. The result has been a marked turn toward spatial process theory, but also a failure to explain how human agency fits these paradigms.

Neoliberal urbanism imagines that the process of planetary urbanization produces what Louis Wirth calls "urbanism as way of life" and thereby creates the basis for a techno-environmental transition to sustainable urbanism on a global scale. Brian J.L. Berry linked urban growth to technological innovations and charted their impact on culture; the conception of multiple industrial revolutions has been tied to political structures by Lash and Urry and changes in urban form by Robert Fishman. More recently this has become the basis for attempts to model global cities as sites for common environmental transitions, noted in McGranahan et al. Structural functionalism, culture driven by adaptation to technological change, has been the main framing device for environmental transition, and takes the form of modelling transition as a developmental process through predetermined phases (for example, in Bai and Imura). Such planning has not succeeded because it has not been able to control the flow of goods and services and because it over-relies on what Brenner and Schmid call "neoliberalizing and/or authoritarian forms of urban governance and environmental engineering."[3]

Planetary urbanism provides a useful critique of functionalist and neo-modernization theories in urban development but fails to provide a viable alternative of its own. Certainly, the flexibility of the current version of the world economy to adapt to local conditions is a testament to the dynamism of capital. For Brenner and Schmid the dynamic character of capital not only trivializes the current definition of urbanization as urban triumphalism, but calls into question all territorial divisions that would obscure the character of capital processes. They seek to replace methodological territorialism – including and especially "the city" – with an understanding of the dynamics of a planetary urbanization process. The tar pits of Alberta, Canada – earth's largest man-made creation – has been made to stand for their argument of the irrelevance of dividing urban territory from its supply train. Indeed, the extensive networks of the global economy reflects an inability to make any territorial divisions whatsoever, in their view. While it true that viewing places as purely self-contained entities denies the existence of networked space, undermining our inclination to see cities or regions or wilderness or countryside as places in relation to people and other living beings destroys one of the most important tools we have for dealing with environmental and other problems.

PLANNING FOR PLACE

In the face of enormous demographic and political difficulties and in light of the failed theories of automatism and functionalism in culture that attend to environmental transition theory, it may be useful to rethink our assessments of transition with an eye on the already industrialized countries. Mumford's significance as a figure in urban history and planning owes to his ability to find an intelligent relation between trends in urbanization and human and environmental needs and requirements. A response to the mechanistic and functionalist definitions of the techno-environmental field, on the one hand, and theories of territorial flux (such as planetary urbanization) on the other, may be addressed by developing three principles invoked in Mumford's work: (1) all settlements, including cities, are form-bearing; they require thinking in terms of forms that are flexible but also resilient to the forces of chaos; (2) architecture and urban design are form-creating and communicate the social and political values of a settlement; and (3) landscape and neighborhood are the two primary concepts necessary to creating sustainable urban forms and they are complementary.

First, Mumford considers the humanization of space as the means of creating necessary forms of settlement. Thus, form is reflective of human values, hopes and fears – some of which are constructive and nurturing and others are destructive and domineering: "From the village, the city derives its nature as a mothering and life-promoting environment, stable and secure . . ."[4] Here Mumford was sensitive to

the destructive force of mass urbanization: the feeling that senseless change sweeps away the past and all meaning. For Mumford "The living memory of the city, which once bound together generations and centuries, disappears: its inhabitants live in a self-annihilating moment-to-moment continuum."[5] But Yi-Fu Tuan, who has written extensively on the anthropology of spatial relations, has noted that taken together connectivity and continuity reflect one pole in a spatial binary between the desire for safe enclosure one the one hand and the aspiration for openness and freedom on the other.[6] Cities reflect this polarity and good urban design might well be understood as a means of accommodating and mediating it. In one reading, the city becomes a place (in Greek a polis) where these forces are reconciled in what Hannah Arendt calls "public things" – streets, squares, civic buildings, churches, parks. This definition of place is partly institutional (not just ad hoc); it reaches back in time – related, then, to urban identity – and it operates at various spatial and chronological scales. In this sense, cities can develop public spaces that are "civic" and also social and aesthetic – ideally, they should be integrated nonetheless, in any case, all three are valid.

Second, architecture is important to the city as city: i.e. a form requires aesthetic expression. We must counteract a world of undifferentiated space characterized by "atomized niche markets and sovereign consumers."[7] Successful buildings, even while referring symbolically to various motifs and even to other places, come to express that inescapable physical rootedness of a particular city has concrete consequences in perception as Douglas Kelbaugh tells us: ". . . sustainability as an ongoing ethic and that practice isn't sustainable if it doesn't result in aesthetically pleasing places, ones that are expressive of community sensibilities and tastes. A designed environment that is ugly and unpleasant isn't beloved, and if people don't love it, they aren't motivated to care for and sustain it."[8] Mumford's orientation reflects the earlier interest in urban planning in producing community as an object of design as well as reflecting a decentralist vision promoted on the grounds of communitarian tendencies: the garden city movement. These designs were formulaic and were never really meant, as they were often interpreted to be, replacements to existing cities. What they reflected was thinking about places through settlement and landscape, a concept that finds its roots in Kevin Lynch's studies: people tend to see places through landmarks and passageways; aesthetics is in part grounded in human impulses and values. I use the term "impulse" in the sense of the capacity to reflexively redefine what is "natural" to human spatial organization – and which actually reflect empirically verifiable aspects of natural ecosystem organization.

Third, community design and landscape design are both necessary to move forward with sustainability. While, New Urbanism has been limited by its neoliberal assumptions, it has also championed the return of traditional urban forms and the walkable neighborhoods as noted by Talen and Kochinsky. "Traditional" (turn-of-the-twentieth century) neighborhoods have been shown to be excellent foundation for capturing passive solar energy and for creating a multi-modal transport network, in research done by Jabareen. The importance of neighborhood to concepts of "traditional" and "compact" urbanism goes back to the Chicago school and to Clarence Perry's neighborhood unit. The approach of Landscape Urbanism has value because urban settlement has long since broken the boundaries of the traditional street-dominated city. Within the spaces thereby created the importance of the aesthetics of individual buildings in relation to landscape are increased. Similarly, as land use changes within traditional urban areas the possible for extending landscape into the city has increased. Aesthetic conceptions of both New Urbanism and Landscape Urbanism are necessary to broaden the appeal of urban reform even if they are not necessarily sustainability-driven at this point in time.

CONCLUSION

Lewis Mumford may be read to provide a segue way into further deliberations on the alternative sustainable city. Might there not be advantages in exploring the possibilities of urban change by considering differing conceptions of (human) nature around psychological traits and aesthetic sensibilities that slowly build commitments to place and publicness, while at the same time moving ahead with instrumentalizing new technologies and techniques?

NOTES

[1] Lewis Mumford, *The City in History*, New York: Harcourt, Brace, 1961, pp. 558, 533, 537; 536-539. See also Susan Buck-Morss, *The Dialectics of Seeing: Walter Benjamin and the Arcades Project*. Cambridge, MA: MIT Press: 1989; Dennis Cosgrove, *Social Formation and Symbolic Landscape*, Madison, WI: University of Wisconsin Press, 1998.
[2] Ibid., p. 543.
[3] Neil Brenner and Carl Schmid, "Towards a New Epistemology of the Urban?" *CITY*, 19 (2015): 151–182, p. 159.
[4] Mumford, *The City*, p. 558.
[5] Mumford, "Neighborhood and the Neighborhood Unit. *The Urban Prospect*, New York: Harcourt, Brace, 1968, p. 59.
[6] Yi-Fu Tuan, *Space and Place: The Perspective of Experience*, Minneapolis: University of Minnesota, 1977, pp. 51-66.
[7] Robert Emmet and David Nye, *The Environmental Humanities: A Critical Introduction*. Cambridge, MA: MIT Press, 2017, p. 57.
[8] Douglas Kelbaugh, "The Environmental Paradox of the City, Landscape Urbanism, and New Urbanism," *Consilience: The Journal of Sustainable Development*. Vol. 13:1 (2014): 1–15, p. 6.

BIBLIOGRAPHY

Arendt, Hannah. *The Human Condition*, second ed. Chicago: University of Chicago Press, 1998.
Bai, Xuemei and Hidefumi Imura. "A comparative study of urban environment in East Asia: stage model of urban environmental evolution," *International Review for Environmental Strategies* Vol.1: (2000): pp. 135 – 158.
Berry, Brian J.L. *The Human Consequences of Urbanization: Divergent Paths in the Urban Experience of the Twentieth Century*. New York: St. Martin's Press, 1973.
Bluestone, Barry and Bennet Harrison. *The Deindustrialization of America*. New York: Basic Books, 1982.
Brenner, Neil and Christian Schmid. "The 'Urban Age' in Question," *International Journal of Urban and Regional Research*, Volume 38, Issue 3 (2013) Urban Worlds doi:10.1111/1468-2427.12115
Brenner, Neil and Christian Schmid. "Towards a New Epistemology of the Urban?" *CITY*, 19 (2015): 151–182. http://dx.doi.org/10.1080/13604813.2015.1014712
Buck-Morss, Susan. *The Dialectics of Seeing: Walter Benjamin and the Arcades Project*. Cambridge, MA: MIT Press, 1989.
Cosgrove, Denis. *Social Formation and Symbolic Landscape*. Madison, WI: University of Wisconsin Press, 1998.
Emmet, Robert S. and David E. Nye. *The Environmental Humanities: A Critical Introduction*. Cambridge, MA: MIT Press, 2017.
Florida, Richard. *The Rise of the Creative Class*. New York: Basic Books, 2002.
Fishman, Robert. *Bourgeois Utopias*. New York: Basic Books, 1987.
Garreau, Joel. *Edge City: Life on the New Frontier*. New York: Anchor Books, 1992.
Jabareen, Yosef R. "Sustainable urban forms: their typologies, models, and concepts". *Journal of Planning Education and Research*, 26: 1 (2006), pp. 38-52 doi: 10.1177/0739456X05285119
Kelbaugh, Douglas. "The Environmental Paradox of the City, Landscape Urbanism, and New Urbanism," *Consilience: The Journal of Sustainable Development*. Vol. 13:1 (2014): 1–15.
Lash, Scott and John Urry. *The End of Organized Capitalism*. Madison: University of Wisconsin Press, 1987.
Luccarelli, Mark. *Lewis Mumford and the Ecological Region*. New York: Guilford Press, 1995.
Lynch, Kevin. *The Image of the City*. Cambridge, MA: MIT Press, 1960.
McGranahan, Gordon, Jacob Songsore and Marianne Kjellen, "Sustainability, Poverty and Urban Environmental Transitions," in C. Pugh (Ed.), *Sustainability, the Environment and Urbanization*. London: Earthscan, 1996, pp. 103-134.
MacKaye, Benton. *The New Exploration: A Philosophy of Regional Planning*. Harper's Ferry, WV: Appalachian Trail Conservancy, 2010.

Mumford, Lewis. *The City in History*. New York: Harcourt, Brace, 1961.

Mumford, Lewis "Neighborhood and the Neighborhood Unit," *The Urban Prospect*. New York: Harcourt, Brace, 1968.

Mumford, Lewis. "The Fourth Migration." Survey Graphic, LIV (May 1, 1925), 130-33; reprinted in *Planning the Fourth Migration: The Neglected Vision of the Regional Planning Association of America*. Edited by Carl Sussman. Cambridge, Mass.: MIT Press, 1979, pp. 55-64.

Mumford, Lewis. (1986 [1962]. "The Case against 'Modern Architecture'," *The Lewis Mumford Reader*, edited by D.L. Miller. New York: Pantheon Books, 1986, pp. 73-83.

Talen, Emily and Julia Koschinsky. "Compact, Walkable, Diverse Neighborhoods: Assessing Effects on Residents," *Housing Policy Debate*, 24:4 (2014), pp. 717-750. doi: 10.1080/10511482.2014.900102

Tuan, Yi-Fu. *Topophilia: A Study of Environmental Perception, Attitudes and Va*lues. New York: Columbia University Press, 1974.

Tuan, Yi-Fu. *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota, 1977.

ME HERE, THEM THERE, ME THERE, WE HERE. SOME APPLICATIONS FOR CONVENTIONS OF ARCHITECTURAL REPRESENTATION IN THE RECOGNITION OF INFORMAL VALUES

Authors:
SUSHMA PATEL, STEPHEN STEYN

Affiliation:
TSHWANE UNIVERSITY OF TECHNOLOGY, SOUTH AFRICA

INTRODUCTION

The Department of Architecture at the Tshwane University of Technology (TUT) is a department on the periphery of a campus, on the periphery of a city on the periphery of the international political imagination. It is located in Pretoria West - a mixed, commercial, light-industrial and residential suburb, which is in places very poor, often informal and highly complex. The ambiguous name of the post-apartheid city in which we find ourselves (sometimes called Pretoria, sometimes Tshwane, sometimes both simultaneously) is indicative of the precarity and contingency of occupation prevalent in the city. It was designed for a racially stratified society which collapsed before it was fully implemented, and it is now occupied in very different ways to those imagined by its designers.

In the project we are about to describe the approach to architectural heritage has been politicised by shifting the definition of what is generally meant by the term 'architectural heritage' from a focus on the preservation and interpretation of architectural artefacts that have stylistic or narrative historical significance[1] to include the concept of heritage as *an inheritance*. This allows us to document and describe the ways in which we live with, in and around our inherited built landscapes.

Informal urban spaces predominate in cities in many parts of the world today and are increasing. In Pretoria, the informal is generally on the fringes, and separated from the planned. But a simultaneity of the formal and the informal is offered in Boom street, located in the suburb of Marabastad, adjacent to the TUT campus. Critical engagement with this layered landscape, through propositional manipulations of ideas of exclusivity and inclusivity (or "us" and "them") can provide valuable understandings of the relevance and significance of architecture in the present and in the future. In order to inform such manipulations, alternative ways of observing, learning, imagining and representing architecture are both urgent and appropriate.

BACKGROUND

Marabastad was founded as a result of the Transvaal Law no. 3 of 1885 which legislated and limited land-ownership rights of non-whites in the interest of creating cheap labour to service the white

population which occupied the city centre[2]. In large part due to its dense conglomeration of 15mX15m plots, it developed over several decades from an assembly of decrepit tin hovels into a culturally diverse, rich and socially fertile neighborhood despite the restrictions meted out first by colonial powers and then by the Apartheid government[3].The Group Areas Act of 1950 which required total classification and segregation of South Africans by race caused the displacement of people, violence through physical destruction, decimation of community as well as the erasure of much of the built form. Erasure was however not sufficient in manipulating populations in the long term, and apartheid spatial planners made extensive use of architectural interventions in order to maintain control. They proposed, and occasionally completed, massive infrastructural projects which occupied some erased sites and prevented communities from re-forming. As a result, one of the most significant features of Boom Street is a dramatic diversity of building scales which exist along its length as the fine grain of Marabastad in the west is gradually replaced over the course of a kilometre and a half with much more expansive 230m (750ft) by 135m (440ft) blocks featuring similarly upscaled building envelopes. This dichotomy makes Boom Street a unique environment in which relationships between formal and informal values can be investigated.

METHODOLOGY

The students, researchers and tutors tasked with studying this street are almost invariably members of the relatively generic international bourgeoisie who are identified by their presence in global (English) media environments. When we engage with our immediate geographical surroundings, in other words, we are engaging with the radically different. It is therefore necessary to look critically and with substantial rigour at the lenses through which we approach such politically sensitive sites. In *Understanding the Socius through Creative Mapping Techniques*, Arie Graafland summarises some techniques used by avant-garde geographers, architects and political theorists during the course of the 20th century to destabilise the power relations inherent in capturing and representing places[4].

Students in the fifth-year studio (the first of a two-year Master's programme) employed such methods in approaching the street. The project brief required three drawings, each at a different scale depicting some characteristics, qualities or practices of particular sites along the street. The medium of representation for the project was prescribed as oblique drawings. These drawings, it is argued, are more likely to produce empathy than other conventions in architectural representation[5].

Oblique drawings merge some qualities of the plan, section and perspective. As such, they enable more types of information to be contained and communicated simultaneously, allowing the transferences of rituals and practices, in addition to representations of built form, into the studio for study. In doing so, they create opportunities for new bonds to form between the haves and the have-nots — "us" and "them" — particularly within informal settings in the Global South.

