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VERNACULAR NTRANSFORMING AND DEVELOPMENTS OF TRADITION

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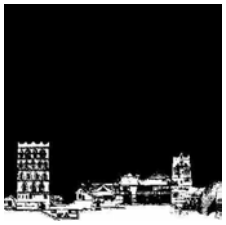

TRADITIONAL DWELLINGS AND SETTLEMENTS WORKING PAPER SERIES

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VERNACULAR NTRANSFORMING AND DEVELOPMENTS OF TRADITION

Traditional Dwellings and Settlements
Working Paper Series

MODERN FLOWS: INTRODUCING TECH-SCAPES FOR NEW VERNACULAR ARCHITECTURE PRACTICES IN EGYPT

Mohamed Attia Tantawy

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MODERN FLOWS: INTRODUCING TECH-SCAPES FOR NEW VERNACULAR ARCHITECTURE PRACTICES IN EGYPT.

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Working in the field of vernacular architecture in Egypt -especially in Hassn Fathy's New Gourna restoration project- offers the opportunity to witness the socio-culture transition of perceiving the concept tradition. Responses on traditional architecture are directly affected by the philosophy of perceiving [the self] as anything but its core value. Low income class are seeing it as outdated building techniques for the poor. Otherwise, upper economic class perceive traditional architecture as new fashion. The common factor in both cases is presenting traditional building as an image for a social class. So starting from here, are we witnessing "The end of tradition?" [1] (Alsayyad 2004) and the most important, can we understand this change with traditional way in order to avoid any foreseen problem of Orientalism?. and if tradition of our age are based on technology how can we mediated it to users.

> *From the materialistic point of view, the history of mankind seems to be a process of progressive secularization. Still, no one has ever explained why primitive man ' s life was filled with cults, mysteries, prohibitions, and beliefs. Why did he attribute life and personality to all things surrounding him such as stones, stars, rivers, and so forth? Why*
> (Ali Ezzat begovich 1984)

1. INTRODUCTION: NON EPISTEMOLOGICAL TRADITION

Postmodern academic discourses was the main source of criticism of the rigidity of modern theories and applications that not fit peripheral world [1], generally after the criticism we pass through set of recommendations to take care Socio-economic factors that were neglected in (industrial, colonial and neoliberal) which are main accused agents and other sub-factors like (scale , identity , materials, production system) , otherwise here I have to ask if this approach is overwhelming tradition questions with political analysis? And if tradition is studied from [top-down] approach]. These questions are raised not to neglect or underrate these studies of course, but just to open up with thoughtful insights can come from more individual core motives, like religion, meanings and values.

The Jordanian scholar Waleed Al Sayyed wrote an interesting description on traditional vs modern conflict with stressing on the absence of validation of the oriental perspective of tradition, He argues that understanding the process by which 'the Arab mind' functions as means and contextual axiom will eventually make clear the distinction between 'Arab mind' and 'French, English, or European mind , the core epistemological system that formulated these are **[philological issue]** which is related to understanding the analogy of the linguistic metaphorical system As It's open to interpretation. [2] Another researcher called Ibrahim Alsakran was supporting this theory and generalize it into even Arab researchers whom imported

western mind with them after studying outside , linguistic problem is simply creating shortage of the importance of the culture values, for example Muslim community actions are represented as if it is just a cult or collective behavior related to the geographical context or local culture because [the researcher doesn't know the depth of the terms of this actions][3] , but it is actually inside the core structure of religion and by importing another anthropological discourse in this analysis tradition come to us as a laxury from scientists and researchers. Simply, with the same methodological commitment, I argue that from here we can start to apply this method on Architecture as well, what appears to me that we have the same issue with understanding tradition, where we think that tradition is represented in the [Older, Authentic and fashionable] Where traditional dynamics can be represented at any positive or negative behaviors. From here we are understanding that tradition is affected agent in the equation and the source of effect is the community values. From this argument can we say that it is named tradition but the its act is ontological?

2. THE OUTSIDE: BEING MODERN

> *" Tradition is the social analogy of personal habit, and in art has the same effect, of releasing the artist from distracting and inessential decisions so that he can give his whole attention to the vital ones. Once an artistic decision has been made, no matter when or by whom, it cannot profitably be made again; better that it should pass into the common store of habit an:d not bother us further. Tradition is not necessarily old-fashioned and is not synonymous with stagnation. Furthermore, a tradition need not date from long ago but may have begun quite recently. As soon as a workman meets a new problem and decides how to overcome it, the first step has been taken in the establishment of a tradition. When another workman has decided to adopt the same solution, the tradition is moving, and by the time a third man has followed the first two and added his contribution, the tradition is fairly established. Some problems are easy to solve; a man may decide in a few minutes what to do. Others need time, perhaps a day, perhaps a year, perhaps a whole lifetime; in each case the solution may be the work of one man. " _ Hassan Fathy*

In the current days, while we work in Restoration project of Hassan Fathy New Gourna village, I'm confronting multi-dimensional update for how local community perceive vernacular buildings, most of the significant responses are leaded by the change in the objective of the houses form being “place for living” totally into “a social image” and “outfit fashion”. These simple answers are opening questions about the parameters that leading this answer, first: we have to understand what influenced this insisting to became modernized, what makes them take this position of following up with something. And most importantly where the idea of " representing by architecture " arrived here?

Science the middle of eighteenth century, beginning from North Europe and to every corner on the world, people have become aware of living in an age radically different from previous ages which they called with the

awe and respect in the same time " the modern age " or " Modernity " .We are all home of modernity, every last hamlet and remote island has been touched by the outlook of the ideology of the era, perhaps the greatest marker of modernity effect on the communities is (The duality) between what is " internal ", " external " and " form ", " function " and what generated out of this separation from " Core ", periphery. Where the circles defining the " self, progress, uniqueness" as more valuable from the human " family, history, identity ".

Though introducing " Modernity ", the Indian scholar Arjoun Appadurai who produced an abstracted scapes of " culture flow " for the anatomy of modernism and its influences. The scapes are (Mediascapes , Technoscapes Ethnoscapes, Financescapes, Ideoscapes) and we will try to cross by some of them but out focus will be into the Technoscape which is the paper scope. What we can do is to merge some flows together to highlight the influence on a certain element. The modern flows in Appaduri concepts can be represented in constant details emerged with the change of values. we are summarizing his definition Ethnoscapes represents the movement of people around the world. Ideoscapes refers to the ideas, symbols and narratives that have spread around the globe, Technoscapes refers to the ways technologies help speed up cross-border movements. Mediascapes has an increasingly global reach. And finally Financescape represent the rapid movement of money across borders.[4]

In his masterpiece " Architecture of the poor " Hassan Fathy discussed the dichotomy of ("Architecture" in opposite of "Building"). He is not the first of course but Hassan Fathy story in his project was describing major "Transformation" in the question of architect and architecturization, Fathy distinguish between architecture and building was very clear while he is insisting to stress all his effort on the technical aspects to generate a proper (Shelter) not to use this project to set the roles for a heritage discovery. [5] Vernacular architecture is one of the most visible affected features from modernity, where most of these scapes are influencing the internal mindset of the definition of success Regardless all other factors.

3. THE INSIDE: BUILDING AS A SUFI BEHAVIOR

In his article "Against impartiality in architecture" Abdelhalim Ibrahim is describing a unique phenomenon he name it as "the building cult festival", he is observing the celebration with putting keystone in Egyptian rural villages and wood precutting actions in Benin or land division ceremony in California, and he is asking about these cults that's we miss in this age, and if modernity rooted this separation between what is tangible and what is not tangible and what innovation lost by this separation between ontology and buildings. [6]

From these approaches " Ali Ezzat begovitch " introducing the difference between cults and civilization. In his book Islam between east and west. he was trying to bring us into a fair ground where we can point on

what is common human being, and this will lead us to critical criteria for the collective and individual behaviors of the people after modernism, by his ideas: " Without religion and the concept of man ' s ever-striving spirit, as stated in the "prologue in heaven ," there is no authentic belief of man as the highest value . Without it, there is no belief that man as man is at all possible and that he really exists ." [7] Begovitch elaborated with the statemen which supporting tradition as clearly connected to human believes. Which opens discussion of the wight of this approach at the agreed scientific approach.

As the archaeologist Janet Abu-Lughod's mentioned in her article about Cairo before colonialism, the City was running around number of craftsmen leaders, these leader (Sheikh) had the responsibility to check for the quality of the implemented elements. For example, there was craft men leader (Sheikh) for each profession. Which is giving the permission and credibility to the rest craft men in the area. The interesting note about this this leader that he wasn't only learning or evaluating technical issues but also religious values like honesty and fidelity. This credibility mechanism are very similar of Sufi discipline pathways in islam, and this leading to another ideas towards the relation between tradition and religion.

Sufism is variously defined as "Islamic mysticism", "the inward dimension of Islam" or "the phenomenon of mysticism within Islam", characterized by particular core values, ritual practices, doctrines and institutions" which began very early in Islamic history and represents "the main manifestation and the most important and central crystallization of" mystical practice in Islam. Practitioners of Sufism have been introduced to the idea of " Adab is Sufi Etiquette in the Outer and Inner Worlds " , Adab is a code of behavior that is central to Sufism, a way to walk the Sufi path with the correct attitude and true courtesy. On the deepest level, adab is the attitude of the soul before God, the way the soul bows down before its Lord with utmost respect, and then lives that respect in the outer and inner worlds. It is a way of being with God in one's actions and behavior. To quote Hujwiri, "Towards God one must keep oneself from disrespect in one's private as well as public behavior." And the wayfarer on the Sufi path aspires to bring this innermost respect into daily life, into his way of being with others, with himself, and with God.

With a thoughtful introduction El messiry introduced the work of Dr. Sohir Hegazy who wrote article named with [Being biased in architecture] as response of the idea of International Architecture, in her paper she introduced a skeptical critique to the orientalism theories which foucusing the form of religious architecture and trying to pass it to the [inner instructions line] of the architecture as behavior not as technical tool, he paper was discussing the throat of thinking of building starting from the Building purposes and if you are building just for showing up or you have religious reason behind it, then she settled set of rules like respecting privacy and taking the economic consideration and overpricing with encouraging simplicity and avoiding over decoration and restrictions on polluting environment.

4. RE-VISUALIZING STEREOTYPES

Because our thesis supporting the internal " scape " of human being, we need to take care that this inner scape is not nutral anymore, as we explained before " modern scapes" are already taking the hole space inside. Visualization is one of the successful options to change the mindsets of any subject beside removing the misconceptions and mental block of what is [Old, Outdated]. In his essay "Digital Deception", written by Belmont Freeman discussing this obsession with the perfect, photo-shopped image, which has become - thanks to technology - far too easy to achieve: "our eyes are trained to believe that a photograph is a true representation of an existing condition. Thus in the digital age the graphic representation of architecture has moved beyond an exercise in persuasion; it has become an exercise in deception. [8]

Prof. Gerald Hüther whom studies Neurobiology has an interesting study field that merges between the inputs which can change people mindsets, in the second chapter of his book [The Authority of mental image: How visualization change the world]. he is hinting on the metaphor of visualization that any religion presenting to describe the second life, Hütheris tracking this line to indicate other psychological status which changed by going through dramatic experience or in his case being raised in a rural area in east Germany.

> [T]he human brain's extraordinary plasticity we can change its structure through changing how we use it. We can sharpen our senses by attending more sensitively and precisely to our inner and outer worlds. We can develop a great capacity to empathize with others' feelings, imagining ourselves in their place.[9]

What I want to build right here is a chance to refresh, removing bugs the process of [Building using your own culture]. As I mentioned up that local community is not [neutral or unbiased] right now, but as we profiled in previous sections it is influenced with Modern-scapes. Therefore to extract the captive mental stereotypes of " Thinking from roots " needs to remove this misconceptions first, and this must happen with building successful contemporary models, and through render technical innovations using the local suitable and well researched techniques.

5. EGYPT HOUSES UNDER HERITAGIZATION

Egypt always a unique case to study the transformation of traditional concepts over the years, maybe because its history has variation and contrast authority in a relatively short period, professor Timothy Mitchell, whom wrote a descriptive piece on the house condition before the creation of the modern state as we know it right now, under the chapter the model village he is mentioning the core structure of rural house before the colonial era :

> The house is organised, Bourdieu explains, according to a set of homologous oppositions: between fire and water, cooked and raw, high and low, lightand shade, day and night, male and female, nif and hurma , fertilising and able to be fertilised. But to say 'the house is organised' in this way is misleading for two kinds of reason. First, the house is not in that sense a neutral space in which items or persons are arranged. The space itself is polarised, according to the oppositions Bourdieu escribes, and the polar oppositions invest every activity of the house, including even the way in which the house is built. Considered, moreover, in relation to the rest of the village, the house becomes just one polarity, the 'female', in a larger world: 'The same oppositions are established between the house as a whole and the rest of the universe, that is, the male world, the place of assembly, the fields, and the market.'[60] The oppositions are not fixed categories into which items and spaces can be organised; they are an effect not of spatial coordinates but of polar forces. Second, as we will see, such polar forces occur themselves not as a structure of oppositions but as an unstable play of differences. The male, the light or the dry is each nothing more than the process of excluding or deferring the female, the dark or the wet. In a sense, therefore, the male includes the female, the light includes the dark, the dry includes the wet, and vice versa, for each term occurs only as the uncertain disappearance or postponement of what it differs from. Difference, as Derrida would tell us, is not a pattern of distinctions or intervals between things, but an always unstable deferring or differing within. [10]

This brilliant analysis of the power structure of the house is aligned what the colonial French architect Le Corbusier's recorded in his travel notes and sketches from the ["Orient" an ambiguous place], loosely referring in early twentieth-century discourse to the lands of the Middle East and North Africa, and Istanbul, Professor Zeynep Celik describing:

> Le Corbusier's infatuation with Islamic culture "… The women of Istanbul, inaccessible to Le Corbusier, intrigued his sense of mystery further with their veils. He could barely make out their eyes through the pieces of cloth that enhanced their beauty: "innocent eyes of gazelles," he exclaimed, "delicious." He was more ambivalent about the long robes. At times he described the women in chadors as "impressive bats, with the folds of their capes framing their heads and then fading away from their hips," reminiscent of "those fiends at the towers of Notre Dame"; at others, as "hidden treasures in burgundy "charming in their mysterious black veils, their disquieting anonymity of identical silks ". As conclusion his design for the masterplan for Qasabah in Algeria was traying to simulate the women body lines and his message was clear " that we want to liberate the Arabic women. [11]

From these insights we can summaries what we are pointing to into 3 main ideas, first that the Houses in Middle eastern culture was introvert and mainly serving the house internal members ss we understood from analogy of the shy eastern women, secondly that the Colonial and modern era couldn't understand and accept this typology and by practices this idea has been changed over the years, to reach the era of exposing the building totally to the outside with almost no interior features at all. Third change we trace is the concept of heritagization which appeared in the colonial actions to all what is old in Egypt and promoting what they named " progressive, have better life quality and the most important [this is how we follow the world system].

With this method, tradition became a consumerist material coming with a set of responsibility and burdens and following your genuine self in building has already its built in constrains.

The next infographic discretion represents a schematic timeline of Traditional architecture In Egypt:

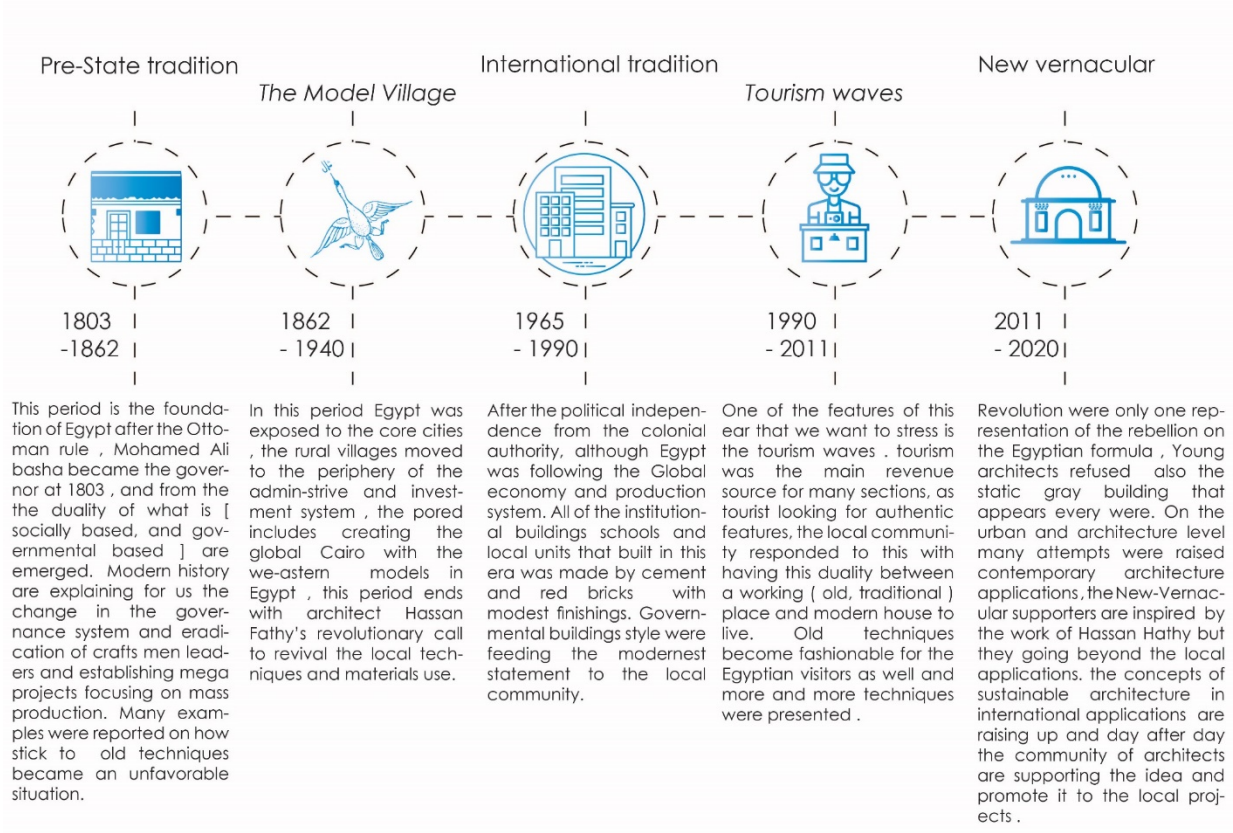

Fig. 1: a schematic timeline of Traditional architecture In Egypt

6. NEW VERNACULAR EXAMPLES IN EGYPT

Form 1998 until now, many attempts came out to revive the new vernacular architecture in Egypt, Egyptian Earth Construction Association (EECA) is the first institutional application on reviving vernacular architecture after Hassan Fathy, the association started at 1997 from a group of architects most of them was working with Prof.Abdelhalim Ibrahim, Ziad Amer who is taking the management position started to work on reintroducing the vernacular techniques to many governmental housing projects and succeed to work into one of them, but the like did not continue at all because of many changes on the housing policies afterwards , in the same time Dr. Adel Fahmy was working and learning in many projects In middle and south Africa, then he turned to Egypt and Saudi Arabia to apply many classic vernacular designs in the beginning then research and development upgraded his work into an almost international level, Eng. Ahmed Abdel Gawad with Hand Over is a startup established by young engineer and they also took the line of new vernacular, beside the building projects they mobilized the building techniques to many students through workshops and open lectures, in 2020 Mariam korachy shocked the social media with her design and built project in Fayoum, the interaction with her project was positive relative to the new content she presented.

Fig. 2: the work of Ziad Amer. (Source: EECA foundation)

Fig. 3: Housing project in Fayoum by Adel Fahmy

Fig. 4: ahmed Abdel gawad's sinai clinic with hand Over start up

Fig. 5: Abdullah mekkawi's school in menia in coopration with Hand Over.

Fig. 6: Mariam Korachy unit in faiyom.

7. CONCLUSION

This paper was driven by question raised by Prof. Nizzar al Sayyad : [Is Tradition is already ended ?][12] From here we can trace many changes are disturbing the surface that proofs that the traditional question is an endless question because it is directly related with the human existence, and I quote from how I started the paper with:

> Therefore, to properly understand our position in the world means to submit to God, to find peace, not to start making a more positive effort to encompass and to overcome everything, but rather a negative effort to accept the place and the time of our birth, the place and the time that are our destiny and God' s will . Submission to God is the only human and dignified way out of the unsolvable senselessness of life, a way out without revolt, despair, nihilism, or suicide. It is a heroic feeling not of a hero, but of an ordinary man who has done his duty and accepted his destiny. [13]

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Traditional Dwellings and Settlements
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TRADITION, SPACE, AND ARCHITECTURAL PRACTICE IN DEMOCRATIC SOUTH AFRICA

Gerald Stewardt Steyn

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TRADITION, SPACE, AND ARCHITECTURAL PRACTICE IN DEMOCRATIC SOUTH AFRICA

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The advent of democracy in South Africa in 1994 gave impetus to the quest for architecture with an African identity. It is widely accepted that this concept relies more on spatial traditions than on aesthetics. However, in a predominantly urban society it is understandably a considerable challenge for architects to interpret and reimagine traditional and mostly rural African sensitivity to spatiality in an age of globalisation. Twenty leading Black architects, known for the Afrocentric nature of their work, were interviewed. This study explores their views on the relationship between traditional spatial patterns, postcolonial architectural education and contemporary professional practice.

