

ON THE MARGIN OF CITIES

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ABSTRACT: The United Nations indicates that more than half of the world population now lives in the urban area. In urban environment outside of North America and Western Europe, one of their prominent characteristics is the prevalence of the informal settlements. They are a manifestation in the built-environment of experiences of modernity, which have shifted from the transitions from traditional into modern societies into integration into the globalized, post-industrial world, which included impacts of the economic, political, and cultural forces of late capitalism. This phenomenon possesses a multitude of social, economic, political, and environmental issues, in particular, in relationship to the presence of the urban underprivileged. The latter informs a particular way of constructing and ordering of space and form of cities. This paper reports the design research that the author and students have been performing in slums in Addis Ababa, Mexico City, Manila, and Mumbai. The research documents and analyzes first hand experiences in slums architecturally, then seeks the relationship to the local socio-cultural contexts. The design research aims to ask the question of how to interrogate contemporary spatial and formal practices in this context? How can we theorize these practices within the context of theory of modernity in architecture? It intends not only to offer the understanding of slums in descriptive or prescriptive fashions, but also to seek generative design principles that possess potentials as social catalysts.

KEYWORDS: slums, generative principles, modernity

INTRODUCTION

Ullrich Beck argued that modernity has shifted from the dissolutions of traditional societies into the transformations of the industrial societies themselves (Beck, 19-50). He pointed out that modernization brought about the increase and distribution of wealth. However, it produced risks and hazards as its consequences. Thus, the logic of modernity changed from the logic of wealth distribution in a society of scarcity to the negative logic of risk distributions. The dream of an emancipated, utopian society without economic and social disparities was replaced by a negative utopia of the distribution of risks. The process of modernization turned into a systematic way of dealing with its own hazards and insecurities. He alluded that history showed that wealth were accumulated at the top socio-economic classes, while risks were concentrated at the bottom tiers. This implied the social and political dimensions of risks, as they became means of the filtration of societies that would enhance the class stratification. Beck argued that eventually, risks would affect all parts of societies because of the systematic nature of modernity. Modernization became spatial, as risks were concentrated in specifically geographic areas (Beck, 19-50). This line of thought is particularly relevant to the urban realms in the Third World. Nowadays, the experiences of modernity for the third world has shifted from the transitions into a modern society from traditional societies into an integration into the globalized, post-industrial world, which included impacts of the economic, political, and cultural forces of late capitalism. Urban areas of the developing world manifest these experiences of modernity in the built-environment. This phenomenon possesses a multitude of social, economic, political, and environmental issues, in particular, in relationship to the presence of the urban underprivileged. The underprivileged inhabit informal settlements that made up a large part of the urban areas. As the urban areas in this part of the world experience rapid growth, so do the extent of their informal settlements.

1.0 DESIGN-RESEARCH ON SLUMS

1.1. Methodology

This design research was fifth-year theses in our institution that consisted of research in the fall semester and design studio in the spring. Each of these students involved came from different cultural backgrounds and they chose to work on slums from their respective upbringing. The methodology for this research was a series of descriptive and analytical mapping from general to particular levels. The intent was to understand the issue through visual means and to unfold the relationship within each level and across different ones. We started with the UN Habitat's definition of slums that we articulated as architectural issues, based on framing architecture as spatial, formal, tectonic, programmatic, and performative factors.¹ Overcrowding and socio-economic exclusions illustrated the spatial and programmatic dimensions of slums, in which certain groups of people were concentrated in certain areas with real and invisible barriers. Tectonically, the construction and materials of structures signaled a part of a city as a slum. Lacks of services and infrastructures illustrated the performative dimension of slums. We diagrammed comparative photographic

