

BURKINABÉ DOMESTICITY

A contextualized response to rapid urbanization in Sub-Saharan Africa

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Graduation Presentation
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BURKINABÉ DOMESTICITY

A contextualized response to rapid urbanization in Sub-Saharan Africa

Fascination
Research
Documentary
Site analyses
Design





RESEARCH

Context



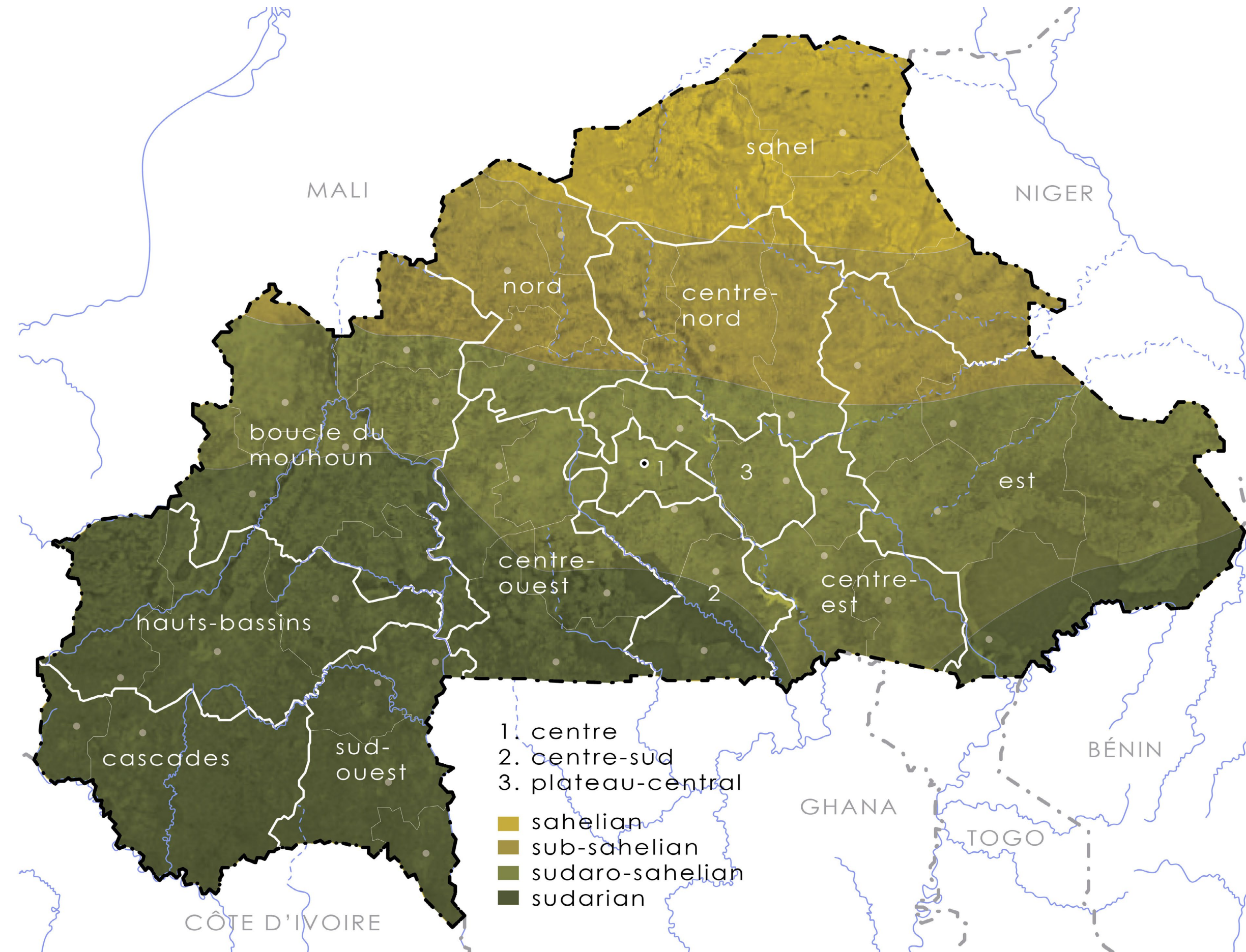
RESEARCH

Context



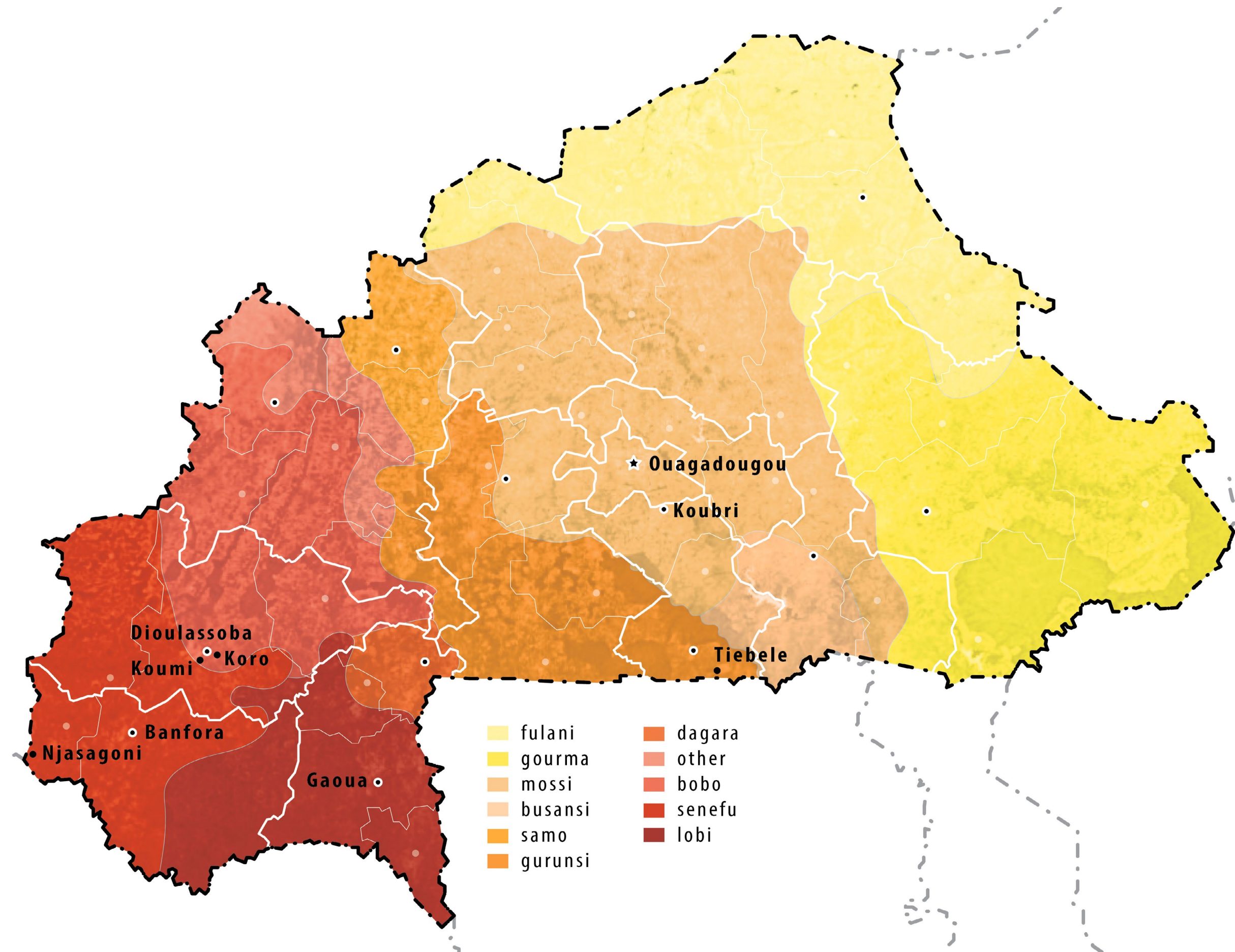
RESEARCH

Context



RESEARCH

Context



*How are the **ethnic groups**' values in Burkina Faso reflected in their **vernacular architecture**?*

