



## THE PREMISE OF PROGRESS

-Sustainable urban upgrading through the integration of a much needed junior high school within the complex social and economical climate of Nima, Accra-

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A junior highschool - Hot Coffie Road, Nima

AAHM01 - Degree Project in Architecture  
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*"Knowledge is power. Information is liberating. Education is the premise of progress, in every society, in every family."*

*-Kofi Annan*



# ABSTRACT

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Nima is a distressed neighbourhood located north of central Accra, the capital city of Ghana in West Africa. Nima is an extremely dense community, where land is very scarce. Single floor, clay built compound houses occupy the entire neighbourhood. Spatial planning is lacking, infrastructure is limited and overcrowding proposes a severe problem. Nima, a neighbourhood which is a direct result of rapid urbanization which occurred after the second world war, has long been considered an illegal squatter settlement with a reputation as a place undergoing rapid physical and social decay. Furthermore, academic achievement within Nima is shown to be very low, a large percentage of the population has never received any education. This knowledge, along with Nima's bad reputation has created a shared frustration among the youth due to lack of jobs and opportunities. It is time for Nima to create its own opportunities and unlock its potential by providing further education for its youth. Today most children of Nima attend primary school but then drop out after the age of twelve, both because of economical as well as geographical reasons as there are no secondary

schools within the neighbourhood. Therefore, as a step towards improving the neighbourhood, this thesis proposes to build a much needed Junior high school within Nima, where children can continue their studies locally. It does so by looking closely at the neighbourhood, viewing its potential and by implementing a site specific design solution which challenges the concept of the school as an institution while provoking new ways to approach densification. A new typology is created as a response to the severe lack of space. A junior high school, built with local traditional building materials is built on columns and therefore occupies the otherwise unused space above the existing local market, creating a dynamic mix of people, functions, tradition and innovation on site. Inspired by the words; "Knowledge is power. Information is liberating. Education is the premise of progress. In every society, in every family." by the Ghanian diplomat Kofi Annan, the project hopes to support Nima to develop its image and help its youth to create a more prosperous future for themselves.

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*\*\*Conducted interviews and diary entries during field research.*

# PROLOGUE

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Land is the stage of human development and towns and cities have long been considered the stage of human progress, they are perceived to be the promised land and the image of change. Job opportunities, stable income and financial security attract people by the masses and therefore cities continue to grow. In a rapidly urbanising world, land is occupied faster than ever, in an unplanned, unbalanced and uncontrolled manner, creating severe problems and inadequate living situations, especially within developing countries. Ghana, a post-colonial success story in West-Africa is developing fast but is still no exception to this. There is a clear division between the rich and the poor in regards to quality of life; clearly evident by the comparison of housing as well as access to education and healthcare. A large part of Accra, the capital city of Ghana is occupied with established neighbourhoods which are still today considered to be slums. Built without any planning forms or municipal supervision the neighbourhoods quickly became overcrowded and burdened with related problems. With continuous government neglect the problems have festered

and become permanent, shaping the lives and livelihoods of nearly half of Accra's population. Much like many other cities of developing countries, Accra has to be aware of the problem and the fact that it will only continue to grow in the near future. First step towards change is to educate, and to focus on our youth because they are the future. Education is the premise of progress and it should be accessible to all, it is one of our basic human rights. Universal education is an important political objective in Ghana, its constitution includes laws to provide free and compulsory basic education for all and annually the country spends a quarter of its budget towards maintaining and improving the school system. In 2016 I travelled to Ghana for the research purposes of this thesis. My goal was to design a school for 500 underprivileged children within Nima, one of the most notorious slums in Accra and doing so by implementing local materials. Through numerous interviews I came to the realisation that basic education within Nima is far from equal. The public school system is overburdened with enrolment and cannot provide. Therefore conditions are created



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where private schools thrive and impoverished families have to pay high tuition fees to enroll their children in school. In my biased opinion this raises many ethical questions such as; how is this fair and shouldn't this be different? My research taught me that even though the answer seemed clear to me, some people believed schools should be tuition fee based and therefore only for those who could afford them. That way schools would be less burdened with enrollment, teachers would have decent salaries and be motivated to do their best and students would be aware of their fortune and therefore be grateful enough to make the absolute most of their education. Additionally this would instead relieve the state's financial burden and allow it to put more revenue towards other sectors. Based on this eye opening revelation and collected knowledge throughout my research and field study, the focus of the thesis shifted and it investigated how a much needed junior high school could become an integrated part of the unique social and economical climate found within Nima. The main objective was to

push the boundaries of the school as an institution and introduce public program to its ideology in order to create revenue and sustain its students. Paving a more equal path for Nima's youth towards finalising their education and creating a more prosperous future for themselves. Influenced by the neighbourhood's needs and the site chosen for the project, a new typology was created. As a response to the severe lack of space within Nima, the school was raised up on columns occupying the otherwise unused space above the existing local market. Pragmatic land-use, application of local materials and the market-infused school dynamic therefore create an interesting mix of people, functions, tradition and innovation on site. The project applies urban acupuncture to create responsible and thought provoking architecture, a building which is sensitive to its environment while trying to motivate and inspire education.



## THESIS GOALS

To conduct a research based design

To design a sustainable school in Nima, a deprived and densely populated neighbourhood in Accra, Ghana, based on a thorough investigation.

## THESIS AIMS

To analyse and explore the need for a school in Nima, a neighbourhood in Accra, Ghana.

To learn about indigenous traditional building materials and methods in Ghana and explore how to use and implement them in a modern design.

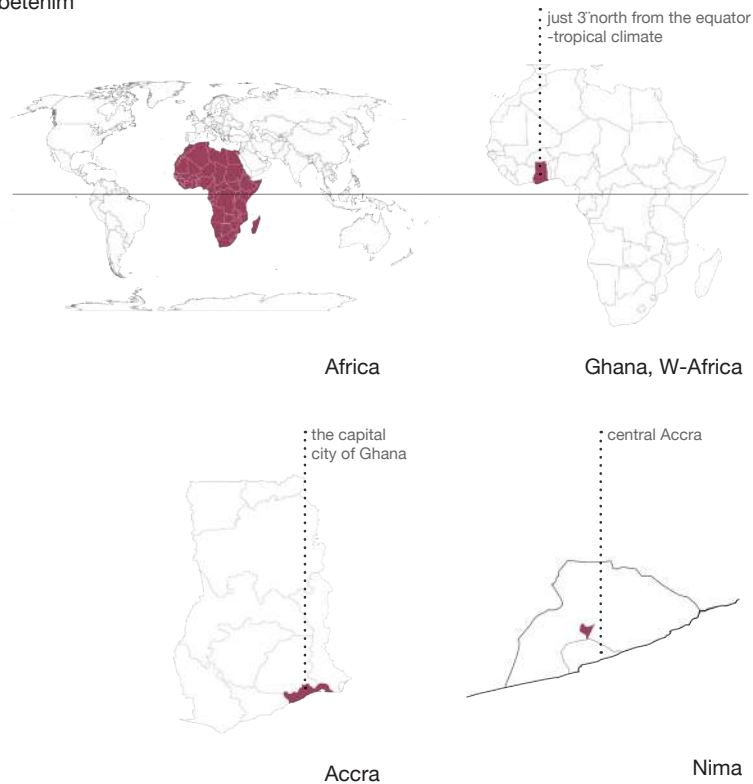
To thoroughly read and analyse Nima, a foreign densely populated neighbourhood with an on site investigation and documentation.

To develop a strong site specific neighbourhood building strategy.

To come up with a research based design, a sustainable solution which is sensitive to its environment and respects its social and economical climate.

# BACKGROUND GHANA

Areal view of Abetenim



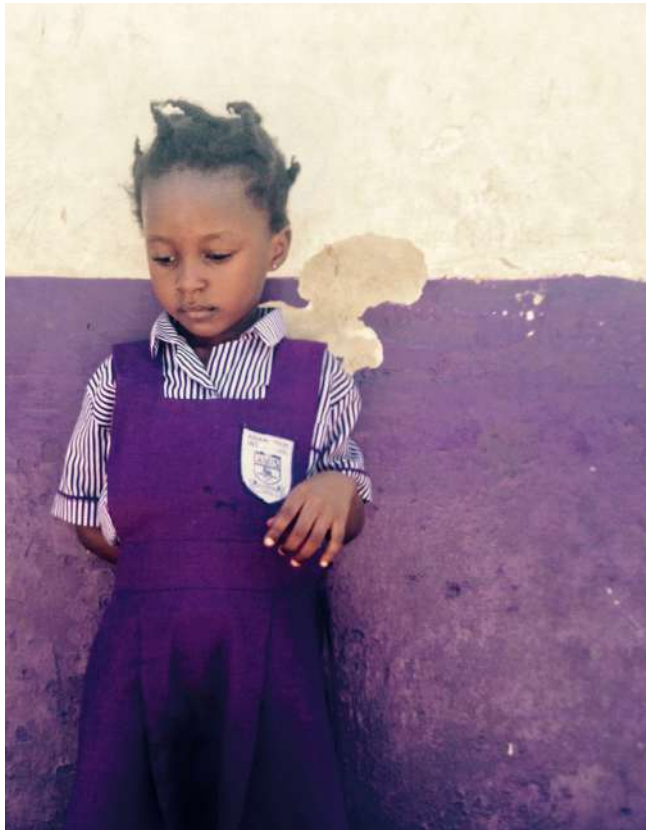
## HISTORY & POLITICS

Ghana is located along the Gulf of Guinea and the Atlantic Ocean, in the sub-region of West Africa. The country borders Ivory Coast to the west, Burkina Faso to the north and Togo to the east. Furthermore, it sits only a few degrees north from the equator giving it a warm and humid climate with relatively low wind speeds, especially along its coastal belt where the capital city of Accra sits.

Ghana is a multicultural country of approximately 27 million people, spanning a variety of ethnic, linguistic and religious groups. However, a large majority of the nation, or approximately 70% adhere to Christianity. Around 20% practice Islam and only about 5% practice traditional faith.

The country was the first sub-Saharan African nation to become independent of European colonialism. It became independent in 1957 and has been developing fast and successfully since then. Today "Ghana is a democratic country led by a president who is both head of state and head of the government."<sup>1</sup>Ghana has reached a relatively strong and diversified economy within Africa, with a good and rather stable governance. "Ghana's growing economic prosperity and democratic political system have made it a regional power in West Africa".<sup>2</sup>

1:2 Wikipedia. Ghana. 2016. <https://en.wikipedia.org/wiki/Ghana>. Data collected: 14. 02.2016



## EDUCATION

With the independence of Ghana, universal education became an important political objective. Clear goals to eliminate illiteracy and ensure equitable access to education have been the main priority of the Ghanaian education policies since then. In 1992 the constitution included laws to provide free and compulsory basic education for all. Annually the country spends around 25% of its budget towards maintaining and improving education.

Education in Ghana is divided into three phases, basic and compulsory education from the age of 4 - 15, secondary education from the age 16 - 20 and tertiary education at university level.

The adult literacy rate in Ghana is around 70%. Among men the literacy rate is 78%, while it is only 65% among women. With improved access to education and the governmental focus on eliminating illiteracy the numbers improve with younger generations and the gender gap nearly disappears. Literacy rate with young adults, age 15 - 24 years old is around 82%. Furthermore, enrolment has experienced a steady increase at all levels of education since 2008 indicating a fast development in the right direction.<sup>3</sup>

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1-2 Wikipedia. *Education in Ghana*. 2016. [https://en.wikipedia.org/wiki/Education\\_in\\_Ghana](https://en.wikipedia.org/wiki/Education_in_Ghana).  
Data collected. 14. 02.2016

# RESEARCH METHODOLOGY

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## PART 1

### PARTICIPATION IN A BUILDING WORKSHOP BY NKA FOUNDATION IN ABETENIM, GHANA

8th - 18th of April 2016



To learn about Abetenim Arts village, its ideology and intent by conducting interviews with project leaders and developers.

Explore and document Abetenim Arts village as well as Abetenim itself and its existing structures through photos and sketches.

Engage with and learn from local entrepreneurs, craftsmen by conducting interviews and monitoring their work.

To reach a certain understanding of local materials and methods by getting a hands-on experience using them.

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## PART 2

### FIELD INVESTIGATION. ANALYSIS AND DOCUMENTATION OF NIMA, ACCRA, GHANA

18th - 28th of April 2016



Talk and engage with locals to get a genuine feeling for their concerns, hopes and Needs for Nima's future.

Explore the neighbourhood on foot to get a good grasp of its built and unbuilt environment, how it's used and how it's cared for.

Visit schools, interview teachers and students and try to understand the current value of Nima's educational system and the spatial dimensions it conspires from and how it can be improved upon.

Look carefully for an area or prospective site for a development of a new school building in Nima. Analyse the site and the surrounding situation in order to set the ground for the design process.





# BUILDING WORKSHOP ABETENIM GHANA

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8th - 18th of April 2016

This chapter examines the history and ideology of Abetenim's Arts Village, located in Ashanti region, north-east of Kumasi in Ghana. It investigates in depth the local clay, its attributes, how it is used and the locals' perception of it. Research was conducted by studying the clay-built structures of the village and the various methods applied, through photography and sketches. Furthermore, clay was used hands on during the construction of rammed earth test walls. This chapter gave a real insight into the usage and maintenance of clay and how the local and affordable material can be applied in various situations. It provides tremendous inspiration for the design purpose of this thesis.



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**8th of April 2016 - 14:00**  
**Arrival to Abetenim Arts Village**

14:00

*I've only been in Ghana for a day and a half. I arrived in Accra on the 6th and spent yesterday with a friend exploring the chaotic crowded city, it seems surreal that I'm now here in quiet Abetenim, with not a single person in sight. I arrived with a bus to a nearby village just an hour ago where I met Frank, the building workshop's co-ordinator. We went straight to his car and drove here, to Abetenims Arts Village. He told me about the international people who are staying in the village at the moment and participating in the building workshop; two girls from Germany and a couple from the UK. He also pointed me to the building where he lives and the building where dinner would be served.*

*Then he said; "Goodbye, see you at dinner!" and then he left. Right now I'm sitting here inside the building I'm staying in and I'm completely alone. It's only two pm, dinner is in four hours and I'm not sure what to do, as I expected the village to be filled with people building, but somehow it's something completely different.*

20:00

*I have now learned that the building workshop I applied to is only in the very beginning stages. The project leader, Karla Paz is here with her husband Norris and the two of them are now organising and preparing the workshop which has already started but will be in full swing in May. During the preparation period, they will take soil samples, determine the site location, prepare the site, conduct tests using rammed earth technique, collect soil and other building materials, hire local contractors, try to get good deals on local*

*materials and so on, their mission is to conclude this work before May, when they will start building. At the moment there are only three of us, me and the two German girls who are participating in Karla's workshop and I've concluded, even though the workshop will not be in full swing while I'm here, that I will use the short period of time which I have here to get as much information as I possibly can from f.ex. Frank, Karla and local contractors through interviews and by participating in all activities which will take place at the workshop during my time here and by exploring the village myself by sketching and taking photographs. Maybe it's even good that I've entered the building workshop at its starting phase, I have a feeling there will be time for a lot of questions.*



# ABETENIM - FIRST IMPRESSIONS

THE ARTS VILLAGE



LITTLE DRUMMERS



THE VILLAGE



THE PRIMARY SCHOOL



THE SCHOOL CANTEEN



WOMEN BUILDING  
THE NEW CHURCH



LOCAL ARCHITECTURE



THE JUNIOR  
HIGH SCHOOL





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# NKA FOUNDATION

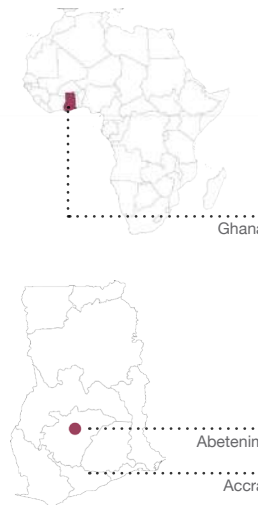
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*About Nka foundation, their involvement with Abetenim Arts Village in Ghana & their vision and mission in Africa.*

Nka Foundation is a multi - disciplinary, non-profit organisation in the United States, serving underserved communities in Africa. Their focus is on the human capital development through different mediums of arts. Their aim is to bring together motivated and creative individuals in arts and technology to create a cross-cultural synergy for community arts practice as well as infrastructure to enhance the social, cultural and economic vitality of rural communities in Africa.<sup>1</sup>

Their mission is to empower local communities with knowledge transfer through international arts and architectural projects by building a network of arts villages throughout Africa. Their first arts village was built in Abetenim, Ghana. The arts village serves as a meeting and learning centre for creative people from the region as well as people from all over the world. The village accommodates architects, artists, volunteers and builders who want to teach, learn and create. The village is a basecamp of knowledge transfer and cultural bridges, it's a place where people grow.<sup>2</sup>

Nka foundation supervises annual international earth architecture competitions where the winners of the competition travel to Ghana to build their own design together with local people in the earth building workshops.” They stay in the arts village of the duration of the project where they work together with the local people to bring the design to life. “This is where the idea exchange and knowledge transfer happens.”<sup>3</sup>



Areal view of Abetenim

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1 Nka Foundation. About us. Data collected 16.05.2016. <http://www.nkafoundation.org/aboutus.html>  
2-3 Go Fund Me. Sustainable school for Ghana. Data collected 16.05.2016. <https://www.gofundme.com/sustainable-school>

The main objective of Nka foundation with The Arts Village is to inspire people to explore and engage with the local material, the earth; the clay.

“Earth is a traditional, nontoxic, locally available building material with great insulation properties. It withstands earthquakes and extreme weather conditions, and keeps insects and rodents out. It’s cheap and 100% recyclable.”<sup>4</sup>

Despite being such a fantastic building material it is disappearing from the rural architectural scene because it is considered to be the building material of the poor. Therefore, like many other African nations, Ghana is facing a material shift in architecture, from the local sustainable, available material to a range of imported, expensive and environmentally damaging building material like the concrete for example. Nka foundations aim is to reverse this evolution and to promote earth architecture by exploring new ways to use earth as a building material to help earth to regain its well-deserved reputation.<sup>5</sup>



The traditional



The trend



**10th of April 2016 - Interview with Frank Appiah Kubi, program co-ordinator at Abetenim Arts Village & the principal of the junior high school at Abetenim.**

**Can you tell me about the history of Abetenim?**

The village is as old as slave trade and originally it was used as a slave camp. When the slave trade ended the slaves, which were already here did not travel back to where they were abducted from but settled down and started farming.

**Why is the village called Abetenim?**

The name Abetenim derives from the tall palm trees which were here before, the tall ones, you can still see some of them, like the one just out there. Palm tree in Twi (Ghanaian language) is called Abe, Abetenim therefore translates to the place of the tall palm trees.

**How many people live in the village and which religion is practised here?**

There are about 500 people who live in the village. Most of them are kids below the age of 18. Most people are Christians. Some people practise Idolise,

the traditional religion, but it's only practised by few people and not openly. This religion is overshadowed by Islam and Christianity.

**Are there any religious conflicts in the village?**

There are no conflicts between the two main religions, people here stick together and co-exist in peace. F.ex. when the new church was built Muslims donated and earlier when the mosque was built Christians helped. - Just look I'm a Christian and my driver is a Muslim. -

**What is the main profession of the people living in the village? How do they provide for themselves?**

Most people in the village are farmers. They farm for domestic use, so most of them do not practise it professionally but do so to provide food for their families. There are two different cash-crops here. One is palmoil extraction, there is even a big palm oil factory nearby. The factory produces oil, which is then brought to the local markets once a week to sell further. Some people from the village work in the factory. However, this is a seasonal crop so it cannot provide a stable job. The other cash-crop is cocoa.

**Architecture of the village:**

**Can you tell me about the main building materials methods used in the village?**

Most houses of the village are built with earth or mud. Timber is used for both roofs and supporting pillars. Sometimes the house itself (living-room/bedroom) is constructed with mud, while the kitchen which is usually an indoor/outdoor room is constructed with timber. There are two types of earth constructions in the village. One of them is Aktapami and most houses here are built using this method. Aktapami is considered inferior building method because it is cheap. The other method is building with pre-made earth bricks.

Few of the more contemporary constructions in the village are built with concrete blocks. Concrete blocks are expensive to make because they are built with cement. A bag of cement is expensive and it can only be used to produce a few concrete blocks. White sand is also needed to make the blocks and that is quite expensive as well. After that you need more cement to lay the blocks and you need to plaster and paint. While f.ex. if you use rammed earth you just need to ram it and then you are more or less finished and it looks beautiful. Just look at the Kente-house outside. You also need much less of cement and white sand to do the rammed earth construction and therefore it's much more affordable.

**I'm curious about the reputation of the local material and the local methods, can you tell me what the locals think about building with earth vs. building with concrete?**

It is cheap to build with earth. People want to build with concrete because it's a status symbol, if you can build with concrete it means you have money, and having money is good. Mud is therefore considered to be inferior.

**Do you see any change in the attitude towards mud because of the projects of the arts village?**

Yes, the attitude is definitely changing. Abetenim Arts Village is bringing new insight into the use of locally found earth and restoring faith/hope in its attributes. People are realising the value of their raw local material, it's potential and how beautiful it can be. The growing experimental structures of Abetenim's arts village are therefore changing the local attitude towards mud buildings and earth architecture.

After the interview, we walked around the village and Frank told me about the different structures.