With the aid of the empathic mechanism of these drawings and the techniques described by Graafland, students approached the site with the aim of striking up conversations with the occupants in order to determine some of their values and daily rituals for transcription. The site was, in other words, approached not from above, but from within the social structures of the street. In doing so, the role of architecture is expanded to include not only the proposition and making of buildings, but also practices of looking through drawing.

PROJECTS

Outside Architecture

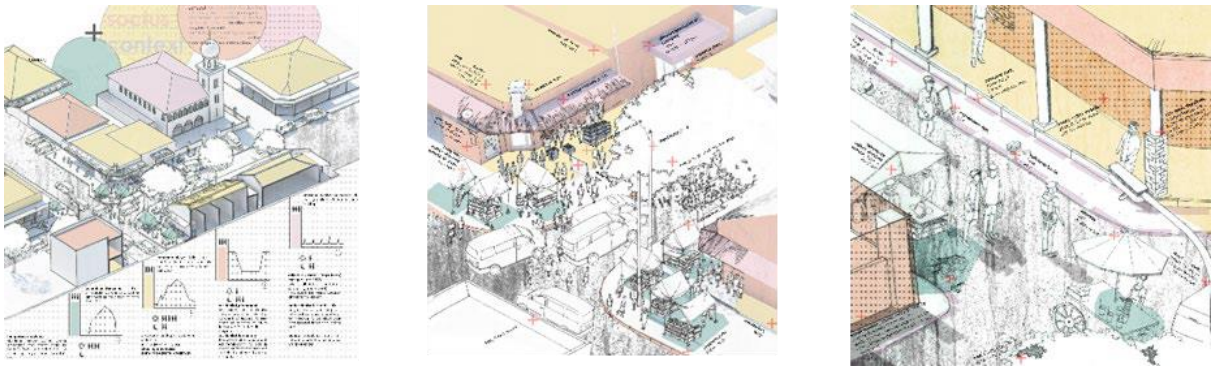


Figure 4. An intersection near the dense western end of Boom Street, Marabastad. (Nkoana, Prozesky Swanepoel: 2018)

One of the most striking characteristics of Boom Street is the high level of activity taking place outside its buildings. The western side of the street in particular is congested as building interiors have spilled out well beyond their porches and sidewalks. In the figures above, the authors have focused on a busy intersection, and documented the activity on the street in architectural terms.

In the most distant view, buildings and their immediate surrounds are depicted as comparably devoid of activity. In a reversal of convention, the intersection is then conceived as a room and the entrances and walls in this 'room' are identified. The taxonomy of 'edge', 'type' and 'threshold' were used to translate, analogously, between the room and the intersection. The thresholds include inversions of conventional thresholds – the outside is 'entered' from within buildings or through the door of a vehicle, which connects the interior of the intersection to any number of spaces from which the vehicle may originate.

Marabastad today is characterised by the theme of arrival, with major bus terminals, a major train station as well as the South African Refugee Reception Office just beyond the edges of these drawings. The technique of conceptualising entry points to a site from a much broader context serves as a poignant counterpoint to the common practice in apartheid planning of placing townships at a substantial distance from the city and controlling the number of entry points to the city as well as the number of exits from townships themselves. By inverting concepts of inside and outside, and collapsing polarities of far and near, these images illustrate an essential shift in the character of Marabastad since the advent of democracy.

Appropriated Infrastructure

Figure 5. Individual items of infrastructure can create a cascading series of new activities. (Alberts, Albisini, Raseroka: 2018)

At this extensive bus lot, the problem of a large, undifferentiated surface is apparent at the broadest scale. In this image, the tarmac that forms the primary circulation for buses is also occupied quite densely by pedestrians. Vehicles and persons share this open space in a continual negotiation. Students of this site anticipated that there would be underlying forms of order which could be documented in the oblique drawing form.

The intermediate scale focuses on a different site as a means to study the ways in which informal activities are ordered in a more formal setting. Here the curb separating the roadway and the sidewalk is identified as an anchor onto which traders attach their own ad-hoc infrastructures – buckets, piles of pallets, canvas sheets etc.

At the last scale, the focus shifts back to the bus lot, and students now attempt to identify the means by which people draw their own lines in the city using existing and self-made infrastructures. At the center left of the image, a municipal stormwater drain serves as one of the first points of access. For informal cooking, a nearby drain is essential in order to dispose of water used in food preparation and dishwashing and food-based businesses have sprung up around drains on the lot. In this image, there is also an existing lamp post which facilitates trade until later in the day, especially in winter. Additional appropriated infrastructure includes municipal refuse bins that have been arranged to create demarcated vehicular zones.

In this project, it is apparent that informal appropriation of existing infrastructures is a means for people to create economic footholds within the formal city. City regulations and infrastructure create some sense of order and produce opportunities for informality to latch onto. They could be more optimally delivered, if this appropriation is anticipated and facilitated in design.

The investigation and illumination of the value and use of infrastructure at this scale serves as a critique of the enormous infrastructural projects that the nationalist government erected to cover sites from which people have been displaced.

Scale and Identity

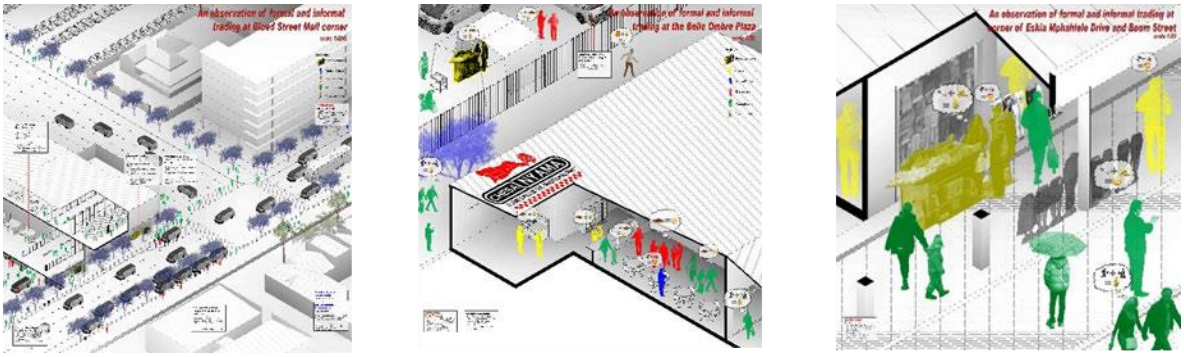


Figure 6. The ability to relate to individuals (as opposed to abstractions and statistics) is related to variations in scale. (Bembe, Lebethe, Steenkamp:2018)

In the next project, the impact of scalability on identity is illustrated when, at the first scale, students identify broad categories of persons and activities and gradually reassess those categories as they progress to more immediate scales.

In the first image, at the urban scale, occupants of this intersection are abstractly identified as either vendors, taxi drivers, police officers, pedestrians or drug users. This organization allows conceptual access to the ways in which this part of Boom Street – which was developed more recently and with a much coarser urban grain and more formal planning – is controlled through passive and active policing. At this scale, they identify passive means of control through architectural objects such as bollards and painted islands in the roads, which formalize the relationship between pedestrians and vehicles. The minibus taxi parked illegally on a painted island in the centre of the drawing informs the second layer of the drawing in which persons are identified as either policers of informality, or as instigators of transgressive informal appropriations of infrastructure.

In the intermediate image, this process is repeated at the building scale where furniture and store attendants inform the activities on the inside of the building, while makeshift tents and drums serve the purpose of facilitating trade on the outside. The scale here allows for some individuation, as the figures in the drawing, while still broadly categorised as either inside or outside the law, are given desires and goals in the form of thought bubbles tethered to individual characters. Their classification and their presumed desires are thus brought into contact at this scale.

At the final scale, a more sympathetic gaze is evident as the policing of inside and outside, formal and informal and legal and illegal is relaxed. The shop spills out onto the sidewalk, and the responsibility of determining the rules of engagement for public life is transposed onto the generic categories: shopkeepers (both formal and informal) and pedestrians, at the exclusion of drug users and police officers.

Through this set of analytical drawings, it is possible to derive a critique of large scales of urban and social planning. Represented at those scales, people are less likely to be identified as individuals and more likely to be identified through categories like “groups” and “areas”. By aligning groups and areas, through the Group Areas Act, apartheid planners created a framework of order through which the city could be understood. Zooming in from that scale, and reflecting, even cursorily, on how people actually occupy and make the city (i.e. not as “groups” occupying “areas”) makes it apparent how that framework standardised violence as people were forced into categories which inaccurately represent them.

Competition for sidewalk space

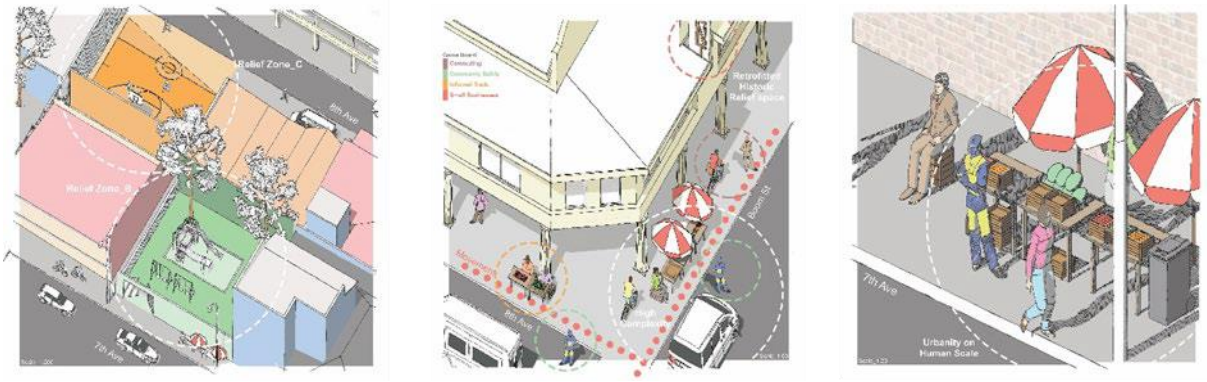


Figure 7. An ameliorative proposition is elaborated into a problem statement when images are imagined to be in motion. (Adlem, Fourie, Sesemane: 2018)

In this project students proposed a number of small interventions, in order to identify a conceptual problem with which to approach theorising the site. The problem can be identified if one were to set the characters in these images in motion. In every image, cyclists, vendors, pedestrians and vehicles are headed for collision. In the second image, the cyclist is about to be trapped between a column and a vendor's stall, there is a pedestrian standing in the roadway and the vendor stall to the left of the image produces a walkway only slightly too narrow to pass through.

In the final image, superfluous details have been omitted, and reality abstracted to some degree. The uncomfortable pinching of circulatory space is indicated by a pedestrian who is walking with one foot in the roadway and one on the kerb. The packed density of the drawing is exaggerated by the streetlamp which is drawn so that it obscures the vendor's face.

The narrowness of circulation and the congestion that the competition causes are shown to be exactly that which makes trade possible here. These images, though abstracted, show an underlying sensibility present in Marabastad which welcomes social friction and employs it as a resource. They also serve as a critique of the tendency of architectural propositions to idealize the smoothing of social interaction.

Instead of solving the problems of contested space – by for example adding more space to the sidewalks, any intervention here could rather be an exercise in making more such problems, but with precision and care.

The Presence of History

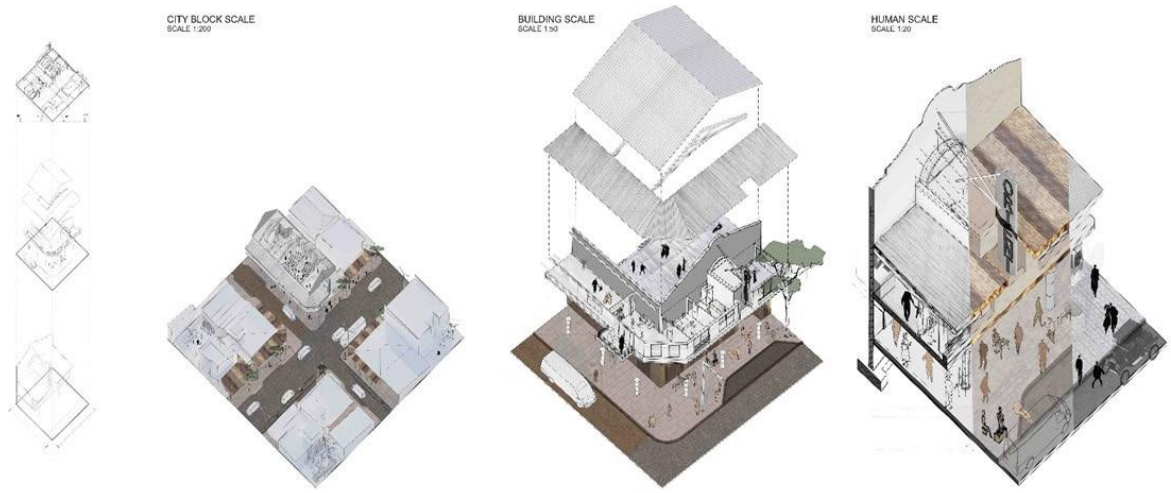


Figure 6. Temporal layering as an added dimension of the oblique drawing (Lamprecht, Plaatjie, Stoltz:2018)

In this project, the dimension of time becomes an explicit subject for study and representation. The durability of buildings mean that they frequently survive their intended uses and rituals. Buildings bring some of the past with them into future uses, where they may exert subtle influence on contemporary practices. In this project, the temporal dimension of axonometric drawings is taken to a logical extreme with the simultaneous representation of different times, here simplified to the past, present and future.
In the first image, at the urban scale, students have collated historical information about the Orient Theatre located on Boom street and combined it with documentations of its current uses while at the same time using those two points to form a trajectory projecting into the future.
At the intermediate scale the device is most apparent. In this construction, the past, present and future have been separated by architectural elements. The past is located and represented in the interior, where the building is shown to function as a theatre, the present is located on the exterior and in the street, where current informal occupations are documented. Interestingly, the future is placed in an interstitial layer. In the future the building is supposed to function as housing. What is most significant here is the challenge which the medium presents to linear conceptions of time in which the past and the future straddles the present. In this provocative proposal, the future is instead a product of the interaction of the present and the past, which lends substantial agency to the subjects of study in the production of the future.
At the most intimate scale, the order is changed, and the hypothesis investigated from a different angle again. Now, the future is located on the interior, and the present placed in the centre of the image, separating the future from the past which is located on the street. Though this appears to be a more conventional approach to the temporal dimension – the logic of the past and future mediated by the present is carried over from the timeline as a narrative device — the figures in the drawing are used to complicate the relationship between timelines. Figures drawn as silhouettes in black represent persons from the past, and silhouettes in beige, people from the present. The future is constituted of three kinds of people, those from the past, those from the present and a new category. Again, the society of the future is seen not as an isolated category, but as an interaction of the past and the present. In this final image, we are shown that not only architectural artefacts carry the past through the present and into the

future, but that people and their individual experiences form an integral part of the construction of the future.

CONCLUSION

Architectural representation has, through the proposition of the spaces which other people will inhabit, always already had a substantial political dimension. Though we generally tend in the profession to think of its intentions as benevolent, there are ways in which architecture and infrastructure can be actively weaponized in the interest of the control and manipulation of society. While we are now able, generally to advocate for more sensitive forms of intervention than what was common practice in South Africa at times during the previous century, there are many subtle ways in which representation exerts political power over our society. While the axonometric is by no means a cure-all for the potential pitfalls and seductions of architectural drawings, they offer us a way into other means of approaching sites.

NOTES

[1] International Council on Monuments and Sites, *Principles for the Recording of Monuments, Groups of Buildings, Ensembles and Sites* (Paris: ICOMOS, 1996), 48-52.
[2] Jacques Laubscher and Sushma Patel, "Future Boom Street, Pretoria South Africa: The Space between the Temporal and the Permanent (Derby: University of Derby, 2017), 612-615.
[3] Aziz Tayob, *Integrated Urban Design Framework for Marabastad* (Pretoria: Aziz Tayob Architects, 2002), 3-114.
[4] Arrie Graafland, *Understanding the Socius through Creative Mapping Techniques*(Delft: Delft School of Design, 2010).
[5] Stephen Steyn, "Long Division: A Political Critique of Parametricism," in *Folio,* ed. Lesley Lokko (Johannesburg: GSA Imprint, 2017), 86.

