



Architecture & Dwelling

TU DELFT | FACULTY OF ARCHITECTURE AND THE BUILT ENVIRONMENT
DEPARTMENT OF ARCHITECTURE | CHAIR OF ARCHITECTURE & DWELLING

GRADUATION PLAN

Master of Architecture, Urbanism & Building Sciences

A - Personal information

Arianna Fornasiero

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B - Studio

a) Name / theme of the studio:

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

b) Tutors:

Prof. Ir. Dick van Gameren (D.

Dr. Ir. Nelson Mota)

Anteneh Tesfaye Tola)

c) Argumentation of choice of the studio:

The Global Housing Graduation Studio is giving me the opportunity to face with a completely different reality compared to Western countries.

I have always been interested in housing. In particular, last year, during the Msc2, I got the chance to design a project of affordable housing in India, in Ahmedabad.

So, during my graduation I will be able to deepen down the interest I have in Developing Countries trying to find a solution able to deal with global issues. Indeed, the urban population is growing fast and there is an urgent need to tackle with the pressing housing demand. Ethiopia, which is considered one of the poorest countries in the world is the perfect place where to experiment my interest.

C - Graduation Project

Title

The Intangible Border

C.1 _ Goal

Location: The Menen, Addis Ababa, Ethiopia

Problem Statement

Cities will have to "house" all future population, which is expected to peak at ten billion in 2050.

This means that urban population is growing faster than actual cities can absorb, resulting in a deficit of housing accommodation for people.

Ethiopia is ranked as one of the poorest countries in the world and is facing an annual growth of 2.6% . In particular, 80% of Addis Ababa, the capital of the country is a slum and 70% of the existing government owned rental housing needs renovation. This means, that Addis Ababa alone has a deficit of 300.000 units. At the beginning of the 2000s the Ethiopian Government, in partnership with Germany, developed a high-density prototype: the Condominium Block. This was then extended to a full-scale project. While facing the issue of density, the Condominium blocks cannot be considered as the best solution to approach the problem of affordable housing in Addis Ababa. Three main problems can be highlighted: production cost and the dependence on the importation of materials from Western countries; building configuration that does not fit with poor people life style resulting

in the loss of the social and local character of the place, and finally, the lack of flexibility in the apartment units that does not allow further expansions. Addis Ababa, specifically the Menen Sefer, could be the perfect laboratory to investigate a valuable alternative solution compared to the condominium blocks. The Menen is one of the oldest slums in the capital city hosting and heterogeneous population that rooted in the site during the years. This place acquired a strong social value and the community space is indispensable for the inhabitants. The application of the condominium blocks solution in this site would totally destroy the characteristics and habits that make this place a valuable place to live, even if considered to be a slum.

Research Question

This brings to the formulation of a clear research question.

How can the different socio-spatial layers, that characterize the fabric of the Menen, be reinterpreted into a low-rise project able to reach the same density of the Condominium blocks?

How could this space evolve with the expansion of the site and then of the city?

Design Assignment

The project is located in the Menen Sefer, close to the street that connects the city to the Entoto Mountains.

Thanks to its particular position, close to so-called Magnets (such as The American Embassy, the Shiromeda Market and the University), this place hosts a population that settled down during the foundation of the city and grew up throughout the years. This particular site was not involved in the rapid urbanization of the city and had the precious chance to evolve and root with time.

A sequence of socio-spatial layers, that connect the public space to the inner communal space, permit people, from different social classes, to coexist and live in a really valuable place. The Menen has not been the first target of the government project in the redevelopment of the city. This does not mean that, sooner or later, the site will be mostly entirely demolished to host the Condominium Blocks.

Indeed, the design assignment, focuses on designing a solution able to reach the same density of the condominium blocks, while maintaining the socio-spatial layers that permit this space to be heterogeneous.

C.2 _ Process

Method description

The first research phase focused on the study of the transformation of Addis Ababa. In particular, the Menen Sefer, transformed and evolved from the foundation of the city till now. We tried to understand its characteristics and if events, such as the Italian Colonization or the rapid urban expansion, influenced the growth of this place.

During this first step, we investigated the different housing typologies that varied from the circular local hut till the last interventions built in the late 1990s. This first research helped us to become more familiar with the periods and events that contributed in the transformation of the capital city. Moreover, thanks to a morphological analysis, we got to know that the site was not involved in the rapid urbanization promoted by the government. More, the housing typologies analysis showed us that different types of dwellings still coexist nowadays.

