common ground
vernacular livelihoods &
rural urban migration

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- typographic research -

- *housing* -

MARKANDEYA

Location: Mumbai, India
Plot Area: 0,1625 ha
Number of Dwellings: 116
Density: 885 dw/ha
FSI: 4.03 / 1.96
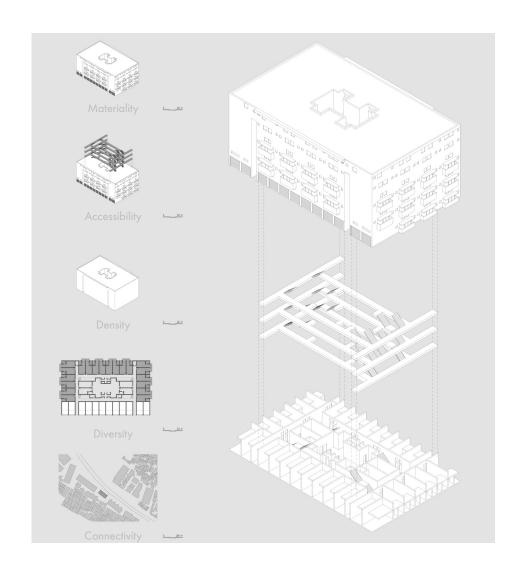**Unit Sizes:** 16,7 sqm; 26 sqm
GSI: 0.80
Client: SPARC (Public Sector)
Scheme: Public Housing
Design: SPARC
Tenure: Home Ownership

Located in Dhravi, a part of Mumbai which for many years was seen as the largest slum in Asia. The area grew to become a part of the central Mumbai in the 1980's and had 10 times the density compared to the surrounding areas and lacked services and infrastructure. In 1985 The Prime Minister's Grant Programme was incorporated to improve the housing situation for low income groups in Mumbai, whereas 1/3 of the grant was invested to change the horrible conditions in the area of Dharavi. The grant covered improvements of services and infrastructure, as well as loans to replace the huts with cooperative owned low-raise buildings. Markandeya

Cooperative Housing Society (MCHS), was commissioned by the Society for the Promotion of Area Resource Centers (SPARC) as a slum development project in 1988. After multiple proposed schemes under different political acts, the building came to be a low-rise courtyard structure with 116 apartments, which replaced many of the 92 huts that had earlier compiled the Markandeya area. Alike the huts, the apartments within the building is based on 16,7 sqm units and some with an additional mezzanine level, of a total of 26 sqm.

Materiality

Accessibility

Density

Diversity

Connectivity

GRATTE-CIEL
DE VILLEURBANNE

Location: Lyon, France
Plot Area: 2.5 ha
Number of Dwellings: 1450
Density: 580 dw/ha
FSI: 4.3
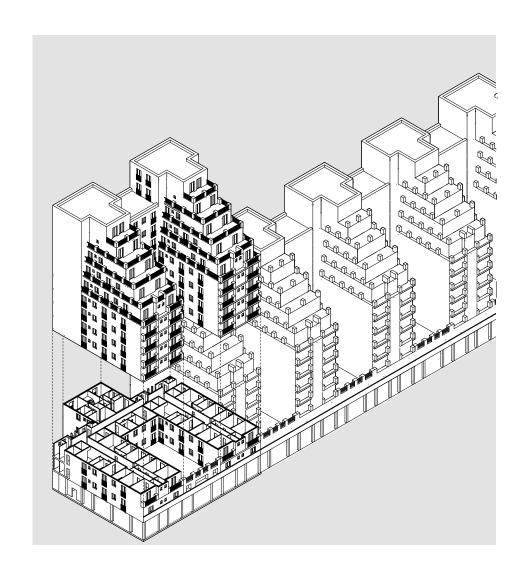**Unit Sizes:** 80 sqm; 47 sqm; 41 sqm; 38 sqm; 35 sqm
GSI: 0.7
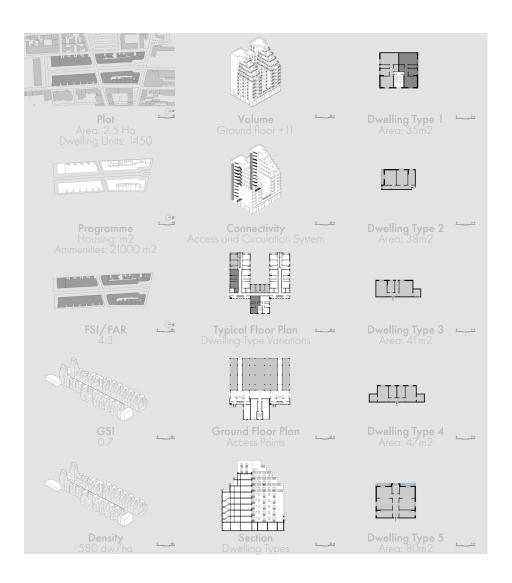**Client:** Villeurbann Municipality, Lyon
Scheme: Social Housing
Design: Maurice Leroux
Tenure: Rental

The city of Villeurbanne is located outside of Lyon in France and experienced a rapid population growth during the industrial revolution in which continued into the 20th century. In order to resolve the urgent housing demand, the municipality projected Gratte-ciel de Villerbanne as a solution to social housing for the working class. Maurice Leoroux, a French architect, was commissioned ro design the project, included two towers, which were the first skyscrapers built in France, as well as four blocks with stepped apartment buildings. This was set out to be the new centre of the neighbourhood.

Plot
Area: 2,5 Ha
Dwelling Units: 1450

Volume
Ground floor +11

Dwelling Type 1
Area: 35m2

Programme
Housing: m2
Ammenities: 21000 m2

Connectivity
Access and Circulation System

Dwelling Type 2
Area: 38m2

FSI/FAR
4.3

Typical Floor Plan
Dwelling Type Variations

Dwelling Type 3
Area: 41m2

GSI
0.7

Ground Floor Plan
Access Points

Dwelling Type 4
Area: 47m2

Density
580 dw/ha

Section
Dwelling Types

Dwelling Type 5
Area: 80m2

- condominiums -

KALITY, AKAKI

Scheme: 20/80
Type: Greenfield development
Plot Area: 18.3 ha
Number of Dwellings: 2430
Density: 132,8 dw/ha
FSI: 0,78
GSI: 0,17
Unit Sizes: 22sqm; 28sqm; 46sqm; 50sqm

2020

2010

2003

Group work. Chiara Tobia, Zhuo-ming Shia, Anna Grenestedt

CHEFIE, BOLE

Scheme: 40/60
Type: Greenfield Development
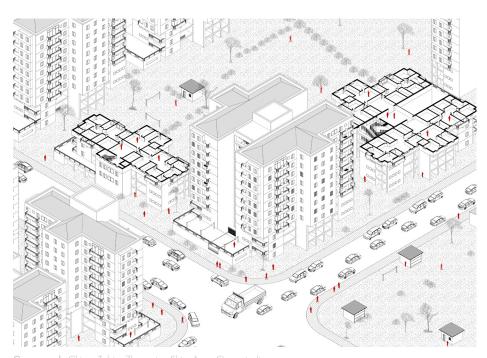**Plot Area:** 16 ha
Number of Dwellings: 1380
Density: 86.3 dw/ha
FSI: 1.9
GSI: 0.16
Unit Sizes: 95 sqm; 115 sqm; 130 sqm

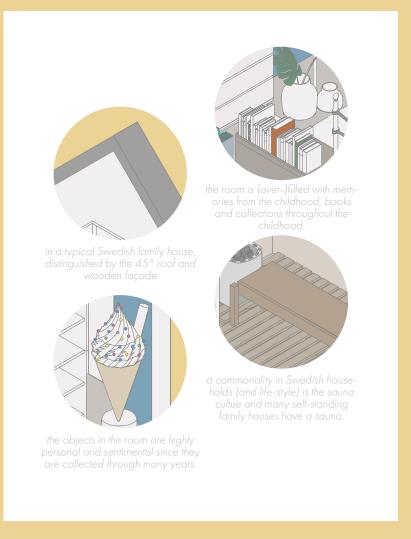**Group work.** Chiara Tobia, Zhuo-ming Shia, Anna Grenestedt

LIVING IN SWEDEN

the childhood home in Sweden is
located in the archipelago and is a
self-standing family house with five
family members living there. the house is
an old summer cottage, extended part
by part, as the family grew. the children
have their own bedrooms where child-
hood memories are crowded together.

plan scale 1:200

0   5m

in a typical Swedish family house,
distinguished by the 45° roof and
wooden façade

the room is (over-)filled with mem-
ories from the childhood, books
and collections throughout the
childhood.

the objects in the room are highly
personal and sentimental since they
are collected through many years.

a commonality in Swedish house-
holds (and life-style) is the sauna
cultue and many self-standing
family houses have a sauna.

LIVING IN SCOTLAND

the appartment in Scotland is the first home-away-from-home and the universty home while studying the first years at university.

plan scale 1:200

0   5m

in the city centre of a small Scottish city, in a typical British stone building with decorative features is the appartment located.

the room has included furnituire, which makes the details in the room the more personal. the room is big and gives space for various activities.

the room was primarily used for studying, however many of the memories created connected to the space is rooted in gatherings with friends.
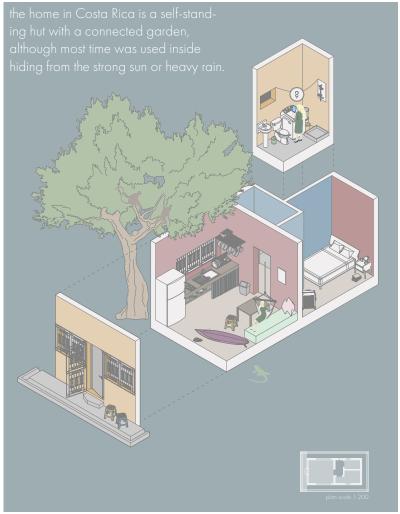
many of the student apartments in the United Kingdom are shared. furthermore, many of these apartments have a bathroom with a bathtub which is also shared, affecting the accessibility.