BIBLIOGRAPHY

Alexander, Christopher. "A City is not a Tree" in *Architectural Forum,* vol. 122, no. 1 (1965). pp. 58-62
Fisher, Roger. Le Roux, SW and Maré, E, eds., *Architecture of the Transvaal*, Pretoria: UNISA, 1998.
Graafland, Arrie. "Understanding the Socius through Creative Mapping Techniques". Delft: Delft School of Design, 2010.
International Council on Monuments and Sites, *International Charters for Conservation and Restoration*(Paris: ICOMOS, 1996).
Judin, Hilton and Vladislavic, Ivan, eds., *Blank: Architecture, Apartheid and After*. Rotterdam: NAi Publishers, 1999.
Laubscher, Jacques and Patel, Sushma. "Future Boom Street, Pretoria South Africa: The Space between the Temporal and Permanent." In: E. Tracada & G. Cairns (ed.s), *AMPS Proceedings Series 10. Cities, Communities Homes – Is the Urban Future Livable?* University of Derby, Derby, UK. 22 – 23 June (2017). pp. [612-622].
Nietzsche, Friedrich. "The Use and Abuse of History for Life" in *Untimely Meditations*, edited by Daniel Breazeale.
Ong, Walter. "The Writer's Audience is Always a Fiction", in *PMLA*, Volume 90, No. 1 (1975) pp. [9-21].
Poulsen, Lone and Silverman, Melinda, eds., *The South African Informal City*. Johannesburg: Architects collective, 2012.
Riahi, Pari. "Expanding the boundaries of architectural representation" in *The Journal of Architecture*, 22:5 (2017): 815-824.
Scolari, Massimo. Oblique *Drawing: A History of Anti-Perspective*. Cambridge Mass: The MIT Press, 2015.
Scolari, Massimo. "Representations" *Log* no. 26 (2012). pp. [107-117].
Simone, Abdoumaliq. "People as Infrastructure" in *Johannesburg: The Elusive Metropolis* edited by Sarah Nuttall and Achille Mbembe, 68-90. Johannesburg: Wits University Press, 2008.
Steyn, Stephen "Long Division: A Political Critique of Parametricism" in *Folio*, *Vol 1, Winter*. Edited by Lesley Lokko, 82-95. Johannesburg: GSA Imprint, 2017.

MEASURING THE URBAN QUALITIES OF MIXED-USE STREETS

Author:
SAMAA BADAWI, ALSHIMAA A. FARAG

Affiliation:
MANSOURA UNIVERSITY, EGYPT / EFFAT UNIVERSITY
ZAGAZIG UNIVERSITY, EGYPT

INTRODUCTION

Streets are the most important element of the urban environment. They are where people go to work, walk and engage in social activities[1]. Streets represent a significant component of users' mental image of their cities[2]. Designing streets to encourage walkability is a major topic in urban design discourse[3]. Studies show that enhancing the urban environment may encourage walkability, especially in streets designed and built for cars[4]. Many researchers have considered how to provide users with such memorable experiences. However, most studies have mainly evaluated gross qualities, such as neighborhood density, street connectivity, and the distance to parks[5]. Individually, such gross qualities may not explain much about the experience of walking down a particular street[6]. Specifically, they do not capture people's overall perceptions of the street environment[7]. Other urban studies point to subtler qualities that affect the perception of users and influence walkability[8], including "Imageability-Enclosure, and others"[9]. This research used a technique developed by The Active Living Research Program to study and evaluate five urban qualities in five mixed-use streets in the city of Jeddah.

RESEARCH GOALS AND METHODOLOGY

This research aims to test the validity of the field manual tool in measuring urban qualities and to provide clear indicators of the physical features of streets that should be developed to make the streets more walkable, enjoyable and memorable. Five mixed-use streets located in Jeddah, KSA, were used case study to apply the field manual technique.

The research team was composed of two lead researchers and 150 female students. The research was part of the urban design course taken during the third year at the College of Architecture in one of Jeddah's female universities. The students were divided into groups, each containing six members. To ensure the validity of the results, 5 different groups measured each of the five streets. The students attended multiple lectures and workshops to learn about the meaning of each urban quality, the physical features affecting them and the measurement technique. After finishing their training, the students visited the sites to perform the measurements and completed the field manuals. The researchers reviewed the work of the students and provided feedback and notes. Some groups needed to revisit the

site and collect the data again according to the recommendation of the lead researchers. The twenty-five groups submitted their field manuals, and the researchers performed the analysis for each street with regard to the different urban qualities. To ensure the accuracy of the results, a comparison was performed between the results of each of the five groups' measurements of the same street. Despite the review and feedback of the two lead researchers, few groups had unusual results. These results were excluded to avoid affecting the calculations.

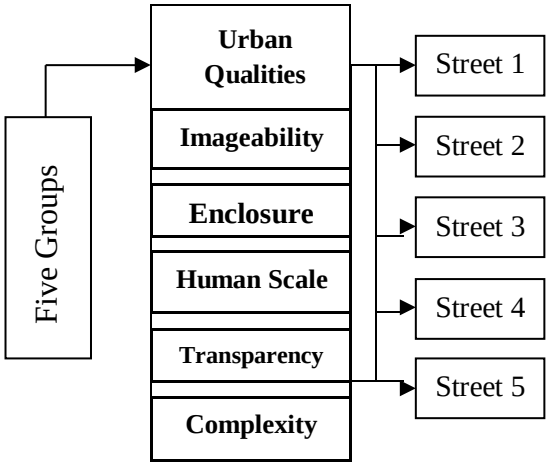


Figure 1. The Methodology of Measuring Urban Qualities

LITERATURE REVIEW

Users' perception of the physical environment is a core issue in classical works in urban design. The quality of the walking environment influences the perceptions of individuals[10]. Classic readings in urban design are filled with references to those qualities. They are a "group of qualities, which affect users' perception about the urban environment and influence walking behavior"[11]. There are about forty-three qualities, but there was no practical method to measure them. A study by Active Living Research focused on how to measure urban qualities. The study found that not all urban qualities are measurable. To determine which urban design qualities are measurable, a set of criteria was established, resulting in five urban qualities that fulfill the criteria and are measurable. These qualities are Imageability, Enclosure, Human Scale, Transparency, and Complexity[7].

The researchers of the Project of Active Living attempted to measure the five qualities by relating them to different physical features of streets. The method used in their project is described in detail[7]. Imageability, enclosure, human scale, and transparency met all the criteria for operationalization. The physical features related to these qualities were included in a field manual that was programmed to calculate the value of each urban quality after inserting all the measurements associated with the physical features[11]. Table1. Presents the field manual. The table is composed of four columns. The first column represents the physical features of the street, which affect the urban qualities. The second column represents the numerical value of each physical feature. The third column represents the multiplier, which clarifies the degree of effect of each physical feature on the urban quality. The value of this multiplier is the result of many statistical techniques used by the research team in Active Living Research during the first project phase, which attempted to connect each urban quality to the physical features of the streets. Some elements have a substantial effect and thus have a high multiplier value. Other elements have a weak effect and therefore have a low multiplier value. Some elements have a

positive impact on the quality and thus have positive values, whereas other elements have an adverse effect and thus have negative values [12].

Measuring urban design qualities scoring sheet	Audit		
Street	Date & Time		
Step	Recorded		Multiplier * Recorded Value
	Value	Multiplier	
Imageability			
1. number of courtyards, plazas, and parks (both sides within study area)		0.41	0.00
2. number of major landscape features (both sides, beyond study area)		0.72	0.00
3. proportion historic building frontage (both sides within study area)		0.97	0.00
4. number with buildings with identifiers (both sides within study area)		0.11	0.00
5. number of buildings with non-rectangular shapes (both sides within study area)		0.08	0.00
6. presence of outdoor dining (your side, within study area)		0.64	0.00
7. number of people (your side, within study area)		0.02	0.00
8. noise level (both sides within study area)		-0.18	0.00
		Add constant	+2.57
		Imageability Score	2.57
Enclosure			
1. number of long sight lines (both sides, beyond study area)		-0.31	0.00
2a. proportion street wall (your side, beyond study area)		0.72	0.00
2b. proportion street wall (opposite side, beyond study area)		0.94	0.00
3.a proportion sky (ahead, beyond study area)		-1.42	0.00
3.b proportion sky (across, beyond study area)		-2.19	0.00
		add constant	+2.57
		enclosure score	2.57
Human Scale			
1. number of long sight lines (both sides, beyond study area)		-0.74	0.00
2. proportion window at street level (your side, within study area)		1.10	0.00
3. average building heights (your side, within study area)		-0.003	0.00
4. number of small planters (your side, within study area)		0.05	0.00
5. number of pieces of street furniture and other street items (your side, within study area)		0.04	0.00
		add constant	+2.61
		human scale score	2.61
Complexity			
1. number of buildings (both sides, beyond study area)		0.05	0.00
2.a number of basic building colors (both sides, beyond study area)		0.26	0.00
2b. number of accent colors (both sides, beyond study area)		0.12	0.00
3. presence of outdoor dining (your side, within study area)		0.42	0.00
4. number of pieces of public art (both sides, within study area)		0.29	0.00
5. number of people (your side, within study area)		0.03	0.00
		add constant	+2.61
		complexity score	2.61

Table 1. The physical features assigned to measure the urban qualities in the field manual[12]

RESEARCH CASE STUDY/ JEDDAH CITY

Jeddah is the second capital of Saudi Arabia. After the economic upturn of the Kingdom, the city expanded; similar to most cities around the world, the expansion was accompanied by the creation of wide, car-oriented streets. Jeddah was no exception; its streets transformed from human-scale, pedestrian streets to car-oriented streets[3]. The Kingdom of Saudi Arabia has strived to develop more human-friendly cities to encourage walking and create livable communities; however, these attempts have been limited, and the majority of streets are still considered car-oriented. The following part of the study measures the urban qualities of five mixed-use streets in Jeddah that affect users' perceptions and encourage walkability.

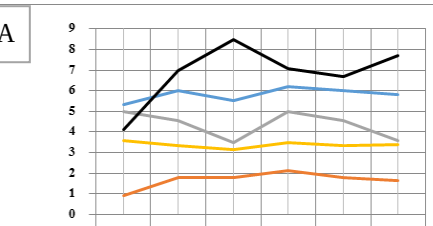
DATA ANALYSIS

Five mixed-use streets in Jeddah City are used as a case study. They represent essential destinations for users. The chosen streets share the main characteristics of being important streets whose primary function is commercial use on the ground-floor level. They have approximately the same width, ranging from 24 m to 30 m. The evaluation of the urban qualities in the 5 streets as follows by the 5 groups for each street:

Figure1. Shows the scores of urban qualities for the five streets obtained by using the field manual. Figure1.A indicates that complexity has the highest value among the qualities in the first street. This is mainly due to the variety of buildings' colors while the enclosure has the lowest value. This is due to weak edges because there are many vacant lands along the street. Figure 2.B. shows that in the second street the average value of the human scale was the highest among the qualities, while the average value of enclosure scored the lowest. A large amount of street furniture in the second street helps to enhance the sense of human scale. The low value of enclosure resulted from the high number of long sight lines and the proportion of the sky.

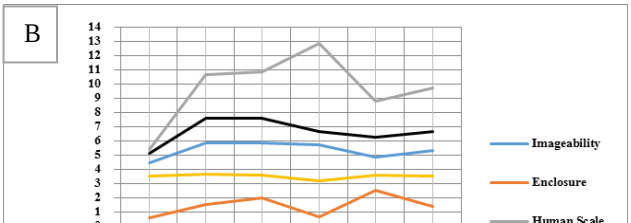
Figure 2.C shows that the average value of complexity in the third street was the highest due to the high number of buildings and the high number of people. The enclosure was the lowest value in the third street, which resulted from the weak edges of the street. Figure 2.D shows that in the fourth street the average values of complexity and imageability were the highest. The high value of imageability was due to the high number of buildings with identifiers and the high number of people in the street. The high value of complexity was due to the high number of buildings and the high number of people. The enclosure had the lowest value. Figure 2.D shows that the average value of complexity was the highest of the qualities in the fifth street. This result was due to the high number of buildings on both sides of the street and the high number of people. The enclosure had the lowest value because of the weak edges of the street.

A



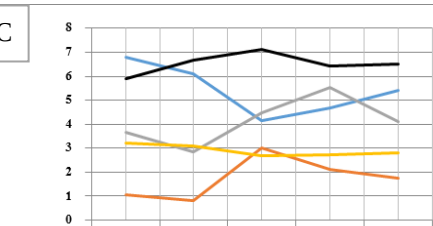
	G1	G2	G3	G4	G5	Average
Imageability	5.33	6.01	5.5	6.19	6.01	5.8
Enclosure	0.91	1.77	1.79	2.1	1.77	1.66
Human Scale	4.99	4.54	3.46	4.97	4.54	3.6
Transparency	3.56	3.35	3.16	3.49	3.35	3.4
Complexity	4.09	6.96	8.46	7.09	6.69	7.7

B



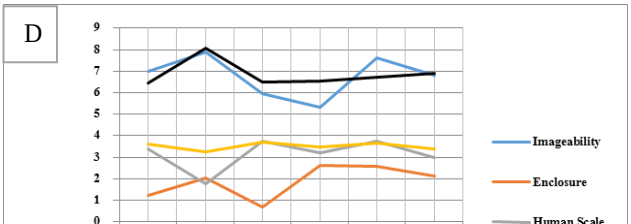
	G1	G2	G3	G4	G5	Average
Imageability	4.43	5.86	5.86	5.72	4.85	5.33
Enclosure	0.56	1.48	1.95	0.64	2.54	1.4
Human Scale	5.4	10.65	10.86	12.88	8.78	9.72
Transparency	3.48	3.65	3.6	3.19	3.56	3.5
Complexity	5.09	7.61	7.61	6.65	6.28	6.65

C



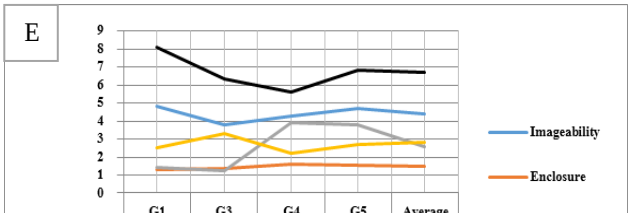
	G1	G2	G4	G5	Average
Imageability	6.8	6.12	4.14	4.67	5.4
Enclosure	1.07	0.83	3	2.1	1.75
Human Scale	3.67	2.83	4.46	5.52	4.12
Transparency	3.22	3.08	2.68	2.74	2.8
Complexity	5.9	6.67	7.11	6.41	6.5

D



	G1	G2	G3	G4	G5	Average
Imageability	6.97	7.91	5.96	5.32	7.62	6.8
Enclosure	1.24	2.04	0.67	2.62	2.56	2.11
Human Scale	3.38	1.74	3.76	3.22	3.73	3
Transparency	3.61	3.23	3.69	3.49	3.64	3.4
Complexity	6.46	8.06	6.49	6.54	6.7	6.9

E



	G1	G3	G4	G5	Average
Imageability	4.82	3.8	4.28	4.72	4.4
Enclosure	1.31	1.36	1.62	1.56	1.5
Human Scale	1.42	1.24	3.91	3.8	2.6
Transparency	2.53	3.29	2.22	2.72	2.8
Complexity	8.12	6.34	5.64	6.85	6.7

Figure 2. Urban Quality Scores for the Five Street

RESULTS AND DISCUSSION

The validity of the field manual technique for measuring urban qualities

When analyzing the data acquired using the field manual technique, there was always consistency or minimal variation in the scores among the groups measuring imageability and transparency in all streets. This finding indicates that the physical features related to these urban qualities are easily and precisely measured.

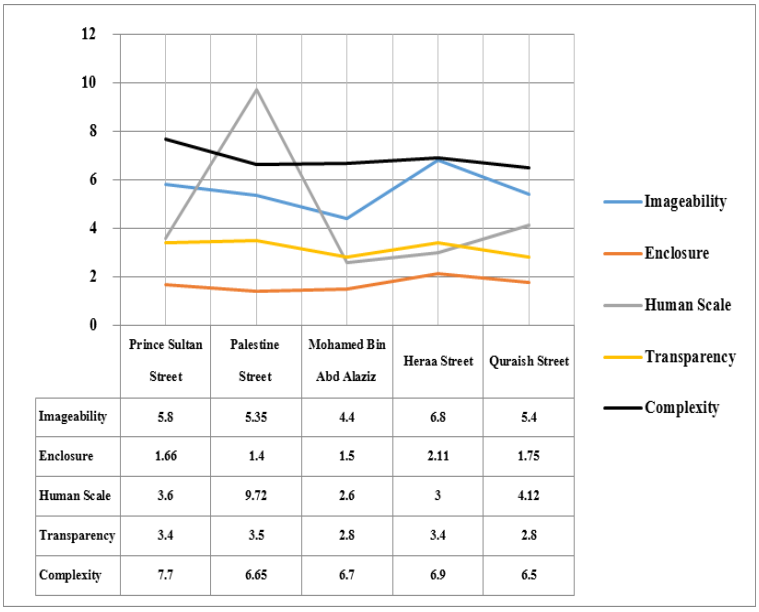
The variation in other urban quality scores among the different groups measuring the same street is a result of the following:

- The dependence on one side of the street for measuring some urban qualities, which may vary from one side to another.
- The measurements of some features that vary according to the point of observation along the street, such as the long sight line and the proportion of the sky.
- The variation of some values according to the time of observation, such as the number of people and the noise level.