# WALK & TALK WITH FRANK



**Frank's house**

First house of the arts village. Barthosa designed the house. It was built in 2010. The rooms are 6 by 6 meters. There are 5 rooms. The house was constructed with mud using the Aktapami method. It was plastered with mortar to provide the finishing touch. The roof is constructed with timber and corrugated steel plates. There are raffia palm mats on the inside of the roof which functions as a heat and sound isolation but they also provide a warm aesthetic feature.



**Valentina's house**

Valentina travelled from USA to Abetenim for a workshop in 2011. However, the workshop got cancelled and somehow she missed the notification. Since she was already in Abetenim she used her time well and built a small house herself in only three weeks. She did this for her thesis project in architecture. The earth construction she applied is Aktapami method.



**And outdoor theatre**

The theatre was designed by Jose Alehandre from the USA and it was built in 2013. Jose wanted to do something different for the Arts Village. The children of the village use the stage to practice dance for upcoming events for example.



**Julia's house**

Julia, a teacher from Italy built this house with her architecture students back in 2015. They combined Aktapami construction and concrete blocks to build the house. Metal screws were used to connect the concrete blocks with the Aktapami construction. The building was then plastered with sewed earth to achieve an orange fine grained earth texture as a finishing touch. Plywood was used for window frames and shading inside.



**Anna Webster's house**

Anna Webster, an architectural teacher from the UK designed the building. She built the house along with her students from France in 2015. The walls of the structure are made with rammed earth construction. There is a concrete strip on top to relief horizontal tension of the walls. Furthermore, the concrete strip supports the roof construction. Interestingly the floor is made with clay as well, whereas most of the structures have concrete floors. Plastic water bags were then recycled into window screens.



**The German BBQ house**

A semi open structure for cooking and bbq-ing was designed and built by a group of students from Germany and their teachers in 2015. The construction was partly made with earth bricks which were mixed with coconut fibre and partly made with gravel infused rammed earth. The brick walls had a white wash finish and the rammed earth walls included concrete strips on the top and the bottom for practical reasons. Seating arrangements were incorporated in the design and were made with local wood and massive stones. The floor was made with concrete.



# WALK & TALK WITH FRANK



**The Kente house**

The Kente house is one of the most recent houses and most beloved one of the village. The building was designed by Angeles Harvi and it was built in 2015. The purpose of the building was to create a suitable place for the women of the village to come together and weave Kente cloth, fabric which is native to Akan, an ethnic group of South Ghana. The house over 100sqm and it is constructed with rammed earth. Natural pigment like charcoal is used to produce different colors in the earth. Kente is incorporated within the timber beams which support the roof. Roof is made with corrugated steel.



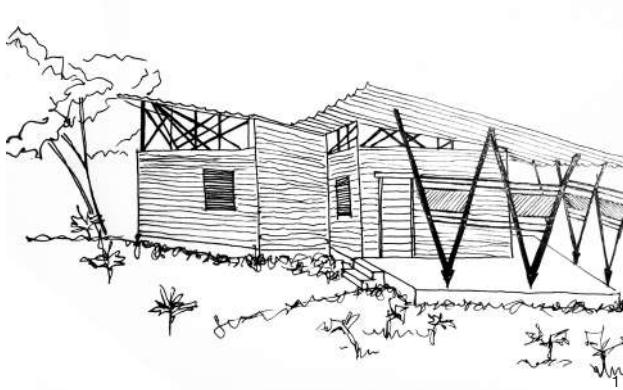
**Three - Two house**

Manuela and Chris, architects from the USA built the three - two house in 2014 along with their students. The construction was built using poured earth construction. Furthermore, bamboo was used to make an interesting pattern on the walls of the building. Plastic window screens were used to control lighting inside. The screens are bought and not locally made, they are quite effective and commonly used but the material is expensive.



**A - house**

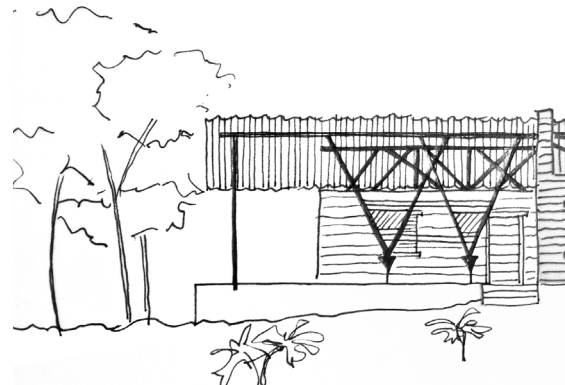
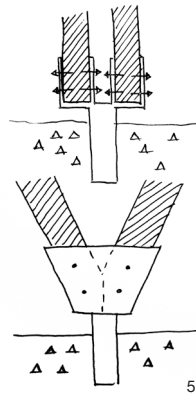
Ive Mayers, an architect from the USA designed this building and built it in 2015, but is yet to be entirely completed. The earth construction uses a method called poured earth. The building has two floors and is designed to be sleeping quarters for future interns at the arts village. Natural, un manipulated teak pillars are used inside to support the roof.



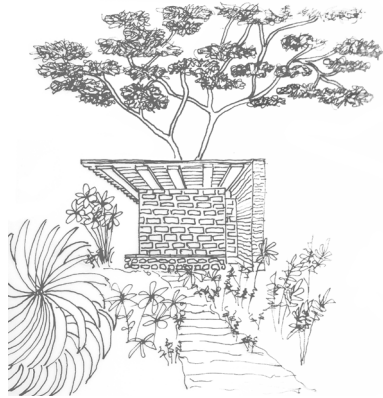
## THE KENTE HOUSE

These images provide a closer look to the Kente house. They give a sense of materiality and details regarding the design.

1. The dynamic shape of the Kente house. Main entrance.
2. The pillars which support the roof have a V-shape and are made with timber. Kente is incorporated into the design.
3. Surrounding the building are beautiful earth colored stones, they sit on the gray gravel and give a pop of color.
4. Air flows under the roof; ventilates the building and prevents overheating. Walls are made with rammed earth. Windows are covered with raffia palm curtains on the outside.
5. Details explaining how the steel foot of the pillars connect with the concrete floor.
6. Back entrance. The pillars which support the roof give the building a unique identity.



# A CLOSER LOOK



1



2



3

## THE GERMAN BBQ HOUSE

These images give a closer look the small, open structure designed to be used as a gathering space for dining and bbq-ing. The structure displays a clever, artistic use of materials.

1. A view of the small structure which sits elegantly in the raw untouched nature surrounding it.

2. A beautiful combination of materials. Earth bricks, white wash and timber.

3. Coconut fibre was used to bind the earth bricks.

4.-5. Seating is incorporated into the design in a clever way.



4



5



6

6. Large natural earth stones, mortar and raw timber form the benches.

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**16th of April 2016 -  
Interview with Karla Paz, engineer at Bio Climatika,  
an Eco-effective Architecture Workshop, currently  
under construction at Abetenim Arts Village.**

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*Karla is a building engineer and a technical architect with more than 10 years of professional experience. Her specialisation is in Sustainable Architecture and International Co-operation for Development.*

*Her goal with the Eco - effective workshop here in Abetenim is to develop an effective and engineered building solution which reflects its context and positively intervenes on an environmental and social level. Her aim is to create a technology based prototype that can be replicated locally.*

*Her project is a prototype of a self-sufficient, off grid house which provides a healthy environment and a safe shelter, clean, free energy and water, generates compost and organic fertiliser to grow food, manages its own outputs and has a positive ecological footprint.*

*The work during the workshop is divided into four main stages. Stage 1 is about learning, the international team of architects and engineers led by Karla will engage with the community through observation and cooperative processes. Stage 2 is about the design. The design will be done collaboratively where the focus will be on upscaling of materials and solutions regarding zero waste production, local empowerment, bioclimatic design and low cost construction. Stage 3 is the building stage where participants build hands on, in full scale on site. Stage 4 is monitoring and evaluating the ecological footprint of the building. This will be done by the locals' community for one year after the building is ready.*

**What are the main local issues, or local needs your design is trying to answer?**

*-Abetenim's main issue is the lack of access to clean drinking water. I want to solve that by collecting rainwater and invest in a filter which cleans the water to make it drinkable.*

*-Second issue is unreliable electricity and frequent blackouts. Families here spend up to half of their salaries on electricity when there is really no need for it. I want to utilise solar power to provide energy, just enough to create a reliable electricity source for one family.*

*-Third issue is the materiality and maintenance of the local buildings. The buildings more or less built with the local clay; they are ageing and starting to deteriorate. Therefore, the current trend is to build with concrete and other imported materials, which in this climate are even more difficult to maintain. In my opinion it's necessary to work with the local materials, use what is proven to work and then improve their own building methods.*

**You've told me before that one of your main objectives is to provide people a safe shelter in this environment, what does that require in your opinion?**

*A safe shelter is a building that is healthy for its inhabitants, a building which does not impose deceptions to its inhabitants and furthermore makes the inhabitants feel safe and provides a protection from the inferior, to the other, to the unknown. A safe shelter provides the feeling of security and this is the most important feeling one should feel in their home. It is our responsibility as engineers, as architects or as designers to improve the human environment and ensure basic needs are cared for.*

**About the design: What is the prototype's purpose? Is it a home or is it an official building?**

*The prototype is a prototype for a small family home, providing the minimum space a family should require.*

**Budget wise, do you see homeowners being able to replicate your design?**

*This design is very cost efficient, especially in an urban situation. An off-grid housing neighbourhood saves the government a lot of money on all infrastructure. If this prototype works well and proves it self to be cost efficient, healthy and safe for its inhabitants then word will spread and people will understand that it is a good investment. I'm hoping from there the government, local NGO's and financial institutions will realise the benefits in offering microcredit to families who want to invest in a house like this one. This all boils down to the main reason why I do this; the prototype will improve the quality of life for its inhabitants and more than that it will be a long-term solution and not just an temporary one. So yes, in time I think homeowners should be able to replicate the design.*

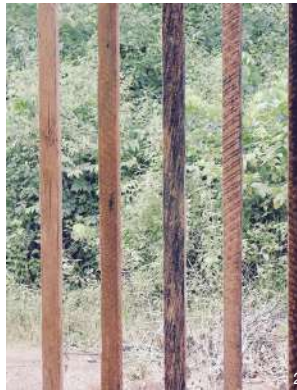
**Do you believe your prototype can teach the locals something they could benefit from in the future?**

*I look at the project as a bidirectional empowerment where it's a mutual learning process. The project might teach the locals something while the locals will teach us a lot as well.*

**How do you envision convincing a homeowner to invest in an off grid house like this one?**

*With time! When the prototype has been built, I want to invite a family to live in it for one year, and instead they will care for it and measure its effectiveness. It takes one year for all the technical system to prove their worth. I envision convincing them with concrete numbers how the house performs in one year's time.*

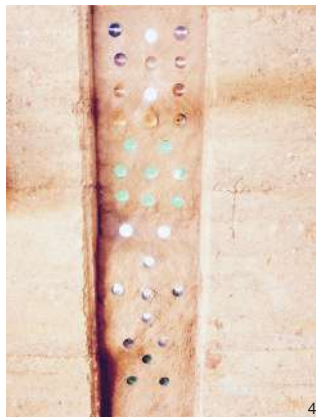
# PROTOTYPE BY BIO CLIMATICA



## ECO EFFECTIVE PROTOTYPE

These images are from Karla's collection and show her prototype during its building stage and when it was completed in August 2017.

1. Karla relaxes on the patio after the project is finished. A large roof covers the patio and provides a shaded outdoor living space.
2. Timber is reused and recycled within the prototype.
3. The prototype during its building phase. The rammed earth walls are almost finished.
4. Glass bottles have been collected and upscaled and used within the clay construction.
5. Water collection tank recycles rainwater for showering and provides, along with additional filtering system; clean drinking water.
6. The prototype's interior, the bathroom, where you shower with rainwater.



# HANDS ON EXPERIENCE

## 16th of April 2016 - What I have learnt so far

I've been here in Abetenim for a week now, I'm leaving in two days to go back to Accra and explore Nima. I want to reflect on what I've managed to learn during this week. I am truly inspired by the work that has been done here in the Arts Village and it has been an amazing input to the work I have ahead. I feel like I've managed in a really short time to get in touch with the nature and the attributes of the clay and gotten a real understanding of how it can be used and maintained. Large part of how this understanding has been reached is through talking with people and asking a lot of questions as well as looking closely at a few of the buildings and somewhat dwell with them and sketch design details in corporation with the clay, to understand how they connect and complement each other. Furthermore, I participated in all the activities related to the Eco - Effective workshop led by Karla Paz which occurred during the past week. The workshop is currently in its preparation period, and I have only spent one week here, so the activities were perhaps quite limited. However, we did go through the process of making soil samples and measuring its mineral content. Moreover, we tested the earth and its strength mixed with different proportions of white sand and cement by making various rammed earth test walls. The process was very educating, Karla explained everything so well and was always more than willing to answer all my questions. I truly wish I could stay longer and continue with this workshop and see the end result for myself.



Soil sample. Minerals measured.



Soil collected for test walls.



Soil mixed with cement, white sand and water.



Earth is rammed inside formwork.



The earth dries overnight.



Formwork is removed.  
Finished Product.

## THE LOCAL CONTRACTORS

**17th & 18th of April 2016 -**

**Talk with two of the local contractors in Abetenim**

*After staying in Abetenim for about 10 days where I had closely monitored the work of some of the local contractors, I asked two of them if I could interview them to get a better understanding of how they learned their skills, for how long they had practiced and how they valued the initiative of the Arts Village.*

*My hope was to get a glimpse into the life of construction workers in Ghana. I sat down individually with Abass, the rammed earth specialist and Odansini, one of the masonry specialist in the village and asked them a few questions.*

**Mr. Mohammed Abass**



*Mohammed Abass is a 23 years old local rammed earth specialist. Abass has worked within the field for four years. He told me that his skills are a gift from god but that he learned the method of ramming earth from the white people at Solterre architects, when they built the community library. He told me that his work is very physical and that he works with a team, but he is the one responsible. They start their workday at 6am and finish at 12pm when it becomes too hot to work outside. Abass told me that since he is a skilled worker, his daily rate is 25 Ghana cedi (5 euros) a day. Furthermore he told me that they have quite a lot of work, but if they don't, he and his senior brother Abu, work together to make earth-bricks to prepare for upcoming work. I also learnt that he has travelled to Takorade to build a big rammed earth house. When asked, he said that the Arts Village had opened many people's minds to use the local clay in their houses again, but with improved methods. He tells me that rammed earth is beautiful, sustainable and really strong, he adds, that if it cracks it is easy to fix, because of the availability of the material. He concluded the interview by telling me that he enjoys his work very much.*

**Mr. Josuha Odasini**



*Joshua Odansini is a 49 years old masonry specialist. Joshua was born in a village close to Abetenim, he went to Nkyerepoaso, a middle school two villages from here. To study his trade, he travelled to Nigeria, and told me he learnt it by following others. He came back to Abetenim in 1999 and has been working with masonry in the village and nearby towns, like Juaben and Ejisu ever since. He told me that even though there are around four others who practice masonry professionally, he can always find work and that he prefers to stay busy. He has another job to attend to, which is farming. He farms for his family but they also sell their crops at the local market. When I asked him what buildings he had worked on in the village he told me that he had worked on few of the houses in the Arts Village as well as the library and the toilets in the village. I asked him if he would like to share with me his daily rate, and he told me that he earns 50 cedi a day he also told me that he is proud of his work, and that he has worked hard. I thanked him for the interview and soon after I had to catch a bus to go back to Accra to explore Nima.*





# NIMA

## THE URBAN CONTEXT

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18th - 28th of April 2016

This chapter explores the background and history of Nima, a distressed and extremely dense slum located north of Accra central, the capital of Ghana, West Africa. Furthermore, it tries to reflect on its current state, by investigating its complexity as well as its needs and prospects. This chapter examines the severe problems related to poor infrastructure and the lack of proper layout within Nima. It also aims to investigate possible opportunities for the development of a new junior high school within the neighbourhood and explore the positive impacts it could have on the community. Research was conducted through the previously written word and with a thorough study visit.



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**19th of April 2016 -  
A two hours private guided tour of Nima with  
Hamza Haruna from “Ghana, Nima tours”.**

*I met Hamza at the Shell station at the Nima roundabout at 10am on the 19th of April. We introduced ourselves and started the tour right away. We walked along Nima highway, towards the Nima market while he told me about the neighbourhood, how it came to an existence, how many people lived there, the main two religions and how people in this community respected each other and co-existed here in peace. While he informed me about Nima, my senses were working overtime mapping the area visually and trying to absorb as much information as I could while I had him by my side.*

*The sun was burning and it was scolding hot. There was traffic, there was congestion and pollution. There were men hanging from moving tro-tros (minibuses), yelling and selling their routes to the people walking past them. There were smells and sounds from all over. And of course there was music, the beat that always seemed to be there, everywhere I went, the rhythm of Africa. There were people, there were so many people, people everywhere, staring at me and shouting my way - “obruni, obruni” (white person = foreigner), Welcome!*

*Everyone was busy; men, women and children were working, balancing heavy loads on their heads. Desperation or hope as I approached, I was offered to buy everything from a handkerchief to live chickens. I as the “obruni” was looked at as a walking wallet, I was expected to be rich. One elderly man simply approached me and started shouting “MONEY!!”.*

*I sensed quickly that the people’s life here was a hustle and that it depended on their work and their unstable day to day income.*

*As soon as we stepped into the market the atmosphere calmed down a bit, it was quieter somehow. A maze of small and narrow crowded streets, with people selling food, medicine and other goods greeted us, as I completely lost my sense of direction. And it continued to be lost for the rest of the tour as the complexity of the street grid and the spatial dimensions in this neighbourhood were entirely different from what I was used to.*

*From the market onwards to the youth corner, where men come to discuss politics and pressing matters concerning Nima or even marriage and family issues. An informal corner with two benches and graffiti which displayed the words “5 horrors” and a picture of 5 colourful skulls; I tried to grasp the name title of the corner and connect it to the context but I couldn’t, as I found myself in the middle of a photoshoot as the only woman and the only “obruni” in this exact time and place.*

*We continued our walk through the neighbourhood after our encounter at the youth corner. We walked through narrow alleys, between old deteriorated, clay built compound houses with corrugated steel roofs. We took a turn or a different passage every 5-10 seconds where he walked with purpose and I walked with hesitation and excitement. I walked with hesitation because I needed to be careful and I didn’t know the area the same way he did. I needed to mind my step, since the pavement varied in height and I didn’t want to step in to waste or the open, unplanned*

*system that drizzled through the neighbourhood. But I walked with excitement because there was so much to see, explore and learn. We walked past people; homeowners, people cooking fufu (traditional delicacy) or fetching water, people relaxing and engaging in conversations, children playing where ever they could find space to engage with, schoolchildren walking to school, seamstresses working and goats and pink chickens strutting around, we even passed a cow being slaughtered in one of the alleys.*

*Upon my request, Hamza brought me to one of the primary schools in the neighbourhood, Anani International Memorial School where I talked shortly with the teachers, listened in to a French class, helped a little with lunch preparation for the kids and made arrangements to come back to conduct interviews with the principal and the staff later that week. Lastly we walked to the Nima-Maamobi drainage, a drainage on the very north edge of Nima which then runs through the entire neighbourhood north to south. Of course I had no idea of this at the moment since I felt entirely lost and had no direction what so ever. He informed me that city officials were finally taking care of this drainage to benefit the community. I could see that a major construction was underway to close it off but I noticed years’ worth of waste around the drainage and wondered with slight scepticism of how all of this might look and work when the construction was finished. He however, seemed to be positive towards this change and that is what matters the most.*

*We wrapped up the tour and he brought me to the Berlin Bridge where we said our good byes and I caught a taxi home. Only two hours in Nima and I was*

# NIMA - FIRST IMPRESSIONS

already exhausted and overexposed. My mind was still trying to get a grasp of everything I had seen and experienced. Maximum confusion and excitement. How would I start to understand a neighbourhood of this complexity and how would I ever, EVER find a space within the crowded setting of Nima in order to build a school?! There are so many things that need to be taken care of, so many things to take in to consideration. Is building a school the right way to go even? Are there more pressing matters concerning Nima or other interventions I should explore further?

.....

Next few days would be spent visiting the neighbourhood again and again and again. I spent my time conducting interviews with teachers at different schools as well as interviewing with the women at the market and the women from The Mothers Club of Nima. I tried to engage with the community, talked to cab drivers, students and people I met on the street. I went to dance rehearsals, was taught how to drum, made contacts and asked as many questions as I could. I can honestly say I have never experienced friendlier people, after only few days, people started greeting me by my name. I felt entirely safe and only met kindness and helpfulness along with massive curiosity from the people of Nima. I really enjoyed my stay there and I hope I can return there again one day.