LIVING IN COSTA RICA

the home in Costa Rica is a self-stand-
ing hut with a connected garden,
although most time was used inside
hiding from the strong sun or heavy rain.

plan scale 1:200

0   5m

the house is a small hut placed in a fenced garden filled with trees and different animals. the hut is simple and is missing glass windows - inste... ... bars.

the space is furnished with available objects and furniture and there is limited utilities. personal objects and clothes are stored in a suitcase.

the space is used to relax and read when coming home from a day of work. the hanging chair is the most used piece of furniture and the growning monkeys ouside is the strongest memory.

the bathroom has a manual wash-ing machine - different to the widely used ones in europe. the washing machine functions by manually add-ing and exchanging the water.

- research plan -

Fig. 00. Collage

BACKGROUND

A widely spread and predominate research indicates that by the year of 2050, urban areas will be the home for 68% of the world's population (United Nations, 2018). Throughout the last decades, urbanisation has grown rapidly over the world and globalisation has become a fact. This does undoubtedly require new housing projects for the increasing number of inhabitants in urban environments. Arguably, it is also optimised for new housing typologies and living standards. In the process of urbanisation does nevertheless the urban density become a central topic in the question of how to accommodate the great number of people moving into cities. The notion of the rapid urbanisation does further raise concerns for the environmental impacts and calls for sustainable solutions. Nevertheless, in the time of the peak of the Anthropocene ear, is the environmental impact critical (van Doorn, 2019).

Another major issue in the urbanisation process is the aspect of affordable housing solutions in urban areas. Cities over the whole world, from North to South,

are dealing with the notion of the urging need of affordable accommodation. The issue is divided between the current residents in urban contexts, who are being forced to move due to unfordable rates and people arriving to cities in search for low-income housing (van Doorn, 2019). Examples ranges from low-income households in London, England, being forced to move further out of the city in phase with new building developments (Batty, 2011), to inhabitants in Mumbai's, India, slums and informal settlements, losing their accommodation when their sites are being re-developed (Udas Manki-kar, 2020).

Urbanisation does further revolve around the rural-urban movement and the connecting complexities of the notion. The way of tackle the complications of rural-urban migration varies worldwide. Many of the rural livelihoods are reliant on its connection to the ground in order to support the community. Therefore, are rural areas significantly exposed to environmental changes and are suffering by varying conditions affecting the yearly harvest. The loss of ability to

generate income through agriculture is one of the foremost reasons of rural-urban migration in developing countries over the world (United Nations, n.d.). It is however of global interest to preserve vernacular livelihoods and heritage in rural areas. In certain parts of China, for instance, actions have been taken in order to protect rural villages, both its architecture, farming and way of living. In order to encourage people to stay in these villages, instead of moving to urban areas, the inhabitants are offered financial support to maintain their communities (Cai, 2018).

Looking at the continent of Africa, major changes related to urban growth is subjected to keep expanding as the fastest rated continent. From the year of 2010 when the percentage of people living in urban areas was 36%, is expected to raise to 50% by the year of 2020. The urbanisation process in Africa sees to lead to economic growth, developments and reduction of poverty, however, it may also result in urban poverty, reproduction of slums and further inequality. The critical denominators in the process

are therefore dependant on policies and laws, as well as actions to provide successful outcomes through the transformation (The World Bank, 2015).

Ethiopia is the highest populated country in Africa after Nigeria and is the fastest growing economy in its region. Although the immense cases of famine and poverty, the country sees to reach a lower-middle-income status by the year of 2025. Challenges of the development in Ethiopia lays both in governance advancement and increased work opportunities in order to retain economic growth and improve the current state of poverty (World Bank, 2020). The growth of urbanisation in Ethiopia has not increased as rapidly and substantially, as seen in many other countries, on the other hand, Addis Ababa is expected to expeditiously grow in the coming years (Alemayehu, 2019). Therefore, the accommodation typologies and living standards in the city are due to further evolve. Whilst both public and private buildings have been prioritised along with new infrastructure in recent years, nevertheless, thousands of low-income households have been

kept in the background due to the urban development. However, as a response to the raising demand of affordable housing, the government has since 2004 realised condominium housing projects through an Integrated Housing Development Program (IHDP) (French, 2011).

Nearly 66% of the population in Ethiopia works with agriculture in the year of 2020 and rural areas and livelihoods are dependent on farming and their relationship to the ground. Many rural areas do still employ traditional living standards and practices and are reliant on self-provisional farming.

Conflicting to the rural livelihoods and traditional handling of nature and farming, are the impenitent land investment and expansion of agriculture for exportation. In a land like Ethiopia, where famine and poverty are a largely spread societal issue, the exportation of resources and food, which highly impact an unsustainable agricultural output, is rather contradictions. This notion dissevers both the natural resources and takes over natural areas in need of protection, as

well as rural communities, as the ongoing land investment creates uncertainties of ownership of land, which often leads to loss of land for the local farmers (DW Documentary, 2019).

Fig. 01. "A slum in the old Piassa neighbourhood of Addis Ababa, slated for demolition".

PROBLEM STATEMENT

The prevailing matter of contention of affordable housing in the time of a rapid urbanisation and additionally, during the peak of the Anthropocene era, calls for new social, economic and environmental solutions to accommodate the rural-urban migration in Addis Ababa. The prospects of the future cities open up opportunities for new policies and investments of affordable housing solutions, as it contributes to both a greater impact on a societal level and are profitable in the long-term. The process of densification in urban contexts are reliant on a balance between mix-used buildings, proficient infrastructure and open green spaces, in order to remain a sustainable and liveable place (van Doorn, 2019).

Through the rural-urban migration, livelihoods dependant on relationships to the ground are being configurated in an urban setting. With the current condominium system in Addis Ababa, the ownership constitutes for a property, configurable speaking, floating in the air; the premise is abducted from its relationship to the ground.

People resided in, often informal, settlements in neighbourhoods central in Addis Ababa, were relocated to the outskirts of the city. The outcome resulted in lack of connections to the surrounding and both economic and social practices were interrupted. Alongside the economic challenges were healthcare, education, water and sanitation reported to lack in accessibility and quality (Yntiso, 2008).

As the boundary of Addis Ababa is constantly expanding in the phase of its urbanisation, the farmland is compromised and taken over by new building developments. Part of these is taken up by schemes relocating informal settlements, such as condominiums, and other by land investors. Local farmers are losing their lands and livelihoods and are experiencing low compensation and lack resources to generate income (Yntiso, 2008). This is shredding a light on how farmland and the outskirts of Addis Ababa is treated and questions what is due to be implemented in order to preserve and protect nature and livelihoods related to these alike.

Furthermore, farming and ecologies are being de-prioritised in the rapid urbanisation seen both in Ethiopia and globally. Consequently, this results in lack of open green spaces, local farming and space for non-humans. To enable both sustainable urban migration and urbanisation and accommodate affordable housing schemes, new systems and typologies have to emerge in the phase with Addis Ababa's growth. In recent years, urban farming has become a trend in cities over the world as a concept to implement greenery and growing of food, in already dense contexts. The approach often targets re-invention of spaces and usage of roofs and balconies to grow plant on. Urban farming

is nevertheless often an after-construction and lacks resources and space to function successfully in a greater extent. In order to contribute with wider opportunities for farming and greenery access, it requires a well thought out plan and participation from the neighbourhoods.

As a response to the destructive traits of agriculture, was permaculture constructed to obtain a sustainable relationship between farming, landscape design and ecologies. Considering the situation in Addis Ababa, permaculture might be a source of a sustainable solution implementing farming in an urban context and subsidise to a self-sufficient and ecologic compound.

Fig. 02. Diagram

RESEARCH QUESTION

As one of the emerging challenges in Addis Ababa is the need for affordable housing for the great number and how to accommodate the rural urban migration; it also raises question of the dissolving relationship to the ground.

In the time of a global extensive globalisation and rapid rural-urban migration both around the world and within Ethiopia, the question is if we can create space for traditional livelihoods and rural practices to take place in an urban environment.

how do we re-connect people to their place and engage people with their environment?

how can we contribute to the challenges to accommodate the rural migration confronted in the urban context and provide a vernacular connection to the ground and nature?

through the lens of a sustainable social, economic and ecologic community; how do we create common ground?

THEORETICAL FRAMEWORK

The research is based on three main themes and concept in which are being analysed through the lens of affordable housing in Addis Ababa, Ethiopia. By way of introduction, the themes used in the research, defined by leading researchers and authors in the subjects, are as following:

Commons

"For us, the analysis of knowledge as a commons has its roots in the broad, interdisciplinary study of shared natural resources, such as water resources, forests, fisheries, and wildlife. Commons is a general term that refers to a resource shared by a group of people".
Elinor Ostrom and Charlotte Hess, 2011

Permaculture

"The conscious design and maintenance of agriculturally productive systems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of the landscape with people providing their food, energy, shelter and other material and non-material needs in a sustainable way."
Bill Mollison, 2016

Rural-Urban Migration

"The factors bearing on the individual decision to migrate are growth of non-agricultural jobs and the rate of urban unemployment are significant determinants of outmigration from agriculture"
Derek Byerlee, 1974

Cities stand in front of crucial decisions in forming and determine the future urban areas. The theoretical framework constitutes a foundation for research and concepts connected to housing, relating to nature and its symbiotic relationship to humans and non-humans, in an urban context. Inevitably, the theoretical framework used in the research aims to form a coherent response to the emerging need for affordable mass housing, globally and specifically in Addis Ababa, Ethiopia. The research relies on historical examples and conceptions as well as speculative future possibilities relating to the connection to the ground. Rural-urban migration acts as a starting point as it sets a premiss of need of affordable housing for the great number of people moving into the city. Departing from the

notion of the need of mass-housing, the next step to investigate is how, whereas the notion of commoning and permaculture are two conceptions which can be tested to create sustainable housing schemes. The theoretical framework is crucial in order to compose possible contemporary building standards in Addis Abba.