1. INTRODUCTION AND BACKGROUND

This paper pursues the theme of tradition, space, and professional practice in the built environment at times of transition. It explores the nature of, and interrelationships between historical spatial practices and contemporary architectural practice, and the role of background and education as a bridge between these two extremes (Fig. 1). An objective was to examine the agency of contemporary architectural practice in creating identity and a sense of (African) place in a democratic society.

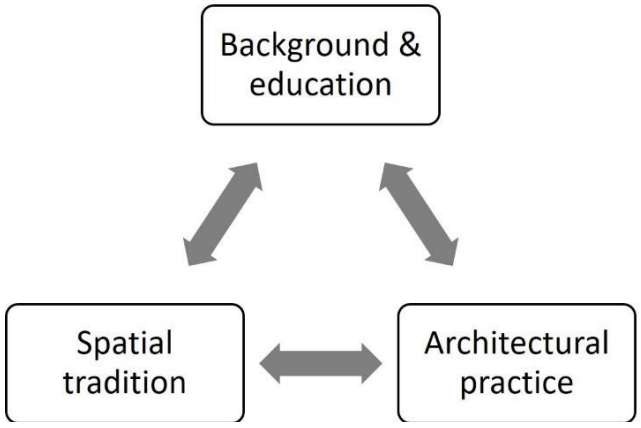

Fig. 1: The elements under study (Source: Author)

For the duration of its regime, South Africa's minority White government deliberately denigrated Black African history and cultural practices. Subsequently, because Apartheid segregationist legislation became particularly oppressive in the 1980s, there were no Black architects to protect and promote indigenous building traditions.[1] Graham Owen described the government-commissioned buildings of the 1980s as "banal late Modernism". [2] Although the White architectural fraternity did not, like Albert Speer, develop a style that can be associated with the politics of the era, Brazilian Modernism became popular. During that time, Julian Cooke wrote disapprovingly that one kind of South African architect relies on foreign models

and the other does not "… attempt or even wish to create an architecture of … *place*" (Cooke's *italics*).[3] Towards the end of the decade the Royal Institute of British Architects (RIBA), the Commonwealth Association of Architects (CAA) and the International Union of Architects (UIA) expelled South Africa. They also withdrew recognition of its architectural qualifications because of "insufficient progress in the admission of non-white students".[4]

The advent of democracy in 1994 brought about a radical paradigm shift, powered by the transformation of every conceivable aspect of the profession. Now Black architects, many with European qualifications, started practicing and essentially took over leadership of the professional bodies.[5] Transformation of the profession and defining architecture with an African identity became hotly debated topics (and still are). Officials in the newly elected ANC (African National Congress) Government have tended to be fiercely Afrocentric, and architects often have to motivate what makes a design "African". In the midst of this broad democratic "Africanisation", the professional bodies and universities regained recognition, but incomprehensibly, an Apartheid-era colonial-style architectural curriculum still dominates.

2. SOURCES OF INFORMATION

The information for this study was partly derived from a broader and ongoing research project that aims to describe and analyze African perceptions of space, territory, privacy and aesthetics in an age of globalisation. Since White academics have been dominating the debate on Afrocentricity in architecture, twenty prominent practicing Black architects were interviewed.[6] Other Black architects were engaged by the author in their capacity as peers. The findings and discussion are mostly based on their concepts and case studies. Four case studies serve to illuminate the argument. The first case study, a student project, is a court of law designed by Gopolang Motswai, presented in the Section: Background and Education [Case study 1]. In the section Architectural Practice, when describing the three case studies by Mashabane Rose: the first two are the courtyard of the Oprah Winfrey Leadership Academy for Girls and the courtyard of the Hector Pieterson Museum, while the third of the Mashabane Rose case studies is the comparison between Mashabane Rose and FWP's Pan African Parliament competition entries.

3. SPATIAL TRADITION

One interviewee was adamant that Afrocentric architecture is about "space planning and social interaction and not aesthetics". Another insisted, "African architecture is rooted and informed by African traditions". The prominent South African architect, Phill Mashabane, said simply that "African Architecture is about place and placing that is defined by cultural hierarchy".[7] In fact, it was found that

Black architects tend to use the terms "tradition", "culture" and "space" almost interchangeably.
This architectural tradition is found over most of sub-Saharan Africa and essentially comprises a number of thatched huts around an open space (Fig. 2).[8] Accordingly, in the traditional architecture of South Africa's Bantu-speaking people, including the Tswana, the real social space is the range of open-to- the-sky courtyards, of which the *kgotla* – an important social construct that takes place in a particular physical space – is in the center as the most important place in cultural and functional terms. This plan configuration is known as the Central Cattle Pattern (CCP), a conceptual spatial nexus identified and most notably espoused by Thomas Huffman (Fig. 3).[9] Fig. 3 also compares a 19th century homestead with a contemporary compound, with both consisting of the central meeting place surrounded by houses.

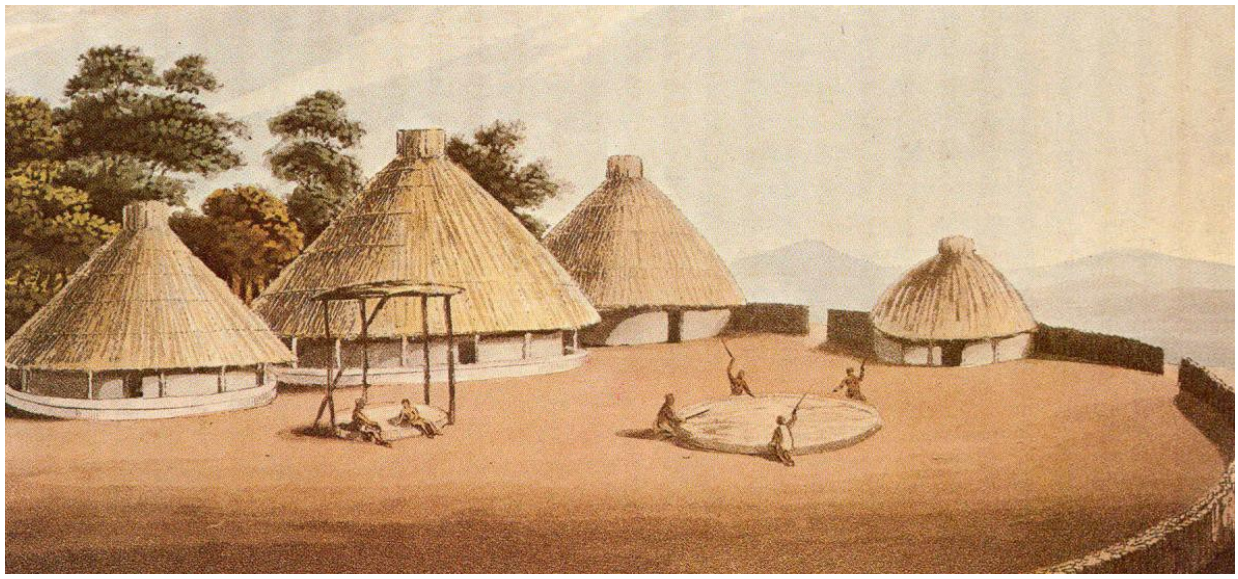

Fig. 2: Chief Senosi's compound in the Marico Valley by John Campbell (source: Campbell 1822, p. 244).

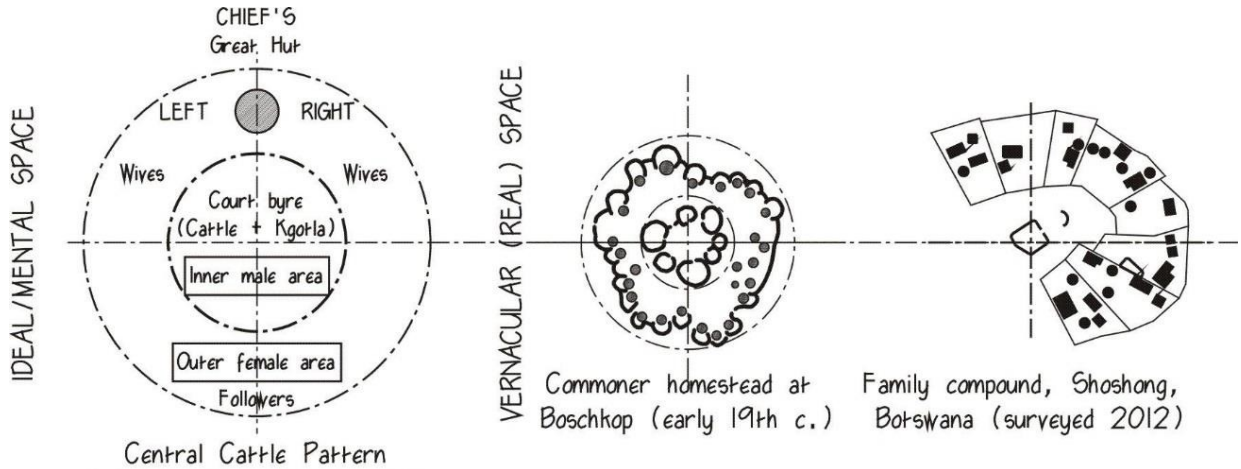

Fig. 3: The Central Cattle Pattern and vernacular configurations. (Source: Author).

Preeminent in traditional African architecture is its hierarchy of spaces. Some form of spatial hierarchy is found in all societies, but they are foremost in the way African villages and Islamic cities and houses are configured. The hierarchy of space regulates not only movement, but also the relationship between constituent components in the settlement. Two other patterns that actually also relate to spatial progression are courtyards and verandas. The courtyard is a key element. The open spaces that organize African homesteads have indeed been called a "courtyard" by many eminent scholars (including Nnamdi Elleh, Paul Oliver and Spiro Kostof). Some purists might insist that a courtyard is fundamentally a more enclosed form of open-to-sky space – as in Greek, Roman and Arab dwellings, but any open living space that is the focus or organizing framework of a dwelling, can typologically be classified as a courtyard. In that sense, there is a typological relationship between African and Arab dwellings, based on the shared concept of courtyards (Fig. 4).

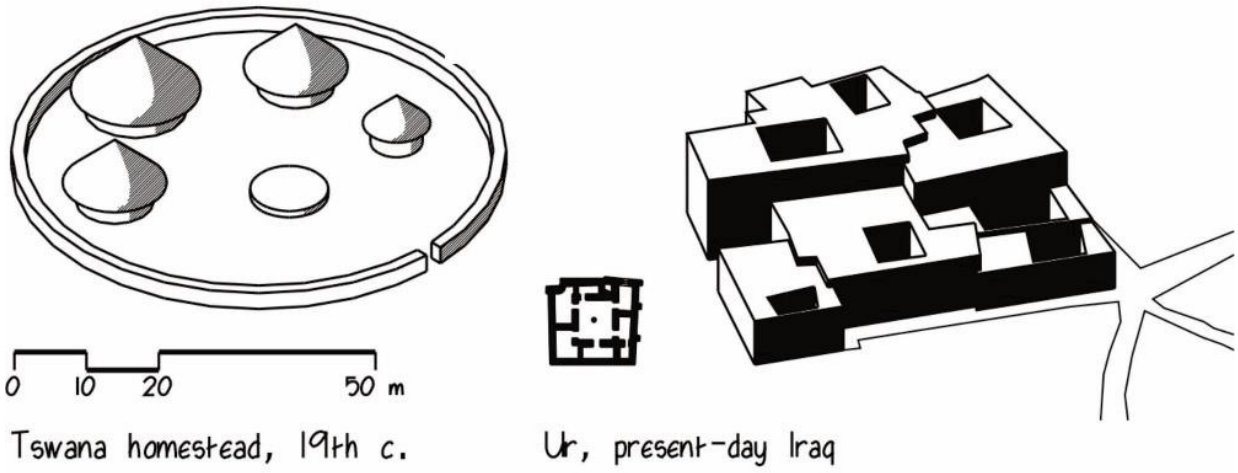

Fig. 4: African and Arab courtyards (Source: Author).

Obviously, recreating the ambience of a traditional meeting space with its embedded symbolism and meaning requires more than simply adopting a 'doughnut' typology with a hole in the center. In addition to prerequisites such as a clear hierarchy of spaces, successive layering of space, and a clearly expressed circulation system, the place-making quality of courtyards should be enhanced with an identifiable perimeter and the clustering or aggregation of individually roofed functional units. The abruptness of indoor-outdoor transition should be softened by verandas and canopies. To these requirements should be added the organic and circular geometries so typical of traditional architecture.

4. BACKGROUND AND EDUCATION

Since an appreciation of spatiality is unquestionably a lived experience, the problem now is how architects – Black and White – will be able to design culturally-appropriate spaces. How will students learn about indigenous architectural traditions in schools of architecture, in order to apply the lessons learned? As a subject, the History of Architecture tends to predominantly focus on the imagery of what was built, rather than on by whom and why it was built, and how it was used. Students never learn about the complexities of social behaviour and interaction that shaped these places. In addition to this, the subject contents are not properly representative of a postcolonial curriculum. At present, 66.36 percent of South Africa's rapidly urbanizing population lives in cities.[10] Nonetheless, while it is in the rural homesteads that the traditional spatial patterns are still evident (Fig. 5), children who grow up in rural villages are unlikely to know of, or eventually study architecture. Where they live, the community design and build everything themselves. The phenomenon of circular migration exposes many city-dwellers to tradition.

Fig. 5: A homestead in the Drakensberg Mountain are (Source: Author).

Every weekend huge numbers of urban dwellers travel to rural areas to visit family, often in ancestral villages. The well-known economist, Mike Schüssler, claims that 31,7% of Blacks own a second property, compared to 10,3% of Whites.[11] This could be construed as evidence that many Black children regularly visit rural areas with their traditional compounds, and are thoroughly familiar with the traditional spatial patterns that still exist. These however, are under threat: The percentage of households living in traditional

dwellings decreased from 18,3% in 1996 and 11,7% in 2007, to just 8,0% in 2011.[12] Despite this, the mental image of ideal space will not disappear with the traditional architecture: the concept of ideal space is too inherently related to patterns of social behaviour.

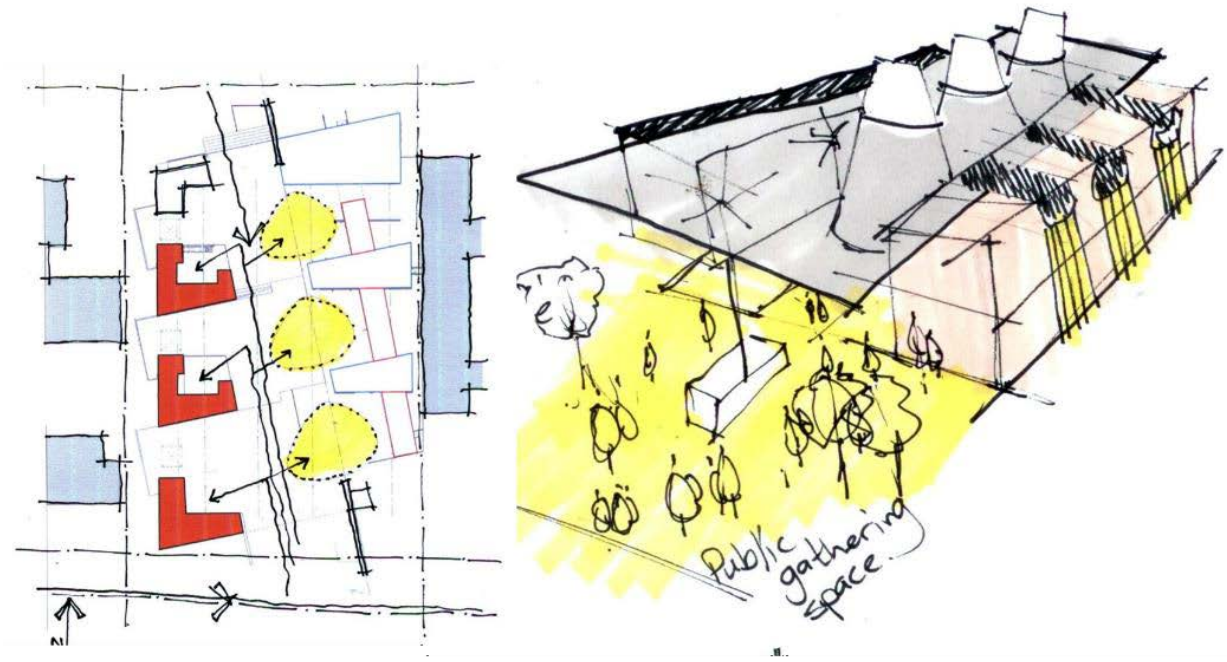

Fig. 6: Student scheme by Gopolang Motswai, 2011 (Souce: the author's subject files).

Fig. 6 illustrates a design for a court of law by Gopolang Motswai when he was a final year student; he regularly visited his grandmother in the rural Limpopo Province. In his design, the courtrooms are in conical shells resembling the conical tower at the ruins of Great Zimbabwe, with other functions accommodated in L-shaped buildings, each with its own small court. A public gathering space is situated at the entrance of the complex. The whole is composed of separate structures clustered along an internal street and is roofed over. This is a mature and informed figurative interpretation of traditional space.

Without that exposure, students exhibit an immature understanding of traditional spatiality, tending to romanticize it somewhat (Fig. 7). The curriculum manifestly needs serious expansion, enriched by excursions to rural areas. Even visits to the touristy "traditional villages" are better than just pictures in the literature.

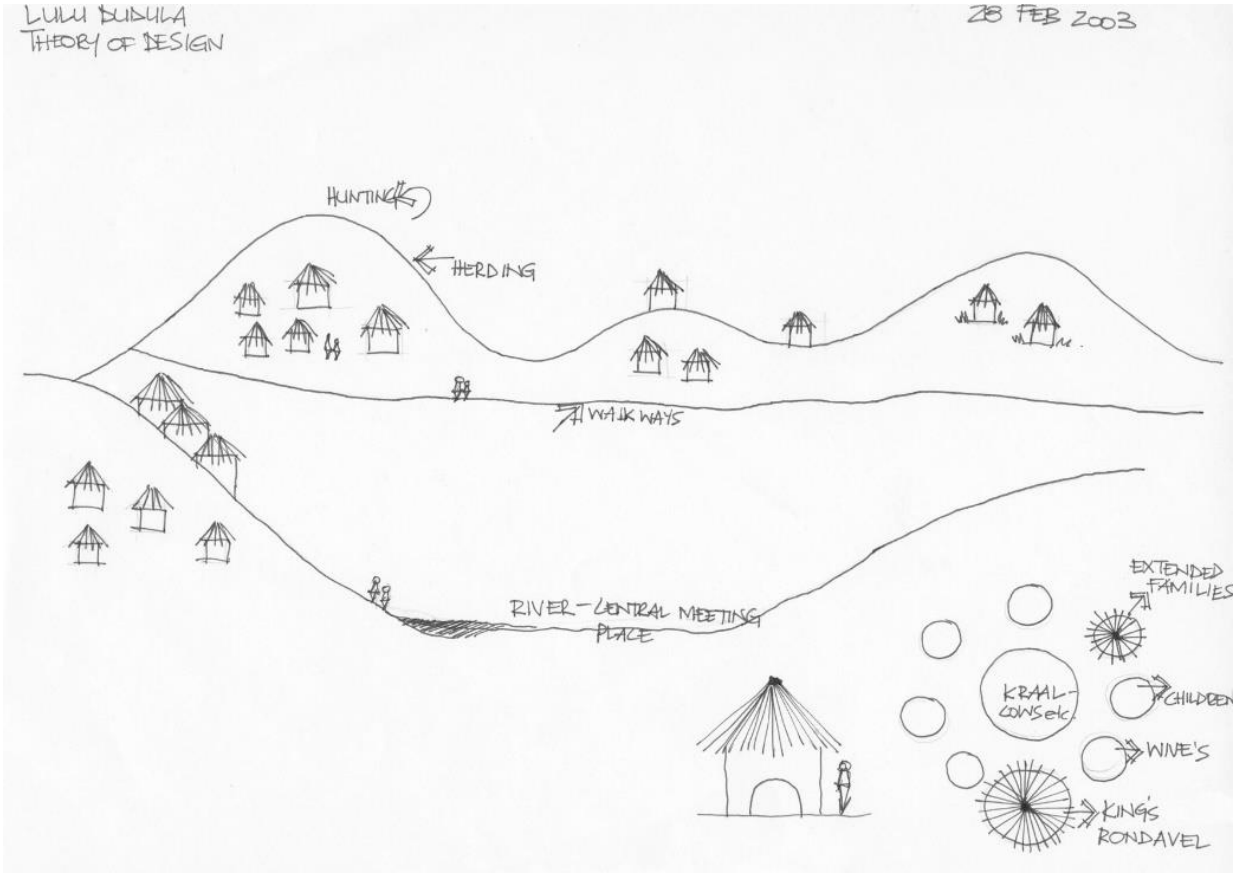

Fig. 7: Lulu Dudula's representation of a traditional African village (Source: the author's subject files)

5. ARCHITECTURAL PRACTICE

Three case study projects by Mashabane Rose Architects are featured below to illustrate how traditional spatial concepts are made manifest in the contemporary built environment. The first two are examples of how courtyards, the heart of African spatiality, can be articulated to suit different functions. The third serves to demonstrate the fundamental differences between architecture with an African identity and a more internationalized (or simply "Western" approach). In the first of these three case studies by Mashabane Rose Architects, the courtyard of the Oprah Winfrey Leadership Academy for Girls, near Johannesburg (2007) is spacious, permeable and festive. It features canopies and pergolas along the edges to mark indoor-outdoor transitions (Fig. 8). The second, also by Mashabane Rose Architects, the Hector Pieterson Museum in Soweto, outside Johannesburg (2002), commemorates the June 1976 Soweto student uprising. Here the courtyard is a solemn, central void, filled with the names of the approximately 700 students who died as a consequence of the uprising (Fig. 9). In the third of Mashabane Rose's case studies, their entry for the Pan African Parliament design competition, represents most of the characteristics associated with African identity: the courtyard, the round debating chamber linked to the courtyard, the perimeter fence, pergolas,

Fig. 8: Oprah Winfrey Leadership Academy for Girls, 2007. (Source: https://mashabanerose.co.za/).

screens and canopies, and an irregular, clustered plan form with frayed edges. Materials are rustic and rough to the touch. The approach is along a curved road, and the complex is partly obscured by an earth berm so that its size – actually its presence – is only revealed when the visitor is quite close (Fig. 10). As part of the third case study, a comparison is drawn between it and the entry by FBW Architects, which is extensively glazed, smooth and taut in a contemporary internationalized idiom. There is also a central drum juxtaposed on a crescent-shaped monolithic block.