- Highways
- Nima boundaries
- Nima market
- Mamobi gotta - the drainage
- Our walk
- Start and end point

NIMA HIGHWAY



THE MARKET



THE COURTYARD



THE ARCHITECTURE



THE LIFE



# NIMA - FIRST IMPRESSIONS



THE YOUTH CORNER



SCHOOL KIDS



NARROW PATHWAYS



ANIANI SCHOOL



SANITATION



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# HISTORY

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*A brief overview of the historic background of Nima.*

Migration is best described as one of the strategies adopted by individuals, households or communities to enhance their livelihoods.<sup>1</sup> After the Second World War urbanisation in Ghana took a giant leap, people from the country side moved to the city hoping do just that, enhance their lives and create better future for themselves and their families. Rural migrants in Ghana and migrants from other West African countries settled into neighbourhoods at the periphery of Accra's municipal boundaries, neighbourhoods such as Nima and its surrounding areas.<sup>2</sup>

In close proximity to the city and the opportunities it had to offer, migrants settled on unregulated, affordable and available farmland where no spatial planning had been implemented, "creating a crowded and jumbled shanty town landscape".<sup>3</sup>

"Land in Nima was, and continues to be owned by the Odai Kwao family, a Ga family from Osu. They gave custodianship of the land in the early 1940's to the Futa family of the Fulani tribe from West Africa".<sup>4</sup> Initially land in Nima was used for cattle pasturing in order to slaughter and sell at a market in Accra Central, but under the custodial agreement between the Odai Kwao family and the Futa family, "people (mostly migrants) have been allowed to settle under a lease arrangement."<sup>5</sup>

Since the 1940's Nima has attracted poor migrants in large quantities due to the low rents and availability of land. By the mid 1960's Nima was fully occupied and already facing severe problems due to overcrowding and lack of spatial planning. Today "the migrants from northern Ghana and other West African countries have become a permanent feature of the community. They are no longer viewed as temporary migrants, but today include a generation of young adults born in their new setting and pursuing their futures in Nima."<sup>6</sup>

Despite the custodial agreement between the two families, "Nima was for a long time considered an illegal squatter settlement, with a reputation as a place undergoing rapid physical and social decay, rife with dangers rising from crime, both petty and organised."<sup>7</sup> This "played a role in Nima being termed a "Zongo", or "stranger's quarters" due to the large influx of migrants and uncontrolled development. "Zongos" in Accra have a history of neglect in terms of municipal service provision relative to other communities in Accra. As such, sanitation, accessibility and waste management have long been a major hindrance to the public health of the community."<sup>8</sup> A walk through Nima will reveal exactly that, a poor area in regards to development intervention, sanitation, overcrowding, limited public services and poor infrastructure.

The neighbourhood is administratively split as Nima East and Nima West with Nima Highway running through it from north to south. "Nima East is considered the most deprived area of Nima, according to authorities at the Accra Metropolitan Assembly as well as to opinion leaders in Nima."<sup>9</sup> Nima East will be the subject of further analysis in order to create an understanding of the extreme environmental, economic, cultural and social surroundings of the project development.

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1 Owusu, G., Agyei-Mensah, S., Lund, R., *Slums of hope and slums of despair: Mobility and livelihoods in Nima, Accra*. Norsk Geografisk Tidsskrift - Norwegian Journal of Geography, 62:3, 180-190, 2008, p.181.

2-3 Accra; After the World War II (Wikipedia, 2016). <https://en.wikipedia.org/wiki/Accra>, accessed 6 August 2016

4 Kang, S., Pescina, JUC., Quashiagah, P.J., Kumashie, I., *Nima Land Use Mapping Project; Report and Map set*. Millennium Cities Initiative; Earth Institute/ Columbia University, University of Ghana Legon. 2010. p.2.

5 Arguello, JEM., Kurtak, K., Ahassan, AR., Yaahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area*. Millennium Cities Initiative; Earth Institute/ Columbia University, Voice; Volunteers in Community Empowerment. 2012. p.11.

6 Owusu, G., Agyei-Mensah, S., Lund, R., *Slums of hope and slums of despair: Mobility and livelihoods in Nima, Accra*. Norsk Geografisk Tidsskrift - Norwegian Journal of Geography, 62:3, 180-190, 2008, p.183-184.

7 Arguello, JEM., Kurtak, K., Ahassan, AR., Yaahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area*. Millennium Cities Initiative; Earth Institute/ Columbia University, Voice; Volunteers in Community Empowerment. 2012. p.7.

8 Kang, S., Pescina, JUC., Quashiagah, P.J., Kumashie, I., *Nima Land Use Mapping Project; Report and Map set*. Millennium Cities Initiative; Earth Institute/ Columbia University, University of Ghana Legon. 2010. p.2.

9 Kang, S., Pescina, JUC., Quashiagah, P.J., Kumashie, I., *Nima Land Use Mapping Project; Report and Map set*. Millennium Cities Initiative; Earth Institute/ Columbia University, University of Ghana Legon. 2010. p.3



A view of Nima from Kanada Highway

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# LAND-USE, LAYOUT & DENSITY

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*Municipal neglect, overcrowding and social segregation.*

Land is the stage where all human activity is conducted. Human use of land or “land-use” encompasses myriad different activities from food production, provision of shelters, recreation and processing of materials.<sup>10</sup> Land has to be used wisely and with respect for the nature. Land-use has to reflect society’s current needs as well as the needs of the growing population. Modesty and compassion should be practised in order to leave a stronger sense of place, a place that is healthy for all of its inhabitants, current and future ones.

“Nima East has a long history as one of Accra’s most deprived area. The physical layout of the neighbourhood is in a severely poor condition, the neighbourhood is particularly overcrowded and infrastructure is virtually non-existent.”<sup>11</sup> This is easy to understand just by looking at maps from Nima. It is striking to see the density within the built environment as well as the network of extremely narrow and unregulated pedestrian street grid that exist between the houses. It is even more striking when compared to the adjacent neighbourhood west of Kanada Highway, where the presidential parliament sits and Accra’s elite lives, a neighbourhood which seems to have abundant space. Mapping vegetation within Nima and the surrounding neighbourhoods, further reveals a distinct division and social segregation.



Unbuilt land



Vegetation

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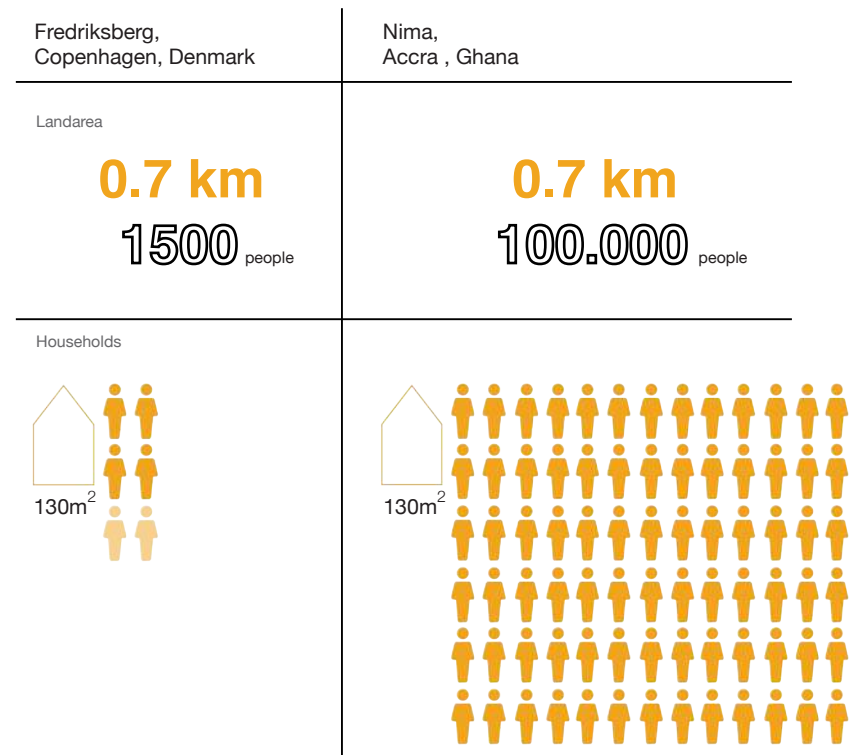
<sup>10</sup> Kang, S., Pesca, JJC., Quashigah, PJ., Kumashie, I., *Nima Land Use Mapping Project; Report and Map set*. Millennium Cities Initiative, Earth Institute/ Columbia University, University of Ghana Legon. 2010. p.1.

<sup>11</sup> Arguello, JEM., Kurtak, K., Aihassan, AR., Yeahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area*. Millennium Cities Initiative, Earth Institute/ Columbia University, Voice, Volunteers in Community Empowerment. 2012. p.11.



Density is one of Nima's major concerns, in each room or household of 10 square meters live together around four to eight inhabitants, with an average of 80 people per compound. Which means that over 100.000 people live in an area of about 0,7 square kilometres which is in total defiance of any planning norms.<sup>12</sup> Therefore Nima is severely overcrowded. It should be testified that overcrowding, along with unclean water, immense lack of sanitation and hygiene, exposure to solid waste and pests, food contamination and household air pollution is listed as one of the greatest threats to human health.<sup>13</sup>

Most of the poor conditions of concern in Nima are directly tied to the lack of layout and access. Improving and implementing spatial planning would make it much easier to improve upon other conditions.



<sup>12</sup> Owusu, G., Agyei-Mensah, S., Lund, R., *Slums of hope and slums of despair: Mobility and livelihoods in Nima, Accra*. Norsk Geografisk Tidsskrift - Norwegian Journal of Geography, 62:3, 180-190. 2008. p.186.

<sup>13</sup> Arguello, JEM., Kurtak, K., Alhassan, AR., Yahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area*. Millennium Cities Initiative; Earth Institute/ Columbia University. Voice, Volunteers in Community Empowerment. 2012. p.14.

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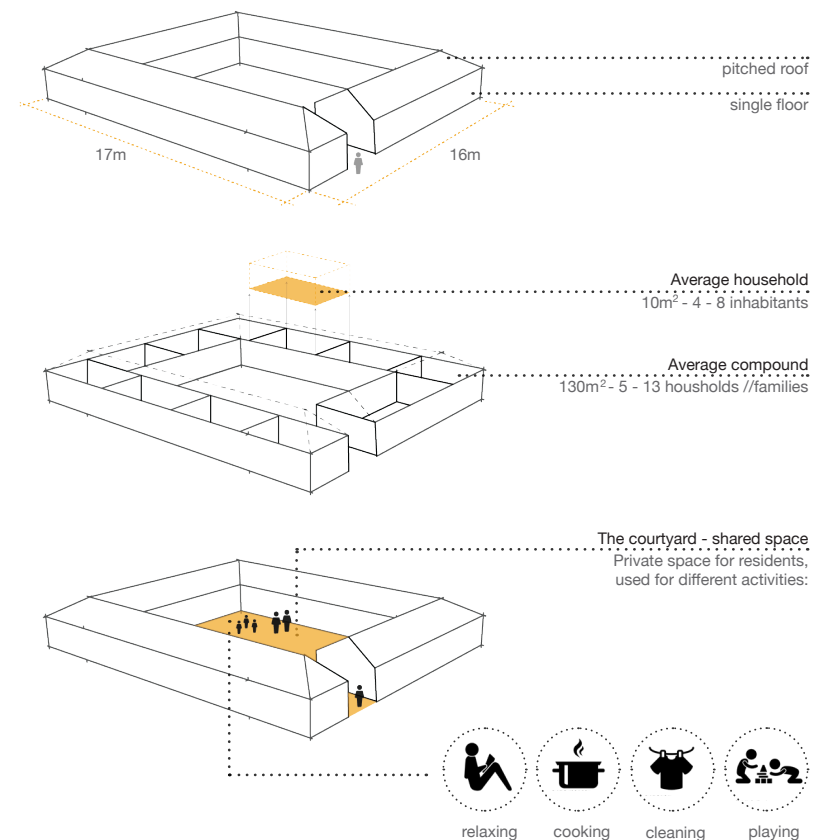
# HOUSING & CONSTRUCTION

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*Tradition, materials, methods and trend.*

As previously described, Nima consists of migrants who travelled from central and northern Ghana as well as other West African countries and settled there after the second world war. The migrants brought with them building traditions as well as building techniques and implemented them in their new surroundings. Therefore Nima mainly consists of single floor compound houses, those who are typically known in the Ashanti region where most of the migrants originally come from. Compound houses consist of 5-13 rooms or household units and are built around a common courtyard, where people engage in their day to day activities such as cooking, washing laundry, eating, relaxing, playing and so on. This is done to create a community feeling among neighbours.

The houses are constructed with clay or red earth and are mostly built with a construction called Aktapami. A method where clay is mixed with water and fibres and kneaded into many large balls which are then compiled one by one to create the walls needed for the house. A method that is both sustainable and durable, not to mention affordable, since the materials are locally found and easily replaced when needed. However, many houses in Nima have become very deteriorated, weak and cracked. This is due to the fact that most of them were built 50 – 60 years ago and have been overexposed to the elements of nature. People have tried to plaster their houses with cement in an attempt to improve them and even to give them a more modern look, but without proper knowledge or skill-set, it often does not improve the buildings, but rather creates a series of new problems.



Apartment buildings are becoming more common in recent years and are found mainly along the two highways,<sup>14</sup> Nima Highway and Kanada Highway. Those buildings are usually two to three floors and are mixed use residential and commercial buildings built with cement blocks.<sup>15</sup> The new typology has usually been constructed to replace an old compound clay house, giving us a hint of the direction the housing development in Nima is heading towards. In regards to functionality the change is positive, for it implies a better usage of land than before, creating room for better infrastructure, new connections and other developments. In regards to material, the cement blocks are less sustainable, less climate friendly and even more expensive than the clay built houses leaving constructions like these often half finished. Other housing types include detached or semi-detached flats and improvised homes. Wooden structures are quite common and are usually in the form of quickly erected sheds placed within compound courtyards or along already dangerously narrow alleyways.<sup>16</sup>



Two different typologies most common in Nima

<sup>14</sup> -<sup>16</sup> Arguello, JEM., Kurtak, K., Alhassan, AR., Yaahalaal, AM., AMA community upgrading profile, Nima-Maamobi drain area. Millennium Cities Initiative, Earth Institute/ Columbia University, Voice, Volunteers in Community Empowerment. 2012. p. 14.

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# WATER, SANITATION & WASTE MANAGEMENT

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*Unreliable water resources and disfunctional waste management.*

For decades, Nima has had trouble with access to safe and reliable water despite its central location in Accra. Piped water infrastructure is mostly limited to water lines running along Nima Highway and Kanada Highway as well as nodes designed for individual connections which can be both complex and expensive. This in return has created a network of illegal connections to the main water supply system. Many of them run through extremely dirty and gee-infested alley gutters, exposing the water to bacteria and other disease-causing organisms that are passed on to users. It is not uncommon for breakouts of diarrhea and other diseases to be transmitted within Nima through this secondary network.<sup>17</sup>

The inability to rely on piped water networks has necessitated the reliance on water vendors or water tanks as primary or supplementary providers of water. Another factor is that “Nima is located on a terrain with rising and falling relief with Kanada, Maamobi and Accra New Town bordering it on lower grounds. This may partially account for its predicament with regards to water supply.”<sup>18</sup>

Sanitation in Nima is far from adequate. There is a gutter, an old stream at the very north end of the neighbourhood which runs through it from north to south. This gutter acts as the main drainage of wastewater and stormwater out of Nima and its adjacent neighbourhood, Maamobi. “Only a few formal drains have been constructed by the government to channel water from the neighbourhoods into the gutter. They do not have the adequate capacity or coverage to handle the amount of water flowing from the neighbourhoods. This has led to the construction of many informal drains that are easily eroded and are not large enough to handle major storm runoffs.”<sup>19</sup> Furthermore the inhabitants of Nima often use the uncovered



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17 Arguello, JEM., Kurtak, K., Ahassan, AR., Yaahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area.* Millennium Cities Initiative, Earth Institute/ Columbia University, Voice; Volunteers in Community Empowerment. 2012. p.17.

18 Kang, S., Pessina, JUC., Quashiagah, PJ., Kumashie, I., *Nima Land Use Mapping Project; Report and Map set.* Millennium Cities Initiative, Earth Institute/ Columbia University, University of Ghana Legon. 2010. p.14.

19 Arguello, JEM., Kurtak, K., Ahassan, AR., Yaahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area.* Millennium Cities Initiative, Earth Institute/ Columbia University, Voice; Volunteers in Community Empowerment. 2012. p.23.

drainages as a waste disposals or even as “bathrooms” when they need to relive themselves, creating a major source of potential contagion in the neighbourhood. The large gutter, running through the neighbourhood is currently under construction. The city officials want to close it off in order to improve sanitation within the area as well as the lives of the people living closest to the gutter. The closed gutter is a sign of hope for a better and more sanitary environment in the near future.

Solid waste management is an urgent issue in Nima, there is a pressing need for a functional waste management system within the neighbourhood. However, the lack of proper layout and access makes it difficult for any serious intervention to be implemented. “Most residents, especially those closest to the drain, indiscriminately throw their garbage in to the gutter. Others further off also tie their refuse in plastic bags, which they then tend to leave in deserted corners, causing an environmental mess with its attendant health and sanitation consequences. Existing drains are therefore often clogged with waste material, leading to a proliferation of vermin and disease vectors in these communities.”<sup>20</sup>



Nima's informal drainage system

<sup>20</sup> Arguello, JEM., Kurtak, K., Alhassan, AR., Yaahalaal, AM., AVA community upgrading profile; Nima-Maamobi drain area. Millennium Cities Initiative; Earth Institute/ Columbia University, Voice; Volunteers in Community Empowerment. 2012. p.17.

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# WALKABILITY & RECREATIONAL SPACE

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*Lack of access, connections and recreational space.*

“The neighbourhood is generally well serviced by transportation services as it is key destination for many traders, customers and residents in Accra.”<sup>21</sup> There are no roads running from east to west in Nima East. This part of the neighbourhood is connected to Nima Highway and to the rest of Nima to the west but entirely disconnected to Kanada Highway and the neighbourhood to the east. Residents of Nima East therefore need to walk to one of the highways in order to reach their cars or to catch a taxi or a trotro (the local minibuses) to get to where they need to go. “Most of the poor conditions of concern in Nima are directly tied to the lack of layout and access. Improving access would make it much easier to improve other conditions.”<sup>22</sup>

Walking along the two highways is common among the residents of Nima, but it is a dangerous activity since the streets are both overcrowded and heavily congested. Since vehicle access is restricted to Nima and Kanada Highways, residents rely on the narrow pedestrian pathways to reach their destination and to move around. Many of these pathways have been narrowed even further with encroachments, furnitures or in some cases even waste. Poor drainage and inconsistent surfaces make the passage very difficult and unpleasant.<sup>23</sup>



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<sup>21</sup> Arguello, JEM., Kurtak, K., Ahassan, AR., Yaahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area.* Millennium Cities Initiative; Earth Institute/ Columbia University, Voice; Volunteers in Community Empowerment. 2012. p.12.

<sup>22</sup> Arguello, JEM., Kurtak, K., Ahassan, AR., Yaahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area.* Millennium Cities Initiative; Earth Institute/ Columbia University, Voice; Volunteers in Community Empowerment. 2012. p.23.

<sup>23</sup> Arguello, JEM., Kurtak, K., Ahassan, AR., Yaahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area.* Millennium Cities Initiative; Earth Institute/ Columbia University, Voice; Volunteers in Community Empowerment. 2012. p.23 - 27.

One critical challenge Nima is facing and a very obvious one from the start is a severe lack of recreational space. “Recreation is a very important part of community life in Nima, a fact clearly manifested during weekends. The recreational needs of adults and youth, males and females are different, but the common challenge confronting them is the lack of space.”<sup>24</sup> Venues for celebrations are created by closing of streets in the neighbourhood on weekends. This is done informally by putting up “no way” signs to hinder cars to go through the street. This sometimes happens on connecting roads close to the highways but this instead can cause major traffic congestions.

Adults and teenagers are not the only ones faced with problems raised by the lack of recreational space; children are also forced to play on the roads and/or in very crowded and dangerous alleys in close proximity to the open drainages where they are exposed to pollution on daily basis.

There is one designated recreational space in Nima. It is a “park”, or a large brownfield that belongs to the neighbourhood. The park is located north-east of Kanada Highway and is used as a soccer field. It is uncovered and unexciting to say the least, not to mention it is too far away to serve the neighbourhood properly. children have to cross Kanada highway in order to reach the soccer field. They often do so when accompanied by an adult which supervises their game.

: vehicular street  
: no sidewalk, no trees  
: no shade



: part of the pedestrian  
: network



: the park

Streets, pathways and recreational space

<sup>24</sup> Arguello, JEM., Kurtak, K., Alhassan, AR., Yaahalaal, AM., AVA community upgrading profile; Nima-Maamobi drain area. Millennium Cities Initiative, Earth Institute/ Columbia University, Voice, Volunteers in Community Empowerment. 2012. p.12.

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## THE LOCAL ECONOMY

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*Economic development, diverse mix of business and prosperity.*

The heart of economic activity in Nima is the ECOWAS market (Nima market) along with Nima Highway. The market serves as a distribution hub of agricultural goods coming from other regions in Ghana as well as neighbouring West African countries. Other goods, such as second hand clothing are also sold in large quantities. Nima Highway is situated centrally and conveniently within the city. The highway is characterised by many different types of businesses, mostly in the wholesale and retail trade sector. Businesses are mostly local, but international brands such as Coca Cola and Shell Oil can also be found there. Boutiques, hotels, restaurants internet cafés and hardware stores have opened in recent years due to improved business prospects along the road. Smaller clothing stores and kiosks along with street vendors selling food and drinks can be found in large quantities along the highway as well. Demand for commercial space is extensive and has created a need for multi-story mixed use developments along the highway.<sup>25</sup>

Nima highway has managed to preserve a healthy mix of small, medium and larger enterprises as well as thriving formal or informal businesses. Furthermore Nima is known for selling cheap wholesale and retail goods which translates into quick movement of products and money. However; “What is most impressive about the rate and style of growth along Nima Highway is that it occurred with very little municipal service provision (aside from the road itself) and no land use or economic planning.”<sup>26</sup>



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25 -26 Arguello, JEM., Kurtak, K., Alhassan, AR., Yaahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area*. Millennium Cities Initiative, Earth Institute/ Columbia University, Voice, Volunteers in Community Empowerment. 2012. p.34.