Despite the variation, the scores are close to each other and indicate each urban quality value in the street. Accordingly, the field manual technique helped in measuring the five urban qualities and provided a clear indicator of the physical features of the street that should be developed to enhance the pedestrian experience and encourage walkability.

Urban Quality Scores

By comparing the average value of each urban quality among the five streets, it is clear that complexity is the urban quality that received the highest score for most of the streets. The main reasons for this are the number of buildings along the street, the number of people and, in some cases, the number of basic colors and accent colors. Conversely, enclosure received the lowest score. This result is mainly due to two factors: the high number of long sight lines and the high proportion of the sky. Figure2. below shows the value of each urban quality for the five studied streets. It is clear that complexity has the highest score among all urban qualities and that enclosure has the lowest score, which will be discussed in the following section.



	Prince Sultan Street	Palestine Street	Mohamed Bin Abd Alaziz	Heraa Street	Quraish Street
Imageability	5.8	5.35	4.4	6.8	5.4
Enclosure	1.66	1.4	1.5	2.11	1.75
Human Scale	3.6	9.72	2.6	3	4.12
Transparency	3.4	3.5	2.8	3.4	2.8
Complexity	7.7	6.65	6.7	6.9	6.5

Figure 3. The Average Values of Urban Qualities for the Five Streets

Table2. Shows the range of each urban quality value for the five streets:

Quality	Maximum	Minimum
Imageability	4.4	6.8
Enclosure	1.4	2.11
Human Scale	2.6	9.72
Transparency	2.8	3.5
Complexity	6.5	7.7

Table 2. The range of Urban Qualities Scores

Enclosure, human scale, and transparency are the urban qualities that received the lowest scores in all streets. This finding reflects the design used for most streets in Jeddah, which includes wide streets, low building heights, a lack of landscape and hardscape elements, a lack of street activities and long solid walls. The urban qualities that received the highest scores in all streets were complexity and imageability. This result is due to the high number of buildings and colors.

CONCLUSION

The use of the field manual technique to measure urban qualities results in consistent scores by different groups, which demonstrates the validity of the technique. However, the obtained scores can be used only to compare the same urban quality among different streets or to compare different qualities in relation to each other. There is no referenced value for each urban quality itself. This issue makes it difficult to know whether the quality has been achieved at a high level or a low level in a specific street. Some measurements that result from using this technique may not provide evidence of whether the street creates a good image in users' minds. Because many physical features related to these qualities may exist in different ways, the quality score may be high although the users' experience is negative. For the case of the complexity value, the number of basic colors and accent colors can be high while

the overall image of the street is random due to inharmonious colors. This fact reveals that there is a need to think about qualitative aspects even when using quantitative results. The results for the urban qualities of the five streets revealed that there is a definite problem regarding enclosure, transparency and human scale due to the design followed in the city.

RECOMMENDATIONS

Measuring urban qualities can help to determine the physical features of the street that need development. Enhancing these physical features should be attempted within a guiding framework to guarantee a positive effect on all the urban qualities. To enhance the sense of enclosure, the street should have clear edges. The method for creating such edges should be chosen carefully because it may negatively affect another quality such as transparency. If the street has solid walls on both sides, it may rate high in the enclosure but not in transparency. Accordingly, measuring the urban qualities of streets should be an initial development step with creation guidelines to control the different treatments used to enhance these qualities. This guidance can help to prevent the misleading results that may occur when depending only on quantitative measurements, as mentioned concerning the relationship between the number of colors and complexity. Such guidance will incorporate qualitative aspects as well to guarantee a memorable environment.

As noted, each urban quality score for all streets is within a specific range. The concept of this research can be applied to other streets in the same city. The two results can be compared in a way that may help to create a referenced value for each urban quality.

To avoid variation in the same quality value on the same street and to obtain more accurate results, the following recommendations should be followed.

- This field manual method should be applied to small sectors of the street that have similar characteristics to avoid the difference in results that may occur along the street.
- Before beginning to use the manual, it is important to determine from which side of the street the researchers will take their measurements. For greater accuracy, this method should be applied to both sides of the street to provide a comprehensive view of the necessary development for each side and each sector of the street. In some cases, the urban qualities may have high scores when measured in specific sectors of the street and low scores in other sectors. Therefore, it is essential to know the particular location of the measurements.

NOTES

[1] Badawi, Samaa., & Elborombaly, Hossam. “New Technique for Developing and Conserving Historic Streets In Jeddah KSA." *Fifth National Built Heritage Forum. Riyadh* (2015).
[2] Badawi, Samaa. "Sustainable Approach for Developing Local Mixed-use Streets Case Study Beit Al Maqdis Street in Jeddah." *Procedia Environmental Sciences* 37 (2017): 374-385.
[3] Badawi, Samaa, and Aida Nayer. "Jeddah City as A Contemporary Gateway: New Vision for City Smart Growth Management." *Procedia Environmental Sciences* 37 (2017): 330-341.
[4] Ewing, Reid, Susan Handy, Ross C. Brownson, Otto Clemente, and Emily Winston. "Identifying and measuring urban design qualities related to walkability." *Journal of Physical Activity and Health* 3, no. s1 (2006): S223-S240.
[5] Ewing, Reid. "Can the physical environment determine physical activity levels?." *Exercise and sport sciences reviews* 33, no. 2 (2005): 69-75.
[6] Moudon, Anne Vernez, and Chanam Lee. "Walking and bicycling: an evaluation of environmental audit instruments."*American Journal of Health Promotion* 18, no. 1 (2003): 21-37.
[7] Ewing, Reid, and Susan Handy. "Measuring the unmeasurable: Urban design qualities related to walkability."*Journal of Urban Design* 14, no. 1 (2009): 65-84.
[8] Jacobs, Allan B. "Great Streets." (1993): 23-27.
[9] Ewing, Reid H. "Pedestrian-and transit-friendly design." (1996).
[10] Lynch, Kevin. *The image of the city*. Vol. 11. MIT Press, 1960.
[11] Handy, Susan L. *Regional versus local accessibility: Variations in suburban form and the effects on non-work travel*. No. qt3rs4s3gc. University of California Transportation Center, 1992.
[12] Ewing, Reid, and Otto Clemente. *Measuring urban design: Metrics for livable places*. Island Press, 2013.

BIBLIOGRAPHY

Badawi, Samaa. "Sustainable Approach for Developing Local Mixed-use Streets Case Study Beit Al Maqdis Street in Jeddah." *Procedia Environmental Sciences* 37 (2017): 374-385.

Badawi, Samaa., & Elborombaly, Hossam. “New Technique for Developing and Conserving Historic Streets In Jeddah KSA “. *Fifth National Built Heritage Forum. Riyadh* (2015).

Badawi, Samaa, and Aida Nayer. "Jeddah City as A Contemporary Gateway: New Vision for City Smart Growth Management." *Procedia Environmental Sciences* 37 (2017): 330-341.

Ewing, Reid H. "Pedestrian-and transit-friendly design." (1996).

Ewing, Reid. "Can the physical environment determine physical activity levels?." *Exercise and sport sciences reviews* 33, no. 2 (2005): 69-75.

Ewing, Reid, and Susan Handy. "Measuring the unmeasurable: Urban design qualities related to walkability."*Journal of Urban Design* 14, no. 1 (2009): 65-84.

Ewing, Reid, and Otto Clemente. *Measuring urban design: Metrics for livable places*. Island Press, 2013.

Ewing, Reid, Susan Handy, Ross C. Brownson, Otto Clemente, and Emily Winston. "Identifying and measuring urban design qualities related to walkability." *Journal of Physical Activity and Health* 3, no. s1 (2006): S223-S240.

Handy, Susan L. *Regional versus local accessibility: Variations in suburban form and the effects on non-work travel*. No. qt3rs4s3gc. University of California Transportation Center, 1992.

Jacobs, Allan B. "Great Streets." (1993): 23-27.

Lynch, Kevin. *The image of the city*. Vol. 11. MIT Press, 1960.

Moudon, Anne Vernez, and Chanam Lee. "Walking and bicycling: an evaluation of environmental audit instruments."*American Journal of Health Promotion* 18, no. 1 (2003): 21-37.

CHANGING TIMES IN HOUSING PRODUCTION - MARKET-LED HOUSING TRANSFORMATION IN 21ST CENTURY NAIROBI

Author:
COLLINS SASAKAH MAKUNDA

Affiliation:
THE OSLO SCHOOL OF ARCHITECTURE AND DESIGN, NORWAY; UNIVERSITY OF NAIROBI, KENYA

INTODUCTION

Twenty-first century Nairobi is undergoing rapid transformation as a city in the wake of the twin challenge of rapid population growth and increasing urbanization that Kenya is experiencing. The unprecedented pressure is altering both the physical and social fabric of the city as it grapples with the magnitude of the unanticipated radical urban change. This is manifestly evident in the city´s western suburbs where historically well-planned exclusive residential neighborhoods, renowned for their preponderance of bungalows on ample plots,[1] have recently experienced a radical shift in housing typology from low density single-family units to high density multi-family apartment blocks.

This paper investigates the dynamics of the transformation that is altering how the city´s housing is produced and consumed; and in turn, how this is framing an emergent middle-class lifestyle. The research is based on a case study of a residential neighborhood in the west of the city that over the last decade of the current millennium has experienced rapid and radical transformation of its housing stock. The neighborhood's low-rise detached single-family housing units are quickly being replaced by high-rise multi-family apartment blocks. Qualitative interviews were conducted with key actors identified to be involved in the process of housing transformation in Nairobi. Additionally, apart from multiple site visits, field observations and documentation of the case study area, a review of relevant literature and documents was undertaken.

The key findings are that market-led logics driven primarily by property developers are reshaping the mode by which housing in the city is produced and consumed and this is leading to an emergent norm of vertical living for some of the city´s residents who aspire to a middle-class lifestyle. However, in the context of the rapid urban transformation, particularly in the densification of housing, the paper also draws attention to patently evident significant unsustainable outcomes, which urgently need to be addressed to safeguard the long-term viability of the city´s residential habitat.

Rapid Urban Transformation

Over the last decade, the city of Nairobi has experienced rapid transformation of its existing housing stock. This phenomenon is primarily evident in the western suburbs of the city where historically low-

rise low-density housing is rapidly being replaced by high-rise high density housing. This is largely seen as the consequence of a rapidly growing population in tandem with increasing urbanization and the consequent need for more housing. The city´s population has expanded by more than a million from 3.1 million at the last census in 2009[2] to almost 4.4 million in 2018, almost a decade later, at a growth rate of 3.87%.[3] A significant portion of this growing population is part of Africa´s rapidly growing middle class.[4] This income group is considered to be a strong factor influencing the need for more housing in the city.[5] It represents a category of the population that is able to either buy or rent new-build housing. Hence property developers largely tout this as the source of significant demand for new housing units.

The rapid urban transformation highlighted in the densification of low-density housing in low density neighborhoods in the west of the city, can arguably be viewed as occurring in a climate in which a market-oriented economic paradigm dominates the nature of the transformation. Consequently, market dynamics can be seen as governing property development in which the commodification of housing is the emergent impetus in the production of housing. The outcome of this is that the "exchange-value (profit-oriented)" of housing trumps its "use-value (everyday life)" as developer pursuit of profit undermines the viability of the urban habitat.[6] And all this occurring at a time when the local government (Nairobi City County Government) appears to have adopted a laissez-faire attitude towards the urban development of the city, in which property development projects are largely developer-driven.

Apartment buildings are rapidly becoming the norm for new housing that is emerging in the western suburbs of the city. A case in point is Kileleshwa neighborhood. This is a residential neighborhood situated four kilometers from Nairobi´s Central Business District (CBD).[7] It was established in colonial era Kenya as a low-density residential neighborhood with low density dwellings – primarily bungalows, most built in the 1950s and 1960s, on large lots ranging from three-quarters of an acre to one acre.[8] [9]

Kileleshwa is zoned for low density residential housing with the maximum permitted building height for each plot set at four storeys.[10] This regulation was largely adhered to for four decades after Kenya´s independence from the British in 1963. However, at the turn of the millennium, and for the greater part of the last decade, the zoning regulations for the neighborhood have been violated.

In actions that ostensibly illustrate the commodification of housing in the city as well as the exchange-value of housing overriding its use-value, developers are building apartment blocks that exceed the four-storey height limit that was put in place and which was commensurate with the infrastructural capacity of the neighborhood. Newly emergent apartments exceed four floors. They range from six floors to as high as thirteen floors – more than thrice the stipulated height limit. Thus, they are exerting enormous strain on extant infrastructure.

Property developers who wield a great deal of influence on property development, arguably due to their financial clout, appear to have an upper hand in the ongoing housing transformation as seen from their flagrant flouting of planning and building regulations. They drive the property development agenda and argue that building to the stipulated height limit of four floors is not only financially unviable but also that it would not supply sufficient apartment units to meet the prevailing need for more housing to accommodate the rapidly growing population. Despite these contentions, the developers´ push for ever higher apartment blocks accommodating more apartment units is arguably driven more by the need to make a significant return on investment than simply meeting the housing need. This has a number of consequences, most of which are unsustainable, such as the stretching of existing infrastructure beyond its limits.

CHALLENGES OF NEW HOUSING PRODUCTION

An economic paradigm prevails in a context in which sustainable development ought to be the dominant disposition. This is signified by the market-led approach to development that frames the mode by which housing is produced. This in turn has led to a number of challenges that can be understood at a variety of levels. The planning and building regulations in the city are not being enforced. Besides the informal settlements scattered throughout the city, this has historically been a problem associated with lower middle class and low-income residential areas in the east of the city.[11] However, recent years have seen the problem spread to the western suburbs of the city which were historically well planned and popularly referred to as the leafy green suburbs given the preponderance of mature trees.[12]

The current ad hoc unplanned mode of housing production that is market-led and developer-driven is resulting in both desirable and undesirable consequences for the residents of the neighborhood. More residents are now able to live in Kileleshwa, which is now accessible to more residents given the availability of apartments in contrast to single dwelling units that previously characterized the neighborhood´s housing. The neighborhood is fast transforming from a high-end neighborhood to a middle class one with many preferring to live in the neighborhood due not only to its historical prestige but also its proximity to the city centre, places of work, schooling and shopping. It is becoming a residential neighborhood where a middle-class lifestyle of modern apartment living and conspicuous consumption is the emergent desirable norm.

While it is evident that apartments do in fact increase the opportunity for more people to live in a given area, due to their higher density, when compared to low-density housing, as well as being more accessible due to their lower cost than detached single dwelling units; apartments, as a form of housing, do have certain impacts on the urban context that can lead to unsustainable outcomes if not handled carefully.

In the case of Kileleshwa, an emergent trend is that a well-planned residential neighborhood is fast becoming an unplanned one. The apartments being developed are emerging in an ad hoc manner at the individual plot level without reference to the overall urban context. The apartments not only exceed the stipulated height limit (see Figure 1) but also have larger building footprints well above those envisaged in the area´s zoning guidelines. They are built up to the property line with little regard for necessary setbacks and in some cases apartment balconies overhang boundary walls.

Figure 1. A high-rise apartment block under construction in Kileleshwa, Nairobi, (March 2018)

Consequently, challenges related to the issue of sustainability are emerging in the urban context. Trees have been cut down to make room for the larger building footprint of the apartments. The larger footprints in tandem with expansive paved surface areas on the plots, for driveways, have increased surface water runoff during heavy rains resulting in annual flooding in the lower region of the neighborhood during the rainy season[13] as the capacity of the extant drainage system is exceeded.