Related to the main focus of the project is the relationship to the ground. Contrary from an approach built on agriculture, does the research chose the notion of permaculture as a source of alternative solutions which are intended to benefit the natural conditions. The questioning will explore the relationship, vernacular patterns and commonly, in these essential terms and concepts dealt with in the research, are social, economic and ecological questions. Moreover, what are the spatial complications in Addis Ababa and how can these be evolved with the rural-urban migration through a framework based on commoning and permaculture.

Commons / Commoning

Central in the research lays the concept of commoning as a reaction to rural-urban migration and vernacular livelihoods. Furthermore, the research aims to analyse the layers which constitute for commoning, through the lens of shared resources, from social practices and livelihoods to sustainable urbanisation, ecologies and micro-economies. As the concept of the commons reaches both an environmental, social and economic level, it contributes with an approach to deal with a broad range of subjects which can be integrated with contemporary housing schemes in Addis Ababa. The theoretical framework, constituting the ideas of commoning, are foremost relying on the works of three main authors, theorists and researchers: Elinor Ostrom, David Bollier and Silvia Federici.

The work by Elinor Ostrom regarding the commons lays the foundation of the term and further resonates with the principal economic, social and environmental intention of the commons. Moreover, Ostrom contributed with multiple books on the subject and administered a comprehensive set of design principals of common pool resources. Selected works by Ostrom is prioritised in the research to acknowledge a broad and relevant framework, implementable in the contemporary housing management in Ethiopia. The book "The Future of the Commons: Beyond Market Failure and Government Regulations" (2012), is one of the late works by Ostrom and builds on the understanding of issues with the environmental and managing these without a top-down governmental regulation system. Additionally, the book "Working Together – Collective Action, the Commons, and the Multiple Methods in Practice" (2010) written by Ostrom together with researchers Amy R. Poteete and Marco A. Janssen, analyses and discuss various approaches and evaluate research models treating the collective functions and management of a commons. Further literature and research conducted by Elinor Ostrom will be integrated in the purpose of a holistic and grounding understanding of the commons.

In a further obduction of the term commons, David Bollier contributes with research and sources of the commons, which is both documented through literature and ongoing up to date blog posts. Bollier is an author, activist, consultant and blogger, "exploring the commons as a new paradigm of economics, politics and culture". Contrary from Elinor Ostrom, Bollier often refers to commoning as a verb, rather than the noun commons. This implements the current and active notion of the concept and Bollier writes in a blogpost "There is no commons without commoning – the social practices and norms for managing a resource for collective benefit" (Bollier, 2011). In one of Bollier's editorial books "Patterns of Commoning" (2015), collected essays explain the international and current signs of commoning and what constitutes for the spread of commoning and its persistence. The perception of Bollier's work is relevant in the research in order to imply insights of commoning and its modern examples globally.

In order to elaborate on the political aspects of commoning and further reach a deeper understanding of the social conditions manifesting the commons, author, researcher and activist Silvia Federici's work is essential. The book "Re-Enchanting the World – Feminism and the Politics of the Commons" (2018) by Federici sets a feministic framework for the politics of the commons and further elaborate on examples from various countries around the world. In the field of the commons, Federici contributes with analysis and research on capitalism and feminism, which allow a broader societal conception of the term. Whereas the project opts to treat commoning as a foundation for contemporary housing ideals in Addis Ababa, commoning is emerging in the built environment and is directly impacting the domestic life. Relating to the historic and place specific relationships to farming and natural resources in Africa, connection to the domestic life and expectations of gender roles, Federici's work contributes to a feministic approach to deal with these notions through the politics of the commons. Additional works by Federici, covering topics related to the domestic life and inequalities, e.g., the book "Wages Against Housework" (1975) are

therefore important in order to implement a socially sustainable community.

Permaculture and Natural Resources
The intention to create a holistic understanding of agriculture and natural resources in relation to the built environment and urban infrastructure is based on the notion of diverse studies by researchers and theorists exploring these topics. Furthermore, the framework of permaculture and natural resources has evidently a literal relationship to the ground, nevertheless, it acts as a response to the current, future and viable sources and handling of these. Researching the relationship to the ground, from both a human and non-human perspective, there are certain common denominators and pressuring questions, nonetheless in the age of the Anthropocene era. The research aims to realise the basic ideas behind each concept and unpack these in an attempt to implement strategies in the built environment. The grounding idea of researching the natural conditions and relationships require to distinguish a position, on which approach to undertake. As the research aims to contribute with

profound sustainable solutions, the theories and concepts shaping the framework have been chosen with respect to this.

Agriculture is one of the main resources for humans relating to nature, however, the notion of modern farming does nevertheless imply consequences for the nature. Therefore, the research is chosen to deal with the conception of permaculture. The term permaculture was coined in the 1970s by ecologists Bill Mollison and David Holmgren as a concept combining ecologies, agriculture and landscape design, in respect to environmental sustainability. Notwithstanding, the main focus of the concept relating to the natural ecological conditions, the notion does also reach a more politic sense of ground. In the documentary "Permaculture the Documentary: How it started" (DogsGoWoof Productions, 2019), David Holmgren states "the ownership of the land had this really adverse effect on sustainability of the land". In the books Permaculture One (1978) and Permaculture Two (1979), Mollison and Holmgren present the implications of permaculture on a small and large scale

and how we can create permanent culture and agriculture by understanding the way nature design things.

Considering nature in the process of design, it is necessary to understand the interplay between the built and natural environment. Moreover, how these properties can influence each other and what can be implemented in the urban contexts to allow a sustainable surrounding. Looking at a macro level of the scale of a city, it is of importance to provide green areas, such as parks, and in recent years also urban farming is being adapted. These are valuable for humans and non-humans alike for a prosperous social and biological diversity. Likewise, concepts like urban farming can act beneficently for the community and individuals in sense of provision of food and consolation. Architects Katrin Bohn and Andre Viljoen established the concept of Continuous Productive Urban Landscape (CPUL) is a strategy to implement sustainable urban infrastructure. Bohn and Viljoen's paper "Continuous Productive Urban Landscape (CPUL): Essential Infrastructure and Edible Ornament"

(2009), introduces the concept of CPUL and implements opposite scales, from building to city. The research explores the urban infrastructure as a point of development towards a more sustainable environment. For instance, a prospect of the concept relies on the process of reducing energy when producing and distributing food, achievable through urban farming.

More specifically, in order to understand the complex circumstances locally in Ethiopia and future resources related to the ground, it is necessary to build an understanding of the current and potential environmental sources. The book "Atlas of Potential Vegetation of Ethiopia" (Friis, 2010) analyse the possible vegetation in Ethiopia as well as addresses the current climate properties. By adopting the notion of the factors constituting possible outcomes relating to the ground and natural resources, the aim is to provide a sufficient foundation to build future architectural schemes around. Furthermore, how resources can contribute to a self-sufficient ecologic atmosphere, farming and micro-economy.

Further research on the area of agriculture and nature in Ethiopia and Addis Ababa specifically, will be considered throughout the project. The article "The Rush for Land and Agricultural Investment in Ethiopia: What We Know and What We Are Missing." (Cochrane, 2020), does moreover subsidise for the notion of the complex situation of land investments in Ethiopia and what these entails. Moreover, does the article "Accessibility of urban green infrastructure in Addis-Ababa city, Ethiopia: current status and future challenge." (Azagew, 2020) contribute with important insights of the underpinned challenges of the urban green infrastructures in Addis Ababa.

Rural-Urban Migration and African Cities

With the notion of the rapid rural-urban migration globally, the research focuses on the complications, challenges and outcomes of the current conditions and future of urban areas. The movement impacts both the rural livelihoods and traditional lifestyle and patterns. In respect to the complex conditions of rural to urban migration and the substitution

in every part of the world, the research aims to grasp an understanding of the effect the phenomena has in the context of Africa and further Ethiopia and Addis Ababa. The rural-urban migration does nonetheless raise social, political and environmental questions, which are specific to its place and time. By analysing theories and research covering these topics, the project sees to create a framework built on a broad perspective and knowledge of place specific properties in the field, as well as comparable examples continentally and globally. For the sake of the project, the rural to urban migration is setting a starting point in terms of an opportunity to provide new housing schemes to contribute to the matter. Furthermore, tracing the rural-urban migration to the concept of a connection to the ground is crucial and directly connected to rural and traditional livelihoods and agriculture. Evidentially, the relationship to the ground has become a complex issue in the movement of national migration and urbanisation as the notion of farming contributes to both social, environmental and economic factors, such as lack of work opportunities and food

resources. The concluding result of the research is to be considerably chosen in recognising a relevant and circumspective approach. Focusing on the social, political and cultural developments in Africa and Ethiopia, the research ought to present challenges and developments to deal with when implementing contemporary affordable housing schemes, as a part of the urban environment in Addis Ababa.