Other roads within the neighbourhood which carry huge potential for future economic development are Kanada Highway and Hot Coffee Road. “Enterprises along these roads cater more to local neighbourhood demand and are not nearly as well integrated to the broader urban economy than Nima Highway is, simply because they do not serve as important trade routes as Nima Highway does. Nevertheless, it is clear that roads serve a vital role in attracting business.”<sup>27</sup> Despite the prominence of the ECOWAS market and its reputation for being a hub for affordable goods and labour, Nima has been socially and economically isolated from the rest of Accra for decades.

affordable:  
agricultural:  
goods:



Nima market

<sup>27</sup> Arguello, JEM., Kurtak, K., Alhassan, AR., Yaahalaal, AM., *AMA community upgrading profile; Nima-Maamobi drain area*. Millennium Cities Initiative, Earth Institute/ Columbia University, Voice, Volunteers in Community Empowerment. 2012. p.35.

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## EDUCATION & FUTURE PROSPECTS

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*Academic achievement, stigma and job opportunities.*

Academic achievement in Nima is shown to be very low. A large percentage of the population has never attended primary school and very few residents have received anything beyond a secondary education.

Approximately 34% of the overall population in Nima has never attended school. Around 26% of the population has received basic primary education while 27% has gone beyond the basic education and received a middle school or junior secondary school education. Only a very few have received a post-secondary or tertiary education or close to 4%. The educational statistics suggest there is a high level of unemployment in Nima. Less than 30% of the population is employed in the public sector compared to almost 54% who are self-employed.

There is a shared “frustration among the youth due to lack of jobs and opportunities. Low academic achievement also impacts the ability of local residents to obtain jobs, and, more important, properly paid jobs.” However some of the problems related to finding jobs, especially those outside Nima can be traced back to the bad stigma or the reputation of people from the neighbourhood which sometimes becomes the “basis for denying the community and its residents jobs and other vital services, which in turn reinforces the negative characterization of the community. Which then again contributes to hopelessness and hence, the negative practices of the youth.”



Students at Anani International Memorial School in Nima

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28 Kang, S., Pesca, JJC., Quashiagah, P.J., Kumashie, I., *Nima Land Use Mapping Project; Report and Map set.* Millennium Cities Initiative, Earth Institute/ Columbia University, University of Ghana Legon. 2010. p.3.  
29 Owusu, G., Agyei-Mensah, S., Lund, R., *Slums of hope and slums of despair: Mobility and livelihoods in Nima, Accra.* Norsk Geografisk Tidsskrift - Norwegian Journal of Geography, 62:3, 180-190, 2008. p.185.  
30 Kang, S., Pesca, JJC., Quashiagah, P.J., Kumashie, I., *Nima Land Use Mapping Project; Report and Map set.* Millennium Cities Initiative, Earth Institute/ Columbia University, University of Ghana Legon. 2010. p.5.  
31 Kang, S., Pesca, JJC., Quashiagah, P.J., Kumashie, I., *Nima Land Use Mapping Project; Report and Map set.* Millennium Cities Initiative, Earth Institute/ Columbia University, University of Ghana Legon. 2010. p.6.

However times are changing and most children today receive a primary education. Today there are around 10 public primary schools within the neighbourhood along with approximately 100 private ones. This paradigm reveals that there exists a greater desire for education among Nima's residents than that the government is providing for. Furthermore the quality of the education provided by the government can be questioned. Because of the low teacher's salary provided by the public schools, the teachers are not motivated to do their jobs properly or show up for work at all.

When the quality of the education in the public schools drops, along with the fact that not nearly everyone gets in who wants to get in, an opportunity arises for private schools to come to live. Schools where children's families have to pay fees in order to enrol them and to support their studies. Schools where teachers are provided greater salaries and are likelier to give a better performance.

Private schools exist and thrive in this environment because of individuals who either see a tremendous need for a better quality education and create one out of the goodness of their heart or people who see this as a business opportunity and want to make money.

In a poor community like Nima, this paradigm proposes a huge problem because families cannot afford sending their children to private schools in order to give them the best quality education available, forcing parents to enroll their children public schools on the off chance they get admitted. One has to question how private schools thrive in a community where the parents can barely afford paying their child's/children's tuitions. The reason why children are able to attend the private schools is merely because the schools receive and rely on funding which in most cases comes from abroad. Another thing to question is the morality of this practise, how ethically right it is of the government to allow a private primary school system which relies on foreign capital to exist in a nation where it is written the constitution that - free education should be provided for all.

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**21st of April 2016 -  
A visit to Anani International Memorial School  
in Nima**

*I arrive to Anani International Memorial School in Nima at 10am. The school is located in the north part of Nima East. A clay compound house, much like the other buildings in the neighbourhood, except this building is painted white and purple and part of it is built out of wood. The compound is filled with children running around. I seem to have arrived at one of their breaks. Children flocked around me and chanted "obruni!" "obruni!" - Some of them even grabbed my hands to get a closer look at that strange pale skin of mine.*

*I had originally made an appointment to meet and interview the principal but he was otherwise occupied and therefore not around. I however decided that not to let this visit go to waste and asked one of the teachers if I could interview other staff members and possibly some of the students instead and I was more than welcome to do so.*

*The interviews were conducted in a very informal manner, where I allowed the conversations to flow in a direction the interviewed wanted to reflect on. Topics included were education and its value, attendance, prospects and history among other things.*



**Sir Prosper**

*Sir Prosper is 23 years old and he has worked at the school now for one year. He teaches two classes of 20 students each aged 13-14 years. Sir Prosper studied at Providence Preparatory School in Kotobabi to become a teacher. He wants to continue on to university to become a marketing director in the future.*

*Sir Prosper told me that he believes that between 70 - 80% of children in Nima attend primary school to receive their basic education. He tells me that Nima's inhabitants are aware that education is important and that studying can bring you further in life. However, he explained to me that the children who do not attend school in Nima, cannot because of their familie's financial situation. Their families often rely on them to work from a really early age to help to keep the home up and running.*

*Furthermore he tells me that he teaches his students to value their education and to be thankful. He tells me that his students are extremely intelligent and that he believes they have a bright future and of them, he has high hopes for them to go far.*



**Mr. Abdallah**

*Mr. Abdallah is the French teacher of the school. He started teaching at the school in 1983 and is therefore one of the oldest teachers here. He teaches children from 2-6 years old to speak French before they start first class.*

*He explained to me that the school has faced financial troubles on numerous occasions in the past, where teachers experience long time periods where they don't get paid. He tells me that these financial troubles are somewhat based on unpaid school tuitions of many of the students and therefore at times the school does not receive the adequate capital to keep it functioning properly.*

*Interestingly tells me that despite the money problems he has never considered quitting or searching for a new job because he believes that it is most important to secure the children's future and that he is ready to make a small sacrifice to achieve that.*

# ANANI INTERNATIONAL MEMORIAL SCHOOL



**Cathy -  
Catherine Anane**

*Cathy is 25 years old and she has worked in the school for 8 years as the English teacher at all levels of the school.*

*When I ask her if the school is named after her last name, she tells me I'm right and that it was her grandfather that founded the school. She knows the history of the school back and forth and tells me all about it.*

*The school was founded in 1975 by Yao Anane Nager. An illiterate painting contractor who had experienced the hard way how the lack of basic education could affect ones quality of life. For many years he had worked hard for his salaries, but because he didn't speak French nor was he any good at calculus he brought his friends with him every time he collected his salaries from the bank. But his friends cheated him and gave him much less than he had earned and took the rest for themselves. He didn't realise this until an honest bank servicer told him one day. When he realised this, he decided that his children should never have to experience the same. He wanted them to have*



*the opportunity to educate themselves. He had a vision of a place where even the most impoverished children of Accra could receive an education. That's when he founded the school and he did so with only two teachers and fifteen students, half of which were his own children.*

*The school started in his own home, where he had his four wives and his 24 children, one of whom was Kofi Anane, the current principal of the school today and Cathy's father. The school grew quickly and soon Yao had over 100 students learning in his living-room and bedroom. At this time there were no school tuitions but Yao used his painting salaries to finance a new rental space at the schools current location to house all of the students properly. Since then the school has grown immensely and graduated over 14000 students, many who have excelled and gone much further with their studies. The school has also grown in physical dimensions within the compound. It started with a small wood structure, but was extended in 1998 by Principal Kofi Anane.*

*The school has received major financial support from*



*abroad from various countries and organisations which has allowed them to build for example, the kitchen, the bathrooms and the small library as well as the principal's office. Funding has also derived from abroad to support some of the students or many of the orphans who cannot afford to attend the school without donations.*

*The school keeps on growing and their spatial needs as well. Their future plans are to tear down the wooden structure and build a two story building instead. The building should include classrooms, computer laboratory, music theatre, staff common room and a library. They hope to achieve this soon but they need financial resources to be able to.*

*When she is asked about design features that are most important for a school building in Nima, she claims ventilation and natural light are the most important features along with security. When she allowed herself to dream beyond their basic needs she admits that an outdoors playground for the children would be really great.*

# THE MOTHERSCLUB OF NIMA

## **21st of April 2016 - A visit to The Mothers Club of Nima**

*I had heard about an organisation called The Mothers Club of Nima and I got curious. On my mission to explore and absorb as much information about the neighbourhood and the livelihoods of Nima's inhabitants with special focus on the children I of course wanted to meet them. I asked around and after my interviews with the teachers at Anani International Memorial school I learned that The Mothers Club was located really close to the school. One of the teachers, Mr. Abdallah offered to bring me there. I accepted his kind offer, especially since I was nowhere near figuring out the street maze of Nima on my own.*

*We walked slowly in the heat for about 5 minutes before we arrived at another compound where The Mothers Club was located. There I saw a few women, all dressed in beautiful traditional clothing, the atmosphere was calm and relaxed. The women were either cooking or taking care of their children. Mr. Abdallah introduced me to Michelle and Mariam the founders of The mothers club.*

*The interviews were conducted in a very informal manner, where I allowed the conversations to flow in a direction the interviewed wanted to reflect on. Topics included were education, attendance, prospects, importance and history among other things.*



**Michelle and Mariam**

*Michelle and Mariam founded The Mothers Club of Nima 20 years ago. Their main concern is to give their children a brighter future. They aim and their main focus is to improve sanitation within the neighbourhood as well as access to health facilities.*

*They themselves did not receive basic education but realise how important it is. Their emphasis is on getting the neighbourhood children to school, especially the street children. There they want them to learn the importance of good sanitation, the necessity of using clean water and soap for hand washing f.ex. They believe basic information like this will improve the life quality in the neighbourhood and increase public health.*

*When I ask Mariam if there are any evening schools for adults in the neighbourhood she tells me that there are literacy lessons taught at the library on the other side of Kanada Highway, but she says it is too far away and would need to be more centrally located within Nima to function and prosper. She says evening school could occur between five and nine pm.*



*She tells me that one of their initiatives is to provide first aid training for mothers within Nima. They are able to do so through generous contributions from Harvard University. Mariam tells me that this initiative has already saved lives here in Nima.*

*I wrap up the conversation by asking them if there are any improvements they would like to see in the neighbourhood for children, they quickly reply YES! We need space where our children can play safely, a place they can call their own. Where they are not playing amongst traffic, in the street or between the drainages in the alleys. They mention that a space like this can be created but that means something needs to be demolished and that costs money so they aren't very optimistic to achieve this.*

## AN EVENTFUL DAY WITH CATHY

**22nd of April 2016 -  
A day with Cathy -A second tour around Nima, a  
visit to Dannaks Senior High School & a visit to  
Mr. Kofi Anani, the principal of Anani International  
Memorial School**

*I received call the day before (21st of April) from Cathy, one of the teachers at Anani International Memorial school, she asked me if I wanted to visit the school again tomorrow and she would show me places in Nima, she also wanted to bring me to meet her father the principal since he wasn't around last time I visited. I accepted this kind offer and I met her at noon on the 22nd of April.*

*I met Cathy at the school compound, she had to wrap up her work but after about fifteen minutes we started walking around Nima. She asked me what I wanted to explore and I told her I would love to see the park I had heard about as well as the library and she kindly brought me to those two places.*

*We walked past the gutter to move towards Kanada highway. We continued along the highway in the burning sun, with no shade in sight for a while before we came to a crossing where we moved over to the other side. There we saw a ginormous mosque, two libraries, one of them designated for children. Both libraries were prominent buildings and extremely well built. They were both in use and I learnt that they had been donated to Nima by a woman from Kanada, named Kathy Knowles. Slightly further away we entered the park, which was a sight for sore eyes to*



*say the least. The park was a large brownfield, with two trees in total, few goats and cows and one football field. It seemed more like an empty space waiting to be developed.*

*We ended our tour around Nima back where we started. Cathy needed to collect her belongings before she would leave the neighbourhood. As we were leaving the compound I noticed two very young boys, around six years old who were preparing to leave the premise to go home. They both walked with a major difficulty, one was noticeably worse than the other one though, but they used support from each other to move forward. I realised something was not right with their legs and I asked Cathy what was wrong. She told me that they were brothers and that they were both disabled. She also explained that one of them managed to hurt himself earlier in the day and that's why his limp was even worse than normally. I was of course very concerned and asked how they would get home, she told me they would walk there but I questioned if he really could, since his leg actually seemed broken. She then asked one of the*



*kids, an eight year old to carry the injured one home and suggested that we would follow to make sure they actually got home. I agreed to this but offered to carry the kid myself since it was obvious to me that the eight year old was far from being strong enough to carry the kid. We walked through the narrow, winding maze of alleys for about 10 minutes before we reached the destination. The kid was very thankful and I could even feel how much by the way he hugged me on our way to his home.*

*After this adventure we walked to Nima Highway where we caught a taxi and travelled together to another school, Dannaks senior high school, close to the neighbourhood, a private secondary high school where one of Cathy's friends, Mr. Daniel Gbewoaza, worked as the principal. She thought it would be beneficial for me to get another perspective on the school administration surrounding Nima and I completely agreed and obliged in total admiration of her kindness and helpfulness.*



**Mr. Daniel Gbewoaza**

*Mr Daniel Gbewoaza is the principal at Dannaks Senior High school and he has been since the schools foundation in 2007. The students at this school are at the age of 18 - 22 years old and most of them come from Nima, Maamobi or Lapass, all neighbourhoods very close by.*

*I ask him whether this school is public or if it is privately owned and he informs me that this is indeed a private school. He explains to me the difference between the two systems, and tells me that in public schools the government has to provide for everything while in private schools everything is administrated through school tuitions. Moreover he tells me that most of the students here pay their tuitions which means that they come from extremely hard working families. I ask him if he believes this is a good and proficient system and I learn that he believes it is. There is a great need for private schools since the government can't provide for everyone to finish their education. Which in return creates a huge opportunity in managing and profiting from founding a private school, an opportunity people like him should seize.*



*When I then ask him if he thinks this is fair, or that if this system allows equal opportunities for children/people to educate themselves, he answers; "No, education is only for the privileged few, but they realise that they are privileged and therefore don't let the opportunity go to waste. They really want to do well, and put a lot of effort into excelling in their studies. Our students here dream about going to university when they finish."*

*When asked about the most important design features needed to obtain a school, he replies in a moderate fashion; "Preferably a room, with walls, floor and a roof." I asked him what would make that room comfortable he replied; "good air circulation, light and furnitures."*

*.....  
After this interview we jumped into a cap again and drove to Mamobi, where Cathy's father lives and has another business. We arrive at a restaurant or a bar and we find Cathy's father, Kofi, waiting for us there. He welcomes us and leads us to "the back" where we sit down among his friends to have a chat.*



**Mr. Kofi Anane**

*Kofi Anane is the current principal of Anani International Memorial school, he is the son of Yao Anane Nager the founder of the school and one of its very first students. He started off by telling me how his father founded the school, the same story as Cathy had told me the day before with a few added details. One of them being that in the very beginning children had to be able to -touch their ear- to qualify for the school.*

*He tells me that he has helped out with school administration since he was eight years old, at that time he was the schools secretary. He has managed the school finance for 36 years. He takes care of the children tuitions. Since this is a private school, you have to pay to get in. He manages the tuitions to be able to pay the teachers, pay the rent and so on.*

*When I ask him why Anani International Memorial school is a private school and not a public one (since I was quite baffled by this information), he informs me that there are around 10 public schools in Nima and about 100 private ones. He tells me that the public schools are completely full and therefore private*



## AN EVENTFUL DAY WITH CATHY



*schools are needed. He continues on to tell me that even though there are tuition fees, that about half of the students at the school cannot afford paying them. When I ask him then how they manage to keep those children at the school, and the school running properly he tells me that they rely on foreign donations to support the children. Furthermore he explains that he just renovated and opened this bar/restaurant we are sitting at, in hopes to use to profit made from this business to sponsor the orphans at school. It was fairly obvious that he was both a very kind and a generous man and that he wholeheartedly wanted to give the orphans a fair chance at this thing we call life.*

*He did not always intend to make this his life mission, to teach or administrate the school. For many years he travelled the world and worked as itinerant worker. He travelled to 29 countries but told me that his late father visited him in a dream one night and told him he should return to his country and take care of his legacy. And so he did. He also told me about another dream he had later and it was to create a drumming and dance group with young students from Nima. A*

*chance for them to showcase their talent, spread their culture and earn money while doing so, the group was called Kusum Gboo. (Interestingly I had already met one of the dancers from that group, he is a taxi driver by day and personal dancer by night - his name is Prince Kwalm Amegbe. We met once while he was working as a taxi driver, he told me that his group practiced three times a week for two hours each time and that they exhibited a lot. I went to one of the practices and it was a truly an amazing experience.)*

*I also learnt that one of his initiatives was to found the Ghana Nima tours, which was a blooming tourist business in the neighbourhood and the same one I had gotten a tour with when I first arrived in Nima. My experience here was coming to a full circle.*

*When I asked him about the main challenges the school is facing, he told me that they are mainly of financial concern. Paying the teachers was the hardest task, he told me that often they didn't get paid at all. They somehow managed through support from abroad.*

*His final words during the interview were that it is most important that we, as humans, as a community support our children's education. He said "When you educate a child, you educate a nation and the whole world benefits."*

*To me it was very interesting to see how engaged he was in his community, it is obvious that he sees his ideas through and really and truly cares for the students futures.*

*After we wrapped up the interview he offered me traditional lunch, taught me how to play the drums and we played pool on his new pool table for a while. This day was entirely unplanned, where one thing lead to another and I ended up learning a lot.*

## THE WOMEN AT NIMA MARKET

**25th of April 2016 -  
A visit to the women at the Nima market**

*I had mentioned to Hamza, the tour guide from Ghana Nima tours, that I would love to talk with some of the women at the market and possibly interview one or two of them. He told me that could be arranged and he even offered to lend his assistance. He knew some of the women personally and the fact that most of them don't speak English fluently so he offered to tag along to translate.*

*We met around 10am on a Monday morning and walked over to the market. We visited a woman called Margaret and her friends at one of the sales booths. Margaret greeted me by my name "Welcome Auntie Rose" and I remembered that we had talked for a few seconds during my first tour with Hamza the week before. She offered me to have a seat inside her booth and we sat there together for a while and talked.*



**Auntie Margaret**

*Auntie Margaret is 45 years old and her family migrated here from the Volta Region - Bosumi. She was born in Nima and started her primary school education here, but she didn't go very far with it. Margaret has a husband and they together have six children, four boys and two girls, age range from 10 - 23 years old. All of her children go to school, her eldest, the 23 year old completed senior high school and wants to continue on to university to learn more, but he needs support to be able to do so. All of her six children have gone to private schools, she tells me that was important to her because they would receive better education there which would in return benefit them in the future.*

*Auntie Margaret has worked at the market for over 30 years now. She comes in every day around nine or ten in the morning and stays here until they close at six. Often she would bring her young children with her to work, especially during school breaks and holidays. They often even work with her after school, the school closes at three or four in the afternoon and since they don't live in Nima any longer, they have to stay with*



*her until they can go home together after the market closes.*

*I asked what she thought needed to change within Nima to make it a better environment for people to thrive in. She answered that women here work really hard to support their children, what was most needed and most important was financial support. I had realised already that what seemed to be everyone's concern here was earnings and financial means, their basic individual needs to merely survive. They were less concerned about what could be done within their neighbourhood to benefit the whole community, but when I raised that question she replied; "The children need space, a playground, football field or a park." She told me about the CDR, or the social centre in Nima and said that space was used for social gatherings such as graduations or birthdays, but it needed to be even bigger. (I had actually been there myself, on the 22nd of April when I went to watch Prince practising with his dance group Kusum Gboo. It was just another compound, it looked the same and was similar in size and I agreed with her; it needed to be bigger)*

## A SECOND DAY WITH CATHY

**25th of April 2016 -  
A visit to Cathy's close friends, Justice Prah**

*I had made arrangements to meet Cathy at two o'clock at her school and go with her to visit one of her closest friend Justice Prah. She wanted to introduce us since he was also a teacher and told me that he would have a lot to say.*

**Mr. Justice Prah**

*Justice Prah is the assistant head master at Dannaks senior high school and he has worked there since 2007. He graduated from sociology and political science from the University of Ghana in 2014.*

*He talked about Nima and the quality of life of its inhabitants, he refers to the neighbourhood as a slum (he is noticeably the first one I hear doing so). He told me that settlement in Nima occurred spontaneously after the Second World War. The neighbourhood developed so fast and uncontrollably that conditions were created which were difficult to react to in the aftermath. Additionally he explained that the neighbourhood is and has always been really underserved in regards to public amenities by the government. It is truly a neglected area.*

*To follow up on this statement I asked him about what he thought of the public and private schools system and if he thought the government should put more revenue towards providing free education for all. Surprisingly he did not think so, he told me that private schools existed because of a need, they were*



*trying to close a gap which existed because the public sector was overburdened with enrolment. He explained that the currently the government is actively trying to build more schools which will result in the collapse of private senior schools. In his opinion; free education should not exist, because then other fields will suffer. He thinks the government should charge tuitions to be able to facilitate schools and administrate them, but focus other revenues where they are needed, in agriculture, transportation, health care and water sanitation for example.*

*I concluded by asking him about his opinion on basic design features of a classroom. He said a classroom only needs space, space is the most important. He told me 20 students would do really well in a space like the one we were sitting in (we were sitting in his living-room, which was approximately 12 square meters).*

*After his shockingly and refreshing opinions I was surprised at how modest he was when it came to his final question.*



## NIMA THE URBAN TOOLBOX

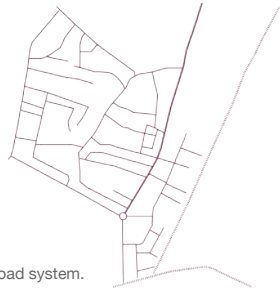
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This chapter introduces Nima's urban toolbox. The toolbox was developed during the first stages of the design process as a response to the severe lack of any wholistic urban development plan for Nima. It suggests a shared responsibility for all new individual developments to improve Nima's urban space collectively. It displays a conceptual strategy or rather a set of goals for all new developments to achieve. It raises an awareness to seven relevant issues and suggests ways to improve upon them if possible through each new individual design. It is an architectural attempt to respond to the severe urban issues Nima faces.