With an apartment block of more than 50 units replacing a single dwelling unit on a given plot, excessive pressure has been exerted on infrastructure such as the water supply to the neighborhood. While developers have sought to remedy the situation by drilling boreholes on each plot in which they develop apartments, they are largely unregulated. Kenya´s Water Resources Management Authority (WARMA) recently suspended the issuance of ground water permits in the Nairobi Metro Region citing, amongst other issues, illegal drilling and over-abstraction as well as the violation of recommended spacing between boreholes.[14] This raises concerns over the safety of the water being supplied to the apartments since their proximity to the sewer line has not been officially regulated to avoid the risk of contamination. Moreover, the risk of building subsidence due to excessive withdrawal of water from the underground aquifers is not being attended to.

In some instances, some apartment blocks are not connected to the sewer line. They are instead connected to septic tanks that were a feature of the extant low density residential neighborhood. The septic tanks while appropriate for low density developments are highly inappropriate and unsustainable for higher density ones with their commensurate higher volumes of effluent.

With more people accommodated in apartments, many of whom, as part of the middle-class lifestyle, own and drive cars, severe vehicular congestion on the road, besides air pollution from exhaust fumes,

is now a common feature with lengthening weekday traffic jams occurring during the morning and evening rash hours.

Some apartments have encroached onto riparian land thus are exposed to flooding during the rainy season. Moreover, the encroachment takes away a potential public space that could be developed as a public amenity with bike lanes and walkways for pedestrian use by the river as well as for the planting of trees that would not only improve the micro-climate of the neighborhood but act as carbon sinks for the city as well.

Due to poor apartment block layout design, children lack open space or play areas in which to play within the apartment complexes. They are hence forced to play on the hard asphalt or tarmac driveways and parking lots thus risking serious injuries and bruises from falls when playing. In addition, lack of common public space for recreation in Kileleshwa neighborhood, which would provide more opportunities for interaction amongst the residents, minimizes the likelihood of a cohesive community forming.

The current ad hoc development of apartments without due regard for building and planning regulations is fostering undesirable outcomes in the case study residential neighborhood.

NEED FOR CHANGES TOWARDS A SUSTAINABLE FUTURE

Kenya has a housing deficit of 2 million units with an annual shortfall of 200,000 units with only 50,000 units supplied annually.[15] [16] While apartment development contributes towards plugging this housing deficit, this should be done sustainably. A sustainable approach requires a balance between economic, social and environmental dimensions.[17]

For sustainable urban development to be achieved, sustainable planning practices should be enshrined in the city´s development approach.[18] This would entail not only enforcing extant regulations but also, more importantly, modifying them in line with a move towards a more sustainable future for the city through the use of appropriate guidelines and measures.

This could include energy conservation strategies such as the use of solar panels; incorporation of green roofs; collection of water using porous pavers; sustainable transportation that allows for alternative modes of mobility; provision of public open space as a social amenity; protection of riparian land along the river banks; planned property development rather than the current ad hoc approach to property development; and upgraded infrastructure that is commensurate with current and future needs.

Kenya´s Energy Regulatory Commission requires that residential buildings that use 100 litres of water or more to install solar panels for water heating.[19] If complied with the regulation would contribute to sustainable energy use, however, its implementation is uneven since some new apartment buildings lack solar panels.

With apartment development and loss of green space on the ground level due to the larger footprint of apartment blocks, an opportunity exists to take advantage of their flat roofs through the incorporation of green roofs as a passive means of cooling the buildings.

Better designs and planning of apartment blocks would incorporate open space on the ground level to accommodate play areas and play equipment as well as communal space for residents. Many of the families moving into the new apartments have young children who need easily accessible and safe playing areas.

The paving used for driveways should be porous to allow rainwater to seep through and recharge underground reservoirs. Greenery would compensate for the trees cut down to make room for apartment blocks.

There is a need for alternative modes of mobility for residential neighborhoods such as Kileleshwa that are rapidly becoming high-density residential zones. This would require the development of pedestrian walkways and bike lanes, in addition to the use of buses, as well as taking advantage of the two rivers that form part of the boundary of the neighborhood. The two rivers could be made into public recreational amenities such as a greenway that could provide access to the CBD without recourse to vehicular use.

The Nairobi River Regeneration Task Force recently began the process of demolishing structures that had encroached on riparian land in various parts of the city including Kileleshwa.[20] A petrol service station, a café, an apartment block and boundary walls for several apartment blocks, which had encroached on riparian land in Kileleshwa were demolished.[21] [22] However, the riparian land thus reclaimed needs to be developed as public recreational space, which would act as both an accessible amenity as well as a means of flood control during the annual heavy rains.

In late 2017, the Nairobi City County Assembly passed a motion to densify all neighborhoods in the western suburbs of Nairobi to accommodate the city´s growing population.[23] [24] The proposal, if effected, would amount to ad hoc planning. It is unlikely to result in sustainable outcomes if unaccompanied by proper planning for densification, enforcement of planning and building regulations, the upgrading of existing infrastructure – particularly water and electricity supply, sewage and storm water drainage systems, and the adoption of deliberate strategies towards sustainability.

The extant infrastructure of neighborhoods such as Kileleshwa that were planned for low-density development is unlikely to accommodate the densification of all the single dwelling units. This would exceed the carrying capacity of the neighborhood. Moreover, there ought to be a diversity of building types to contribute to the richness and diversity of income groups as well as the urban fabric of the residential neighborhood. A proper plan is needed that ensures adequate infrastructure is provided to support the building typologies that are allowed to be developed in the residential neighborhood.

Given the current development trajectory, there is need for the city to reign in irregular property development through the enforcement of building and planning regulations. And, beyond development control, the city´s county government needs to adopt a proactive development approach aimed at guiding the rapidly growing city towards a more sustainable future rather than simply capitulating to market forces.

CONCLUSION

With Nairobi´s growing population, rapid urbanization and expanding middle class, the need for housing is a pressing challenge. A clear and well thought out plan will be necessary to rationally address the growing challenge. In the market-led context of Nairobi where apartment development is primarily developer-driven, the emergent apartments being developed, a number of which are poorly designed, are primarily the result of the profit-motive. It is not enough to focus on providing more housing. The quality and sustainability of the housing and the sustainability of the urban context in which it is situated should feature prominently in the choices and decisions made. However, with limited government regulation and enforcement of planning and building regulations, unsustainable outcomes will likely continue to manifest in the city´s housing production. For this to change, sustainable planning practices and guidelines will be needed.[25] The carrying capacity of the neighborhood and provision of adequate infrastructure should be critical factors in determining the form of housing allowed in the future development of low-density residential neighborhoods. A holistic approach to the development of housing for the city as a whole is necessary if the growing population is to be adequately accommodated.

Densifying all low-density neighborhoods in the west of the city will not solve the problem because the apartments being developed thus far are not affordable to the majority of the city residents and are not being developed sustainably. Affordable housing units will need to be provided along with the market-rate ones to increase neighborhood accessibility. Minimum design standards for apartments would need to be developed as well to ensure that they enhance the quality of life, sense of community and sustainability of the urban habitat. However, all this will require the city´s county government to enforce regulations, which will entail not only curbing irregular practices that are leading to changes for the worse in the city but also a deliberate focus on the betterment and future sustainability of the growing city as the driving agenda for approaches that are adopted.

NOTES

[1] Bill Freund, *The African City: A History* (Cambridge: Cambridge University Press, 2007), 79.
[2] "The 2009 Kenya Population and Housing Census: Population and Household Distribution by Socio-economic Characteristics," Kenya National Bureau of Statistics, accessed November 15, 2018, https://www.knbs.or.ke/publications/
[3] "Nairobi Population 2018," World Population Review, accessed December 30, 2019, http://worldpopulationreview.com/world-cities/nairobi-population/
[4] "The Middle of the Pyramid: Dynamics of the Middle Class in Africa," African Development Bank, accessed December 10, 2018, https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/The%20Middle%20of%20the%20Pyramid_The%20Middle%20of%20the%20Pyramid.pdf
[5] "Cytonn Annual Markets Review," Cytonn Investments, accessed January 6, 2019, https://cytonnreport.com/research/cytonn-annual-markets-review-2018#real-estate
[6] Neil Brenner et al, "Cities for People not for Profit: An Introduction," in *Cities for People not for Profit: Critical Urban Theory and the Right to the City*, ed. Neil Brenner et al. (New York: Routledge, 2012), 3 – 4.
[7] "Kileleshwa," Hass Consult Real Estate, accessed January 9, 2019, http://hassconsult.co.ke/real-estate/index.php/suburb-profiles/26-kileleshwa?g=0&location=Kileleshwa
[8] Bill Freund, *The African City,* 79.
[9] Hass Consult Real Estate, "Kileleshwa."
[10] "A guide of Nairobi city development ordinances and zones," Nairobi City County Government, accessed November 15, 2018, https://ccn-ecp.or.ke/asset_uplds/files/zoneguide.pdf.
[11] Marie Huchzermeyer, *Tenement Cities: From 19th Century Berlin to 21st Century Nairobi* (Trenton: Africa World Press, 2011), 123 – 232.
[12] "Suburb Profiles," Hass Consult Real Estate, accessed January 9, 2019, http://hassconsult.co.ke/real-estate/suburb-profiles?g=1
[13] Collins S. Makunda and Håkan Edeholt, "How African Design Perspectives Challenge Sustainable Development," *Conference Papers – International Sustainable Development Research Society Conference* (2016 Annual Meeting): 136-150.
[14] "Questions as WARMA Stops Borehole Permits for Nairobi Region," Consumer Federation of Kenya, accessed January 5, 2019, http://www.cofek.co.ke/index.php/news-and-media/2050-questions-as-warma-suspends-borehole-permits-issuance-for-nairobi-region
[15] "Kenya economic update: Housing unavailable and unaffordable," World Bank Group, accessed November 16 2018, http://documents.worldbank.org/curated/en/988191491576935397/pdf/114115-REVISED-PUBLIC-KenyaEconomicUpdateFINALFINALMay.pdf
[16] "Housing Shortage," Government of the Republic of Kenya, accessed November 25, 2018, http://www.transport.go.ke/Projects.html
[17] "Our Common Future," World Commission on Environment and Development, accessed March 27, 2019, http://www.un-documents.net/our-common-future.pdf
[18] Collins S. Makunda, "Sustainable Housing through Sustainable Planning Practices: Challenges and Opportunities for Formal Housing Provision in Nairobi, Kenya," in *Lifelong Learning and Education in Healthy and Sustainable Cities. World Sustainability Series*, ed. Ulisses M. Azeiteiro et al. (Cham: Springer, 2018), 539 – 549.
[19] Peter Muiruri, "It Will Soon Be Illegal Not to Have Solar Water Heating System," *Standard*, March 16, 2017, https://www.standardmedia.co.ke/business/article/2001232857/it-will-soon-be-illegal-not-to-have-solar-water-heating-system
[20] Jecknia Otieno, "Why Cleaning Nairobi Rivers is no Walk in the Park for Task Force," *Standard*, September 9, 2018, https://www.standardmedia.co.ke/article/2001295030/why-cleaning-nairobi-rivers-is-no-walk-in-the-park-for-task-force
[21] Geoffrey Mosoku, "More Multi-Billion-Shilling Properties to be Demolished," *Standard*, August 9, 2018, https://www.standardmedia.co.ke/article/2001291214/more-multi-billion-shilling-properties-to-be-demolished
[22] Josephat Thiong´o, "More Structures Brought Down in City Estate," *Standard*, August 8, 2018, https://www.standardmedia.co.ke/article/2001291105/more-structures-brought-down-in-city-estate
[23] "Population growth (annual %)," World Bank, accessed November 16, 2018, https://data.worldbank.org/indicator/SP.POP.GROW?end=2016&start=1961

[24] Lillian Mutavi, "New City Zoning Laws to Allow Flats in Posh Areas," *Daily Nation*, February 22, 2018, https://www.nation.co.ke/lifestyle/dn2/New-city-zoning-laws-to-allow-flats-in-posh-areas/957860-4315112-oa0s7oz/index.html

[25] Makunda, "Sustainable Housing," 539 – 549.

BIBLIOGRAPHY

African Development Bank. "The Middle of the Pyramid: Dynamics of the Middle Class in Africa." Accessed December 10, 2018. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/The%20Middle%20of%20the%20Pyramid_The%20Middle%20of%20the%20Pyramid.pdf

Brenner, Neil, Marcuse, Peter, and Mayer, Margit. "Cities for People not for Profit: An Introduction." In *Cities for People not for Profit: Critical Urban Theory and the Right to the City*, edited by Neil Brenner, Peter Marcuse, and Margit Mayer, 1 – 10. New York: Routledge.

Consumer Federation of Kenya. "Questions as WARMA Stops Borehole Permits for Nairobi Region." Accessed January 5, 2019. http://www.cofek.co.ke/index.php/news-and-media/2050-questions-as-warma-suspends-borehole-permits-issuance-for-nairobi-region

Cytonn Investments. "Cytonn Annual Markets Review." Accessed January 6, 2019, https://cytonnreport.com/research/cytonn-annual-markets-review-2018#real-estate

Freund, Bill. *The African City: A History*. Cambridge: Cambridge University Press, 2007.

Government of the Republic of Kenya. "Housing Shortage." Accessed November 25, 2018. http://www.transport.go.ke/Projects.html

Hass Consult Real Estate. "Kileleshwa." Accessed January 9, 2019.

Hass Consult Real Estate. "Kileleshwa."

Hass Consult Real Estate. "Suburb Profiles." Accessed January 9, 2019, http://hassconsult.co.ke/real-estate/suburb-profiles?g=1

Huchzermeyer, Marie. *Tenement Cities: From 19th Century Berlin to 21st Century Nairobi*. Trenton: Africa World Press, 2011.

Kenya National Bureau of Statistics. "The 2009 Kenya Population and Housing Census: Population and Household Distribution by Socio-economic Characteristics." Accessed November 15, 2018. https://www.knbs.or.ke/publications/

Makunda, Collins S. "Sustainable Housing through Sustainable Planning Practices: Challenges and Opportunities for Formal Housing Provision in Nairobi, Kenya." In *Lifelong Learning and Education in Healthy and Sustainable Cities. World Sustainability Series*, edited by Ulisses M. Azeiteiro, Marco Akerman, Walter L. Filho, Andréia F.F. Setti, and Luciana L. Brandi, L, 539 – 549. Cham: Springer, 2018.

Makunda, Collins S, and Edeholt, Håkan. "How African Design Perspectives Challenge Sustainable Development." *Conference Papers – International Sustainable Development Research Society Conference* (2016 Annual Meeting): 136-150.

Mosoku, Geoffrey. "More Multi-Billion-Shilling Properties to be Demolished." *Standard*, August 9, 2018. https://www.standardmedia.co.ke/article/2001291214/more-multi-billion-shilling-properties-to-be-demolished

Nairobi City County Government. "A guide of Nairobi city development ordinances and zones." Accessed November 15, 2018. https://ccn-ecp.or.ke/asset_uplds/files/zoneguide.pdf.

Muiruri, Peter. "It Will Soon Be Illegal Not to Have Solar Water Heating System." *Standard*, March 16, 2017. https://www.standardmedia.co.ke/business/article/2001232857/it-will-soon-be-illegal-not-to-have-solar-water-heating-system

Mutavi, Lillian. "New City Zoning Laws to Allow Flats in Posh Areas." *Daily Nation*, February 22, 2018. https://www.nation.co.ke/lifestyle/dn2/New-city-zoning-laws-to-allow-flats-in-posh-areas/957860-4315112-oa0s7oz/index.html

Otieno, Jecknia. "Why Cleaning Nairobi Rivers is no Walk in the Park for Task Force." *Standard*, September 9, 2018. https://www.standardmedia.co.ke/article/2001295030/why-cleaning-nairobi-rivers-is-no-walk-in-the-park-for-task-force

Thiong´o, Josephat. “More Structures Brought Down in City Estate.” *Standard*, August 8, 2018. https://www.standardmedia.co.ke/article/2001291105/more-structures-brought-down-in-city-estate

World Bank. “Population growth (annual %).” Accessed November 16, 2018, https://data.worldbank.org/indicator/SP.POP.GROW?end=2016&start=1961

World Bank Group. “Kenya economic update: Housing unavailable and unaffordable.” Accessed November 16 2018, http://documents.worldbank.org/curated/en/988191491576935397/pdf/114115-REVISED-PUBLIC-KenyaEconomicUpdateFINALFINALMay.pdf

World Commission on Environment and Development. “Our Common Future.” Accessed March 27, 2019. http://www.un-documents.net/our-common-future.pdf

World Population Review. “Nairobi Population 2018.” Accessed December 30, 2018. http://worldpopulationreview.com/world-cities/nairobi-population/

A NOVEL APPROACH TO URBAN DWELLINGS - THE CASE OF THE K'SOUR IN THE M'ZAB VALLEY ALGERIA

Authors:
HOCINE BOUGDAH, ANIA DJERMOULI

Affiliation:
UNIVERSITY FOR THE CREATIVE ARTS, UK

INTRODUCTION

In the aftermath of the independence of Algeria in 1962, the attention was turned to what the decision makers saw as a priority, economic development. The worsening of the housing conditions had major socio-economic implications and important transformations in the spatial organization of the cities. According to Benameur (2010), these changes are due to four main factors:

- Rural migration, which was first encouraged by the French administration as a means of counter insurgency. This has continued after the independence due to the lack of employment outside the urban centres.
- Fast urbanisation.
- Demographic growth.
- Non-prioritisation of the housing sector.

