

# nyumbani

Village Concept Cards

Art Center College of Design 2004

Kenya Village Project



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Topography,  
Population

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... **A**T THE CORNERSTONE OF ART CENTER'S EDUCATIONAL PHILOSOPHY is the conviction that designers and artists have a seminal role in shaping every aspect of the world around us. Since its inception 75 years ago, the College has stressed the need for students and faculty to think deeply about the issues and realities addressed in their work.

The Nyumbani Village: Kenya Studio represents a new level of engagement at Art Center today. Through designmatters @ Art Center, a College-wide initiative exploring social and humanitarian applications of design, we have joined a unique partnership that is creating a series of sustainable communities in Africa for elders and orphans left behind in the AIDS pandemic. The Kenya Studio documented herein is the first result of Art Center's involvement in a coalition of United Nations and Kenyan Government agencies, local Non-Governmental Organizations, and private sector contributors that together, will help confront this enormous challenge.

Conceived by Peter Di Sabatino and Annie Chu of Art Center's Environmental Design department, the Kenya Studio was a rigorous laboratory closely examining the complex needs of the adults and children who will reside in the prototype Nyumbani -- "home" in Swahili -- Village in Kenya. The Studio benefited immeasurably from the powerful synergy created by the teams of students that Peter and Annie assembled, both at the graduate and undergraduate level, in a wide range of design disciplines: Environmental Design, Graphic Design, Film, Graduate Media Design, Product Design, Graduate Industrial Design, and Fine Art. Demonstrating superior communication skills and problem-solving strategies, these students produced extraordinary concepts and proposals that expand the standard definitions of "community." We applaud their engagement and creativity.

We also thank the distinguished residents of the Kenyan community in Los Angeles who provided invaluable first-hand perspectives, as well as other scholars, architects and urban planners and colleagues who participated in reviews of the Studio at several key junctures. Their contributions were essential to the in-depth research accomplished by the Studio.

With the first Nyumbani Village now scheduled to break ground on the outskirts of Nairobi this year, Art Center is honored to have provided early input toward this critical endeavor. We look forward to the next stages in our participation, and hope that The Nyumbani Village: Kenya Studio will also inspire others in design education and practice to become involved in work that can truly make a difference.

... **Richard Koshalek,**  
PRESIDENT, Art Center College of Design

... **Mariana Amatullo,**  
PROGRAM DIRECTOR, International Initiatives  
Co-Director, designmatters @ Art Center



... **T** HIS FOLIO CONTAINS INITIAL IDEAS, ISSUES AND APPROACHES FOR the Nyumbani Village in Kenya. Research and design has been applied to a hypothetical site of 1,000 acres in the region surrounding Nairobi. Programmatically the village is for a 1,000 orphans and elderly in need of a home due to the AIDS pandemic. This body of work articulates some of the preliminary research and design done by students at Art Center College of Design over a fourteen-week period. Students from Environmental Design, Fine Arts, Graphic Design, Media Design, Industrial/Product Design, and Film collaborated on this project. This publication and accompanying short documentary were also designed and produced by the students during this semester. While much work from the students is contained within these cards, it is very important to note that this is preliminary work; it is, in fact, “pre-design” work. Much has been examined and uncovered in the process, and many things have been articulated via design, but it must be stressed that this work is being offered as informative, suggestive and provocative. Without undermining the seriousness and creativity of the research and design embedded here, this work is best viewed as speculative expressions of intentions, ideas and needs that will be reinterpreted at a later date. This is not intended to be a final design proposal.

It is important to include design processes and issues during preliminary discussions and decisions concerning project formation and implementation. Through research and design, programmatic ideas can be examined, tested and possibly created. Design and other processes are critical; there must be a methodology, a process, of checking, influencing, informing, questioning and provoking. Beyond program and site, this process may influence general thoughts, possible preconceptions and emergent ideas. This is particularly relevant for the Nyumbani Village project and its complex prototypical nature. Design and decisions are reiterative and cumulative. Following additional discussions with key partners and others, all of this work will be done again with an actual site, local community, and local professionals.

The work presented here explores ideas, issues and approaches. Nature, community and weave became three key anchors and were examined at large, medium and small scales and through various typologies. The students worked on overall village planning and design, on the graphic identity and environmental graphic system for the village, on housing units and districts, on sacred spaces and places, and on land form, landscape and other systems inclusive of lighting, solar power, signage, seating and irrigation/drainage/water reclamation.

Nature is a dominant component in the village design. It is one of the things that distinguishes the village from a town and city, and is proposed here to provide an overarching character for the Nyumbani Village. The predominance of nature, natural systems, and the interface with the built components of the village is an important element of the conception and design for the village, and extends to responsible and ecological design through appropriate systems, technologies, materials and planning.

Another key element is community, with decisions in design establishing and/or enhancing these opportunities. Ideas of community merge with the desire to reconnect; that reconnection occurs to both the land and to new family/clan structure. The search for what is held in common, for unity, manifests at the family,



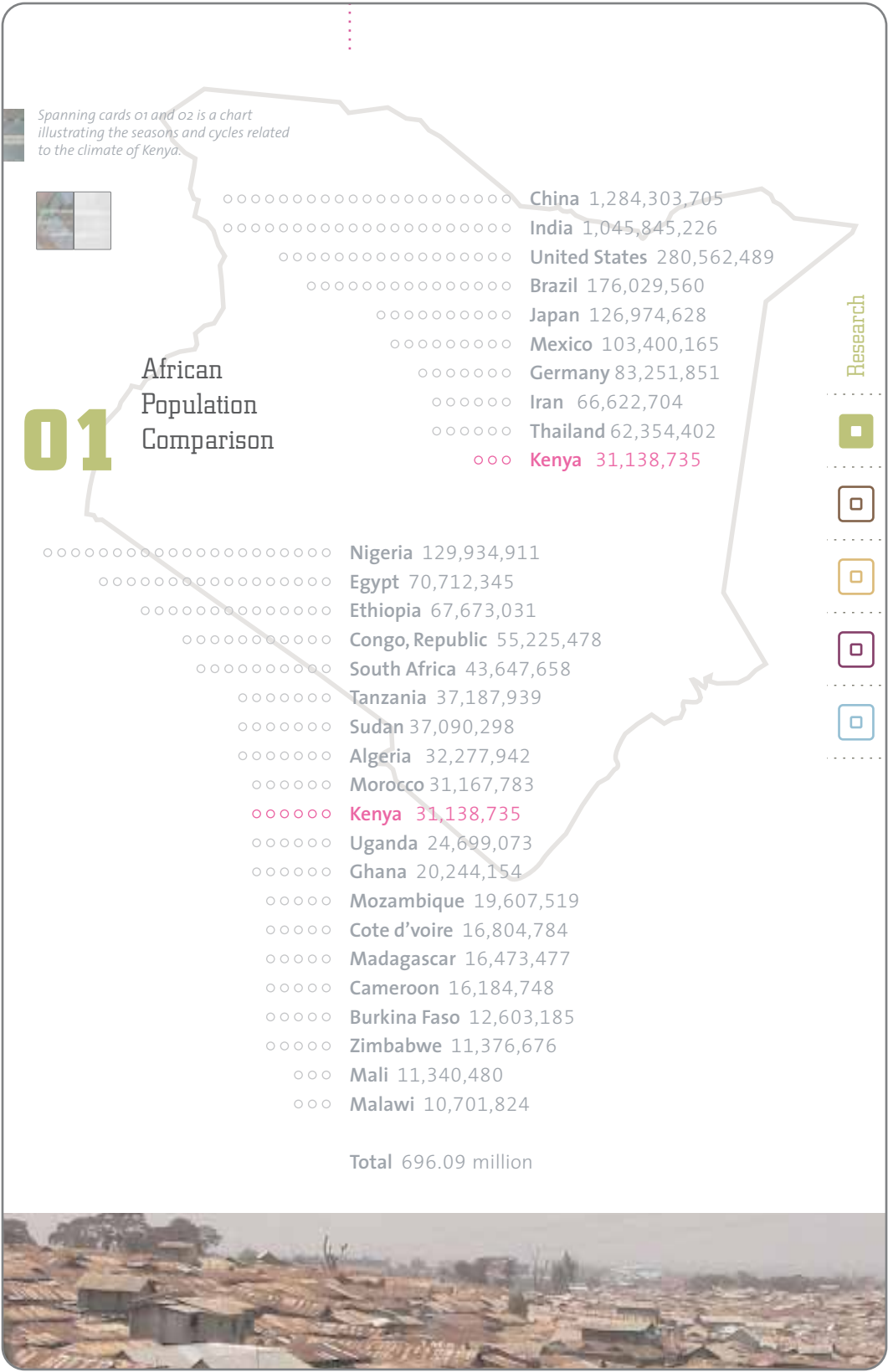
and the existing local community levels. To further reinforce the desire for linkage to local community and the increased acceptance of the new family structure and conception, the design proposes the direct inclusion of the local population via traditional, nuclear, and intact families. This calls for a variety of housing types and clusters, and presents a more viable, vibrant and inclusive village environment, as well as a broader, integrated sense of community.

The concept and act of weaving has influenced much of the work as well. It speaks towards the tradition of weaving in Kenya, continental Africa and beyond. It is both a local and universal act. For this work, it has both formal and metaphoric aspects. The village physically and conceptually weaves nature with natural and built systems into village and family structure. There is a weave of spaces, places, people, systems and programmatic components. This is articulated, for example, through the design of a mixing of housing types and programmatic elements, and through the merging of natural and human made components.

A fundamental approach of the village planning and design acknowledges the immediacy of the needs in response to the AIDS pandemic that has left so many orphans and elderly vulnerable. However, contained within the work of the students is the view towards the future as well. While attending to the necessities of the short-term, the village must also look at long-term developments in Kenya and beyond. The design of the village must inherently account for growth and change. Further, one may reasonably assume that HIV/AIDS will eventually become a livable disease, if not eradicated. Therefore, we are looking at the evolutionary aspects of the village and towards future generations as well. Ultimately we are designing a village that responds to immediate necessities with a particular character, while also considering the future possibilities and the general nature of village design. Similarly there is both a particular and general nature towards the village and its inhabitants. This village becomes a new and true nyumbani for its residents, and for its new clan. It is about new families, new clans and a new nyumbani. "Orphans" are in fact children, and the "elderly" are elders. A new family conception and structure becomes normative, and things evolve.

Acknowledgment and appreciation must be extended to many. This body of work could not have been achieved without the support, actions and encouragement of the other lead partners, with particular recognition to Father D'Agostino, Nyumbani Village International, the governments of Kenya and the United States, various United Nations agencies and NGO's, and the team at the Noel Group. At Art Center College of Design, the administration, designmatters, Annie Chu, and, of course, the students joined in the efforts embodied here. Many people shared their expertise and perspectives with the studio; particular appreciation is extended to Njubi Nesbitt, the Global Fellow at UCLA's International Institute. For all of us, there is a strong sense of anticipation of the next steps in this significant project.

**Peter Di Sabatino,**  
DEPARTMENT CHAIR, Environmental Design  
Art Center College of Design







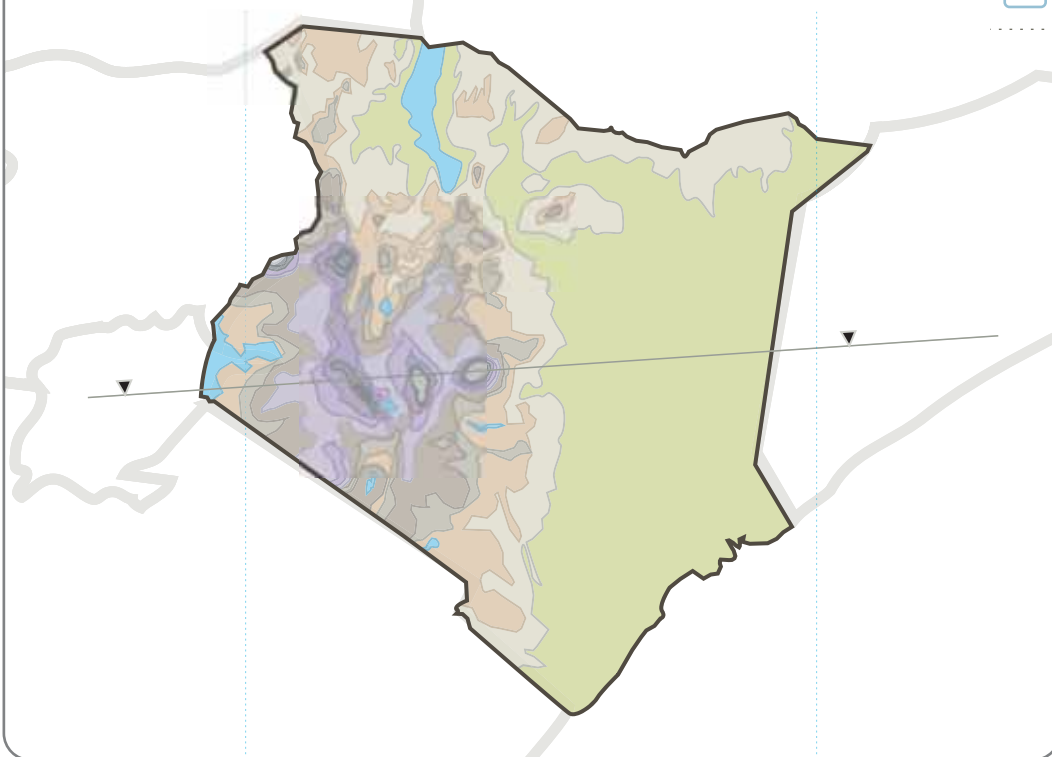
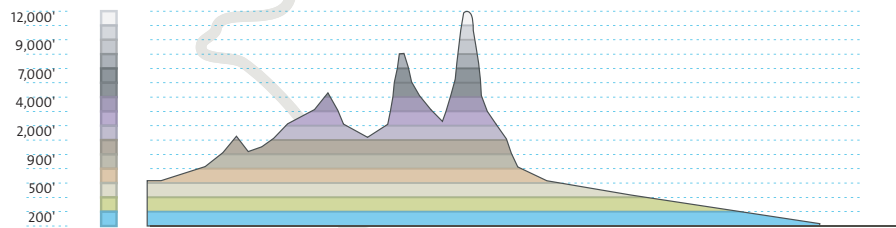
Spanning cards 01 and 02 is a chart illustrating the seasons and cycles related to the climate of Kenya.



02

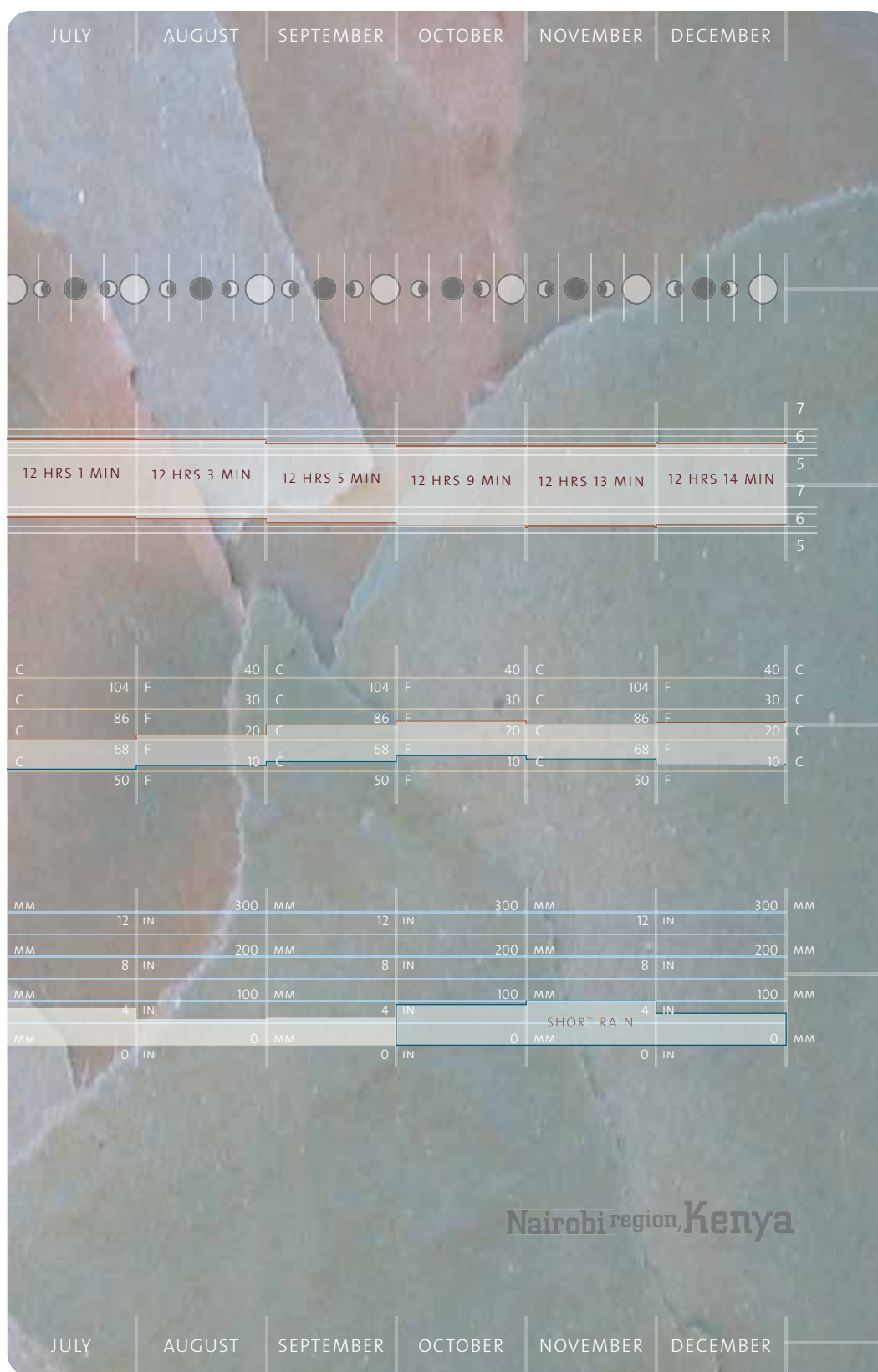
## Kenyan Cross Section/ Topography

Typically when one thinks of Africa, immediately images of vast plains inhabited by giraffes, elephants and zebras come to mind. Kenya does not follow that stereotype. Below is a cross section of the highest point in Kenya. While you will notice the vast plain on the western side, there are considerable elevation changes throughout the rest of the country.



Research





These maps show the diverse languages in Kenya. While there are 51 languages, these can be categorized into three families.

## 03 Kenyan Languages

### OFFICIAL LANGUAGE: ENGLISH

1 BONI
2 BORANA
3 BUKUSU
4 BURJI
5 CHONYI
6 CHUKA
7 DAASANACH
8 DAHALO
9 DIGO
10 DURUMA
11 EL MOLO
12 EMBU
13 ENDO
14 GARREH-AJURAN
15 GIKUYU
16 GIRYAMA
17 GUSHII
18 IDAKHO-ISUKHA-TIRIKI
19 KALENJIN
20 KAMBA
21 KURIA
22 LOGOOLI
23 LOWER POKOMO
24 LUYIA
25 LUO
26 MAASAI

### NATIONAL LANGUAGE: KISWAHILI

27 MALAKOTE
28 MERU
29 MWIMBI-MUTHAMBI
30 NORTH TUGEN
31 NYORE
32 OKIEK
33 OMOTIK
34 ORMA
35 POKOOT
36 RENDILLE
37 SABAOT
38 SAGALLA
39 SAMBURU
40 SANYE
41 SOMALI
42 SUBA
43 SWAHILI
44 TAITA
45 TALAI
46 TAVETA
47 TESO
48 THARAKA
49 TURKANA
50 UPPER POKOMO
51 YAAKU

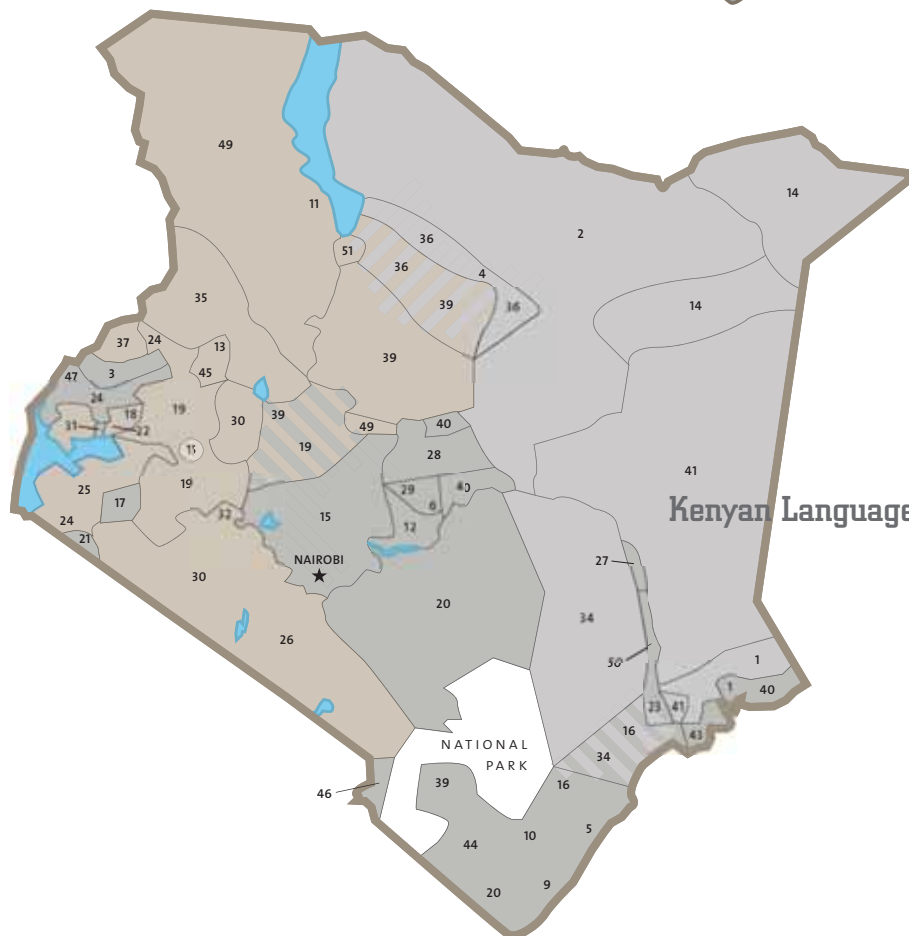
Research



Language Families



Kenyan Languages



## 04 Ethnic Groups

22%	Kikuyu
15%	Other African
14%	Luhya
13%	Luo
12%	Kalenjin
11%	Kamba
6%	Kisii
6%	Meru
1%	Non African (Euro- pean, Asian, or Arab)

For much of Kenya's history, its ethnic groups were loose social formations, fluid and constantly changing. In the late 19th and early 20th centuries British colonial rule solidified ethnic identities among Kenya's people. Colonial administrators associated ethnic groups with specific areas of the country by designating areas where only people with a particular ethnic identity could reside. This pattern of ethnically based settlement has persisted in Kenya since it became independent, even though economic and political development has increased mobility and urbanization among the country's inhabitants. Thus, the majority of Kikuyu live in south central Kenya, the majority of Luhya in western Kenya, the majority of Luo in southwestern Kenya, the majority of Kamba in east central Kenya, and the majority of Kalenjin in west central Kenya. Ethnicity also has been an important factor in Kenyan politics.

Research









As part of the mid-term critique/presentation students compiled an information wall around the three main concepts of weave, community and nature.

## 05

### Key Concept Exploration/ Identification

Initially we all came together as a class to identify the underlying concepts that would drive us all throughout the term. Many ideas were explored visually and eventually a wall was created to show the different aspects of the three main concepts of weave, community and nature. No idea was thrown out as we created exuberant mess that was the the studio.

Connections were indicated with string and images were pasted to a couple of sheets of corrugated board. The visualization of our key concepts was crucial to the overall design directions we decided on later in the term.

Research









*This design experiment shows an initial exploration of the concept of weave. Taking the very literal form of a basket, but it also metaphorically explores other concepts.*

## 06 Weave

structures

materials

community

social

The concept of weaving was explored as a way to reconnect the people within Nyumbani Village. Initially, the practice of basket weaving was studied as a way in which the weave could be utilized to create three-dimensional space. Basket weaving was compared and contrasted to images of weaving within the space of cities and the land. We decided early on that the weave was another of the three key concepts to base our final design exploration on.



Research







A typical community is made up of children, parents, and elders (grandparents), but this structure has changed due to AIDS.

## 07 Community

Orphans

Elderly

Staff

Society



nuclear family of mother, father, children and grandparent(s).



Parents die of AIDS leaving behind orphans and elderly



Because the elders must work to sustain the family, children are often left alone.



A new family of elders, orphans and other members of society that have not been directly affected by AIDS.

Research









A chance for a child to have some hands-on with nature. This photo was taken at a butterfly farm outside of Nairobi.