RESEARCH

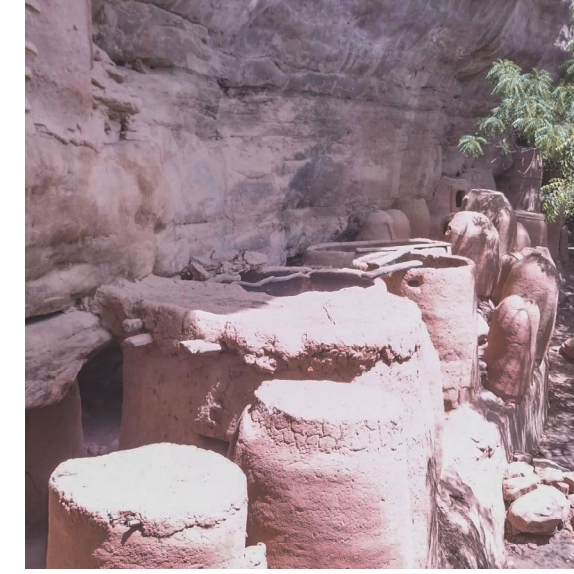
Method



Location: Koubri
Ethnicity: Mossi



Location: Tiebele
Ethnicity: Kasena



Location: Njasagoni
Ethnicity: Wara



Location: Malon
Ethnicity: Turka



Location: Dioulassoba
Ethnicity: Bobo



Location: Koro
Ethnicity: Bobo



Location: Koumi
Ethnicity: Bobo



Location: Gaoua
Ethnicity: Lobi



Location: Gaoua
Ethnicity: Gan



RESEARCH

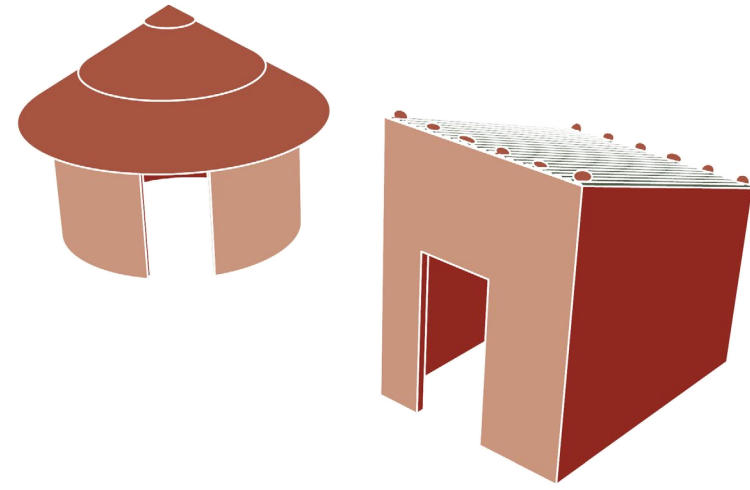
Method

TOWN	KOUBRI	TIEBELE / TANGASOGO	NJASOGONI	MALON	DIOULASSOBA	KORO	KOUMI	GAOUA	GAOUA
ETHNICITY	MOSSI	GURUNSI - KASENA	SENUFO - WARA	TURKA	BOBO	BOBO	BOBO	LOBI	LOBI-GAN
LOCATION									
SURROUNDING LANDSCAPE	 mossi - walk back	 drone - tiebele - landscape rotation & drone - tangasogo 9, landscape panning & drone - tangasogo 8, landscape	 drone - njasogoni rock bird attack & njasogoni - tour - entrance	 drone 2 - turka - perspective landscape & drone 3 - turka - panning mountain & drone 4 - turka - perspective village landscape mountain	 drone - bobo - dioulassoba - rotation city & drone - bobo - dioulassoba - perspective, river	 drone 1 - koro - perspective & koro - tour - overview 2	 drone - koumi 1 - perspective & drone - koumi 2 - perspective	 drone - gaoua village - perspective, landscape, rotate	 drone - gaoua village - perspective, landscape, rotate
TOWN STRUCTURE	 drone - mossi - village aerial & drone - mossi - village zoom out	 drone - gurunsi - aerial still, zoom, turn & drone - tangasogo 2, aerial zoom & gurunsi - tour - roof view 2	 drone - njasogoni 1	 drone 7 - turka - zoom in village, rotation	 drone - bobo - dioulassoba - coming down, village within a city	 drone 3 - koro - perspective, rotation village & drone 2 - koro - perspective	 drone - koumi 4 - perspective, zoom & koumi - tour - roof 3	 drone - gaoua village - perspective, landscape, rotate & drone - gaoua village - landscape rotate, coming down	 drone - gaoua - museum
NATURE	 drone - mossi - barack to village panning <i>barrage far away, climate change</i>	 tiebele - court royale - courtyard 4, women preparing the painting <i>paint is also made out of natural elements</i>	 njasogoni - tour - overview 5 <i>Living under the rock, protecting it from rain</i>	 turka - tour - porch, solar panel <i>using the sun, natural source, for their comfort</i>	 dioulassoba - tour - river, trash	 drone 3 - koro - perspective, rotation village 2 & koro - tour - kids on rocks & koro - tour - rocks, homes	<i>see Surrounding Landscape and note that the homes perfectly blend in with their surroundings</i>	 gaoua village - tour - entrance, garden	
ENCLOSURE	 mossi - outside house part of wall	 drone - tangasogo 7, flyover, panning & gurunsi - tour - inside 17 & gurunsi - tour - inside 13, hole for neighbors 2	 njasogoni - tour - landscape, rocks & njasogoni - tour - landscape 3		<i>see Surrounding Landscape to understand that the village has been enclosed by the city</i>		 koumi - tour - decayed house, entrance home		
PROTECTION	<i>see Town Structure, families are clustered in groups</i>	 gurunsi - tour - getting out the house & gurunsi - tour - inside 3, low door & tiebele - court royale - inside 9, woman's house, inside	 njasogoni - tour - landscape, rocks & njasogoni - tour - landscape 3	 turka - tour - chicken houses & turka - tour - animal homes		 koro - tour - walking up & koro - tour - rocks people passing by	 gaoua Museum - lobi tour - fetich, exterior, stairs, facade, material		
DOMESTIC ANIMALS	 mossi-man talking 4 & mossi - chickens and chicken house & mossi - tour 1 - chicken house, goat house, person house	 gurunsi - tour - courtyard & gurunsi - tour - inside 11, chicken holes and entrance & tiebele - waterhole, animals	 njasogoni - tour - animal location, beetle 2	 turka - tour - chicken houses & turka - tour - animal homes				 gaoua village - exterior, facade tour <i>see Town Structure for more small constructions for the animals</i>	
MATERIALS	 mossi - walk towards hut - material highlight & mossi - tour 4 - window and material & mossi - material highlight riet	 tiebele - court royale - inside 1, dole and mud stuff & tiebele - court royale - inside 5, women preparing walls & gurunsi - tour - material highlight palmtree	 njasogoni - tour - material highlight 2 & njasogoni - tour - overview 4, material highlight & njasogoni - tour - foundation	 turka - tour - material highlight 2, roof & turka - tour - material highlight 3, houses	 dioulassoba - tour - street, material highlight & dioulassoba - tour - follow & dioulassoba - tour - dirt house	 koro - tour - get together, girl touban, material, cement & koro - tour - material highlight 2 & koro - tour - material, rock, homes	 koumi - tour - homes, material highlight 2, forgeron thing & koumi - tour - home, roof & koumi - tour - cooking, sleeping, constructing house	 gaoua museum - lobi tour - fetich, exterior, material	 gaoua museum - lobi tour - fetich, exterior, material
DECORATION		 tiebele - court royale - inside 4, signs & gurunsi - tour - grenier & gurunsi - tour - entrance 5, signs & gurunsi - tour - inside 7, kitchen, air hole, black and white	 njasogoni - tour - grenier & njasogoni - tour - treasures				 koumi - tour - material highlight 2, woman cooking, hand & koumi - tour - women under tree		
MEETING PLACE	 mossi - outside home and cover & mossi - group talking	 tiebele - court royale - entrance & tiebele - timelaps waterhole	 njasogoni - tour - sick and welcome place & njasogoni - tour - sick and welcome place 3	 turka - tour - walk towards village	 dioulassoba - tour - animist meeting space & dioulassoba - tour - entrance set up	 koro - tour - funeral gathering rocks 4 & koro - tour - funeral gathering rocks 5 & koro - tour - funeral gathering 8, musicians	 koumi - tour - material highlight 2, woman cooking, hand & koumi - tour - women under tree	 gaoua village - exterior, facade tour	
STORAGE	 mossi - tour 10 - grain storage - mosque	 gurunsi - tour - courtyard 2, gran thing turn around & tiebele - court royale - inside 15, millet gran thing, agriculture sign & tiebele - court royale - inside 6, mill gran thing	 njasogoni - tour - grenier 2 - house & njasogoni - tour - overview 6, grenier & njasogoni - tour - overview 7, grenier	 turka - tour - houses - grain storage, room curtain & turka - tour - houses and onion drying place	 dioulassoba - tour - grain storage place	 koro - tour - grain storage place	 koumi - tour - oven, homes, getting up for shea butter nuts	 gaoua museum - lobi tour - walk towards, grenier	 gaoua museum - lobi tour - walk towards, grenier
POLYGAMY	 mossi - tour 7 - woman house, kitchen, grain <i>see Town Structure as well for both women's houses</i>	<i>CHECK LITTLE BOOK-LET!!!</i>			 dioulassoba - tour - muslim, men sleep up women down	 koumi - tour - home, amount of children not polygamous, talking about family relations	 gaoua museum - lobi tour - inside first woman & gaoua museum - lobi tour - inside second woman, grenier & gaoua museum - lobi tour - roof	 gaoua museum - lobi tour - first woman, material highlight roof & gaoua museum - lobi tour - second woman & gaoua museum - lobi tour - entrance village	
RELIGION / CELEBRATION	 mossi - tour 10 - grain storage - mosque & mossi - mosque outside cover <i>see Town Structure for aerial view</i>	 tiebele - court royale - inside 2, signs, hotel fetiche	 njasogoni - tour - entrance to sacrifice place not allowed to film, but check audio	 turka - tour - construction 2 the structure that is being constructed right now will become a place for the fetich	 dioulassoba - tour - animist sacrifice place & dioulassoba - tour - church	 koro - tour - fetich 3 & koro - tour - kids on rocks, fetich place, cooking & koro - tour - funeral gathering gun	 koumi - tour - fetich, double heighted house & koumi - tour - fetich, getting up roof	 gaoua museum - lobi tour - fetich, exterior, material	 gaoua museum - lobi tour - fetich 2