According to Deluz (2010) the post-independence urban housing typologies could be described as; *identical blocks* typology - an adaptation of the idea of *Les Grands Ensembles* from the colonial era but offering less pleasant models-, the *tower* typology of up to 15 storeys housing blocks adopted relatively recently, the *villa* typology- privately owned single-family dwellings and the *shantytown* typology where the poor and most disadvantaged classes live.

Starting from this position, the present work will seek to identify alternatives to the current urban dwelling typologies which seem to fail in addressing the needs and aspirations of its users. The work is part of a larger project into the relationship between architecture and culture in post-independence Algeria through the lens of urban dwellings (Djermouli, 2019). In this paper, the discussion of alternative urban dwelling typologies is undertaken is limited to the region of Ghardaia in the South of Algeria. The discussion is undertaken using both primary and secondary research, in the form of field interviews /observations and literature-based case study analysis.

URBAN FAILURES

In a research project undertaken to relate the design of housing units in Algeria to the social and cultural needs of the people who live in them, the author came to the conclusion that neither international modernism, in housing provision, nor an attempt to slavishly copy past indigenous solutions are likely

to be successful" (Chabbi, 1988). While the occupiers of the traditional settlements were making changes and conversions in order to introduce the new technologies into their dwellings such as gas and sanitary fixtures, the occupiers of the new dwellings were trying to fulfil their needs for privacy and more space that were neglected in the new designs. The author argues that although neither housing type was a full success, each one of them has something to offer. Djiar (2004) investigated the effect of French colonialism on the way Algerians use the domestic space and the ideal domestic architecture that can be culturally appropriate for them in a post-independence Algeria. The author interviewed dwellers in Algiers, of both the old city-Casbah- and those in apartments built during the colonial era. According to the author, there are similarities in the concerns that were raised by the two groups of the respondents such as the small size of the dwelling, the lack of privacy and dedicated spaces, internal arrangements…etc. However, the author noticed that dwellers of the colonial era apartments were more concerned with the issues related to the internal spaces, those from the Casbah were more concerned with the nature of the community lifestyle. The investigation showed that the amount of social interaction became weak within the housing estates with the apartment typology. The respondents living in the Casbah explained that this typology has always reinforced social ties as it is usually occupied by extended families. The author arrived at the conclusion that the influence of the colonial era has a long-lasting effect on Algerian's culture given that the findings show that: "…the typical courtyard house of the Algiers Casbah is now-for the majority of respondents- a less welcome architectural form for future housing than the colonial flat typology" (Djiar, 2007). As far as this research is concerned, failure or success of post-independence urban dwellings in Algeria will depend on the extent to which the housing schemes can address the socio-cultural needs of the inhabitants.

The excessive urbanization that resulted from the adoption of the new urban housing areas 'ZHUN' and the creation of the new suburban housing estates showed clearly the dysfunction of the Algerian cities. According to Harkat (2013), the housing estates that were built in the 50s (colonial era) in the suburbs had no infrastructure and amenities to go with them. According to the author the housing estates of the 70s seem to follow suit as they were being austere in terms of facilities and to make things worse, they were even further from the urban centres. He goes on to explain that it is only in the 80s, that the new housing developments saw the introduction of basic infrastructure, which made them function better.

Benameur (2010) describes the creation of the 'ZHUN' as an engine of urbanization given the important number of housing units that they provided. Despite this, they failed on different levels as the emphasis was on quantity and not quality and the architectural and urban aspects were completely ignored. This urban expansion created neighborhoods isolated from the city and with no architectural or urban identity. Furthermore, according to the author, the social dimension was completely ignored. The users were excluded from the whole process; hence, there was no consideration of the identity, socio-cultural values and aspirations of the dwellers. Other failures that various researchers have described include:

- Technical failures (Hadjri, 1993)
- Socio-economic failures (Heraou, 2012)
- Inadequate design briefs (Heraou, 2012; Hadjri, 1993; Benameur, 2010; Harkat, 2013)
- External spaces (Benameur, 2010; Harkat, 2013)
- Internal layout of dwellings (Benameur, 2010; Heraou, 2012; Harkat, 2013; Hadjri, 1993)

Even the self/privately built dwellings, introduced as part of the market deregulation introduced in the 1990s do not present a better scenario. The neighborhoods are characterized by the lack of basic infrastructure and facilities such as roads surfaces, pavements, drainage systems and so on (Safar-Zitoun, 2009). Deluz (2010) argues that there is a cultural problem in this sector; as it is supposed to

present diversity given that it relies on the initiative of the owner, but the reality is different. Both Deluz (2010) and Hadjri (1993) argue that the only existing difference is reflecting the different social strata in the society. Architectural elements of this style are repeated to become the sign of a social condition presented through artificial elements such as the baluster from the classical style, the roofs with steep angles and balconies that are useless and unnecessary (Deluz, 2010). While these failures are experienced throughout the country, the South of the country seem to lead the way in seeking alternative dwellings models to reverse the negative impact of these failures. The New K'sour initiatives in the M'Zab valley is such an example (Chabi and Dahli, 2011).

THE NEW K'SOUR AS COMMUNITY DRIVEN INITIATIVES

Faced with the architectural identity crisis and the socio-cultural failures of cities in Algeria, a new approach to the procurement of urban dwellings in the M'Zab valley in the Northern desert- a UNESCO world heritage site since 1982 - is worth studying. It is a new urban settlement that goes by the name K'sar Tafilelt, built to the South of Beni-Isguen, one of the five k'sour1 in the valley. This heritage inspired; community driven initiative is particularly relevant to the argument being developed throughout this paper. The initiative was started by a non-profit local community association called "Amidoul". The initiative leaders have put heritage, both tangible and intangible, at the heart of the project as they went back to the socio-cultural and urban structures of the old M'Zab, while reinterpreting and adapting them for the contemporary way of life. These factors combined, have led to a huge success for this award-winning project, which is gaining the praise of architects, urban planners and researchers alike (Bouali-Messahel, 2011; Ali-Toudert et al., 2005). One of the significant comments is that by Chabi and Dahli (2011): "K'sar Tafilelt has allowed the restoration of a traditional way of life based on faith and self-reliance. This great experience has been used as a reference for a new responsible approach to urban planning, which ensures safeguarding the M'Zab Valley while honouring the local culture" (Chabi and Dahli, 2011).

The project, which was completed in 2006, was conceived and constructed as a way to provide some much-needed housing while reviving some ancestral socio-cultural and architectural practices and contributing to the halting of the unchecked expansion of the Beni-Isguen settlement at the expense of much needed palm groves. Having the site for the new settlement on top of a rocky outcrop meant that the much in demand and scarcely available fertile land is preserved (see Figure 1).

The Ksar as a Heritage Inspired Project - The case of Tafilet

According to the community-based association behind the inception, design, financing, construction and management of the project (Fondation Amidoul):" Self-reliance and social volunteering, two ancestral values of the M'Zab region, associated with the participation of the state through the National Housing Fund 'CNL', have helped to make the project a reality. The development of the settlement was based on four principles that informed its design, construction and post-completion management. The first of these is to conceive a settlement that is adaptable to its context ecologically, economically, socially and culturally. The second principle is to follow ancestral values that inform the design and use of space (both the domestic and urban) as well as the use and management of available resources (social volunteering and the use of local materials as far as possible). In this respect, the project instigators state clearly that the use of local materials such as stone, lime and plaster instead of concrete to build the settlement, combined with volunteering local workforce is informed by those ancient socio-cultural values inherited through the generations. The third principle involved in the development of the project

relates to the second one, but in a specific way to managing the energy resources. Half of the wastewater is re-filtrated using biological methods, while the street lighting system is fed directly from solar energy and household waste is sorted to avoid dumping non-degradable waste into the ground. The fourth and final principle is purely social and comes from the traditional values of living together as a community supporting each other. In this respect, each family living in the K'sar is responsible for keeping its neighborhood clean for a week. Furthermore, the development of the zoological park requires of each inhabitant to plant three trees, a palm tree, and ornamental tree and a fruit tree.

Figure1. Tafilelt conceived as a settlement to relieve the pressure on the palm grove

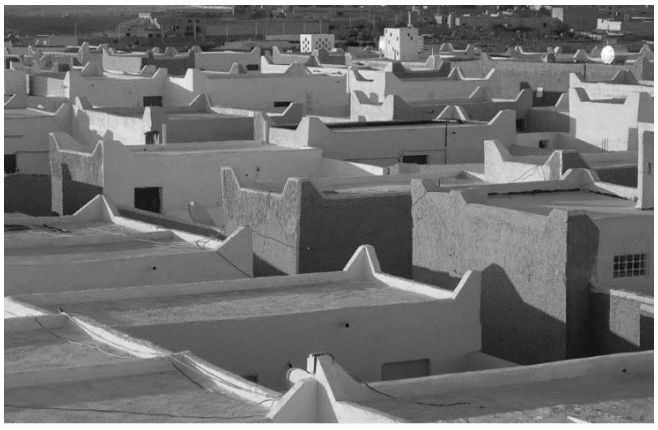


Figure 2. Tafilelt as a highly compact layout (source: Aga Khan Foundation)

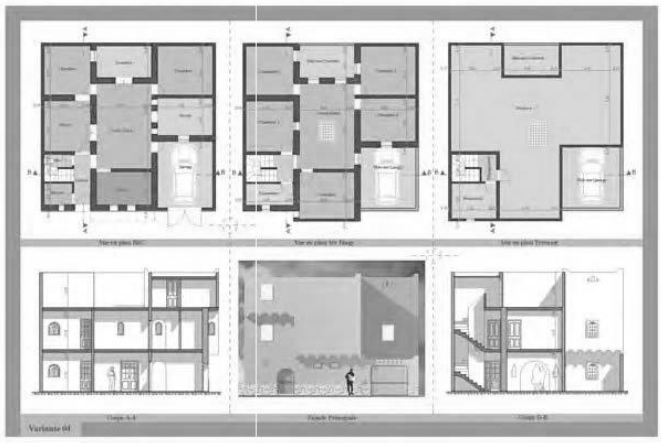


Figure 3. The use of thick walls for cooling (source: Aga Khan Foundation)

Figure 4. The use of thick walls for cooling (source: Tafilelt.com

Figure 5. The use of thick walls for cooling (source: Tafilelt.com

FIELD BASED STUDY - THE NEW K'SAR OF TINEMMIRINE

In order to test some of the claims in the literature about the new k'sour (Babaammi, 2016; Chabi and Dahli, 2013) and the extent to which this type of urban settlement addresses the socio-cultural concerns of the dwellers, a field-based investigation was carried out, using semi structured interviews and observations in the k'sar Tinemmirine, one of the new k'sour (just like Tafilelt described earlier). The

70 dwellings scheme was initiated and delivered by the association 'Touiza' an attempt to search for solutions for a multifaceted problem and a crisis that resulted from thirty years of anachronistic management by both local and central governments which is putting at risk the material and immaterial heritage of the M'zab Valley. According to the designer the scheme will strengthen the bonds between the k'sar and the neighbouring communities, preserve the agricultural land and help mitigate against flooding of the river Oued M'Zab (Figure 6). This strategy is aiming to stop the urbanization of the valley, based on randomly chosen new sites and make the inhabitants of the neighbouring K'sar Beni-Isguen feel at home with its tradition inspired architecture.

Figure 6. Aerial view showing the new K'sar Tinemmirine as part of the M'Zab valley

Urban and Architectural Aspects

According to the designer, the urban and architectural aspects of the K'sar should preserve the intimacy of the families, promote social cohesion and respect the traditions (tradition inspired urban layout). Given that the project had a very limited budget, each step in the building process was thought through in order to use effective and less costly methods. The designer started by drawing the roads following the topography of the site (same contour lines). the pedestrian paths were added, including stairs to deal with the level differences of the site. The rest of the site is then divided into plots of different shapes, intended for dwellings and public buildings. The design of the dwellings received much attention from the designer to arrive to dwelling units that are all different from each other due to the irregular shapes of the plots. The challenge according to the designer is to get the spatial layout right, as it should be functional to allow the management of the space and adaptable to the way of life of its occupants. The local arid climate in the region was taken into consideration in the design too. This is reflected in the sinuous and narrow alleyways to promote shading, small openings in the facades.

Figure 7. Covered passage / gathering space, Tinemmirine

Community Participation

At the heart of the scheme community participation in the finance, construction and design processes as well as the use of local materials are two cornerstone that give such developments a character of novelty. The financial participation of the future dwellers to the costs of the project is a contribution of 60000 Dinars which represents just under sixteen per cent of the cost of one hundred square meter dwelling including a nine square meter courtyard. Further involvement of the community is seen through consultation as part of the design process and taking part in the construction work of the dwellings in the form of sixty working Fridays per beneficiary.

Outcomes of the Field Study

Semi-structured interviews were conducted in Ghardaia; with dwellers from different types of urban dwellings including those living in the *k'sar*. The interviews extended to other stakeholders including designers and decision makers in the area of urban dwellings. Reading through the transcripts helped to identify some issues and key words that are discussed as follow:

- The guest room: Five out of the seven visited dwellings have a room for the guests; it is either part of the design or part of an adaptation of the dwelling. Unlike what is generally known in the urban centres of Northern Algeria, this room is not used by the families for any other activities than receiving guests.
- The *Sqifa* (or entrance space): This space is very important in the traditional houses. The dwellings in the *K'sar* were designed with a *Sqifa* given that it is based on the traditional dwellings' design combined with the needs of contemporary living.
- The central space/courtyard: *Tinemmirine* dwellings have a traditional covered central space (West-eddar in Figure 8) with a ceiling opening called *Chbek*, just like most dwelling types in the region that have either a central space or an open backyard.
- The roof terrace is an important feature, particularly for family gathering and sleeping during summer nights and a place for domestic chores.
- Building materials: An important point that was discussed with the dwellers in Ghardaia and not in the North is the materials used in the building. The choice of materials in the South is very crucial given that the climatic conditions are different. The construction techniques and

materials used in tradition inspired *k'sour* dwellings have effective thermal performance (thermal mass, self-shading, natural ventilation, etc.). furthermore, the choice of such materials combined with financing and construction methods based on community participation has led to strengthening the social bonds within a culturally relevant context that contributes to preserving a way of life and mitigating against the impact associated with fast chaotic urbanization at the expense of a fragile environmental context such as that of the palm groves in the M'Zab valley.

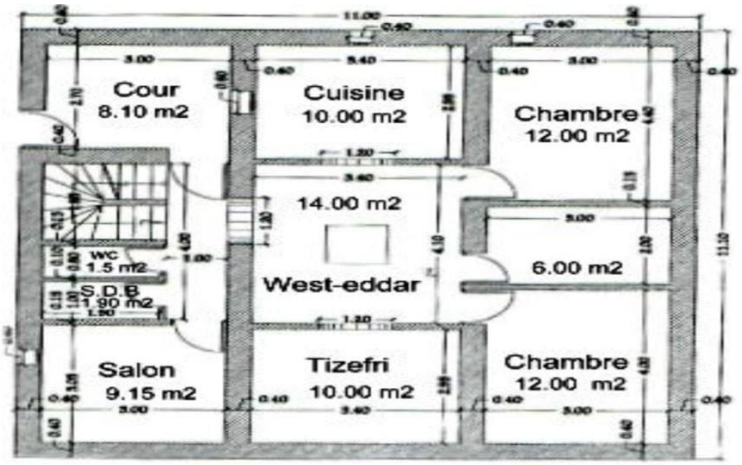


Figure 8. A floor plan of a house in the K'sar Tinemmirine

Figure 9. A typical example of the central space in a dwelling (Source: Aga Khan Award for Architecture

CONCLUSION

The work described in this paper has sought to look at efforts to find alternatives to the failing urban housing models currently found in Algeria. The new *K'sour* initiatives in the M'Zab valley in the South of Algeria seem to offer hope and point out the way forward for developing new urban housing models. The field-based study carried out in Ghardaia, through interviews and observation, has identified a number of aspects of the new community driven initiatives to finance, design, build and manage urban

dwellings. While these initiatives, such as those in the *K'sar Tafilelt* and *K'sar Tinemmirine,* are context specific, they can start pointing the way to other initiatives throughout the country to develop new ways of procuring urban dwellings that could start a process of reversing the current failures of the urban environment in Algeria. The physical, spatial and urban characteristics of the dwellings provided under these initiatives as well as their methods of financing and construction offer a number if lessons that designers and decision makers in the North of Algeria could learn from and adapt to the local conditions in order to develop socially, economically, culturally and environmentally relevant urban dwelling models that looks at the housing provision more than a mere quantitative problem but rather one that can contribute to redefining a lost identity of the urban centers.