## 08 Nature

Topography

Growth

Multiplicity

Integration

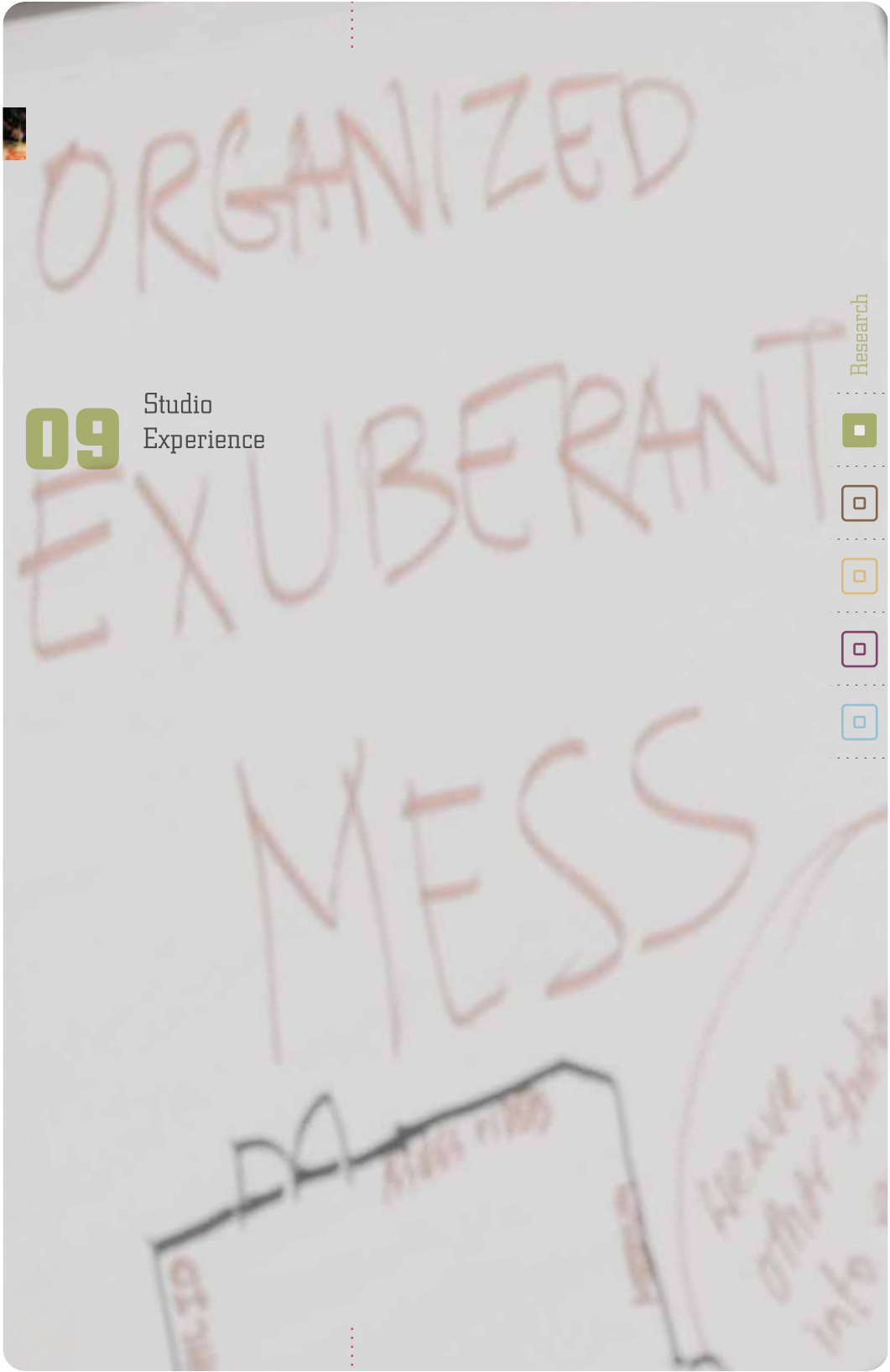
Kenyan lands are rich with natural beauty. From lakes, to forests and all types of animals abound. But because of the the urbanization of Kenya, many of these natural resources are dissappearing. A key concept to our design explorations is the strong integration of nature into the final village concept. In an effort to return to some of the more traitional values of African heritage while still moving forward in a positive way. The integration of nature into every aspect of the village is key.



Research







09

Studio  
Experience

Research









Originally these cards were intended for binding in book format. This is an image of some of the first special studies for possible book pages.

# 10

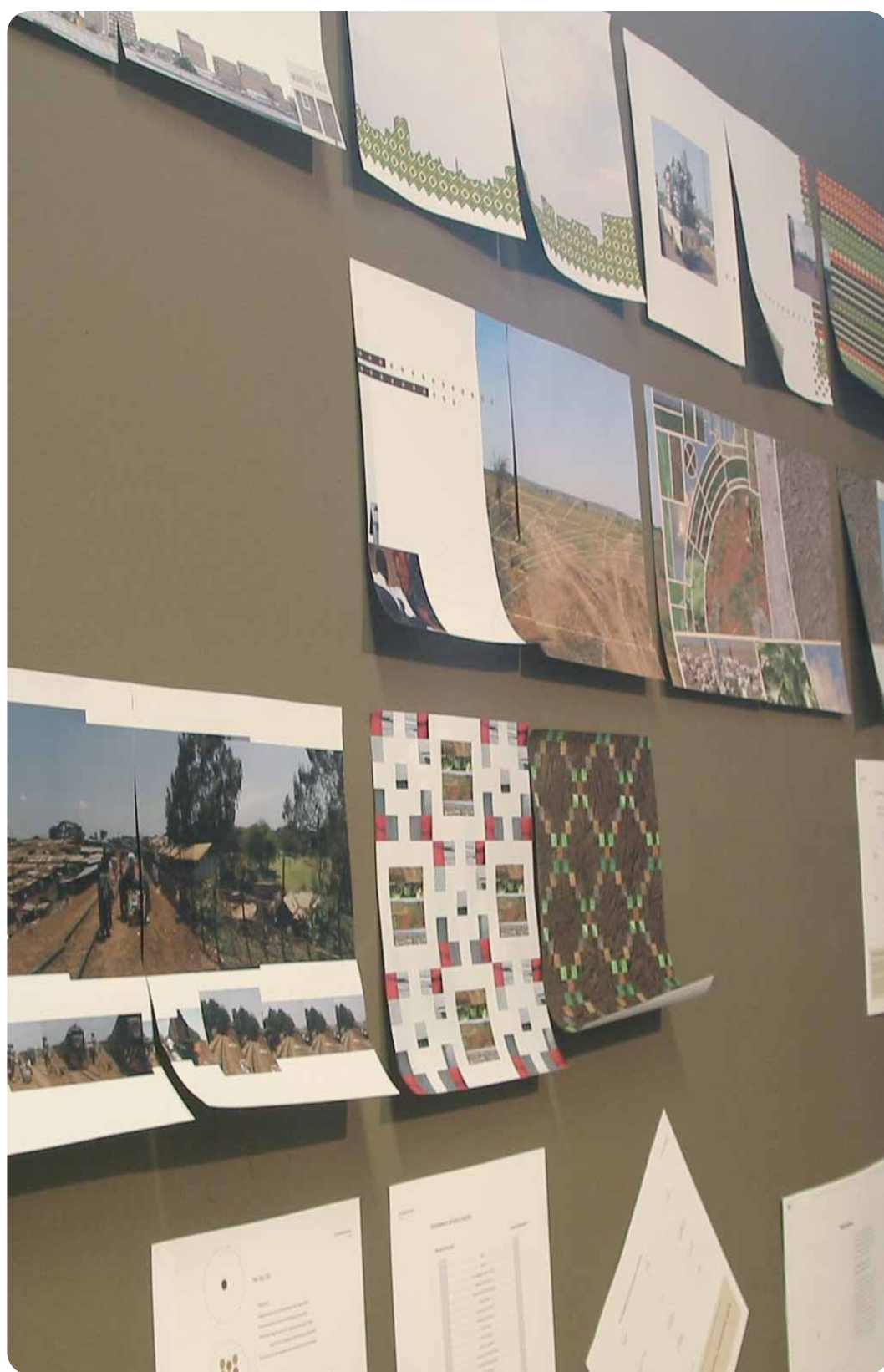
## Evolution of the ~~Book~~ Project Cards

From the first day of class, we discussed various forms for representing our work long after the term was over. Originally the form we agreed upon was that of a book. The book evolved slowly over time through visual explorations. It started as a very loose narrative piece integrating all work by trying to weave it together. Later in the term we decided that the best way to display the work (if a book was the container) was as a catalogue of ideas. This concept of individual projects becoming more important as a catalogue of ideas led us to the final direction of a set of cards. The cards are unique in that some work alone while others work as sets of cards focusing on one idea.



Design explorations for the book concept.







Back, indigenous trees of Kenya

# 11

## Color and Symbolism

Kente is an Asante ceremonial cloth that is hand-woven on a loom. Color symbolism within the Akan culture affects the aesthetics of Kente. Colors are chosen for both their visual effect and their symbolic meanings. Below are a list of some colors and their meanings.

**Yellow** in all its variations is associated with the yoke of the egg, ripe and edible fruits and vegetables and also with the mineral gold. It symbolizes sanctity, preciousness, royalty, wealth, spirituality, vitality and fertility.

**Pink** is associated with the female essence of life. It is viewed as red rendered mild and gentle, and therefore associated with tenderness, calmness, pleasantness, and sweetness.

**Red** is associated with blood, sacrificial rites and the shedding of blood. Red-eyed mood means a sense of seriousness, readiness for a serious spiritual or political encounter. Red is therefore used as a symbol of heightened spiritual and political mood, sacrifice and struggle.

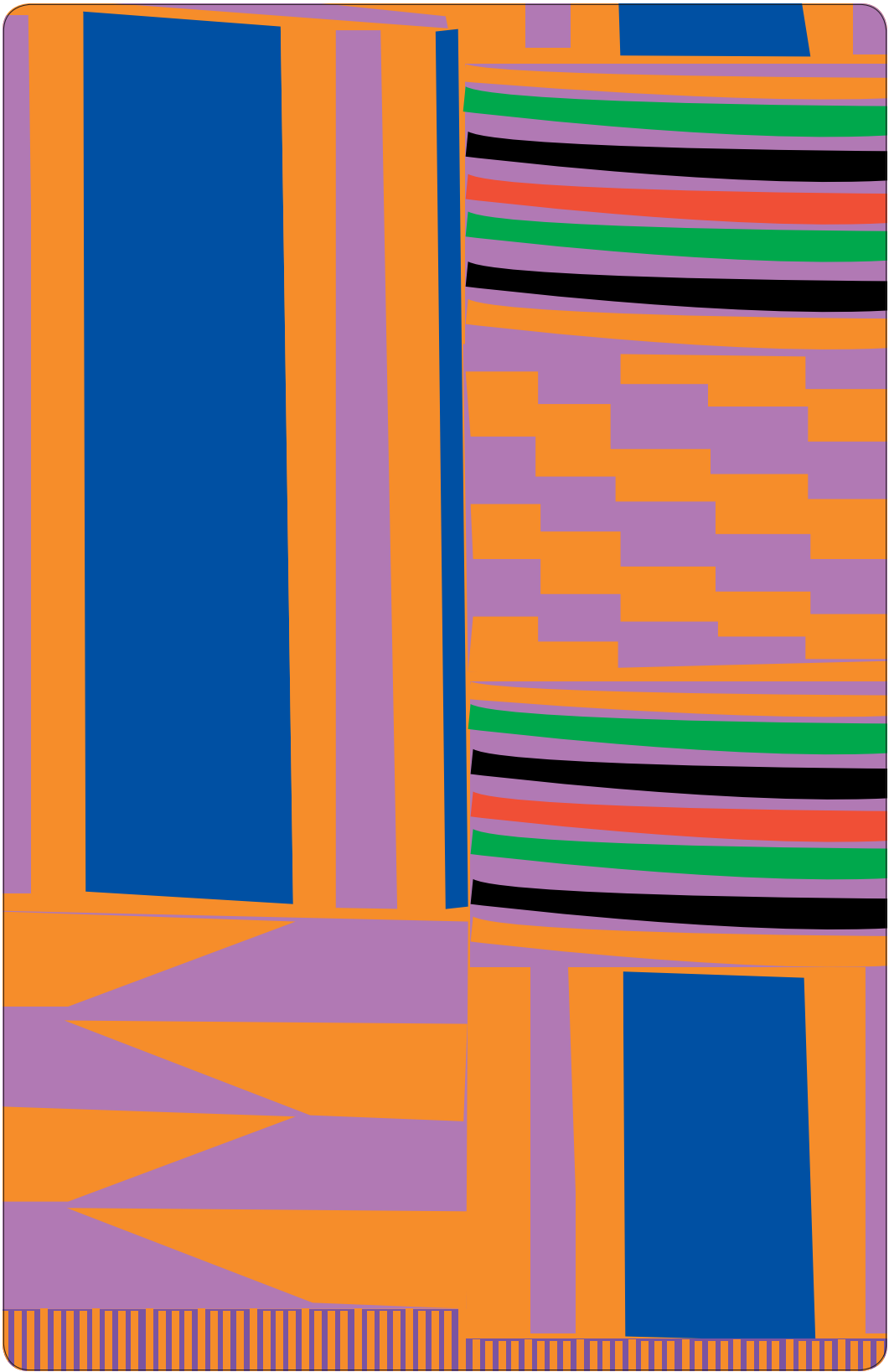
**Blue** is associated with the blue sky, the abode of the Supreme Creator. It is therefore used in a variety of ways to symbolize spiritual sanctity, good fortune, peacefulness, harmony and love related ideas.

**Green** is associated with vegetation, planting, harvesting and herbal medicine. Tender green leaves are usually used to sprinkle water during purification rituals. It symbolizes growth, vitality, fertility, prosperity, fruitfulness, abundant health and spiritual rejuvenation.

**Purple** is viewed in the same way as maroon. It is considered as earth associated with color used in rituals and healing purposes. It is also associated color used in rituals and healing purposes. It is also associated with feminine aspects of life. Purple cloths are mostly worn by females.

**Maroon** has a close resemblance to red-brown which is associated with the color of Mother Earth. Red-brown is usually obtained from clay and is therefore associated with healing and the power to repel malevolent spirits. It symbolizes serenity, purity and joy.







A shot of some of the photos taken in Kenya. All photos were taken digitally, then printed low res and organized on a wall as you can see below.

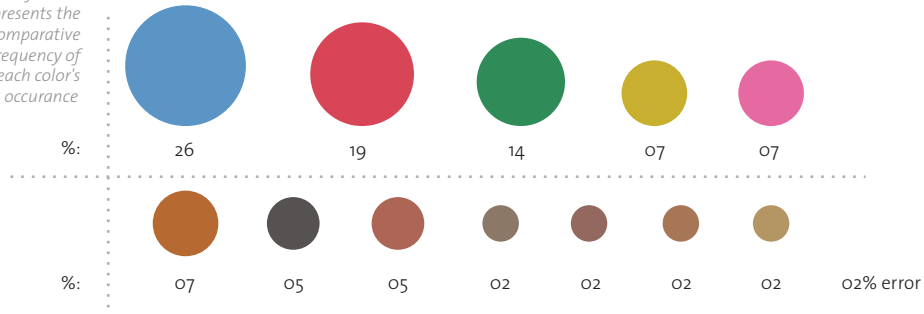
# 12

## Visual Research

Because we would not be able to visit Kenya ourselves, we had to rely on the images from those who had most recently been there as a resource for our research. One of the first things we did as a group was scan through hundreds of images looking for colors patterns, similarities and differences. After selecting the useful images, we then began organizing them by content and posted them on a few walls in our studio space.

One of the initial studies done with this photography was to identify the most frequently occurring colors from the photos. After careful study a palette was selected. Through studies such as this we were able to determine patterns of color usage that would later inform the palette for the identity system and signage.

Size of circles represents the comparative frequency of each color's occurrence



Identity Studies







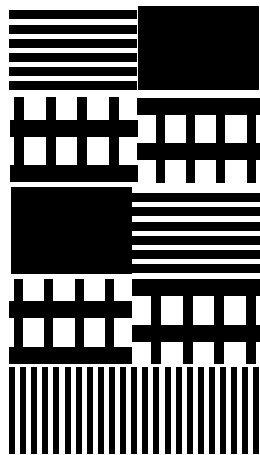
# 13

## Pattern Studies

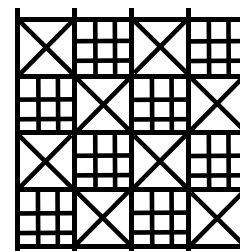
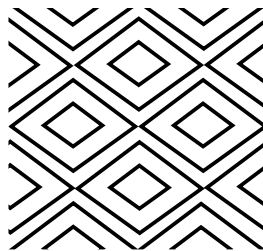
Back, traditional Kente patterns

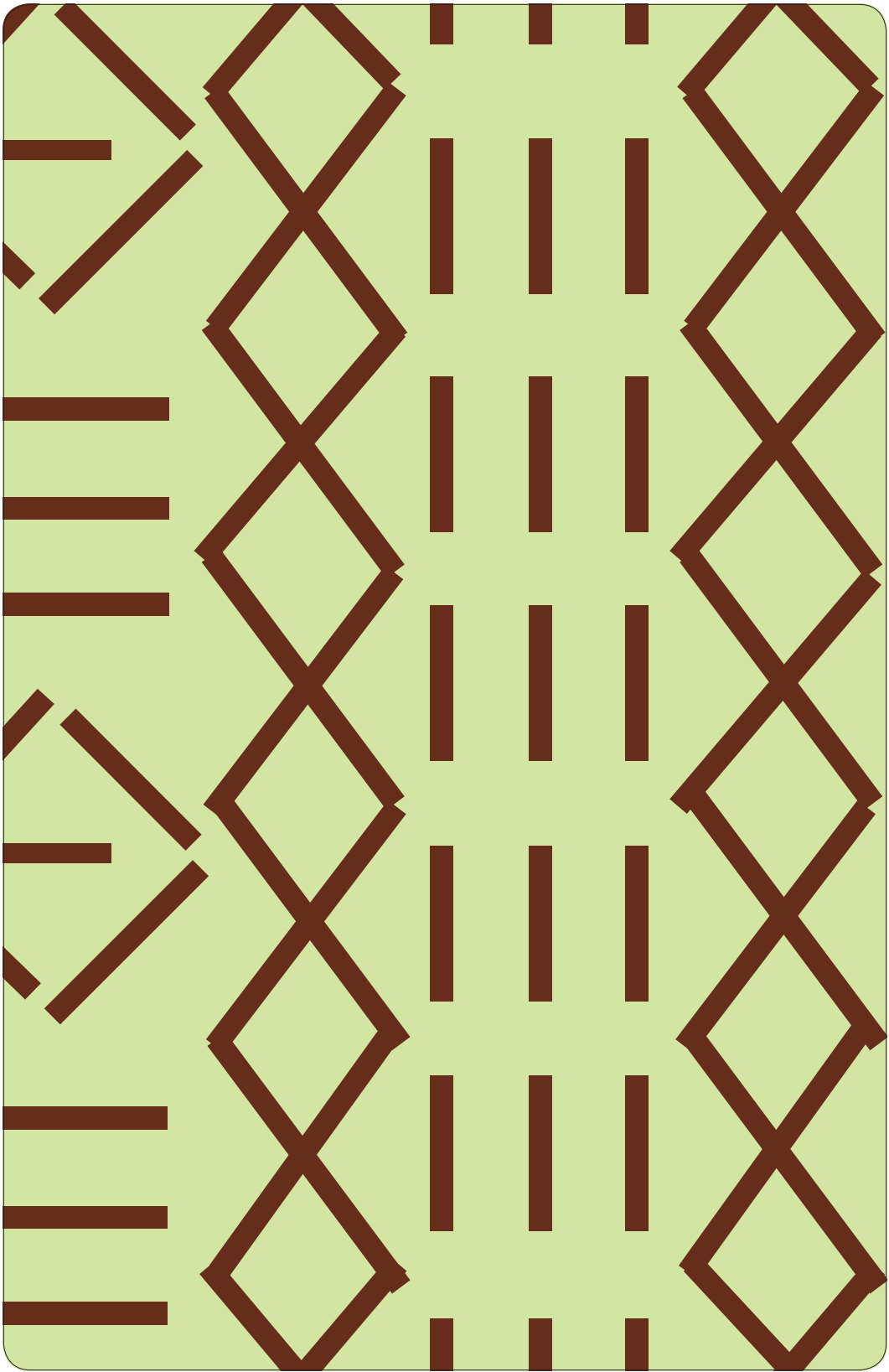
Kente is used not only for its beauty but also for its symbolic significance. Each cloth has a name and a meaning; and each of the numerous patterns and motifs has a name and a meaning. Names and meanings are derived from historical events, individual achievements, proverbs, philosophical concepts, oral literature, moral values, social code of conduct of conduct, human behavior and certain attributes of plant and animal life. Patterns and motifs are rendered in geometric abstractions of objects associated with the intended meaning. Sometimes, some of the patterns and motifs are arbitrarily determined, and their forms have no direct structural similarities with the concepts or objects symbolized. The hand-woven kente cloth is not only valued for its aesthetic quality, but it is also valued for its symbolic and expressive quality.

Identity Studies



Below, traditional Kente patterns









Some of the sketches that led up to the final logo.

# 14

## Identity Explorations

Through our research we learned of some basic symbols for the ideas of family and home. The first was three stones arranged around a fire pit, and the second, a clay vessel (pot). From these ideas we began sketching different marks that explored different forms for the stones and the pot. The goal was to be illustrative while staying away from sharp geometry that was interpreted by our Kenyan visitors as being too corporate.

We decided that instead of trying to communicate pictorially to a culture we don't completely understand, the best solution would be to simplify the logo into basic and humanistic letterforms. By joining the m and the n of the word Nyumbani, we are suggesting the creation of a village that promotes integration and unity rather than isolation and stigmatism.

nyumbani  
nyumbani

nyumbani  
nyumbani

Identity Studies







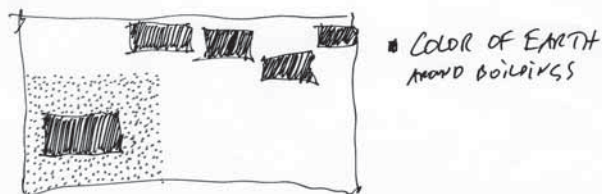
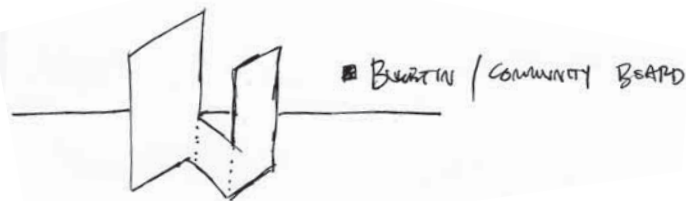
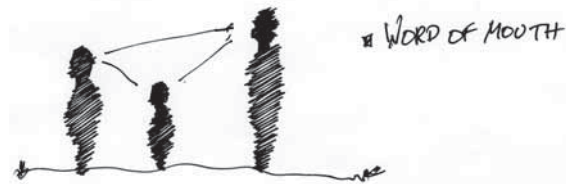
Some initial sketches of the idea of signage without the need for signs.

# 15

## Invisible Signage

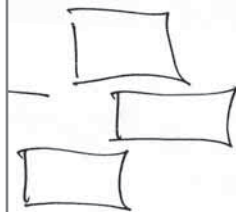
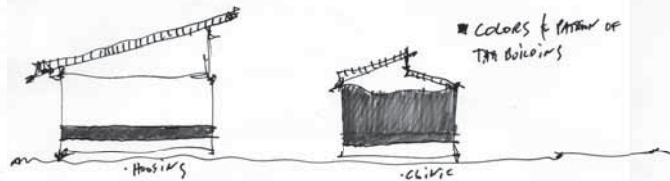
As part of the identity system, graphics students also explored ideas in signage for the village. A turning point in our design research was a meeting with visiting architect Cameron Sinclair who had just returned from Africa on a related project. After discussing various ideas about signage, he shared some interesting insights. According to Cameron, Aids clinics carry with them a stigma which drives people away, even when they need and want the medical attention. By reducing the actual signage and making the clinic into a public space by night, they were able to remove the stigma of it really being an AIDS clinic and saw an increase in use.

As a reaction to this insight, we developed a few key concepts around the idea of minimal signage systems for the village.



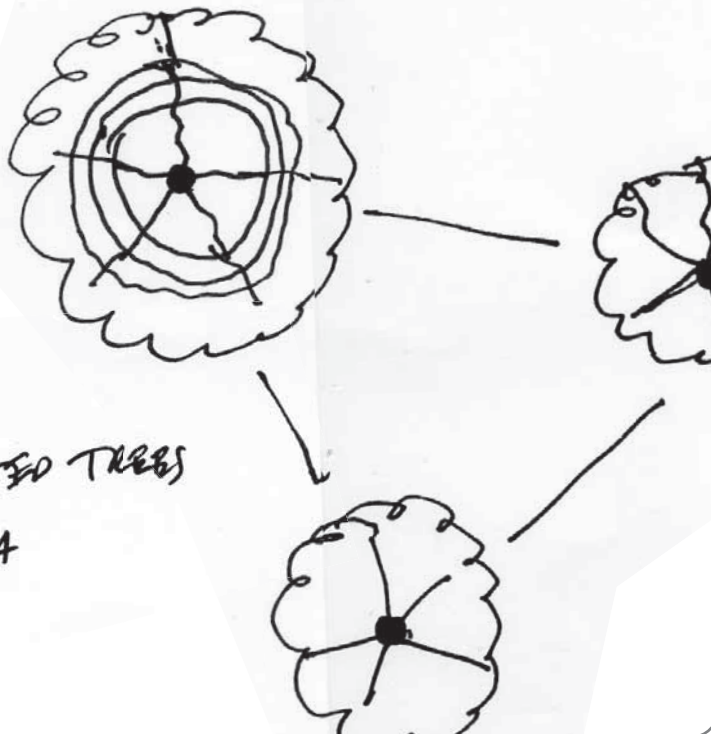


## ■ PATTERNS IN THE STON WALKWAY



■ PHYSICAL LAYOUT  
OF SITE

■ DIFFERENT SIZED TREES  
MARK THE AREA





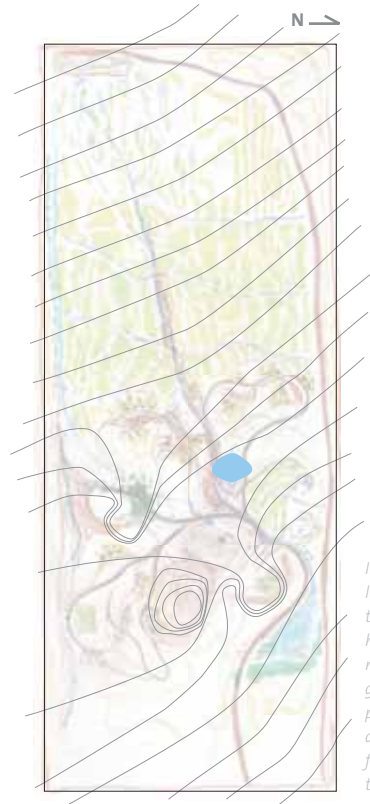
Hypothetical site with topography and main divisions of space called out.