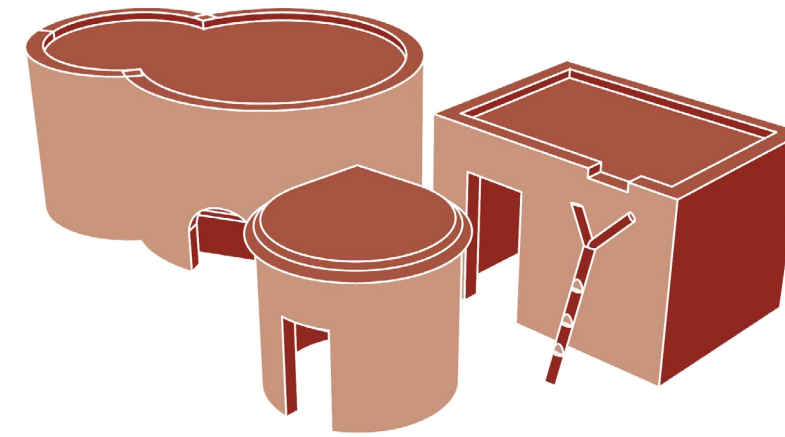
RESEARCH

Excursion

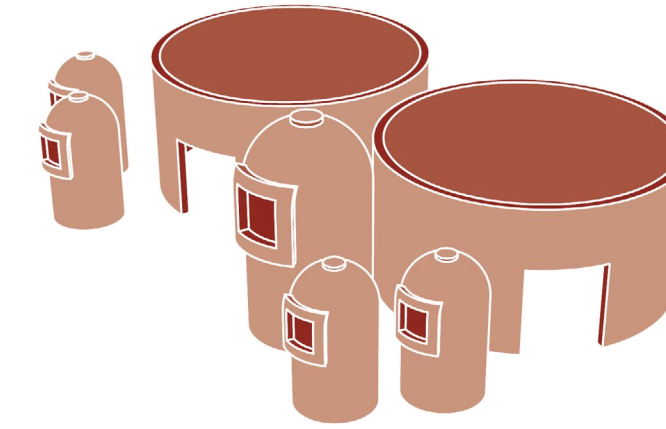
Location: Koubri / Ethnicity: Mossi



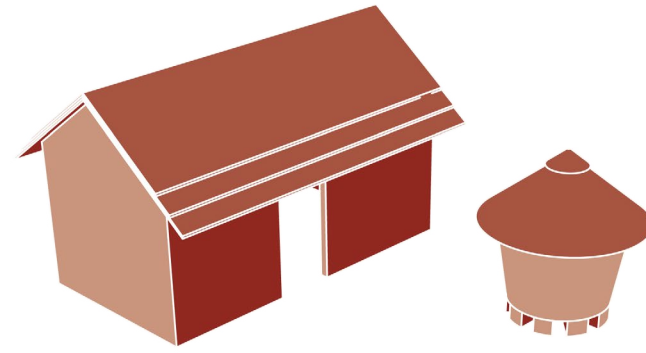
Location: Tiebele / Ethnicity: Kasena



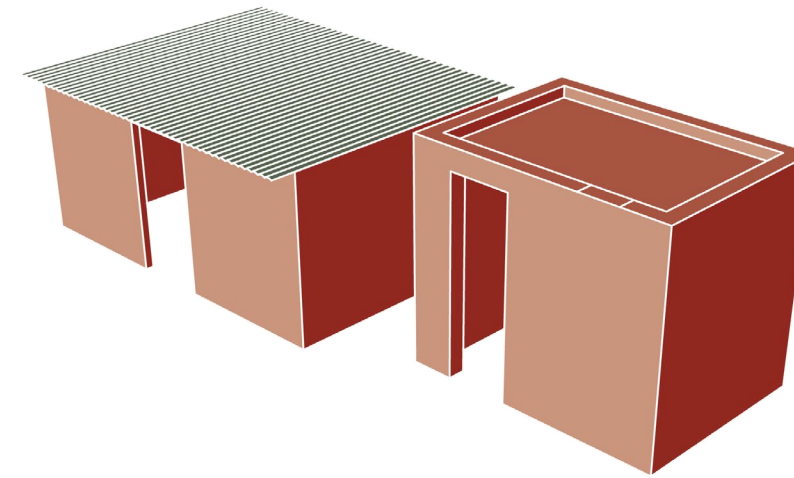
Location: Njasagoni / Ethnicity: Wara



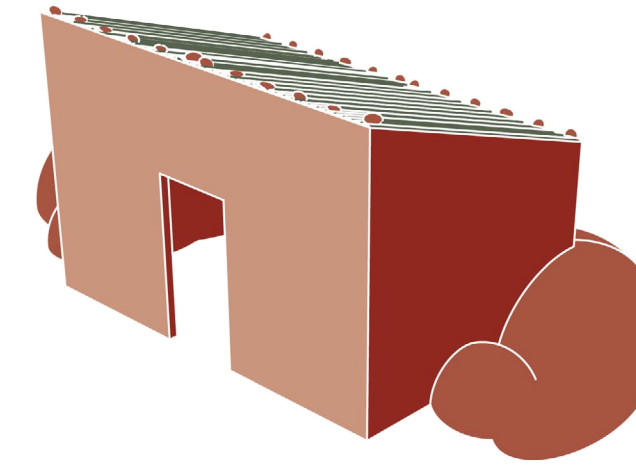
Location: Malon / Ethnicity: Turka



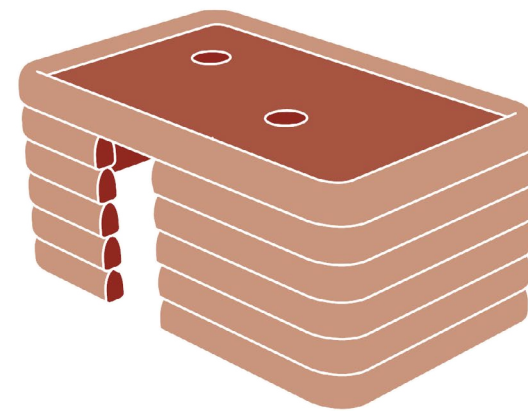
Location: Dioulassoba / Ethnicity: Bobo



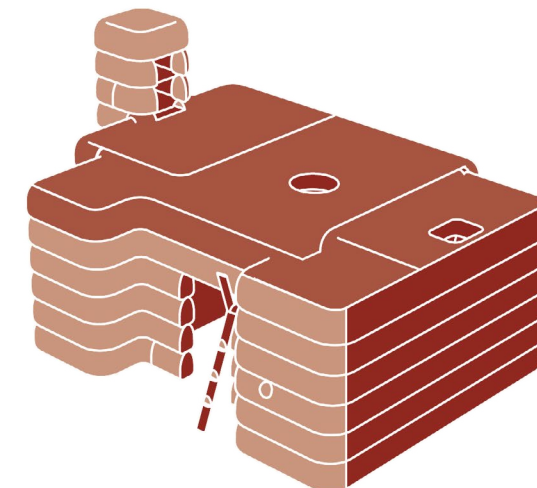
Location: Koro / Ethnicity: Bobo



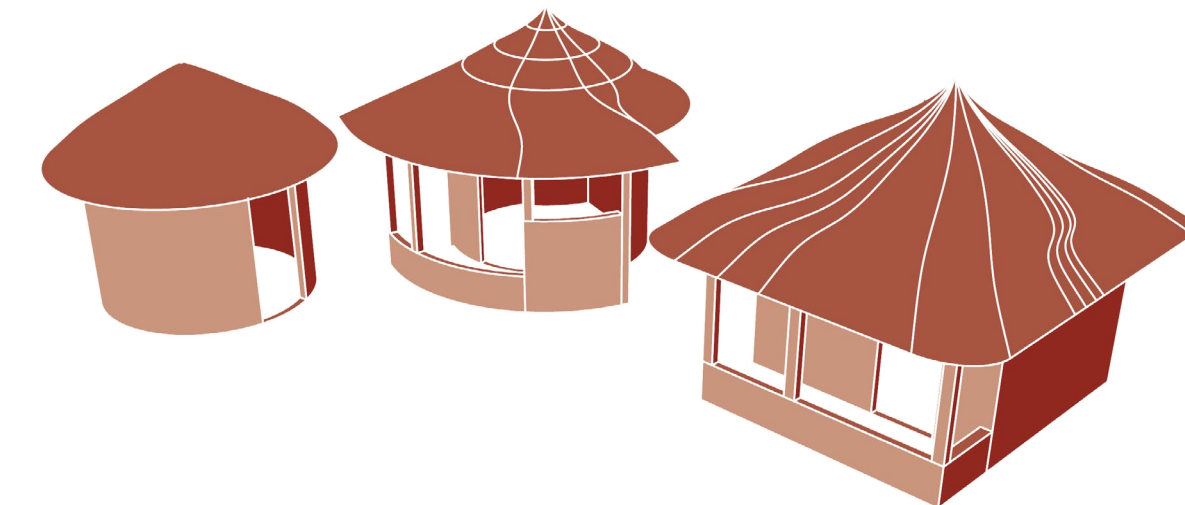
Location: Koumi / Ethnicity: Bobo



Location: Gaoua / Ethnicity: Lobi



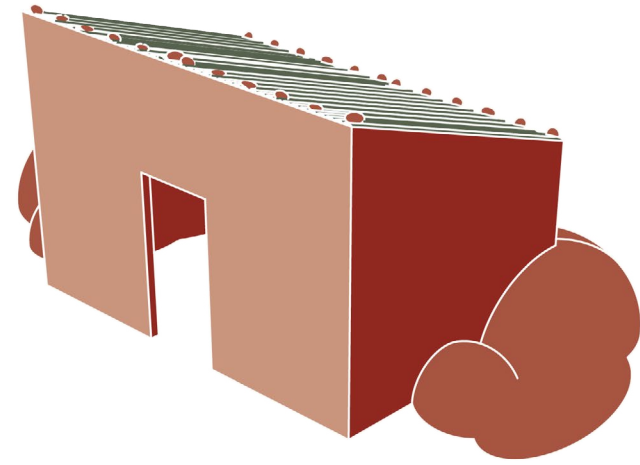
Location: Gaoua / Ethnicity: Gan



RESEARCH

Excursion

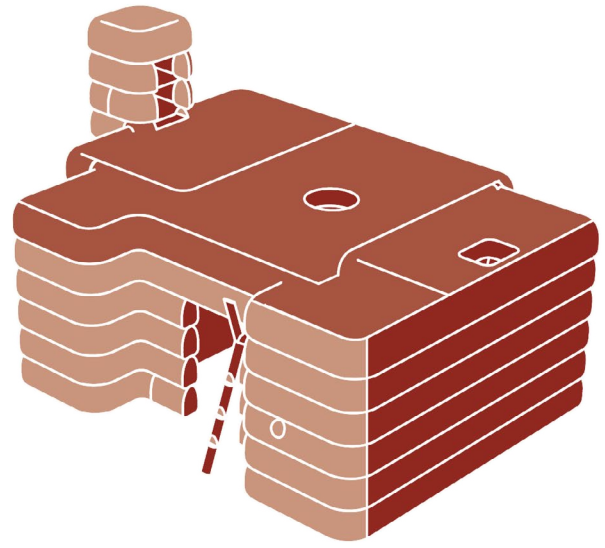
Location: Koro
Ethnicity: Bobo



RESEARCH

Excursion

Location: Gaoua
Ethnicity: Lobi



RESEARCH

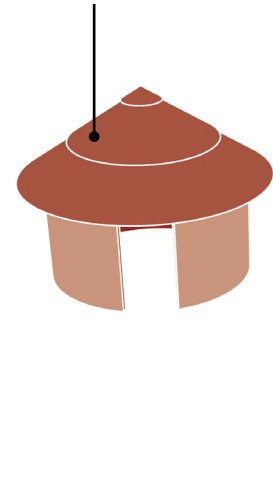
Excursion

Location: Njasagoni
Ethnicity: Wara

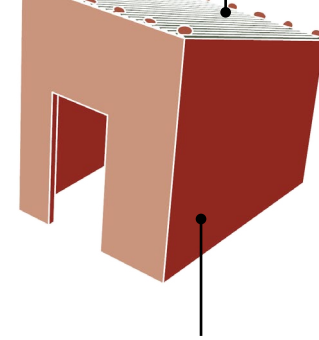


Location: Koubri / Ethnicity: Mossi

Round huts made out of compressed earth blocks and a hay roof.

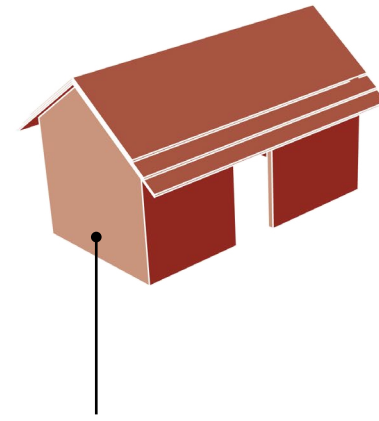


A tin roof is more expensive and creates an unpleasant warm temperature within the room, however it doesn't need to be maintained as much as a hay roof.



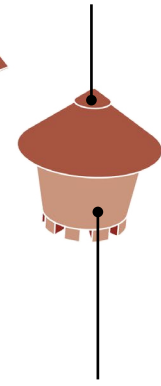
These structures, made out of compressed earth blocks (or even cement if one can afford it) and a tin roof, are more and more apparent in Mossi villages. The original vernacular dwellings are being replaced and disappearing slowly.

Location: Malon / Ethnicity: Turka



A simple and effective unit is created with a double slanted roof. The walls are made out of compressed earth blocks with a hay roof.

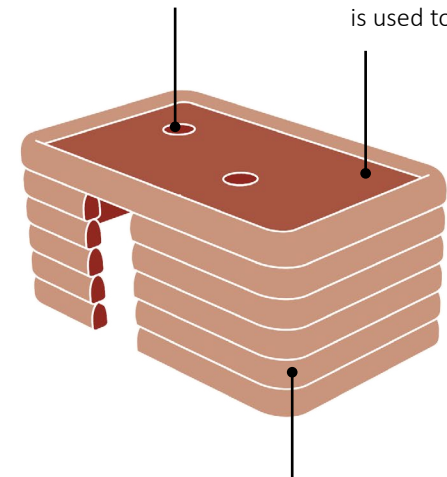
Storage units for grain and millet are spread out throughout the entire community.



The storage units are made of stacked earth with a hay roof. They are lifted from the ground with stones, to avoid the water from entering during rainfall.

Location: Koumi / Ethnicity: Bobo

Openings are created in the roof to let in daylight and for ventilation. It is covered with a hay cap when it rains.

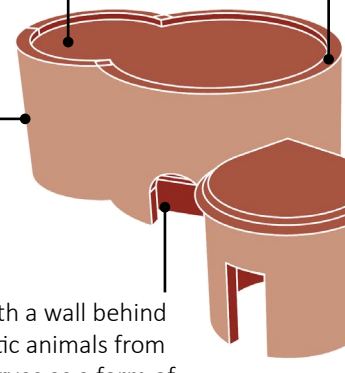


These dwellings are constructed by simply stacking earth. One layer is formed and let to dry for a day before the next one is applied.

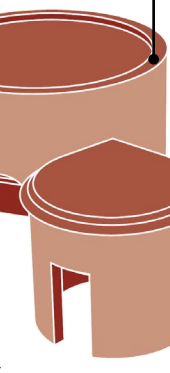
The roof is made out of earth and is supported by wooden beams. The roof is used to dry grain.

Location: Tiebele / Ethnicity: Kasena

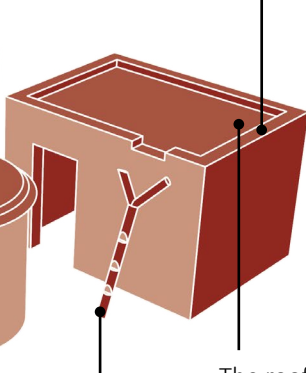
1st typology: the house in the form of an 8, it is occupied by elder couples.



2nd typology: a round hut with a hay roof, it is occupied by young bachelors.



3rd typology: a rectangular structure, it is occupied by young families.



All typologies are made out of an earth mixture, constructed by men, and painted by women with important symbols.

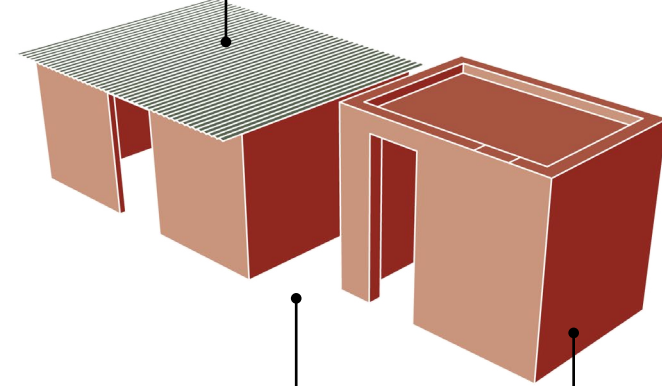
A small door with a wall behind it, stops domestic animals from entering and serves as a form of protection for the elders.

A wooden stair in the form of a Y leads the way to the roof.

The roof is used to dry grain and is the place people sleep during the hot season.

Location: Dioulassoba / Ethnicity: Bobo

A tin roof is more expensive and creates an unpleasant warm temperature within the room, however it doesn't need to be maintained as much as an earth roof.

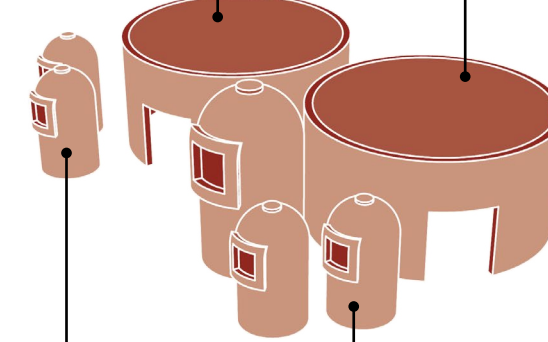


The structures are easily repeated and are placed in vicinity of each other. This community is much denser than the others as it is placed within a city and cannot expand outwards.

These structures are entirely made out of earth, sometimes they are compressed earth bricks, sometimes simply compressed earth. The roof made out of earth as well and is held up by wooden beams.

Location: Njasagoni / Ethnicity: Wara

The structures are placed in a linear manner against a large rock which hangs over them to protect them from the elements.



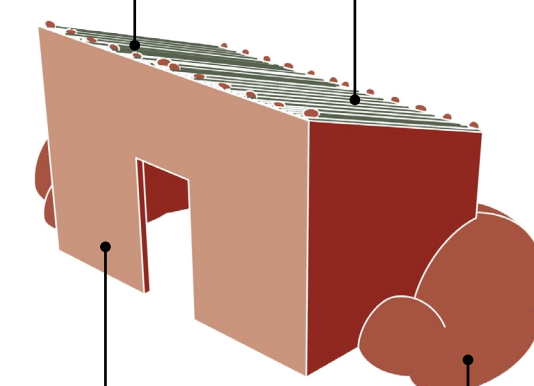
Storage units for grain and millet are spread out throughout the entire community.

The huts are abandoned and do not hold a roof anymore, however it is probably that the roof was made out of hay.

The storage units vary in size and resemble a woman's breasts.

Location: Koro / Ethnicity: Bobo

All dwellings in this community have tin roofs now. They are held in place by placing rocks on top of the tin.



The walls are made out of compressed earth blocks.

A tin roof is more expensive and creates an unpleasant warm temperature within the room, however it doesn't need to be maintained as much as an earth roof.

The Koro people integrate the natural landscape in their dwellings. The huge rocks that are spread out the entire community are too heavy to move, instead of putting much effort to displace them, they use them as part of the foundation / walls.

Location: Gaoua / Ethnicity: Lobi

The husband sleeps in this part of the dwellings. He is the only one that has access to the roof, and uses the wooden stair to get there.

The 1st wife's room. It is slightly larger than the 2nd wife's room.

A grinder is placed in the center of the dwelling and is shared by the 1st and 2nd wife.

This opening lets in daylight and is used for ventilation. It is covered with a hay cap when it rains.

The 2nd wife's room.

This opening gives the husband access to the 2nd wife.

A shower is located over here and shared by the husband and the 1st wife. This is also his point of access to her room.

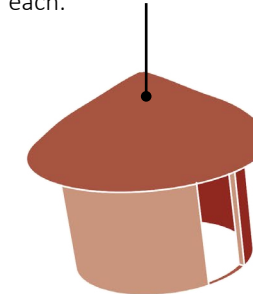
The roof is also made out of earth and is supported by wooden beams. The roof is used to dry grain.

An opening in the facade was previously used to shoot arrows through, but is now used as a window; for light and ventilation.

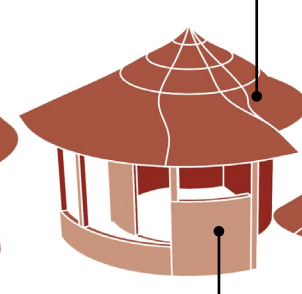
These dwellings are constructed by stacking earth. One layer is formed and let to dry for a day before the next one is applied.

Location: Gaoua / Ethnicity: Gan

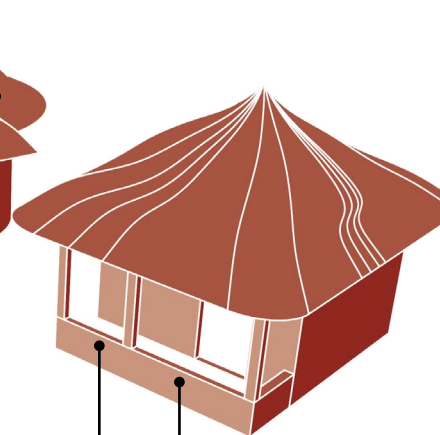
The 2nd wife's hut. If more wives join the family, new huts are built for each.



The 1st wife's hut. The women always have a circular hut.



The first wife has a grinder at the entrance. This is where the other wives grind their millet.



The dwellings are made out of earth mixed with small stones. The roof is made out of hay.

