

PROJECT REFLECTION

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Graduation Studio: Affordable Housing for Sustainable Development in the Global Urban South - Addis Ababa

Title: 'A Symbiotic relationship between LIVING and DENSITY – densify and upgrade city center of Addis Ababa with Open-to-Sky Spaces'

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Aspect 1: The relationship between the theme of the graduation lab and the subject/case study chosen by the student within this frame work (location/object)

Ethiopia has been undergoing rapid urban growth in the past two decades, resulting in a huge challenge to deliver sufficient housing for the urban poor. Addis Ababa being the capital of the country, has been confronted with the housing shortage problem and is in need of an urgent solution that mitigates the situation. Hence, the aim of the graduation lab is to develop a collective knowledge base and investigate spatial strategies and design methods to tackle this issue.

While density is definitely one of the main objectives to attain in the project, the social aspects, resilience and livability is another. Having read Charles Correa's 'Space as a Resource', it is emphasized that open to sky spaces act as a key component for quality of living. Due to lack of living spaces, a range of people's daily activities take place outdoor. Therefore, not only do these open to sky spaces accommodates different activities and interactions, they also embed the fundamental quality of domestic community living and social ties that are existing within the neighborhood.

Therefore, the challenge is to achieve the optimum result of providing the much needed density while ensuring the resilience and quality of living. In this case, while trying to densify during the design process, Open to sky spaces would be the main element as a strategy that ensures the livability of the densification outcome. It is also vital to bring the existing qualities that are taking place on the ground level, making sure the qualities are preserved even after densifying vertically. Knowing that increase of open to sky spaces usually lead to a decrease of density, it is then a challenge to apply and implement both elements comprehensively while paying close attention to the affordability and efficiency of the project.

Aspect 2: The relationship between research and design

The aim of the project was underlined by the research question: *To what extent can the demand of density be mitigated while maintaining the quality of resilience, domestic and community living in Addis Ababa?* While the focus of the project lies in bringing a balance between the spectrum of density and living, (as well as efficiency and resilience), it is vital that the research process covers both aspects comprehensively, in order to serve as a strong research base for later design developments. The research was done within approximately two weeks during a site visit to Addis Ababa. Information was collected and documented through observations, interviewing, photographing, sketching...etc.

2.1 Condominium Approach



Figure 1 – Existing condominium housing approach often comes with poorly articulated left over space

First of all, it is important to study and understand the underlying efficiency behind the condominium approach that is broadly used throughout the country. The condominium approach tends to be more favorable in terms of meeting density demands in a short period of time. It allows each unit to have its own kitchen and toilet facilities with improved hygienic conditions. Its straight forward and cheap construction processes with easily accessed materials makes it very efficient to apply in many places throughout the country. However, there are many shortcomings related to the quality of living. There is a lack of attention paid on accommodating the Ethiopian culture of community living and the system of spaces that people need, resulting in many unusable leftover space.

The design proposal took reference from the existing condominium housing blocks in its efficient building systems and use of easily accessed materials. The design is constructed with two main materials – concrete and bamboo to emphasize and represent the project's aim to balance two ends of the spectrum (efficiency and resilience/density and living). The main structural system of the project is done through beams and structural walls to accommodate the gestural shifts and setbacks in the design. Walls are made with concrete hollow blocks which are highly used in the country. The façade is separated into four to five panels that can be easily replaced or changed for alterations or expansions in the unit. Similar to the condominiums, every unit has its own utilities, which are serviced by a vertical shaft and are naturally ventilated from two sides of the unit. The previous issue of undefined public space after developing vertically has been diminished in the design proposal, the spaces between unit blocks are now more intimate, ground spaces are also utilized with the level differences to serve different purposes (e.g. public seating, meeting area, urban farm...etc) within the clusters.

2.2 Living in the Sefer



Figure 2 – examples extracted from the household investigation

We carried out a series of in-situ research at the site in order to understand the Ethiopians' way of living, their patterns of inhabitation as well as collecting first hand resources. Other than mapping on information including infrastructure, resources, functions, programs and activities, another focus was put into investigating the open to sky spaces within the sefer. We identified huge variations of domestic and income generation activities taking place in such spaces, further justifying Charles Correa's emphasis on the importance of open to sky spaces in quality of living. Of course regarding to the system of spaces that people need, it is also important to understand the relationship between the living spaces and the open to sky spaces. We picked a variety of housing units across the sefer as samples to investigate, where we visited individual households, carried interviews and sketched unit layouts in order to understand the living condition, people's lifestyles, needs and opinions towards the existing situation.