## 16 Large Scale Landform

community gathering  
.....  
hypothetical site  
.....  
connection to nature  
.....



Because we have no actual site for the village, we began with the knowledge that the eventual site will be 1000 acres. With no real topography to work from we have created one. Our 1000 acre plot that is 2 miles long and .78 miles wide. The site slopes 3 degrees from the northeast corner to the southwest corner. We have chosen to create landforms to mark public space, the major community spaces, or significant public gathering spaces. We have created a large hill, a terraced seating surrounding a soccer field and an amphitheater. The stadium terrace and the amphitheater are nestled in a hill.



In order to give us a land mass to react to, we created this hypothetical site map. These diagrams show the progression from design research and formal explorations to the final sketch.

Village Planning







wastewater treatment

wetland

service road

irrigation canal

main canals

seat bench

agriculture fields

tree line

housing cluster's

field

seat mound

lake

boarding school

sacred space

amphitheatre

media center

central tree

village entrance

market square

parking

terraced soccer field

hill

solar panels

primary school

secondary filtration lake

school soccer field

main entry road

N →



Digital composite of potential landforms. Notice the difference in the scale of the different mounds.



## 17 Landform

community gathering

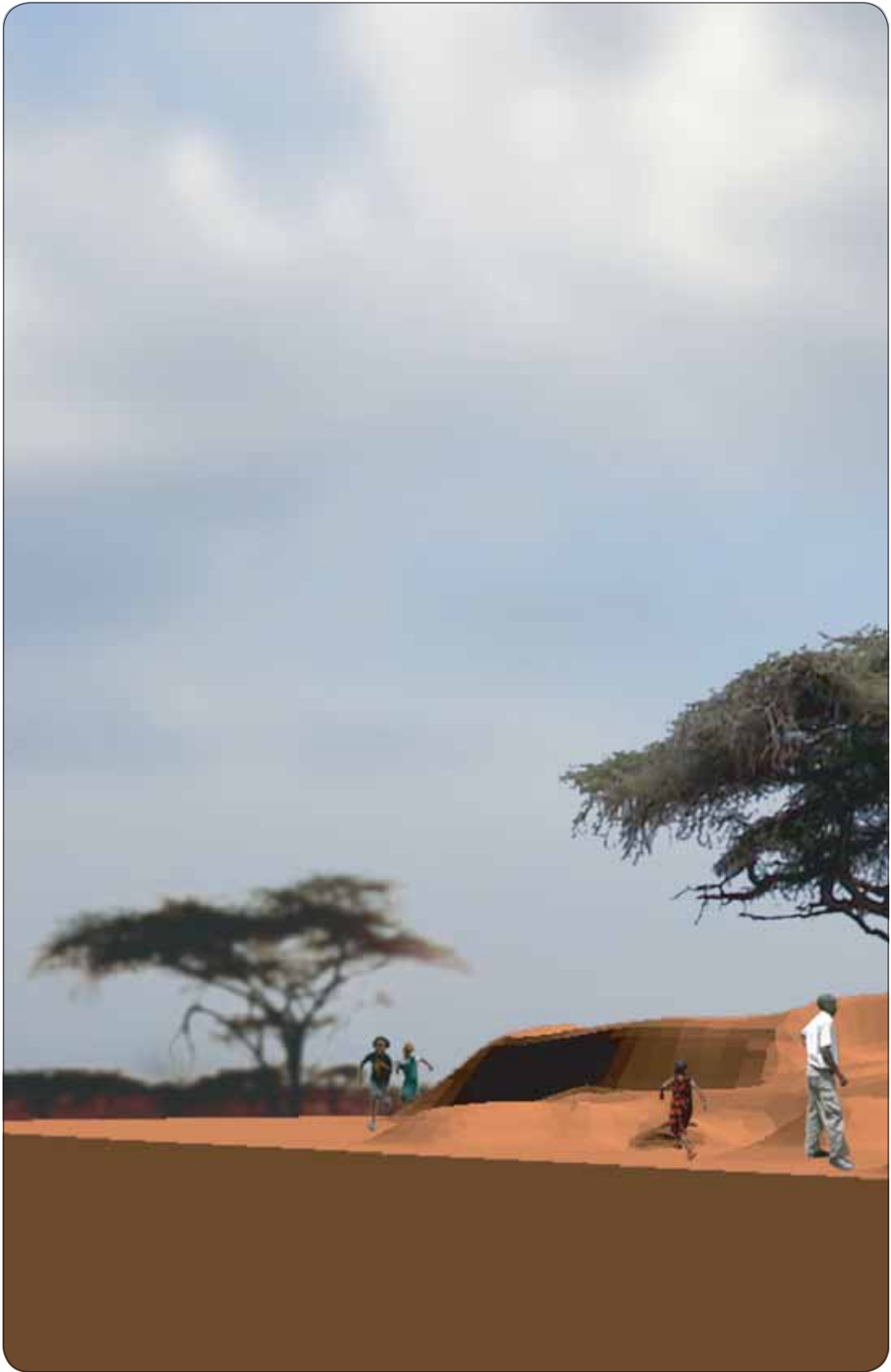
playground

social space

The large scale landforms are created to mark public space in the village. The seatmound reflects this concept at a smaller scale. These forms act to reconnect people with the land in a very intimate way. Divisions of space should be natural not contrived. Their very materiality communicates their purpose to serve as social spaces.

Village Planning









Digital composite of potential landforms. Notice the difference in the scale of the mounds and seats.



## 18 Landform

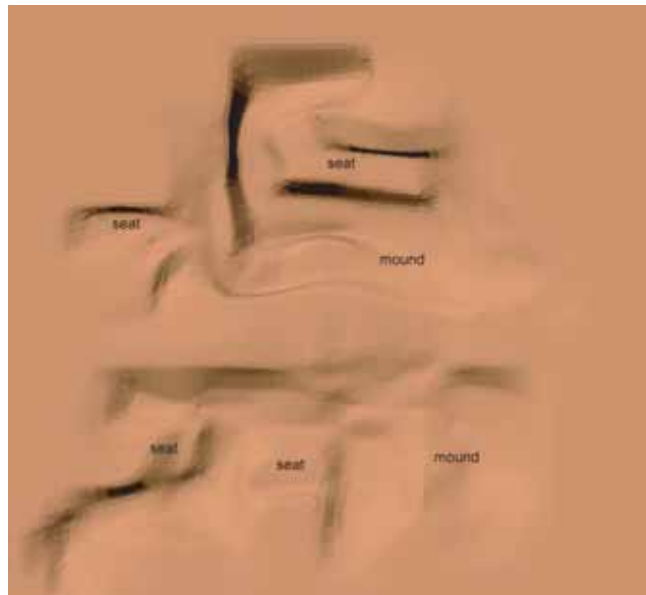
community gathering  
playground  
social space

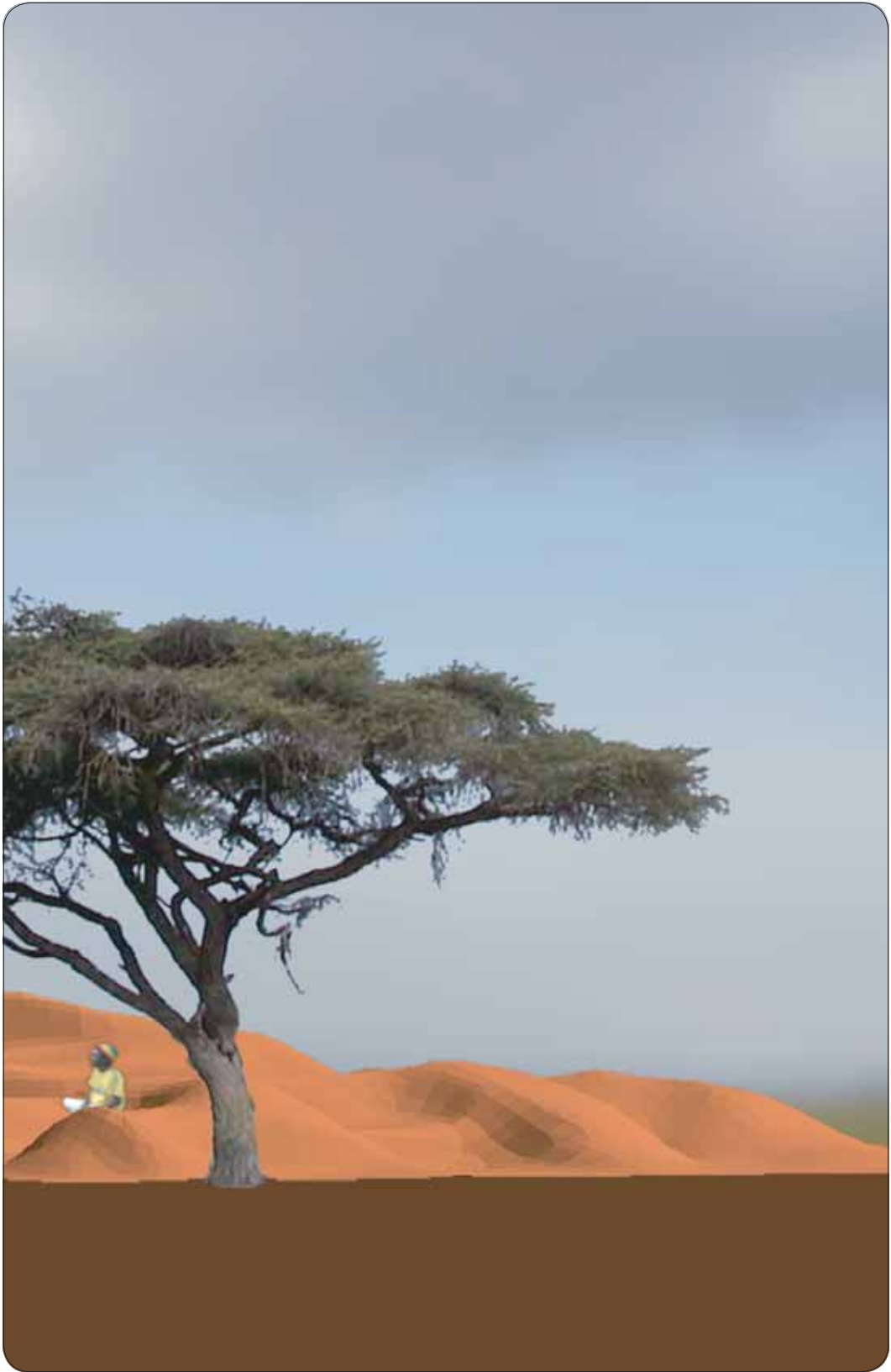
In order to explore different forms for the landform, we created many small study models out of clay exploring various ways of shaping earth. Through these design explorations, patterns and systems emerged, ultimately leading to the final concept of the landform. The below drawing is a plan view of the illustration on the opposite side of this card. Notice the ample seating and divisions of space using the land itself as our building material.



clay study model of possible landforms.

Plan view indicating locations of mounds and seats.







Major systems for controlling and distributing water through the village.

# 19 Water management and energy systems

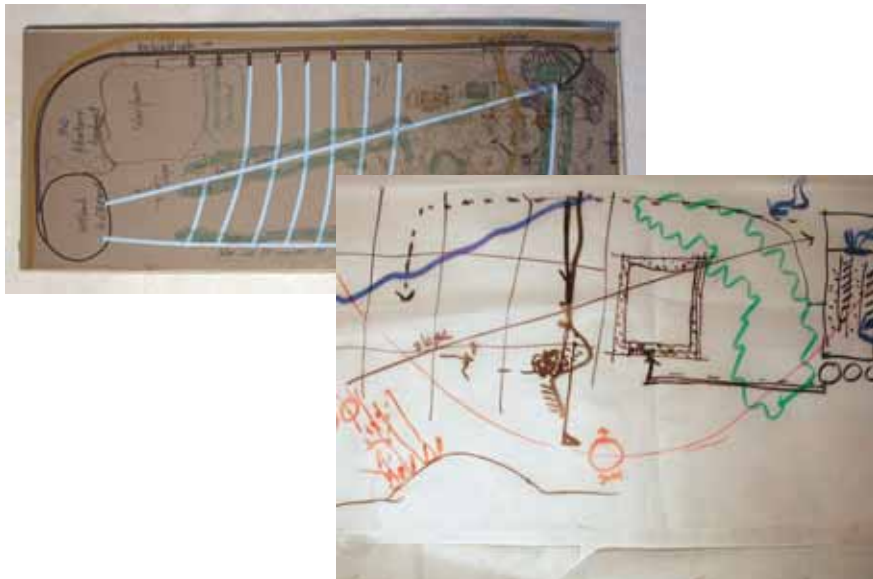
graded slope  
importance of water  
flood control

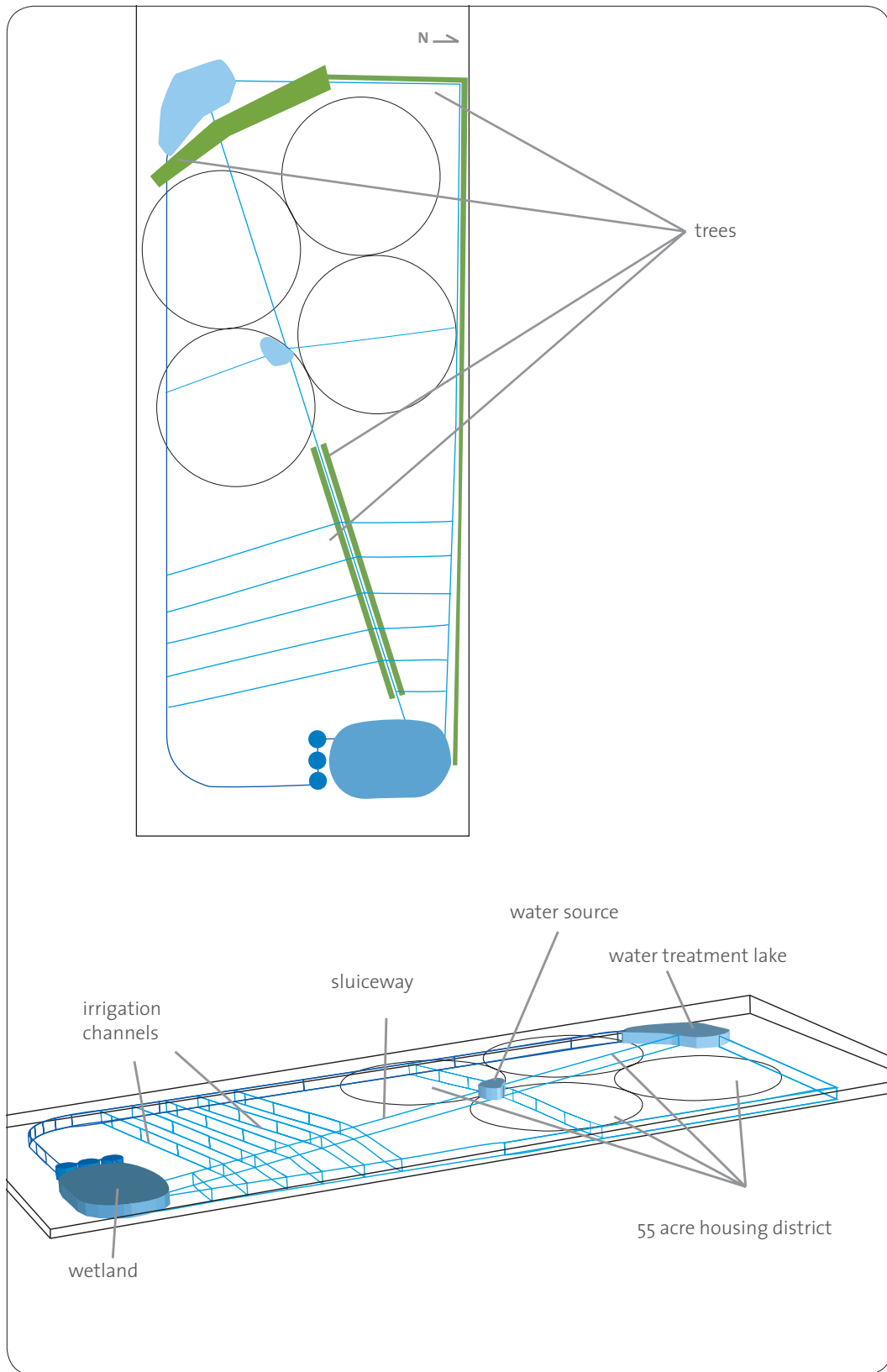
The site slopes 2-3 degrees from the northeast corner to the southwest corner. The people populated area of the village is located at the east end and the crop populated area at the west end. As the rain falls it is diverted by roofs to be collected into cisterns, it is absorbed by the earth either directly or through the permeable turf block paving. The remaining water is moved as a result of the slope towards the sluiceway or channel which carries it toward the constructed wetland. Here, the water is purified by plants and microbes and the safe, clean drinking water is returned to the village. This positions means that the people are located upstream of the wetlands yet downstream of their water supply because after the wetlands clean the water it is returned upstream to the people.

Village Planning



1  
N







Artist's rendition of the two circulation systems for the village.



## 20 Circulation

dialogue between  
channels and roads  
multiple scales of  
paths

secondary road  
(mainly for bicycle  
traffic - could  
accommodate one  
car if necessary)

parking for lake  
and soccer  
field; transition  
into village and  
delivery of goods  
and services

road to highway



Village Planning









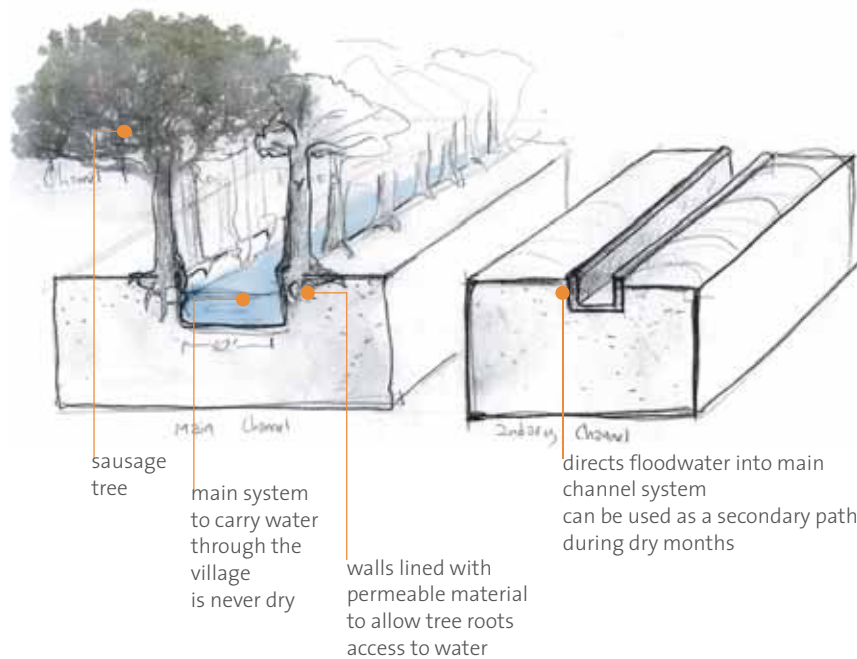
Artist's rendition of the two circulation systems for the village.



## 21 Circulation

dialogue between  
channels and roads  
multiple scales of  
paths

The two main circulatory systems are roads and channels. One cycles goods, services and people throughout the village, the other cycles water through various stages of filtration and distribution. These systems are responsible for keeping the lifeblood of the village flowing. Trees act to strengthen the walls of the channels for water, the floodways double as footpaths during the dry season.







Artist's rendition of the two circulation systems for the village.



## 22 Circulation

dialogue between  
channels and roads  
multiple scales of  
paths

**LARGE SCALE ROADS** – Two total; for connection between the village and neighboring communities; they can accommodate all scale vehicles including school buses, farm equipment, and delivery vehicles.

**MAIN ROADS** - These roads connect the elements within the village to one another; they can accommodate small opposing lanes of bicycle traffic and, in emergencies, small automobiles. They are flanked by the Flood Control Channels.

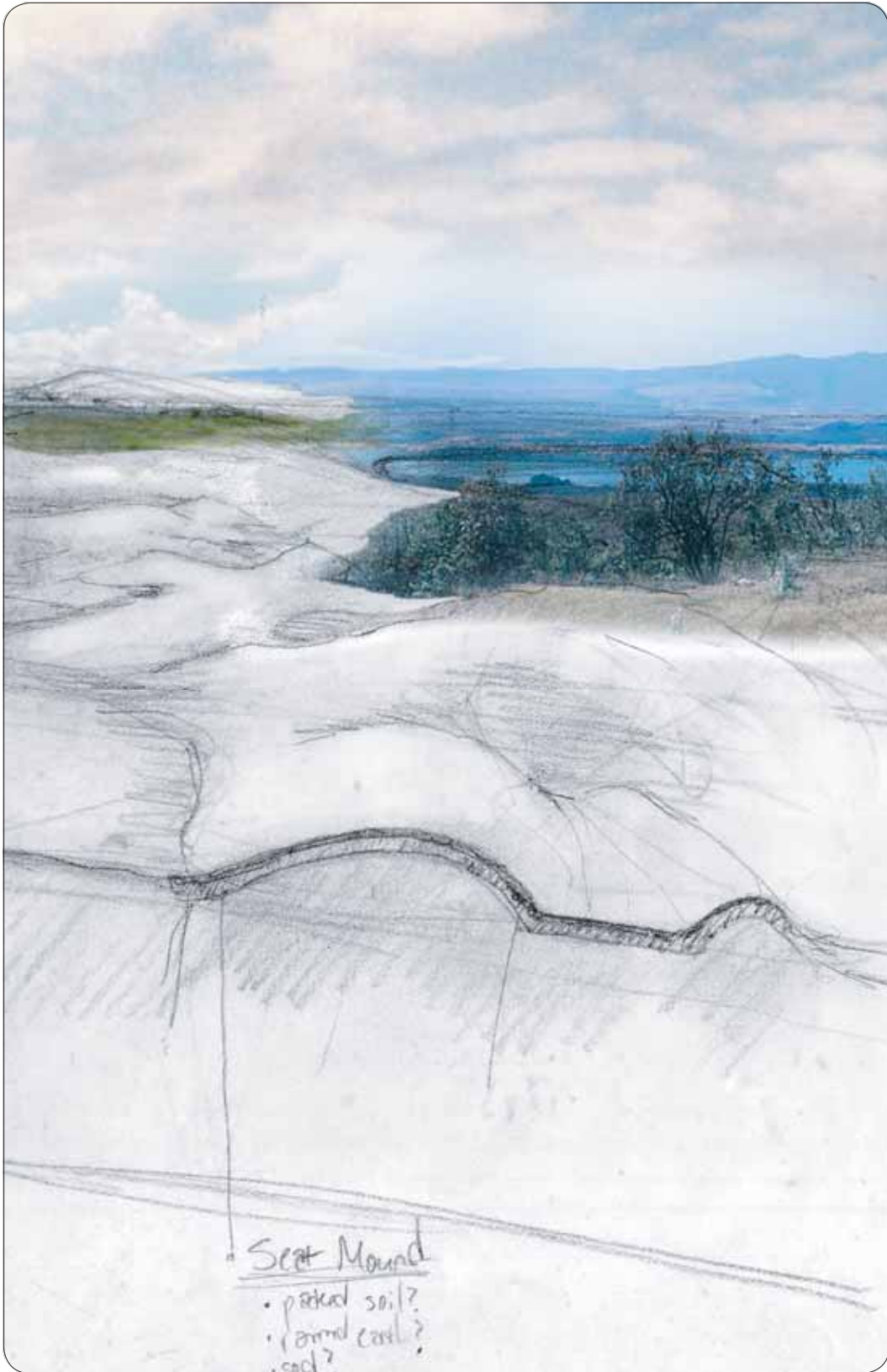
**FOOTPATHS** - Main roads bleed off into footpaths; potential for growth into Main Roads when the village expands.

**MAIN CHANNELS** - Two total; continuously cycling water throughout the village, always wet - paved with a permeable surface, such as gabion or loose gravel to allow water to feed tree roots.

**IRRIGATION CHANNELS** - These follow the downhill slope of the village to water crops, then feed into the Main Channels. They are a similar size to Flood Control Channels

**FLOOD CONTROL CHANNELS** -located at the sides of the Main Roads to collect and drain runoff during the rainy season, and to serve as an alternate walking during dry seasons.