NOTES

[1] K'sour is the plural for K'sar, which is the local name for an urban settlement or town, which historically used to be fortified.

BIBLIOGRAPHY

Ali-Toudert, F., M. Djenane, R. Bensalem and H. Mayer. 2005. "Outdoor thermal comfort in the old desert city of Beni-Isguen, Algeria," *Climate Research* 28.

Babaammi, A. 2016. "Interview by Akli Amrouch," *Vies de Villes,* May 24.

Benameur A, H. 2010. "*La residentialisation: Une alternative au manqué d'urbanite des grands ensembles. Pour une approche de renouvellement urbain –Cas de la ZHUN de Bab Ezzouar."* Master thesis, Universite Mentouri Constantine.

Bouali-Messahel, M. "Tafilelt, un projet communautaire pour la sauvegarde de la vallée du M'Zab." Centre de recherches sur l'habitat, UMR Lavue (CNRS, 7218), ENSA Paris Val de Seine, 2011.

Chabbi, N. 1988. "*Towards a socio-cultural approach for the design of the house/settlement system. A case study in Ghardaia, Algeria*." PhD Thesis, University of Newcastle Upon Tyne, UK.

Chabi, M. and M. Dahli. "Une nouvelle ville saharienne Sur les traces de l'architecture traditionnelle." Presented at the Mediterranean Cities and climate change conference, Rouen, France, 2011.

Chabi, M. and M. Dahli, "Le patrimoine: Un référent pour le renouvellement urbain? Cas des ksour du M'Zab." Université Mouloud Mammeri, Tizi-Ouzou, Algeria, 2013.

Deluz Jean Jacues. 2018. "La croissance d'Alger, de la ville extensive à la ville en réseau Uniformité ou diversité, discontinuités ou continuités." *The European Journal of Planning*. Accessed June 2019, http://www.planum.net

Djermouli Ania. 2019. "*Architecture and Culture in Post-Independence Algeria: The Case of Urban Dwellings."* PhD Thesis, University of Brighton, UK.

Djiar K, A. 2004. "*War on the Casbah: Housing, Culture and French Colonial Policy in Algiers."* PhD Thesis, University Westminster, UK.

Djiar K, A. 2007. "*The Politics and Housing in 1950s French Algiers,"* In *The politics of making,* edited by M. Swenarton, I. Troiani and H. Webster, 36-48. London: Routledge.

Fondation Amidoul. "Ksar Tafilelt." Accessed July 01, 2019. http://tafilelt.com/site/

Hadjri K. "Algerian housing policies, practices and end product." *Joint Centre for Urban Design*, Oxford Brooks University, Oxford, UK, 1993.

Harkat K. 2013. "*L'habitat urbain collectif et forme(s) urbaine(s) en Algerie. Etude de cas: Ville de Skikda quartier Salah Boulkeroua."* These de Magister, Universite Badji Mokhtar, Annaba, Algeria.

Heraou A. 2012. "*Evolution des politiques de l'habitat en Algerie, le L.S.P comme solution a la crise chronique du logement cas d'etude la ville de chelghoum laid."* These de Magister, Universite Ferhat Abbas Setif, Algeria.

Safar-Zitoun M. 2009. "*Les strategies residentielles des acteurs sociaux dans un contexte de modernisation bloquee: Alger 1962-1998."* In *La ville et l'urbain dans le Monde arabe et en Europe,* edited by P. R. Baduel, 109-133. Paris: Institut de recherche sur le Maghreb contemporain.

A RIVER AND WARFARE - EXPLORING WAR ANECDOTES AND LANDSCAPE VARIANCES ALONG THE RIVER SPREE

Author:
DIANNE LÊ

Affiliation:
RUTGERS UNIVERSITY, USA

INTRODUCTION

Water is amorphous, replenishing, destructive, and transient. It is an essential element to which life on Earth thrives and ceases to remain stagnant in position nor state. Water gives and takes away life, existing synchronously in organisms and natural disasters. The city of Berlin, Germany's capital, accommodates distinct communities that carry comparable pasts of warfare, resettlement, and assimilation. Throughout history, bodies of water have brought people together due to the dependency on this resource for survival. This paper seeks to explore the relationship immigrants may have to with the Berlin's major waterway. The River Spree has historically been dominated by industrial sites,[1] as Berlin's physical landscape had been fundamentally reshaped by the Industrial Age.[2] The landscape of the Spree is still largely comprised of old industrial structures[3] however, its landscape form dates back to the "collective plan" of 1946 where Hans Scharoun gathered a team of architects and planners to design, from the remains of war destruction, a new urban modernist Berlin.[4] However, with the progression of industrialization, people have grown more disconnected to nature, to waste, and to one another. Disconnection eventually leads to neglect, and it is apparent that immigrants are still neglected as they largely struggle to seek asylum, resources, and belonging in host countries. This paper seeks to better understand the experiences of intersectional immigrant groups in relation to Berlin's physical and psychological landscapes while integrating photographic and anecdotal analyses on the River Spree.

Psychological walls

When the Berlin Wall was demolished, were the lingering psychological walls also dismantled? According to Brian Ladd, even educated Germans remain insecure in their national identity since World War II.[5] As a nation that has solemnly sought to move forward from its past of warfare and walls, immigrants still face barriers in assimilation, finding peace and community, and accessing resources. Perhaps we may attempt to deconstruct fear, as it is often the cloak that one may hide behind when faced with a lack of understanding and susceptibility to vulnerability however, this overwhelming vulnerability is a constant reality for many immigrants.

This paper proceeds in the following manner. I will first outline immigration pathways using a case study on the Vietnamese diaspora to Germany. Next, I will discuss the methodology of the research, which takes on an anecdotal, photographic, and technical analysis of the traversing experience along

and within the relative proximity to the Spree. Thirdly, disparities between immigrants' access to natural and social resources shall be examined and ultimately build up to my argument that the limitations and fractures that occur in immigrant communities are reflected in Berlin's own physical and psychological landscape. Nevertheless, understanding these notions may also create opportunities to disassemble our internal walls and reconstruct more inclusive ways to coexist.

Immigration pathways

The first reported Vietnamese migrants in Germany were known as 'die Moritzburger,"[6] a cadre of approximately 350 students who studied in Moritzburg during the 1950s in the former East Germany (German Democratic Republic - GDR).[7] These students often pursued university studies in East Germany or trainings in China or the USSR, and came from educated families who often participated in anti-colonial resistance as well as the international 'social ecumene.'[8] Conversely, students from South Việt Nam attended school in the former West Germany (Federal Republic of Germany – FRG), where they usually came from higher socioeconomic households.[9] Many of these students remained longer in the former FRG, for returning Việt Nam after the end of the war could jeopardize their safety. About 38,000 boat people were received by the FRG following the end of the war in 1975 as quota refugees under the Geneva Refugee Convention. This was a surprising act of support as an "Asylum Panic" had currently swept over West Germany in regard to receiving large asylum requests from groups including Latin Americans and Iranians, according to Kiên Nghị Hà.[10] Moreover, the GDR recruited an estimated total of 70,000 Vietnamese contract workers in 1980 and 1984 from a bilateral agreement between the Vietnamese Ministry of Labour and GDR State Secretariat for Labour as another solidarity initiative. This was the largest Vietnamese group in Germany. The intention of this program was to provide more financial security to the workers' extended families in Việt Nam, while they were required to pay 12% of their wage to the Vietnamese Government.[11]

However, former contract workers struggled in East Germany when their status became uncertain after the Berlin Wall fell in 1989. Many of whom were unable to find jobs in the restaurant industry or as hawkers and were swiftly recruited into the illicit cigarette trade that smuggled drugs from Poland to Germany.[12] Returning to Việt Nam was not an option. A Vietnamese German interviewee claimed that it takes the equivalent of thirty years of labor to make the amount of money that it takes one year of labor in Germany.[13] According to the New York Times, "The Vietnamese cigarette vendors, the police agree, are pawns in the current gang war. Many found themselves unemployed after Germany was unified in 1990 and cannot hold normal jobs because they are here illegally."[14] This brings up the ethical question on how such a large concentration of immigrants still struggle to assimilate in a highly developed nation. However, Andrew Downs expresses, "The real question is not just the Vietnamese's ability to integrate, but German society's willingness to let it occur."[15]

Assimilation

An immigrant's ability to assimilate varies on factors such as physical features, perceived gender, sexual orientation, and religion. For example, Polish migrants benefit more from the labor market than non-white migrants as their European heritage and 'whiteness' deemed them more desirable.[16] Conversely, queer Muslim ethnic minorities disproportionately face poverty and unemployment 'at the bottom,' according to Kosnick.[17] In response to hate crimes and progressing gentrification, both queer and ethnic communities have sought to establish their own communities, or 'parallel structures,' to create belonging when the German society failed to. According to Kosnick, "claiming space and visibility on

public urban terrain has been identified as a crucial strategy both of survival and of citizenship claims for counter-public sexual cultures."[18] Furthermore, poor immigrants and racialized minorities often resided together, where these 'mixed' settings led to the notions of inequality and adversity integrating into the urban way of living.[19] Furthermore, immigrants often become crippled under the capitalistic hegemonies that cyclically dictated their lives, as one's extent of rights was directly proportional to their power to consume.[20]

METHODOLOGY

Anecdotes

There were very limited war anecdotes available listed as location specific to the Spree. However, the anecdotes I was able to gather from the FHXB Friedrichshain-Kreuzberg Museum that discussed stories in relation Spree illustrated a diverse range of themes that reflected the heterogeneity of immigrant milieus and contribute to Berlin's unique community.

Some immigrants recounted their experiences and surroundings through the memories of their senses, as Géza had in the following anecdote, "No one wanted to invest in the West Berlin. When I moved there, it was as if I had a second courtyard to the house I lived in because most of the other buildings had been bombed from the war. Local pollution developed into 'the smell of the east' which also traveled to the west. Ecological problems don't end at the border."

Kader describes noticeable changes in the physical and social landscape of West Berlin as it became gentrified, "Now it's different, they've changed it completely. there's too many modern houses and more rich people living there. When you walk by, you can see that they look at you funny and they don't seem to want people who're as dark skinned as me to go there."

A former contract worker also shared limitations as a non-citizen, "I have lived and have worked in Berlin restaurants for twenty years now since moving from Vietnam. Yes, I came here for the workers exchange. No, I do not attend school. I cannot. Yes, because I am not a German citizen. Yes, I would attend school if I could."

Furthermore, Hülya shares a childhood story of a traumatic landscape, "There was this wonderful Lohmühlen Park. I can still remember how my small sister was playing about there and her shoe fell in the water. And we tried to get out the shoe with a stick, and we didn't succeed. It floated away, further and further. And then it just went under the Wall, then it was on the eastern side. So, my sister's shoe disappeared in the East. We never saw the shoe again and of course we were scared because we knew from the adults that the bogie men were over there."

Claudia, a refugee mother, also shares a memory of a location that, in contrast, incited positive emotions as she found healing and support from the local community there, "In the Falckensteinstraße there is an ice-cream parlour. I met several women there for the first time, who really helped me later. It was they who provided me with contact to the Medibüro - an office for medical aid to refugees -, so that my small daughter could get medical attention These friends gave me answers to everything and explained what I had to do. I was relieved. Everything started in this ice-cream parlour. For me it became - how I should say it - a place of comforting." Overall, stories carry the ability to reduce the proximity of empathy with another and build closer connections.

Photography

As the iterations of captured snapshots for a single view of a site increased, my articulation of the site also seemed to enhance. What if photographs could serve as a form of communication between people whom do not speak the same native language? When individuals from different groups share relatable memories, they reach a point of interaction referred to Marselis as the 'contact zone.'[21] This mnemonic empathy may wield the potential to strengthen connections among different communities, especially when words alone do not suffice. Further, multidirectional intersection of memories from contact zones may lead to the creation of 'memory cultures,' which Marselis explains to be "space for multiple voices and transcultural borrowing between memory communities."[22]

Along various bridges throughout the River Spree, I collected a linear progression of photos every five or ten steps depending on the vastness of the bridge. Afterwards, I overlaid the individual photographs at reduced transparencies. The end product was a collage of varying perspectives of a singular space that currently exist in the melting pot of Berlin; many people may also encounter a place and have similar but unique interpretations of that very space.

Figure 1. Photographic collage of Friedrichsbrücke. Extensive access to the Spree, many people here.

Figure 2. Photographic collage of Elsenbrücke. Moderate access to the Spree, notice the contrast.

Figure 3. Photographic collage of Gotzkowskybrücke. No access to the Spree, signs of industrialism.

Technical Sketches

Anecdotes offered the greatest breadth of interpretation yet inversely made scaling of physical spaces to be very difficult. Photographs offer opportunities to scale subjects, yet one may easily become inundated with the ranging proportions of a view through the parallax of human vision. I recorded measurements of different components of parapet designs that were unique to each bridge I visited.

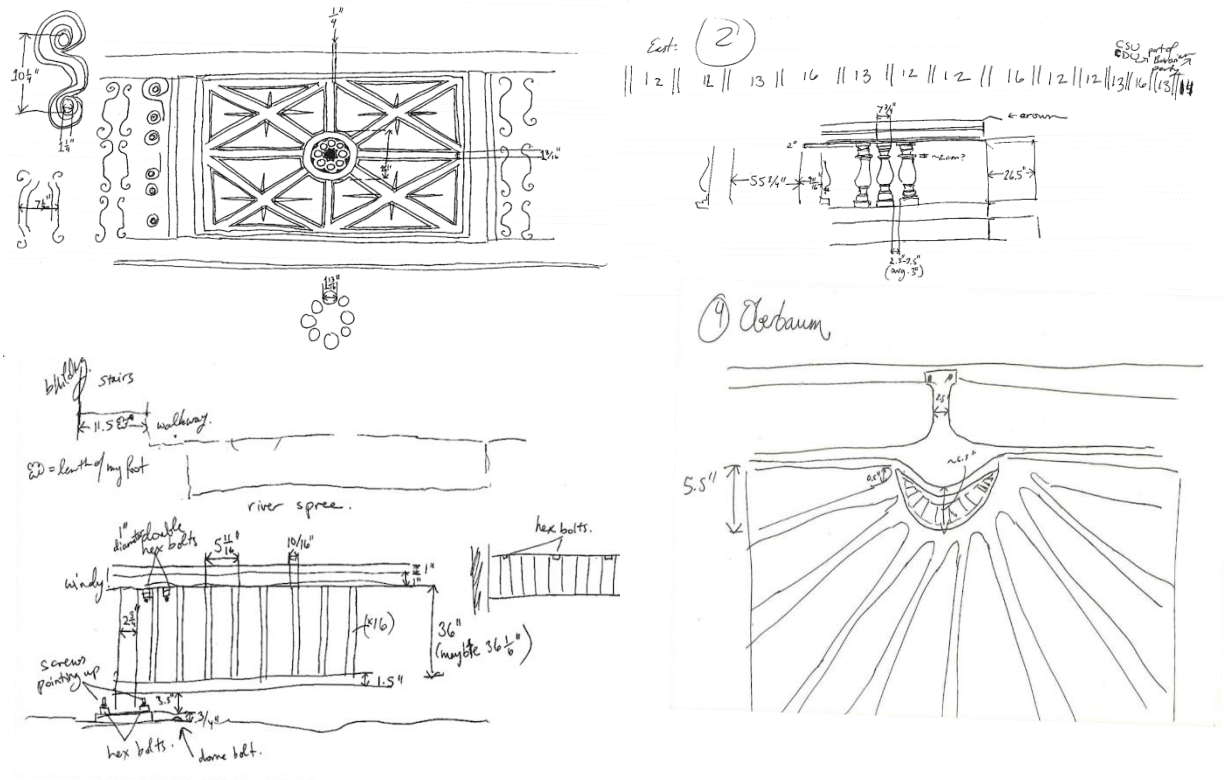


Figure 4. Technical drawings of various bridge parapets along the River Spree.