Starting at the point of the phenomena of rural-urban migration, there are multiple sources of research on the subject, reaching from identification to social, economic and environmental questions. In line with the economic and identifying research of rural-urban migration, is economist, agricultural researcher and policy advisor Derek Byerlee's work. As an introduction to the term and its instrumentation in Africa does Byerlee's paper "Rural-Urban Migration in Africa: Theory, Policy and Research Implications" (1974) provide a detailed and critical analysis and mapping of rural-urban migration. The content does furthermore account for theoretical schemes and figures showing

the relationships between the rural migration to urban areas and economic and social factors, such as work opportunities and education. Despite the fact that the paper is rather antiquated, many of the research points provides a grounding framework for an understanding of the factors and critical reflections on how to read and analyse data on the subjects. For example, Byerlee criticises the collection of data through interviews, whereas the methods that had been carried out stressed certain economic motives "they do not address important policy issues such as the impact of urban wages on migration" wites Byerlee (1974).

Connecting rural-urban migration with urbanisation, the International Institute for Environment and Development's (IIED) specialist research group for Human Settlements, provides integrated knowledge of urban environmental issues since the 1970s. The research carried out by the group is centred around poverty and the most vulnerable people living in squatter settlements or slums (IIED, n.d.). Moreover, multiple articles and projects are available under the collection of "Ur-

banisation and rural-urban linkages" by The Human Settlements research group. Amongst many relevant topics, is the project "RurbanAfrica" which describes a number of components of rural-urban migration in Africa; agricultural transformation, rural livelihoods, city dynamics and access to services (IIED n.d.).

From a global point of view, the book "Local Governments and Rural Development: Comparing Lessons from Brazil, Chile, Mexico and Peru" (Andersson, 2018) contributes with an understanding of the political challenges that rural developments are facing. The research underdone is based on extensive interviews of mayors' local officials and farmers from four countries in Latin America, providing analysis of "the ways in which different forms of decentralisation affects the governance arrangements for rural developments on the ground" (Andersson, 2008).
The connection between the themes is based on their common ground. Thematically, the notions all build upon an environmental, economic and social approach which can implemented in a

contemporary housing strategy in Addis Ababa. Through these lenses does the themes furthermore overlap and complement each other. Permaculture, could for instance, be integrated in a community based on commoning. Moreover, the notion of rural-migration and vernacular livelihoods are also strongly connected to commons;" Much of commoning depends on memory when we resurrect forgotten traditions and cultural practices." (Ristau, 2011).

Fig. 03. Diagram
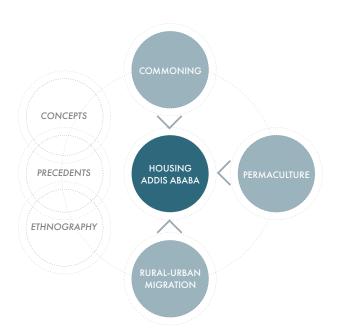
METHODOLOGY & METHODS

In order to research the impact of shared resources and its connection to social, ecological and economic properties, relating to the housing situation in Addis Ababa, various methods are being used to examine the historic values and present situations. Throughout the research, it is critical to create a holistic approach in which lays the foundation for the forthcoming project. Predominantly are com-

moning, permaculture and rural-urban migration instrumental in the research.

As a significant part of the methodology of the research is the usage of the theoretical framework, it constitutes a foundation for further analysis of historic and current precedents. By investigating properties in various cities, communities and building constellations and implementing the lenses of the conceptions of commoning, permaculture and rural-urban migration, it substitutes for a comprehensive library of relevant references. The terminology being used throughout the research does furthermore play on the relationships between social, economic and environmental challenges.

Commoning is used as a method to analyse projects based on the economic, social and environmental concept of shared resources. Projects with a clear aspiration of commoning are being used in the research, as well as historic precedents which can be analysed by the means of commons. Examples globally will be used to understand culturally diverse scenarios and commu-

nalities between these. Moreover, these precedents can contribute with a range of scales, as Elinor Ostrom and Charlotte Hess describes; "In a commons, the resource can be small and serve a tiny group (the family refrigerator), it can be community-level (sidewalks, playgrounds, libraries, and so on), or it can extend to international and global levels (deep seas, the atmosphere, the Internet, and scientific knowledge." (2011). Examples constituting the theme of commons and commoning can be found in housing that share resources and allotment gardens.

Relating to the ground and symbiotic relationships between humans and non-humans, an approach of rural and traditional observation will be integrated within the research and used to analyse livelihoods in Ethiopia, Africa and globally. This ethnographic approach aims to look at housing through images, drawings and the patterns of usage of various spaces and places. Images and drawings contribute to an understanding of practices and activities and the spatial qualities around these. This contributes to

CONCEPTS

COMMONING

PRECEDENTS

HOUSING ADDIS ABABA

PERMACULTURE

ETHNOGRAPHY

RURAL-URBAN MIGRATION

an understanding of architectural values and needs.

Engaging in the ideas of possible schemes for affordable mass-housing in an urban environment, such as in Addis Ababa, does nevertheless require a certain degree of density in order to compete with current schemes and provide housing for the great number. On the other side, the research aims to benefit the connection to the ground, which may entail open green spaces. The conflict between density and open spaces are complex in urban contexts and will therefore be analysed through a typological approach. By looking at diverse urban contexts and building types and analysing these, the aim is to find components and possibilities suited to develop further and implement in affordable housing schemes in Addis Ababa.

For instance, the spatial relationship between co-living of humans, animals and nature can be seen in vernacular settlements in rural areas in the province Enshi, China. The buildings are standing on stilts which has the function to let an-

imals move freely underneath the living spaces, as well as keeping odour and dangerous animals away from the level of rest in the building. The connection to the ground is functional yet divided by height and penetrated in everyday life activities, this acts upon one approach of creating a close relationship to the ground yet constructing height differences and allowing a symbiotic relationship for humans and non-humans.

The methodology of researching the course of rural-urban migration does also build on facts and numbers constituting the past and recent figures relating to urbanisation. Both United Nations and The World Bank offers a wide range of statistic relevant for the research and comparison of the subject. For instance, The World Bank has compiled an overview of the current economic, social and environmental situation and supporting articles.

Fig. 04. "Tensta kolloniområde". Allotment gardens and affordable housing schemes in Tensta, a suburb to Stockholm, Sweden.
Fig. 05. "Vernacular architecture, Enshi, China".

SUSTAINABILITY

TRADITIONAL LIVELIHOODS

HOUSING ADDIS ABABA

CONNECTION TO THE GROUND

URBAN GROWTH

RELEVANCE

In the prevailing urbanisation in Ethiopia and the notion of the many cases of famine, poverty and further land occupation and handling, it is pressuring to seek new approaches to deal with these complications. Housing, enabled and focused on the rural-urban migration, is the departure which creates a testing ground to analyse the relationship between environmental, social and economic values.

The research aims to provide a foundation for new housing schemes based on the concept of commoning and permaculture in the time of an increasing rural-urban migration in Ethiopia. In the recent years, the concept of commoning has spread and been discussed broadly, nevertheless, relating to the field of architecture. Moreover, there is an urgency to provide sustainable solutions in the urban environment and raising housing demand. This notion has subsidised in research and interest in possible solutions which suggest shared resources, urban farming and ecologic co-living with humans, animals and nature. In the Anthropocene era, there is a need to revert the faith of the built environment.

This can be tackled by design solutions with consciousness of building materials and sustainability. In recent years, permaculture has evoked a movement across the globe with people devoted to a sustainable approach to farming and greenery.

Rural-urban migration is setting the foundation and the inhabitant group. It tackles the questions considering the rural arrival to urban contexts and the traditional occupations and practices the rural-urban migration brings. The project does furthermore seek opportunities to promote vernacular traditional livelihoods in a possible urban environment, in order to maintain the connection to the ground.

The project sees to contribute with an understanding of possible solutions for affordable housing which remain a vernacular relationship to the ground and further connects the social, economic and environmental challenges in an urban environment. Hopefully, can the research induce an understanding of the factors conductive to sustainable housing in Addis Ababa.

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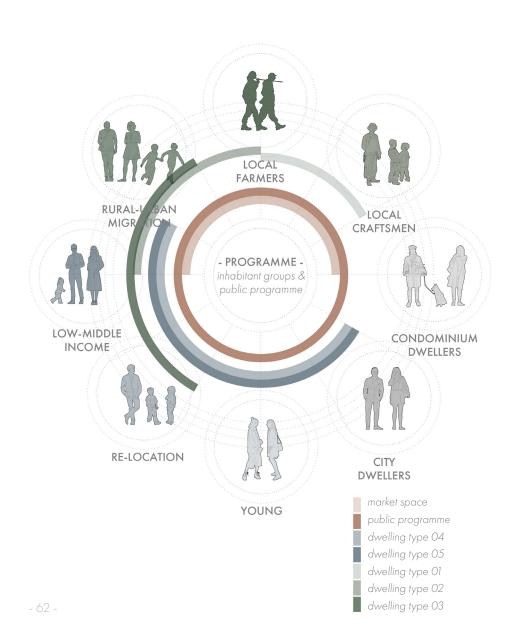
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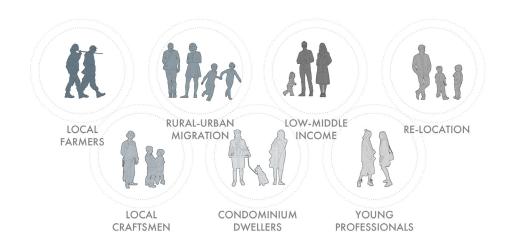
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- inhabitant group -