examples of slums to understand their morphology, assuming the street as its basic elements. We analyzed properties including of the geometry of spaces, ordering system, scalar aspects, and properties of boundaries. The findings included that street and alleys created figurative profiles in figure-and-ground. The scales of space were mostly intimate, and they tended to be curvilinear. Programmatic features included the overlaps of public and private space, low degrees of separations of personal, family, and communal spaces, the porosity of these programmatic boundaries, and the distinction of spaces based on genders. We mapped both physical, visible and conventional infrastructures, such as water and electricity, and less visible ones, such as internet and mobile services. We noted that spaces in the slums were highly flexible and that inhabitants of slums were highly skilled in adapting their social and economic activities within their spatial and formal settings. Each student then researched demographic features and related economic factors of selected countries. We also researched typologies of vernacular architecture in respective country. Vernacular in this sense included contemporary houses, working on an assumption that the way people used spaces in slums was informed by spatial behaviors that were embedded in vernacular architecture. The findings provided a framework for the field studies to observe, collect, and document data and information. Besides site observations and documentation of spatial and formal features, they also observed daily activities in slums, including shadowing families.

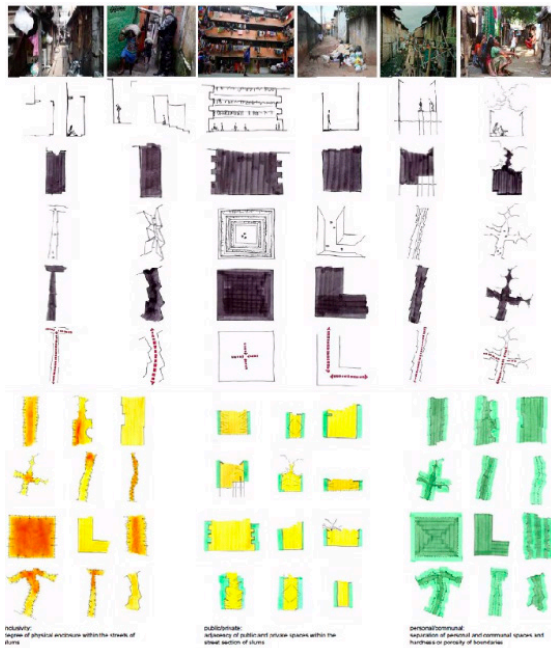


Figure 1: Comparative studies of slums. Source: (Tolentino 2014)

In the design studio, we started with programmatic analyses of a swath of a street, mapping daily activities according to categories including economic or social and personal or collective activities. This analysis was based on the understanding of the ways the locals used space. We diagrammed and mapped activities as bodies occupied and moved around space and also the temporal scenarios in which bodies occupied spaces in different ways and locations in different times. We also diagrammed elements that facilitated activities and the roles of spatial boundaries relative to those activities. These activities diagrams fed the formal analysis, in which we translated them into a series of two- and three-dimensional forms. We also analyzed characteristics of materials in slums that tended to be rough and colorful and construction techniques that tended to be flexible, temporal frame structures. These findings informed in the iterations of the design research. The focus on activities on slums led students to propose interventions in terms of infrastructure that would support daily activities in slums. Each student's interests after engaging life in slums, such as provisions of education, economic and health services, informed the design intents. Students explored designs that integrated materials and techniques adapted from the slums. They then constructed artifacts for infrastructure out of materials commonly used in slums, using techniques and methods that inhabitants of those places used in their daily life.

1.2. Research and Observations

One student researched slums in Mumbai, India, starting with analyzing the morphology of Indian slums. He identified features such as small urban grains, clusters of small and large blocks, dense blocks with narrow streets and public open spaces around religious buildings. The street sections showed a vertical separation of commercial and industrial activities on street levels and residential purposes on upper levels. The street level tended to be permeable, creating a linear, continuous space that accommodated various activities. He identified verandah on a raised level as one of the

main features of vernacular architecture there. It provided a space for daily activities, including cooking, relaxing, social activities, as well as home-industries such as pottery and sewing. The study focused on Dharavi, considered as the largest slum in Asia, in which he noted that its central location had made the area as one of the most valuable land in the city. A particular characteristic of area was the predominance of small businesses and industries based on waste-recycling. The area was organized according to types of wastes that they processed, such as plastics, metal, and paper, and to the separations of areas for receiving, processing the waste and delivering recycled products. Inhabitants lived among these recycled materials, sleeping, cooking and eating in leftover space inside their shelters.