## Spatial layout

Firstly the neighbourhood needs a comprehensive plan to improve its spatial layout. By building on its existing road system and providing new and **vital connections**, access can be improved immensely. Through new connections and **improved access**, the Nima's **circulation, infrastructure** and **security** will be greater.



Nima's existing road system.



Vital connections.

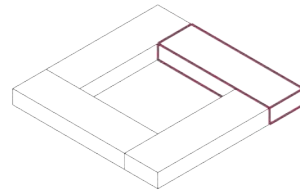


Secondary connections, for cars pedestrians. Provided over time as new developments rise.

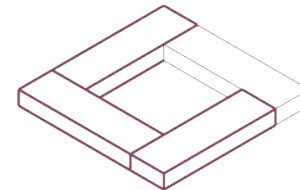
## Housing & Construction

The neighbourhood needs to focus its densification upwards. New developments should be constructed to minimum of **three floors**. The current courtyard typology should be able to be expanded through time with **systematic approach**. **Vertical densification** allows the squaremeters lost to new roads and vitals connections to be **regained**.

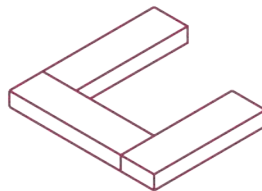
### Systematic approach to densification



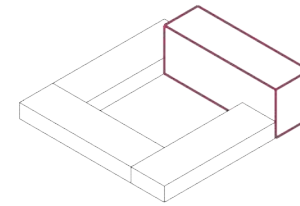
1. Identify a starting point of development.



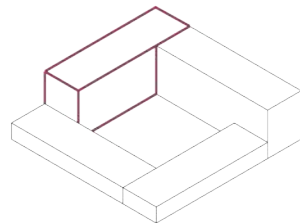
2. Inhabitants move into the remaining buildings.



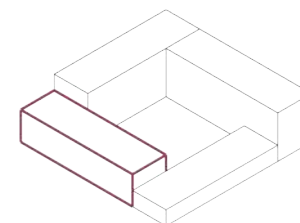
3. Part of the compound is removed.



4. A new three storey building is constructed in its place and inhabitants move in.



5. Same approach is used for the second development.



6. The compound is still intact, homes have been improved with time and landuse is far better.

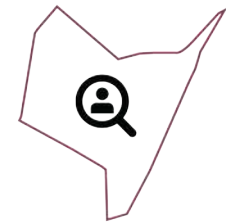
## Materials

New developments should focus on keeping the **materialistic character** of the neighbourhood intact by continuing to **source for materials regionally**, opting for **sustainable** and **affordable** solutions. New developments should take advantage of Nima's human resources by **hiring** and **training unemployed people** into the building sector.

### Local resources



Materials should derive from the region.



Hire locally. Hire unemployed local people.

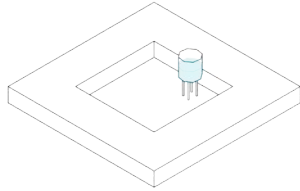


Teach locals new skills with in building and construction.

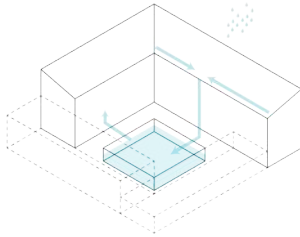
## Water & Sanitation

All new developments should include plans to **collect, store and reuse rainwater** as a **response to clean water scarcity** within Nima. Furthermore new developments should be responsible of **leading waste water from their site** and into the current drainage system along the highways.

### Rainwater harvesting and recycling

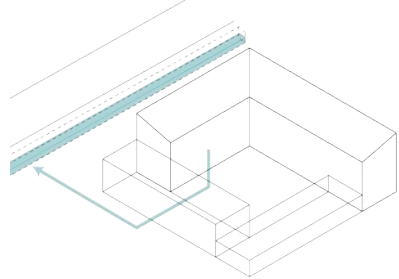


Collection tanks for smaller developments.



Large storage tanks under courtyards in larger developments.

### Waste water management

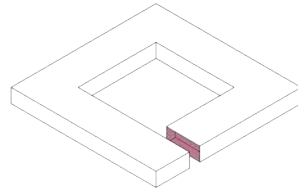


Larger developments responsible of leading waste water from the site and into the drainage along the highways.

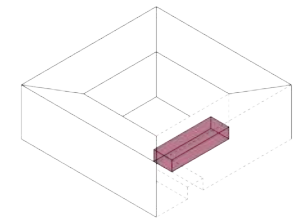
## Waste & Sanitation

All new developments should allocate space for **waste collection** where it can be **stored and removed** conveniently. Larger developments with public amenities need to **contribute to public waste collection** and businesses need to **contribute** a percentage of their **profit** to **build and maintain public bathrooms** within Nima.

### Allocate space for waste collection

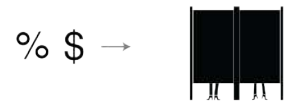


Private waste collection in smaller developments.



Public waste collection in larger developments.

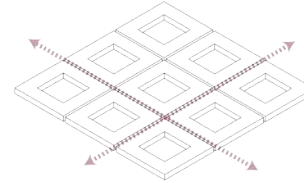
### Business profits improve sanitation



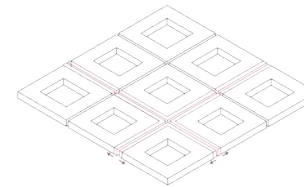
Business profits used improve sanitation within Nima.

## Pedestrian environment

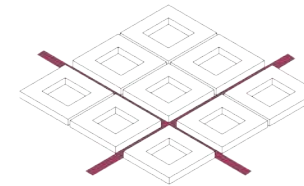
With the new spatial layout, areas will be defined where access should be improved. **Slowly through new developments this can be achieved.** Developments within the defined area focus on **creating drawbacks** while building upwards. Drawbacks create **awnings and rest stops** and eventually improve the access.



Define areas to improve access.



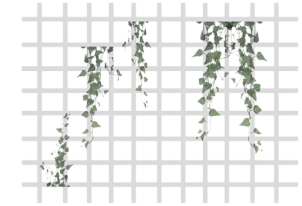
New developments create drawbacks to improve access.



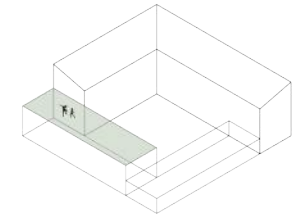
A better pedestrian network with awnings and rest areas is created through time.

## Urban nature

New developments should focus on **densifying vegetation** within Nima by looking into ways to **implement greenery** within their design. This can be achieved by **activating unused spaces** like roofs f.ex or by **allowing greenery to grow vertically** where it can.



Use greenery that requires little space and can easily thrive.



Activate roofs, or unused spaces in larger developments.





# NIMA

## SITE & CONCEPT

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This chapter introduces the site chosen for the development of Nima's Junior High school. It explains why it was chosen and describes its attributes and typology. It discovers a potential within the site's context and explores a conceptual way to approach the site with a new building typology while respecting its existing and unique character.



Nima highway

Kanada highway



Highways Nima boundaries Nima market Mamobi gotta - the drainage

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## THE SITE

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Finding a space for 500 potential students within Nima proposed a major challenge. Surprisingly the designer stumbled upon an undeveloped plot sitting within the markets city block during the last days of her study visit. With no time to spare, the incredible find immediately became the site of investigation. The plots raw potential along with its availability and location within Nima were appealing. The plot measured to be 17x17m in diameter and it became clear that it would not be able to contain the school's program by itself. Therefore, with the plot as a starting point, the investigation looked into the entire city block and explored the potential in the plot's surroundings.



An undeveloped plot waiting to be explored



A modern, mixed use, 4 story building is located next to the plot



A badly deteriorated and abandoned building is sitting within the plot.



An L- shaped storage building is facing its back to the plot



The L-shaped building frames the plot





Commercial



Residential housing



Industrial buildings

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## SITE CHARACTER

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The market area was mapped thoroughly in regards to functions and architectural value and meaning. The area which is mainly commercial was found to be housed largely in unsafe, temporary market structures. On the contrary value was found in few high rise buildings and old historic landmark trees on site.



Irreplaceable buildings & vegetation



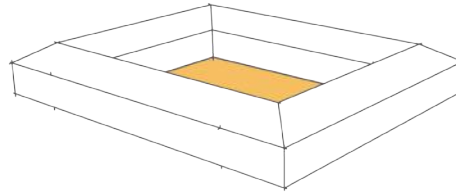
Replaceable structures



Nolly map of Nima

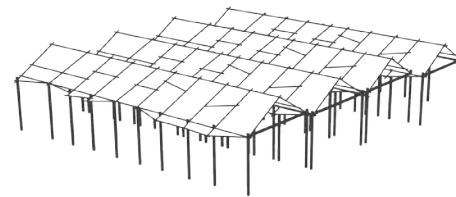
NIMA'S TYPOLOGY

-single floor, clay-built compound houses with a shared courtyard



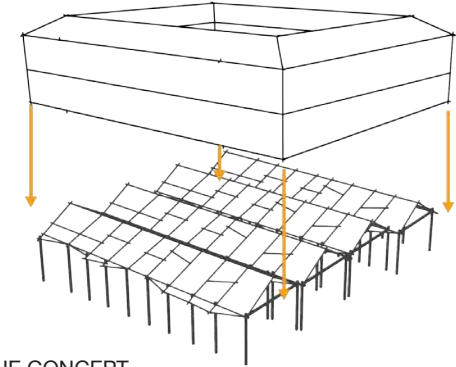
NIMA'S MARKET TYPOLOGY

-temporary structures constructed with corrugated steel roofs & timber columns



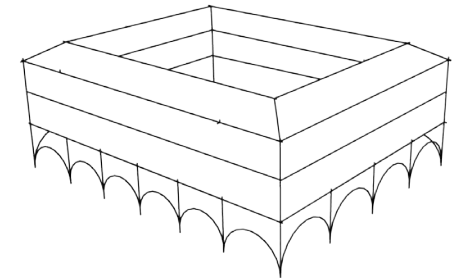
THE CONCEPT

-to utilise the space above the market and to allow the new school building to create a permanent roof for the market



A NEW TYPOLOGY

-a two floor compound building raised on reinforced concrete/ brick arcades.



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## THE CONCEPT

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As previously explained, finding a space within the crowded setting of Nima to build and develop a much needed school for 500 students was found to be extremely challenging. Therefore, the design utilises the potential in the space directly above the existing local market. The market which is located along Nima highway is well established. Interestingly, it features a noticeably different typology from the rest of the neighbourhood. It largely consists of temporary structures made from corrugated steel roofs and timber columns. The structures are in poor condition and their solitary function is to provide market vendors with shelter and shade during the day. The main concept behind the design derives from this knowledge and suggests replacing the temporary market structures with a raised school building which supplies the market with a safe and permanent roof. The design further respects the traditional building patterns found within Nima. It does so by mirroring the shape and materials of the surrounding clay compound houses while exploring a more pragmatic and innovative use of land and space. With the empty plot along Hot Coffee Road as a starting point of development, the concept is applied to the site and multiplied above the market's replaceable structures until the school's program is fulfilled.



The new typology applied to the site and adjusted to its grid and school program's needs. The concept was strategically placed above the markets replaceable structures.





## THE DESIGN

# NIMA - JUNIOR HIGH SCHOOL

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This chapter explains in depth how the design of Nima's Junior High school was approached. It goes through the school's layout and illustrates how it is divided up into several units each with their own program. It describes how public functions are introduced and mixed with the school to create a revenue to support the student's education. It talks about construction and materiality and how the shape of the building takes form relative to the site and its function and further it demonstrates how climate plays an influential role in the design. It describes how the idea comes together through few simplistic design elements and tries to communicate a holistic picture of the designer's vision through drawings, diagrams and renderings.



# NIMA'S JUNIOR HIGH SCHOOL

The design of Nimas' junior high school respects the current function of the existing market by utilising the space directly above it. Built on columns, the school consists of seven buildings which each have their own function. The layout of the buildings derives from its surrounding. Following the measurements of the average compound building, the buildings adjust to the current grid on site and together form a cluster, with a small market square in the centre. A guideline from Nka foundation was used to meet all of the spatial requirements needed for a junior high school and was further adapted to Nima's site specific urban situation. Pushing the boundaries of a typical school institution the design allocates a part of the school's program to public usage after school hours in order to sustain the school and its students. Public facilities are located along Nima Highway and Hot Coffee Road. Those are; the library, the school canteen, the sports hall and the chapel. All of which can be used by students during school hours and by the public after hours, creating a variety of life and people at all hours. These four buildings then act as a noise barrier for the three classroom buildings which rest in the centre of the site and are used privately by the students and school staff.





Aerial view from the corner of Nima Highway and Hot Coffee Road

Elevation showing the dining hall/ restaurant which sits on the corner of Nima highway and Hot Coffee Road as well as the library/ book café and the green pocket garden on Hot coffee road. The library carries the main entrance to the school. Classroom buildings are displayed in the background.

classroom buildings

school entrance  
library & book café

pocket park





existing building

school dininghall/  
public restaurant

Elevation Hot Coffie Road 1:200

Elevation showing the multi-purpose sports hall with its semi open/ventilated roof. Furthermore the elevation displays the school's lecture hall which can be used as a chapel or a space for prayer during weekends. Market stalls can be seen sprawled under the construction and classroom buildings sit in the background.

school dining hall/  
public restaurant

market stalls

school sports hall  
public usage after  
school hours





.bridges connect the  
.school buildings on the  
.second floor

.school lecture hall/  
.public chapel

Elevation Nima Highway 1:200




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## THE MARKET

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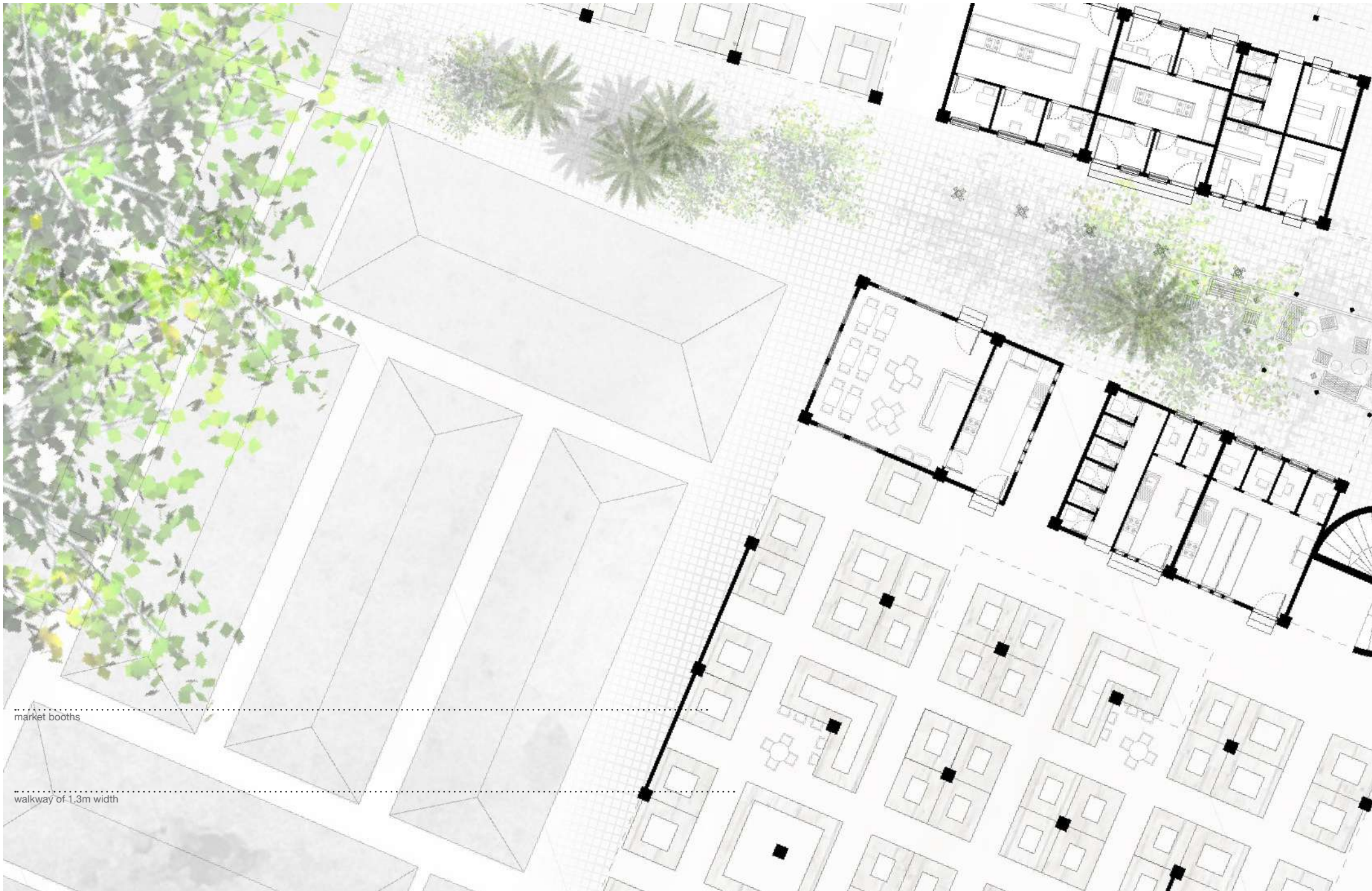
The school is raised up on columns allowing the function of the market currently on site to stay intact. Therefore the design of the school in it self creates a permanent roof for the open market on the ground floor. The market has been divided into three zones to advocate proper hygiene; textile and design can be found under the canteen next to the two roads, meat and animal products under the sports hall and the two classroom buildings in the centre and lastly agricultural goods under the chapel and the third classroom building to the south of the site. The columns under the buildings divide up the space rented out to different market sellers. A walkway of 1.3m is secured between the booths allowing for easy access and the space under the courtyard of each building is left unregulated for temporary storage or spontaneous vendors. Each individual building has a core which connects to the ground. The cores provide access to the school and help to create a variety of mixed use spaces which compliment the market on the ground floor. The cores are f.ex. used for storage, bathrooms and small restaurants where food from the market has been prepped and cooked to sell further. The cores are arranged to frame the square in the centre, creating an enclosed and botanical restaurant environment.