INHABITANT GROUP

- PROGRAMME -
*inhabitant groups &
public programme*

LOCAL
FARMERS

LOCAL
CRAFTSMEN

CONDOMINIUM
DWELLERS

CITY
DWELLERS

YOUNG

RE-LOCATION

LOW-MIDDLE
INCOME

RURAL-URBAN
MIGRATION

market space
public programme
dwelling type 04
dwelling type 05
dwelling type 01
dwelling type 02
dwelling type 03

LOCAL
FARMERS

RURAL-URBAN
MIGRATION

LOW-MIDDLE
INCOME

RE-LOCATION

LOCAL
CRAFTSMEN

CONDOMINIUM
DWELLERS

YOUNG
PROFESSIONALS

TYPE 01.1
*dwellings: 4
sizes:
storeys: 2 (1 duplex)
contract: mixed own-
ership/rentals
inhabitant group:
farmers*

TYPE 01.2
*dwellings: 16
sizes: sizes: 66m2,
98m2
storeys: 4 (2 duplex)
contract: mixed own-
ership/rentals
inhabitant group:
mixed,
rural-urban migration*

TYPE 01.3
*dwellings: 24
sizes: sizes: 66m2,
98m2
storeys: 2-4 (1-2
duplex)
contract: mixed own-
ership/rentals
inhabitant group:
mixed,
rural-urban migration*

TYPE 02.1
*dwellings: 28
sizes: 38m2, 50m2
storeys: 3-4
contract: mixed own-
ership/rentals
inhabitant group:
mixed,
city dwellers*

TYPE 02.2
*dwellings: 36
sizes: 38m2, 50m2
storeys: 4-5
contract: mixed own-
ership/rentals
inhabitant group:
mixed,
city dwellers*

source: Allison Wong
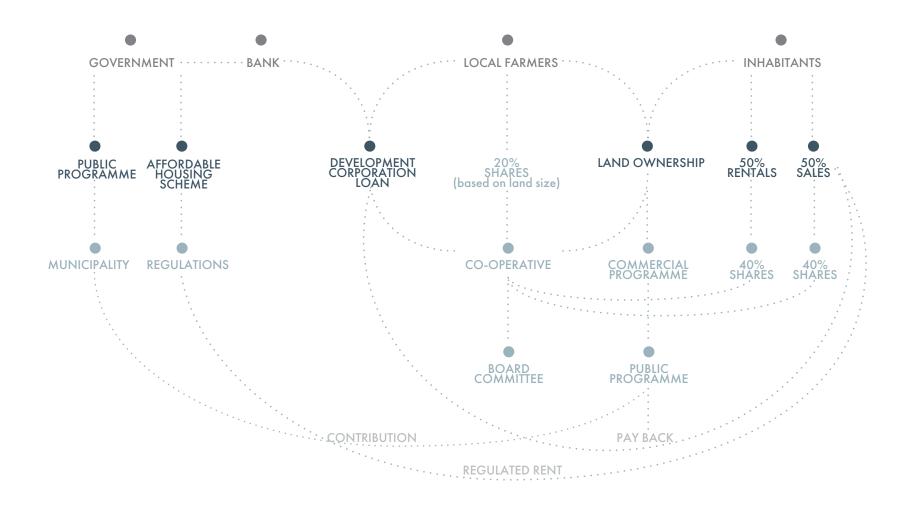
source: Video "Emerging Spaces – a day in Addis Ababa's condominiums" 2012, _Spaces

- manegerial strategy -

POWER / INFLUENCE

SATISFY

COMMERCIAL
BANK OF
ETHIOPIA

ADDIS ABABA
MUNICIPALITY

SHAREHOLDERS

BUILDING
CO-OPERATIVE

FARMERS &
INHABITANT
GROUP

MANAGE

FEDERAL
HOUSING
CORPORATION

GOVERNMENT

ENVIONMENT

LOCAL BUSSINESES

CONSTRUCTION
INDUCTRY

PROPERTY
DEVELOPERS

MONITOR

INFORM

VISITORS

NEIGHBOURING
COMMUNITIES

CONDOMINIUM
SITES

low

INTEREST

GOVERNMENT · · · · · BANK · · · · · · · · · · LOCAL FARMERS · · · · · · · · · · INHABITANTS

PUBLIC
PROGRAMME

AFFORDABLE
HOUSING
SCHEME

DEVELOPMENT
CORPORATION
LOAN

20%
SHARES
(based on land size)

LAND OWNERSHIP

50%
RENTALS

50%
SALES

MUNICIPALITY

REGULATIONS

CO-OPERATIVE

COMMERCIAL
PROGRAMME

40%
SHARES

40%
SHARES

BOARD
COMMITTEE

PUBLIC
PROGRAMME

CONTRIBUTION

PAY BACK

REGULATED RENT

PHASE 01
- foundation
- service core

PHASE 02
- pre-cast concrete slabs
- pre-cast concrete columns

PHASE 03
- straw bale walls
- green facade

- design -

DESIGN HYPOTHESIS

This project aims to create an affordable housing typology as a reconfiguration of the existing condominium scheme in Addis Ababa. The design is intended to respond to topics touching sustainable migration, rural practices and commoning as a form of shared resources. Central in the design philosophy is the relationship to the ground and the connecting practices relating to and enabled by this. By implementing a design strategy which is built on an understanding of the current urbanization, the hope is to create a solution responding to the housing demand and protect both the ground conditions and rural practices through globalization.Furthermore, based on the term of commoning, the project ambition is to create involvement on a social, economic and sustainable level.

Location: the project is meant to be developed in the outskirts of Addis Ababa and with time become an integrated part of the urban fabric.

GREENERY CLADDING < STRAW FACADE < CONCRETE SERVICE CORE

greenery
straw facade
concrete floor
concrete service

MULTI-STOREY CONCEPT   2-STOREY CONCEPT

- site -

SITE CONCEPT
"GREEN ISLAND"

image: Kieran Dodds/Panos Pictures
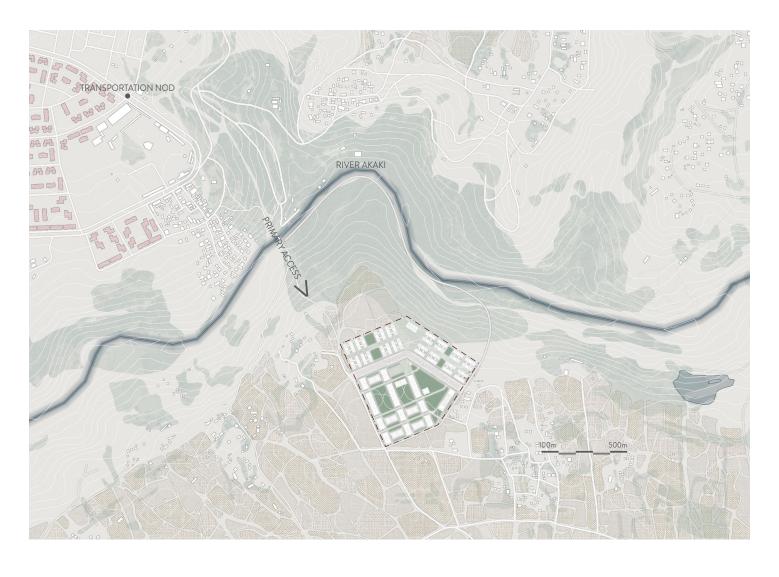
● African Union Comission

● Bole International Airport

● Bole Bulbula Condominiums

SITE

● Addis Ababa city edge

1km

N

SITE LOCATION

1500m 1500m 1000m 500m

100m 500m

scale: 1:5000@A1

N

SITE CONTEXT

TRANSPORTATION NOD

RIVER AKAKI

PRIMARY ACCESS

100m   500m

scale: 1:2500@A1

N
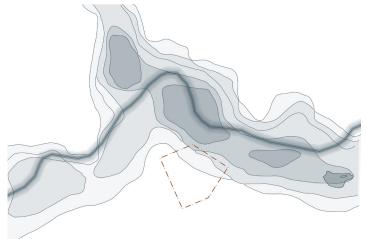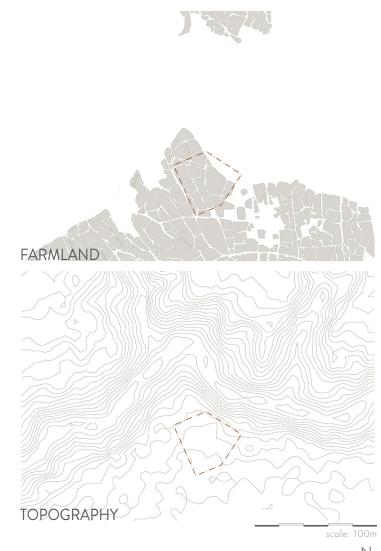
NATUAL
SITE CONDITIONS