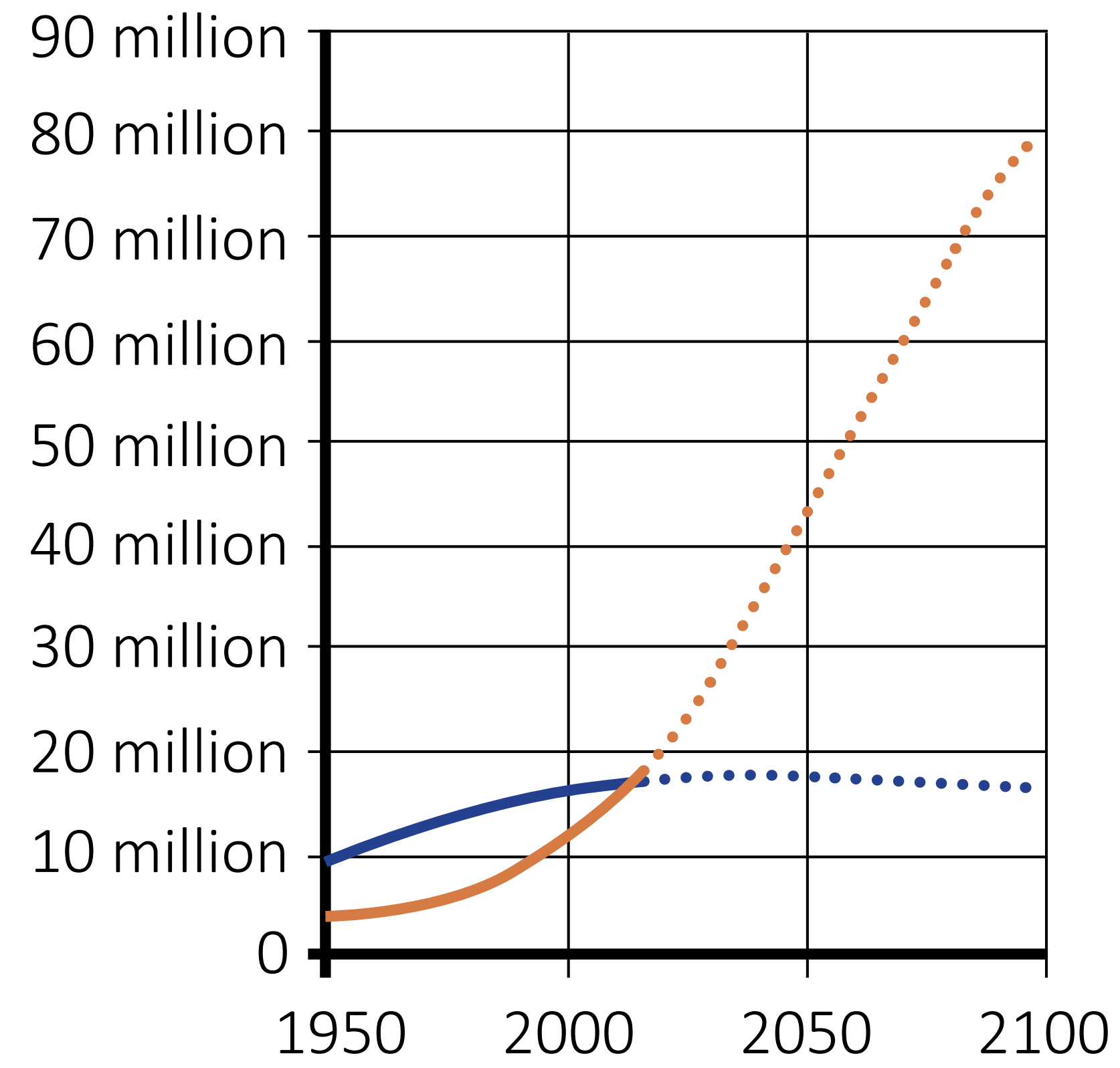
The husband's hut is square or rectangular.



<i>Population</i>	19,617,011	17,069,609
<i>Life expectancy</i>	60.92	81.4
<i>Fertility rate</i>	5.71	1.78
<i>GDP per capita</i>	\$753	\$52,020
<i>Economic growth</i>	6.5%	2.6%

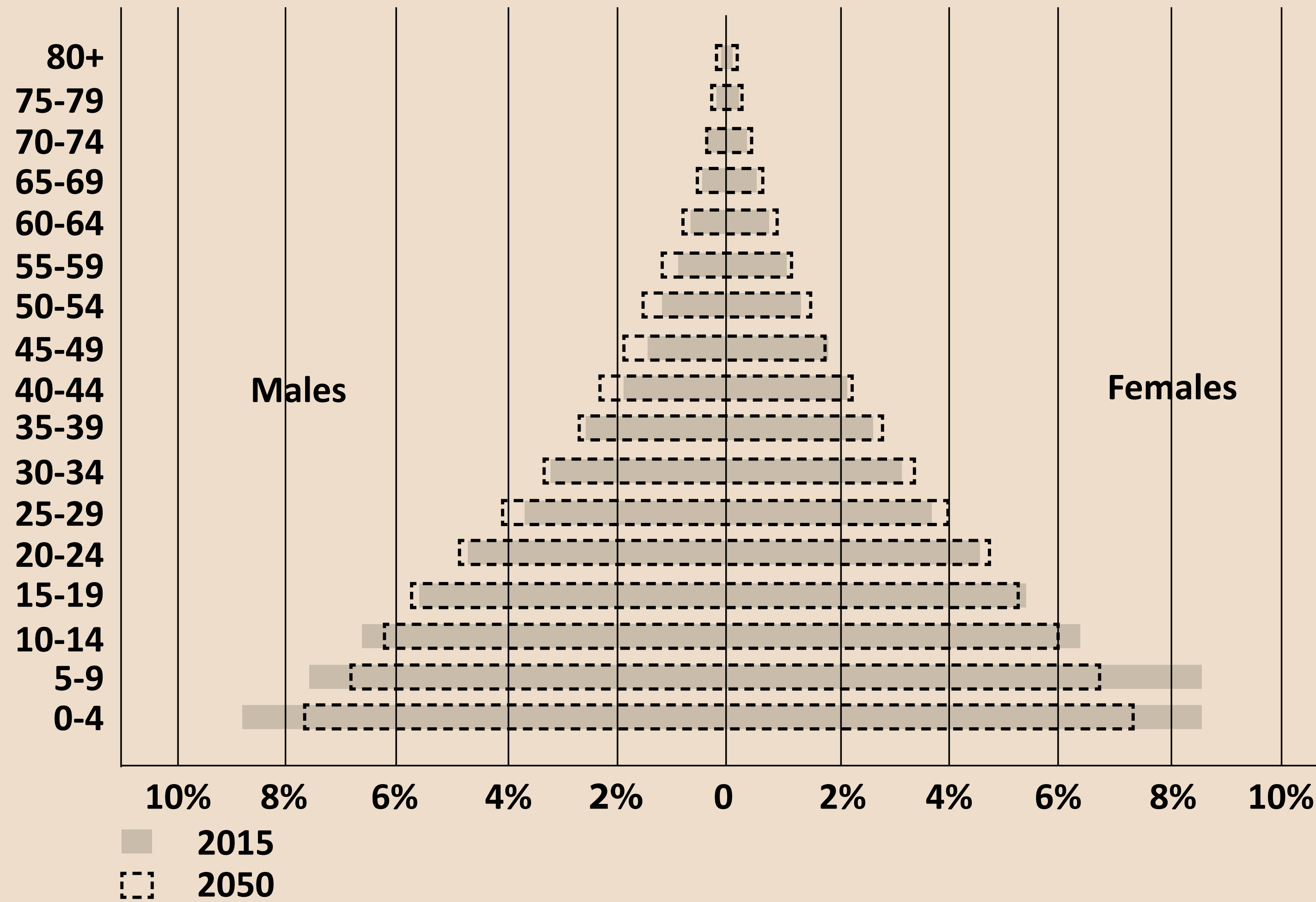
RESEARCH

Population growth



— The Netherlands

— Burkina Faso



RESEARCH

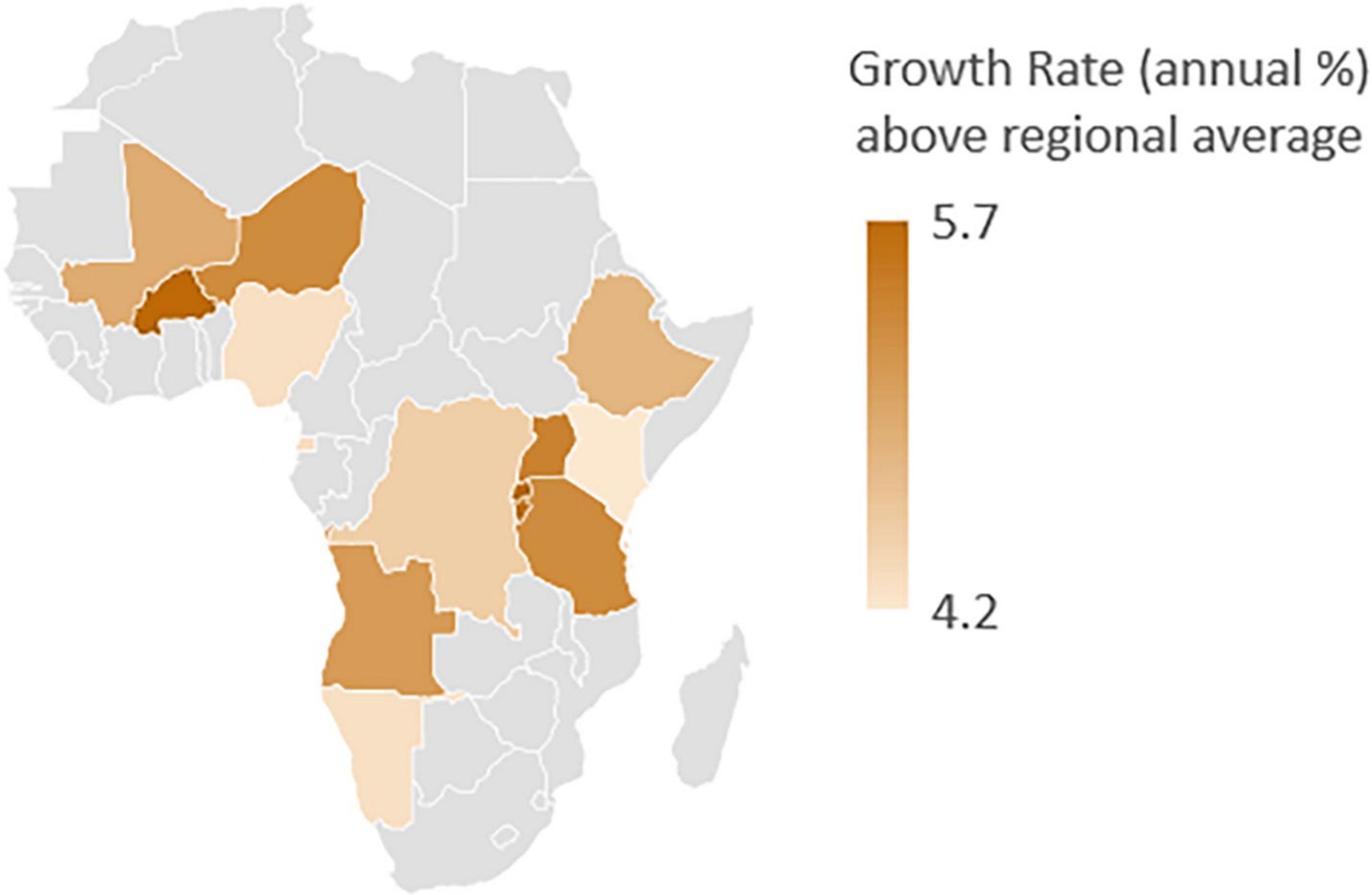
Changing climate



Photographer: Jean Claude Frisque

RESEARCH

Urbanization



***3 people
in 3 minutes***

*What housing typologies can be build **massively**, while being **value sensitive, climate resilient**, and **economically feasible** in Burkina Faso*

RESEARCH

Income groups

CATEGORIES ACCORDING TO REVENUES	INTERMEDIATE TO HIGH	AVERAGE	LOW	VERY LOW
Annual Revenue (€)	2750	1350	900	Less than 900
Affected Households	14.5%	19.1%	16.1%	50.3%