*In this case, all of the public spaces in the district are oriented toward the central space that can be seen from the various districts.*

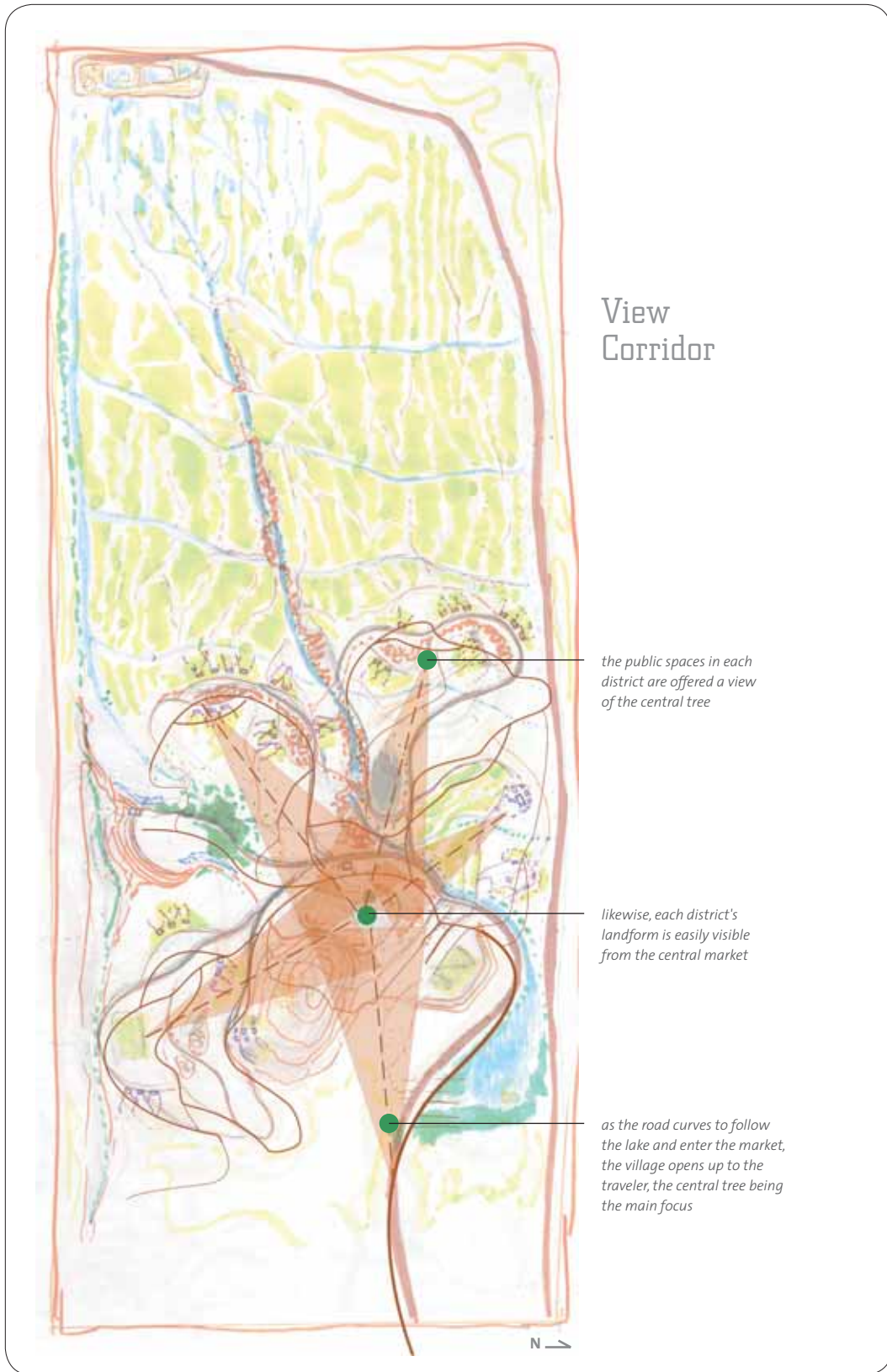
## 23 View Corridor

importance of  
viewpoints and  
procession

An individual's line of sight within the village was an important consideration regarding village identity. What do you see when you're at your local barbershop? What do you see from your house? What do you see when you first enter the village?

One way to unify a village in which there is a decent amount of space between housing, the playgrounds, the commercial areas, etc. is to orient key elements toward the major identifying features of the village. In this case, all of the public spaces in the district are oriented toward the central tree in the market square. Without having to place the village in a circle around the tree, which is a closed form that discourages growth, the tree retains its symbolic significance.









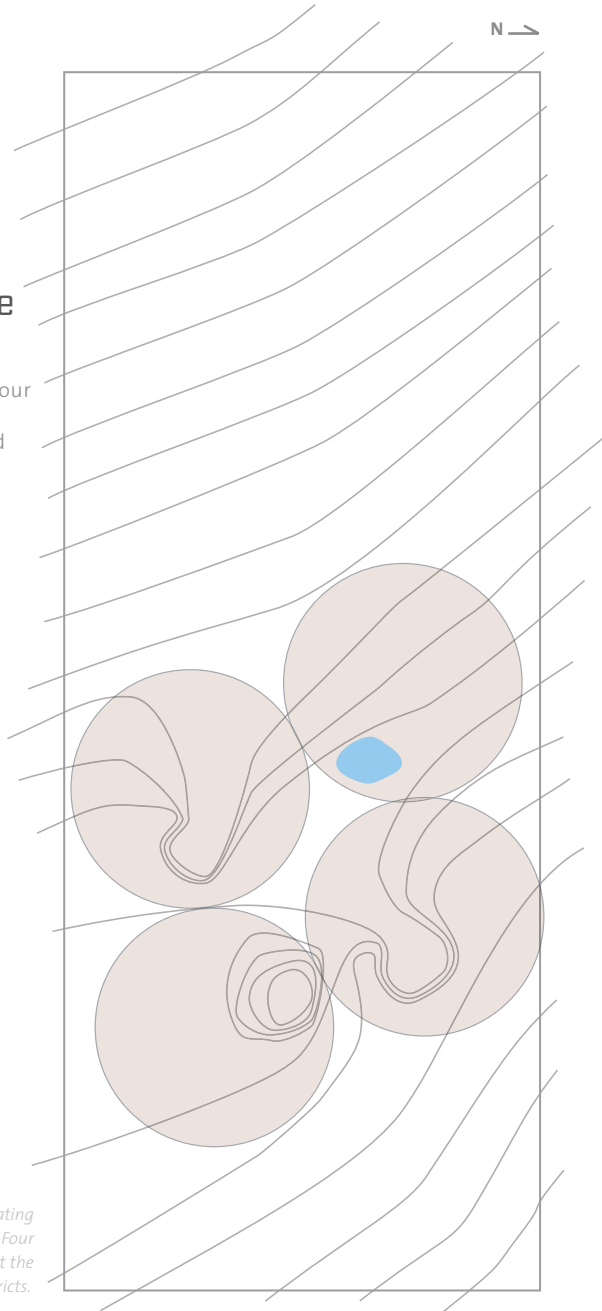
3-D rendering of the Village core and the topographic features unique to this arrangement of the village concepts.



## 24 Village Core

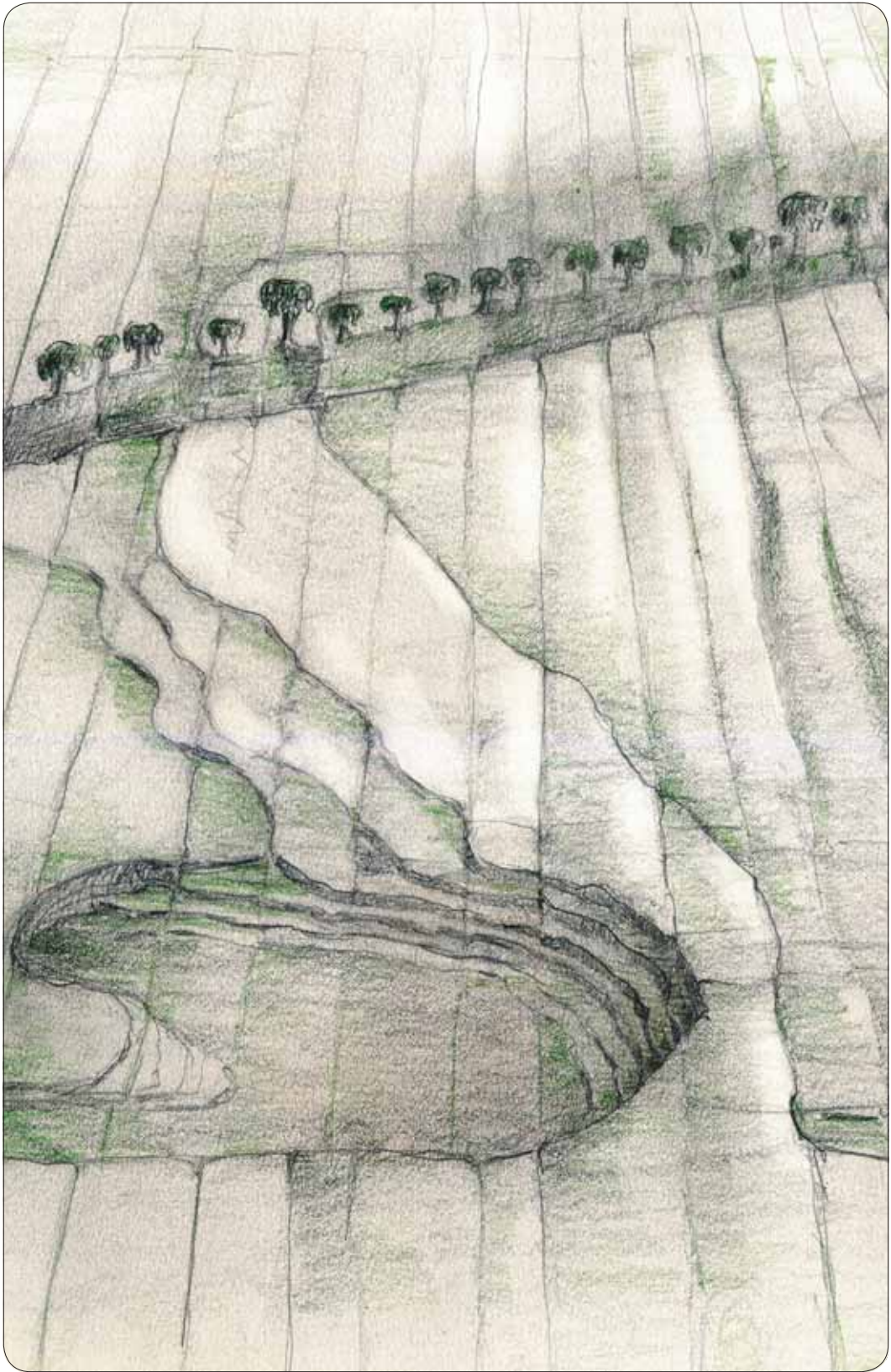
How and why the four districts are formed  
(for more text, see card 25.)

Plan view illustrating the contours. The four circles represent the four districts.



Village Planning







3-D rendering of the Village core and the topographic features unique to this arrangement of the village concepts.



## 25 Village Core

how and why the four  
districts are formed

The village core is comprised of districts that pinwheel around a main square. The districts are influenced and achieved by three main factors: an anchoring landform/landmark feature, the arrangement of everything within a ten-minute walking distance, and a maximum number of sixteen housing clusters. It is organized in a three-plus-one format. A terraced soccer field, the hill, and the amphitheatre make up the three major landforms. The freshwater source is some form of manmade intervention into the ground to store or extract drinking water. These three major manmade landforms, plus one freshwater source, which becomes a landmark itself represent the interweave between nature and the built environment.









Detail with call-outs for the hill district area of the overall village plan.

## 26 Hill District

elements of district  
.....  
relationship between  
.....  
district and rest of  
.....  
village  
.....

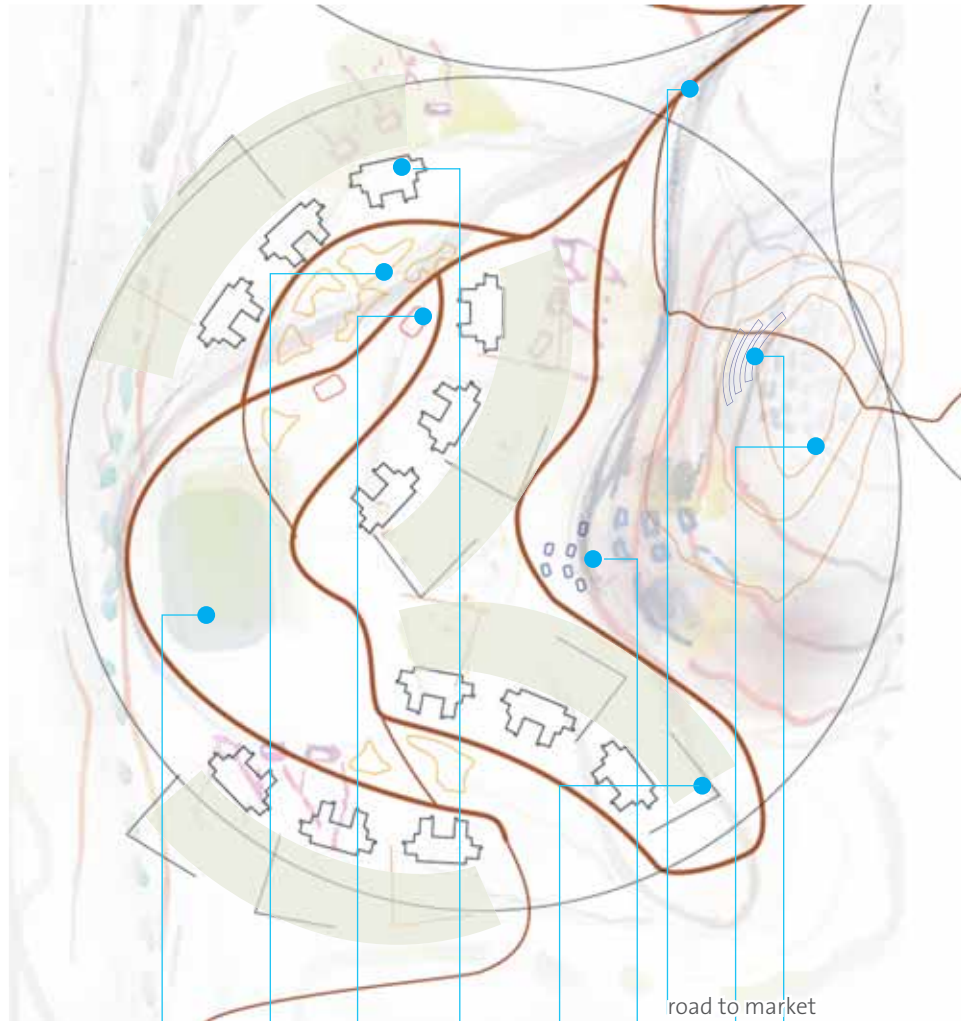
The major landform of this district is the hill and the significant public building is the primary school. Because of its significance, the primary school is located on the hill. Space has been reserved for a soccer field to be used by the primary school for soccer and other recreation.

The district also contains a small field of solar cells that provide power for the entire village. Located atop the hill, the solar cells create a prominent feature that can also provide power for neighboring communities.



Village Planning





## Hill District

N ➔

local soccer field

public playground (seatmound)

local shop

housing cluster

primary school

cluster's shared farmland

road to market

solar panels

hill (district landform)



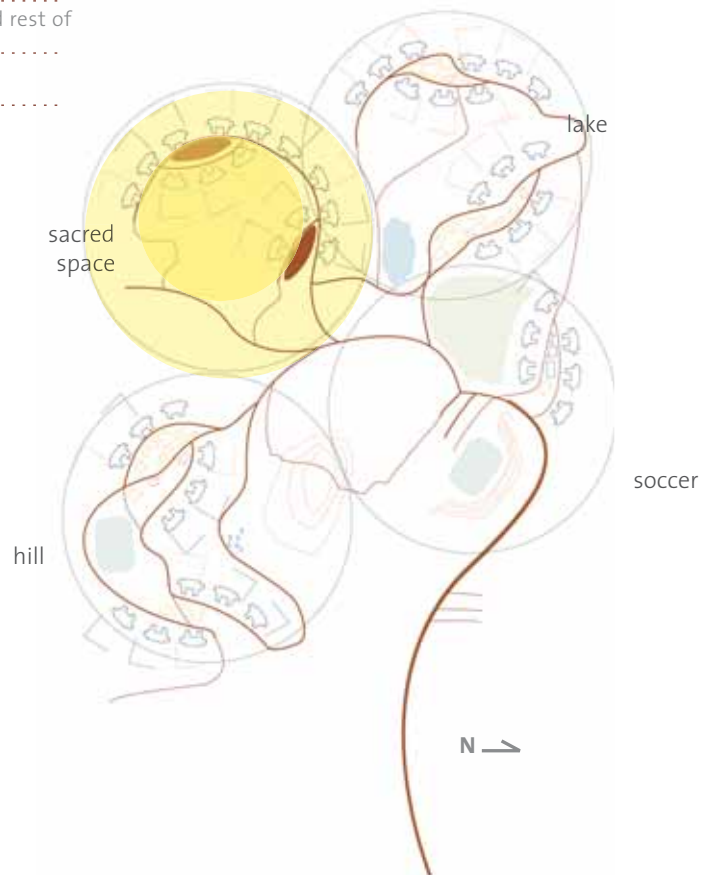


Detail with call-outs for the sacred space district area of the overall village plan.

## 27 Sacred Space

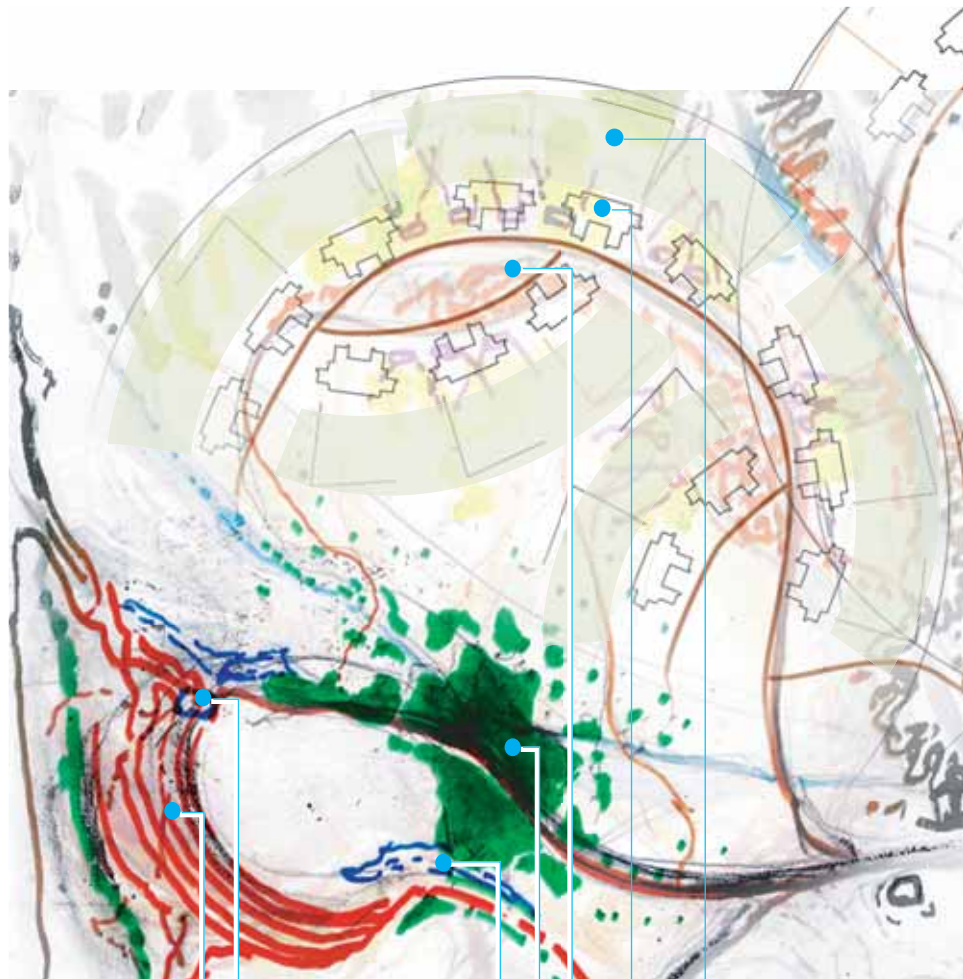
elements of district  
.....  
relationship between  
.....  
district and rest of  
.....  
village  
.....

This district contains simultaneously very social and very spiritual spaces; it is the closest to the market square tree, but also keeps the sacred space. The amphitheatre itself can be used for spiritual purposes such as sermons and holiday festivals but also accommodates local performances of a non-religious nature.



Village Planning





sacred space

public playground (seatmound)

burial

housing cluster

grove of trees

cluster's shared farmland

Sacred Space

N →

amphitheatre (district landform)



Detail with call-outs for the lake district area of the overall village plan.

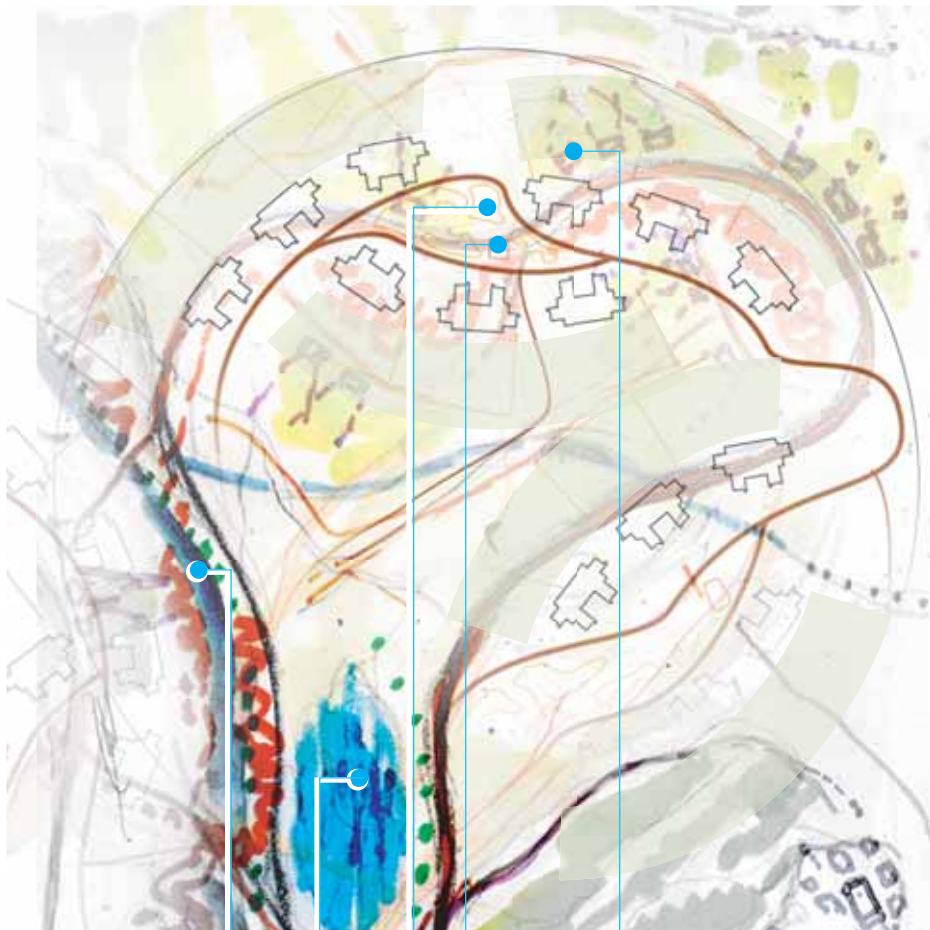
## 28 Lake District

elements of district  
relationship between  
district and rest of  
village

This district has a special relationship to water. It houses the “lake”, which is one of the two freshwater sources of the village (the other being through the recycling system), and is also crossed by an irrigation channel. It also is set on an opposing side of the main channel to the public square, so it is necessary to cross a bridge to enter.

The nature of the lake is itself unique – it is the village’s freshwater source, and could be in the form of an underground reservoir, a stream, a natural lake, a well, etc. People would most likely have the water piped to their homes from this source, rather than actually physically extracting it, but giving this feature the distinction of being a landmark would serve to make this otherwise invisible process visible.





lake (district landmark)

local store

cluster's shared farmland

Lake District  
N →

main channel

public playground (seatmound)



Detail with call-outs for the soccer district area of the overall village plan.