FLOODING

FARMLAND

FORESTRY

TOPOGRAPHY

scale: 100m

N
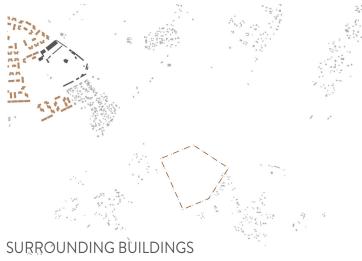
SOCIAL & INFRASTRUC-
TURAL CONDITIONS
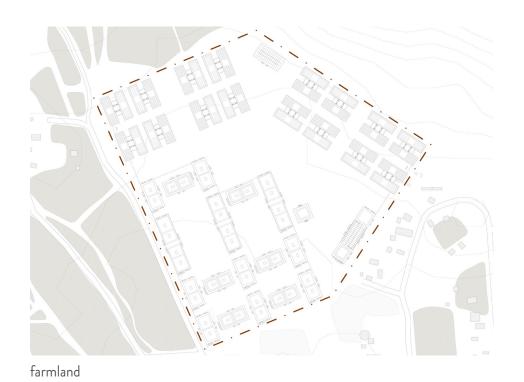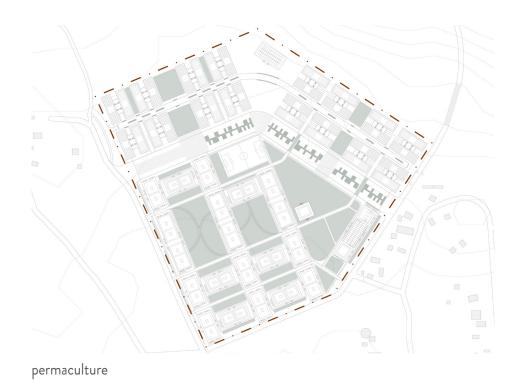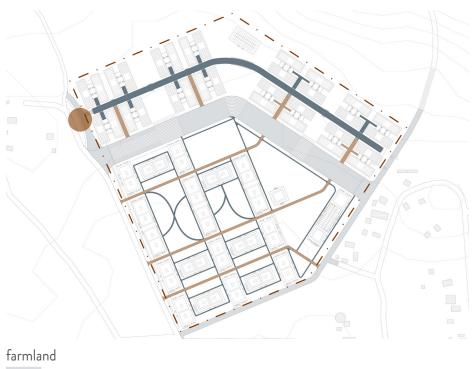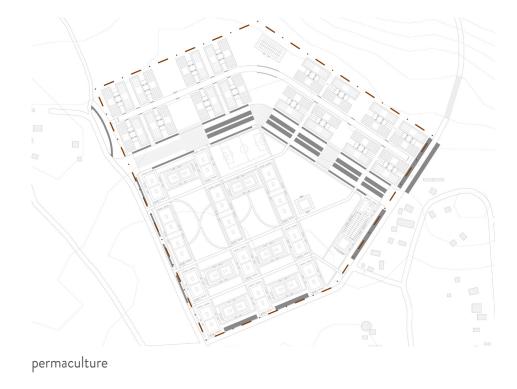
SURROUNDING BUILDINGS

- condominiums
- industrial buildings
- (in)formal housing

ROADS

CITY EDGE

scale: 100m

N

SITE PLAN

site information
site area: 88,500m2
dwellings: 800
density: 90dw/ha
FSI: 1.81
GSI: 0.31

scale: 1:1000@A1

N

SITE - NATURE

farmland

permaculture

scale: 1:1000@A1

N

SITE - INFRASTRUCTURE

farmland

- car access
- service & emergency access
- pedestrian access
- car-pool / bus connection nod

permaculture

scale: 1:1000@A1

N

SITE - WATER
MANAGEMENT

Now, we first dig one foot down, and then like here we dig two feet down.

the soil stays and the water sinks into the ground.
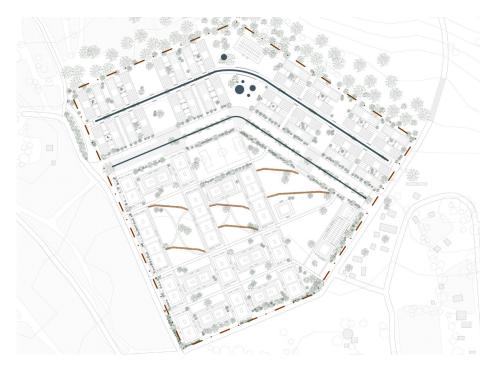
◼ stone prevention soil screed
◼ water collection area
◼ planted green buffer zone

permaculture

scale: 1:1000@A1

N

- shared spaces -

MASTERPLAN
GROUND FLOOR PLAN

scale: 1:1000@A1

N

MASTERPLAN
PROGRAMME

scale: 1:1000@A1

N

(semi) public buildings
building typology 02.1
building typology 02.2
building typology 01.1
building typology 01.2
building typology 01.3

MASTERPLAN
PROGRAMME

URBAN
ACCESS
(condominium dwellers)

COMMUNITY
BUILDING

PUBLIC
TRANSPORT

ALLOTMENT SLOTS

PARK
ACCESS

MARKET
SPACE

SPORT
FACILITIES

VISITORS
PARKING

MARKET ACCESS

FOOD
STORE

STORE
FRONTS &
INFORMAL
MARKET

PRIMARY
SCHOOL

STORE
FRONTS &
INFORMAL
MARKET

(semi) public buildings
mixed commercial/dwellings
main access / neighbour access points
semi private space
public space
high/low concentration of people

scale: 1:1000@A1

N

MASTERPLAN
PROGRAMME

URBAN
CONNECTION

COMMUNITY
BUILDING

PERMACULTURE

WATER
COLLECTION

PERMACULTURE

PUBLIC
TRANSPORT

PEDESTRIAN
ACCESS

OPEN
MARKET

SPORT
FACILITIES

PARK
ACCESS

CAR ACCESS
& PARKING

FOOD
STORE

ANIMAL
CARE

PRIMARY
SCHOOL

building typology 02.1
building typology 02.2
main circulation
semi private space
public space
high/low concentration of people

scale: 1:1000@A1

N

TRANSPORT NOD

scale: 1:200@A3

FOREST CONNECTION &
VISITORS PARKING

scale: 1:200@A3

MARKET SPACE

scale: 1:200@A3
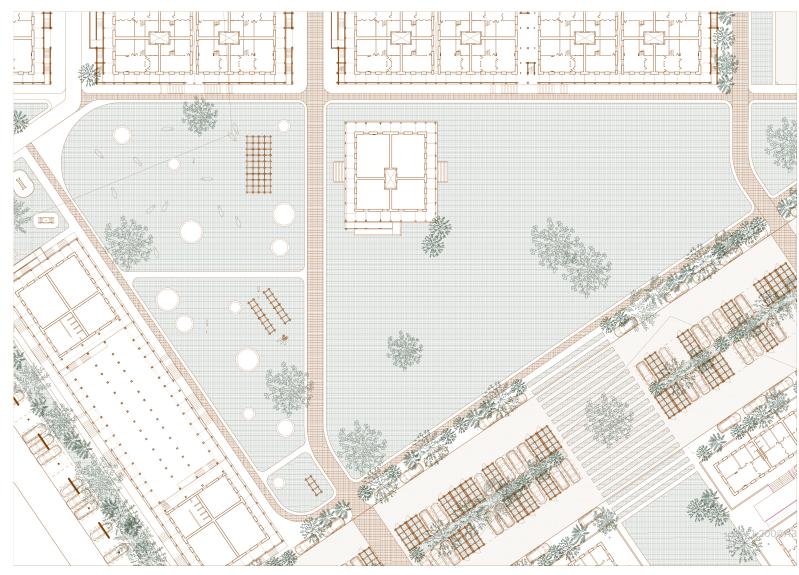
FARMERS MARKET &
ANIMAL CARE
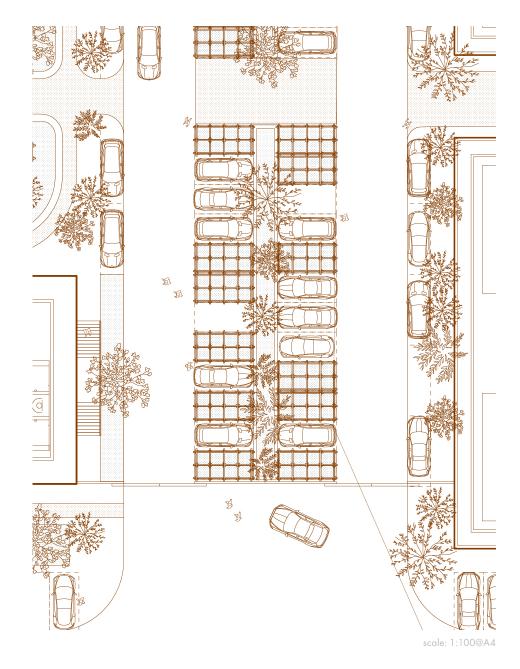
PARK(ing) SPACE & ALLOTMENT GARDENS

The parking space is used as a part of the site for integration between the dwellers of the two different areas with buildings. By including greenery and the opportunity for multiple usages of the parking spaces, either to park your car, use as a commercial unit or an allotment garden, it gives people the oportunity to interact.

scale: 1:100@A4
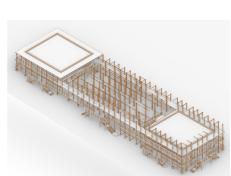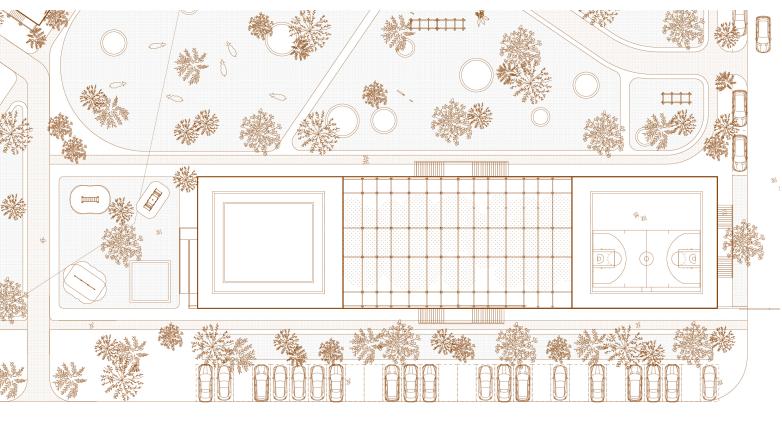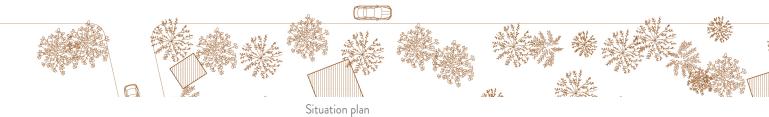
PRIMARY SCHOOL

The primary school is constructed with the same methods as building typology 01, modified in a way to suit the programme of a primary school and offer flexible teaching spaces.