RESEARCH

Income

VERY LOW

Less than 900

50.3%



RESEARCH

Income

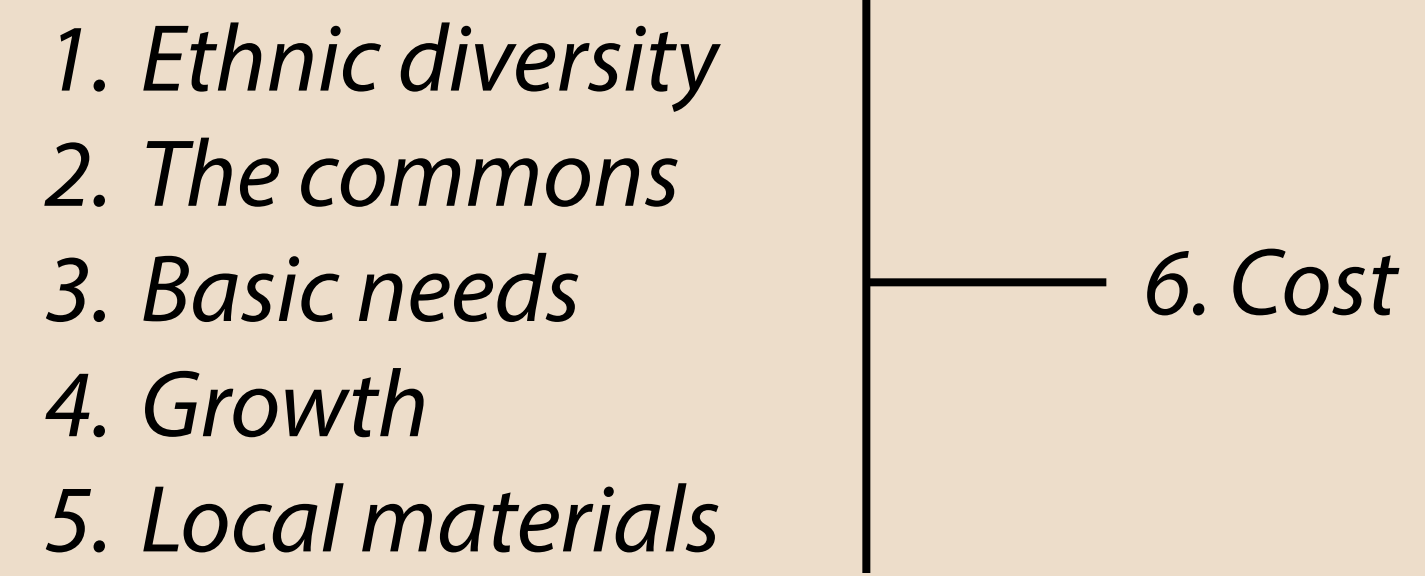
LOW

900

16.1%



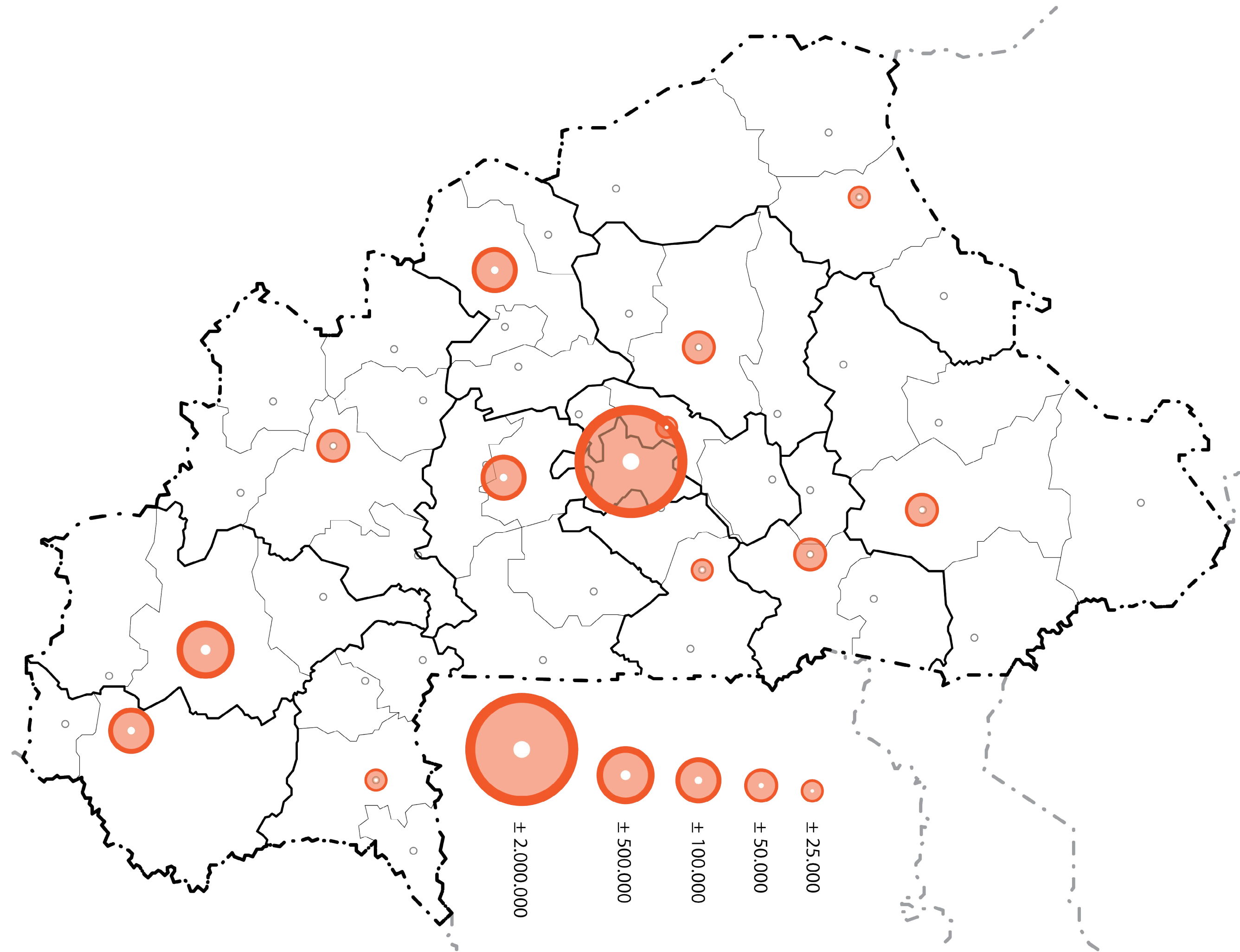
1. *Ethnic diversity*
2. *The commons*
3. *Basic needs*
4. *Growth*
5. *Local materials*