The firm has offices in Uganda, Kenya, Tanzania and Rwanda (in addition to their offices in the Netherland and the United Kingdom). Their portfolio demonstrates quite unequivocally that they are capable of designing in a distinctly Afrocentric way; however, in this instance, they chose to demonstrate modernity. The approach is direct, in a way similar to that of Western monumental buildings.

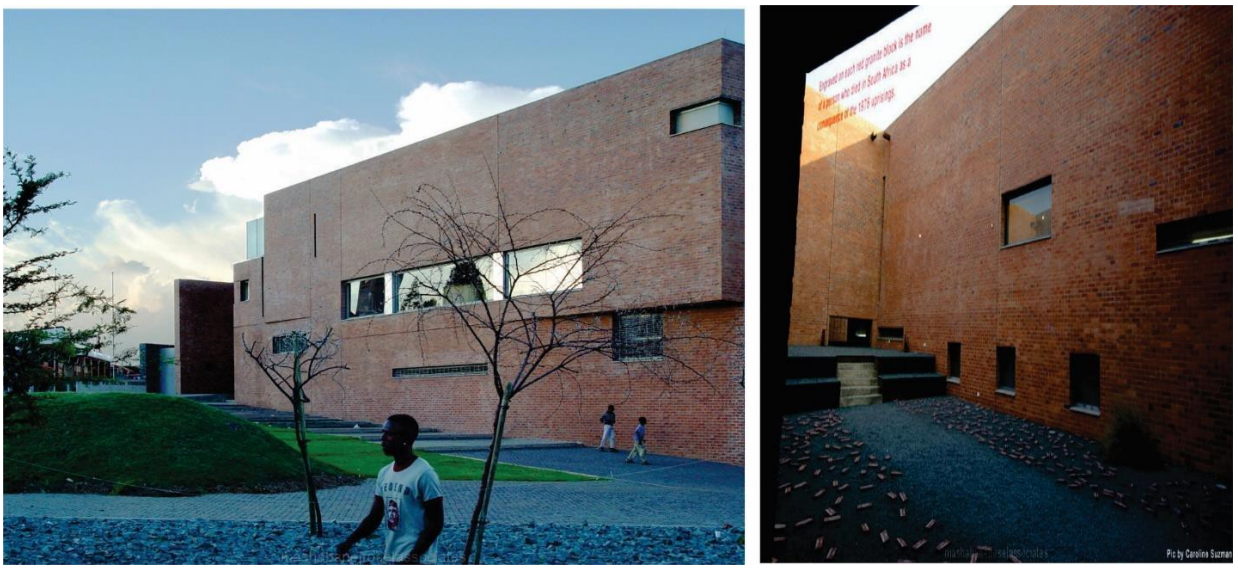

Fig. 9: Hector Pieterson Museum, 2002. (Source: https://mashabanerose.co.za/).

Black people constitute roughly 80% of South Africa's population, and Whites less than 10%.[13] Yet less than 10% of South Africa's registered architects (353 out of 4,029) are Black.[14] There is a contentious argument that arises here: due to the above mentioned imbalance in the numbers of Black and White registered architects in South Africa, the logical conclusion is that White architects are also expected to design buildings with an African identity. As Sigfried Giedion declared: "[I]t has not been necessary for the architect to be a native of the country in which he is working in order to be able to express its specific conditions."[15] A few of the interviewees did not believe White architects are capable of designing buildings with an African identity. Interestingly, however, the majority of them were confident that the architect Peter Rich, would be able to do so. He was the winner in the category of Culture (completed buildings) at the 2009 World Architecture Festival (WAF) for the Mapungubwe Interpretation Centre. He, Peter Rich, maintains that architects are uniquely equipped as observers of social behaviour through training and inclination (in conversation with the author). It should be pointed out, however, that he is known for his painstaking recording and drawing of traditional villages and their homesteads, and for his genuine appreciation and knowledge of indigenous cultures.

Moleta Mosienyane, a well-known Black architect with offices in Botswana and South Africa, argues that every form of social behaviour, particularly when ritualized, alludes to an associated ideal space.[16] It is then the responsibility of the architect to translate that into real space, regardless of his/her ethnicity. However, the rules of social engagement and precedency associated with African spaces are so nuanced that while White architects might understand the geometries, they will probably not always grasp the processes, meaning and symbolism. The African spatial nexus originated without colonial interference. Because of Black Economic

Empowerment (BEE) initiatives, Black architects are often commissioned to do the most prominent projects. With access to the highest authorities, it is perhaps their moral duty to assume responsibility for nurturing the tradition. White architects, even distinguished scholars of African issues, cannot do that.

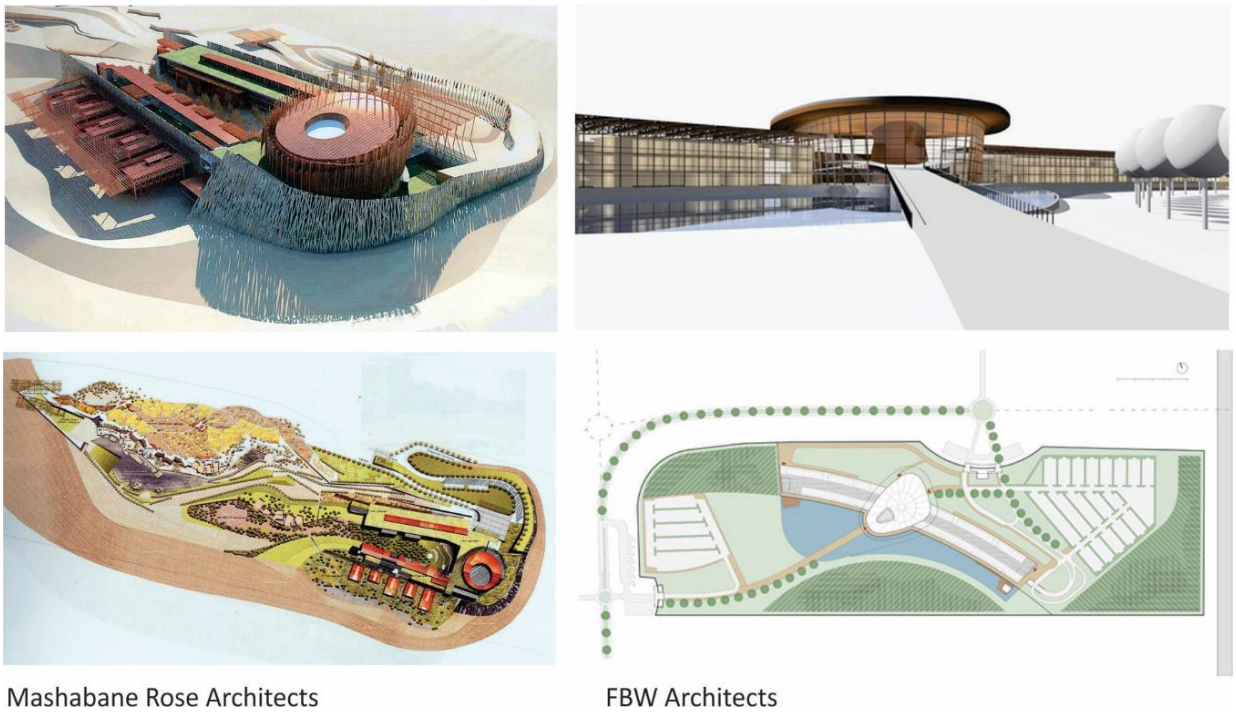

Fig. 10: The Pan African Parliament, 2007. Comparing two shortlisted entries (Source: https://mashabanerose.co.za/; permission requested from http://www.fbwgroup.com/).

6. CONCLUSION

A democratic dispensation in South Africa drastically changed both the institutions regulating and those commissioning architecture. Overnight, Black architects assumed leadership positions on all levels in the profession. In order to inform the pursuit of architecture with an African identity, indigenous building traditions have been foregrounded, with a particular emphasis on spatial patterns. The dramatically new paradigm created exciting opportunities and challenges for those teaching, as well as those practicing architecture. Because the needs of the community and the built environment became so much more diverse, a much greater understanding of cultural, social, ethical, spatial and aesthetical aspects is now demanded of practitioners, lecturers, students and indeed, of clients too.

The agency of the profession to conserve and promote building traditions relies to a large extent on the advocacy and implementation of Black academics and practitioners, with support and encouragement of client bodies, especially institutional ones.

Finally, since the schools of architecture are still dominated by White academics, there is a disjunct between their perceptions of traditional African space, and those of the practicing Black architect. There is an urgent need to bridge that gap.

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[1] White archaeologists and historians, as well as architectural academics, such as Barrie Biermann, Franco Frescura and Peter Rich, became the custodians of indigenous building traditions in the Apartheid era.

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[3] Julian Cooke, "The inscrutable style". *Architecture SA* (Jul/Aug 1984), p. 25.

[4] "Forget Europe, Forget America: Architecture and Apartheid", Spring 1989, p.19.

[5] The South African Council for the Architectural Profession (SACAP) is the statutory body, whereas the South African Institute of Architects (SAIA) is a voluntary association.

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[11] Mike Schüssler, "Who owns what by race". *Mail & Guardian*. Retrieved on 24 November 2012 from: http://mg.co.za/article/2011-12-09-who-owns-what-by-race (9 December 2011)

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[16] Moleta Mosienyane, "Giving Tswana culture a world vision". *The Courier.* (Interview with Debra Percival, Dec/Jan/Feb 2009).

Traditional Dwellings and Settlements
Working Paper Series

COMMUNITY DISPLACEMENT: HOW SOCIO-SPATIAL TRADITIONS IN FILIPINO AND MARSHALLESE ARE

Lyndsey Deaton and James Miller

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COMMUNITY DISPLACEMENT:
HOW SOCIO-SPATIAL TRADITIONS IN FILIPINO AND MARSHALLESE ARE

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The Republic of the Philippines and the Republic of the Marshall Islands are two pacific island nations that have been the site of centuries of colonization, agricultural exploitation, and war-time decimation forcing marginalized populations to repeatedly resettle and concentrate in and around urban centers. This paper traces two of these resettled communities in order to investigate the objectives of cultural assimilation in contrasting resettlement morphologies. This paper concludes by suggesting that adaptations in the resettlement architecture show resistance to the traditions of assimilation and they are an important possible resurgence of cultural patterns.

...Try to tell them to let go
of the niu rings marking
each passing year, to abandon
their only home and move on.
I can't pretend there is
no memory held
in the dried coconut hat,
the star ornament, the midribs
bent and dangling away
from their roots, no thought
behind the kāwelewele
that continues to hold us
steady. There was a time
before they were bent
under their need to make
an honest living, when
each frond was bound
by its life to another
like a long, erect fin
skimming the surface
of a sea of grass and sand…

An excerpt from "He Mele Aloha no ka Niu"
By Brandy Nālani McDougall (2013)

1. INTRODUCTION

Violent storms of colonial exploitation have ravaged Oceania debilitating indigenous cultures and assimilating the islanders into a form of Western society in part through resettlement. As a concept, "resettlement" has been historically tied to nationalist programs like the US's New Deal, China's expansionist programs, and as a masking label for Nazi Germany's deportations of Jewish people. Architectures like the Hull House in Chicago and the post-war tract-homes in LA were centralized attempts to assimilate immigrants into the norms of a white middle-class America.[1] While architectures of assimilation are predominantly associated with refugee movements, in this paper, we work with concepts not specific to the trans-national movements

that are characteristic of refugee resettlements. We do this by establishing a broad definition - as the process or act of moving people from one place to another place - while resisting the temptation to identify a *central* agent as responsible for the movement. In broadening the term, we are able to investigate the nuanced implications of hegemonic agendas on endogenous populations along with their responses to the urban condition.

This broad perspective allows for an inclusive investigation of resettlement processes that juxtaposes decentralized and centralized resettlements. On the one hand, the centralized top-down resettlement of families from the Manilla Metro area to the planned social housing development of Pabahay 2000 is a form of class-based resettlement under the regime of neoliberal capitalism that assimilates residents into a mortgage system. On the other hand, the decentralized, bottom-up resettlement of families returning to their heritage land following the withdrawal of American military occupation on Uliga is ethnic-based resettlement under the regime of military imperialism that assimilates residents into a Western way of life. Describing the processes of resettlement as a mechanism of assimilation in these two cases allows us to frame the individual acts of adapting architecture as a form of resistance and answer the question, how do architectural adaptations show resistance in Uliga and Pabahay 2000?

The architectures of assimilation are evident in examining the literature of ethno-architecture through an anti-colonial lens. The modernization of indigenous housing is a practice of assimilating the 'other' as evident in the literature of 'traditional' versus 'modern' architecture. Rapoport demonstrated the implications of 'modern' housing and materials on Indigenous communities in the Americas and its implications on cultural housing patterns.[2] Recent work on Indigenous architecture further investigates the theme of 'housing modernization.' Walker and Barcham illustrate the forces of assimilation present in social housing programs across Canada, New Zealand and Australia.[3] Nejad and Walker further demonstrate the implications of Western housing typologies on remote First Nations communities in Canada, defining both the assimilating force of Western housing typologies and the resistance Indigenous communities demonstrate through adaptation.[4] Others (Coulthard, 2014; Goeman, 2013,; Kauanui, 2007) have argued that colonial/neocolonial programs such as these are tools for the elimination of the 'native' through assimilation.[5]

Where there is assimilation, there is resistance. A growing field of literature demonstrates the resistance of assimilation enacted through architectural adaptation and cultural practice. Lozanovska argues that architecture and architectural design contain the capacity to support communities in resisting assimilation.[6] Using the concept of 'taste' Lozanovska demonstrates the importance of analyzing architecture through complex systems or assemblages rather than binaries. The migrant house is an embodiment of everyday

practice, a manifestation of aesthetic judgement and taste; the house provides a sense of agency and projects identity into the social and cultural field of practice.[7] Through a similar perspective, James Rojas demonstrates the transformation of intercity and suburban landscapes of Los Angeles into Latinx spaces through the reconstruction of front yards and residential spaces.[8] From a more urban perspective of spatial production, Wilson, speaks to the counter public created by black Americans in the reclamation of physical space - space that has been denied by the USA's symbolic cultural landscape.[9] An enactment that we see carried out today in the current civil rights movement and placemaking undertaken in memorial to contemporary martyrs like George Flyod.

> Even in the field of architecture, where built form and spatial relationships are often determined by formal design principles disconnected from user experience and preferences, there has been a renaissance of thinking about space from a cultural point of view where whole place concerns are reflected in the emergence of 'place-making' courses and programs in architecture and design schools.[10]

To further address the field of international development in which both of these case studies are situated contemporaneously, postcolonial perspectives of development demonstrate the application of American epistemologies as a tool for controlling and better profiting from the markets of 'developing nations.'[11] Within the rhetoric of international development, marginal populations are seen as the 'other' that requires saving, filtering analysis of development in light of Western epistemologies. Often, to see the forces of resistance, it is necessary to frame the phenomenon of architectural adaptation through other epistemologies.

Both cases rely on an ethnographic framework because they share the perspective that conceptualizations of space and place emerge from the study of people in situ in order to produce rich and nuanced understandings of people and place-making.[12] We are building upon the seminal work of Pierre Bourdieu who developed the concept of 'habitus' to analyze the implications of spatial production on cultural evolution and social change.[13] In this framework, the spaces we inhabit both reflect and configure our being in the world and the symbolism of space actively shapes daily-life from the paths we travel to informing social behavior. As an example, in her work on "spatializing culture," Low provides a post-colonial analysis of European planning and architectural representation on the social production of space in Costa Rica.[14] European planning and design logics replaced the symbolic power of Indigenous architectures and place meanings, thus instilling a colonial dominance on everyday life - from religion to public gathering. Similarly, Kim Dovey deploys this framework in his analysis *Framing Places* to discern the boundaries of power and their effects on communities.[15]

Framing the socially constructed meaning of built-form in settler-colonial theory, the built-environment becomes a settler structure and symbol of continued colonial presence. We draw connections between the social production of space through the architectural logic of planned development to the attempted assimilation of endogenous populations. This process of resettlement is done through the systematic architectures of assimilation, in the case of Pabahay, Philippines and Uliga, Marshall Islands. Thus, the urban fabrics created and left behind contain residues of power, which is evident through spatial organization and aesthetic. What is less known, is how these communities enact spatial and architectural resistance to Western hegemony.

2. METHODS

To investigate the effects of resettlement morphology on cultural housing patterns under the regime of neoliberal capitalism, we have selected a comparative case study methodology with the communities of Pabahay 2000, Republic of the Philippines (the Philippines) and Uliga, Republic of the Marshall Islands (RMI). The case study model is most appropriate for "how" and "why" questions asked of contemporary events for which researchers have little to no control.[16] Case studies are able to address situations in which there are more variables of interest than data points and as a result rely on multiple sources of evidence, with data needing to converge in a triangulating fashion.[17] We selected these cases because they both present stark urban conditions shaped by policies and developmental processes of neoliberal capitalism and have morphologies shaped heavily by American colonial influences. In both cases the authors used qualitative analysis of built form, spatial analysis, and ethnographic studies. However, as each case presented a unique cultural context, additional methods were used to iteratively investigate key themes.

In RMI, the resettlement of families to Uliga, the central district of Majuro atoll, was analyzed through archival maps and photographs across time, including site plans from the development of the Trust Territory Headquarters in 1949, as-built documents in1967, aerial photographs from the late 1970s (date unknown), and aerial mapping conducted in 2016. Similarly, the spatial analysis of urban morphology in Pabahay 2000, Philippines, was analyzed through archival maps and articles, including site plans and construction documents from 1998 and satellite images from 2000 to 2018. In each location ethnographic studies were conducted over a period of six months that included extensive interviews, tours, and observations. In Uliga, the researcher followed the inductive work with a survey of 100 participants to triangulate the findings about cultural patterns in housing. In Pabahay 2000, the researcher produced as-built drawings of three street types (alley, side street, and main street) from a careful analysis of street frontages and a short survey of 45 tenants to further investigate the transformation of the community over two decades.

3. A BRIEF HISTORY OF RESETTLEMENT IN RMI

RMI consists of two island chains, the Ralik and the Ratak, with 29 atolls and 5 islands. First settled during the Austronesian expansion, *Aeolon Kein Ad* (Our Islands) is part of Micronesia and was first settled roughly 2000 years ago. Land division in the Marshall Islands is shaped by the *wato*, which is defined by matrilineal inheritance. The *wato* represents a land parcel connecting the ocean to the lagoon which is passed down through matrilineal inheritance. providing access to all of the resources that the atoll ecosystem provides.