Another student studied Addis Ababa, Ethiopia, starting from researching low-cost housing programs to address slums in that city. However, these housing schemes failed to accommodate the needs for diversity and qualities of social and economic supports. She mapped the social organization of the societies along a successive system, starting with family units, which together would form an association. Several associations would integrate into a community unit, which in turn would create a larger unit called kebele, which served as the building blocks of a city. The family and the associations revolved around vernacular houses. She identified the courtyard in vernacular houses as the space around which social activities within the spheres of both family and associations would gravitate. In their evolutions, such as in the housing schemes, inhabitants would form a space that resembled this courtyard. She focused on Mercato, a large residential and commercial area in the city. She observed that types of commodities and programmatic hierarchy of buildings along the street created the logic of spatial organization in the neighborhood. Her findings included the spatial separations based on gender, social activities revolved around drinking coffee, and the prevalence of economic activities around the recycling of metal goods.

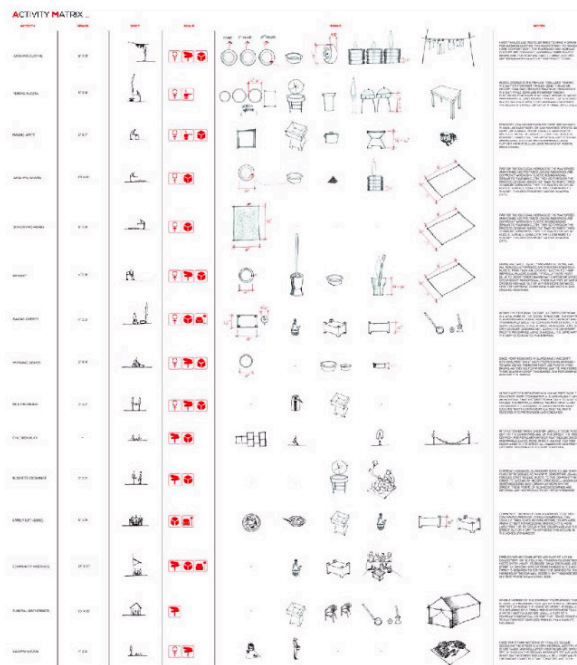


Figure 2: Analysis of slums in Addis Ababa. Source: (Moges 2016)

The research on slums in Mexico City mapped the distributions of slums that followed geographic features, with concentrations of slums on steep slopes, with easy access and close proximity to economic nodes. The student mapped different types of slum, the first of which was irregular settlements equivalent to favelas and barrios. The second type was inner city tenements or *vecindades* in which inhabitants repurposed big, abandoned houses. The third type was makeshift housing on the flat roofs of apartment buildings and the last was shanty housing occupying public land. Their morphological features included courtyard buildings with aggregated cells, which lent to flexibility and adaptability; an echo of characteristics of vernacular architecture. Narrow passages converging to one point with hard enclosure created a sense of claustrophobic space. Abandoned infrastructure morphed into mixed-use public spaces, such as corridors in *vecindad*. In the neighborhood, artisans with certain social status would occupy structures facing the street or units facing a courtyard in a communal dwelling. The student focused on Tepito, in which he mapped the interrelated networks that linked solids and voids and public institutions, including schools, sport, and healthcare facilities. The mapping also revealed the patterns of activities, including illegal activities within the area. Noting the prevalence of invisible infrastructure, the student established a survey through Facebook to gather inhabitants' feedback of interventions that they would like to see.