Site analyses

SITE ANALYSES

Ouagadougou



SITE ANALYSES

Ouagadougou

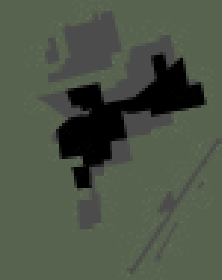
Expansion - 1932



SITE ANALYSES

Ouagadougou

Expansion - 1951



SITE ANALYSES

Ouagadougou

Expansion - 1961



SITE ANALYSES

Ouagadougou

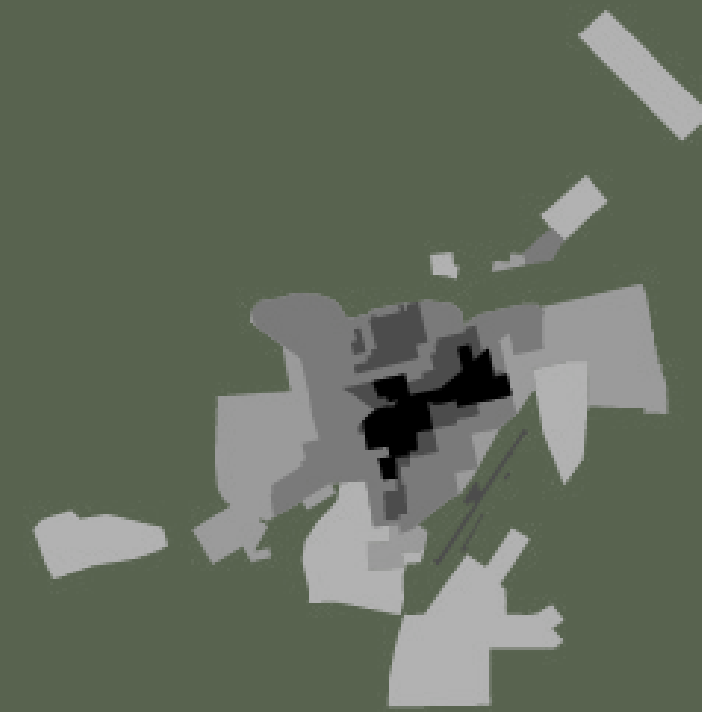
Expansion - 1972



SITE ANALYSES

Ouagadougou

Expansion - 1983



SITE ANALYSES

Ouagadougou

Expansion - 1998



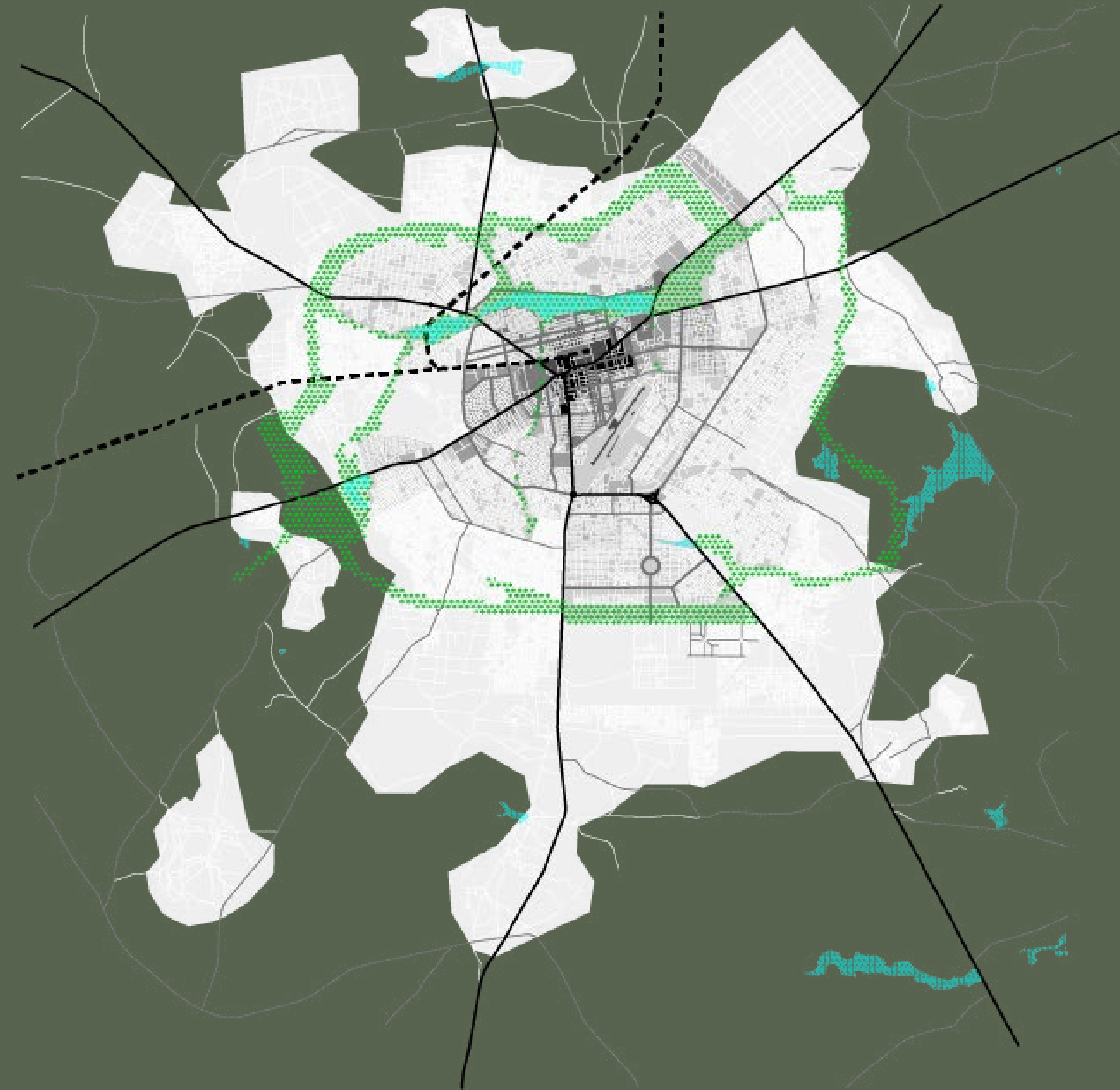
Expansion - 2003



SITE ANALYSES

Ouagadougou

2016



SITE ANALYSES

Ouagadougou

Non-lotis



SITE ANALYSES

Ouagadougou

Non-lotis



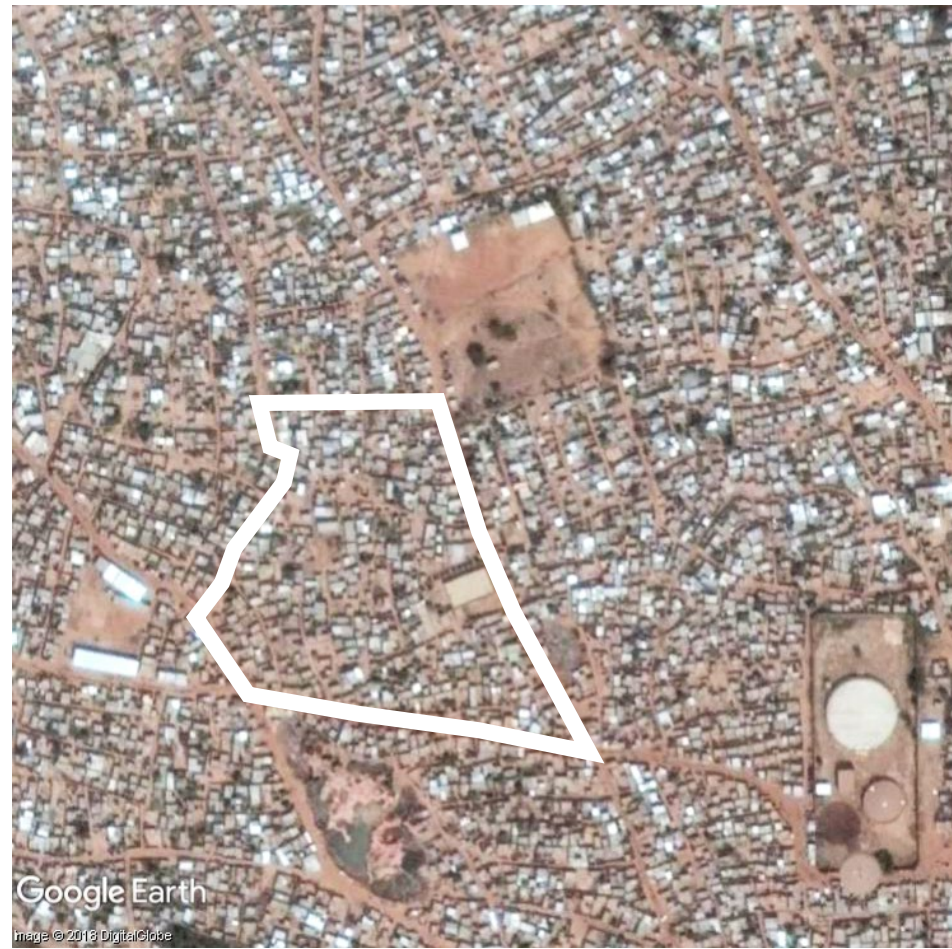
SITE ANALYSES

Site



SITE ANALYSES

Site



75 dwellings / ha



24 dwellings / ha



24 dwellings / ha

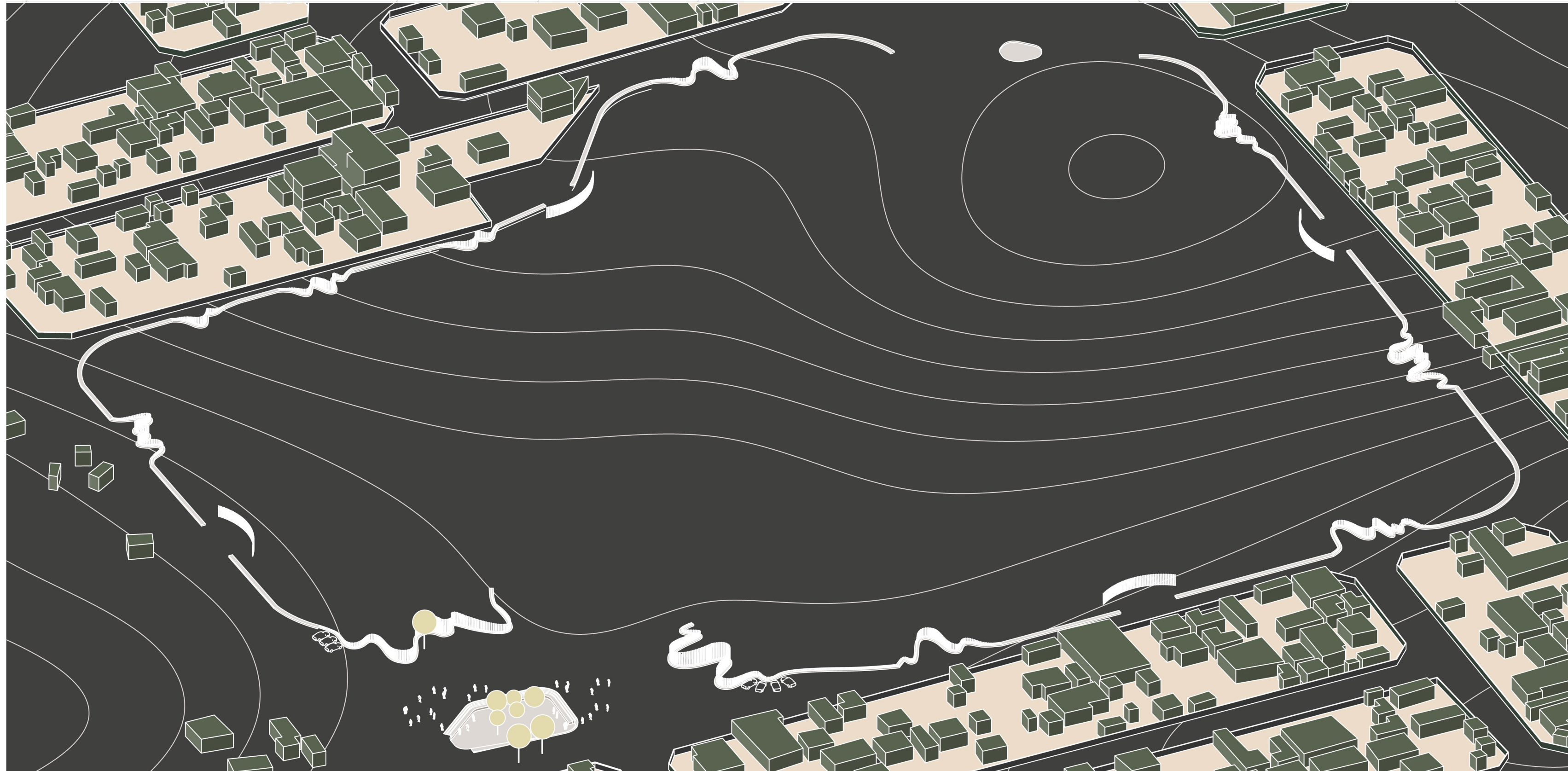
Design

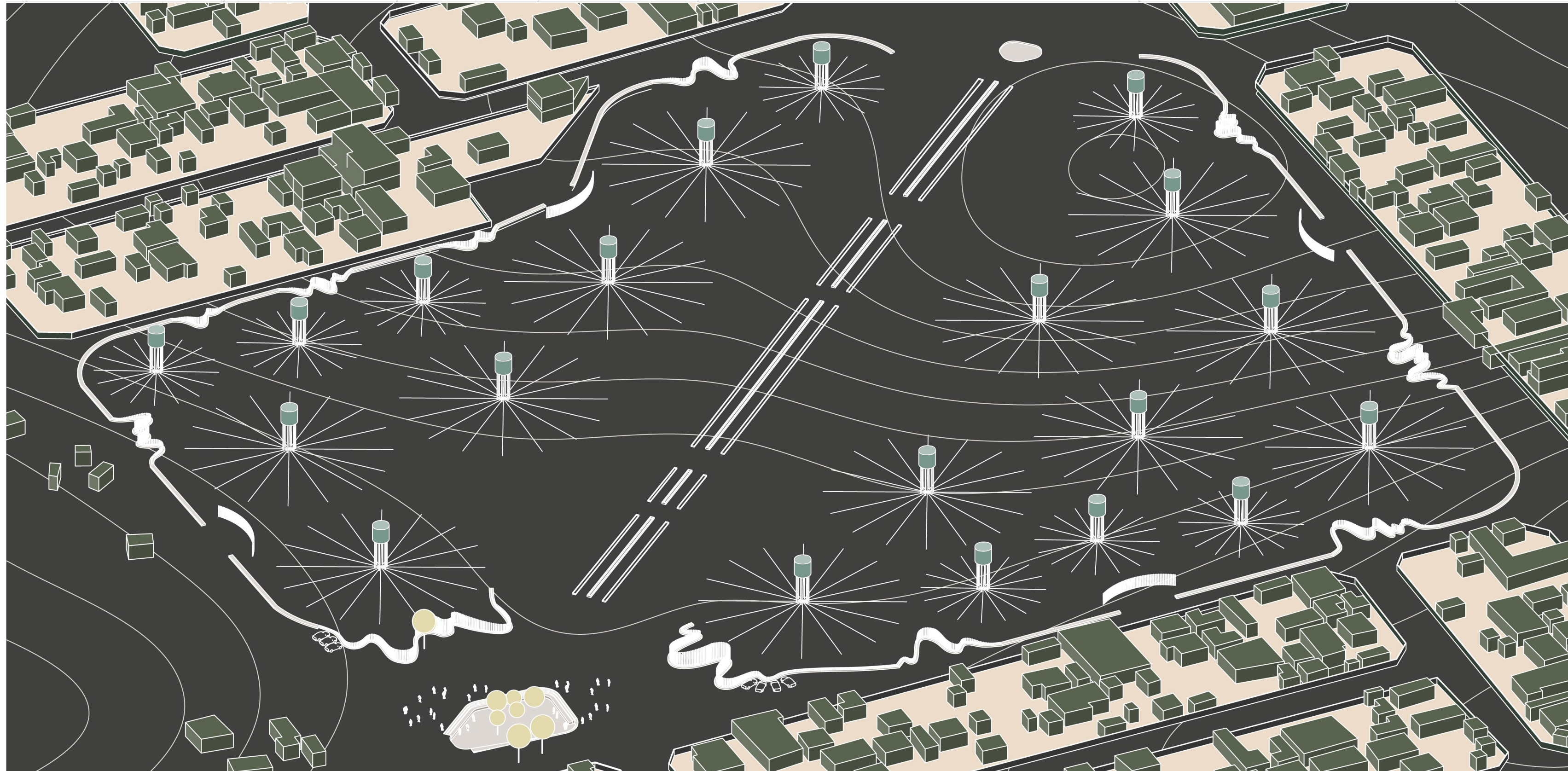
- 1. The clusters***
- 2. The commons***
- 3. The street***
- 4. The gradient***
- 5. The border***