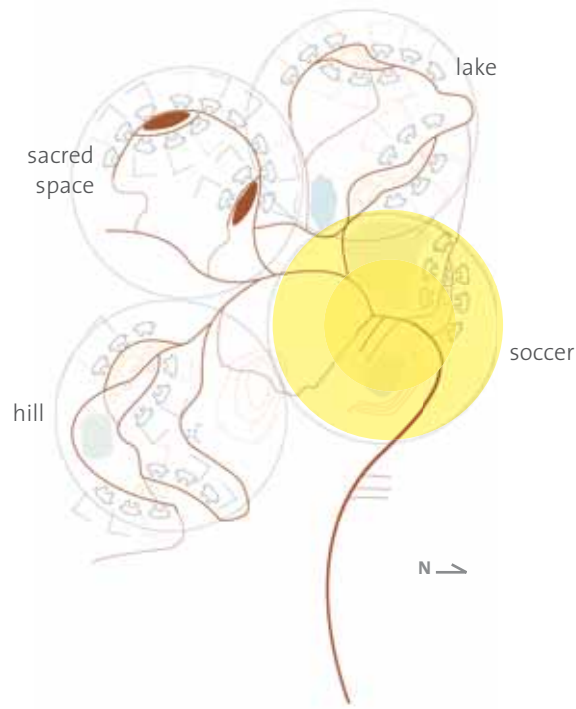
## 29

### Soccer District

elements of district  
relationship between  
district and rest of  
village

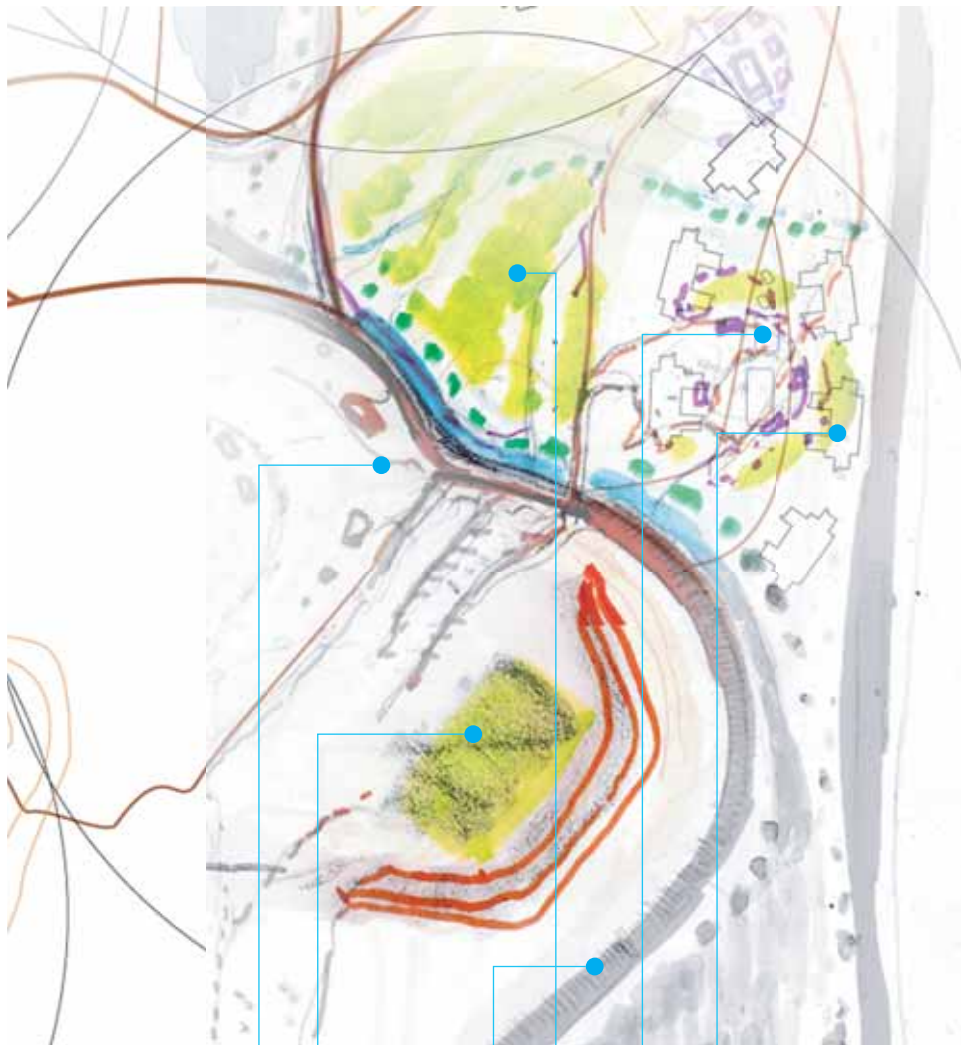
The large soccer field with terraced seating is the major landform of this district. the field and its surrounding seating and hill occupy a significant portion of the land. the field is given this position close to the roads and entrance to be easily accessible to the members of this village and to their neighbors.

This district can accomodate more housing than the six clusters that are planned at this time. because of its proximity to the secondary school/ boarding school we have decided not to exploit its potential as a housing district but to reserve this space for future expansion of the boarding school.



Village Planning





## Soccer District

N ➔

terraced soccer field  
(district landform)

boarding school shared farmland

main entry road

boarding school housing

market entrance

boarding school



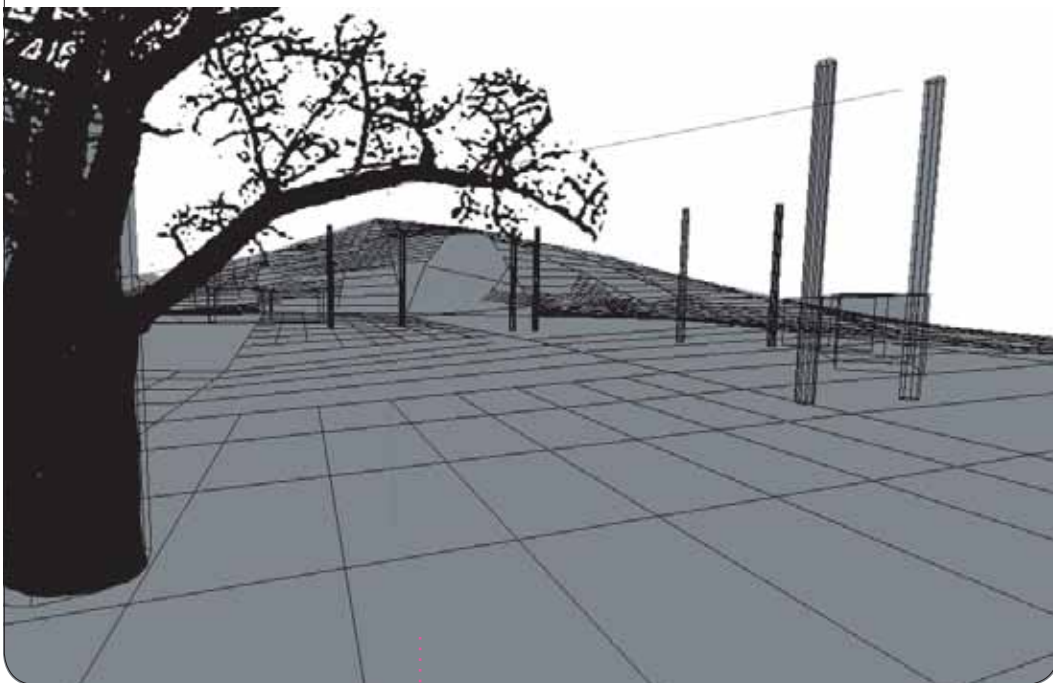


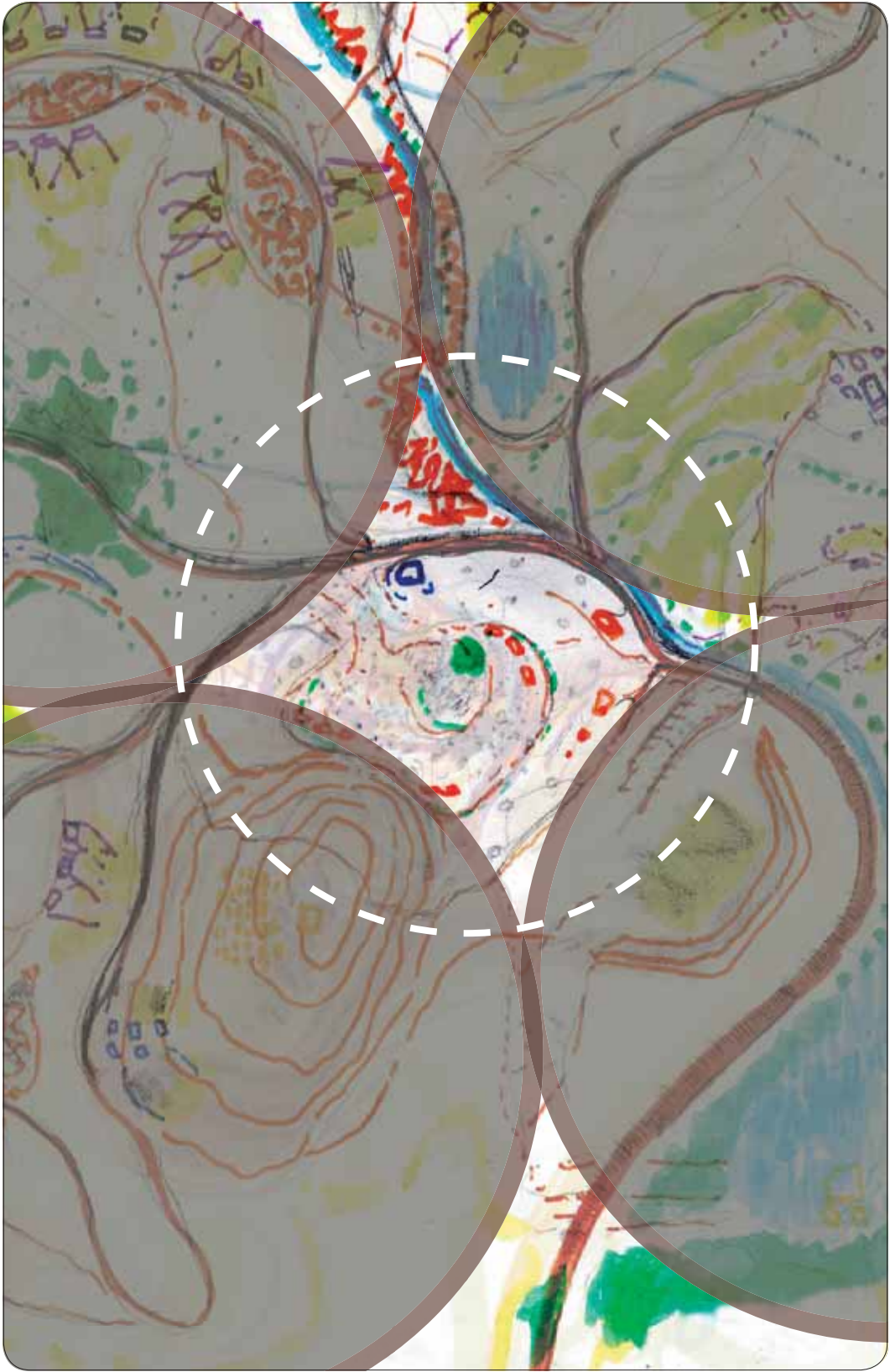
The market square is seen as it is bordered by the four districts.

## 30 Market Square

processional entrance  
.....  
slope/relationship  
.....  
with the hill program  
.....  
of buildings  
.....

The market square has different areas of concentration; the inner ring is the most densely paved, whereas the outer ring is the sparsest. The outer ring contains the two administrative buildings, which greet anyone entering the village, and the library/media center, which is a converging point of all the roads from all the districts. The middle ring mainly houses commercial shops, a farmer's market and the clinic. The clinic was placed here to incorporate it into the daily life of the village, so that it is treated like a "normal" place to go while out running daily errands. At the core of the Market Square is a Baobab tree, the largest tree in the village. It is a centering point, visible from all public points within the village.







*This model was constructed as a translation of weave into three dimensional space.*



# 31

## Housing Design Research

These explorations were critical to the design process in that they facilitated the application of the concept of weave to the housing plan. Every week student brought new housing models to the studio, illustrating the current ideas being explored. These explorations were also essential in developing the design principles that ultimately informed the final design recommendations.



Housing





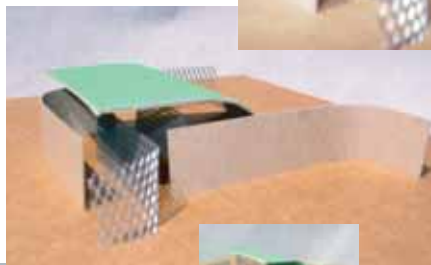
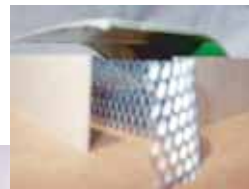


*This model was constructed as a translation of weave into three dimensional space.*



# 32

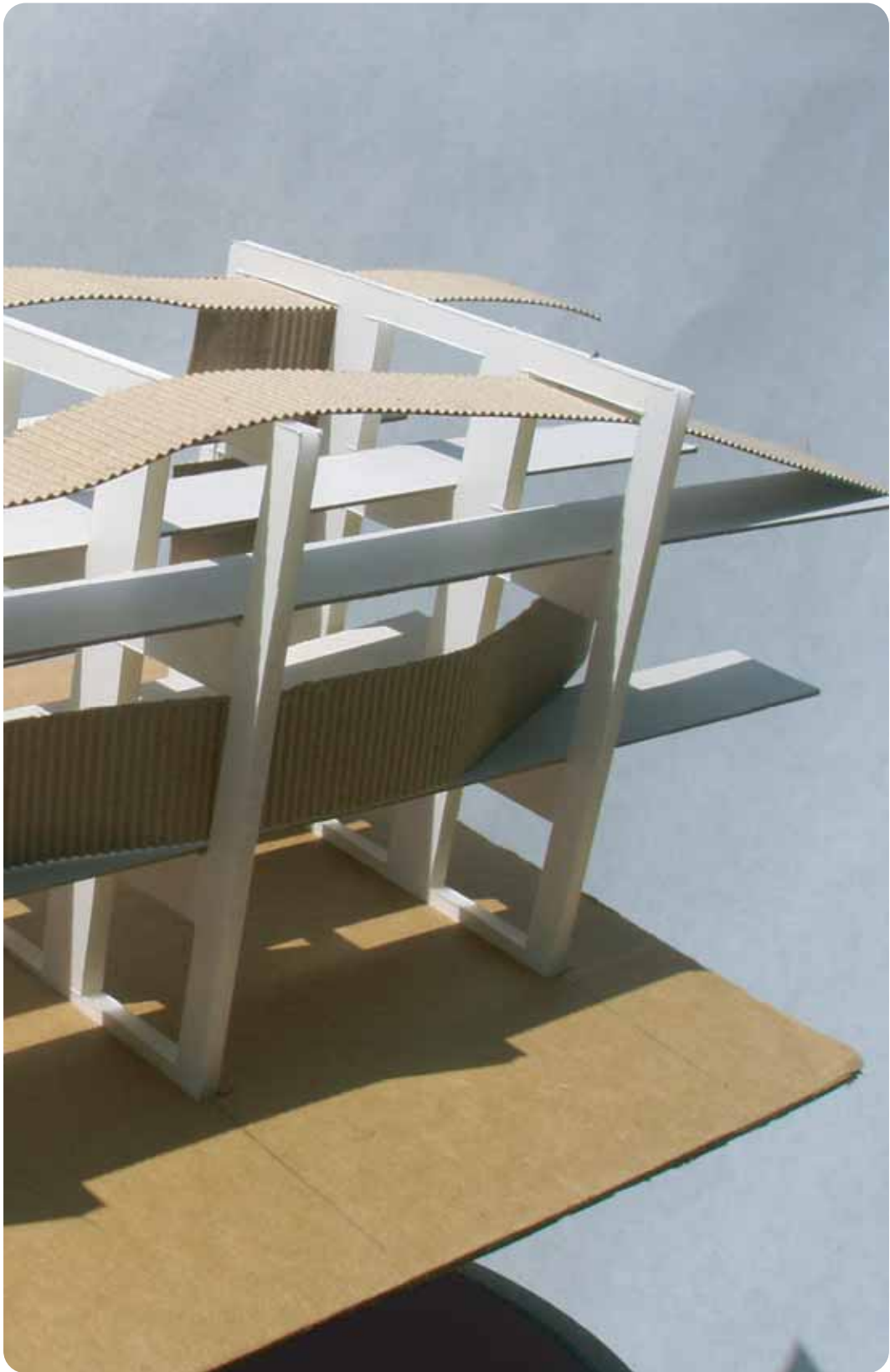
## Housing Design Research



Housing









# 33

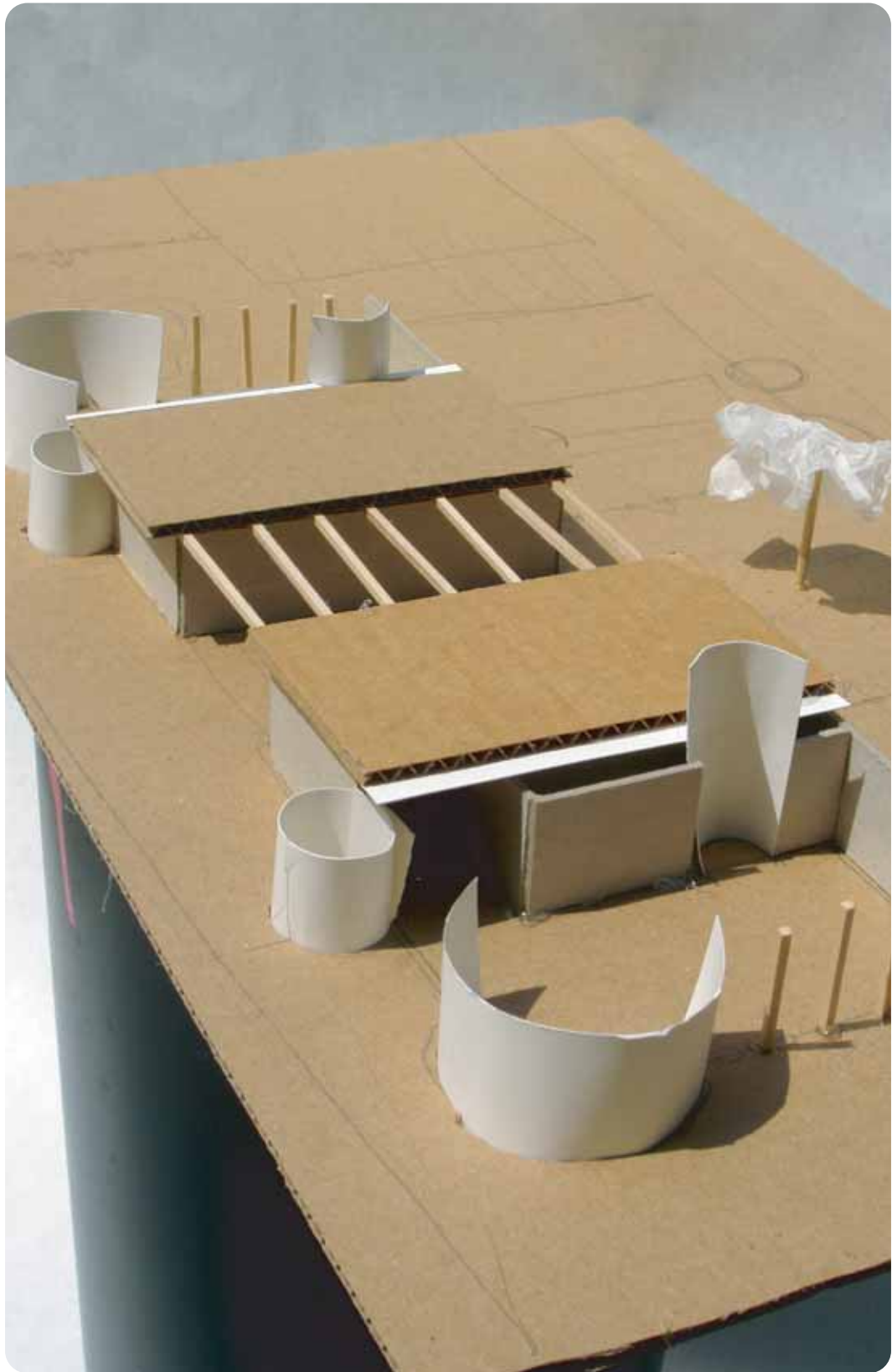
## Housing Design Research

*This model was constructed as a final exploration during the design research process.*



Housing







ThickWall illustration showing storage spaces.



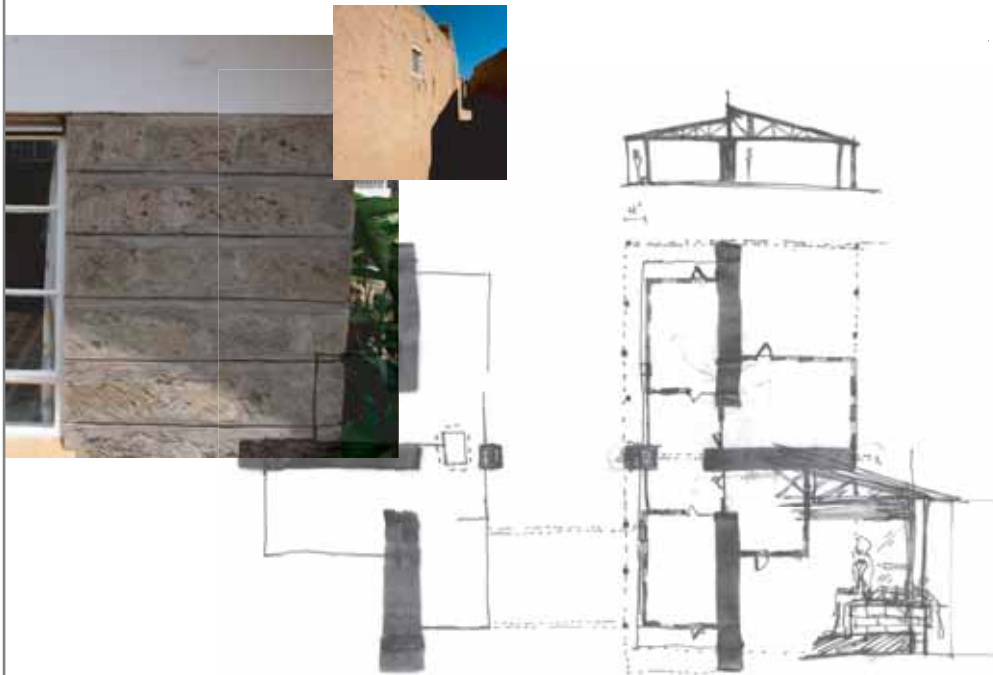
## 34 ThickWall

shared space

dynamic

infrastructure

Nyumbani Village is threaded together by a dynamic strand of functionality called the ThickWall. ThickWall is a datum that holds within its dimensions necessities of living that range from eating, to bathing, to remembering. Kitchens, sinks, and appliances connect into the wall's infra-structure. ThickWall is structural, providing support for the roofs in all houses. Its thickness holds spaces for the storage of various necessities. In the kitchen area, there are spaces for storing food. In other places there is storage space for collected water and solar energy.



Housing







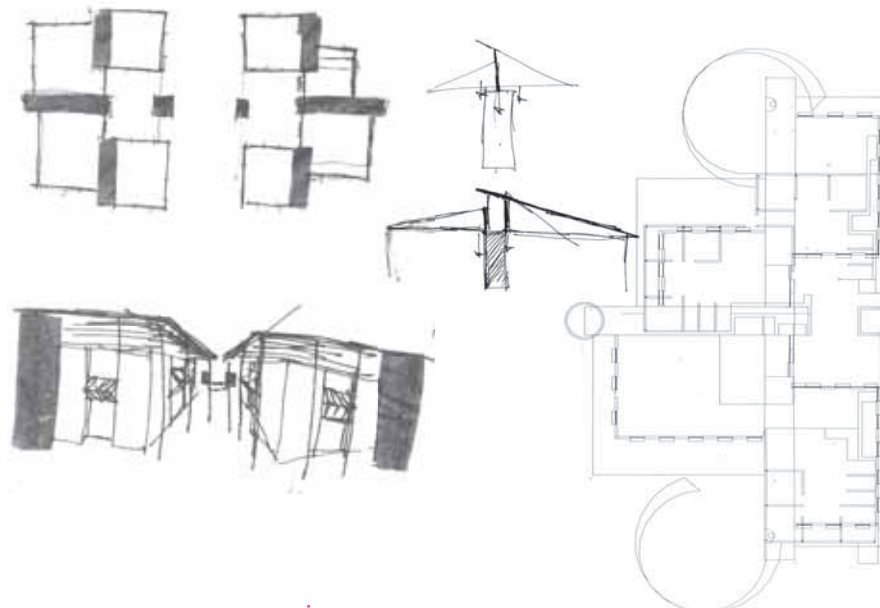
ThickWall illustration showing storage spaces.



## 35 ThickWall

ThickWall allows for personal storage space. Individual remembrance spaces are protected within its depth. Personal objects can be placed in the walls made of native Kenyan earth. The bricks protecting these special memories are part of the land, part of the site, and part of the home. ThickWall represents the permanence of home and of memory. ThickWall is also dynamic. ThickWall shifts and moves to accommodate the dynamics of life. ThickWall steps aside for families to enter into their homes. ThickWall shrinks as needed to become a thin divider of space. ThickWall opens its apertures to frame views beyond. ThickWall extends into nature. Outside, ThickWall defines private rooms. It can shrink to become an outdoor bench or a piece of outdoor sculpture.

Housing





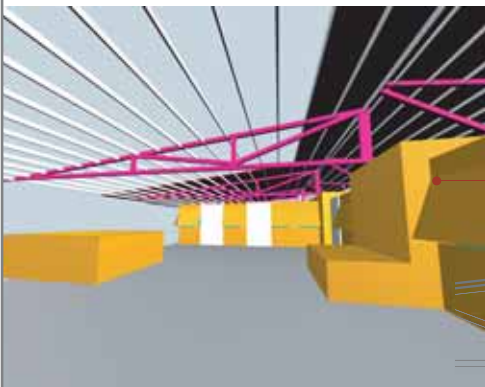


## 36 ThickWall

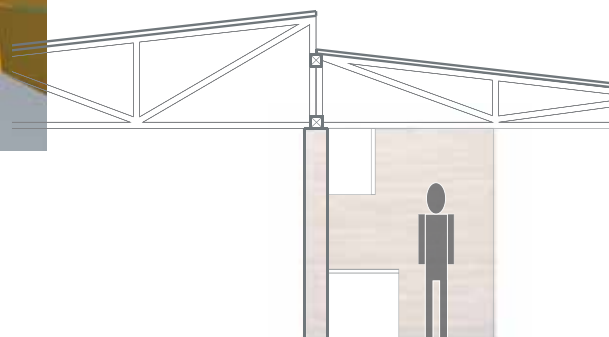
ThickWall details.

ThickWall understands the uniqueness of individuals and accommodates for them. Yet, despite its changed appearances, it always maintains the essence of home. The color of the bricks reminds families of the color of Kenya's earth. The thickness of the wall reminds them of the construction and the sense of security of their past homes. The spaces in the wall hold objects within that remind them of the people and memories of their past. The wall extends to become a part of a larger network and reminds all individuals living in Nyumbani Village that they are part of a larger community.