In the RMI, four phases of social change took place under colonization; these are: the introduction of market capitalism beginning with the German protectorate (1885-1914), Christianization (1850s - present), military imperialism - Japan (1914-1944) and the United States (1944 - 1986), and Neocolonialism under the Compact of Free Association (1986 - present). The most drastic and lasting impacts of these phases on the built environment of the Marshall Islands happened under US occupation, which led to socio-cultural changes in housing, driven by US development programs, the mass displacement of Marshallese communities from their ancestral lands, and the rapid urbanization of Majuro atoll.

While patterns of traditional land tenure were not disrupted directly by the colonial governance of the Germans and Japanese, shifts in socio-cultural values led to the fragmentation of larger family land holdings - most likely under influence of market capitalism and the value in resource production. Under the United States occupation, land tenure was further fragmented, and the United States began to outright lease large portions of atolls along with the entire displacement and destruction of multiple islets and atolls (for example, Bikini and Enewetak). The development of the U.S. Army Garrison of Kwajalein atoll (USAG-KA) forced the displacement of residents on Kwajalein atoll to Ebeye islet, and the designation of the Marshalls as the "Pacific Proving Grounds" for the United States, where 67 nuclear tests were conducted on several atolls, including the most devastating test taking place on Bikini atoll - the Bravo Shot, led to the permanent displacement of Bikini islanders. Today Marshallese continue to feel the impacts of the nuclear legacy and the continued economic and environmental pressures on island life that have been driving rural to urban migration and the growing Marshallese diaspora in the United States. We will focus on Uliga Islet, Majuro atoll in particular to investigate these impacts on the families displaced by the development of the US administrative headquarters on Majuro for the Trust Territories of the Pacific.

Under the Trust Territory, the United States constructed its administrative headquarters in the Marshall Islands on Uliga islet of Majuro atoll and began the installation of an intercontinental missile range on Kwajalein atoll along with USAG-KA. The development of the administrative headquarters in Uliga was placed on the former location of a Japanese military outpost. While the primary population of Majuro atoll

lived on Majuro Islet (code name Laura), this would shift rapidly as the development of the administrative headquarters led to the urbanization of Uliga and the immediately adjacent islets, Djarrit and Delap (collectively referred to as the D-U-D). The former site of the headquarters on Uliga is often referred to as *Americatown* by local residents, a term that reflects the heritage of military imperialism. Furthermore, the designation of Majuro as the administrative headquarters under the trust territory shifted the focus away from the former colonial capital of Jaluit atoll under German and Japanese control to Majuro.

The D-U-D was scarcely populated by Marshallese families up until the Japanese occupation. The Japanese military constructed an ad hoc military base on Djarrit and Uliga islets with officer housing, barracks, bath houses, and administrative buildings. The Japanese outpost was built not long after the 1907 typhoon that leveled Djarritt, Uliga, and Delap islets, washing much of the topsoil into the lagoon. Prior to the Japanese occupation, the land on the D-U-D was used for its natural resources by the applicable traditional landholders. After the American invasion and defeat of the Japanese forces; the D-U-D was mostly destroyed. Up until the United States began to develop an outpost on Majuro, the majority of the Marshallese population on Majuro atoll lived on Laura. However, the land holdings on Delap and Uliga were maintained through matrilineal inheritance. The US convinced families that occupying their lands was for the good of their people and for their protection.

Between 1947 and 1949 the US Military prepared Uliga and Delap for the construction of the administrative base and airstrip. A hospital, officer housing, civilian housing, a public works building, dock, and officers club were among the project's programs (see figure 1 for a site plan of the original development). Similar to the USAG-KA, the US army designed the administrative headquarters of the Trust Territory of the Pacific on Majuro as a 1950s suburban outpost. The housing reflected the suburban tract housing of the era, which Lauren Hirshberg argues provided a suburban refuge amid threats of cold war nuclear insecurity.[18] In Uliga, like Kwajalein, the Marshallese were seen as the foreign laborer to the US Administration and the domestic spaces were segregated, an area was designated for 'Native Residences' on Uliga while most who worked in the DUD, commuted from Laura via the 50 km road connecting the two centers or via the lagoon. The Marshallese with land rights in Delap and Uliga were reframed as foreign to their ancestral lands as families were displaced to other landholdings.

To most Marshallese in the 1950s and 60s, identity was rooted to their lineage and tied to the land (through the *wato*). The greatest impact on social structures in the Marshalls began in the 1960s as independent wealth shifted the reliance on family and community for resources.[19] Changes in land use and housing had a direct correlation to these socio-cultural shifts. The nuclear legacy of United States colonization in the Marshall Islands has had the largest impact on the Marshallese and their way of life, leading to permanent population

displacement from Bikini atoll. In addition to the impact of the United States militarization of the Marshalls and proliferation of an urban center, post-disaster reconstruction has also carried forward the dominance of international development strategies and western agendas.[20]

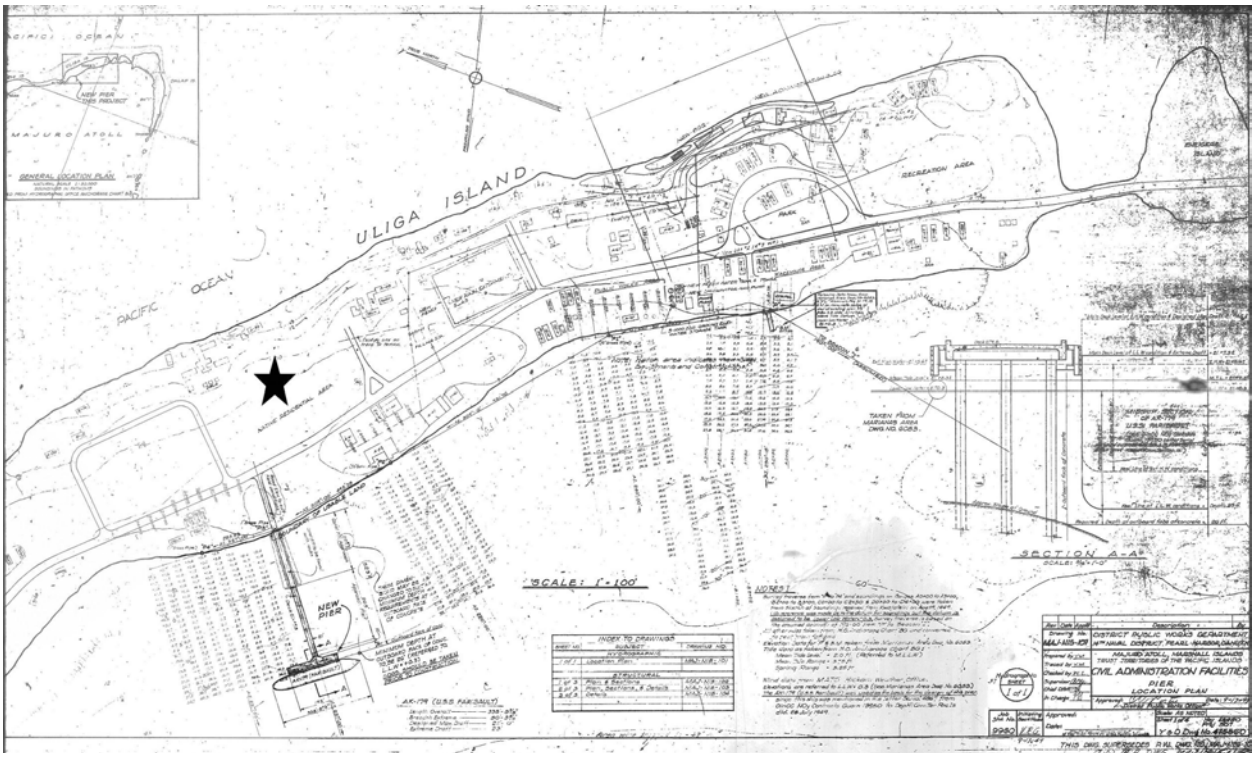

Fig. 1: 1949 Public works plan for Uliga in which the star highlights the area for 'native housing.' (Source: Trust Territory of the Pacific, University of Hawaii, Manoa TT Archives)

Between the 1970s and 1980s, the pace of development on Majuro accelerated as funding from Washington expanded each year. Government positions on the island multiplied, affording hundreds of individuals jobs. For the first time it was possible for workers to feed their families on their own cash earnings without reliance on the land. Thus, Marshallese knowledge systems began to evolve in reaction to the introduction of individual capital driven by government jobs. This period accelerated the socio-cultural shift from multi-family residence to the nuclearization of the family, represented by rapid housing development on the *wato*. However, fragmentation of *watos* did not coincide with the increased development of individual residences, rather building density increased on shared land.

In 1977, the Marshall Islands voted in favor of separation from the remainder of the Trust Territory. In March 1982, the Marshall Islands proclaimed itself a Republic, and on May 30, 1986, the US and the RMI signed the Compact of Free Association. In the 1990s, as the US administration and personnel began to leave Uliga, families began to return to their ancestral land holdings. However, the United States would continue to

hold influence on urban development in the Marshalls, requiring building codes to meet US standards, including stamping of architectural plans by US certified engineers and architects.

4. AMERICA TOWN RESETTLED FROM MAJURO, MARSHALL ISLANDS IN 1967

With the prioritization of development on Uliga, Djarrit, and Delap, these relatively resource poor islets had gained financial capital and symbolic power in RMI due to the legacy of the Trust Territory headquarters. The infrastructure development by the US military, including airstrip, provided the D-U-D the key ingredients for urbanization. As the RMI exited the Trust Territory of the Pacific, a transitional period took place between during the late 1980s and early 1990s. During this time, Hawaii Architects and Engineers were hired to provide full-scale development schemes for the D-U-D. The airstrip was moved from the urban center and development schemes for a medium density suburban center were designed for Delap, inclusive of housing, retail and a movie theater. As RMI entered independence, land holdings on Delap, Uliga, and Djarrit became a vital asset as the rightful landowners resettled their ancestral lands, gaining a place in the new urban center of the RMI and prime real estate in a globalizing world.

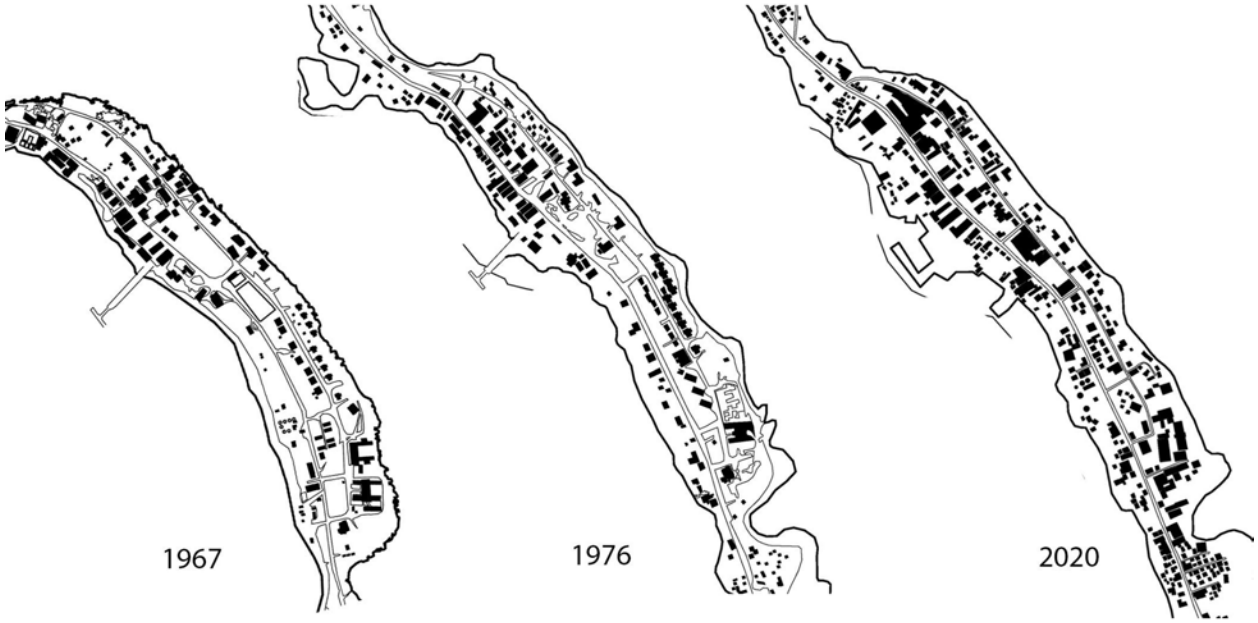

Fig. 2: Figure ground maps of Uliga. Ratios for buildings, roads and open space were as follows for each period: 1967 - 15/15/70; 1976 - 20/15/65; 2020 - 65/15/20. (Source: Miller, 2018)

The focus of the research on Uliga was Lejolimen *wato*. It once supported officer housing, barracks, the water tower, tennis courts, and a commissary. Between 1977 and the mid-1990s, the rightful landowners began to reoccupy their land holdings in Uliga. This period marked the transition from the US Administrative center into a re-identified Marshallese space. As described earlier, the value of these lands shifted drastically

from subsistence resources to real-estate value due to their location in the new economic center of the RMI. Between the mid 1980s and the 1990s, Uliga was rapidly developed as families began to adapt to the existing building stock and construct new housing units for extended families. Figure 2 provides a visualization of this rapid change over time through figure-ground drawings. In 1967, buildings and hard-surfaced areas made up 30% of land use, while 70% was open space consisting of agroforestry and recreation space. By 2020, buildings and hard-surfaced areas consumed 80% of the land, leaving only 20% of open space for agroforestry and recreation. This drastic change in the land shifted the identity with land from natural sustenance to economic sustenance.

America Town reflected the idyllic suburban housing of California and Hawaii in the Marshall Islands. Figure 3 provides an example of typical officer housing in Uliga and the American suburban aesthetic. The plan shown in Figure 4 highlights the original footprint of a three-bedroom officer's house at the center of the parcel, demonstrating the adaptation that has taken place over time after Marshallese families reclaimed their ancestral lands. This house is now the home of the *alap* (traditional landowner) on Lejolimen *weto*, referred to as Icedonia. The buildings to the east and west of the house are used primarily for rentals, with a pool hall and shop facing the main street to the south. There is a cookhouse along the seawall to the north in addition to a second outdoor kitchen adjacent to the indoor kitchen (NW corner of the house). A cookhouse is a small structure built over the fire on which food is prepared in order to protect the women preparing food and the fire.

Figure 3. Photograph of Officer's housing in Uliga, Majuro circa 1967. (Source: RMI Historic Preservation Office)

Fig. 4: The floor plan of the *alap's* house on Lejolimen *weto*, Uliga. The highlighted area is the original footprint of the officer house constructed in the 1950s. (Source: Miller, 2018)

Three important patterns emerge from the everyday practices of this family, and each demonstrates an evolution of Indigenous knowledge that aids cultural continuity in the urban environment. These patterns are Land, *Enra* (Marshallese concept of sharing), and multi-generational house. We argue that these patterns illustrate resistance to the assimilative forces of the American housing and planning schemes occupying the D-U-D. The resurgence of these cultural patterns demonstrate cultural structures that have continued in the construction of culturally supportive space throughout the evolution of the Marshallese culture, and are evidence of resistance to logics of Western planning.

The reclamation of land rights allowed the family to reconnect their identity to the land, albeit their relationship with the land is changing due to the drastic reformation of the landscape between 1907 and 1960. It is clear that the resource value of this family's land has shifted from one of natural resources to one of real estate value, yet the monetization of the land is distributed to the family rather than kept by one individual. In this case money gained through real-estate value has replaced agroforestry. Yet, the value of the land's natural production is still maintained in the cultivation of traditional medicines. Marshallese families resettling Uliga are able to take advantage of the urban economics created by the residue of the US occupation while cultivating cultural practices as they adapt and restructure the urban form.

The introduction of the western kitchen into the Marshallese household has changed the way families relate to each other, yet the cookhouse is maintained as a part of daily eating habits. To express the social changes created by the introduction of the western kitchen, one woman commented: "You don't feel obligated. You don't have to share something with your neighbors. It's really the style of the American construction." While the preparation of food in the cookhouse is visually apparent, cooking in the western kitchen is not. Coinciding with the preparation of food inside the kitchen, it is food that is purchased with money, removing the connection to the land that the Marshallese food prepared over the fire holds. In Icedonia, the binary between kitchen and cookhouse is blurred as meals are shared amongst extended family members, tenants, and other individuals in the neighborhood. The construction of cookhouses in Uliga along with the spatial construction of social networks tied to them reproduce cultural patterns that have kept cohesion among Marshallese families through *enra*. The spatial pattern of these connections to sharing is evident in housing clusters, yet the social connections of togetherness often expand beyond the boundaries of one *wato*.

What is most interesting about the family structure in Icedonia, is the consolidation of a Marshallese settlement pattern referred to by some as the Emlapwoj into the layout of a western track house. The *emlapwoj* is a multi-generational dwelling, traditionally one of the largest houses on the *wato* and inhabited by the *alap* and their grandchildren. Elders from Namdrik explained that the emplapwoj was a central building on the *weto* and behind it or near it was the cookhouse that supported the one fire from which the families' food was prepared. Nearby were also the sleeping houses of couples and single adults. This cluster of housing was near to the lagoon side of the *wato*, preserving the majority of the land for agroforestry. It was explained that the grandchildren lived in the attic space of the large house while the grandparents slept below under the cover of the roof. Children could freely go to stay with their parents or uncles and aunts, but the purpose for this arrangement was to impart wisdom from the elders to the children. The house represented a structure for the dissemination of knowledge and social capital. In Lejolimen, similar to Namdrik, children occupy spaces with

and learn from their grandparents, and a similar fluidity of movement between family housing is evident. Icedonia demonstrates a continuation of Marshallese spatial practices within the urbanization of Majuro.

While it has been argued that the predominant settlement pattern on Majuro has been replaced by the nuclear family represented by the single-family home, it is not clear to what extent this assessment is accurate.[21] Housing development has increased on *wetos*, leading to increased density and the perceived increase of single-family homes, but this also correlates with population growth and rural-to-urban migration. It is not clear that these housing shifts in the RMI correlate directly to the predominance of a nuclear family settlement pattern. The three patterns discussed here point to the persistence of Marshallese settlement patterns, in spite of the development of single-family homes following a predominant American settlement pattern. Analyzing emergent patterns through ethnographic data demonstrates that even families with a series of single-family homes on their *wato* carry forward Marshallese cultural and spatial practices, such as *enra*, the multi-generational housing, and land-use.

5. A BRIEF HISTORY OF RESETTLEMENT IN THE PHILIPPINES

The Republic of the Philippines (The Philippines) is an archipelagic country consisting of over 7,500 islands in the western Pacific Ocean. The most populous urban area, Metro Manila, is located on a large island in the northern region of Luzon. The country's geographic position makes it prone to devastating earthquakes and typhoons that have caused displacement and resettlement. However, political and economic factors such as rural-to-urban migration, ethnic violence, and land appropriation are the more frequently cited reasons for resettlement. Historically, the process of resettlement has been largely attributed to the relocation of families (informally) occupying land without legal rights into subsidized or 'social' housing. Resettlement became an embedded process in the island nation starting with the imbalance of resources between the landowning elite and the tenant farmers under colonization.

Colonized by Spain, Japan, and then the United States of America (USA) the Philippines underwent centuries of agricultural exploitation by way of *haciendas* (plantations) that echoed feudal property-rights and ultimately displaced millions of tenant farmers due to technological improvements in farming that required less manual labor and corporate land holdings.[22] Following the Spanish-American War, the USA sought to use the Philippines' rich agricultural resources to expand economic development. In 1901, the government under an American administration held 93% of the islands' land area.[23] The Catholic Church was the second largest private landowner and through negotiations with the USA sold the majority to Filipino estate owners.[24] In the later stages of the American Colonial Period, a Commonwealth system was established to subdue rising

insurrection regarding pressures on the failing sharecropping system especially around the country's growing commercial port city, Manila.[25]

Social inequality worsened at the turn of the 19th century due to competition for tenant land and the increasing population of the landless working class. The Philippines' federally initiated resettlement programs have their roots here. The People's Homesite Corporation (PHC) was the first government-housing agency to be established in the Philippines. These suburban Manila communities (intended to relocate poor farmers) were the first to include community services and facilities such as schools, open spaces, markets, and utilities. Around this time, squatters, looking for service work in the port, inhabited reclaimed land from Manila Bay; over the next three decades this settlement would come to be Tondo Foreshore – Manila's largest slum and the one in most need of basic urban services.[26]

Just a year after PHC was established, the government enacted the National Land Settlement Administration (NSLA) who's mission was "… to encourage migration to sparsely populated regions, and to develop money-crops to take the place of the present export crops to America."[27] When the Second World War broke out major resettlement areas were already established with populations upwards of 50,000 hectares signifying to working class Filipinos that top-down resettlement was a viable option.[28] However, due to its strategic position in the Pacific, Manila was a major site of conflict in World War II (WWII) suffering destruction to the built environment only second to Warsaw, Poland. During the reconstruction period, the government tried various social programs to stabilize unrest. The democratic system failed to produce equitable legislation likely because most political candidates came from large land-holding families.