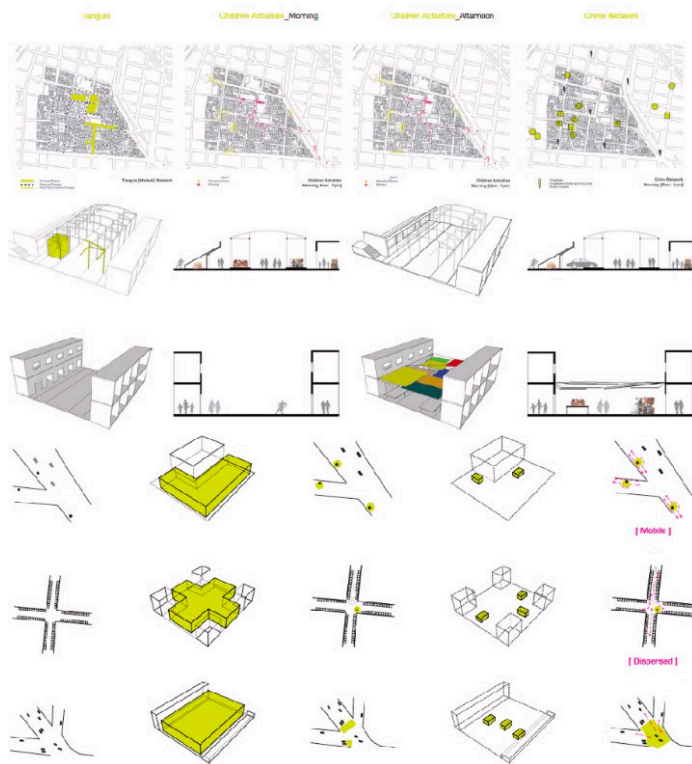


Figure 3: Analysis of slums in Mexico City. Source: (Rodriguez 2015)

The students identified Manila as a very dense metropolis with informal settlements covered much of the area. It was a multi-centered city, around which both formal and informal settlements were organized. The students characterized the small scale of spaces in the slums as oscillating between intimate scales for personal activities and oppressing ones where the sense of personal space disappeared. Each structure usually was built as a room that accommodated various domestic activities. The alleyways that connected these cells of space turned into highly flexible and active semi-public and public spaces. These alleyways were both semi-exterior and exterior space, accommodating both personal and communal activities. These spaces were defined by soft, porous enclosures that allowed for physical and visual connections. The properties of the enclosures created different degrees of the transformation of the alleyways into public spaces. Women and children were the primary users of these spaces, while men tended to work outside the slum. Women used these public spaces to perform both daily chores and home-based businesses. Slums dwellers modified these spaces throughout the day and night to accommodate their activities, each of which occurred at a specific time. However, they also observed public spaces other than the alleyways, such as basketball courts. These public spaces revealed the gender segregation, in which basketball courts tended to be a space for male. In the evening, men would gather in these spaces to watch television. Extended families were common in the slum neighborhood and they formed close-knit community. However, single persons were common, to which inhabitants rented out spaces inside their dwellings. Services, mainly electricity and clean water, were uneven. The structures were based on post-lintel system, a makeshift construction out of locally-sourced materials, including corrugated metal sheets, plywood panels, concrete blocks, and stretched fabric. A particular condition of Manila was the torrential rain that posed a constant threat of flooding, which in part informed the temporality of those structures.

Findings led to design-research that revolved around the notion of flexibility of space, the provisions of infrastructure to facilitate activities, and the explorations of materials available in local slums and of local knowledge and techniques. Infrastructure in this context means artifacts that would enable activities and a module that could be repeated and reproduced, forming a system within the slums. At the concluding phase, the design-research took form of a design-build project. In this line of thought, the Addis Ababa's case intended to capitalize on the tradition of gathering for coffee, stemming from the idea of combining the hearth for making coffee with other elements to facilitate transmissions of information and knowledge. This artifact would be deployed in such a setting, allowing the artifact to transform such a meeting into informational and educational events. The theme of the design was a portable classroom through an artifact that was flexible, able to fit anywhere within the slums, applicable to community scale, could be configured in multiple ways, and constructed out of recycled metal. The studies on Manila researched on the creation of a transformable artifact that could accommodate activities for women and children. This intent emerged out of the observations of the ways women combined their home-businesses with child-caring. The design was a transformable

1.3. Literature on Slums

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of urban space, such as in the zoning and land use codes, while the latter referred to ways in which urban inhabitants used urban space, going about their daily life and navigating around the prescription of urban space.