Technical sketches provide the opportunity to interpret subjects and spaces to both scalable and quantifiable extents. This quantitative empathy bridges the intersection and coexistence between the perceived and the existing. A similar notion may be applied to the ways in which local residents of a host country may perceive immigrants. Due to the lack of direct interaction and information shared between a local and an immigrant, it becomes relatively easy to fill in the fear or voids of knowing with predisposed assumptions gathered by society or the media. However, it becomes easier to view any person who is different from us when we gather more direct facts from them, thereby establishing understanding on a more realistic level that prevents us from making disproportionately scaled assumptions about others and exacerbate feelings of uncertainty into fear.

DISCUSSION

Belonging

Immigrants have struggled to assimilate as they face various forms of discrimination. For example, about a third of Turkish Muslims who were stopped by police felt that they experienced unfair treatment.[23] Also, racialization and discrimination persisted despite Mr. Mai arriving to Germany. As an asylum seeker, he was assigned various placements where he had experienced fighting, rape, and drug-dealing in the homes; the German police failed provide any safety."[24] "The 'National Integration Plan' of July 2007 stated segregation to be 'a result of market forces as well as ethnic preferences….'"[25]

The apparent void in an immigrant's ability to assimilate and to connect with locals may relate to the notion described by Lars Kruckeberg, Wolfram Putz, and Thomas Willemeit, "The strip of the wall, the so-called death strip, could be seen in a similar way as an inaccessible, death-bringing space erased of memory, an actual void of emptiness within the corpus of the city."[26] Exclusionary micro-practices on immigrants, referred to as 'Othering,'[27] commonly occur as Matejskova states, "In Germany and Berlin, the legacies of Cold War division and subsequent inequitable unification permeate local experiences of belonging and exclusion."[28] Perhaps the Othering that local residents impose on non-locals actually reflects their own deep-rooted feelings of insecurity from the still relatively recent separation between East and West Berlin. Matejskova illustrates the notion of the psychological wall below:

Evidence suggests that a "mental wall" persists and has recently intensified, including among youth (e.g., Schroeder, 2006). The Social Democratic Party (SPD) spokesman for immigrant integration in Marzahn, a university student in his mid-twenties, was blunt in our interview: "Even between the West Germans and the East Germans here in Berlin, even if they live close to each other ... this imaginary wall, this border still exists for many people. I belong to that generation, too" (GL, male, 20–30). Many former East Germans continue to feel like second-class citizens, homeless and out of place in a unified Germany whose establishment was defined by the denigration of "all things East German" (Berdahl, 1999; Boym, 2001; Hörschelmann, 2002).[29]

If native residents of Berlin still experience uncertainties with their national identity, then it would be even more difficult for immigrants to understand if they could truly belong here.

Housing and public space

Immigrants have faced various zoning constraints including a Zuzugssperre, or quota ban, from moving into municipalities with an apparent high concentration of Ausländer, or foreigner, residents to prevent Überfremdung, or 'extensive foreignisation.'[30] Access to renting modern social housing was denied to foreigners until the late 1970s as they were instead offered sub-standard flats that German residents had moved out of into more modern blocks of flats.[31] Ngo, a first-generation Vietnamese Berliner recounts moving into a government subsidized home that was dirty and cockroach infested, among a block of Vietnamese-only flats in Lichtenberg.[32] Karen Schönwälder and Janina Söhn describe the byproduct of enforced housing regulations on immigrants, "The fact that immigrant families today typically live in inner-city areas—and not mainly in the housing blocks of the banlieus—is partly an unintended result of discrimination.[33] Furthermore, the existence of the Dong Xuan Center implicates the ineffectiveness of German urban planning in addressing immigrant needs, as Mouffe asserts, "German urban planning law and administrative procedures are insufficiently prepared for culturally sensitive urban development. Planning culture cannot be divided from politics and power and is based on the overarching paradigm of ethno-cultural assimilation in Germany."[34] describes the greater context of the Dong Xuan Center:

The DXC further serves as representational space (Lefebvre, 1991) and a space of cultural reproduction and identity formation for the Vietnamese community in the city of Berlin. It provides a space in which cultural and religious habits are practiced and shown to the public. The Dong Xuan Festival, staged on the site in 2010, celebrated Vietnamese culture in Berlin supporting the process of place-making (Kasten et al., 2011, p. 20).[34]

CONCLUSION

There exists a multitude of possible reasons behind an individual's decision to immigrate. We explored a case study on the Vietnamese diaspora to Germany where some immigrants were financially comfortable students who studied abroad, and some sought to work overseas as contract workers in order to provide more financial security for their families. However, many also immigrated for survival as they fled war. Regardless of the reason behind leaving their country, immigrants generally experience difficulty belonging, facing discrimination, and accessing equitable resources and spaces. In the context of Berlin, we explored the varying levels of privilege within immigrant groups, as well as individuals who experienced unfair treatment when stopped by police or were denied access to rent in specific parts of a neighborhood. Further, the existence of successful immigrant-run spaces, such as the Dong Xuan Center, reflects the ineffectiveness of local and national planning practices to account for immigrant needs. Nevertheless, immigrants have sought to counteract discrimination and inequality through claiming their own neighborhoods and providing support and resources within their own communities. Furthermore, I examined the River Spree using anecdotes, photographs, and technical drawings to maximize interpretations of the space. While anecdotes provided firsthand personal accounts of immigrants who resided along or near the Spree, I found that photographs provided an added visual dimension that enhanced my experience of the site. However, creating technical drawings from the site allowed me to bridge a coexistence between what is perceived and what is objectively known. If we deconstruct the xenophobic fears that take form as voids of unknowing, perhaps we may learn to replace these often-inaccurate perceptions of the foreigner being a danger or threat if we seek to objectively understand these individuals for the human beings that they fundamentally are. After all, as long as there exists political strife, there will be wars, and as long as there continue to exist wars, there will continue to be immigrants. Immigration is inevitable.

NOTES

[1] Marianne Birthler, Lars Krückeberg, Wolfram Putz and Thomas Willemeit, *Unbuilding Walls: from Death Strip to Freespace* (Venice: Birkhäuser, 2018), 246.
[2] Brian Ladd, *The Ghosts of Berlin: Confronting German History in the Urban Landscape* (Chicago: University of Chicago Press, 1997), 97.
[3] Ibid., 98.
[4] Ibid., 177.
[5] Ibid., 4.
[6] Gertrud Hüwelmeier, "Socialist cosmopolitanism meets global Pentecostalism: charismatic Christianity among Vietnamese migrants after the fall of the Berlin Wall," *Ethnic and Racial Studies* 34:3 (2011): 442.
[7] Dr Ann-Julia Schaland and Dr Antonie Schmiz, "The Vietnamese diaspora in Germany," *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH*, 2015, https://www.cimonline.de/static/media/giz2016-en-vietnam-diaspora.pdf.
[8] Susan Bayly, *Asian Voices in a Postcolonial Age: Vietnam, India and Beyond* (Cambridge: Cambridge University Press, 2007), 7-9.
[9] Dr Ann-Julia Schaland and Dr Antonie Schmiz, "The Vietnamese diaspora in Germany," *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH*, 2015, https://www.cimonline.de/static/media/giz2016-en-vietnam-diaspora.pdf.
[10] Kiên Nghị Hà, "Zwischen Grenzen - Vietnamesische Diaspora in Berlin," *Jewish Museum Berlin Journal* 7 (2012): 63.
[11] Dr Ann-Julia Schaland and Dr Antonie Schmiz, "The Vietnamese diaspora in Germany," *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH*, 2015, https://www.cimonline.de/static/media/giz2016-en-vietnam-diaspora.pdf.
[12] Yojana Sharma, "EUROPE: Vietnamese Criminal Gangs Could Resurface," *Inter Press Service*, March 12, 1998, http://www.ipsnews.net/1998/03/europe-vietnamese-criminal-gangs-could-resurface/.
[13] Hayley Pearce and Rachel Glassberg, "Vietnam in Berlin," *Exberliner*, November 28, 2014, http://www.exberliner.com/features/people/vietnam-in-berlin/.
[14] Stephen Kinzer, "Berlin Journal;In Germany, Vietnamese Terrorize Vietnamese," *New York Times*, May 23, 1996, https://www.nytimes.com/1996/05/23/world/berlin-journal-in-germany-vietnamese-terrorize-vietnamese.html.
[15] Andrew C. Downs, "Identities and Inbetweens: The Vietnamese and Assimilation Strategies in Germany," *University Honors Program Theses* (2014): 54, accessed January 13, 2019, https://digitalcommons.georgiasouthern.edu/honors-theses/54.
[16] Magdalena Nowicka, "Cultural Precarity: Migrants' Positionalities in the Light of Current Anti-immigrant Populism in Europe," *Journal of Intercultural Studies* 39:5 (2018): 527-542, accessed January 13, 2019, doi:10.1080/07256868.2018.1508006.
[17] Kira Kosnick, "A Clash Of Subcultures? Questioning Queer–Muslim Antagonisms in the Neoliberal City," *International Journal of Urban and Regional Research* 39:4 (2015), accessed January 13, 2019, doi:10.1111/1468-2427.12261.
[18] Ibid.
[19] Ibid.
[20] Ibid.
[21] Randi Marselis, "BridgetheGap: Multidirectional Memory in Photography Projects for Refugee Youths," *Journal of Intercultural Studies* 38:6 (2017): 665-678, accessed January 13, 2019, doi:10.1080/07256868.2017.1386632.
[22] Randi Marselis, "BridgetheGap: Multidirectional Memory in Photography Projects for Refugee Youths," *Journal of Intercultural Studies* 38:6 (2017): 665-678, accessed January 13, 2019, doi:10.1080/07256868.2017.1386632.
[23] Kira Kosnick, "A Clash Of Subcultures? Questioning Queer–Muslim Antagonisms in the Neoliberal City," *International Journal of Urban and Regional Research* 39:4 (2015), accessed January 13, 2019, doi:10.1111/1468-2427.12261.
[24] Gertrud Hüwelmeier, "Socialist cosmopolitanism meets global Pentecostalism: charismatic Christianity among Vietnamese migrants after the fall of the Berlin Wall," *Ethnic and Racial Studies* 34:3 (2011): 444.
[25] Karen Schönwälder and Janina Söhn, "Immigrant Settlement Structures in Germany: General Patterns and Urban Levels of Concentration of Major Groups," *Urban Studies* 46:7 (2009): 1440.

[26] Lars Krückeberg, Wolfram Putz and Thomas Willemeit, “Unheard(-of) Ideas,” in *Unbuilding Walls: from Death Strip to Freespace* (Venice: Birkhäuser, 2018), 135.
[27] Tatiana Matejskova, “The Unbearable Closeness of The East: Embodied Micro-Economies of Difference, Belonging, and Intersecting Marginalities in Post-Socialist Berlin,” *Urban Geography* 34:1 (2013): 31, accessed January 13, 2019, doi:10.1080/02723638.2013.778630.
[28] Ibid., 47.
[29] Ibid., 35.
[30] Ayse S. Çağlar, “Constraining metaphors and the transnationalisation of spaces in Berlin,” *Journal of Ethnic and Migration Studies* 27:4 (2001): 602-603.
[31] Karen Schönwälder and Janina Söhn, “Immigrant Settlement Structures in Germany: General Patterns and Urban Levels of Concentration of Major Groups,” *Urban Studies* 46:7 (2009): 1451.
[32] Hayley Pearce and Rachel Glassberg, "Vietnam in Berlin," *Exberliner*, November 28, 2014, http://www.exberliner.com/features/people/vietnam-in-berlin/.
[33] Ibid.
[34] Antonie Schmiz and Robert Kitzmann, “Negotiating an Asiatown in Berlin: Ethnic diversity in urban planning,” *Cities* 70 (2017): 8.
[35] Ibid., 2.

BIBLIOGRAPHY

Bayly, Susan. *Asian Voices in a Postcolonial Age: Vietnam, India and Beyond.* Cambridge: Cambridge University Press, 2007.

Birthler, Marianne, Krückeberg, Lars, Putz, Wolfram and Willemeit, Thomas. *Unbuilding Walls: from Death Strip to Freespace.* Venice: Birkhäuser, 2018.

Çağlar, Ayse S. “Constraining metaphors and the transnationalisation of spaces in Berlin.” *Journal of Ethnic and Migration Studies* 27:4 (2001): 601-613.

Downs, Andrew C. "Identities and Inbetweens: The Vietnamese and Assimilation Strategies in Germany." *University Honors Program Theses* (2014): 54. Accessed January 13, 2019. https://digitalcommons.georgiasouthern.edu/honors-theses/54.

Hà, Kiên Nghị. "Zwischen Grenzen - Vietnamesische Diaspora in Berlin." *Jewish Museum Berlin Journal* 7 (2012): 63-66.

Hüwelmeier, Gertrud. “Socialist cosmopolitanism meets global Pentecostalism: charismatic Christianity among Vietnamese migrants after the fall of the Berlin Wall.” *Ethnic and Racial Studies* 34:3 (2011): 436-453.

Kinzer, Stephen. "Berlin Journal;In Germany, Vietnamese Terrorize Vietnamese." *New York Times*, May 23, 1996. https://www.nytimes.com/1996/05/23/world/berlin-journal-in-germany-vietnamese-terrorize-vietnamese.html.

Kosnick, Kira. “A Clash Of Subcultures? Questioning Queer–Muslim Antagonisms in the Neoliberal City.” *International Journal of Urban and Regional Research* 39:4 (2015). Accessed January 13, 2019. https://doi.org/10.1111/1468-2427.12261.

Krückeberg, Lars, Putz, Wolfram, and Willemeit, Thomas. “Unheard(-of) Ideas.” in *Unbuilding Walls: from Death Strip to Freespace 130-137.* Venice: Birkhäuser, 2018.

Ladd, Brian. *The Ghosts of Berlin: Confronting German History in the Urban Landscape*. Chicago: University of Chicago Press, 1997.

Marselis, Randi. “BridgetheGap: Multidirectional Memory in Photography Projects for Refugee Youths.” *Journal of Intercultural Studies* 38:6 (2017): 665-678. Accessed January 13, 2019. doi:10.1080/07256868.2017.1386632.

Matejskova, Tatiana. “The Unbearable Closeness of The East: Embodied Micro-Economies of Difference, Belonging, and Intersecting Marginalities in Post-Socialist Berlin.” *Urban Geography* 34:1 (2013): 30-52. Accessed January 13, 2019. doi:10.1080/02723638.2013.778630.

Nowicka, Magdalena. “Cultural Precarity: Migrants’ Positionalities in the Light of Current Anti-immigrant Populism in Europe.” *Journal of Intercultural Studies* 39:5 (2018): 527-542. Accessed January 13, 2019. doi:10.1080/07256868.2018.1508006.

Pearce, Hayley, and Glassberg, Rachel. "Vietnam in Berlin." *Exberliner*, November 28, 2014. http://www.exberliner.com/features/people/vietnam-in-berlin/.

Schaland, Dr Ann-Julia, and Schmiz, Dr Antonie. “The Vietnamese diaspora in Germany.” *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH*, 2015. https://www.cimonline.de/static/media/giz2016-en-vietnam-diaspora.pdf.

Schönwälder, Karen, and Söhn, Janina. “Immigrant Settlement Structures in Germany: General Patterns and Urban Levels of Concentration of Major Groups.” *Urban Studies* 46:7 (2009): 1439-1460.

Schmiz, Antonie, and Kitzmann, Robert. “Negotiating an Asiatown in Berlin: Ethnic diversity in urban planning.” *Cities* 70 (2017): 1-10.

Sharma, Yojana. "EUROPE: Vietnamese Criminal Gangs Could Resurface." *Inter Press Service*, March 12, 1998. http://www.ipsnews.net/1998/03/europe-vietnamese-criminal-gangs-could-resurface/.

AMPS PROCEEDINGS SERIES 16

Front cover image: Pixabay

AMPS, Kent State University
1–2, November, 2018