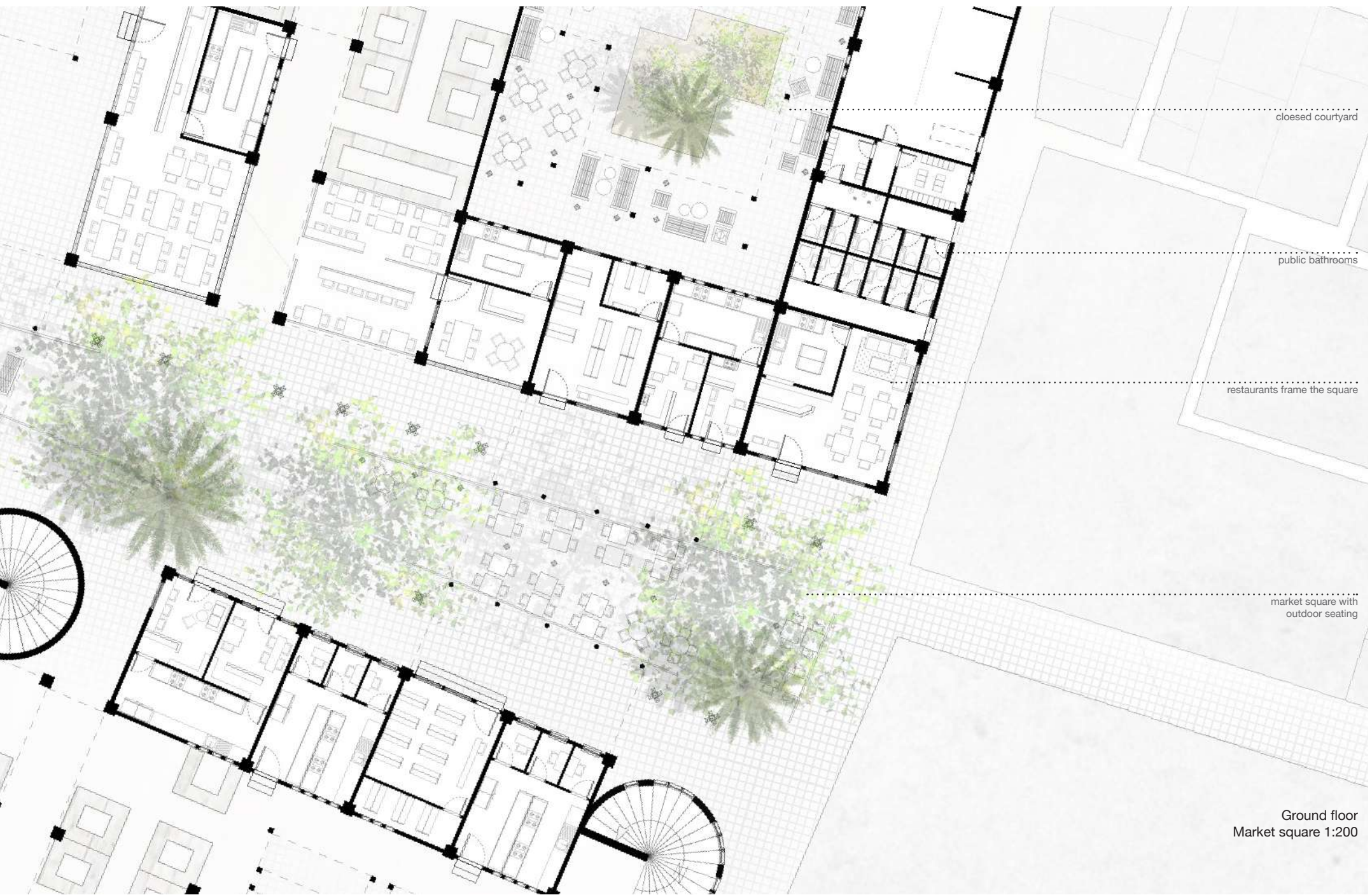
A view of the Market Square

A view from the market square displaying the market stalls under the sports hall to the left and the small market stores and restaurants located within the cores of each building which together frame the square. Furthermore the view displays the school resting above the market and the bridges that connect the different school buildings on the second floor.



market booths

walkway of 1.3m width



closed courtyard

public bathrooms

restaurants frame the square

market square with outdoor seating

Ground floor  
Market square 1:200

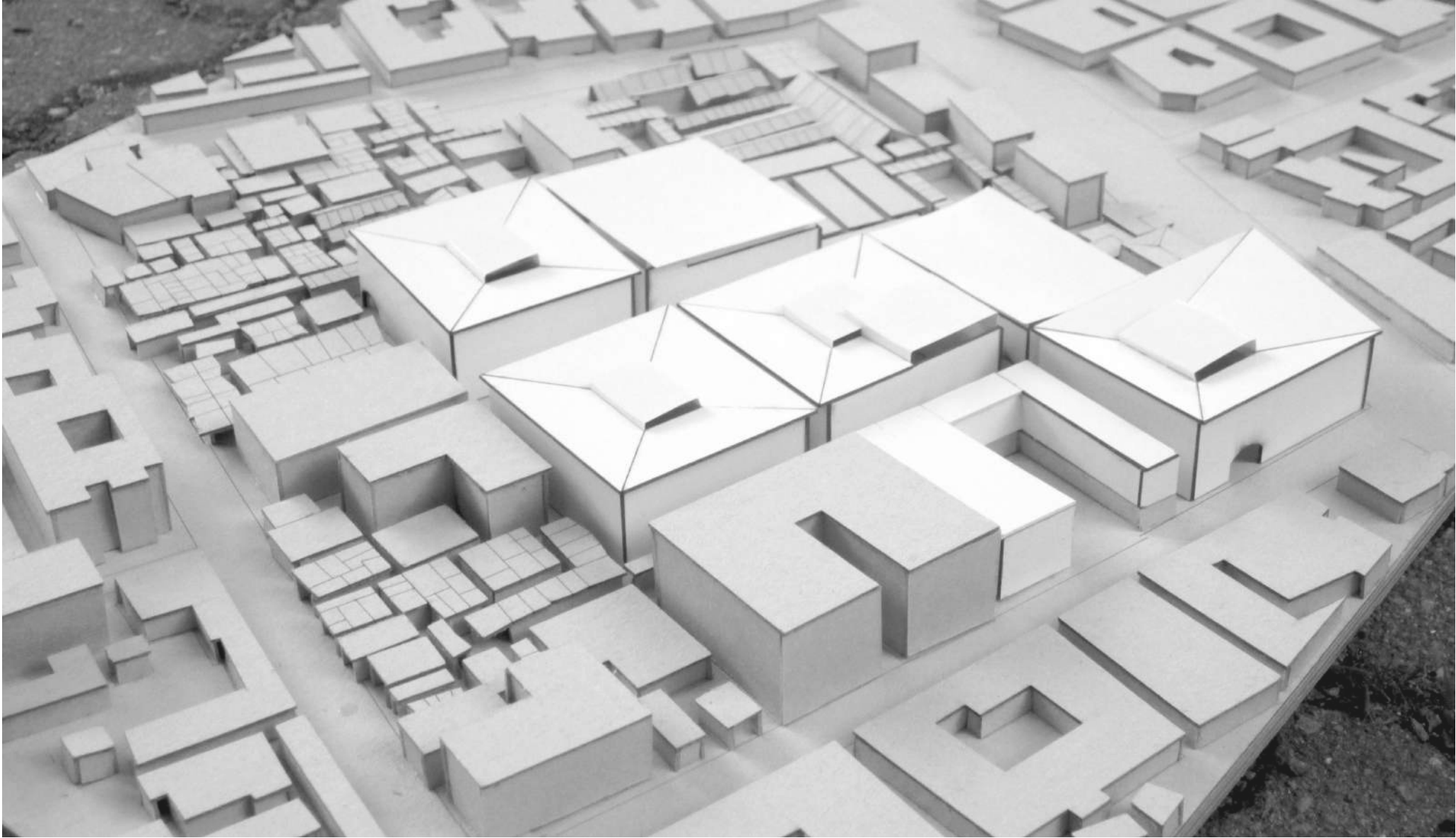



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## THE LIBRARY

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The library is located on the undeveloped plot along Hot Coffee Road. The design takes advantage of the L shaped storage building, currently located on site and facing its back to the plot. It does so by building both to the east of it as well as on top of it, creating a double story, U-shaped building. The building frames the plot allowing the enclosed outdoor space to be utilized as a green pocket park. The ground floor of the new building displays a public book café with large wooden doors along its entire facade from north to south giving it the flexibility of being closed, semi-closed or even entirely open to the park. Inside, the kitchen is located at the south edge of the building and wooden book shelves reach from floor to ceiling. Rammed earth is used for exterior walls, earth bricks for the few interior walls and the floor is made with concrete. The raw rustic feeling of the building, allows visitors to appreciate local materiality. At the south edge of the plot, a staircase leads up to the first floor, to the main entrance where the reception and the school library are located. Teachers offices and meeting rooms are found on the adjacent side and exterior bridges, made from black steel provide connections to the canteen to the west and the first classroom building to the south.



Model displaying the school within the markets parameter



existing building

public pocket park

book shelves from floor to ceiling

stairs to reach the library from within

rammed earth

public book café

kitchen

stairs to the main entrance of the school

Ground floor  
Book Café / Library 1:200



staff meeting room

public pocket park

school library

rammed earth

reception and office

1. Floor

Book Café / Library 1:200

lockers

a bridge to the 1. classroom building



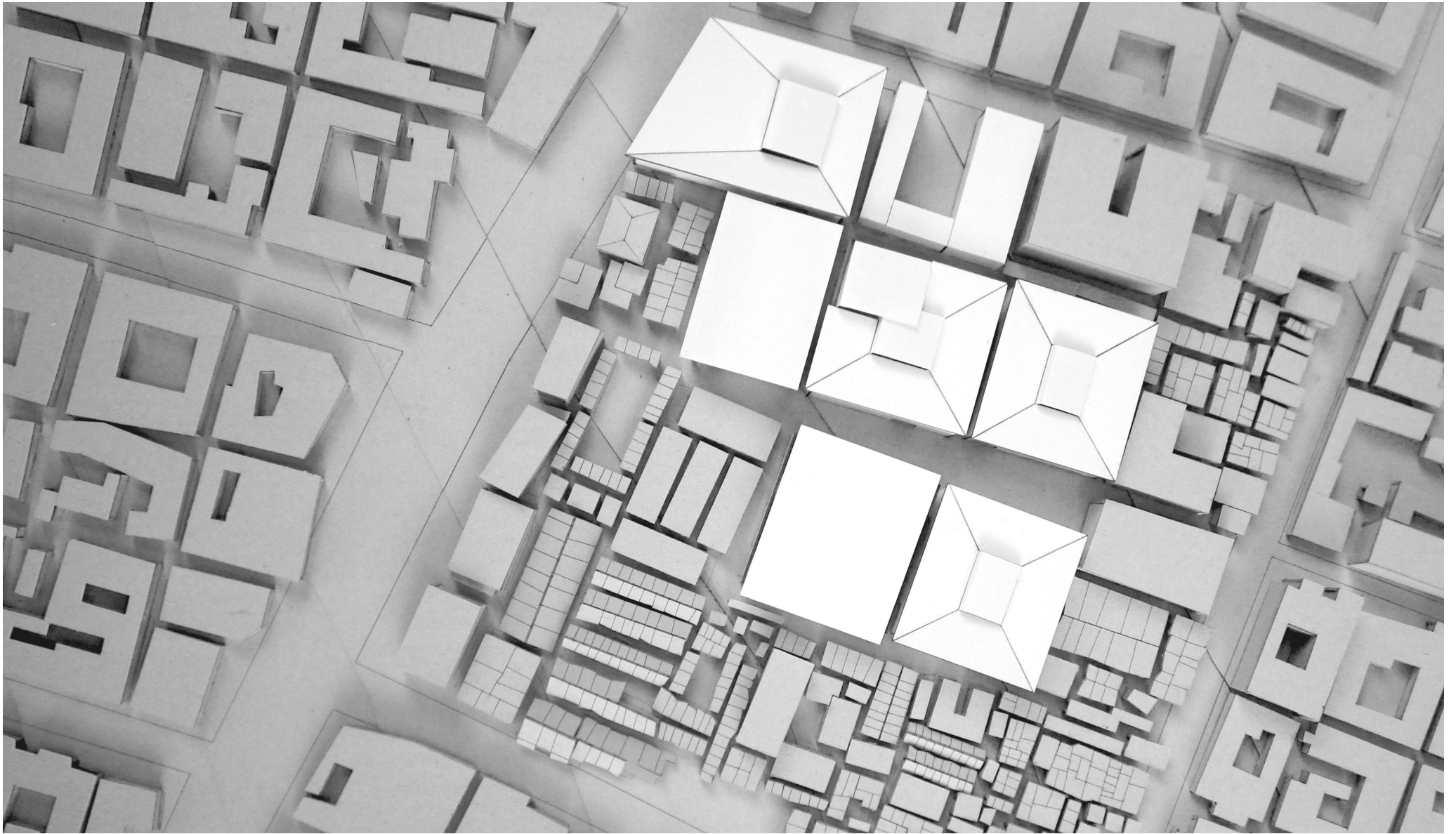
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## THE CANTEEN

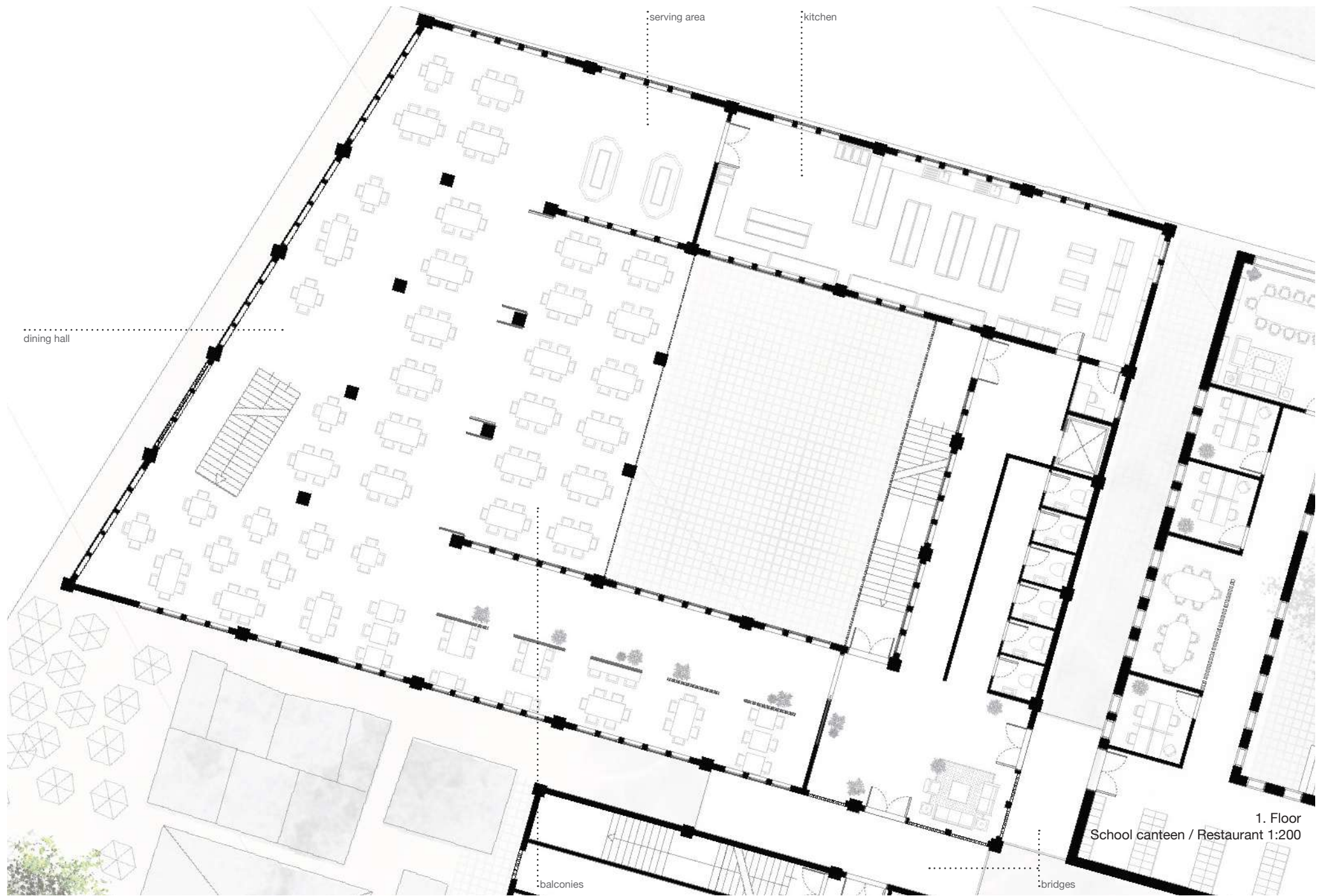
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The school canteen is located on the corner of Nima Highway and Hot Coffee Road. The building is designed to cater for 500 students during the day and to function as a large scale restaurant during evenings and weekends. The building has its own entrance from the ground floor as well as a service elevator and can therefore function as an individual unit. A large kitchen is located on the north edge of the first floor and restrooms to the east. The second floor is quite similar to the first floor, however here a teachers lounge replaces the kitchen downstairs. Main seating areas on both floors are located along Nima Highway where large windows provide a view of the busy street life outside. Wooden doors are placed within the main seating area, towards the courtyard in order to open up the canteen with extended balconies. The edge of the balconies facing the courtyard is closed off with timber panels with 7cm spacing, allowing sun and wind to gently access the building. Adjacent to the canteen's main entrance, a bridge connects to the sports-hall. A sliding door next to the main entrance allows for the ability to close off the canteen and disconnect the two buildings while still providing access to the sports-hall.

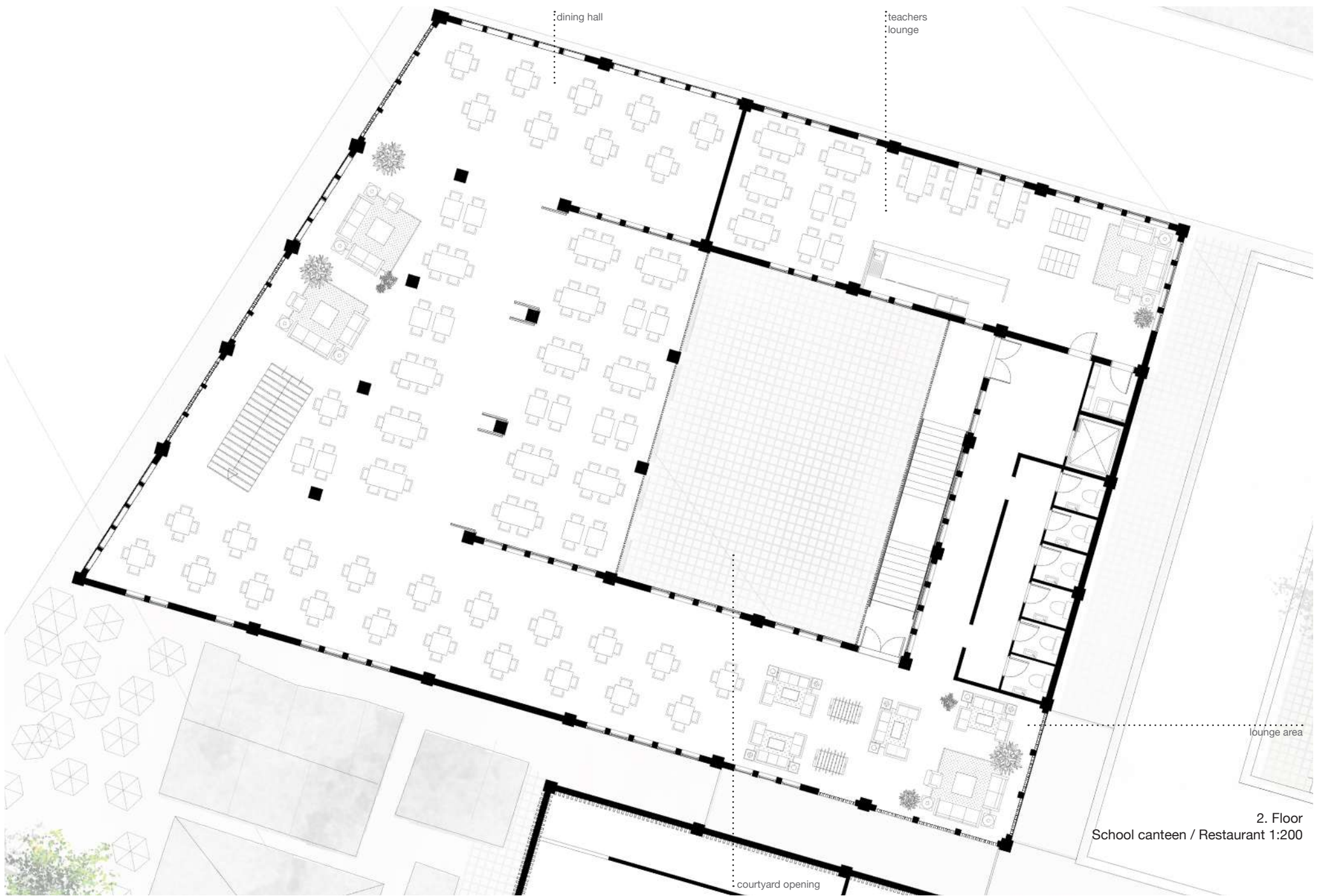




Model; view from above displaying different scales and typologies



1. Floor  
School canteen / Restaurant 1:200



dining hall

teachers lounge

lounge area

courtyard opening

2. Floor  
School canteen / Restaurant 1:200



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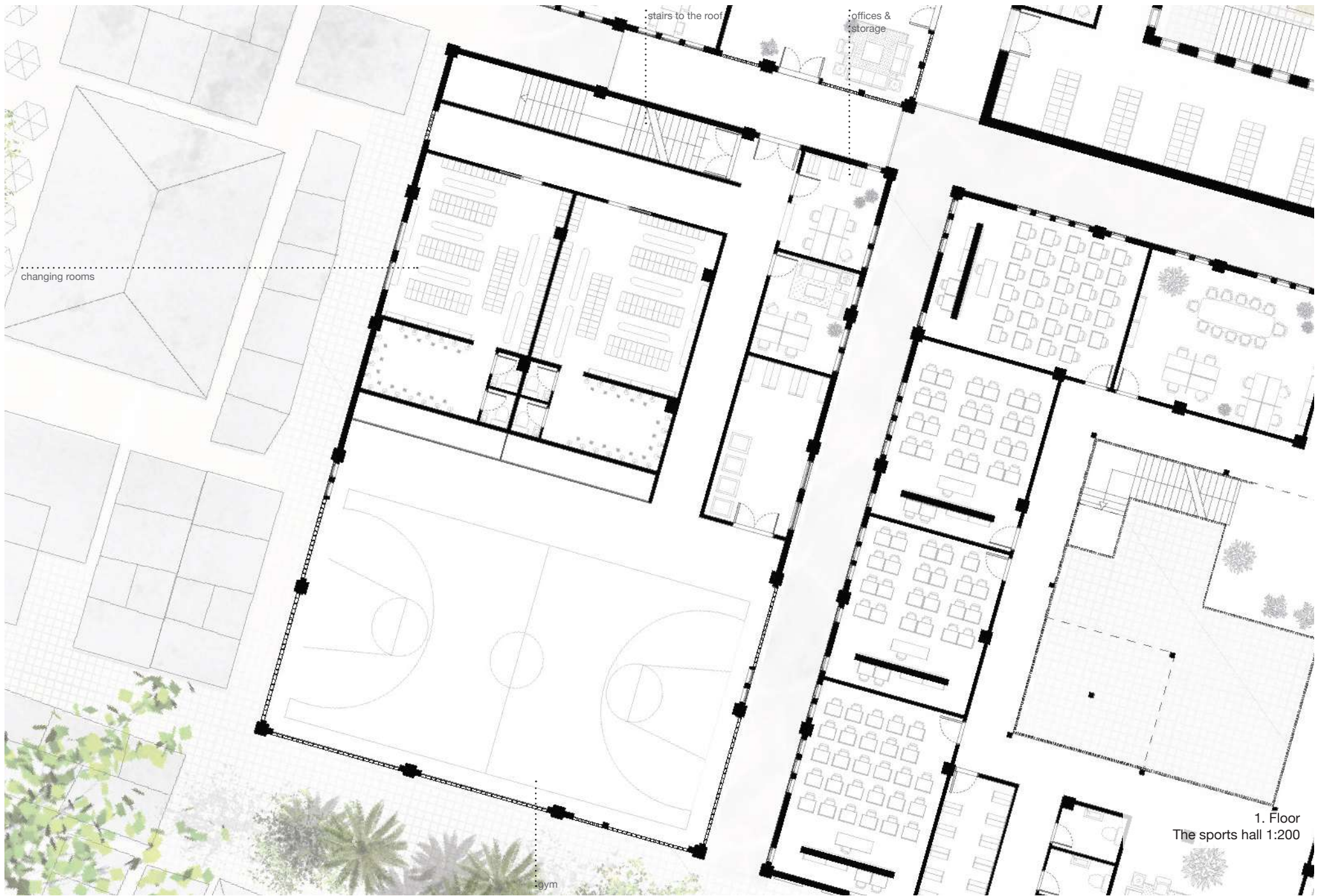
## THE SPORTS HALL