In dealing with slum, Rao called for architect to change the roles of design from a tool of interventions to a tool of innovations in order to further the critical understanding between cities and their inhabitants (Rao, 683). This call found an echo in Teddy Cruz, who pointed out to the critical project of the avant-garde in art and architecture, in which work in architecture has become self-referential and autonomous in order to achieve critical distance (Cruz, 205-16). This critical distance was a form of resistance, allowing a design work to serve as a form of critique. Cruz instead challenged architects to reverse the position in order to engage the world, which he called radical proximity. Along the line, Goodbun, Till, and Iossifova have reframed the context of conditions such as slum in terms of scarcity, in which they challenged designers to ask the effects of scarcity on the production of the built-environment (Goodbun, 10). Till and Schneider argued that one of the issues was the tendency to address scarcity in terms of lack, failing to recognize the opportunity for a critical engagement with existing conditions (Till, 38-43). They suggested to use architectural intelligence to engage existing conditions, relating social and ecological factors with the physical design. Examples of these strategies included reusing and redistributing available materials and resources, avoiding the use of costly materials, and matching local skills with needs.

CONCLUSION

The values of this design-research lies in the way students recognized the limits of architectural interventions in complex and multilayered socio-cultural, economic and political situations. They started with a vision of addressing slums through massive interventions, such as public housing. However, this process led them to discover distinctions between top-down and bottom-up approaches, along with opportunities and limitations of each. As the process turned to revolve around the notion of bottom-up approaches, the intent of learning from local knowledge emerged as the main motive. It brought about the notion of humility in the design process, in which we tried to learn from particular contexts rather than imposing our ideas. Visits to slums always led to the sense of overwhelming desperations. However, by calibrating the focus to everyday, small-scales potentials, students recognized opportunities for architectural interventions in the face of structural conditions. The design explorations turned to investigations of infrastructural interventions, rather than a specific building type, that aimed to facilitate the use of space. They also turned to low-key technology in order for the project to be carried out locally as an opportunity to incorporate inhabitants as agency. As such, we intended to produce designs that would allow active participations. As a capstone project, this process gave opportunities for a process that progresses from global to local contexts and eventually to constructed architectural artifacts.

Beck urged to frame to notion of modernity as a reflexive process, to apply rationality to examine risks and hazard as the consequence of modernity. Extending this notion to the third world, slums exemplified the experience of modernity as an experience of risk and hazard, in which ordinary people were forced to face them in daily life. We sought to read these experiences through basic architectural lenses to identify opportunities in formal, spatial, programmatic, tectonic and performative terms. Our design-research sought to capitalize on findings that came out of close readings of slums. We saw the flexibility of spaces and the resilience of the inhabitants as a starting point to develop possible generative design principles. We sought to set a way to develop deep understandings and awareness of contexts and to learn from local resources, knowledge, and practice, while referring back to some fundamentals in architecture, including basic formal properties. The findings informed us on possibilities to engage and negotiate conditions on site to propose design responses through small interventions that would empower them, capitalizing on lessons learned from sites.

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ENDNOTES

1 UN-Habitat, *State of the World's Cities Report 2007/2007*, 21. UN Habitat defined slums as an urban area with a lack of one or more features including protecting, durable housing, sufficient living spaces for more than three persons, easy accesses to water, adequate sanitation and basic services, the security of residential tenure, and adequate structures. It included the unhealthy living condition, hazardous locations, high density and overcrowding and a high level of poverty and social exclusion.