DESIGN

Urban interventions through time

Day 1 - defining the site

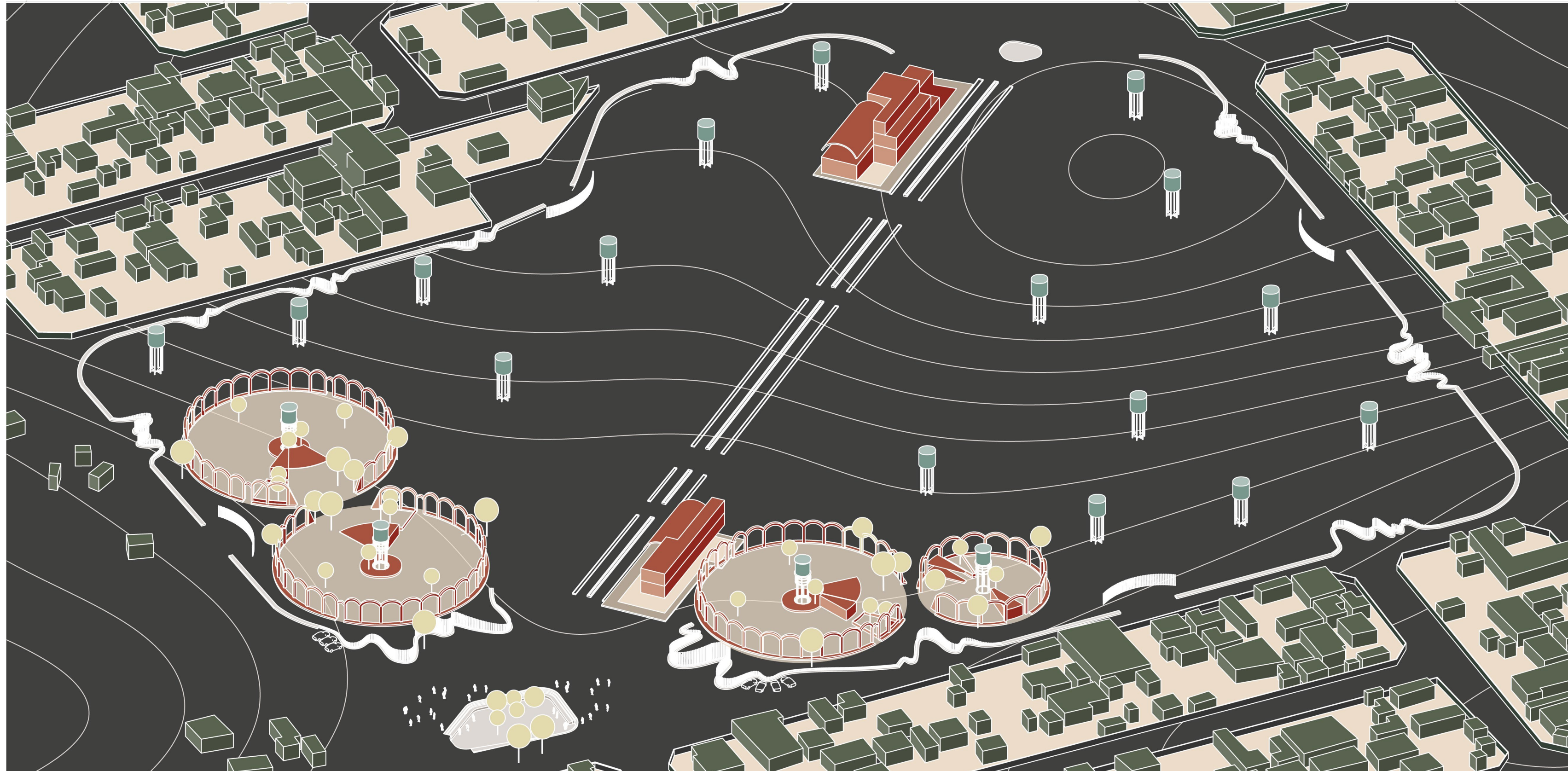




DESIGN

Urban interventions through time

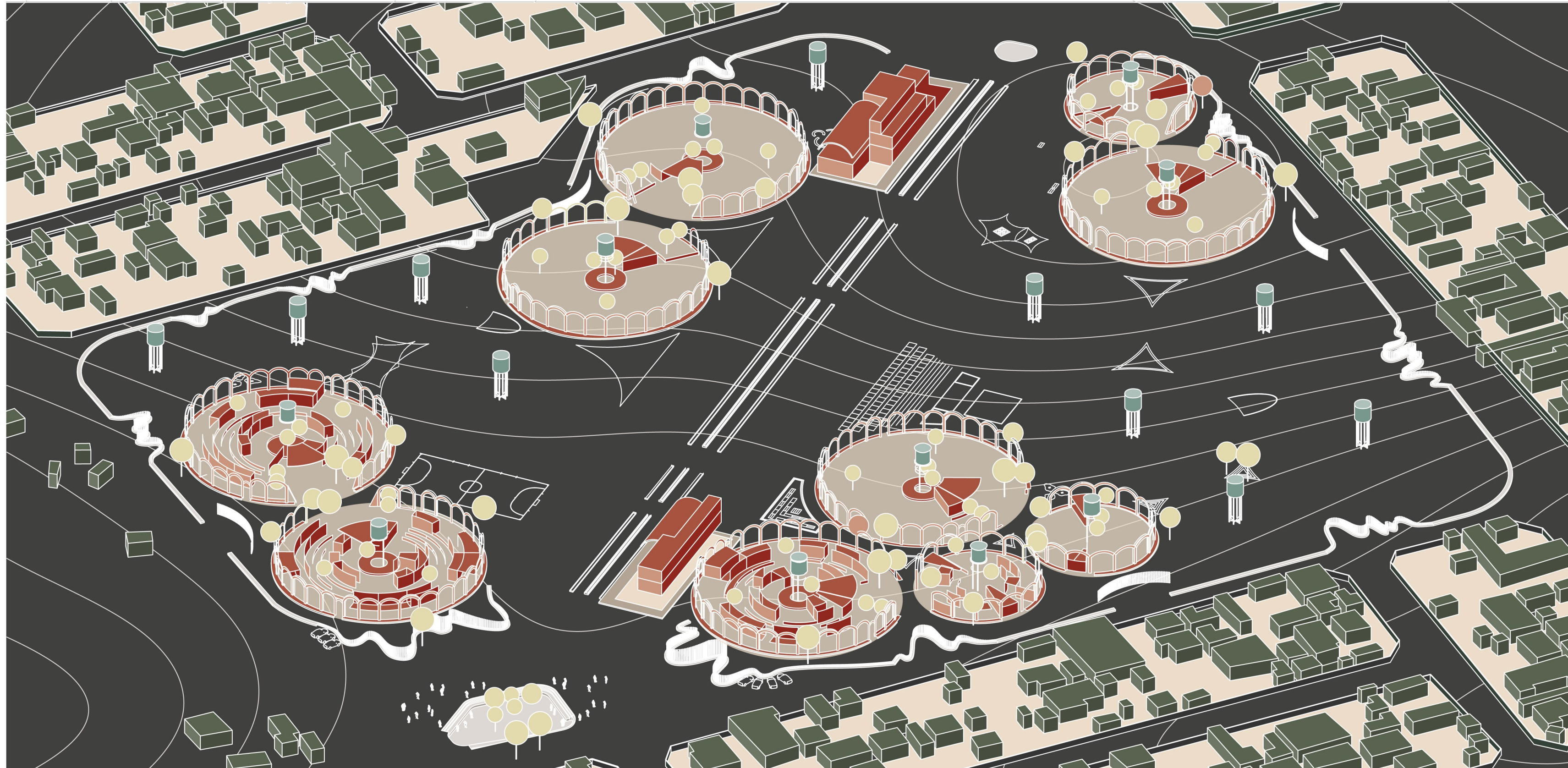
Day 10 - First construction

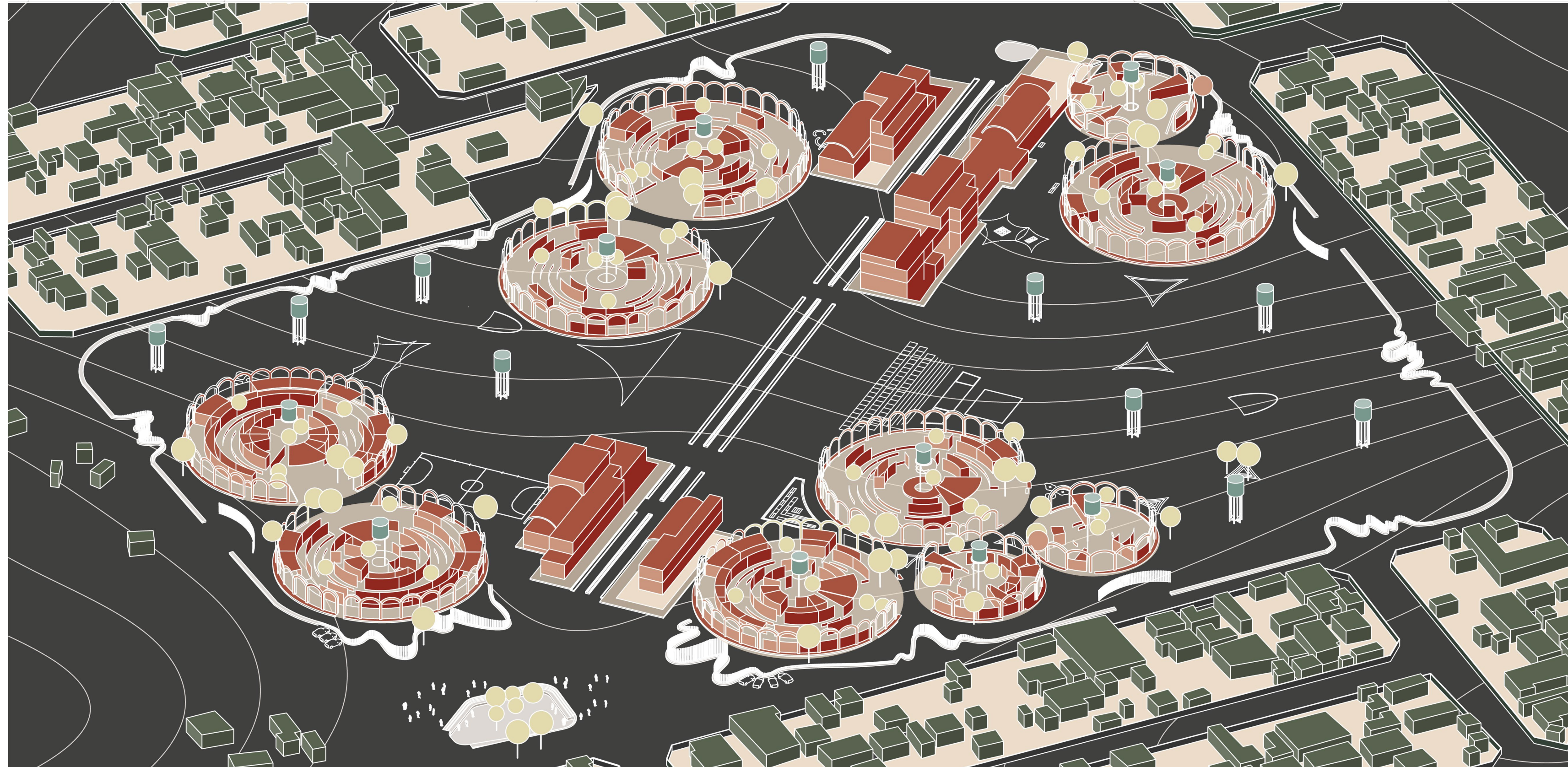


DESIGN

Urban interventions through time

Day 100 - Introducing the commons

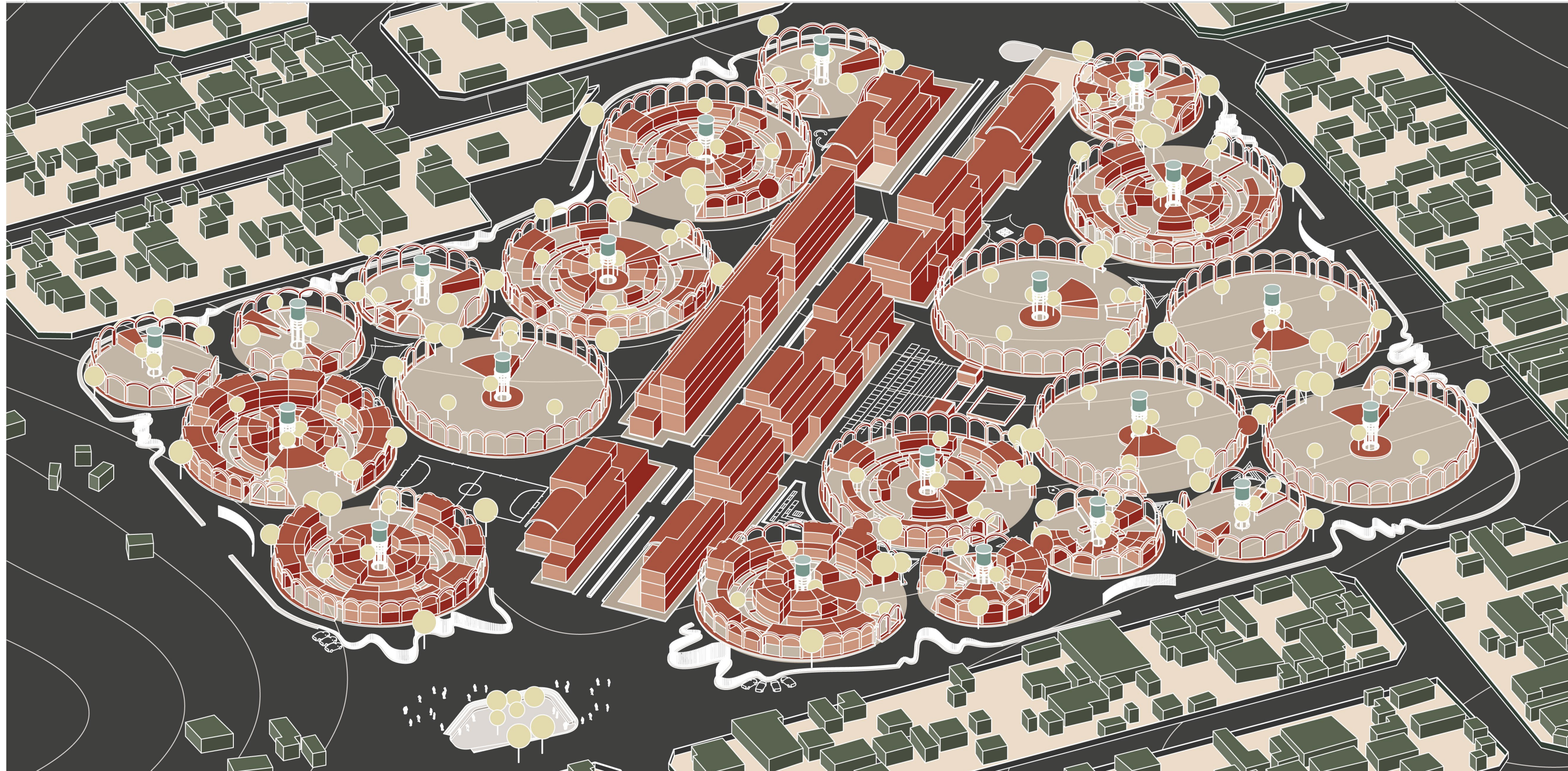




DESIGN

Urban interventions through time

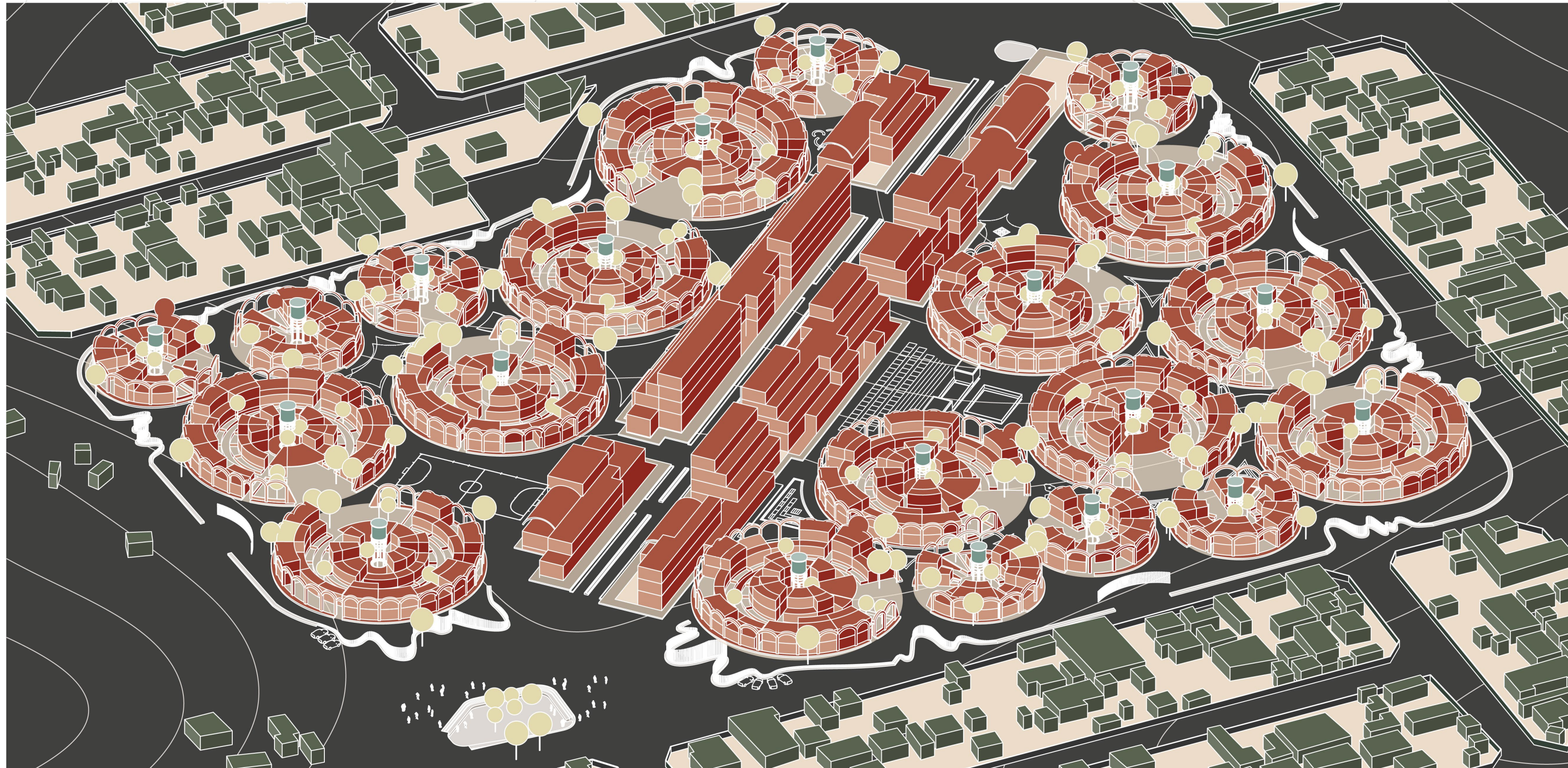
Day 1000 - Incremental growth



DESIGN

Urban interventions through time

Day 1000 - full capacity



DESIGN

Potential

Street: 107
Big cluster: 276
Small cluster: 80

Total: 463 units

71 dwellings / ha
2300 people on site

Neighborhood: 23 dwellings / ha
Non-lotis: 75 dwellings / ha



DESIGN

Meet Claire Sodré



*Ethnicity: Kasena
From: Tiebele
Occupation: Tailor
Family: Husband, 2 children, mother
House: Cluster*