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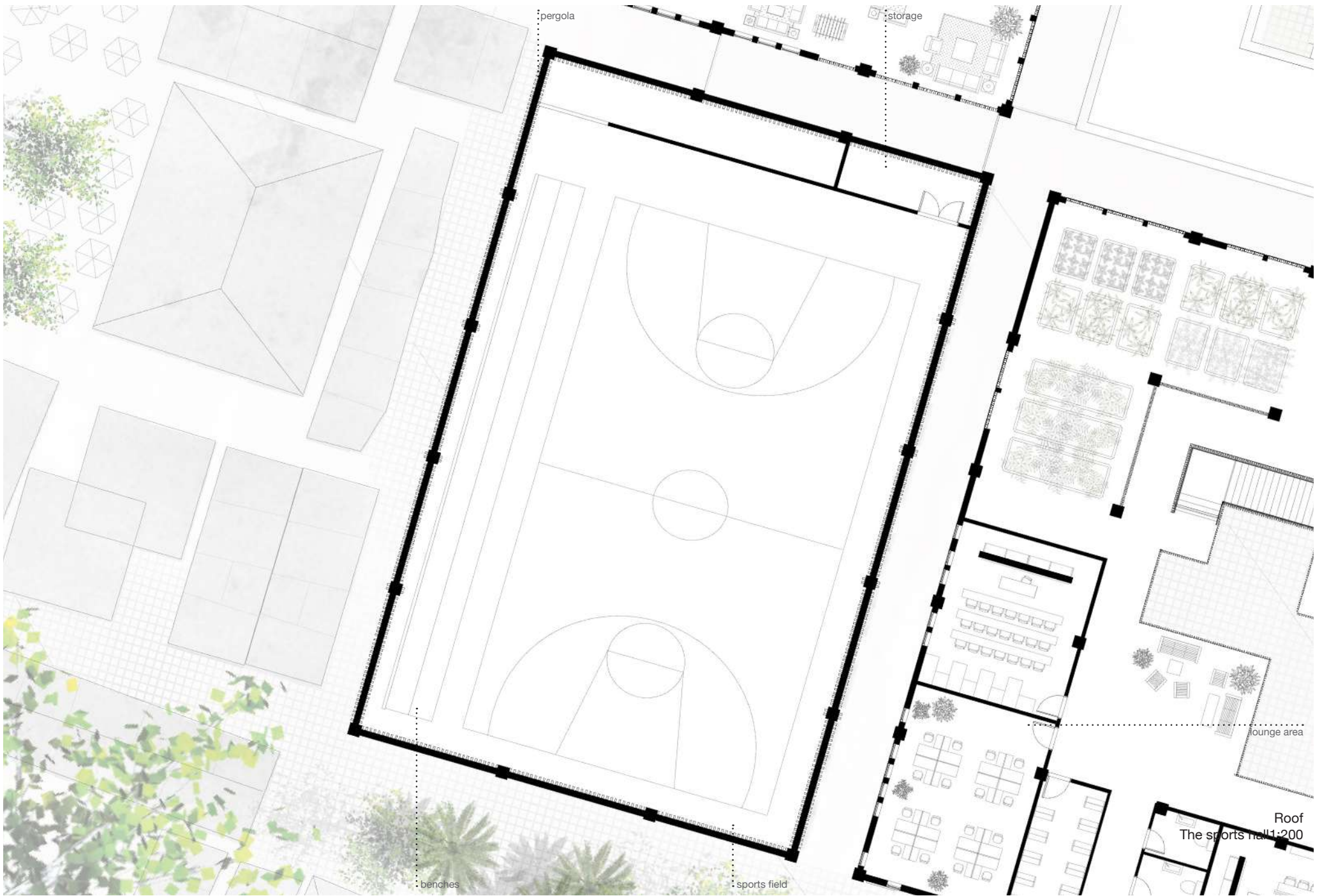
The school's sports hall is yet another building which can be used both privately by the students as well as publicly. The main idea is that the students occupy the building during school hours and that it can be rented out for events or for groups who want to practice sports during evenings and weekends. The sports hall is located south of the canteen and is the only building which does not have a core connection to the ground and therefore it shares an entrance with the canteen. The building in itself has only one floor which is the first one since it is raised up on columns and supporting walls and is therefore entirely open on the ground floor. The first floor consists of changing rooms, offices, storage space and a small gym. The roof however, which can be accessed from the first floor is partly overbuilt with timber in order to create a pergola like roof where local ivy can grow. With benches overlooking a small sports field the design makes the most of the otherwise unused rooftop. The pergola, along with the ivy creates an overcast, green outdoor space with good ventilation which can be enjoyed by students and the public.



Soil samples from Ghana; material and colour palette used for the design



1. Floor  
The sports hall 1:200



pergola

storage

benches

sports field

lounge area

Roof  
The sports hall 1:200




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## THE CLASSROOMS

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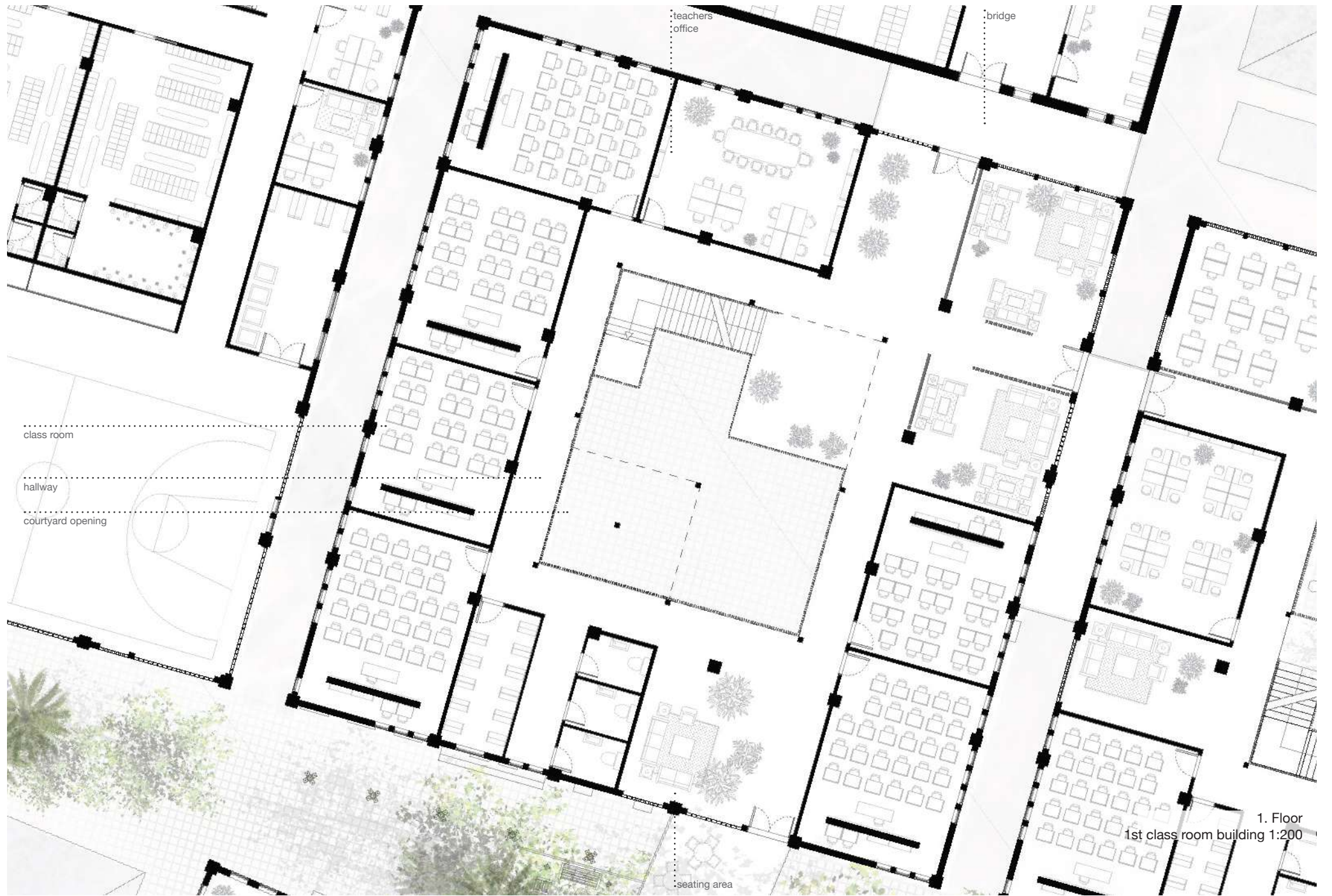
Three classroom buildings rest in the centre of the site away from the busy streets. They all allude to the same design principle where much like the compound buildings of Nima, the rooms are arranged around a central courtyard. An external hallway facing the courtyard connects the classrooms and provides a passage to other floors and buildings. The courtyard is partly closed off with timber panels along the hallway and over the central courtyard. The timber facade or the “pergola” provides an interesting connection between the school and the market but moreover, it is used to ventilate the building. Additionally the pergola is used to implement greenery within Nima where the lack of vegetation is astounding. By doing so the design creates a soothing and calming school environment with enhanced air quality. Although alluding to the same design principle, each building has its unique play on the courtyard. The first one includes balconies which break into the central space and allow for a more direct connection with the market where as the second one connects to the ground floor by creating an enclosed courtyard away from it. Contradicting the other two buildings, the third one covers the courtyard with an enclosed bridge which in return creates various outdoor seating areas for the students.





A view from the school

An inside view from the first floor of the junior high school. The view displays the pergola which both works as a semi open facade for the school and a semi open roof for the market on the ground floor. The view also displays connection between the floors of the school and the corridors which connect the classrooms. On the left a connection via a bridge to another school building can be seen through a door in the background.



class room  
hallway  
courtyard opening

teachers office  
bridge

seating area

1. Floor  
1st class room building 1:200



outdoor garden

nature laboratories

science laboratories

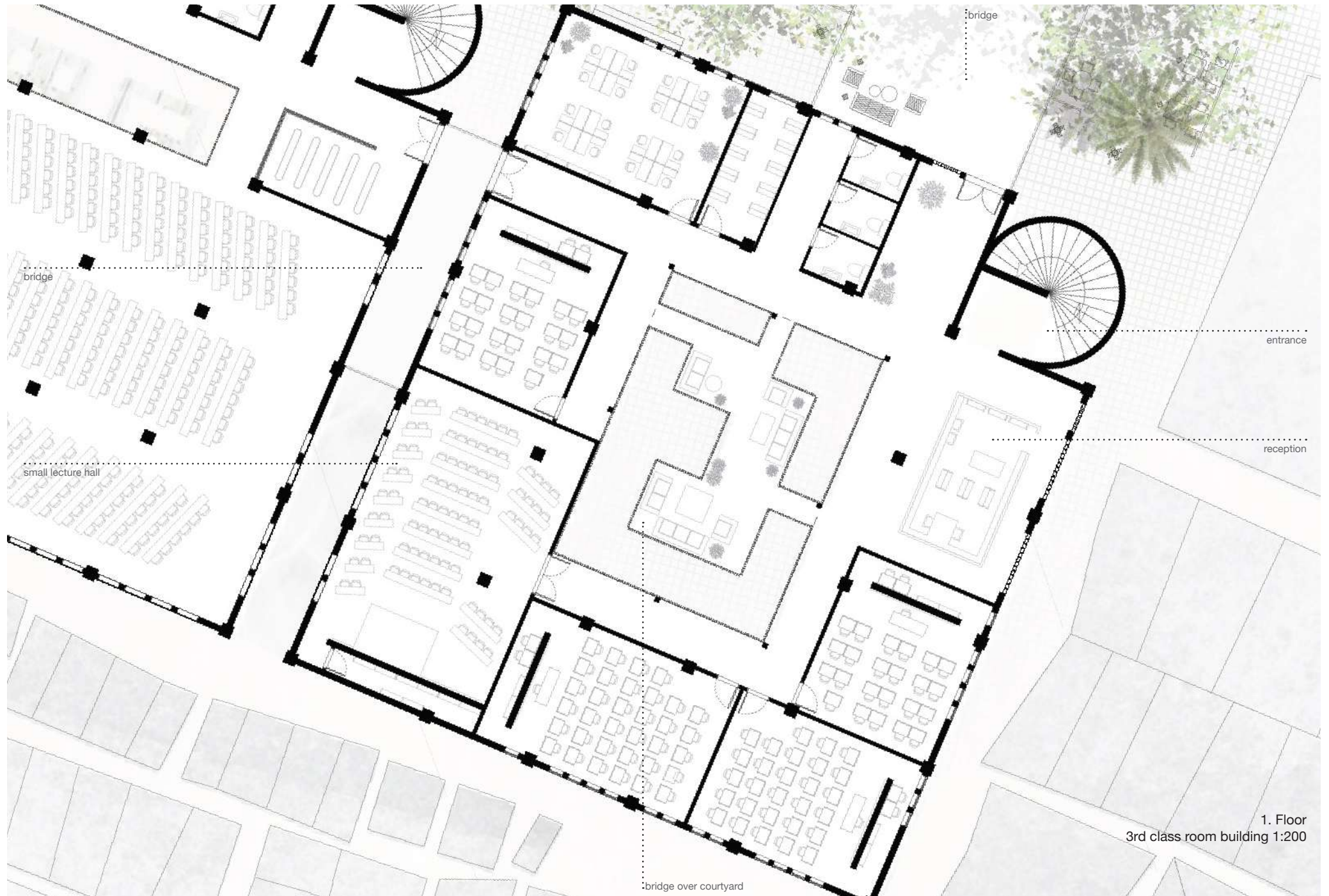
2. Floor  
1st class room building 1:200



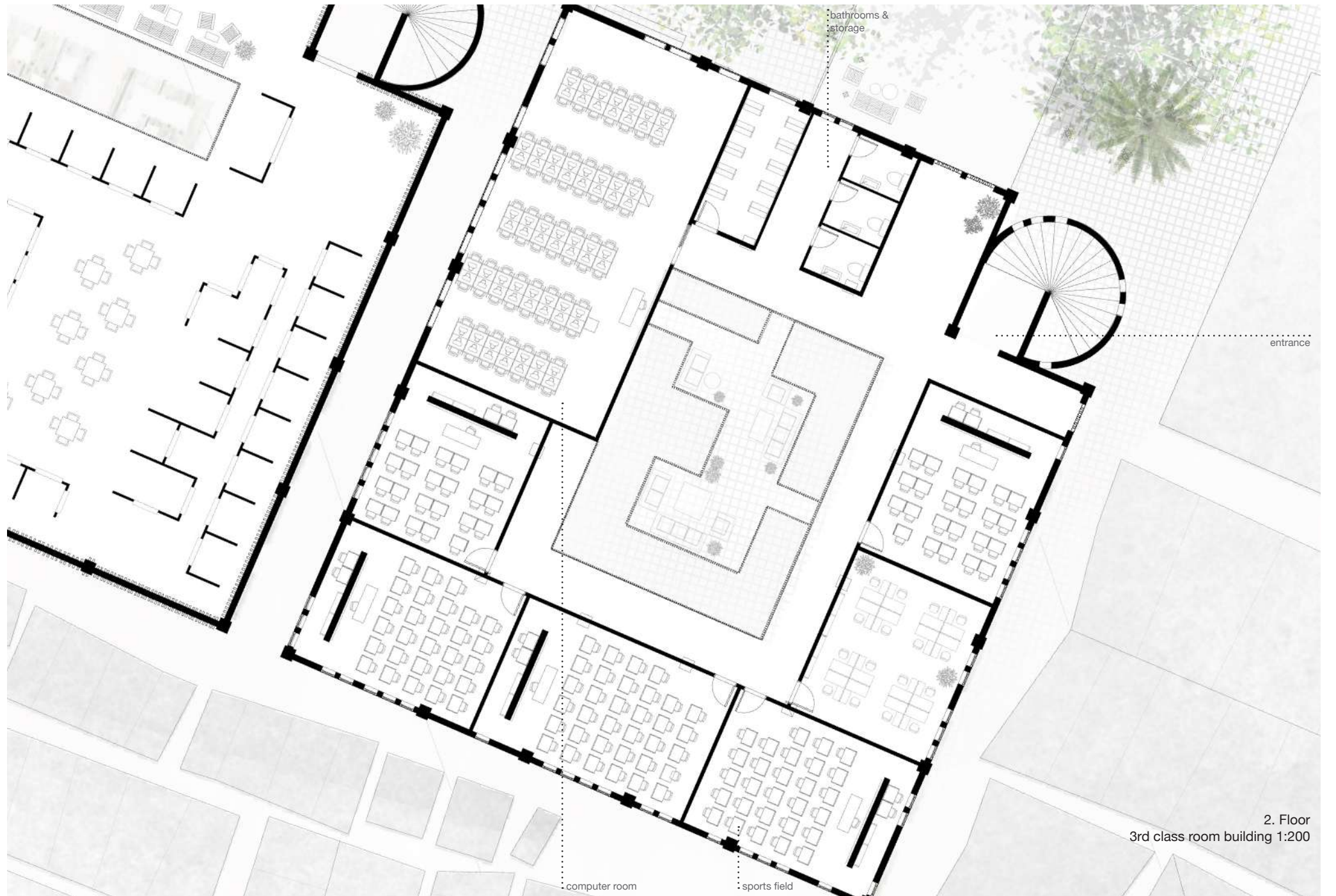
1. Floor  
2nd class room building 1:200



2. Floor  
2nd class room building 1:200



1. Floor  
3rd class room building 1:200



2. Floor  
3rd class room building 1:200



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## THE LECTURE HALL

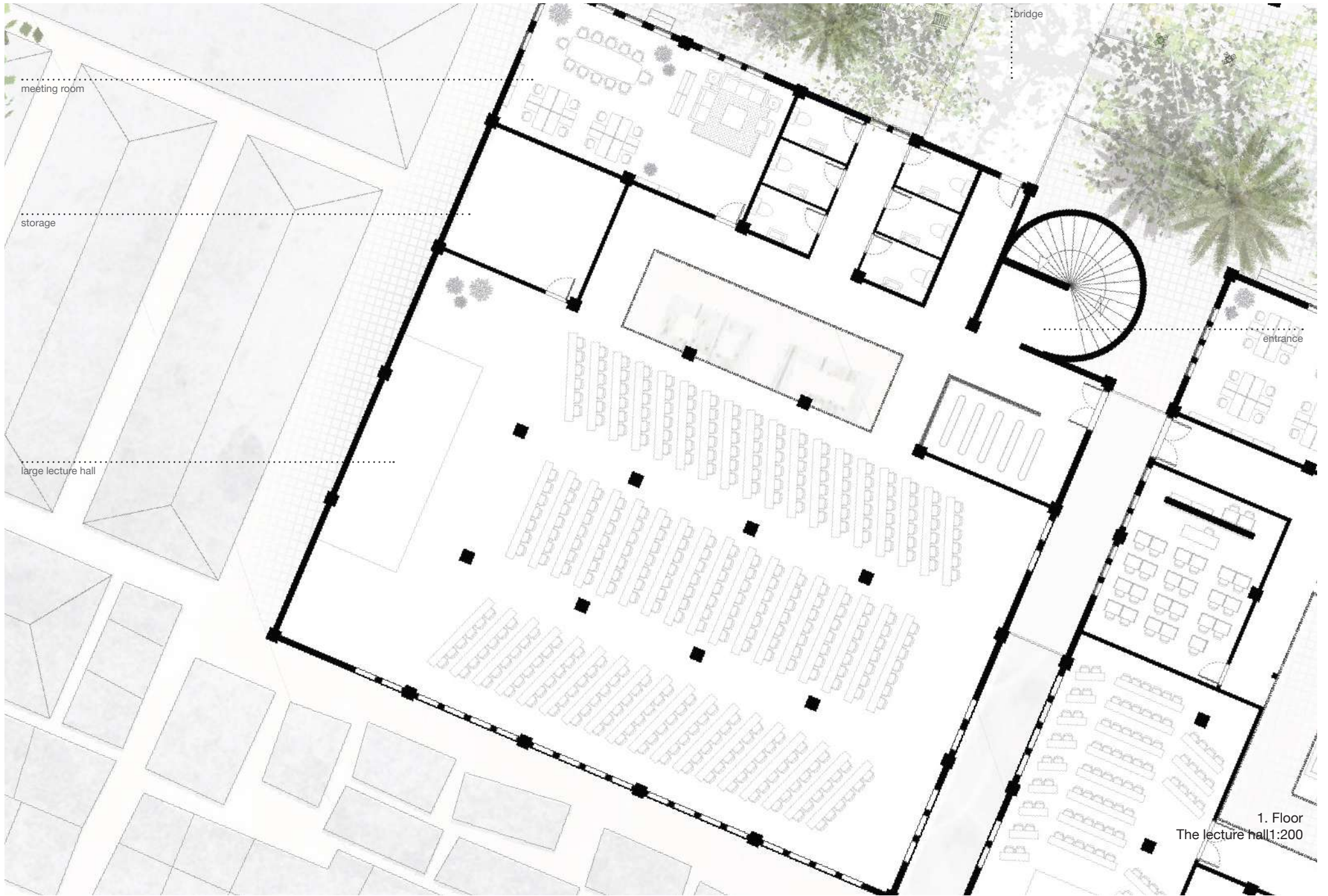
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The lecture hall is located on the first floor of the building in the south-west corner of the site. Answering to a need of a multifunctional inside gathering space within Nima, the school's lecture hall provides one. The hall accommodates seating for 350 people and up to 500 people standing. It can be used for large lectures, conferences, community meetings, name ceremonies and weddings or even as a space of prayer for both Christians and Muslims in Nima. In order to create a larger inside space like the lecture hall the design took a new spin on the courtyard by covering nearly all of it with a concrete floor, leaving only a narrow opening as a symbolic gesture. The opening does not only allow the building to breath but is used to divide up the space, separating the lecture hall from the offices and storage on the other side. Here, similarly to the sports hall, the design makes use of the otherwise unused rooftop by building over it with a pergola creating a quality outdoor public space, a rare find within Nima. The market is extended to the rooftop, creating an excluded area where Ghanaian handcrafted design can be made and sold. All of the buildings excluding the library are addressed in the same matter when it comes to materiality which is explained along with construction principles in the following chapter.