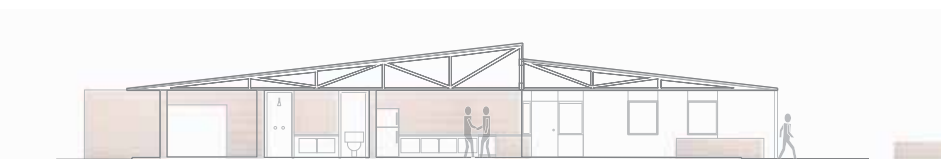
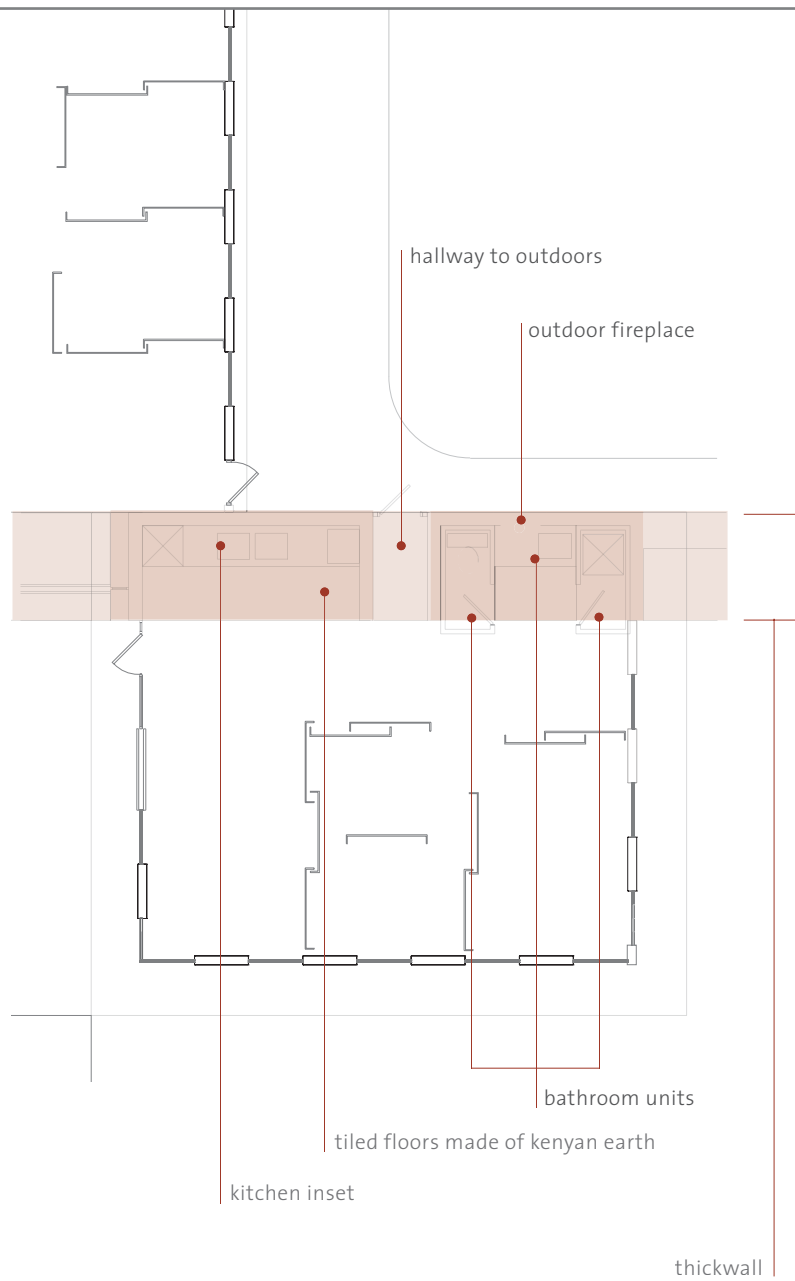
Housing



thickwall



section detail: truss, ThickWall connection



section: thickwall



ThickWall features.

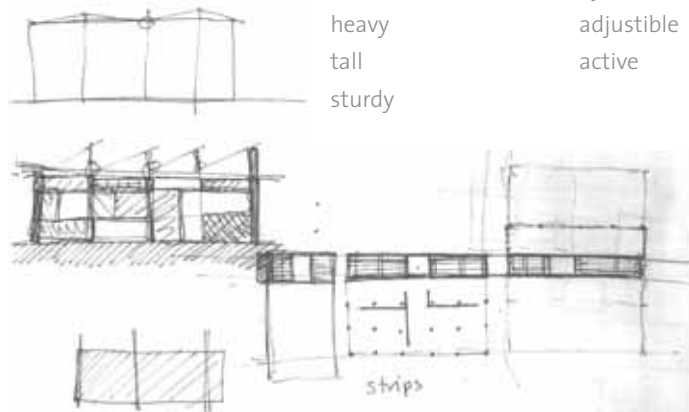
# 37 ThickWall LightSpace Features

## THICKWALL

structure  
constant  
support  
bathroom  
laundry  
kitchen  
memory wall  
closet  
lighting  
storage  
plumbing  
shower  
enclosure  
frames  
outdoor spaces  
views  
water storage  
energy storage  
memory storage  
opaque  
thick  
heavy  
tall  
sturdy

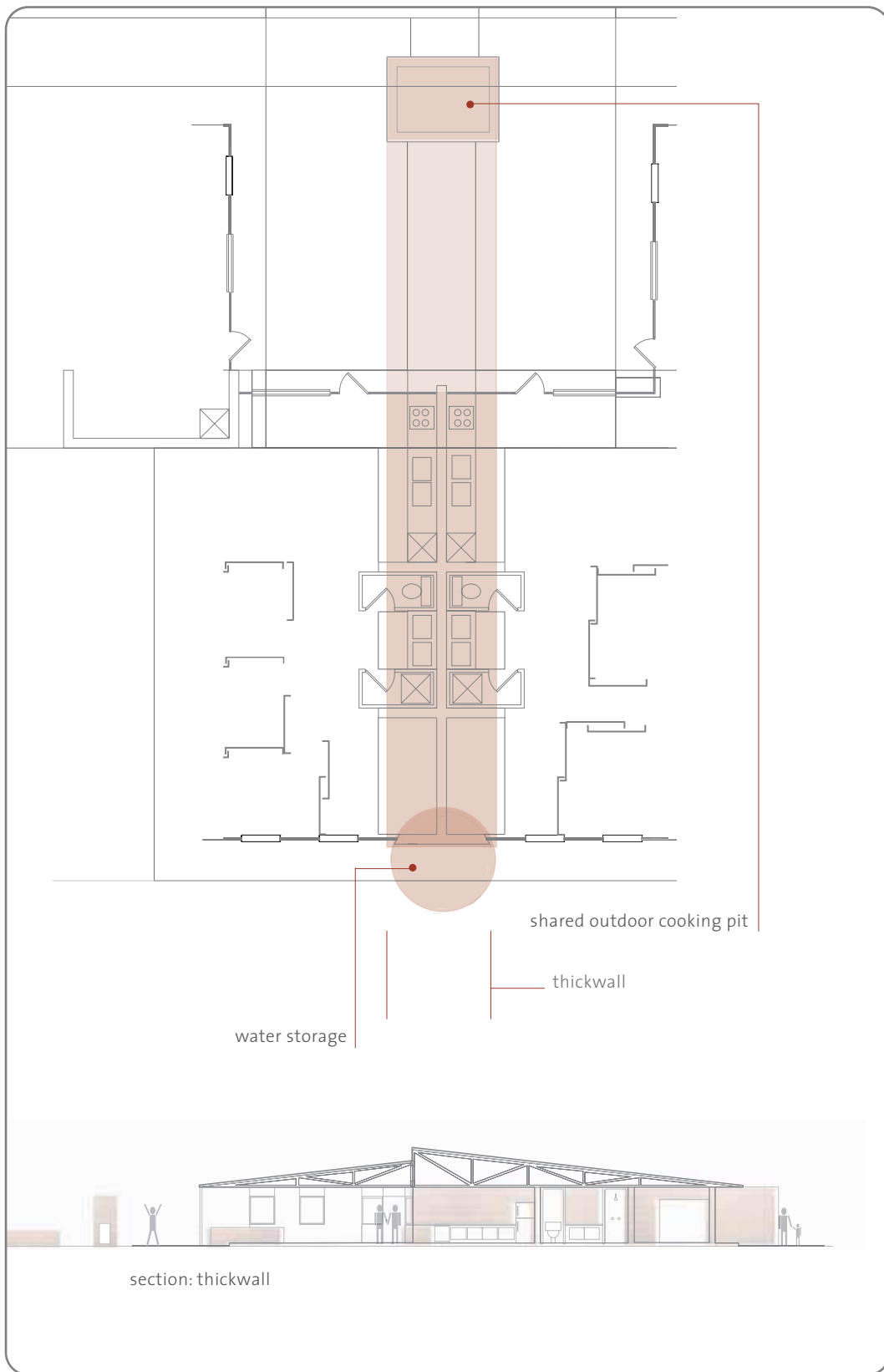
## LIGHTSPACE

open  
nature  
outdoor  
windows  
clerestory  
shared spaces  
open/closed  
light  
flexible  
variable  
personalized  
entrance  
transparent  
fluid  
folded  
growth  
blurred spaces  
inbetween  
thin  
perforated  
dynamic  
adjustable  
active



Housing







Explorations and influences. The concept of LightSpace as a weaveable element was conceived through looking at sources as diverse as traditional Japanese architecture, and the work of Roudolph Schindler. In addition, models were built which helped to facilitate the development of the LightSpace concept.

## 38 LightSpace

light

energy

ventilation



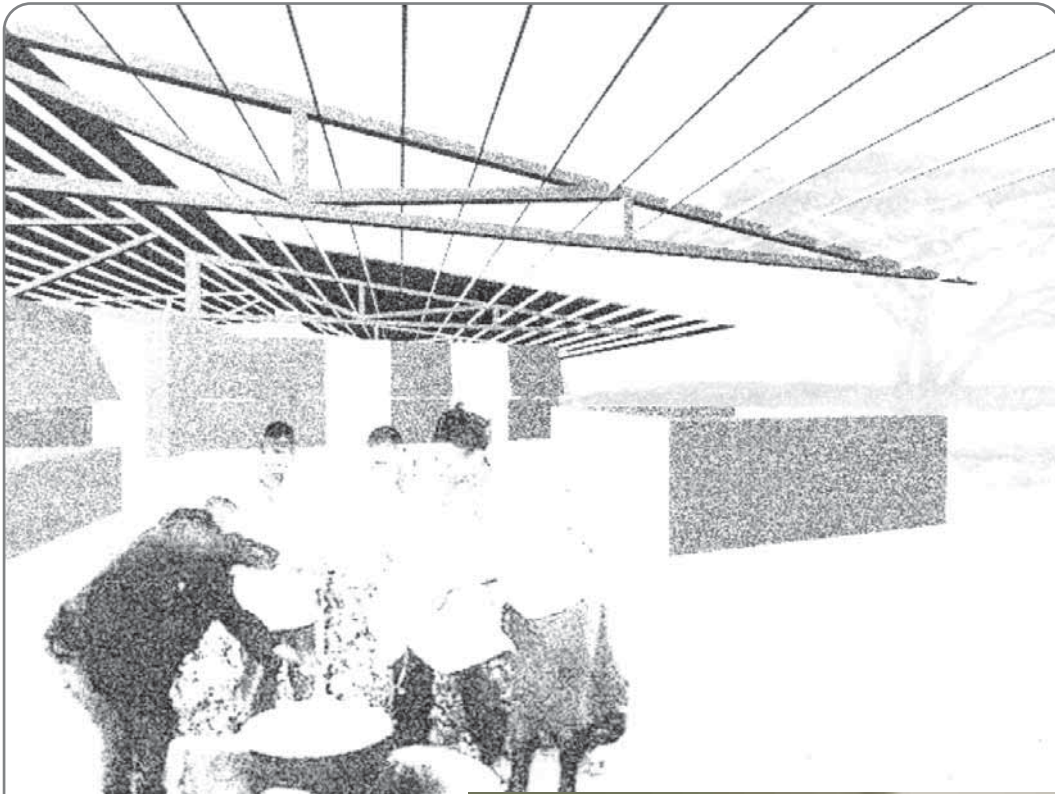
LightSpace is involved with the dynamics of living. It is the changing of nature, the expression of the site, the personalities and growth of the family. LightSpace deals with natural light by having windows and walls that allow for changing light to enter into the house throughout the day.

LightSpace reacts to the changing of seasons by having walls that let weather in when desired and keep weather out when necessary. LightSpace provides cross ventilation, through adjustable windows and louvers. LightSpace collects rainwater and solar energy. On a nice day, families can use the LightSpaces created outdoors by the extension of ThickWall out into nature. LightSpace activates ThickWall.

LightSpace punctures ThickWall to provide families with circulation. LightSpace creates volumes for living within Thick-Wall. LightSpace allows for changing room functions throughout the day. Walls move and fold to create different types of spaces. LightSpace is an exterior community courtyard or the space created under a planned row of trees. It is a shared laundry room as well as a bench in the middle of the farming fields. LightSpace changes. It can be created of different materials depending on the specifics of the site. It can be arranged differently depending on the specific family living within. It can evolve as families grow. It can be personalized. It is the individual pattern in the community weave.

Housing







Different unit types are clustered under a shared roof structure. Structural trusses meet on and are supported by ThickWall.

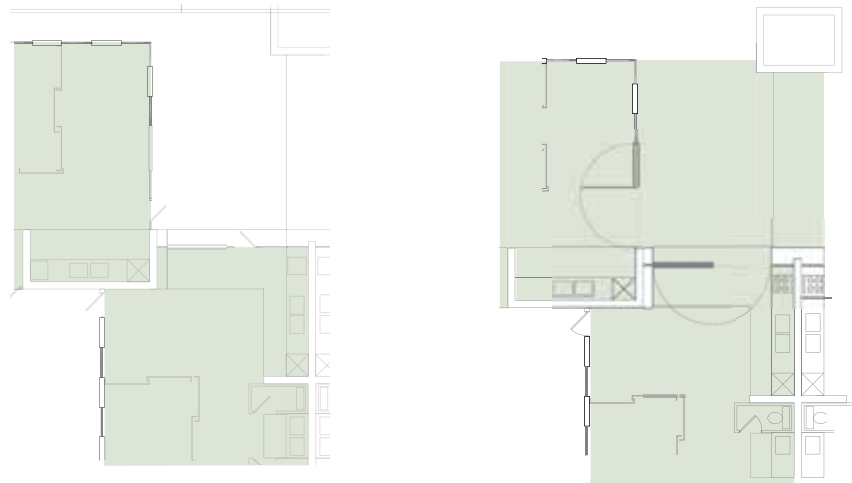
## 39 Community

designing

community

connections

Nyumbani Village has been designed to foster the creation of community connections between residents. Some of the ways in which this connection process is facilitated are illustrated in these diagrams. One of the most important aspects of the housing units in terms of connecting with others is the incorporation of the different unit types under a single roof, and the ability of residents to redefine and recreate community spaces for specific uses.

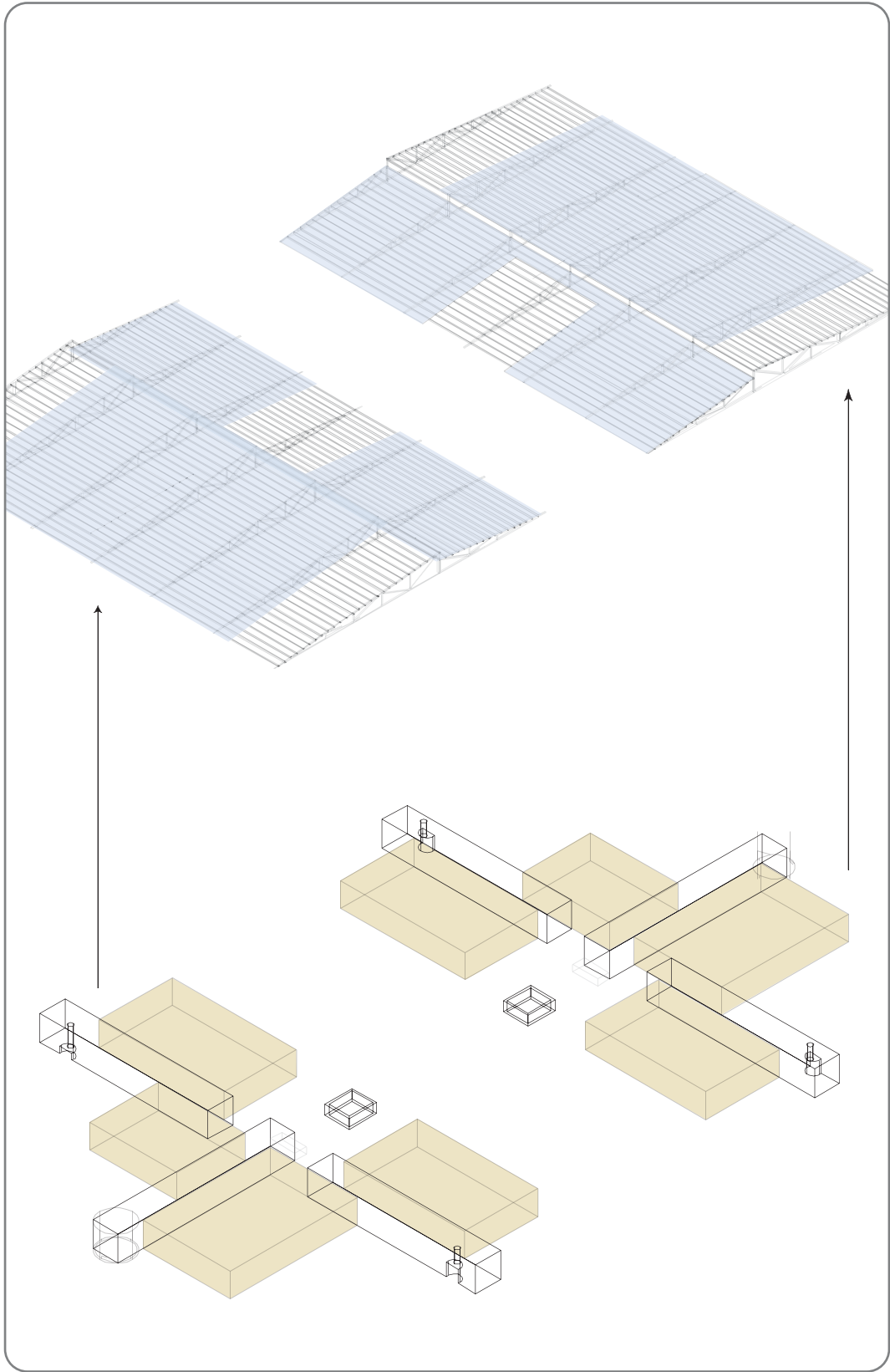


LIGHTSPACE: swinging front wall

Eight feet sections of the front wall can be swung totally open for more connection to the outdoor shared/cooking area.

Housing





ThickWall rendering.

CLUSTER AGGREGATION:

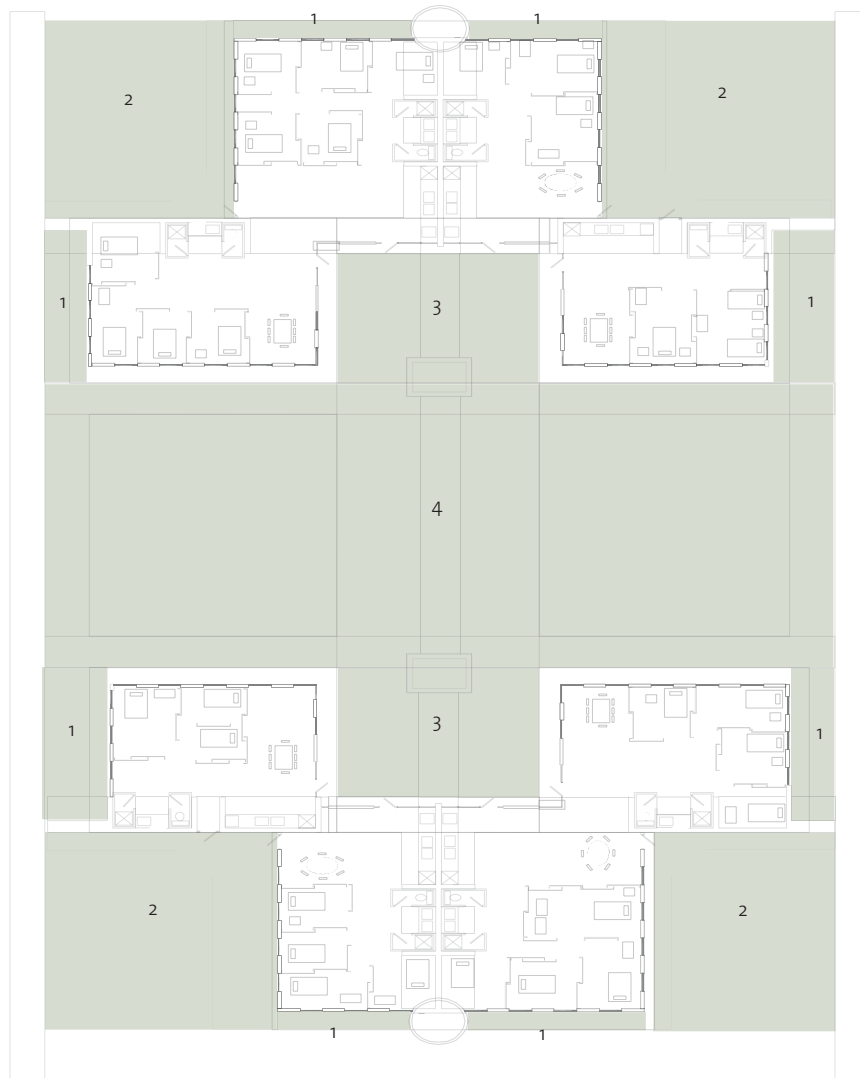
1. road
2. open adjacent land
3. walking path
4. fields
5. rain drainage channels

# 40 Community



Housing





#### SHARED COMMUNITY SPACE

Levels of shared outdoor community space:

1. Private outdoor space for each unit.
2. Outdoor living room shared by two units. Each room has overhead shading provided by extending trusses as well as an outdoor fireplace.
3. Outdoor cooking/dining/living area shared by four units. The space includes a cooking pit, countertop, and overhead shading.
4. The main courtyard is shared by the entire cluster. It includes open lawns, seating, and walking pathways.

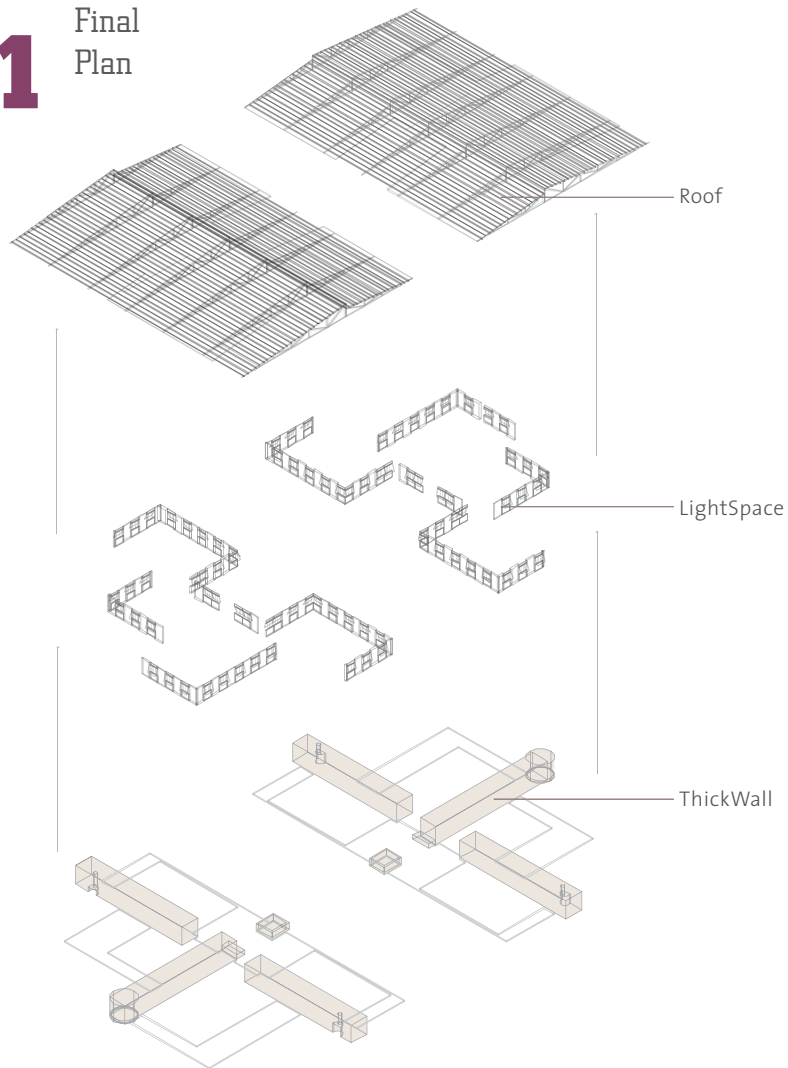


The final plan. 1 of 8 cards.



## EXPLODED AXONOMETRIC DIAGRAM

# 41 Final Plan



Housing









The final plan. 2 of 8 cards.