In the years that followed, nine more social housing agencies were established each for a separate and distinct facet of urban informality and housing insecurity. However, none comprehensively addressed the growing issue of inequity. Only in 1963, President Macapagal enacted the Agricultural Land Reform Code which abolished tenancy based on harvest yields and replaced it with a leasehold system based on fixed rent. This was a significant advancement that helped to break-up the *haciendas* but was stalled by congress' failure to allocate funds for implementation.

The engagement of international investors in land holdings was made possible through the notorious dictator, Ferdinand Marcos (1965-1986). He abolished the existing social housing programs and stood up the *National Housing Authority* (NHA), which was unique because it would rely on the private sector for construction and operation of social housing. This strongly neoliberal move shifted social housing from a social to an economic imperative that worked to assimilate families from the informal economy into a formal economy.

Upon his violent removal from office, President Corazon Aquino stood up the *Housing and Urban Development Coordinating Council* (HUDCC) that she chaired. With a dire economy, she is known for allocating a large amount of urban public land for social housing and for 'inviting' squatters to migrate to the city because they knew they would get resettlement options.[29]

The succeeding presidents all made structural, policy, and architectural changes to the social housing process. President "Erap" Estrada's presidential cornerstone was a mass housing development (55,600 units) called Erap City (Kasiglahan Village) administered through his newly formed *Presidential Commission for Mass Housing* (EO No. 159). Erap invited private investment through the Asian Development Bank and the project received over 3.2 billion pesos (roughly $61M) from SSS, Landbank of the Philippines, and NSJBI. This was one of the first all-horizontal housing communities constructed on agricultural land outside of suburban Manila – displacing over 200 farmers. Over 80% of residents did not have access to livelihoods due to the remote fringe location. But the community fed into the culturally imbued concept of 'home' being a function of land-ownership – something that wasn't offered with the high-density in-city housing promoted by both President Corazon Aquino and President Fidel Ramos.

Resettlement in the Philippines, as in many Southeast Asian countries, leverages the economic potential of urban space through a neoliberal ideology. Yet, the Philippines' sensational display of social housing as the cornerstone presidential issue makes it a great case to study resettlement under the regime of neoliberal capitalism. Constant turnover of housing agencies and juggling for control have rendered little material changes but rather a pendulum swinging between strategies always with a focus on 'numbers of housing units' over qualitative assessments. Over the past three decades, social housing has transitioned from a public responsibility to an opportunity for the private industry.

6. PABAHAY 2000 RESETTLED FROM MANILA, PHILIPPINES IN 1998

Distance, in the greater Manila metropolitan region, is best measured in time because of the deeply congested traffic. The resettlement community of Pabahay 2000 is located about 4-hours from Metro Manila in the agricultural province of San Jose del Monte (SJDM). Public transportation to these areas is limited to commercial nodes where residents can use jeepneys and then rickshaws to eventually arrive home, but these vehicles are unequipped to deal with flooding and landslides. Accessibility, due to limited services, geographic distance, and quality of infrastructure is a major concern.

The residents came from a few different locations. Some were relocated from an informal community on public land Metro Manila when the government leased the land to SM Land Inc. to develop the SM North

commercial shopping center. Others were relocated from flood prone areas around the Manila Port in Tondo. One of the many challenges with centralized 'lottery' style resettlement is the break-up of ethnic and community bonds from the original settlements. With over 7,500 islands each with a unique culture, many Filipinos that migrate to the urban center rely on the social capital of ethnic, regional, and linguistic bonds to sustain their family. These bonds are broken as families are mixed into new communities such as Pabahay 2000 and many residents commented on concerns of safety, lack of childcare support, and even financial support because they didn't have a common ground on which to base new relationships.

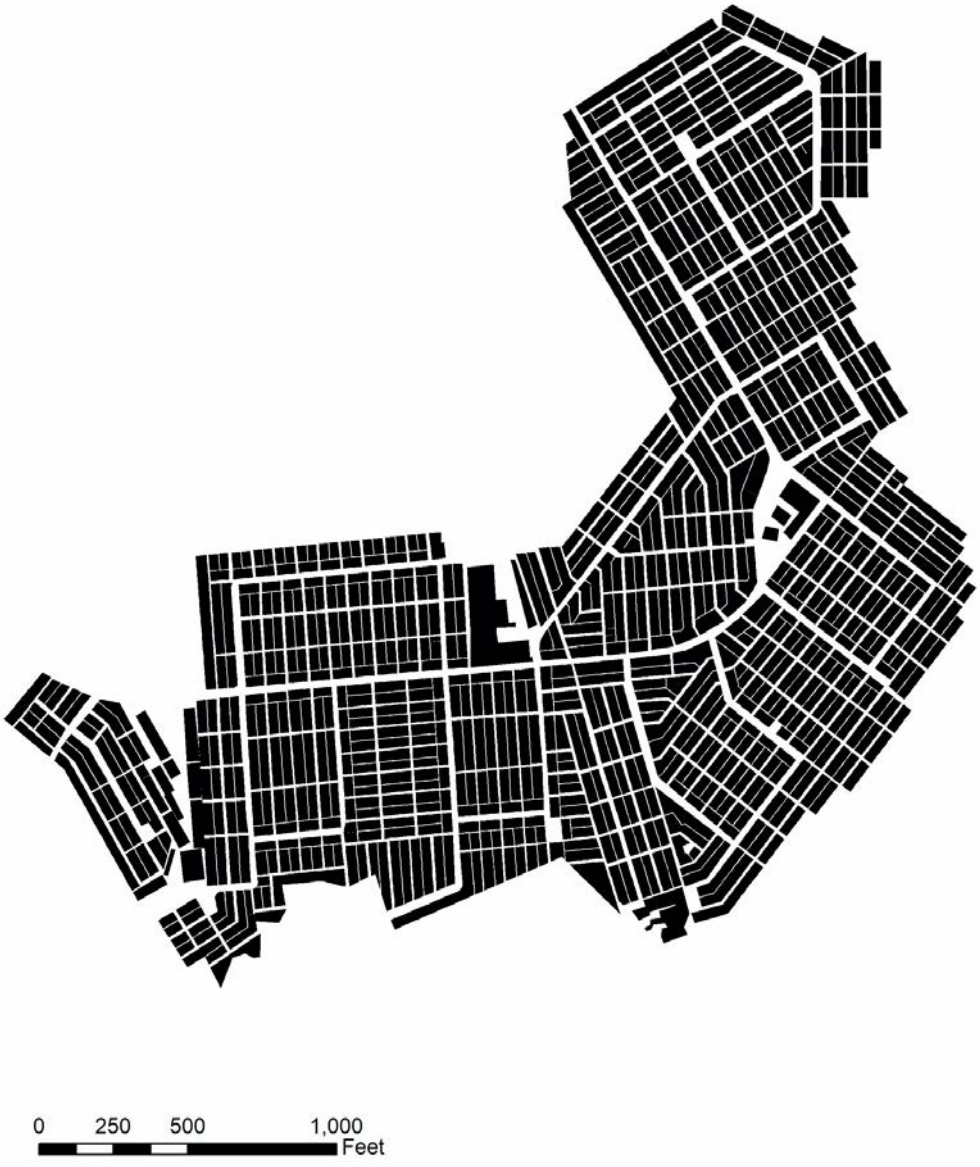

Fig. 5: Figure-ground drawing of Pabahay 2000 using satellite imagery on GIS circa 2020. (Source: Subik Shrestha and Lyndsey Deaton, 2020).

This community was constructed in 1998 and has undergone many transformations, in which individual families have made architectural adaptations and adjustments to the units in an attempt to meet their needs. The community is only accessible through a two-way loop that dead ends into a gated community. Other than from the cramped and inhumane density, it would be hard to tell from the architecture as of 2018 that this community was designed as a resettlement housing site.

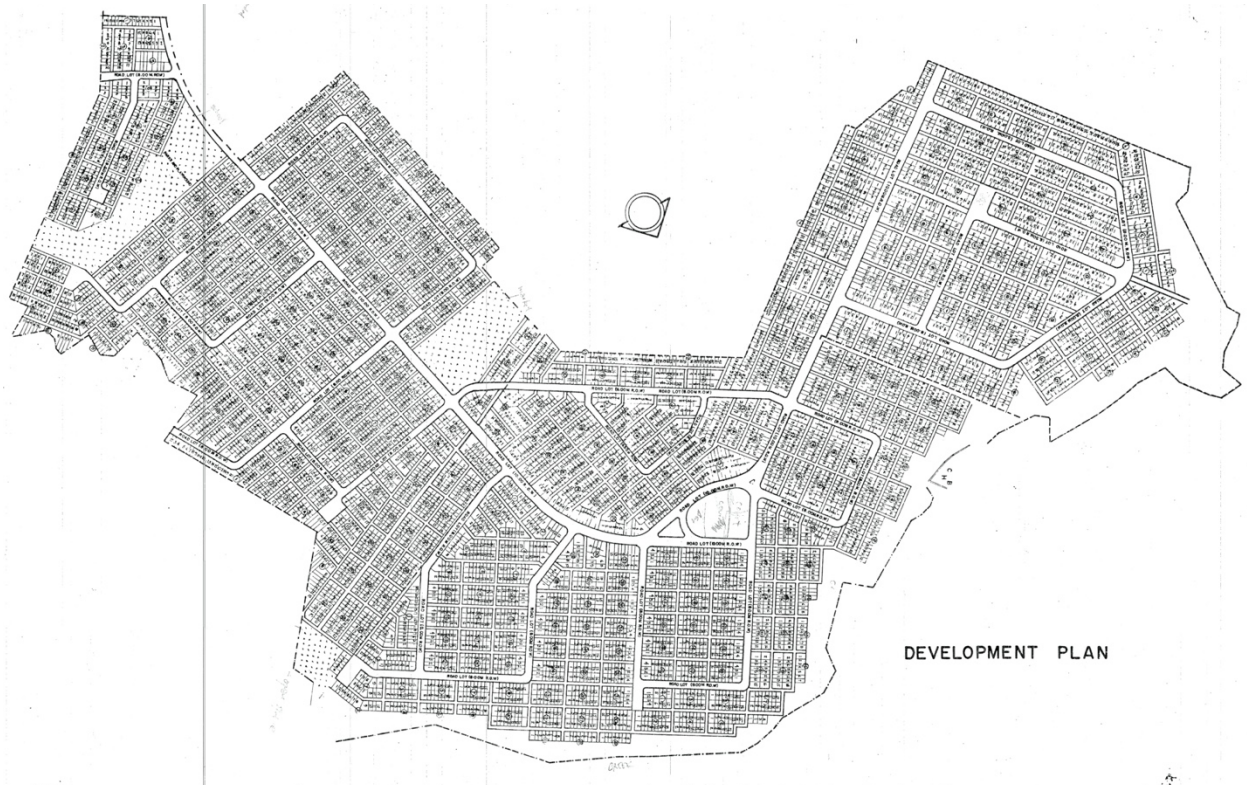

Fig. 6: The development plan of individual family lots at about 25'x12' each. (Source: Filinvest Development Corporation, 1995 courtesy of the NHA).

Economic efficiency was the primary planning goal for the Pabahay 2000 Master Plan. Under President Fidel Ramos, the government shifted its perspective on social housing from highly centralized and subsidized to a market-oriented approach. His presidency is notorious for the idea of 'toilet-communities.' Under his direction, the NHA acquired large plots of land and put down slabs with only a toilet (no partitions or roof).[30] The minimalist idea assumed residents would eventually invest in their home and complete the construction, the trade-off being that Ramos could construct more houses with less resources if residents shared in the construction costs and labor. However, these communities became seeding grounds for blight because the residents didn't have the knowledge or materials to construct homes to a safe standard and architectural code enforcement was limited at best. Families used what they could find - old wood, galvanized iron sheets, and

tarpaulin - to complete their house. The slabs were too densely constructed and without walls, residents took advantage and encroached on the neighbor's space.

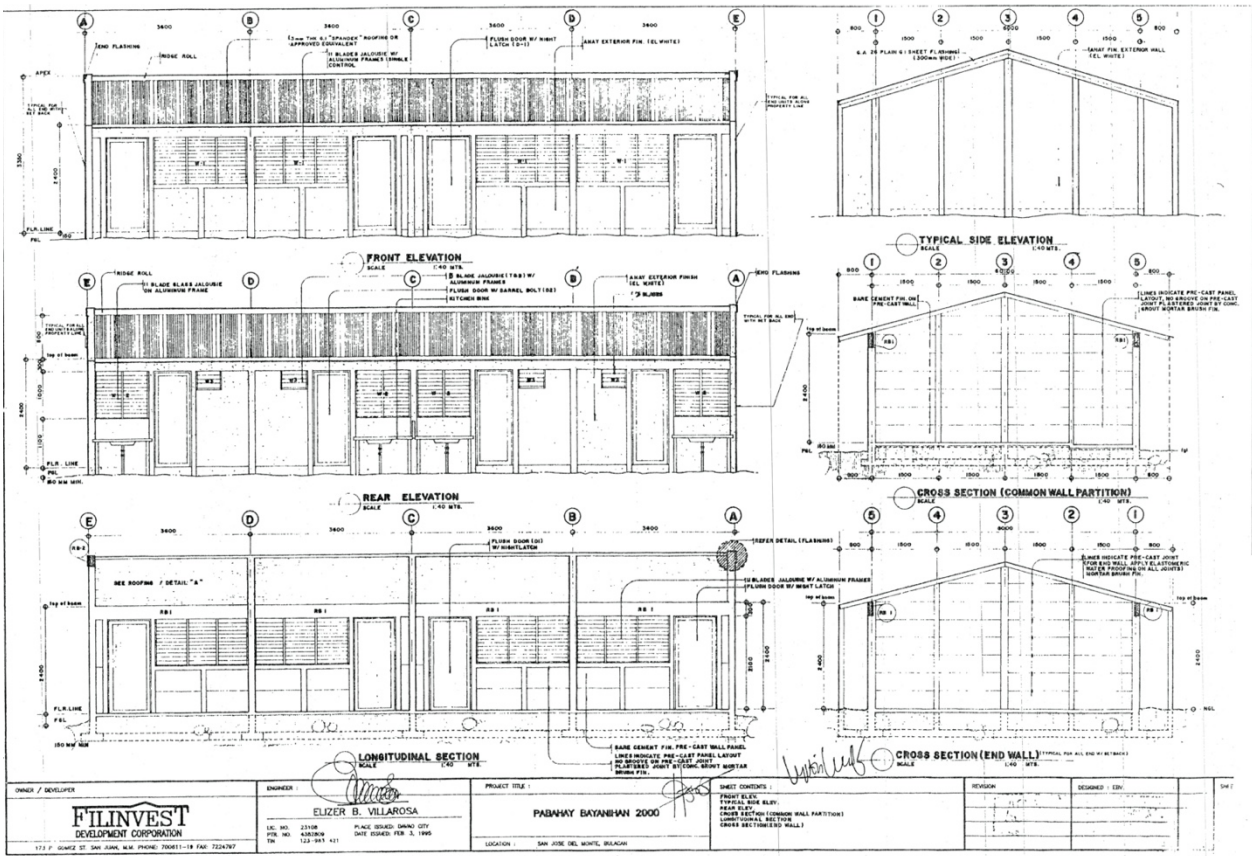

Fig. 7: The elevation and sections for the typical housing structures. (Source: Filinvest Development Corporation, 1995 courtesy of the NHA)

While Pabahay 2000 was not a 'toilet-community,' the essential principles of economic efficiency are clear in the planning documents that lay out the 7,085 units on 107 acres. Filinvest Development Corporation designed the houses to all follow a single floor plan no matter their orientation to the street or the sun or the site. They are organized in dense rows of approximately 20 houses sharing a party-wall between each unit. There is a 3-foot overhang on both the front of the unit and the rear of the unit. This space was for the families to construct steps or ramps to the landing of the house which was often above street level as a precaution against flooding. The front of the units share a boundary with the street while the rear of the units about each other with a 7-foot wide alley in between. There is one area designated as public space - a basketball court. However, there are no traditional public spaces of parks or even informal public spaces such as sidewalks.

Inside the units are divided into two rooms, a bathroom and a family room. The construction of interior walls for bedrooms and segregation of the food preparation area was left to the families to complete on their own. However, at only 225 square feet per unit, the reality of 'rooms' is limited. The average family size in this community is 7 members. The units are built out of concrete blocks with concrete floors and a tin gable roof. The columns in the walls are not designed to support more than the roof so expansion to a second floor is expensive. The units have three windows, two on the main street and one on the alley. There is a front door and an alley door. Architecturally, the units meet their primary objective of economic efficiency. When resettled, families are required to procure mortgages and thus indoctrinated into the processes of banking, insurance, and Western concepts of property ownership. However, the community as intended proved not to viable as a place of habitation and over the next two decades transformed almost unrecognizably.

Today, most units have undergone at least one renovation with many units on their 5th or 6th complete renovation. Lots have been combined, divided, and raised. Property has been sold to enterprising neighbors and out-of-town investors. The National Housing Authority's (NHA) local office estimates that perhaps 40% of the title-holding residents would not qualify for social housing today (insinuating high turnover). The community has morphed into a complete town with a main street lined by commercial uses such as bakeries, computer cafes, restaurants, poultry supply, liquor stores, ice cream stores, resale shops, sportswear, private schools, water filling stations, etc. The standard, single-room, single-level layout has completely vanished underneath medium density mid-rise construction.

Fig. 8: Resettlement architecture succumbs to the pressures of community needs and economic potential. (Source: Deaton, 2018)

Today, the community is experienced more as a hybrid social housing project cum peripheral suburban community. These different acts of renovation are architectural resistance. Through the street survey, I found many patterns of architectural resistance. I will discuss six that illuminate the different scales of architectural resistance from the interior design to the community pan but many more could be discussed in a lengthier

assessment: domestic balconies, protective bars, open facades, sari-sari stores, mixed-use buildings, and pocket courts.

Figure 9: (L) Domestic balconies and (R) protective bars. (Source: Deaton 2018).

As buildings were renovated to include upper levels, many incorporated balconies. However, these balconies were often used primarily as extensions of the domestic space. They were used to dry laundry, to dry and wash hair, for cooking dishes that produced a lot of smoke, and for storing goods. The balconies were sizable and extended out from the facade of the units into the street area by about 3-5 feet.

Safety was a primary concern when speaking with the families. As residents were resettled from different ethnic backgrounds and not all families spoke the same language or even dialect, they felt they didn't know their neighbors. They felt that crime was more prevalent than in Pabahay 2000 than in their previous settlement and mitigated petty crime through protective architectures such as bars on openings in the facade.

Fig. 10: (L) Open facades and (R) sari-sari stores. (Source: Deaton, 2018)

Many units that had been converted to commercial use (almost all that were located on the main street) removed the entire facade of the building. It was replaced with a roll-down cage that would be locked at night and occupied at all times by staff who would sleep in the shop. When shop owners were asked about this renovation, many commented that it was good for business because pedestrians could see the goods better and a few said it was more comfortable because of ventilation.

Some of the houses on side street and the alley had expanded their house to enclose the small space under the 3-foot overhang. This space was used to stock small household goods and food snacks for commercial sale. These neighborhood "convenience" stores are a cultural housing pattern called a sari-sari store. It allows the families to earn some small income without losing too much space.

Fig.11: (L) Mixed-use buildings and (R) pocket courts. (Source: Deaton, 2018)

Many families were not able to pay their mortgage and NHA was obliged to find a tenant that would make the payments. However, the NHA was not obligated to only sell to resettled families. Some enterprising families (both within Pabahay and also from the extended area of SJDM) saw value in procuring multiple lots for commercial redevelopment. The lack of planning for any commercial center was a prime development opportunity. Along the main street, many buildings had been renovated to be multiple levels with the ground level reserved for commercial uses and the upper levels for residential uses.

At the urban design scale, the lack of open space was a critical issue for families with children. The master plan had only one basketball court for the entire community located at the juncture of the two "wings." The court was approximately a quarter mile from most houses but due to concerns of safety, many parents would not allow their children to walk alone to the court. While this was the only identified occupiable open space, the master plan did have small parking lots interspersed throughout the community to comply with a code requirement. In reality, few families owned a car; if anything, families had access to scooters which were kept

adjacent to the house. These parking lots were thus renovated into small pocket basketball courts that were off of side streets surrounded by residential houses. These six patterns of architectural adaptations suggest resistance to the homogenous and uniform plans originally developed by the central government. The next section brings the two cases together with contemporary theories of resettlement, assimilation, and hegemonies of power.