A second research phase focused on a deeper analysis of the site, trying to understand the reasons why this place was not involved in the fast urbanization of Addis Ababa.

Indeed, we analysed the surroundings getting to know that the presence of so-called magnets, such as the University and the American Embassy, gave this place the chance to develop and improve with time. This was confirmed by the presence of activities and public spaces around and within the Menen.

At the same time, we investigated the intervention made by the NGO Redd Barna during the 1990s. This helped us to understand the potentials of the project and the reasons why this prototype did not completely succeed in its purpose.

The third research phase was the field trip. During this time, we got the chance to truly investigate the suggestions and wonderings we had before leaving. The site survey was indispensable to deeper our research and understand the architectonic elements that characterize the Menen Sefer. Interviews and the exercise of re-drawing the spaces of the site helped us to understand the way people live and what they really need.

The visit of the capital as well as the new interventions gave us the opportunity to get to know to what extent the full-scale project of the condominium blocks is spreading around the city.

The final phase of the research was the analysis of the material collected during the field trip.

This confirmed almost all the conclusions we made before leaving for Ethiopia. Since the site survey, we were interested in the socio-spatial layers that characterized the Menen Sefer and enabled people, from different social classes, to coexist. We questioned ourselves to what extent a high-density project could be able to reinterpret the sequence of spaces that, according to us, was the main characteristic of the Sefer.

We know, that sooner or later the Menen will be the targeted by the government for building full-scale projects. We are challenging ourselves trying to find a valuable alternative able preserve the richness of this place as well as reach the same density of the condominium blocks.

Literature and general practical preference

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C.3 _ Relevance

The Global Housing graduation project challenges us to think in a different way that implements the western technologies into local techniques and materials. This means that, it is giving us the chance to apply what we learnt adapting it in a completely different context, such as Africa.

This could surely bring to new solutions able to compete with top-down projects that are spreading around the capitals of developing countries.

The statistics shows that there is the need to build one million-person city per week with ten-thousand dollars per family, during the next fifteen years.

Our graduation project could surely contribute in getting people more aware of this pressing issues and be inserted in the international debate. More, it could give another valuable point of view from which tackle the problem of housing demand.

C.4 _ Time planning

Week 1.1 – 1.4

First Phase of the Research Analysis – Morphological Analysis of Maps and Housing Typologies

Week 1.4 - 1.8

Second Phase of the Research Analysis – Analysis of the characteristics of the site and Redd Barna Interventions

Week 1.9

P1 presentation

Week 1.9 – 2.2

Field Trip – Site Survey, interviews and redrawing of compounds

Week 2.3 – 2.6

Analysis of the Material Gathered during the field trip

Pattern of inhabitation

Research Methods hand-in (15th December 2016)

Final Presentation Typology Transfer

Final presentation research analysis graduation project

Define preliminary design hypothesis + choice of the site

Week 2.7

Definition design hypothesis

Case studies

Week 2.8

19-20th January

P2 presentations

Week 2.9

Corrections after p2 presentation

Development of dwelling typologies

Week 2.10

Development of dwelling typologies (cluster 1:100) + combination of different apartments + circulation + relation of the clusters with the existing fabric

Week 3.1

Development of dwelling typologies (cluster 1:100) + combination of different apartments + circulation + relation of the clusters with the existing fabric

Week 3.2

Development of dwelling typologies (1:50) – definition of each apartment typology

Week 3.3

Development of dwelling typologies (1:50) – definition of each apartment typology

Week 3.4

Definition of the borders (1:100) – typologies that relate to the public street + typologies that relate to the inner streets

Week 3.5

Zoom-out masterplan 1:500 + development of the project according to the existing plots borders

Week 3.6

Zoom- out masterplan 1:500 + development of the project according to the existing plots borders

Week 3.7

Technical approach + structure + materials + research on local materials

Week 3.8

Technical approach + structure + materials

Week 3.9

Technical approach + structure + materials

Week 3.10

P3 presentations

Week 4.1

Definitive design + Deepen down the level of detail and finalization of the prototype

Week 4.2

Definitive design + Deepen down the level of detail and finalization of the prototype

Week 4.3

Definitive design + Deepen down the level of detail and finalization of the prototype

Week 4.4

P4 presentations

Week 4.6

Definitive design in reaction to P4 presentations

Week 4.7

Final presentation products

Week 4.8

Final presentation products

Week 4.9

Final presentation products

Week 4.10

Final presentation products

Week 4.11

P5 presentations