Situation plan

scale: 1:500@A3

PRIMARY SCHOOL

FLOOR 01

ROOF PLAN

FLOOR 00

FLOOR -01

scale: 1:200@A3

- building design -
typology 01
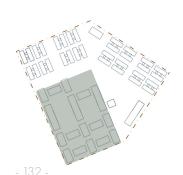
CONTEXTUAL
GROUND FLOOR PLAN

The buildings defining typology 01 are located in the South part of the site and have an in-direct access towards surrounding farmland. Furthermore, the dwellings are combined in a dense layout in order to obtain as much open space as possible for permaculture.

scale: 1:500@A2
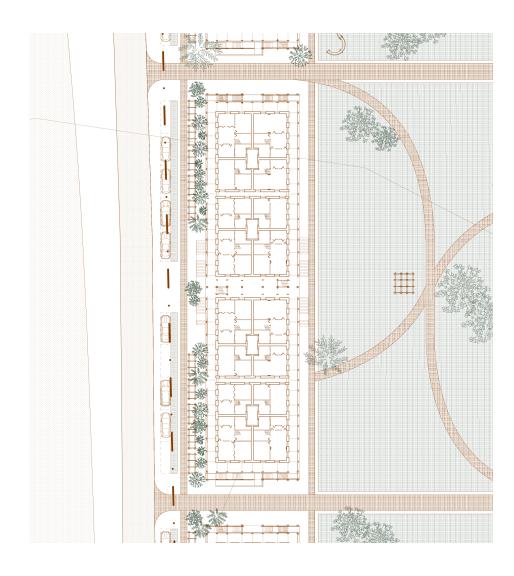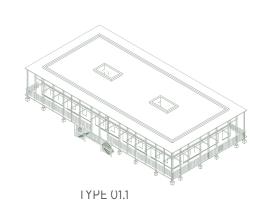
EDGE CONDITION
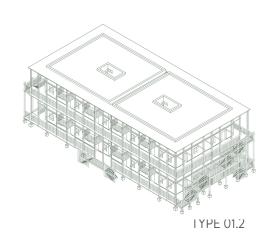
Along the West edge of the site, a more commercial street is located which is targeted towards passing trafic and neighbouring areas. The dwellings in this area are offered space for informal retail opportunities, whilest the dwellings looking out towards the permaculture space are offered space for planting for the household.

TYPE 01.1

TYPE 01.2

TYPE 01.3

TYPE 01.1

TYPE 01.2

TYPE 01.3

DUPLEX FLOOR

- FARMING -
SEASONS
planting & harvesting

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

belg season
meher season
bamboo 3-5 years
barley 60 days cycle
planting
growing
harvesting

- building technology -
typology 01

FIRE ESCAPE ROUTE

BAMBOO CONNECTION DETAIL

CONCRETE BEAM
load bearing structure

ADOBE BLOCK WALL
load bearing structure

CLAY CLADDING
natural colourants & mixtures

CONCRETE RENDER
Interior ceiling

EUCALYPTUS PLYWOOD

CLAY INTERIOR PAINT

EUCALYPTUS DOOR FRAME

CONCRETE RENDER FLOORING

PRE-CAST CONCRETE SLAB
Bamboo re-inforcement

BAMBOO FLOORING
weaved bamboo

COMPRESSED EARTH FLOORING

WATER PROOF MEMBRANE

BAMBOO
structural bamboo flooring
fire retardant coating

BAMBOO CONNECTION
recycled aluminium

RAIN

SUN

water collection
(cooling)

grey water tank

hot air

solar planels

cross ventilation

cool air

mechanical
ventilation
(night time)

FLOODING

septic tank

WIND

DUPLEX FLOOR

ENTRANCE FLOOR

- building design -
typology 02

TYPE D1 PLAN

TYPE D2 PLAN

TYPE E PLAN

TYPE E PLAN

- building technology -
typology 02

STRAW BALE WALLS (wheat)

METALL WIRE

BAMBOO INTERIOR DOORS

ADOBE BRICK WALLS & CONCRETE BLOCKS+BEAMS+COLUMNS

EUCALYPUS WOOD WINDOW & DOOR FRAMES

EUCALYPUS PLYWOOD INTEIOR WALLS

IN SITU CONCRETE SLAB

EARTH EXTERIOR CLADDING

EUCALYPUS PLYWOOD INTEIOR WALLS
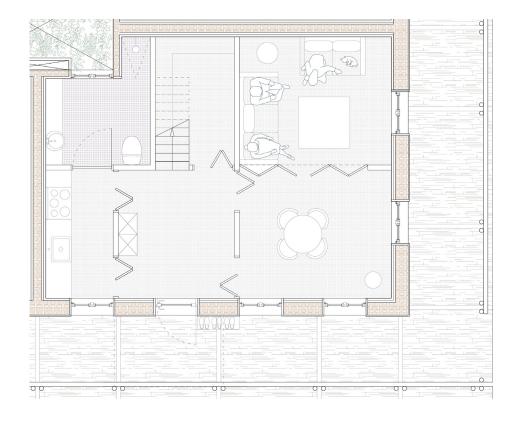
CONDOMINIUM BLOCK 40/60

dwellings per building: **60**
people per building: **≈ 300**
floors: **2 floor basement - 3 floor shop - 10 floor apartment**
apartment types: **2 bed, 4 bed**
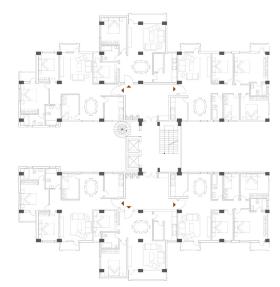
apartment floor area: **718m2**
dwellings per floor: **6**

material usage - concrete & steel / floor:
columns concrete: **31.49m3**
columns steel: **3.49m3**
-
floor slab concrete: **129.24m3**
floor slab steel: **14.36m3**

concrete per dwelling: **26.78m3**
steel per dwelling: **2.97m3**

PROJECT BLOCK

dwellings per building: **36**
people per building: **≈ 126**
floors: **4-5 floor apartment**
apartment types: **2 bed, 2,5 bed**

apartment floor area: **808.25m2**
dwellings per floor: **8**
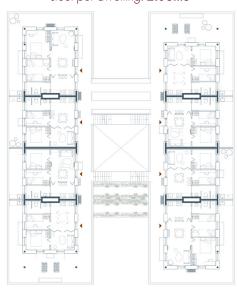
material usage - concrete & steel / floor:
columns concrete: **3.31m3**
columns steel: **0.38m3**
load-bearing wall: **10.45m3**
floor slab concrete: **145.48m3** **0.65 plastic bottles =* **94.56m3**
floor slab steel: **16.16m3**

concrete per dwelling: **19.89 / 13.53m3**
steel per dwelling: **2.06m3**

CONDOMINIUM BLOCK 20/80

dwellings per building: **15**
people per building: **≈ 45**
floors: **3 floor apartment**
apartment types: **studio - 1 bed - 2 bed - 3 bed**

apartment floor area: **255.31m2**
dwellings per floor: **5**
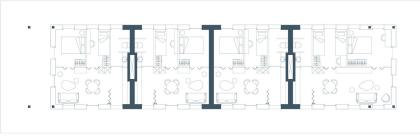
material usage - concrete & steel / floor:
columns concrete: **5.69m3**
columns steel: **0.63m3**
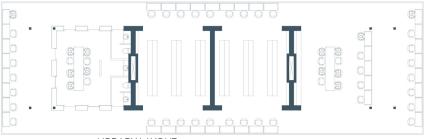
floor slab concrete: **45.95m3**
floor slab steel: **5.10m3**

concrete per dwelling: **10.32m3**
steel per dwelling: **1.14m3**
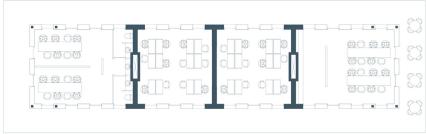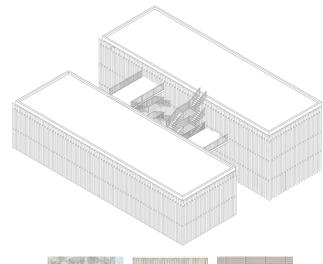
DWELLINGS LAYOUT

LIBRARY LAYOUT

OFFICE LAYOUT

metal   bamboo   timber

FIRE ESCAPE ROUTE

CONCRETE RENDERING SURFACE

IN SITU HOLLOW CONCRETE SLAB
recycled plastic bottles filled with sand

CLIMBING PLANTS WIRE & CONNECTION
gravel + soil

PRE-CAST CONCRETE BEAM

EUCALYPTUS FRAME

EUCALYPTUS FRAME WINDOW

EARTH CLADDING (optional)

STRAW BALE BLOCKS
wheat straw

HOLLOW CONCRETE BLOCKS

RE-INFORCED CONCRETE ROOF GUTTER

LIGHTING
solar energy driven night light

CONCRETE RENDERING

INTERIOR CEILING
Concrete render or Bamboo Ø40mm

EUCALYPTUS PLYWOOD

CLAY INTERIOR PAINT

INTERIOR FLOOR
Concrete render or Bamboo panels

cantilever floor slab force

cantilever floor slab force

RAIN

SUN

GREENERY

water collection   solar planels

overhang shadow

green roof heat buffer zone

transmitted heating

hot air   cross ventilation   cool air

green facade shading

FLOODING

septic tank

septic tank

WIND

natral water heating

grey water tank

- reflection -

REFLECTION

Departing from the course's brief to respond to the fast-growing urbanization in Ethiopia with contemporary housing schemes in Addis Ababa, which are both replicable and affordable, nevertheless, dealing with questions regarding sustainable solutions. These notions do furthermore imply social, economic and environmental caution as part of the wider output of the project, delt with on both a micro and macro scale. The project "common ground" has its core in these approaches and is further exploring the relating social, economic and environmental concepts, locally and worldwide, in order to provide a grounded yet experimental solution, with housing as a testing ground to elaborate the outcome.