7. HOW DO ARCHITECTURAL ADAPTATIONS SHOW RESISTANCE IN ULIGA AND PABAHAY 2000?

The entrenched logics of colonialism and now post-colonialism (and even post-post-colonialism) were put into place to erase the 'indigenous.'[31] The 'techno-power' of planning as a process erases through the cycles of dispossession and resettlement that assimilate populations.[32] Although much of the discourse is rooted in the cycles of claiming/reclaiming indigenous lands, these patterns transfer to the context of 'developing states" through their intentions to assimilate families into the norms of Western culture. The two cases in this study demonstrate different resettlement approaches (top-down versus bottom-up) that both utilized the technology of planning to achieve cultural assimilation. In Uliga, the decommissioned cantonment was the framework for a grassroots resettlement process of families returning to ancestral lands whereas in Pabahay 2000, the federal government forcibly resettled families from informal communities in metro manila to social housing on the urban periphery. Our qualitative investigation revealed patterns of architectural adaptation in both cases demonstrating resistance to assimilation.

The image of American norms and housing values began with the development of the Trust Territory headquarters on the D-U-D and USAG-KA. US based planning and building processes continue to influence daily life in the RMI. This is evident in the continued application of continental land-use planning and the importation of US designed single-family homes, processes that represent an extension of American control and standardization of the local environment. The Americanization of land and building-form in Uliga worked to assimilate Marshallese families to Western norms and housing values. In the context of Hawaii, Kauanui refers to this systematic assimilation of native peoples as 'deracination.'[33] In his work on decoloniality and the RMI, Desmond Doulatram recognizes the modernizing forces of American hegemony, but argues these systems were always resisted by the Marshallese people.[34] Through the continuation of Marshallese spatial practices, families created architectural and spatial adaptations within the US cantonment of Uliga. As families resettled their ancestral lands in Uliga, the morphology of the planned settlement began to evolve from the bottom-up and countered the presupposed western logic. The physical adaptation of the built environment represents the political and social resistance that Doulatram illustrates.

The findings from the analysis of Uliga's urban morphology demonstrate the forms of resistance present in spatial adaptation. Although the land has transformed into a concrete jungle, families maintain their identity in the land and continue to utilize it for sustenance. On Lejolimen *wato*, families re-introduced cultural patterns of multi-generational living, transforming the layout of American single-family homes into identifiable Marshallese spaces. Families resisted models of American domesticity. The social capital present in Marshallese concepts of togetherness and *enra* expanded spatial connections beyond individual houses and *watos* to larger familial networks and resources, evident in the clustering of houses and fluidity of clan relations, tying together ancestral lands across space and time. These Marshallese processes broke down and redefined the barriers and boundaries created by western planning logics. The continuation of these cultural patterns demonstrate the resistance to conforming to the American way of life.

As a process, the unplanned resettlement of indigenous people to reclaim their heritage land in Uliga contrasts with the centrally planned resettlement of informal communities to move into social housing in Pabahay 2000. However, we have found similarities in the ways in which individual families have adapted the architecture of their dwellings to resist assimilation. Just as many families in Uliga continue cultural housing patterns through adaptations, so too do many families in Pabahay 2000 adapt their housing units to resist the constraining efficiencies of neoliberal planning.

The neoliberal hegemony rooted in the Chicago school has commandeered the techno-power of planning around the world to commoditize space by "rolling back" investments in social programs while "rolling out" privatization schemes and market processes. Through a comprehensive analysis of spatial patterns in select American cities, Jason Hackworth contrasted between cases of 'Keynesian managerial cities' and 'neoliberal cities' ultimately establishing the widely used definition for a 'neoliberal city' as one whose mode of governance, social structure, and uneven spatial development express the neoliberal vision of a free market utopia.[35] Other scholars such as Garcia Peralta and Hofer have tied architectural and planning decisions back to neoliberal policies.[36] Their study looked at the rise in gated housing communities for workers in Mexico City as a result of neoliberal policies. They found that this architectural form was introduced to increase the profit margins of developers but failed to meet the needs of workers, segregated residents, and disconnected them from the urban fabric. These scholars show that neoliberal policies result in uneven spatial development through planning and architectural decisions that prioritize economic efficiencies.

Arnison Andre Ortega tells of a market-based and privatized suburban political economy that alters socio-spatial relations and class dynamics on the fringe of metro Manila after the 2008 global financial crisis.[37] He describes how informal communities are rationally dispossessed and resettled to remote socialized housing

projects because they are beyond the reach of real estate accumulation. As one of these projects, the experience of daily life in Pabahay 2000 is to normalize the repetitive housing patterns, the dense homogenous plans, and the urban displacement shaped by the regime of neoliberal capitalism. It assimilates families into a mortgage system of spatial privatization. In this context, resettlement is the process of inscribing a population that once lived through informal labor, informal settlements, and informal resources into a formal system of mortgages, taxes, and insurance. However, this process consistently fails because livelihoods, access to employment centers, and support services have been "rolled back." The Philippine's tradition of leveraging social housing as a political issue increased its susceptibility to be commandeered by the political system. Government corruption, inadequate funding, and gerrymandering organizational responsibilities have only cut back social housing programs demanding more efficiencies from architecture. An architect on the National Council of Architects, who helped to revise the National Building Code acknowledged the challenges with an efficiency-based system.

> Design standards prescribed by the various building and planning laws are problematic. The application of the concepts of ergonomics and anthropometrics to low-cost housing have been very much oriented to the physical realm. Minimum dimensions of house components are largely taken from measurements of the users while laying-out of functional zones are based on very rational analyses of sequential movements, oftentimes based on western models.[38]

The architectural adaptations in Pabahay 2000 retained the framework of the modular unit but adjusted the function, layout, and architectural qualities. The six architectural patterns of resistance that were discussed (domestic balconies, protective bars, open facades, sari-sari stores, mixed-use buildings, and pocket courts) resist the homogeneity and uniformity of neoliberal planning practices. They reclaim the community through acts of adaptation that represent political and social resistance that activate Bourdieu's concept of habitus.

The habitus represents deeply buried schemes that constitute a culture, transforming collective heritage into an individual and collective subconscious. Within the dialectic relationship of culture and the built environment, we see the effect of habitus in built form. The spaces we inhabit both reflect and configure our being in the world and the meaning embedded in place shapes daily-life from the paths we travel to the social behavior enacted in space. Architectural adaptations resist assimilation and support the cultural patterns and needs of inhabitants. As Bourdieu argues, the house symbolizes the epitome of the habitus, which demonstrates the significance of the built environment in the construction of the habitus and the maintenance of culture.[39] In both cases, the cultural construction of the habitus is often in opposition to outside influence. As external and internal relationships evolve between architecture and inhabitant, deep

schemes provide the agency for transforming built form, resisting western planning logics, and supporting collective needs.

Adaptation demonstrates the complex systems present in everyday practice and the incremental spatial reconfiguration to support cultural patterns. More acknowledgement needs to be given to the agency present in architectural adaptations as forces resistant to assimilation and culture change. Environments constructed by foreign interests and neoliberal schemes act to assimilate families into modernity, but resistance reshapes these environments into fields of insurgent power and cultural resurgence.

8. CONCLUSION

As an embodiment of everyday practice, architectural adaptations show resistance to assimilation, demonstrating the agency of inhabitants. Broadening the definition of resettlement allowed for the investigation of nuanced implications of hegemonic agendas on subaltern populations along with their responses to urban conditions. Instead of focusing on refugee populations and trans-national politics, our intention has been to explore how resistance manifests in architecture. We thus took the suggestion of Lozanovska to focus on the perception of assimilation and how it was experienced through daily lives of residents.[40] We considered questions of how assimilation occurs and how it is resisted.

We explored two different types of resettlement processes (decentralized and centralized) through case studies and we found commonalities in the manifestation of architectural adaptations. In the Republic of the Marshall Islands, families who resettled in order to reclaim heritage lands rejected the assimilating architecture of the decommissioned military outpost in Uliga. They made architectural adaptations to demonstrate their agency over the implied western lifestyles, for which the buildings were designed. In the Republic of the Philippines, informal settler families were forcibly resettled to Pabahay 2000, a social housing community on the urban periphery of metro manila. Over a twenty-year period, these families made architectural adaptations that rejected the neoliberal planning logic of the austere and homogenous environment.

These findings suggest a possible resurgence of cultural patterns, but this possibility is difficult to explore in the case of the Philippines where informal settlers are resettled through a lottery system that redistributes ethnic groups. Exploratory and theory-building work in the field of resettlement architecture is critical now more than ever in areas susceptible to sea level rise and other effects of climate change. Specifically, populations living in the Pacific Islands are more likely to migrate and resettle. These issues need to be investigated for cultural plurality and to better understand the role of architecture and planning with vulnerable populations.

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CRAFTING TRADITION: BRIDGING VERNACULAR SOCIETY, EDUCATION, AND PROFESSIONAL PRACTICE IN INDONESIA

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CRAFTING TRADITION: BRIDGING VERNACULAR SOCIETY, EDUCATION, AND PROFESSIONAL PRACTICE IN INDONESIA

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The separation between architect (the thinker) and vernacular builder in architecture education caused a gap in the transmission of tradition in terms of architectural production. Comparative studies of learning by making demonstrates that the act of craft in architecture education, based on vernacular knowledge of 'making' architecture, can become the bridge for professional practice; where, architecture students, professional architects and (vernacular) builders work together. In the end, hopefully this paper will contribute to the understanding of architectural tradition by crafting relations between vernacular tradition, the changing education culture, and the developing environment.

1. INTRODUCTION: TRADITIONS IN ARCHITECTURAL PRODUCTION

Tradition[1] as a dynamic process are performed in many aspects of our lives. Wedding ceremonies are the most notable examples of tradition as a dynamic process, handed down from one generation to the next, which are performed, adapted, and renewed in our everyday life all over the world. In architecture, tradition as a dynamic process behind architectural production[2] often seen as distant, a heritage practiced only by rural society, far away from the so called 'modern' society living in the urban setting. This view separates the practice of architectural production of 'traditional' and 'modern' architecture.

The separation is somehow 'justified' by architectural education in Indonesia. Historically, Indonesia's architectural education started in the 1920 with the opening of the first technical school; *Technische Hoogeschool te Bandoeng* set up by the *Koninklijk Instituut voor Hooger Technisch Onderwijs* in *Nederlandsch-Indië.*[3] Five year after Indonesia's independence, in 1950, the same school became the first architecture school in Indonesia with curriculum adopted from the Netherlands, and became patron of other architecture schools in Indonesia.[4] In this sense, the architecture tradition in Indonesia's education began without the knowledge and skill of local architectural production. Up until now, there is no written changes of local architectural production in architecture school's curriculum.

This missing link caused identity crises in Indonesia's architectural debate since 1990s. Those who are concerned about this matter, whether students, academics or professionals, get together in groups, creating movements in the search of Indonesian architectural identity; notable groups are student organizations called Arsitektur Hijau in 1985[5], academic organization called Lembaga Sejarah Arsitektur Indonesia (LSAI) in 1989[6] and Pusat Dokumentasi Arsitektur Indonesia in 2002[7], and professional organizations called Rumah Asuh in 2009[8]. These groups focused on documenting, writing, preserving and conserving the material culture. The issue of tradition as dynamic process that need to be handed down from one generation to the next, which traditions to be transmitted and how, are still rarely mentioned, let alone discussed.

Thus, this paper is not focusing on the authenticity of tradition, but draws attention to reduce the gap of the transmission of tradition[9] related to architectural production; between local architectural production, practiced by vernacular society and architectural production taught in education, practiced by the students and by professional architects, which already happened hundreds of years ago in Indonesia. If tradition in relation to architectural production can be viewed "as the arena of mediation between the hegemony of national or local culture and the exercise of choice by some members of groups of society",[10] then education of an architect in this global era can be seen as one of the most powerful start in the attempt to re-weaving architecture tradition between these three actors; vernacular society, who practice know-how tradition[11], many are construction labors -read: vernacular builder-, students of architecture who eventually become professional architects that produce architecture for the society, and work with vernacular builder.

This paper will first discuss about performing tradition as craftsman, followed by comparative case studies, explaining the act of craft (or learning by making) in architecture education's program based on vernacular knowledge of 'making' architecture, and demonstrates how the crafting tradition can become the bridge for professional practice; where architects and (vernacular) builders work together.

2. PERFORMING TRADITION AS CRAFTSMAN

Learning by making is a rare exercise in architecture schools, let alone learning by making based on the vernacular tradition of architectural production. Although, the term architecture is derived from *architektōn* (Greek) which means master builder, due to the influence of Ecole des Beaux Arts which focuses on "imitating the Great Master" through drawing, passing down style to the future generations[12], as well as the Industrial Revolution which separated the craftsman's ideas from his actions",[13] the act of making is not practiced. In its development, many architecture schools' concerns about how to design and its representations, resulting "the educational responsibility of apprenticeship within the master builder tradition is being lost".[14] Moreover, "the lost is not simply the ability to create objects by hand, but also the soul that is expressed through the pleasure of making and the independence delivered through the process of mastering one's own craft".[15] This education concept separates the architect (professionals, the thinker) and the builder (vernacular society, the crafter)[16]; which in turn has brought "the separation of the academy from the world around it,"[17] and put the architect in a distant.

Few architects-educators in the world who are aware of the importance of these issues started to give their student a hands-on experience design-build courses, studios or workshops. Samuel Mockbee with his Rural Studio is one of the pioneers of this kind of practice since 1993 which build hand-in-hand with the community,[18] INTBAU workshops[19], Ghost Architecture Laboratory[20], and Design and Make AASchool

Graduate Program which focuses "on the synthesis of advanced technologies, craft techniques, and deep understanding of natural material".[21] In Indonesia, only recently from the 2010 onward, the hands-on experience are beginning to emerged and exercised in architecture schools, as part of studio or community development programs. One of the most notable one as entity in Indonesia's architecture education is Sekolah Tukang Nusantara (Indonesia's Carpenter School) which held its first carpentry workshop in 2015.[22]

Learning by making is not about training architects to be the builder, but it's about making architecture as an act of craft.[23] Craftmanship here means the desire to do a job well, a form-giving activity which focuses on the quality and requires adequate knowledge and technique of making things[24]. To be able to make things well, the craftsman needs to have a deep understanding about the limitations and potentials of materials and the skill to execute the work. Thus, it is about the coordination between the knowlede and the skill, the mind and the hand. In fact, making cannot be separated with thinking which Sennet elaborated with "making is thinking".[25] In this sense, the act of craft in architectural production is not just about carpentry, it is about the whole process of making architecture which includes the material knowledge, skill and technique of construction by vernacular builder, the current architect's design process -practiced by both students and professionals- which includes the ability to design, making drawing, modelling, both manually and digitally, as well as the industrialized building construction process in contemporary architectural practice, which often seen as just an act of 'build'-ing by construction workers.

Architects as craftsman means continuous relation between the ability to design well and to execute the design into reality. Even now, in the globally digital world, architecture is always a concrete entity to be experienced and therefore it has to be made[26]. Peter Zumthor elaborated, "A plan, a project drawn on paper is not architecture but merely a more or less inadequate representation of architecture, comparable to sheet music. Music needs to be performed. Architecture needs to be executed".[27] Thus, to be able to make architecture suited to its place, its environment, and its people -including time and economic considerations-, the design models and drawings created by the architect whether by hand and / or by computer should embodied the understanding possibilities and limitations of the materials and constructions processes, tools, skill and techniques of local vernacular builders.[28]

Local vernacular builder as craftsman certainly does not mean doer without thinking whose skills only related to manual tools and techniques. Just as architects now have the skill to draw digitally by computers, vernacular builder also began to work with machines long time ago. For example, wood cutting is not done only by manual saw, but also by chainsaw and other carpentry machinery; plasma cutting for metal, or even placing large steel column with crane. These machine works operated by human still need knowledge and technique. Thus, the craftsman's skill and sensitivity are needed in digital world and mechanized system[29] as

well as their ability of thinking, developing knowledge and evolving techniques. The technique here is not just a mindless procedure but considered as a cultural practice for a particular way of life.[30]

If within the act of craft, thinking, feeling and the evolving traces of livelihood are included,[31] then architects - both students and professionals- and vernacular builders as craftsman should look at local tradition of architectural production as one of starting point, an important reference of making with materials consciousness, processes, tools and techniques that need to be adapted, developed, reinterpreted and relived according to new needs, situations and advances of technology. As Sennett stated, "the craftsman explores these dimensions of skill, commitment and judgment in a particular way. It focuses on the intimate connection between hand and head. Every good craftsman conducts a dialogue between concrete practices and thinking; this dialogue evolves into sustaining habits, and these habits establish a rhythm between problem solving and problem finding.[32]

In other words, learning by making as an act of craft can be seen as a tool for performing tradition of architecture production. By performing tradition as craftsmen means becoming active actors in understanding, explaining, and interpreting in the transmission of architectural production. This re-weaving tradition by the three actors is crucial, as Paul Oliver stated, "There can be no change without tradition; that tradition provides the matrix within which any change may be introduced. Even so, the rate of change may be virtually imperceptible, as small innovations and modifications are tried, repeated and proved to be effective and gradually incorporated into customary practice, or found wanting to be dropped". In this way, tradition can be reinterpreted, relived, reborn and become more and more sustainable.

3. THE COLABORATIVE CRAFTSMEN

Architects cannot work alone, he/she at least need others to build. "The architect often needs an entire army of surrogate hands, both in the studio and on the construction site to execute his work".[33] In performing traditions of architectural production, this section demonstrates the different ways of collaborations between architects -both students and/or professionals- and vernacular builders as craftsman through comparative analysis among four case studies.

All four case studies[34] are learning by making program conducted at Department of Architecture, Parahyangan Catholic University; the first is wood installation project (fig 1.) conducted as part of Design Theory and Methods Class; second is five wood and bamboo gardener shelter (fig. 2) to be stationed in Cikalong Wetan, West Java, con-ducted as part of Design Studio; the third is bamboo shelter installation[35] (fig. 3) which takes place in Karangjahe village, Rembang, Middle Java, as part of Community Development

Program; and last but not least is bamboo workshop as part of Community Development Program, initiated by Construye Identidad,[36] a group of young architects from Peru in cooperation with Parahyangan Catholic University, which takes place in a West Sumba village called Weelewo. These four case studies showcase different role of the three actors. Three case studies will be explained in comparison, while the last case, the bamboo workshop in Sumba is explained separately.

Fig. 1: Wood Space Installation (Source: Author, 2019).

Fig.2: Wood Gardener Shelter (Source: Author, 2018).

Fig.3: Bamboo Shelter Installation, (Source: Author, 2015).

In the first and second case study, the local vernacular carpenter[37] acted as trainer in architecture bamboo and wood workshops architecture students as designer and trainee, professional architects as design critics and lecturers as facilitators. The students in groups of three are trained three basic wood joinery from measuring and measuring again, cutting, and joining, using manual woodworking tools (fig. 4). The chosen wood joineries are butt-joint, half-lap-joint and mortise tenon, used extensively in wooden stilt houses as main structures in many parts of Indonesia.

Fig 4: Basic Wood Joinery Workshops with manual woodworking tools. (Source: Author, 2019).

Whilst in the case of bamboo, due to time limitations, there are no hands-on workshops, only demonstrations. Bamboo craftsman in Bandung city is invited to teach and demonstrate how to work with bamboo materials; types of bamboo and its' potentials and limitations, tools used, types of joinery, and the construction techniques (fig. 5). The chosen bamboo joineries are bamboo joints with dowels and central double rafters, used as in rural sheds or as non-structural elements. In the third bamboo shelter installation in Rembang, Middle Java, third- and fourth-year architecture students act as designers, lecturers act as mentor, no professional architects involved. All actors; two (female) lecturers, two (female) students and (two) male Karangjahe villagers, work together as builders (Fig 6).

Fig 5: Demonstrations of working with bamboo by local craftsman using manual tools (Source: Author, 2018).

Fig 6: All actors build together as craftsman. (Source: Rembulan Lintang, 2015).

All three case studies have differences in the construction process which influence the role of the three actors. The first case is built by 200 first year, second semester, architecture students (fig. 7) on campus with supervision of the lecturers and two local vernacular carpenters. Trial and error which is a unique characteristics of know-how tradition, collaborations between students, and communications with two local carpenters in the middle of construction process are common occurrence.

Fig.7: Students manufactured and assembled the wood space installation by themselves with the supervision of two local vernacular carpenters. (Source: Author, 2019)

In the second case, the shelters need to be transported from campus to the site, so the given task is to design a knockdown shelter that is able to be assembled in one day. Thus, the second year, third semester students designed wood and bamboo gardener shelters in components, to be manufactured on campus with the help of the local vernacular builder, and assembled by the local vernacular builder onsite with the help of the students (fig. 8). So, there is a reverse role between students and local vernacular builder in the beginning and in the ending of construction processes which certainly require good communication and collaboration to execute the job well.

Fig. 8: Shelter's component manufactured by students on campus being transported and assembled on Cikalong Wetan's rocky hill site by local vernacular builders with the help of the students. (Source: Author, 2018).