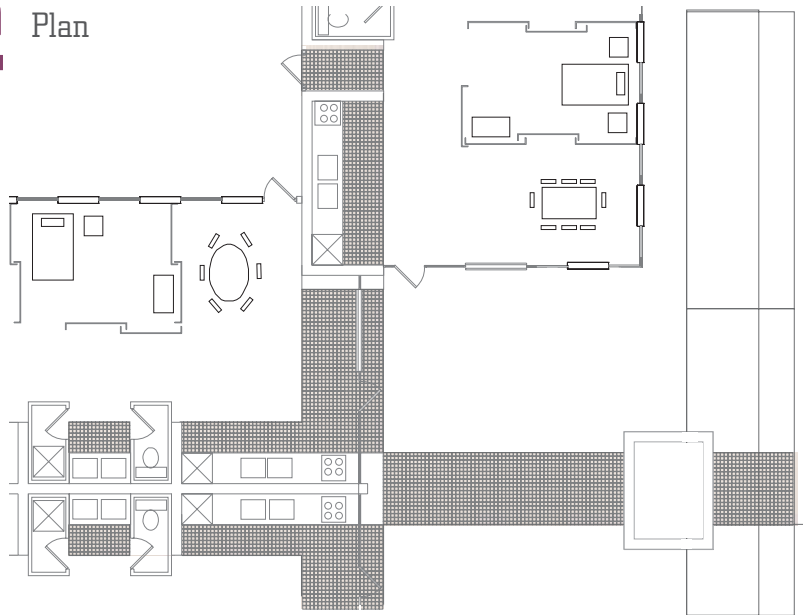


# 42

Final  
Plan

## FLOOR TILE DETAIL

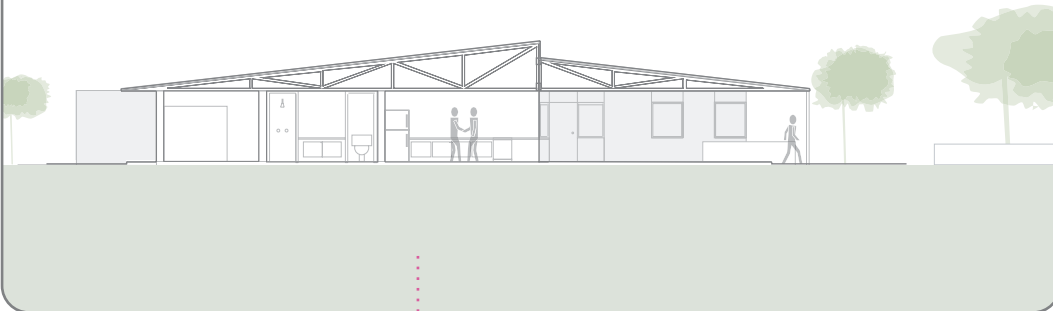
Tiled floors extend the dimensions of ThickWall down into the groundplane.



Housing



## SECTION





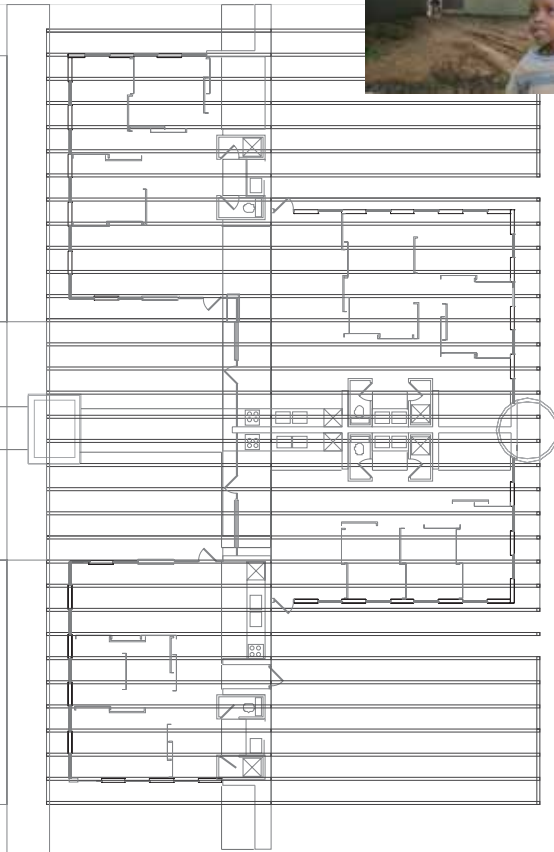


The final plan. 3 of 8 cards.

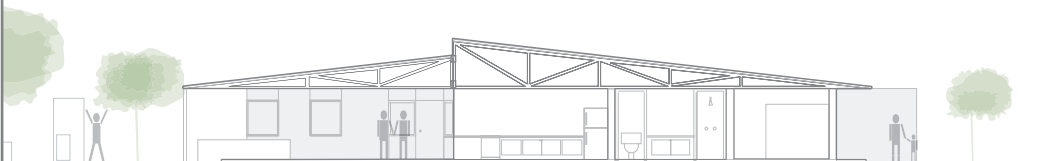


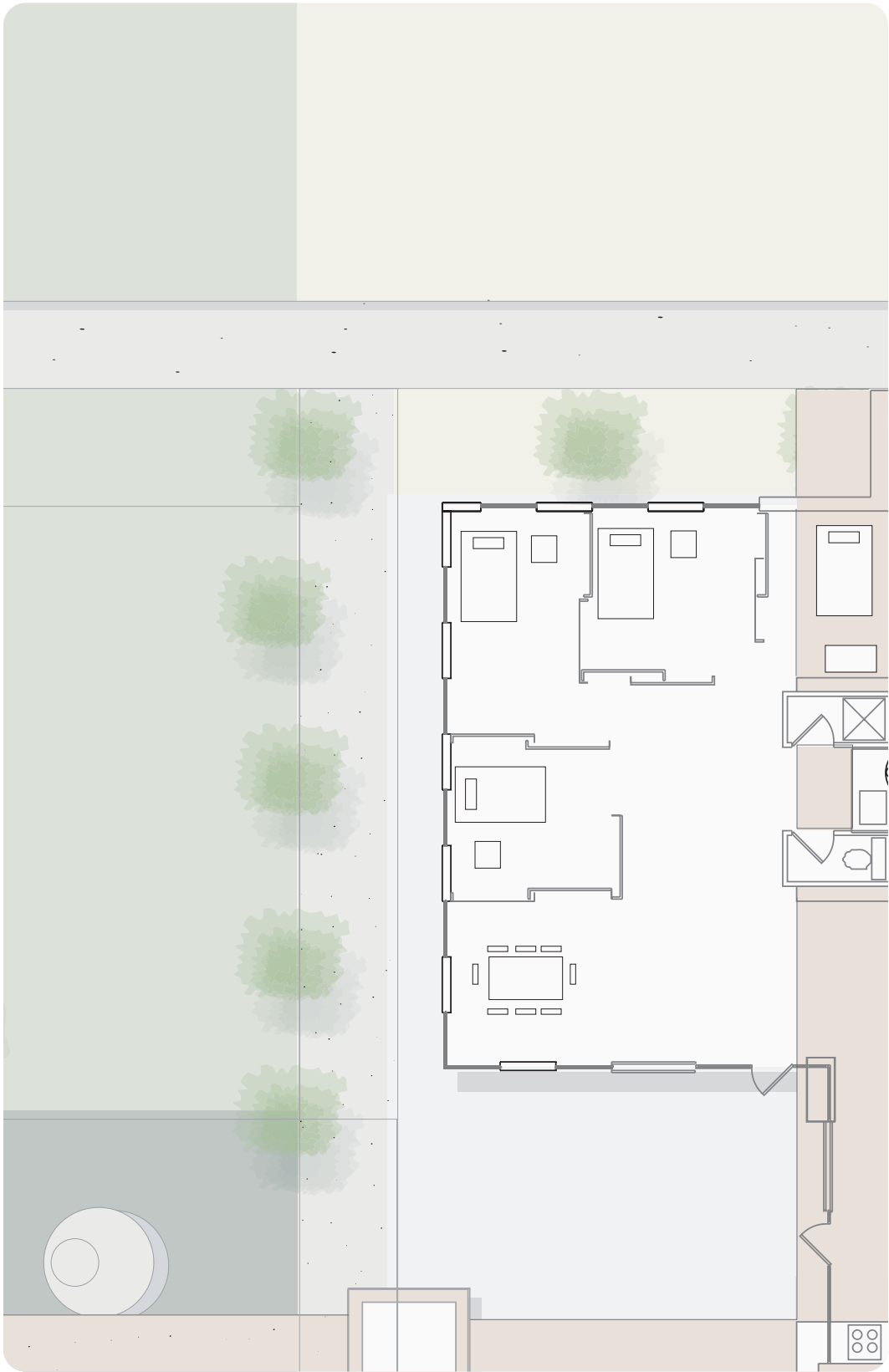
# 43

Final  
Plan



Housing







The final plan. 3 of 8 cards.



## 44 Unit Types

### UNIT TYPES TEXT

Bachelor: Housing for younger adult men or women who have finished boarding school and are one beginning an in-dependent life. 2 to 4 people.

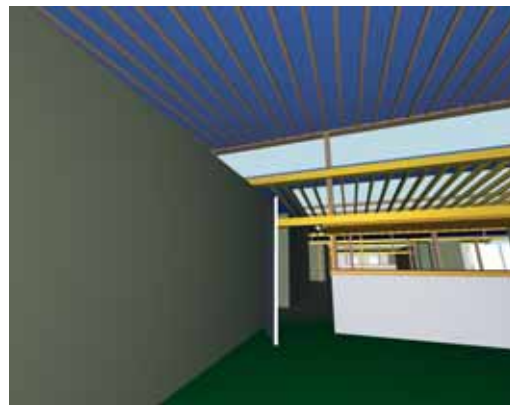
Single Family: Housing for nuclear families. 4 to 6 people.

New Family Unit: Housing for House Mothers and orphaned children of varying ages, much like the age differences that exists in a nuclear family. 5 to 8 people.

Elders Unit: Housing for Elders within the community that might need special assistance for living. Elders Units are connected to the New Family Units allowing family members to help elders while allowing elders to provide the children with a multigener-ational family structure.

Future Possibilities: The interior bedroom walls within each unit are movable and can be rearranged into various formations. This also allows for future changes in program within the clusters.

Housing







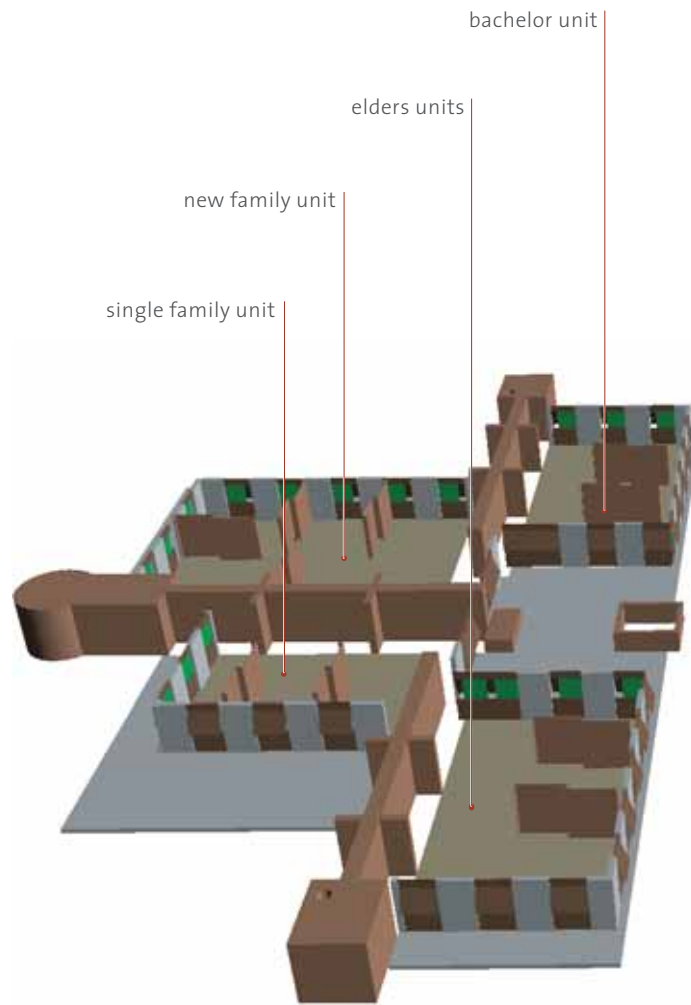


The final plan, 5 of 8 cards.



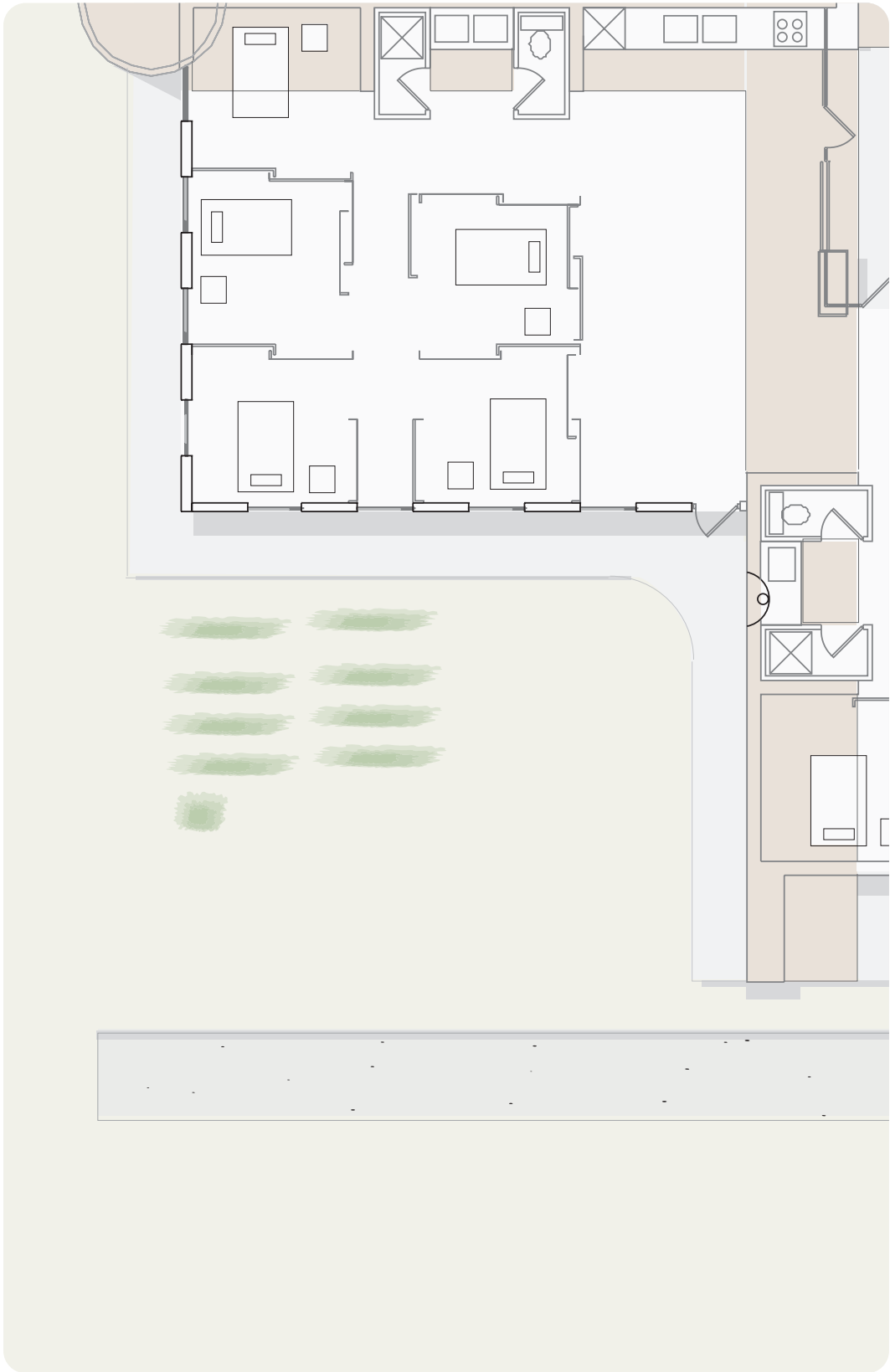
# 45 Unit Types

Each cluster consists of different types of living units all connected by a shared service core. New family units and elders units have more connected spaces. Other units are more individualized.



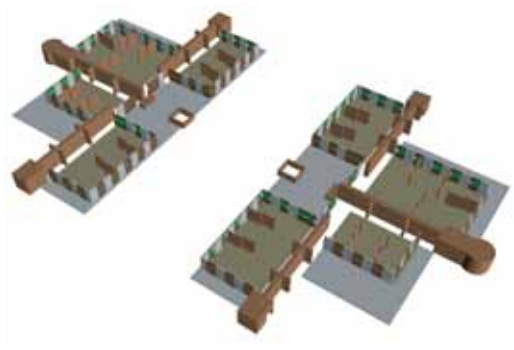
Housing





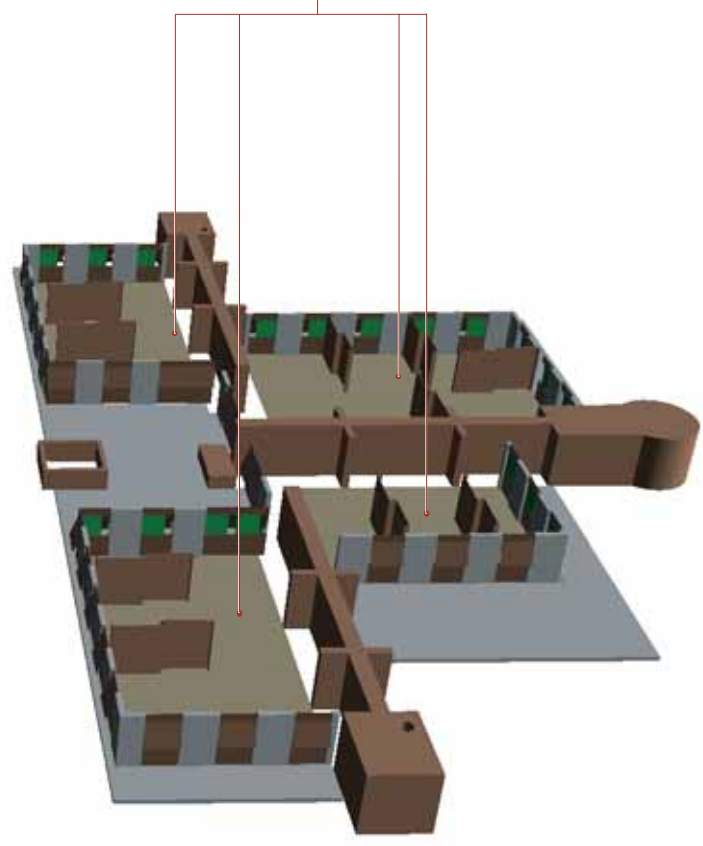


The final plan, 6 of 8 cards.



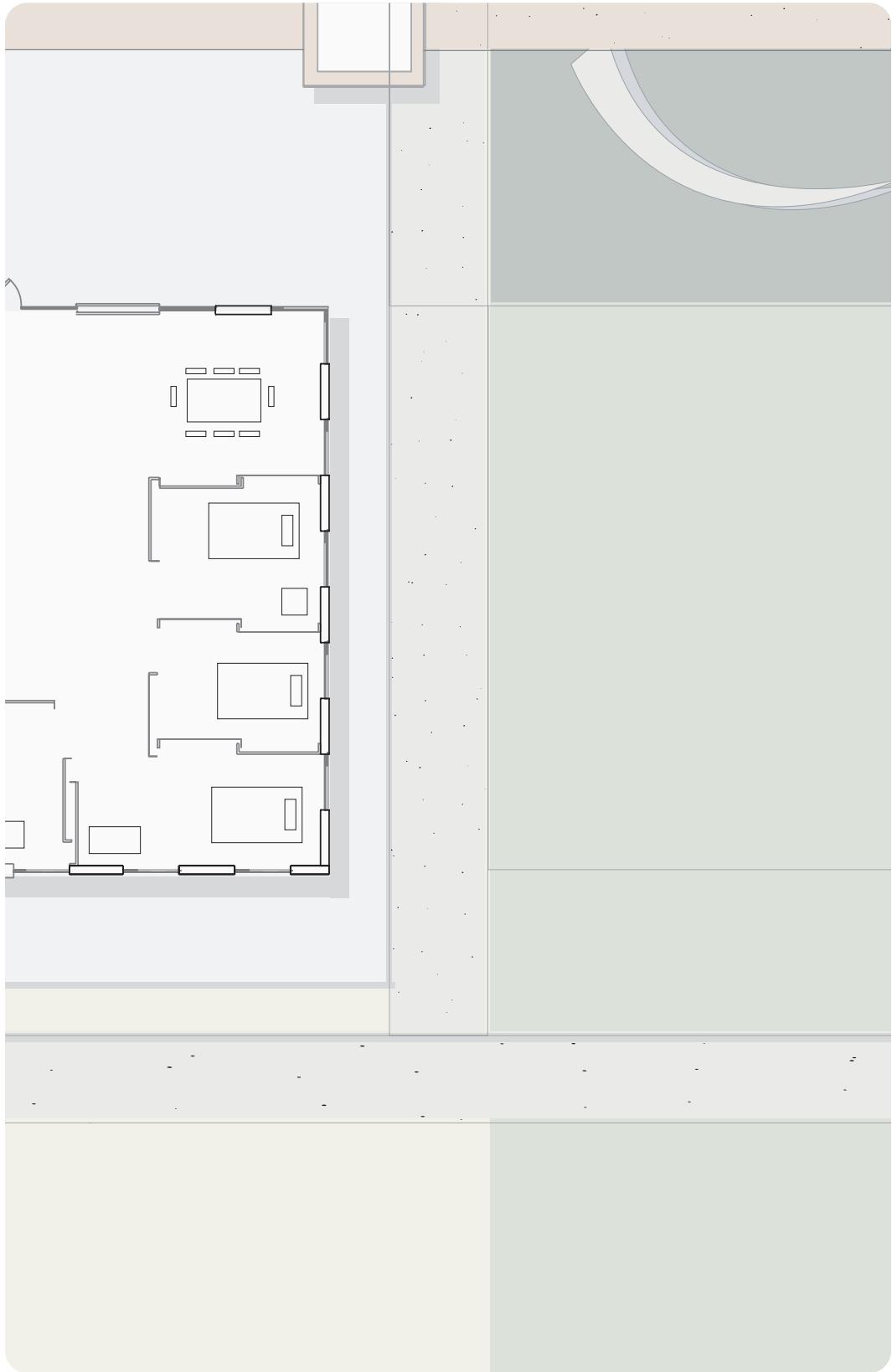
# 46 Unit Types

The types of units that make up a cluster can be varied to allow for the individual-ization of groupings.



Housing



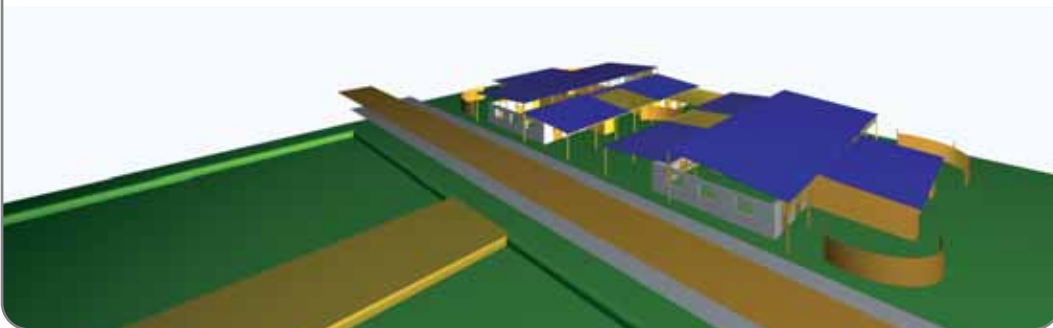
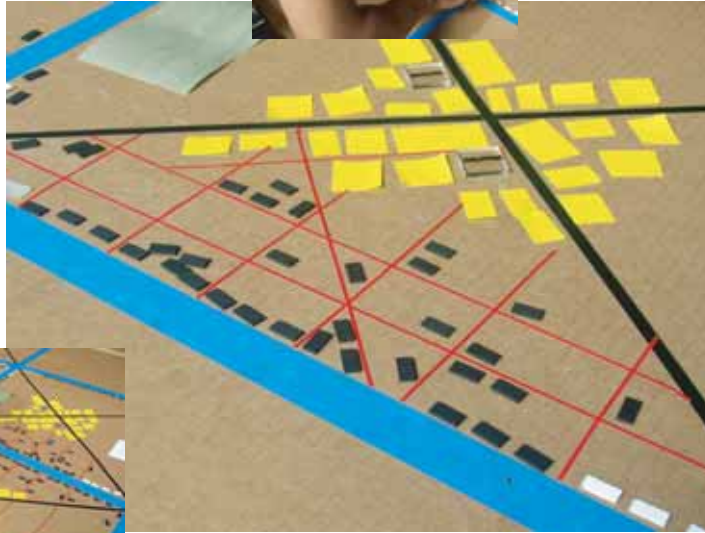




The final plan. 7 of 8 cards.