As a response to the emerging need of affordable housing, the Ethiopian government developed condominium schemes. The construction of the condominiums resulted in various groups of people losing their homes; people in informal settlements were forced to move towards the outskirts of the city and reported loss of economic and social connections. Furthermore, the lands

dedicated to the condominium schemes left farmers without land, which they previously have managed their livelihoods on, with little to no compensations. This constitutes for new inhabitant groups in need of housing, and land, alongside the rapidly growth of the migrating rural population arriving in Addis Ababa (Berhanu, Y, 2018).

As a starting point, the project related to an inhabitant group combined of people being re-located, farmers and the rural urban migration. However, as the project evolved, groups who fall between the focus group, which constitutes for a low-middle income group, people residing in the condominiums and local craftsmen and informal dwellers were included in the scheme. Commonly, whether economically or socially, people's relationship to their context, and ground, have been either interrupted or lacking a sense of communal and green space. This resulted in the projects' aim to re-connect people to the ground and their context. In order to unpack the idea of connecting people to the ground and encourage the livelihoods of local

farmers and the rural urban migration to sustain and develop a sustainable and vernacular urban situation, the project contemplate to create shared spaces and housing to accommodate the inhabitant group and the ideas of social, economic and environmental sustainability.

By analysing the condominium system, it shows that there have been various sides of the programme lacking in ground connection and the courtyards are being overlooked or seen as unsafe spaces. In regard to this, the project also sees to challenge the way dwellings in multi-story buildings connection to the ground and how, figuratively speaking, the renters or owners have access to a property floating in the air. Seen in the more and less successful aspects of the current condominium schemes, the project benefit from the results of the condominium schemes over time. It includes solutions in order to improve the housing system to have a closer relationship between the inside and outside practices. One example of this is how people are using the outdoor spaces as an extension for their kitchen and uses it for food preparation

(Heisel, 2017).

Throughout the design of the masterplan and building typologies, green, shared, private and public spaces were carefully considered. As the connection to the ground consistently decrease with the density of the building, hence the height, the project looked towards creating alternative options and concepts to ground connections by creating variations of sense. The building typology with a higher density offers shared outdoor areas for planting and social interactions on roofs and bridges, literally connecting two sides of the building and activating it with circulation running through the centre of the building. Furthermore, semi-private and private space outdoor space has been integrated in the design for practices such as drying laundry, food preparation and an outdoor extension of the dwellings to accommodate larger groups of people. Nevertheless, how this principle would work in practice is hard to predict, one challenge is how the shared spaces would be used and the atmosphere it would conceive over time. To contribute towards a successful outcome, the managerial aspects of the project have been important to further than connecting people to the ground and their context, also connecting people their homes to care for these and create a neighbourly and shared responsibility of the space. Another aspect considered has been security. Often seen in both Addis Ababa and around the world, are gated communities. This is experienced as being enclosed and shutting out the surrounding, which contradicts the idea of the project's openness. However, a certain level of security is required. In this case, the approach was to look for alternative ways, whereas the plants were used. Densely grown plants, with an additional benefit of fire-retardant properties are used as a "fence" to create the illusion of a borderless boarder.

A comprehensive output of the project is to create a symbiotic relationship between the human inhabitants, animals and nature, which put pressure on the managerial management and the ownership of the land. The notion of commoning has been used in the purpose to manage the natural resources and further manage the community. By developing alternative ownerships, where all inhabitant groups can be included, the project sees to create shared responsibility. One of the managerial ideas is to allow all dwellers shares in a cooperative where the shared effort and responsibility keeps the community going on various scales. It was important to find ways for the inhabitants to have the right to the land they live on, in order to use the natural resources as well as managing the, which ideally, would further create a stronger relationship to the ground and fellow dwellers. Drawing knowledge of renowned economists, activists and authors, the concept of commoning has been unpacked and translated towards the social, economic and environmental aspects of the project. Elinor Ostrom's work has been the backbone of the economic relationship to the natural recourses and how these can be handled and shared between the inhabitants on the land.

Although lessons in commoning with examples from all over the world were used as inspiration, Elinor Ostrom emphasis on each situation as unique and require analysis in its own right (Ostrom, 2012). In order to build a stronger relationship to the specific context and the properties of inherited knowledge, natural resources, social interactions, etc. in Ethiopia, further Addis Ababa, information from various films, literature and images were used.

In the video "Meet the Rainwater Harvesting Champions of Ethiopia, Kenya and Uganda" (RAINfoundation, 2016), people in rural parts of Ethiopia were interviewed and it appeared that the farmers had formed a group of people who together applied for rights to land and to benefit from the resources gained, from the government. This established a solid foundation and support from a possible solution in practice for the managerial strategy of the project, operative in Ethiopia today.

Author and activist Silvia Federici's work focusing on the commons and feminism was used to add additional value in inclusivity and equality to the social

and economic aspects of the project. Further shown in the video "Meet the Rainwater Harvesting Champions of Ethiopia, Kenya and Uganda" (RAIN-foundation, 2016), was how the chores and management handled by groups in the village was divided equally by men and women. Drawing from this, the management of shared resources evidentially contemplate participation by women and men equally and the project has been developed to contribute with space for inclusivity, both in gender, and further class, by integrating housing with mixed income levels and domestic activities.

One aspect of the ethical issues as the role of creating an architectural scheme throughout the project concern the personal understanding and analysis of space, culture and practices in Ethiopia. In the unfortunate situation of not being able to visit Ethiopia and Addis Ababa during the course of the project, a space specific physical experience of the culture, climate and atmosphere has been withheld. Consequently, some values and responses which a physical

experience could have contributed with, might have been compromised. With this knowledge, the motivation for the project was to find proposals of alternative possibilities, not solutions. Imaginable, the foremost aspect compromised in the project is related to the daily practices and activities. Whereas images and films have been the primary source of inspiration and knowledge of the regular occurrence and everyday life. However, these are selective in access and limited. An example of this is the ethnographic analysis of everyday domestic practices, the project has been based on the images, videos and interviews available to create spaces to accommodate these. For instance, the culture around the Ethiopian cuisine has inspired the layout of the reception room, dining room and kitchen, in order to respond to the imaginable needs in the preparation and social situation around dining. Relating to this, the layout of the dwellings has also been adapted to change for each household's needs and wishes and walls can be moved or taken out to create more spacious or enclosed spaces or adding extra space for desired space.

A dilemma confronted in the project has been to find suitable building techniques and materials which meets both societal image and sustainable ambitions. On one hand are the traditional and local materials and craftmanship, which further accommodate sustainable solutions both in terms of workforce ability and sustainable environmental properties. However, on the other hand is the resistance, if you will, towards the aesthetics of these traditional materials, amongst new dwellers, desiring a more modern look. In making ends meet, the decisions have been based on a compromise and using a mix of high-tech solutions using low-tech. One example of this is the external bamboo structure, hence low-tech, connected with a new solution of casting aluminium joints with melted recycled cans. Other decisions have been made on the exterior wall construction made out of either adobe blocks or straw bale construction, using materials from the site, adding a clay cladding which can be modified with various natural colorants and textures to obtain a more modern aesthetics which can be modified and personalized by the inhabitants them-

selves.

In terms of discussion and feedback received by mentors, the main questions at issue have been relating to the contextual relationships, appropriation of aesthetics and materials as well as connecting the conceptual and research questions with the outcome of the building and masterplan design. In response to the aesthetics and materials, as well as project cost, the project has developed by calculating material usage compared to the condominium schemes, as well as decreasing the use of concrete and introducing alternative building materials and construction methods, such as adobe blocks. A challenge has been to integrate the building typologies and build on the concept of shared space. One way of dealing with this has been to identify the shared areas and activate these through various programmes, e.g., sport space for youths, permaculture garden for local farmers shop, workshop spaces, etc. Further, more experimental suggestions have been added to the programme in purpose of creating social connections throughout the site,

for example a shared parking/allotment gardens, where people from different areas of the site can get together and both car owners and gardening enthusiasts can meet. This example in particular is also building on an idea of inclusion and diversity, whereas park(ing) spaces can be rented, and each can be used either for parking your car or planting on.

The final part of the graduation period will be dedicated to further investigation and exploration the future of the project; both in terms of social, economic and environmental sustainability. Further questions will be analysed; How does the building and masterplan change with the inhabitant group over time? Which programmes could be added in the future? How could the various building sites look and work like and how could these be integrated? At what scale does the project thrive? Furthermore, extended studies on how the project could grow with time and how its context could change and how this would affect the project.

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