The third case, because of the nature of the project which is a 7-days construction process in Karangjahe village - far from the city of capital city of Middle Java-, we choose to erect 1:1 main structure models on Bandung campus with the help of bamboo craftsman based on the design and make a detailed working drawings based on the models. However, on the site, after discussion with local vernacular builder, several changes are made in the joinery of the main structure and in the joinery which bind the weave bamboo to the beam.

Due to the global-ranging participant of the program, the role of the vernacular builders, students, and professional architects as craftsmen in the bamboo design and construction workshop which takes place in a Weelewo village are quite different from the three case studies mentioned above. The program is joined by 12 participants; a mix group of architecture lecturers, architecture students, professional architects, industrial and interior designers from Indonesia (Bandung city), French, Germany, and Peru. The goal of the program is to build bamboo water collector, designed and drawn by a Germany architecture student in collaboration with an architect from Peru. It is important to note that the design process is done virtually.

The group of 12 participants -including the two designers and me- can be seen as students of Sumbanese building tradition, while Weelewo villagers acted as local vernacular expert of the rainforest. The term expert

and student are used here because in the case of Sumba's program, the participants are gaining a lot of knowledge, wisdom, techniques and skills from the villagers about bamboo, from picking the 'right' bamboo and rattan from the rainforest, preparing them to become building materials, splitting, making holes, joining, binding using mostly *parang* (a kind of machete), ax, manual drill, and saw, as well as the social and beliefs system embedded in the construction processes of their houses with a distinct tower-like roof (fig. 9).

Fig. 9: Villagers as experts of the rainforest showing how to pick bamboo, how to split rattan, and the construction processes of their houses. (Source: J. Coupertino Umbu, 2019)

In this particular program, different from the other three case study mentioned earlier which buy available materials from the nearest building material store, participants have a rich experience and understanding from the villagers about knowledge, wisdom and techniques of how to take the materials directly from the forest with considerations and high respect of the environment. "You can also see the handling of, not only structures, but how they work the material with what nobility".[38] The process of taking the materials from the forest are filled by communication and a certain sound. The most extraordinary findings are the rattan joinery used in their traditional houses, a skill found hundreds of years ago, handed down by their ancestors. The villagers are showing us how to make several rattan joineries, one of them called buffalo knot, when the idea of using it in the water collector emerged. After a short discussion on site, the water collector's nut and bolt joinery is changed into the traditional rattan joinery (fig. 10). Collaboration between villagers and participants are apparent in the whole water collector construction process from the beginning till the end with joinery changes in the middle. "The construction was a cooperation… they show us how to extract the rattan or the bamboo and use it in the right way".[39]

Fig. 10: (L) Children of Weelewo showing us how to make rattan bufallo knot, (M) participants making the knot together with the experts, (R) the finish rattan joinery on water collector.
(Source: J. Coupertino Umbu, 2019)

From the explanation on the four learning by making case studies, it is apparent that the architecture does not end in the drawing table. Thus, architect as craftsman should not stop after handing the drawing to the construction worker. Students of architecture should learn from many local builders and the ability construct with local cultural reference. Each local builder has their own uniqueness in dealing with materials and construction techniques. Therefore, vernacular builders should not be seen as distant, or unequal. Instead, they should be treated with mutual respect,[40] as architects' equal. They have the knowledge, the wisdom and the skill that architects don't have. Learning by making together with local vernacular builder provides architecture students with the opportunity learn new things in a totally different way.

With a hands-on introduction of basic joinery used in vernacular stilt houses in Indonesia at campus, architecture students are able to design and construct in a more creative way; a new form which is rooted in tradition of architectural production of local and global, traditional and modern emerged. In the future, learning by making can become a tool to explore tradition of local architecture production which is unique in each society and grounded to its place as "vernacular environments provide an unequalled, and only possible laboratory with a vast range of human responses of an equally vast range of problems".[41]

4. CONCLUSION: CRAFTING TRADITION TOWARDS INTELLIGENT CRAFTSMAN

Tradition is not a noun, but a dynamic process which should be crafted in architecture education so that the technique can be developed and perfected continuously according to new needs and new technology invention, the knowledge and wisdom can be written and documented digitally. With the act of craft, students of architecture can learn to become intelligent craftsman who can think quickly, able solve problem of design with confidence, and have the skill to interpret tradition of architectural production in a creative way.

This paper reveals that learning by making in architecture education is a powerful bridge to protect the transmission of local oral tradition of architectural production in a global context. In time, students of architecture will become professional who will be one of the performers of architectural production in the long run. If architects stop designing using local tradition of architectural production, then without market demand, the skill, knowledge, technique and livelihood of the vernacular builder will be perished. There should not be a question about tension local and global. In this globally digital world, it is important to note that we are all citizen of the world who have the accumulative wisdom of human livelihood. Perhaps, tradition in one place can be reinterpreted in a useful way in another place, depending on the problem, situation and people. In this sense, as Alsayyad stated, tradition as temporal and non-place based[42] in a truer sense is a way for it to be sustained from one generation to the next, adapting to the enhancement of technology, knowledge, new needs and circumstances.

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Traditional Dwellings and Settlements
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TRANSITION IN BUILT TRADITION OF KATHMANDU VALLEY, NEPAL

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From the early settlement to the modern capital city, Kathmandu valley has been through an uncomprehending number of changes. In this paper, the alteration in the built tradition due to the development of technology, change in way of communication, use of the internet, and migration (in and out of the city) is studied and explained. The historic cities of Kathmandu Valley with unique art, architecture, and culture are adapting to virtual tradition like most of the cities in the world and this paper is a study of that transition.

Keywords: *Kathmandu; Nepal; Modernization; Built tradition; Internet, Communication, and Technology; Migration*

1. INTRODUCTION

There are compelling reasons to believe that the built environment of Kathmandu Valley has been changing over the year. Change in the built environment is encouraged by several factors, among which the influence of ICT (Internet, Communication, and Technology[1]) and migration is studied in this paper.

The tradition is the continuing pattern of culture, beliefs, and practices. How people live, work, eat, and sustain in any community is the reflection of the culture and tradition of that community. Along with the time, different factors influence changes in the tradition, resulting change in how we produce and consume the built environment. In this paper, two major investigations have been conducted, first to understand the development and influence of ICT in the built environment and second to understand the change in the culture through migration and its impact in the built environment.

Rationale for the selection of study area

Kathmandu Valley (KV) is the bowl-shaped landmass where three historic cities: Kathmandu, Bhaktapur, and Lalitpur are situated. There are three reasons for the selection of KV for this research. Firstly: With a population of 2.5 million people, the KV is the fastest growing (with 4 % growth) metropolitan areas in South Asia. It is the first district in Nepal to face the unprecedented challenges of rapid urbanization and modernization at an urban scale[2]. With the rapid population growth, valley is changing and trying to adapt haphazardly creating numerous problems in society.

Secondly, Kathmandu Valley is the capital city of Nepal, comprised of three historic cities: Kathmandu, Bhaktapur, and Lalitpur, with the number of people migrating in and out every day. With migration of different ethnic groups, different cultures and traditions are introduced to the city which impacts the built environment.

And lastly: Kathmandu Valley is one of the oldest settlements (at least 2000 years old[3]) with amazing and unique art and architecture. Different historic architectures are still standing and serving as a precedent to society. This study is an attempt to understand the impression of technology and migration in historic cities and how cities adapt to that influence.

2. METHODOLOGY

Number of literatures has been reviewed and explored for the development of this paper. Besides the review, a survey was conducted among 165 random households through online: Facebook, Instagram, Viber, and Gmail (due to COVID 19[4]) with people of different age groups, ethnicity, and cultural background living in Kathmandu Valley for more than a year. Question sample was prepared and with the help of my (writer) brother, Bibek Dahal (Software Engineer at Amazon) a website[5] was developed and the data was collected and analyzed.

3. HISTORY OF ARCHITECTURE

The Kathmandu Valley may have been inhabited as early as 300 B.C.E.[6] "Urban pattern, structure, and form are basically a result of socio-economic, socio-religious, and socio-political character of the people."[7] To understand the architectural significance of the valley, we need to understand the people who have been inhabitant in the past. Architecture and built environment of the valley are divided into three periods for this study: Malla Period, Shah/Rana Period, and Modern period.

3.1 MALLA PERIOD

1200-1768 AD[8] is considered as the golden age due to the great achievement in art, architecture and culture.[9] "The most spectacular monuments of the valley are those that date back to the 17th century, erected during the Malla period."[10] During this time period, valley was majorly populated by the Newar community and their art and architecture flourished with beautiful Houses, Temples, Palaces, Monasteries, Public Shelters, and various community structures that we can still trace in the historic cores of KV as a witness.[11] [12]

The city was developed with features like squares, nodes, irregular narrow roads, Newar Houses, Temples, and Palaces. There were four types of Squares at the intersection of the narrow, and irregular roads in the city: Private Squares (courtyard houses), Community Squares, Market Squares and Darbar Squares. Community squares are the open spaces in the neighborhood where *Pati* (Rest Area) or temple or big trees are present for the purpose of the interaction among the people of the community. Market squares are the open space where temples and *Dabali* (Raised Platform) are present. *Dabali* is used for the farmer's market every evening, or for

the performance during festivals and *Jatras* (Street Festival). The biggest open space in the city is the Darbar squares. Darbar square is the open space in front of the Royal Palace where multiple temples are located which are used for public gathering, street festivals, and entertainments.

Fig. 1: Bhaktapur Darbar Square showing different temples and palace structures from Malla Period. (Source: Marcelo Aguilar, https://www.locationscout.net)

Bricked wall with wooden doors and windows and tiled roof: Newar houses at that time period used to be two to three-storied with a joint family around one courtyard.[13] Whereas the Royal Palace is a complex of connected buildings clustered around a courtyard with gardens and temples.[14] Temples and palaced were highly carved and decorated.

3.2 SHAH AND RANA PERIOD

Prithivi Narayan Shah conquered the three cities in 1768 and declared Kathmandu as the capital of the newly unified Nepal.[15] This opened valley to the people all around Nepal and the trend of migration started influencing culture and built environment. The valley where there was majority of Newar community started to change. With people migrating from all around Nepal to valley, new perspective of architecture was also introduced. In 1846, Jung Bahadur Rana came to power and founded the Rana regime (1846–1950).[16] There was a good relationship between the Rana and the British which gave Rana good exposure and opportunity to visit foreign land. After the visit of Rana prime minister to England, the built environment of the valley started to change. Today we can see two types of historic buildings in the valley: Newari Architecture from

the Malla Regime and Neoclassical or Baroque European Architecture from Rana Regime. Rana architecture was huge and massive with big pillars, high ceiling, tall windows, and big courtyards. The 'Singha Darbar' complex one of the major construction during Rana Regime with numerous palaces covered the area about half the size of the old Kathmandu town whose population was almost 80,000.[17] After major earthquake in 1934 A.D Neoclassic architecture flourished in valley with wide new roads and retail hub shifting built tradition from Newar architecture to Modernization[18].

Fig 2: Narayanhiti Palace. (Source: Prakash Silwal, https://travelnewsnepal.com/2074/)

Even though these architectures are different from each other, both have significant influence on the architecture of valley. The concept of squares, nodes and public shelter started to be replaced by wide roads and commercial spaces. The core area from the Malla regime around the palace area with big Durbar square was commercialized during Rana regime changing the importance and appearance of the built environment. Change in the built form gradually caused socio-cultural change. The introduction of vehicles, different building material, different architectural vocabularies, commercialization and use of technology caused change in the Kathmandu Valley.

3.3 MODERN PERIOD

On May 28, 2008, Nepal's monarchy was obliterated, and the country declared a democratic republic by an elected assembly.[19] Gorkha earthquake 2015 destroyed many Malla and Shah/Rana architecture and pushed

Kathmandu valley toward reconstruction with contemporary architecture. In past 12 years, many changes can be seen in the valley in terms of city development which is explained under "Transition In-Built Tradition-Past Few Decades" topic.

Fig 3: Newroad, Modern Period. (Source: Sudhir Manadhar, Wikipedia)

4. HISTORY OF ICT IN VALLEY

Along with the economical divide, there is also the digital divide between the developed and LDC (Least Developed Countries). The digital divide states the difference in the use of information, communication, and technology (ICT) in daily lives.[20] As the ICT status has huge difference among the developed and LDC, the influence of that in the built tradition is also distinct.

The ICT momentum in Kathmandu valley took its pace after the establishment of the digital exchange system in 1980 through open wire trunk link between Raxaul (India) and Kathmandu. This establishment helped to expand the telecom service to the public. In 1995, optical fiber was introduced followed by 3G network in 2007.[21] From 1971 (first computer was introduced to Nepal) to present day, valley has been able to come far way. By 2000 more than 50% of urban households had computers. Internet service was started in 2000 and by 2004 there was a huge boom in the internet user.[22] As per the research done by Nepal Telecommunication (2016), mobile penetration ratio for Nepal is 110.25%[23]. The biggest impact in internet use was seen after public was introduced to Facebook. As per the research by Roshan Joshi as of October 2015, the number of Facebook users in Nepal was over 5 million out of which about 70% of users are from Bagmati zone where Kathmandu Valley is located.[24] After social media took popularity among the public in the valley, the use of internet increased. Today Electronic gadgets like smartphones, tablets, notebooks, laptops, and computers are easily available in Valley.

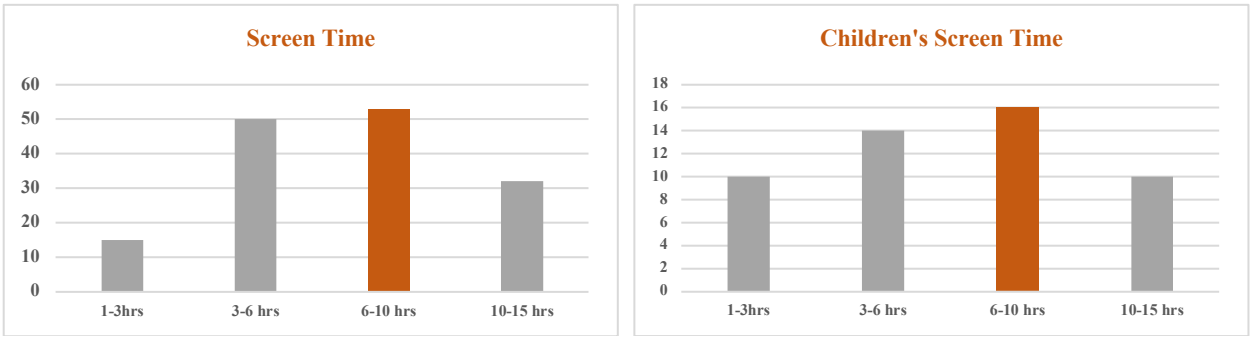

Fig. 4: (L) Screen time per day survey results. (R) Screen time per day of their children survey results (Source: Author.)

To understand the use of ICT the screen time per day of 150 people of valley was surveyed. In Fig. 4 we can see that most of them have screen time of 6-10 hours per day. Same question was asked about their children (for surveyed parents) and same pattern of screen time was observed.

At present the out-migration is another reason for the increase in the use of internet, electronic devices, and social media. Overall, the use of technology, internet and social media is changing social behavior and creating a virtual tradition.

5. TREND OF MIGRATION

After the democracy, Valley has been the converging point for the nation's population. The population of valley increased from 1,107,370 in 1991 to 2,519,034 in 2011(last census data collected).[25] According to the 2011 census data, the valley flat area is densely populated with more than 6000 person/km^2.[26]
During 1990, 40 % of this growth in population was contributed by the migration from rural areas.[27] From 1996 to 2008, Nepal went through the civil war when more than 500,000 people were believed to be displaced. Valley being the capital city with lots of opportunities, became a safe place for those internally displaced people.[28] Currently, the net inflow of migrant accounts for 36% of valley population mostly because of economic reasons and educational purposes.[29]

Not only the in-migration into the valley, but KV is also facing the out-migration trend. As per estimates more than 200,000 Nepalis aged 18-24 have left the country in the past 10 years.[30] There is mainly two types of out-migration: Labor Migration (migrating for work) and Student migration (migrating for higher education). Migrant workers help contribute 25% of country's GDP annually and ultimately return to the country.[31] They help to raise the economic condition of their family member and change their living standard. Students mostly migrate to western countries like Australia, Europe, and the United States and aspire for permanent settlement over there. Not only Kathmandu Valley but the whole country is facing the impact of out-migration. Unfortunately, not much research has been done on this topic.

6. TRANSITION IN BUILT TRADITION-PAST FEW DECADES

From the traditional historic city to the fastest growing urban city in South Asia[32], Kathmandu Valley has witnessed a significant level of both physical and environmental changes and growth in past few decades. The current growth exhibits an unplanned development of urban sprawl in sharp contrast with the traditional city cores.[33] The changes in the built tradition observed in the Kathmandu Valley in the past few decades are tried to explore in this topic under two subheadings: Open Spaces and Built Environment.

6.1 OPEN SPACES

Squares: When asked more than 67% people responded that they have open space in their neighborhood. This is because the valley developed around the historic core area with lots of already built neighborhood squares. But when we asked, if they use that open space, 61% of people responded that they do not use this space anymore showing degradation in the use of open space in the neighborhood.

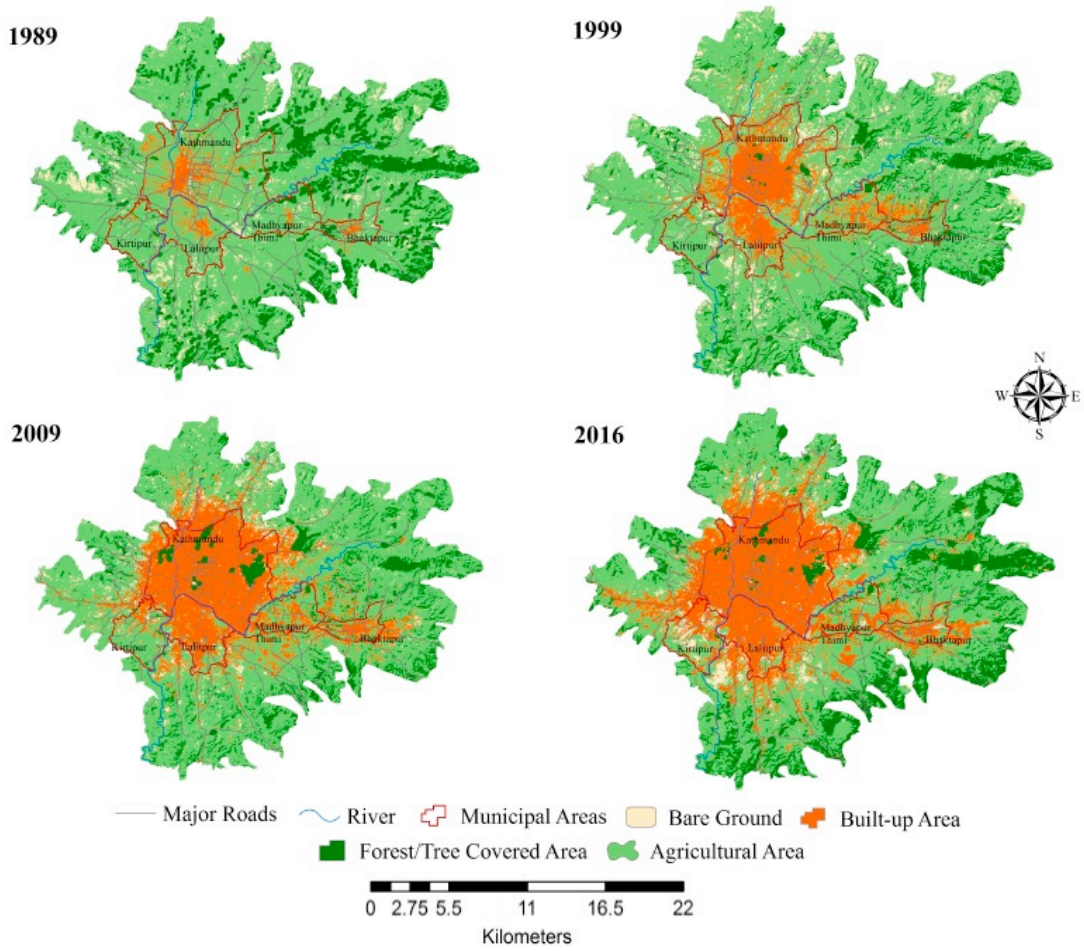

Fig. 5: Land Use of Kathmandu valley over the years. (Source: Ishiaque, Shrestha, Chhetri, 2017, p. 9)

Similarly, market square and Darbar square are also losing its importance. Due to the unplanned, unmanaged, and unhygienic appearance of local vendors on the market square, many people do not prefer to go to these spaces. Also, after the popularity of shopping complexes like Bhatbhatini, the possible customer for market square has dropped. Darbar squares being most popular space (listed in the UNESCO world heritage site[34]) in the valley, it is definitely the most used public open space but due to the disappearance of elements of urban interest and less occurrence of festivals and social events have led to less use of these space as well.[35]

Street: Another major change that we can witness is in the street design and construction. "The historic pedestrian friendly streets of the Malla period and the unique streetscape of the Rana period are being rapidly transformed due to unmanaged urban growth, chaotic construction and a growing number of vehicles".[36] Historic cities of valley were never designed and developed for vehicles. But with the modernization, and globalization the valley today is full of vehicles all around. As motorization grows at an unprecedented rate in

the valley, there are numerous negative impact people are facing today such as destruction of physical form, reduction of social activities, increased accidents and decreased pedestrian comfort.