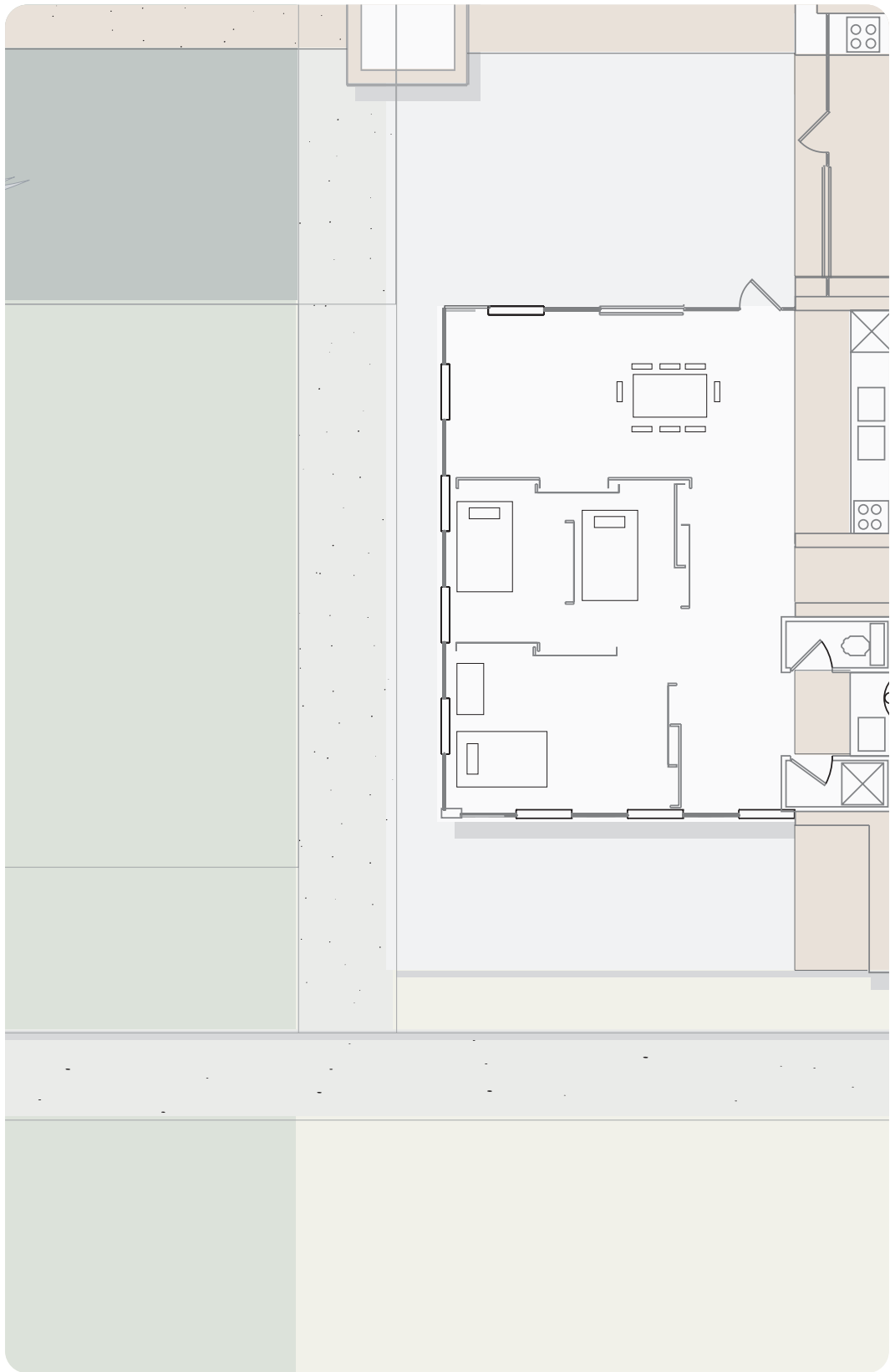


# 47 Relationship of Units



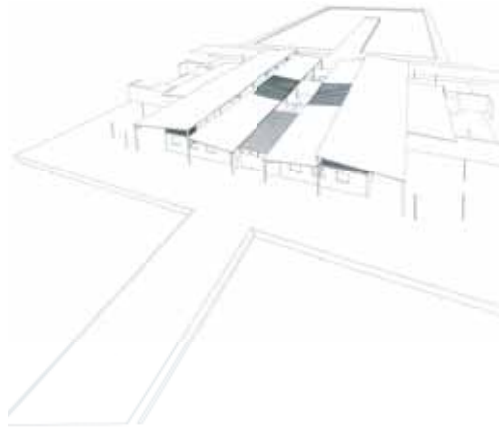
Housing







The final plan. 8 of 8 cards.



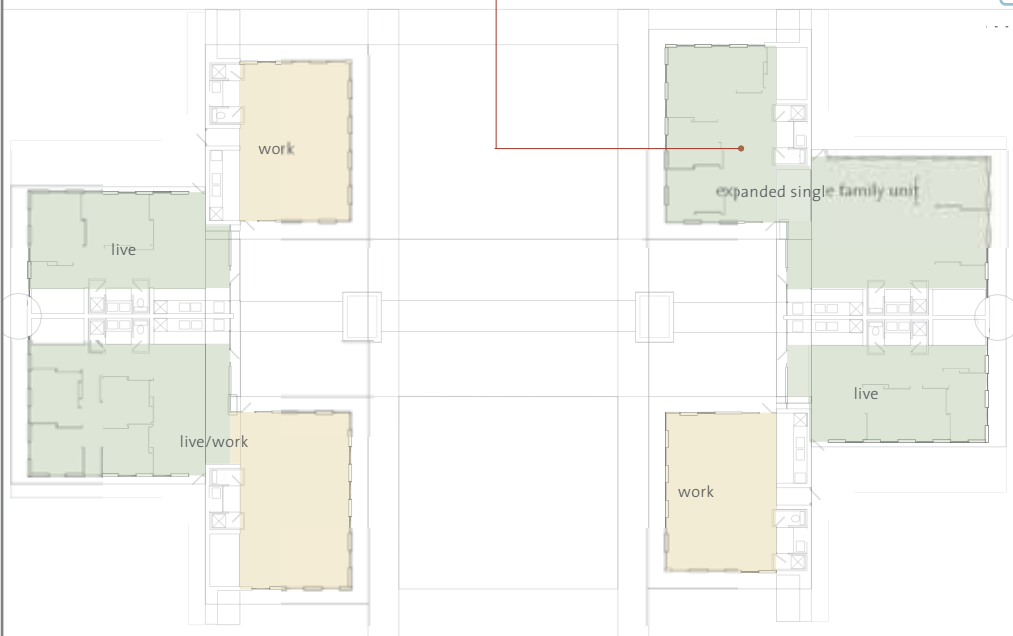
# 48 Unit Features

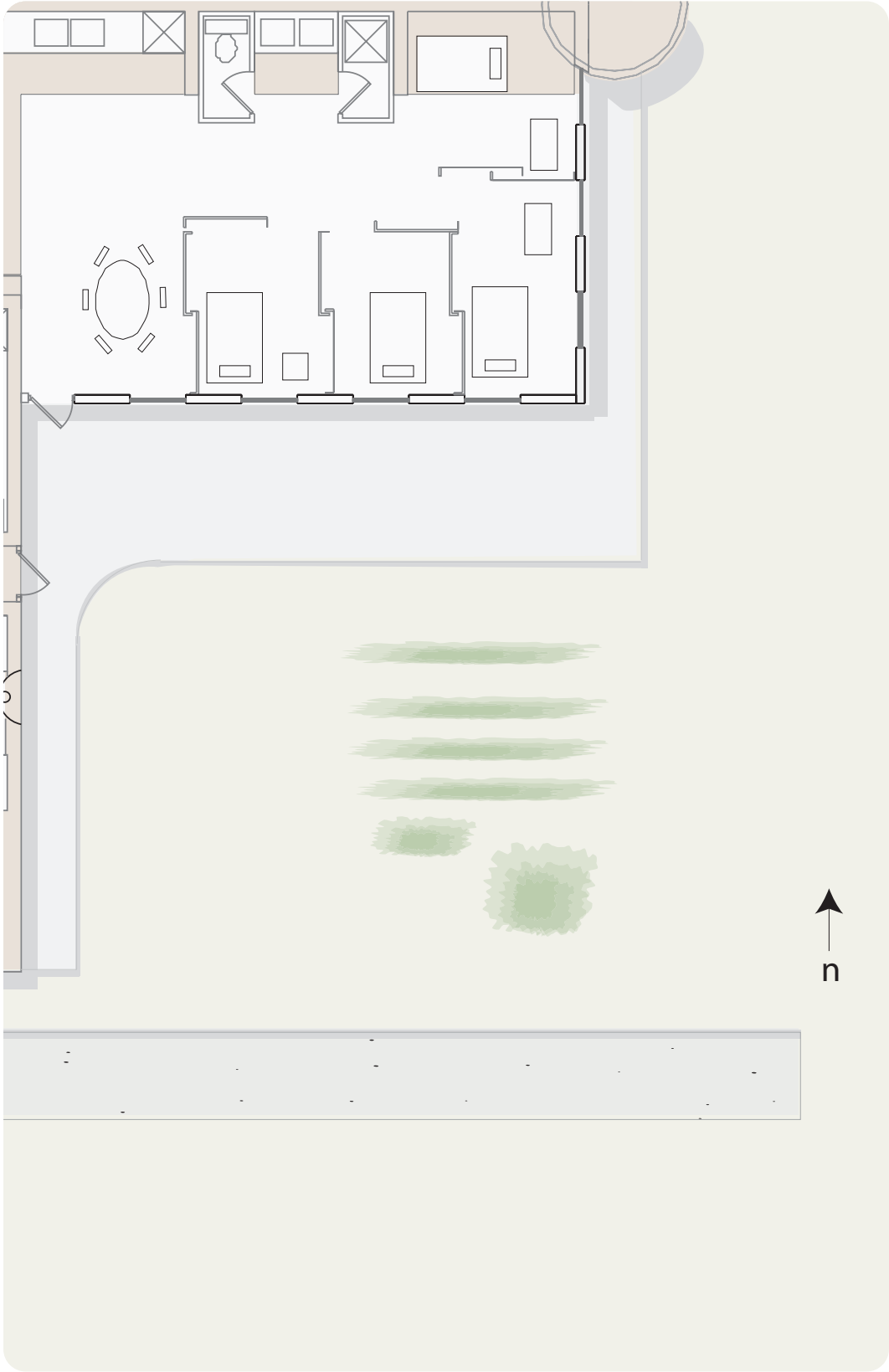
The interior bedroom walls within each unit are movable and can be rearranged into various formations. This also allows for future changes in program within the clusters.

POSSIBLE FUTURE USES FOR UNITS:

- retail
- restaurant
- live/work unit
- expanded single family unit
- community space
- office space

Housing







*A view of the final housing model.*

The final model was built according to the final housing plan. The model is an attempt to bring the housing plan to life, and to allow for an exploration of the space at a small scale.

## 49 Final Model



Housing



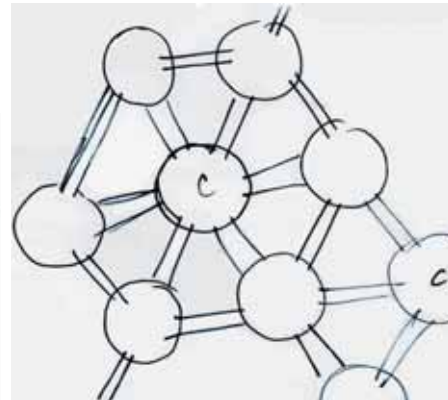
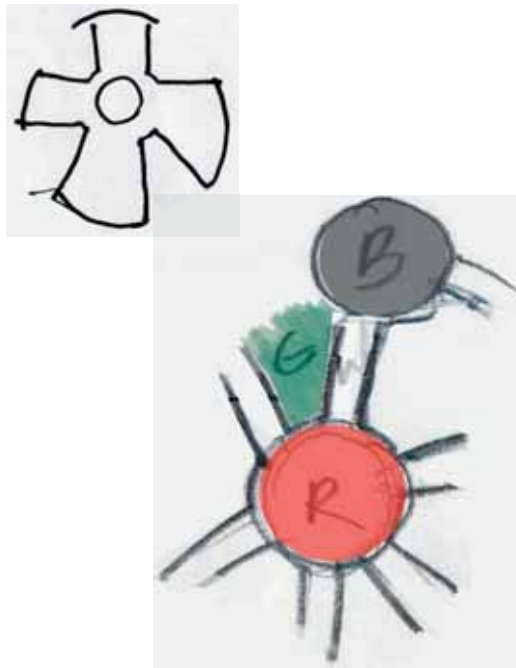


# 50

## Color & Pattern Concepts

After investigating the various textile patterns, a particular pattern emerged after some process sketches, resembling a type of organic geometry. With further exploration, we discovered that it appeared more like an atom.

Continuing the metaphorical process of the atom sketch, we used it as an important element to springboard from. The process sketches represented the nucleus and its counterparts as clusters of a larger living organism -and in the case of this research studio, it appeared like a diagram of a planning design.



Above, pattern exploration







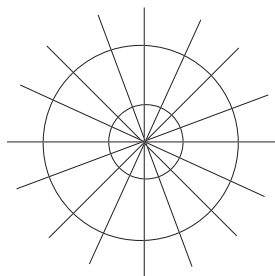


Back, color and pattern exploration

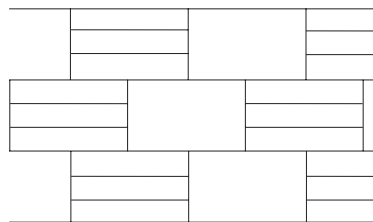
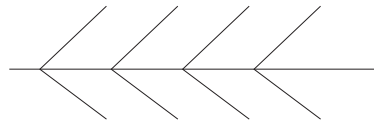
# 51

## Color & Pattern Concepts

These color explorations derived from an earlier study of focusing on the micro detail of textile and material patterns of traditional and non-traditional Kenyan and Maasai garments and urban planning plans. The colors used for the six explorations originated from the Kenyan flag –black, red, green, and white. They are not a literal representation of a plan, but a diagrammatic scheme of layers that could exist at different scales. After applying the color, the color squares began to resemble a diagrammatic plan of a city or neighborhood.



Above, examples of patterns



Sacred Space





15

Back, various sketches of sacred spaces

# 52

## Natural and Built Environment

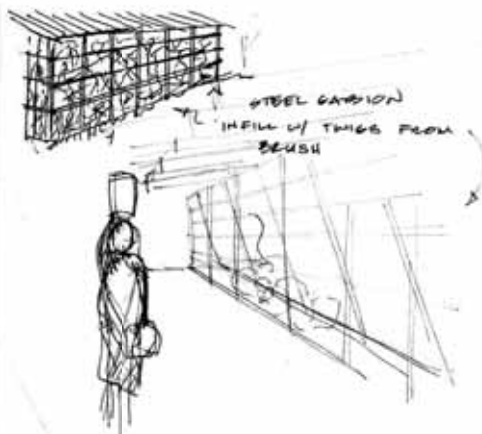
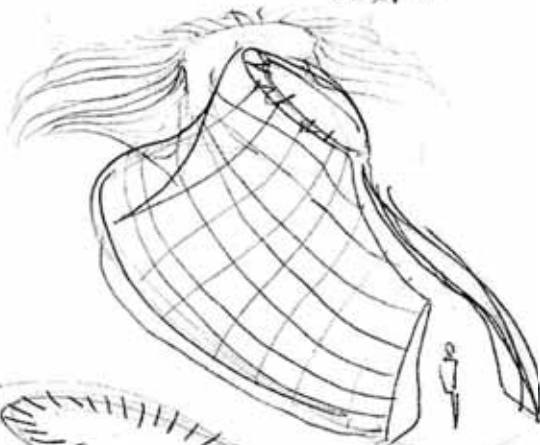
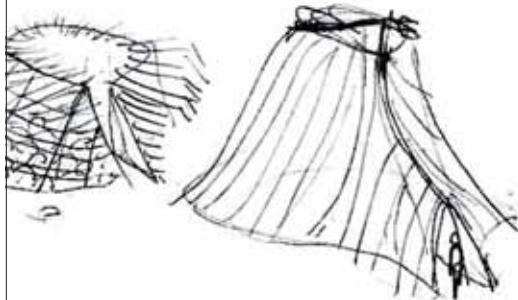
The sketches on the back of this card represent some early ideas of how the sacred space/place of worship would appear, using some indigenous/ local materials with native building processes and a contemporary form that blends in rather than announcing itself as an obtrusive object to gather in.

Sacred Space



Above, existing Kenyan Architecture



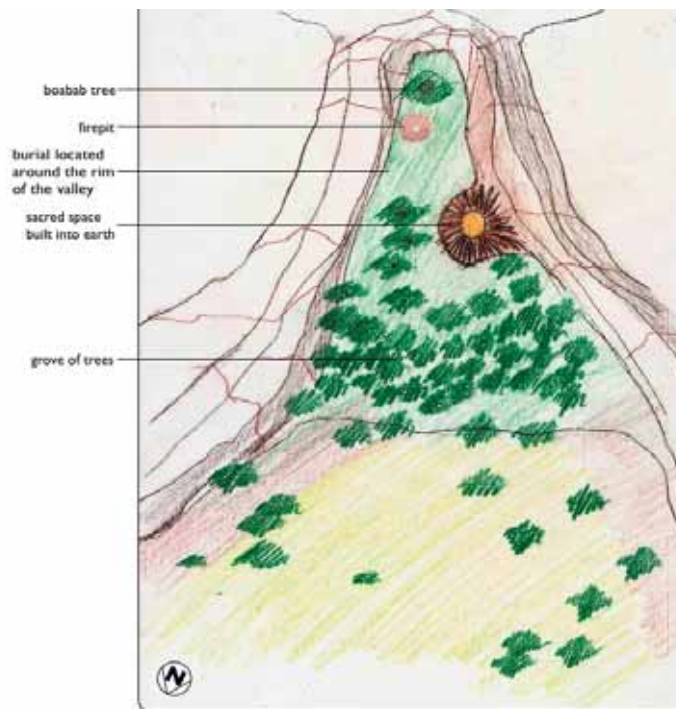




Front: the grove of trees serves as a way to naturally divide up space without "building"

There is a strong bond between nature and tradition. Intertwining the two was the basis for our exploration. We explored how we could transform the land to create communal sacred spaces.

## 53 Procession

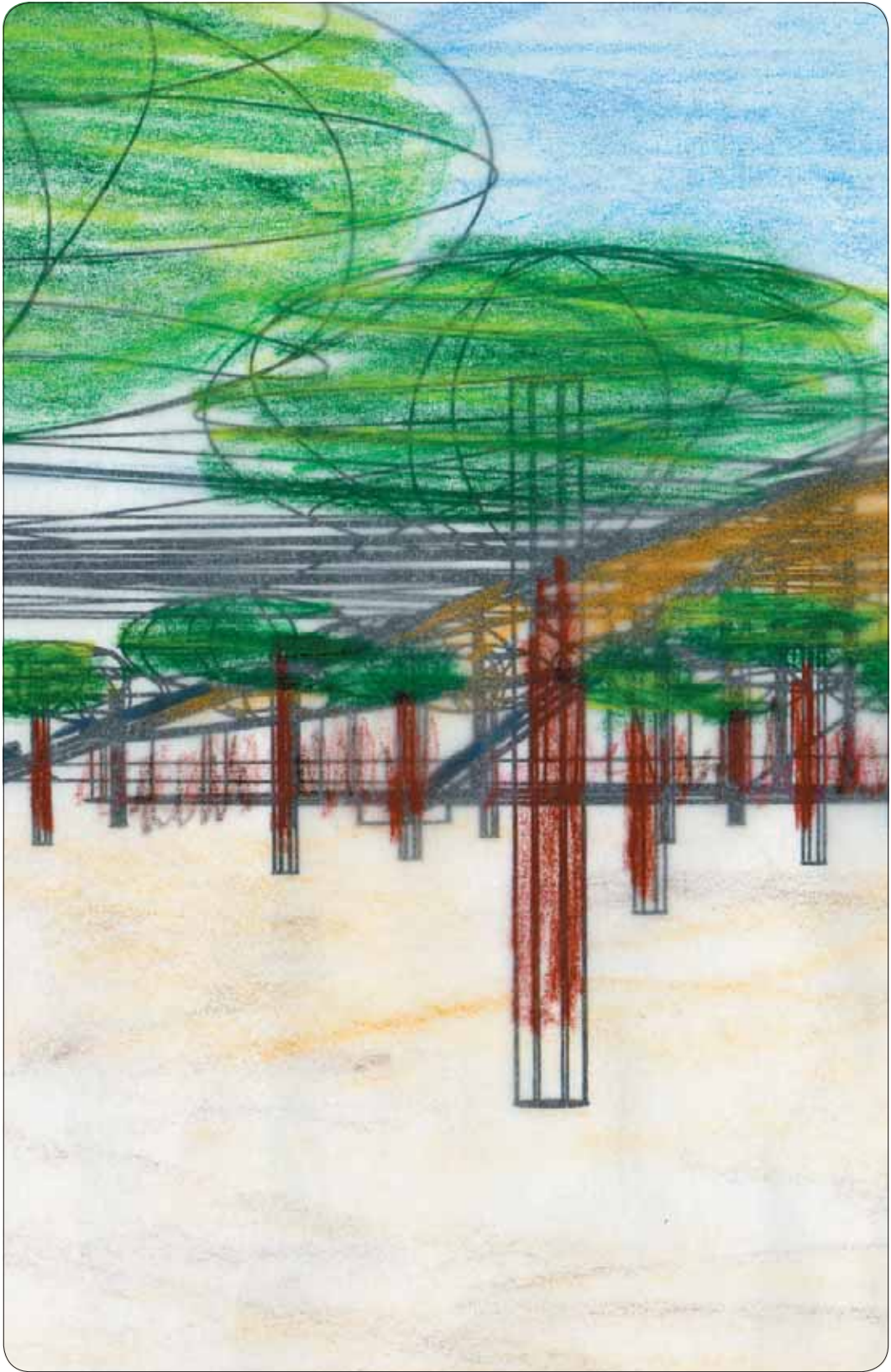


Bird's eye view of sacred space

sacred space site plan







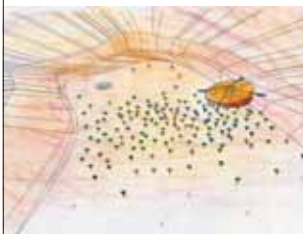




*The fire pit serves as a central point within the sacred space.*

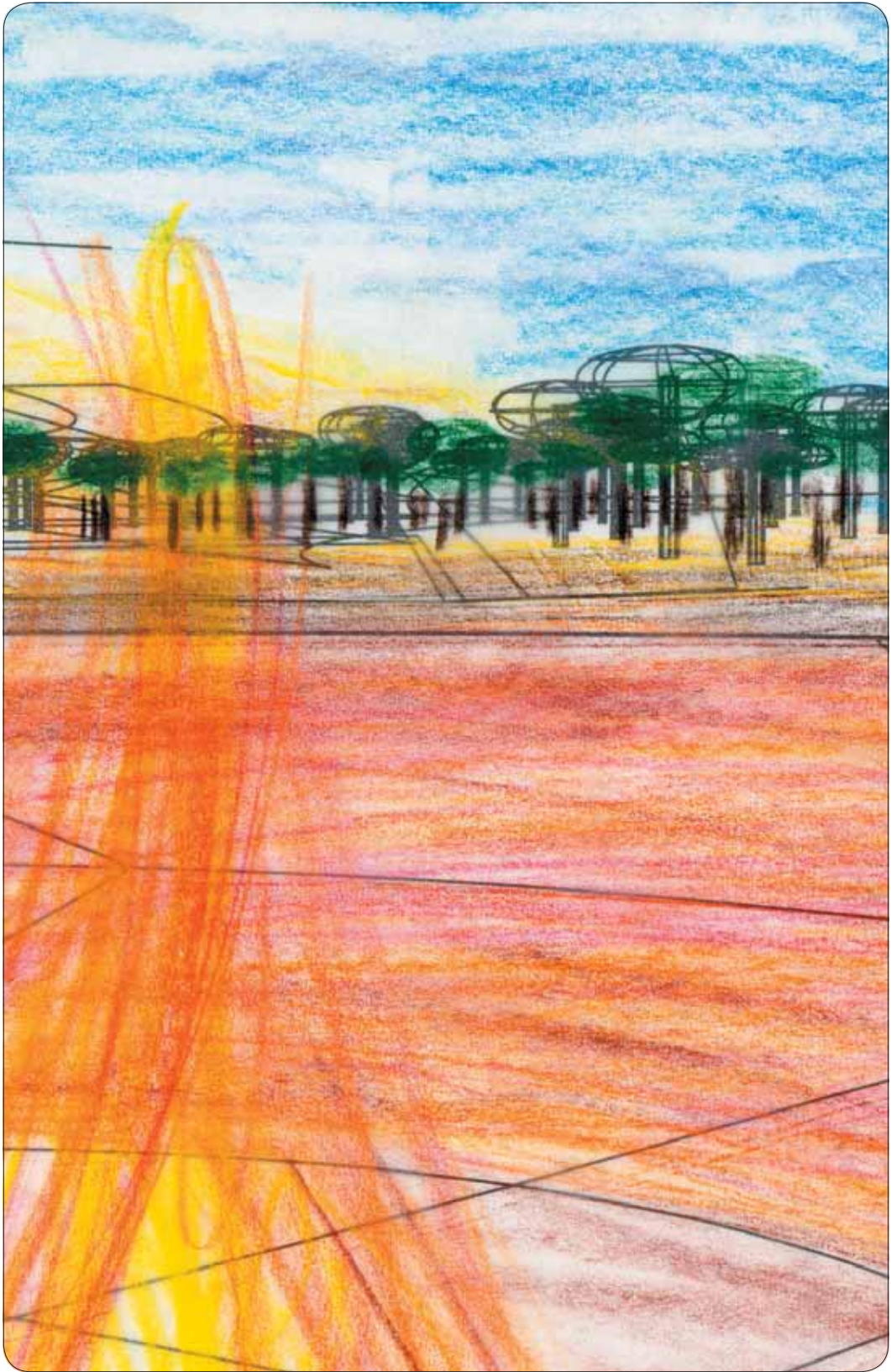
## 54 Sacred Space

Regarding the built environment, we just don't want this building/s to be a container of religions, but an expression of the lifestyles and cultures of Kenya. In order to acquaint, remind, and familiarize people about their homeland—a land with an abundance of sticks and wood, mud and clay, straw and reed- we considered it appropriate to perhaps build the pavilion/sacred, place of worship space with these familiar materials, but with modern application practices. The culture of mud, wood, and straw dwellings informs the spirit of the people of Kenya and has become a key to understanding Kenyan history and tradition. There's a sense of permanence that is associated with Kenyan dwellings that we want to transmit into this sacred space arena.



*top to bottom: grove of trees, aerial view of sacred space, and fire pit with grove of trees in background.*





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