Local materials and textures incorporated in the design



meeting room

storage

large lecture hall

bridge

entrance

1. Floor  
The lecture hall 1:200



temporary market stalls

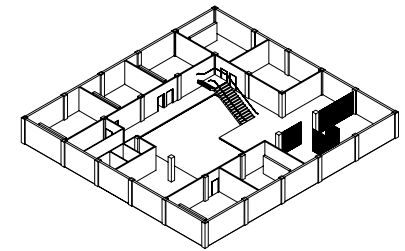
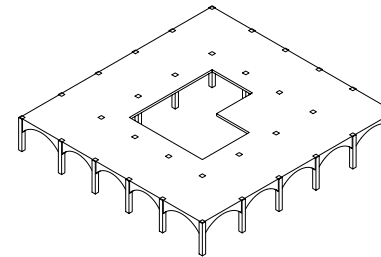
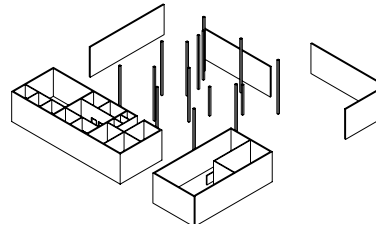
roof terrace

entrance

Roof  
The lecture-hall 1:200

# MATERIALS & CONSTRUCTION

All of the buildings excluding the library are addressed in the same matter when it comes to materials and construction. A diagram of an exploded geometry of the first classroom building is used to explain different elements of the design along with their function and texture. The buildings are raised up on reinforced concrete columns and supporting earth brick walls. Most exterior and interior walls are made with earth bricks, floors are constructed with reinforced concrete and doors and pergolas are made with local wood. The design celebrates local affordable materials by using it carefully along with concrete to reach desired results. The raw, untouched materiality of the buildings tries to promote the unmasked usage of the local earth by using it within a modern design.



**Cores, supporting walls & columns**

The ground floor of the construction is mostly open. The building is constructed with reinforced earth brick columns and arches on the ground floor and therefore it is mostly open. However to stabilise and secure the building, supporting walls are constructed between the 500X500 mm wide columns. Some of the walls create enclosures which function as cores where the top floors can be reached. Black steel pillars support the balconies of 2nd and 3rd floor.



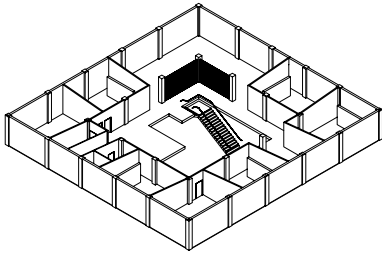
**Arches, columns & walls - Earth blocks**

The main building material is cement-stabilised earth blocks. The earth blocks are made with local Ghanaian clay which is available in abundance in all regions of the country. The clay is the traditional local material and has excellent thermal qualities. The blocks can be locally made and the building can be easily maintained because of the clay's availability and affordability.



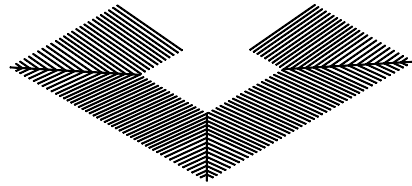
**Floors - Concrete**

All floors are made with reinforced concrete. The concrete floors bind the walls together and relief the tension forces of the earth brick walls.



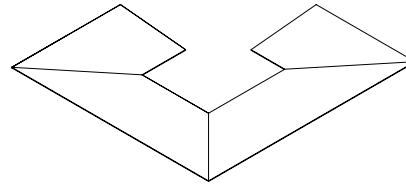
**Free standing interior walls in classrooms -  
Rammed earth**

A room dividing wall is in each class room behind the teacher's desk. The wall creates storage space behind it as well as a more private learning space for selected students. The wall divides the room without compromising the rooms spatial diameters. The wall is made with local clay, using rammed earth construction to introduce flexibility of usage of the clay.



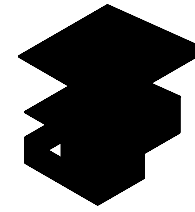
**Roof construction - Acacia**

A visible timber construction supports the roof. The roof construction is made with Acacia timber as well as the pergola to achieve cohesiveness through only few selected materials which complement each other rather than compete. The Acacia timber is relatively strong and widely used for its constructural properties.



**Roof - Fibre cement**

Fibre cement is an affordable and available roofing material which is both strong and durable therefore it is used for the roof in this design. Compared to corrugated steel roof sheets, the fibre cement has excellent thermal and insulation properties.

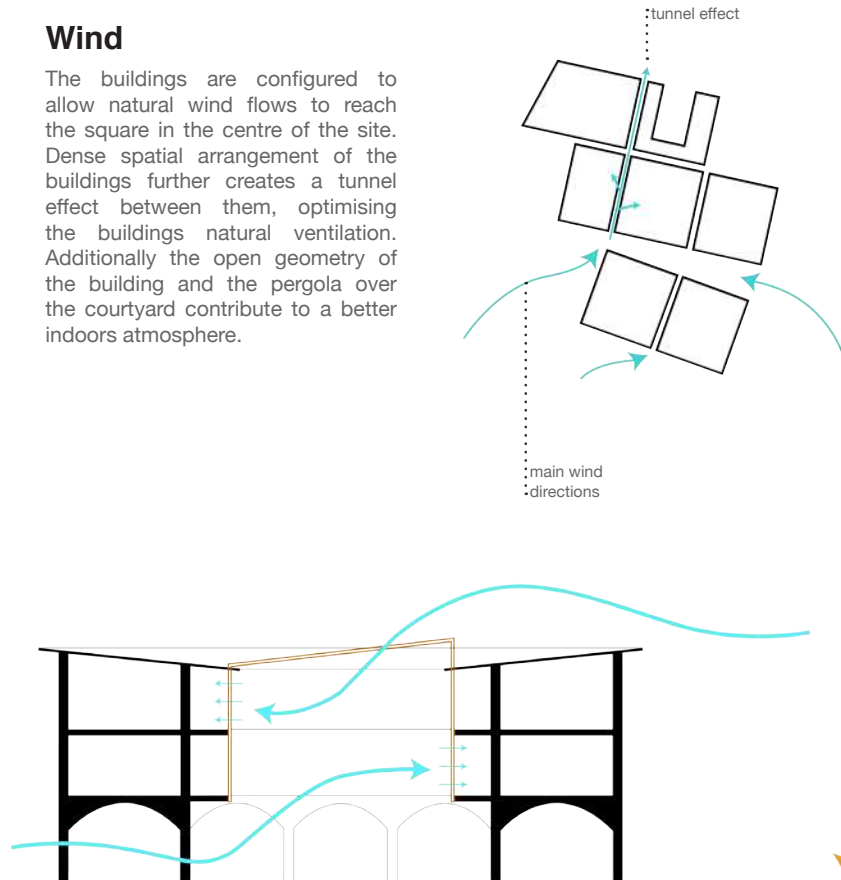


**Pergola - Acacia**

The pergola is an Acacia timber construction which functions as a semi open facade for the school and as a semi open roof for the market on the ground floor. The pergola casts shade to the ground as well as it allows the building to be ventilated naturally. Acacia timber is abundant local material in Ghana and is both affordable and has high moisture durability.

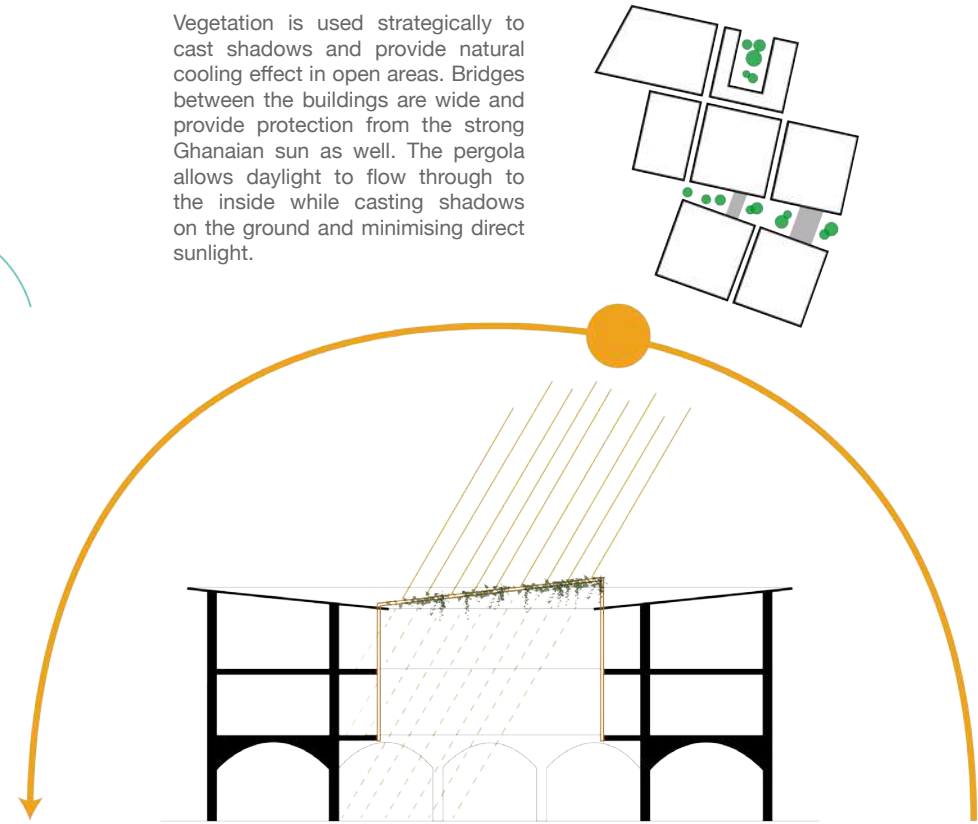
## Wind

The buildings are configured to allow natural wind flows to reach the square in the centre of the site. Dense spatial arrangement of the buildings further creates a tunnel effect between them, optimising the buildings natural ventilation. Additionally the open geometry of the building and the pergola over the courtyard contribute to a better indoors atmosphere.



## Sun

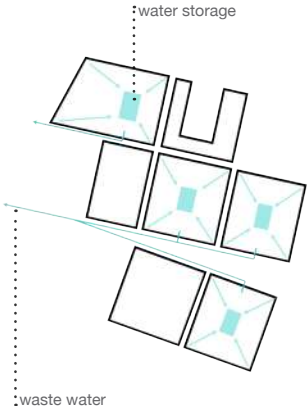
Vegetation is used strategically to cast shadows and provide natural cooling effect in open areas. Bridges between the buildings are wide and provide protection from the strong Ghanaian sun as well. The pergola allows daylight to flow through to the inside while casting shadows on the ground and minimising direct sunlight.



# CLIMATE STRATEGIES

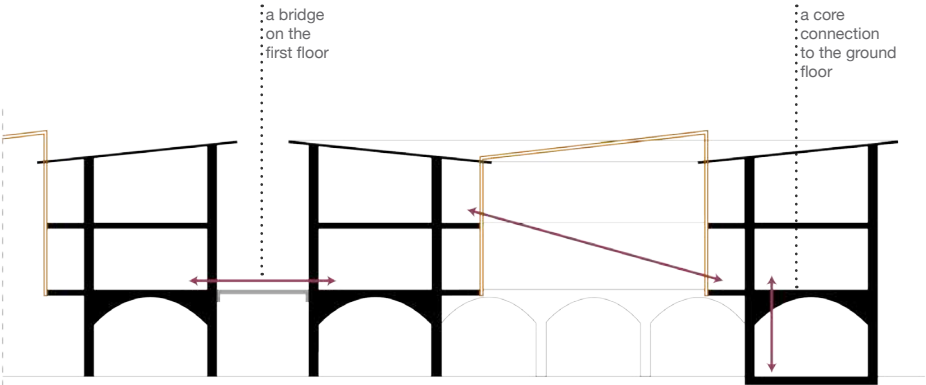
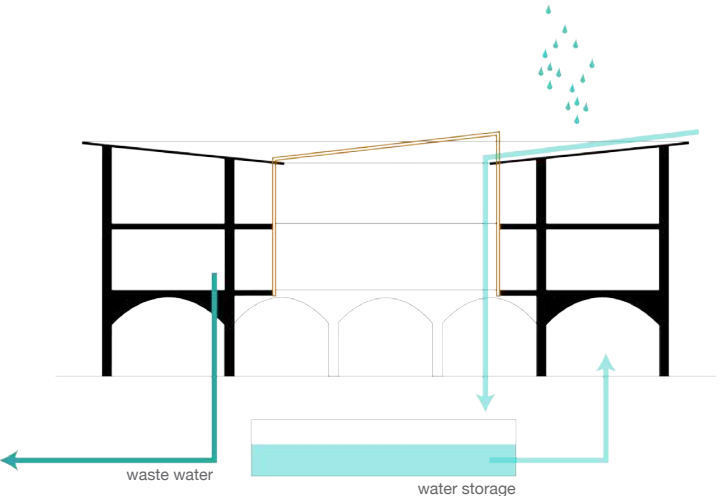
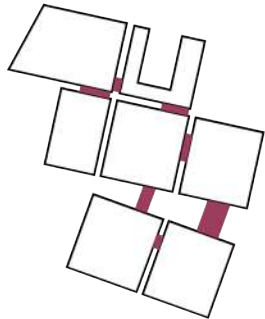
## Rain / Water

Rain is collected from the rooftops, then stored in collection tanks under the courtyards until it is filtered and reused. Wastewater is led from the buildings, under the main square and from there in to the formal drainage along Nima Highway.



## Mobility

Access to the buildings can be gained from their cores, where they connect to the ground. Bridges provide a connection between the buildings on the first floor where as access to the second floor is provided within each courtyard.



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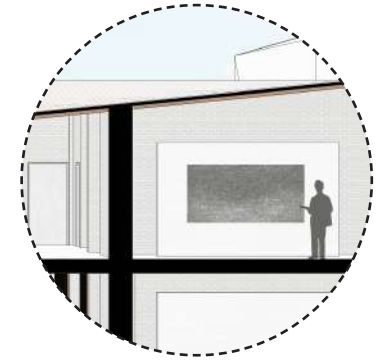
## Activated roofs

Outdoor public spaces are scarce within Nima due to its density. Therefore the design explored the possibilities of activating otherwise unused spaces like rooftops. Partly overbuilt with a timber pergola and ivy growing all over it the roofs become a sacred ventilated outdoors space with limited direct sunlight.



## Classrooms

The classrooms are on average 45 square meters and can accommodate up to 30 students each. Each classroom has a freestanding wall behind the teachers desk which creates a small division within the room. The space behind the wall can both be used as a storage as well as a breakout space for two students.

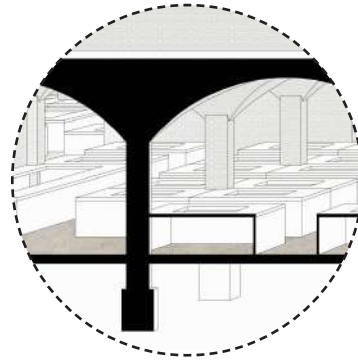




# DESIGN ELEMENTS

## Overbuilt market

The design respects the market on site and keeps it intact by building the school directly above it. Therefore the school is mostly raised up on columns. In return the school in itself creates a safe and permanent roof for the market on the ground floor. Space between the columns is dived up for market vendors, while a access is secured throughout the area.



## Courtyards

Most of the buildings are built around a central opening; a symbolic gesture to the courtyard so commonly known within Nima. The opening is partly overbuilt with a timber pergola which allows air to flow into the building while casting a shadow to the ground. The pergola is intended to enhance thermal comfort both inside and on the ground floor.



## REFLECTION

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The main objective of this thesis was to design a sustainable school in Nima, a deprived and densely populated neighbourhood in Accra, Ghana based on a thorough investigation. In my opinion, the essence of the objective lies within these two questions; first, how to approach the design of a school in an economically vulnerable environment and secondly, can architecture somehow help to heal an underserved community such as Nima?

To be able to answer these questions I travelled to Ghana and divided my study trip into two phases. It started with a visit to Abetenim, a village in rural Ghana where I studied how clay is used and incorporated into modern design and concluded with a visit to Nima, where I emerged myself with the neighbourhood and tried to absorb as much as I could of their culture, needs and hopes.

Through my research and field observations I was driven forward with curiosity. I never stopped asking questions. I carefully threaded for clues within the environment and from the locals and most importantly, I didn't go into the research phase of this project expecting certain results.

I approached Abetenim and Nima with an open mind, listening to the people and to the stories waiting to be heard. Through numerous encounters, both planned and unplanned I learnt that Nima is a resourceful neighbourhood filled with beautiful and welcoming people. It was easy to understand that even though people were both joyful and generous they were actively seeking for financial aid to improve their livelihoods. They saw hope in me as a foreigner, since foreign capital has been their main source of financial opportunities as the neighbourhood is severely overlooked and neglected by their own government.

After listening to the people and their concerns and wishes for the community, my ambition was to make the design both affordable and flexible and most of all it needed to give back to the community.

First I approached the already occupied market-land and applied a more financially pragmatic way of using it by densifying without compromising the already existing character and function in place. I did so by raising the school above the local market and simultaneously providing

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it with a safe and permanent roof. Next I developed a program for the school which introduces flexible private and public usage and allows the school to create revenue to partly sustain itself. Then I allocated different programs within various buildings in order for them to be built independently. Therefore the school can be built in phases according to budget. And lastly I embraced local materiality by implementing clay as the main design element of the building, ambitiously trying to restore faith and pride in the clay as the vernacular, local and affordable material it is.

I started this thesis project with an open mind and the goal of designing a school in Nima. I allowed the concept to expand and concluded with what I believe to be a site specific solution. This project was a genuine attempt to create an opportunity for Nima by implanting a seed in an underserved community and help it grow towards prosperity.



# ACKNOWLEDGEMENTS

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I would like to express my deepest gratitude to everyone who guided me and supported me throughout this process and allowed it to reach its full potential. I would like to thank; My tutor Johnny Åstrand for his incredible inspiration, guidance and motivation. Nka foundation and everyone I met at Abetenim Arts Village for welcoming me, answering my research questions and making my visit a treasured memory. Ghana Nima Tours and Anani International Memorial school for their incredible unsuspected support and guidance during my field research. Steinunn Eik for welcoming me to her home in Accra, sharing her knowledge and helping me experience the city through the eyes of an architect. Sylvia, Fiona, Katrín and Arnold for sharing our summer of 2016 together at LTH and supporting each other. My wonderful mother for proofreading my thesis. And lastly my amazing family, my boyfriend and all of my friends for your endless interest, questions, suggestions and mental support throughout this process.



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\*\*All images are from my own personal collection