Moreover, during 2011-2012 road expansion project was implemented due to the traffic congestion. Architect and Prime Minister of that time Dr. Baburam Bhattarai started a project to widen the road. For road expansion the number of houses facing street were demolished and compensated for the reconstruction.[37] Since the buildings needed to be repaired or reconstruct people changed their building façade from traditional to contemporary architecture which changed the whole building façade of the valley. Also, many public elements were demolished for the expansion of the road. This expansion of road was expected to reduce the traffic problem but unfortunately, due to wide road the capacity of vehicle was increased encouraging people to use more vehicles.

This increase in the number of vehicles is creating another huge problem of parking space. The public spaces and temple courtyards that were used as communal space are now seen completely occupied by car and motorbike parking[38] which automatically discourage people to use public space for the social activity.

Agricultural Land and Riverbanks: At present agricultural area in KV diminished at a rate of 1.8% per year resulting in a total 32% loss during the period of 1989–2016.[39] The change in agricultural land shows the change in the occupation and living style. As the retail value increased the land started to be developed. Private developer started to develop housing and buildings for commercial purpose encouraging the change in the living style and standard of the community. Along with the alteration in physical landscapes of the valley this change in agriculture land has also altered the ecosystem services.[40]

Another change we can observe in the valley is in the Riverbanks. About 67% of the estimated 18000 squatter population had built settlements on previously vacant marginal public land, especially along the riverbanks[41] as shown in Fig. . Due to the migration and rapid population growth there is increasing economic inequality in the valley. Alone in Kathmandu Metropolitan City, the squatter settlements which numbered 17 communities in 1985 had grown to 65 settlement areas in 2000.[42] The unmanaged increase in the squatter settlement alone the riverbank is because of the rapid growth in population, increase in retail value and inability of government to develop city with the situation. Moreover, the disposal of sewer system into river has polluted river and changed the river landscape.

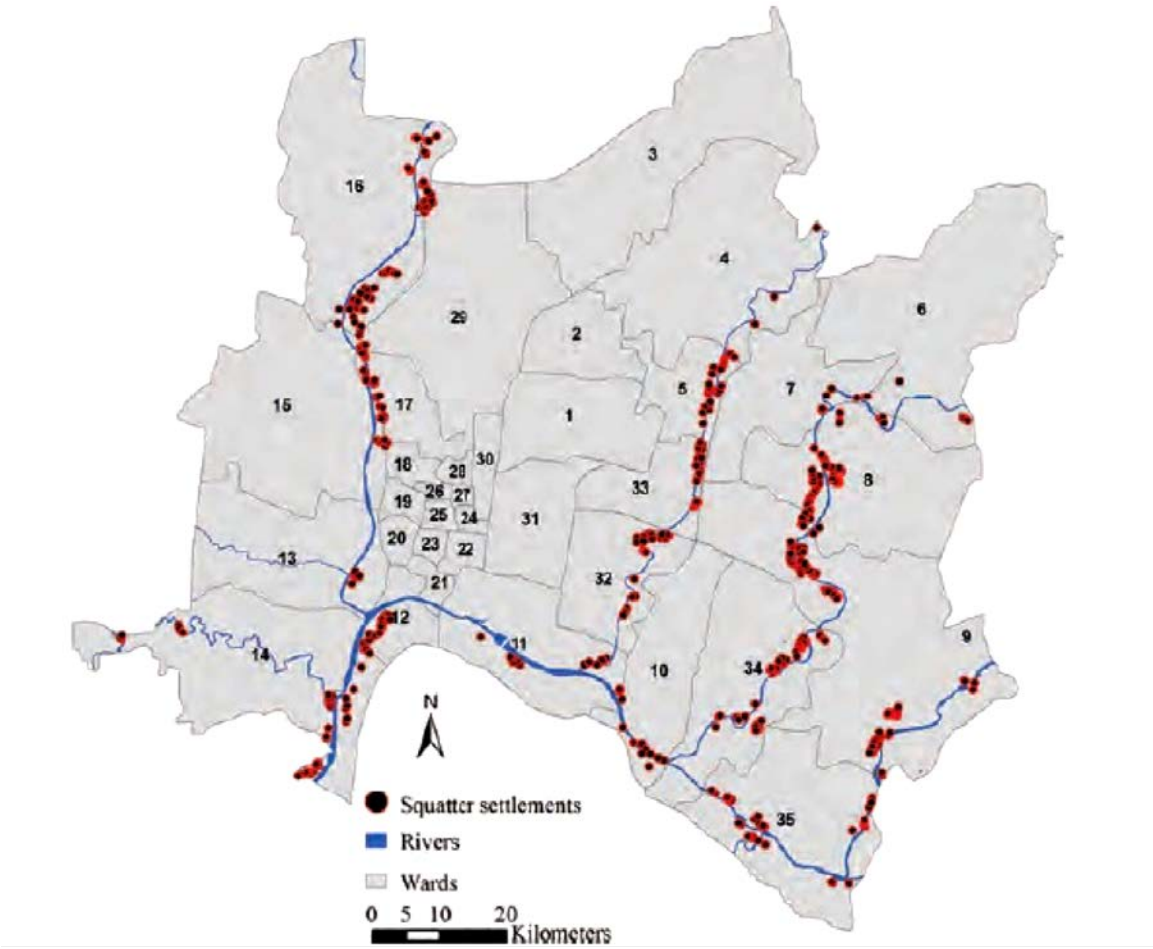

Fig. 6: Squatter settlement in Kathmandu Metropolitan City, 2007
(Source: Muzzini and Aparicio, 2013)

6.2 BUILT ENVIRONMENT

Architecture: As already mentioned before the architecture of the valley has been changing throughout the decade because of political, social, and economic reasons. Contemporary architecture of valley includes at least three different types of structures. First type being the RCC structures with the single façade decorated with traditional Newari architecture elements like: crafted doors and windows, titled roof, exposed brick. Although the recommended official plot size or the valley is 100 square meters, many houses in the valley are built on plot as small as 15 to 45 square meters.[43] Second contemporary architecture is 3 to 4 stories residential RCC structure with Namaste style (pagoda style roof) with balconies and flat roof at top.

Third one is offices or commercial buildings (more than 4 stories) mostly steel structure with all glazed walls, underground basement for parking and roof space utilized for restaurant or some activity. With the rapid growing population, architecture of valley is highly influenced with mix tradition i.e. most of the buildings are rented for residential and commercial purpose.

Fig. 7: Kathmandu: Concert Jungle (Modern Period). (Source: Kalani Gordon, The Baltimore Sun)

Recently in 2015 valley was affected by the Gorkha Earthquake (7.8 M) which damaged about 600,000 structures in the valley.[44] This destruction damaged many historic buildings of the valley resulting opportunity for the change in the built form. New building laws was implemented after that and many reconstruction projects were launched.

Building Typology: The survey was conducted within random 165 households, with different age group, ethnicity, and culture. Three building typologies were provided as options for this study: Isolated (Building with less than 2 facade attached to another building and have garden space), Compact (Building with more than 2 facade attached to another building) and Courtyard (with open space within the building complex). From Figure 7 we can clearly see how the building typology has changed in past few decades. Buildings that are more than 70 years old are either compact (29%) or with courtyard (71%) in design. Buildings that are 40-70 years old are 22% isolated, 33% compact and 44% courtyard in design, building that are 10-40 years old are 47% isolated, 44% compact and 9% courtyard in design and buildings that are less than 10 years old are 57% isolated, 35% compact and 9% courtyard in design.

Traditionally, the courtyard space was used for children's entertainment, family and friends gathering during festivals, drying clothes, and grains etc.[45] Due to the rapid population growth and increase in the valuation of the land and building, now people are changing building typology to either compact or isolated which can be clear seen in the graph above.

Urban Elements: The interaction between people in the community is encouraged by the urban elements. There were numbers of traditional urban elements like Dhunge Dhara (waterspout), Pati (covered shelter in neighborhood square), Sattal (rest houses), Temples, Stupa and Chaitya (Buddhist Shrine) losing its importance in the valley today. Traditionally, social networking and exchange have always been significant part of their life which has led to an extensive use of public spaces and buildings.[46] But with the modernization and the transition in the way of communication, the use, development and maintenance of these urban elements is decreasing day by day. During the road constructions and road expansion most of these elements were destroyed. For example: the removal of the Sorakhutte pati (communal space built for resting), during the expansion of the Lainchour-Balaju road[47] represents how the value and importance of such elements is being replaced. Likewise, 25% of estimated 18000 squatter population in Kathamandu Metropolitan City alone (2001) are believed to be occupying public buildings, Temples, Stupa, Heritage Sites and Riverbanks[48] which has reduced the public use of these spaces for social activities.

7. INFLUENCE OF INFORMATION COMMUNICATION AND TECHNOLOGY (ICT)

Over the last few decades, cellular devices, iPads, Laptops, computers, and most importantly the internet have completely overhauled the way people interact in society.[49] The world today is easily accessible. We can know about anyone and anything within a short time frame with little expense. Certainly, when the tradition changes it also influences the transition in the built tradition. This relationship is explored in this section of research under following subheadings.

7.1 INTERNET/INFORMATION

The Internet has direct and indirect influence on the built tradition. Internet has given people a platform to share knowledge, ideas, news, products etc. Two decades ago, when there was no internet in the valley, everything was physical. If a person needs to know meaning of a word, then they had to open dictionary and look it up for it. The news was available only through a newspaper. It was a difficult time to read and explore knowledge. If someone wants to know something they had to go to library or buy books. These things require time, money, and SPACE.

For example, for a newspaper or books, the facilities like publications, library, bookshops, transportation, and open space to read book comes in play. Nepal news, started since November 1999, under domain

www.nepalnews.com, is the first independent online platform that does not publish in hard copy or does not have any corresponding broadcast media,[50] which means they require minimum space than the traditional newspaper. By 2013, there were around 5 hundred online portals operated from inside and outside the Valley.[51] We can imagine how going online can change the requirement of space.

Online shopping is another sector causing an impact on the built tradition. Online shopping is new concept in the valley. According to the survey conducted with 100 people of Kathmandu Valley, 89% of the respondents were positive about online shopping of grocery items.[52] Corner store (known as *Kirana Pasal)* is very popular traditional concept in valley. Taking the precedent of developed countries, in future with the popularity of online grocery, the decrease in number of corner stores can be predicted. Traditional vendors lack knowledge to adapt to virtual tradition hence online shopping has cast threat and challenge to local vendors in the valley.[53]

In terms of architecture design, today when people want to build house, they can google and look up for design ideas before consulting with architect/engineers. Without internet, the only reference to the building design used to be what people see around them. This would encourage them to build in traditional way. But due to the internet, now the design idea is not limited to what they see around or what architect/engineers suggest them. They can look up for inspiration which persuade them to introduce new style in the community.

7.2 COMMUNICATION

Fig. 8: Social Interaction at Pati. (Source: www.loupiote.com)

Fig. 9: People using phone. (Source: Naresh Neupane, 2020, The Kathmandu Post)

Even though there are many ways of communication on the internet, social media has become one of the most popular way. After the popularity of Facebook, the cultural change can be seen in the society. The way people used to interact with each other is changing. By providing a free platform with group and individual communication options, Facebook combats both economic and social barriers.[54] When people interact

through social medias, the necessity to meet decrease which decrease in the use of space. Before social media, children used to play games either in courtyard space or in the neighborhood square, people used to go to neighborhood square or public spaces like *Pati, Satal* or Darbar squares to meet and chat. After the popularity of social media, it has replaced the use of space for social interaction.

According to the survey, 10 years before 78% people responded that they used to mostly communicate at open spaces whereas rest said they used social media most of the time for communication. Contrary to this, in present day 69% people said they mostly use social media while rest said they usually meet at open spaces. The way of communication of the children was also examined, out of 57 children, 81% mostly use social media while 19% usually go to open space for communication at present.

Fig. 10: Survey results on Older age group use of open space vs social media with respect to time (L) Before 10 years (R) Present day (Source: Author.)

Fig. 10 shows the difference between the use of open space and social media by older age group people with respect to the time. Out of 78 people, 96% responded that they used to use open space and 4% used to use social media for communicating with friends or family before 10 years. While today 54% responded that they use open space and 46% said they prefer social media for communication. This indicates the transition in the use of open spaces.

Social media have also become a good platform for the information exchange. The ability to post, and share has given manifesto for the advertisement, and promotion. In term of architecture, social media has become the ground where design ideas and information could be shared, liked, and commented. Due to social media, architects, urban planners, engineers etc. are exposed to wider range of case studies and knowledge. There are million pages, and groups where people from same field can share their ideas and work inspiring many others. The concept of doing what other are doing (Dekha-Siki) is not new in Nepal. Since culture in society of valley is family based, what other people do matter a lot. For example: if someone goes to new restaurant and post a good picture then their friends and family are inclined to try that place. Some of restaurant in valley also

offers facility where they capture your photo and post on social media. When that photo is shared by you, restaurant gets free promotion. In such way the popularity of restaurant increases. Out of 101 people, 60% responded that they used to use open space before 10 years whereas in present day 67% people responded they go to restaurant or bar. This shows how the increase in the restaurant/bar is increasing and the use of open space is decreasing. In term of city, this has increased the built structure or renovation of old structure for social interaction and decreased in the use of open spaces and public elements.

7.3 TECHNOLOGY

The early influence of technology started after the visit of Rana prime minister to England and thus, began the process of sub-urbanization of Kathmandu.[55] Introduction of new construction technique, new materials and new technologies has always influenced the change in the built tradition. Today people are inclined towards the steel structure rather than traditional brick and mortar or RCC structures. Prefabricated structure is gaining acceptance after Gorkha earthquake 2015.

These days with the popularity of new technologies like computer, laptops, digital data, smart devices, Internet of things and AI concept like smart cities can be observed in the world. Similarly, in KV, government offices and public schools are changing into the digitalization with paperless concept. Different computer and software trainings are being organized in the government offices. Government of Nepal has been improving the online portal and information for the public. Forms for most of the application are available online today[56] and government is improving the provision for online application which will in future reduce lot of spaces requirements. Because of the rapid population, parking is one of the biggest problems in the valley especially in core area. Recently, smart road parking system has been adopted.[57] Similarly, 300 CCTV camera is added in major roads[58] which is another big achievement. Even though some of the initiative have been started, government is still in the planning phase for the implementations of most of them. After the Gorkha earthquake 2015, disaster management department has purposed the digital displace of open spaces in crowded areas of valley. Improvement of traffic lights, addition of CCTV camera, free public Wi-Fi, improvement of online facilities, Provision of bike lane and walkway, removal old public vehicle and replace with energy efficient big public vehicle, Provision of City Smart card, etc. are proposed projects by government.[59]

8. INFLUENCE OF MIGRATION IN THE BUILT TRADITION

The number of migrants and its influence in the built environment of urban area is increasing day by day and KV being the capital city it pulls the largest number of migrants every year.[60] From the survey conducted, out of 154 people 51% people said that they migrated from other part of Nepal and as shown in Figure 10,

most of them either Brahmin, Chhetri or other ethnic group. With the increase in the migration, built tradition of the city goes on changing. In this topic the change in the built tradition of the KV influenced by the migration is explored in following subheadings.

8.1 DIVERSITY

One of the results of the migration is diversity. Nepal is the country with multiple ethnicities, and culture. Valley as already mentioned was originally inhabited my Newar people and the historic Malla architecture is the bystander of Newar art and culture. As different ethnic people have different job title, status, living standard and living style, the architecture of each ethnic group is also different in Nepal. Diversity first started when the valley was ruled by Shah and Rana regime. Unlike Newar culture, Shah and Rana had different living style. From the architecture and the built environment around valley we can observe the transition from Newar style to Neo-classical. Today valley is the most diverse city in Nepal.[61]

When we roam around Kathmandu Valley, mixture of different design can be observed as per the ethnic group and their culture. Similarly, the use of open space also differs. Open space such as Darbar square and market squares are used by Newar community for the festivals while same space is use by other ethnic group for gathering and entertainment. For Newar community since open space is part of their culture, it cannot be replaced, and these spaces have high importance but for other community same purpose is served by restaurant/bar or even social media now a day.

Similarly, the importance of open space in the neighborhood is highly depended on the relationship of neighbors with each other. To understand the change in the relationship pattern with neighbor, survey was conducted between two groups: Age group less than 40 and Age group more than 40. From Figure 10, we can see that how new generation is more isolated and have more causal and distant relation with neighbor and people with age group more than 40 have very good relationship. Migration is one of the reasons for this. When people migrate from different part and do not have their permanent home, they tend to be more distant. This decrease the use and importance of historic neighborhood square with temple and rest spaces.

8.2 DENSIFICATION AND URBAN SPRAWL

Another influence of migration in the built environment is the densification. With the rapid population growth, the density of the KV has risen from 60-65 people per hector (1987)[62] to 1000 people per hector (2013)[63]. Densification is one of the major problems in core areas of KV today. With the increase in the population, the demand of houses increased which increases the mix use buildings. The proportion of households living in rental units significantly increased from 33% in 2003 to 48.5% in 2011.[64] Historic Newar houses today can be seen divided vertically into multiple houses renting ground floor. This densification is resulting the poor quality of life because of the low maintenance in old buildings, small living

spaces, lack of light, ventilation, inaccessibility of emergency vehicles etc.[65] Densification also have resulted the increase in the vehicle reducing the traffic quality. Most of the narrow roads of historic core area is congested with unmanaged traffic flow. Also, with the increase in the population and haphazard development we can witness the change in the agriculture land into the built-up areas resulting the urban sprawl.

Fig. 5: Narrow houses replacing Newar Architecture in Core Area (Source: Rachris World Travels, Blog)

8.3 SLUMS AND SQUATTERS

During period of 1999-2009 valley witnessed 117% growth in the built-up areas[66]. At that time country was going through the political instability (civil war). Many people were forced to leave their property and move to urban area. At that point KV served as the safe place and welcomed many migrants. Due to the rapid growth in population, the real Estate of the valley boomed which increased the land price value. This increase in the real estate and land value, resulted the increase in the costs of building materials, encouragement for the unplanned developments, and lack of effective land use plan and regulations.[67] When the low income people migrated to the valley with high rent and property value it contributed to the growth in the illegal encroachment of public unattended land and buildings and development of unplanned squatter settlement. Today Slum and squatter's settlement can be seen in the public spaces like temples, and open spaces around rivers.

8.4 INFRASTRUCTURES AND PLANNING

During the fiscal year of 2008-09 close to 185,000 people and firms bought new land and housing. This new ownership and rapid growth encourage the transition in built tradition of the valley from historic Malla and Rana architecture with open spaces to modern RCC concert jungle. With number of people migrating for education and job, Kathmandu valley once a historic city today has been changed into the business hub. Valley has witnessed many infrastructure growths in past 50 years. With the rise in population infrastructure like schools, colleges, university, hospitals, hotel, hostel, roads, shopping center, housing, high rise apartments etc. has also grown. It goes without saying that with the development of infrastructure and rapid population growth, KV is suffering from pollution and many environmental challenges today. In both positive and negative aspects, the built tradition of KV has changed.

Migration and ICT also has the co-depended relationship. With the popularity of social media, it is easier today to contact with anyone anytime. Since social media and internet is available in low cost it has helped to reduce the economic difficulties for the communication. People are encouraged to migrate in past 10 years due to popularity in the internet and social media. Ability to connect (communication), ability to be informed (internet) and ability to travel (technology) has made world lot smaller which results the diversification in international level. Concept like country without borders do not seems impossible today. A separate research can be done to understand this relationship and its impact in the built environment in the global level.

9. CONCLUSION

The use of internet, technology and communication is one of the important parts of our life today. Without internet and social media, we are not able to imagine our routine. With the development and dependency on the ICT, Kathmandu Valley is moving towards the virtual tradition changing the built environment. Historic cities with the importance of Open spaces is now losing its essence with the modernization. Similarly, migration is playing vital role in the increase in the population creating diverse, dense, and clustered urban spaces. Use of open spaces is decreasing because of the use of smart phones and social medias and built-up area is increasing due to the migration.

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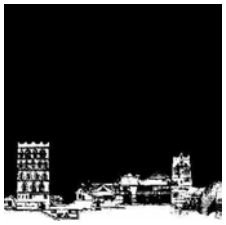

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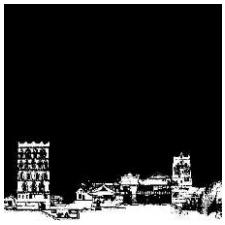

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