Through the household investigation, it is clear that there is a strong sense of neighborhood and social ties. People have very close relationships and are used to the nature of sharing, rather it be spaces, tools or resources. However, the living condition is very poor. People are forced to live in an extremely compact manner with almost no privacy (there are many examples where five people had to share one room with one double bed.) Living spaces are usually dark, unhygienic and sanitation facilities have to be shared with multiple households. From a larger neighborhood scale, due to the compact urban structure, there is a lack of space for public amenities as well as internal spaces for domestic and income generation activities. People had to rely on the main street which often causes issues related to safety and privacy.

In the design proposal, the different unit types (shop houses, standard units, maisonettes) vary in widths and lengths but follow the same principles. The shifts pays respect to the existing unit morphology in the sefer and creates a livelier façade to the neighborhood while providing multiple niche spaces in between. Every shift (for the blocks or unit) is standardized to per 1.5m and every unit has its own potential expansion space and/or open to sky space, as well as utilities like kitchen and toilet, both naturally ventilated. Unit layouts are designed and arranged in a way that can obtain sufficient sunlight, as well as privacy of the household activities and people's lifestyles: bedrooms are positioned at the back and the kitchen is placed close to the entrance. This allows inhabitants to use the open to sky spaces conveniently for daily activities; while combining with the terraced form that allows visual connections

within the cluster, the design fosters interactions between households as well as preserving the social aspects from the original settlements.

For the larger urban scale, the system is designed in a way that can create huge variety of combinations, and because the combinations are not attached directly, parts of it can be removed accordingly to accommodate public amenities and other programs that the neighborhood is currently lacking. The inhabitants now have their own private spaces for daily activities and family businesses, they can also access to a range of public amenities nearby easily. Production points are attached to the main street with a subtle level difference, the quality of the existing main street can then be preserved with a safer condition.



Figure 3 – a snapshot within the compound showing quality of open to sky spaces and unit expansion/customization

Aspect 3: The relationship between the methodical line of approach of the graduation lab and the method chosen by the student in this framework

From the phases of research to design, the graduation studio has a clear framework of approach for students to follow. I found the second phase quite a crucial stage in the development of the project's focus. We were given a range of texts focused on five different subjects related to urban transformation of Addis Ababa and its current housing policies. This was the moment when I had the chance to read Charles Correa's 'Space as a Resource', where I was intrigued by the importance of open to sky spaces that was mentioned in the text. This eventually became the main focus and component in my design.

Throughout the design process, the main challenge has always been the confrontation of the balance between efficiency and resilience when it comes to design decisions. To take a stance in how much control and how much variations and exceptions to take place was quite difficult especially when issues of affordability and efficiency have to be taken into account. One of the examples of these decisions were made after P2 with a fundamental step where I rethought about the unit types; instead of having six different unit block types that have little differences, I reevaluated the sizes of the units and came up with 4 unit blocks, which were combined into 4 different sets that can be adapted to more than 10 combinations. This way, there's better control over the key components but the potential can still accommodate high flexibility. The studio also put us into positions where we had to work with multiple scales at the same time which was challenging but helped us to come up with better and more holistic solutions for the project.



Figure 4 – A huge variation of combinations in the urban scale (right) created by four sets composed by four different unit blocks (left)

Aspect 4: The relationship between the project and the wider social context

Being the capital city in Ethiopia, Addis Ababa is an ideal area to investigate on as it embeds and represents the problems of pressing urban growth and housing shortage, while struggling to retain original cultural qualities. The project achieves the objective of preserving community living, accommodates the need of open to sky spaces and public spaces. It also allows possibilities to expand and alternate and the freedom to customise and utilise space in all units. It is an example to show that the problems associated with the existing condominium housing approach can be mitigated, while being able to densify efficiently and ensure quality of living at the same time. The proposed system is designed in a flexible manner that can be easily applied in other context, especially in the city of Addis Ababa. Minor adjustments can be made depending on the specific programmes that the site needs; the difference in topographical conditions will also affect the ground conditions for buildings to sit on. Nevertheless, even if the exact model cannot be replicated, the idea of a flexible combinational system can be used to densify and ensure quality of living.

Ultimately, the issue of urban growth and housing shortage is also a global phenomenon that is happening all around the world. Cities are developing with growing demand on affordable housing, the design approach applied in Addis Ababa could act as a framework or an example that other developing countries or cities can relate and take reference to, in order to avoid situations of inhumane living environments that lack resilience and cultural qualities. As experienced and studied in the course, we know that during the process of designing in an unfamiliar context, close attention has to be paid on the context with high cultural awareness; as one model that works in one country cannot just be simply replicated into another.