DESIGN

Route



The border



DESIGN

The border



The entrance plaza



DESIGN

The entrance plaza



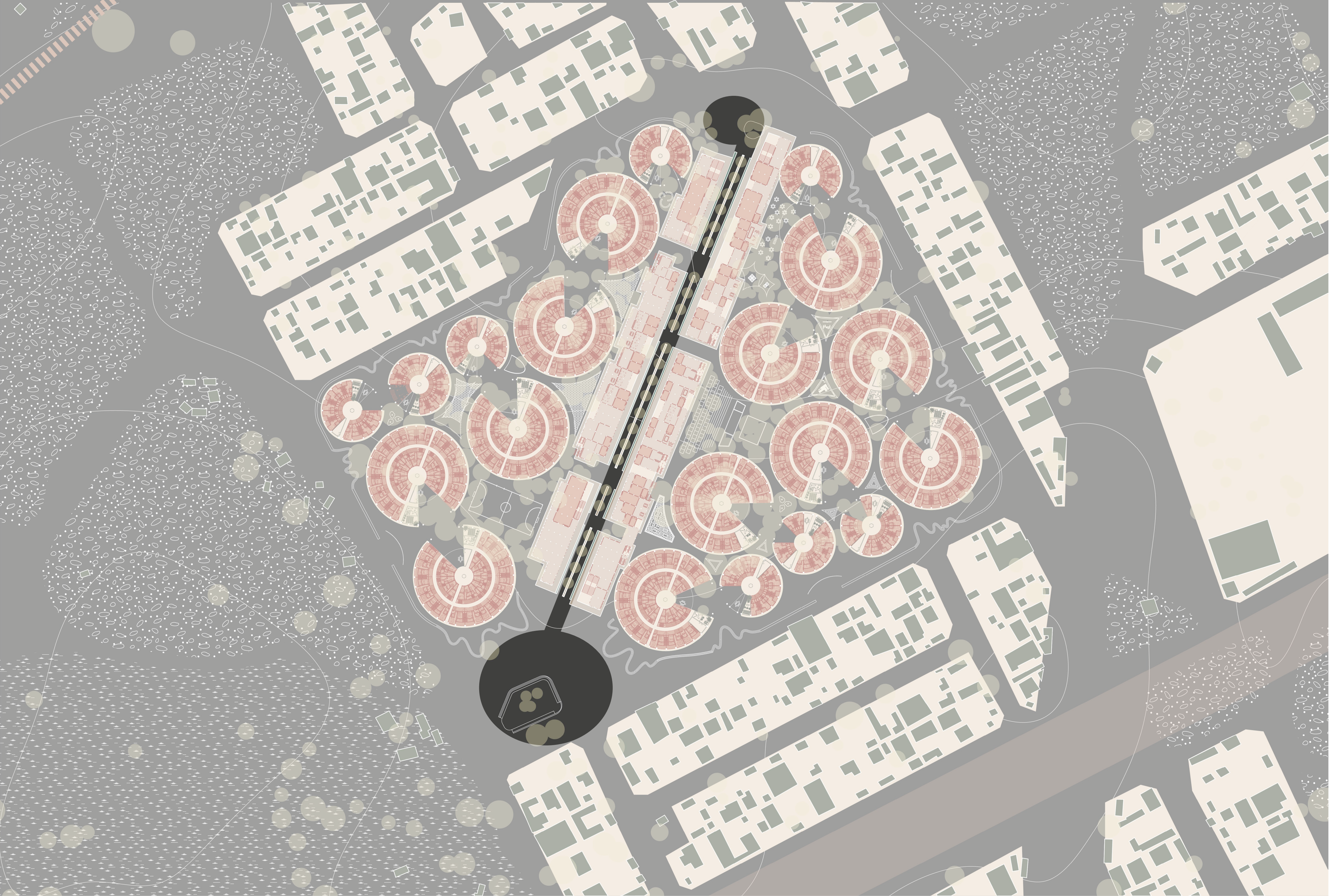
DESIGN

The entrance plaza



DESIGN

The entrance plaza



The amenities



DESIGN

The amenities



The street



The entrances



DESIGN

The entrances



The sidewalk



The workshop



DESIGN

The workshop



The in-between

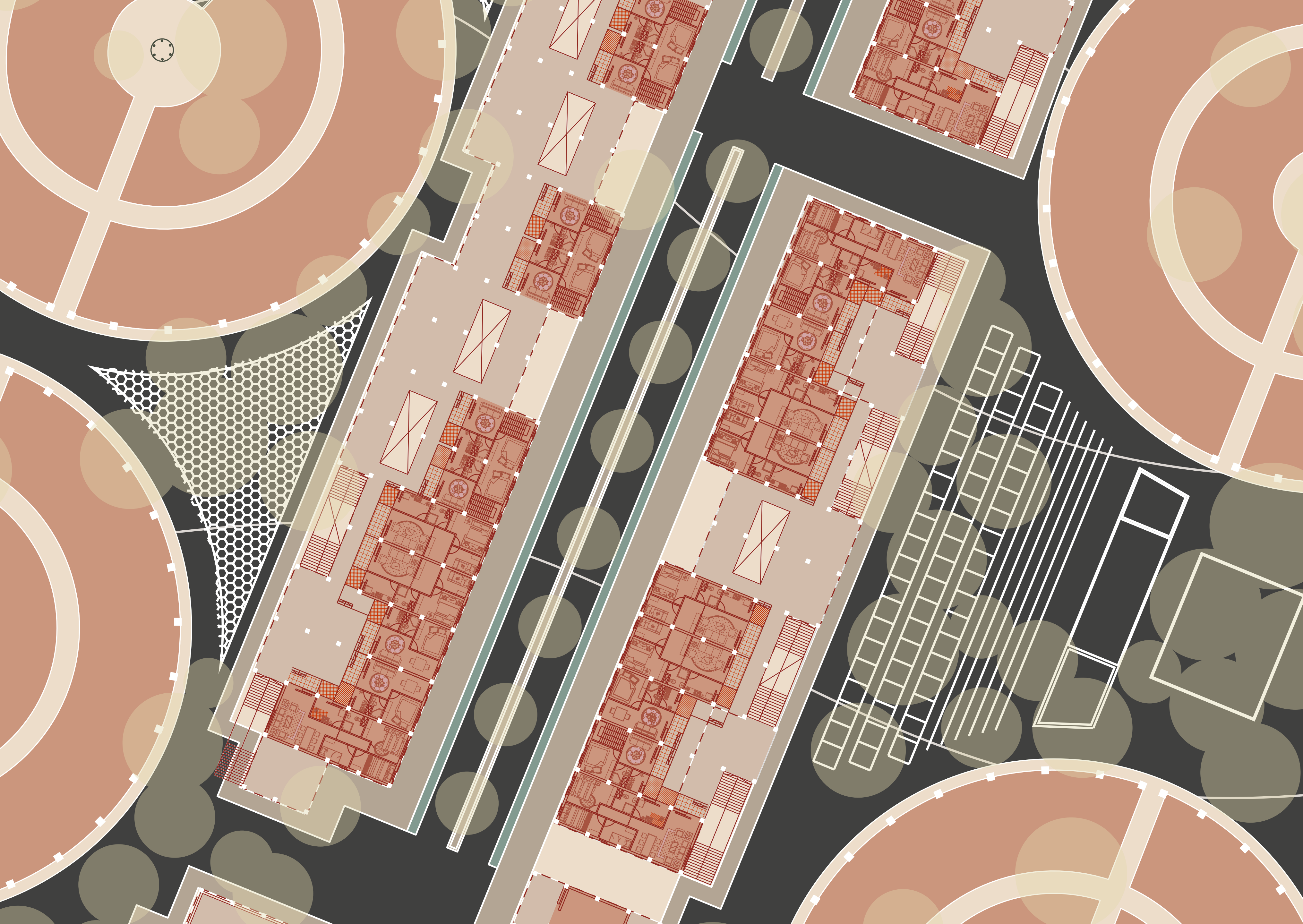


The apartments



DESIGN

The apartments



DESIGN

The apartments

60 m²

3 bedroom

+ 6.75 m² outdoor
+ common space

45 m²

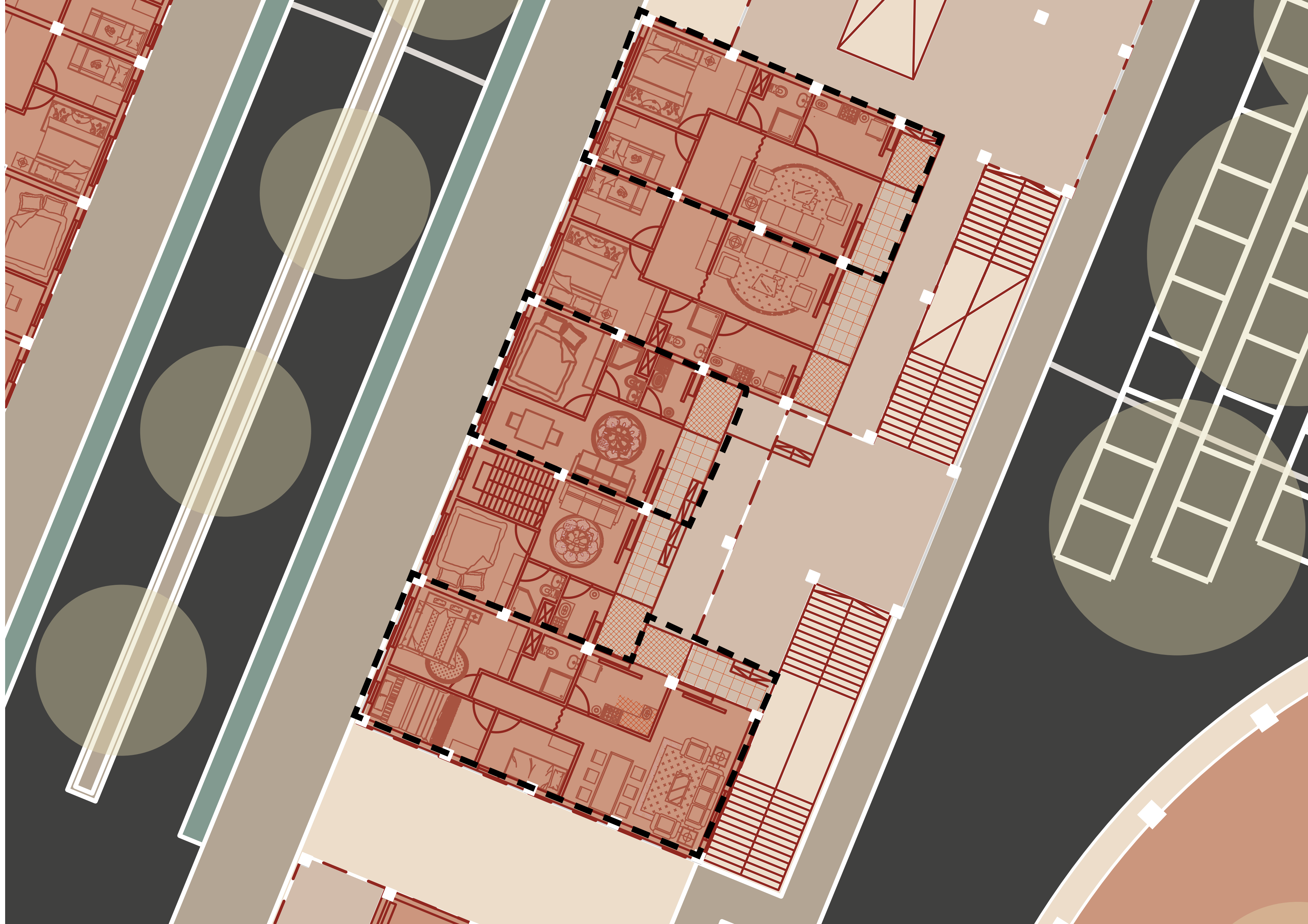
2 bedroom

+ 7.5 m² outdoor
+ common space

30 m²

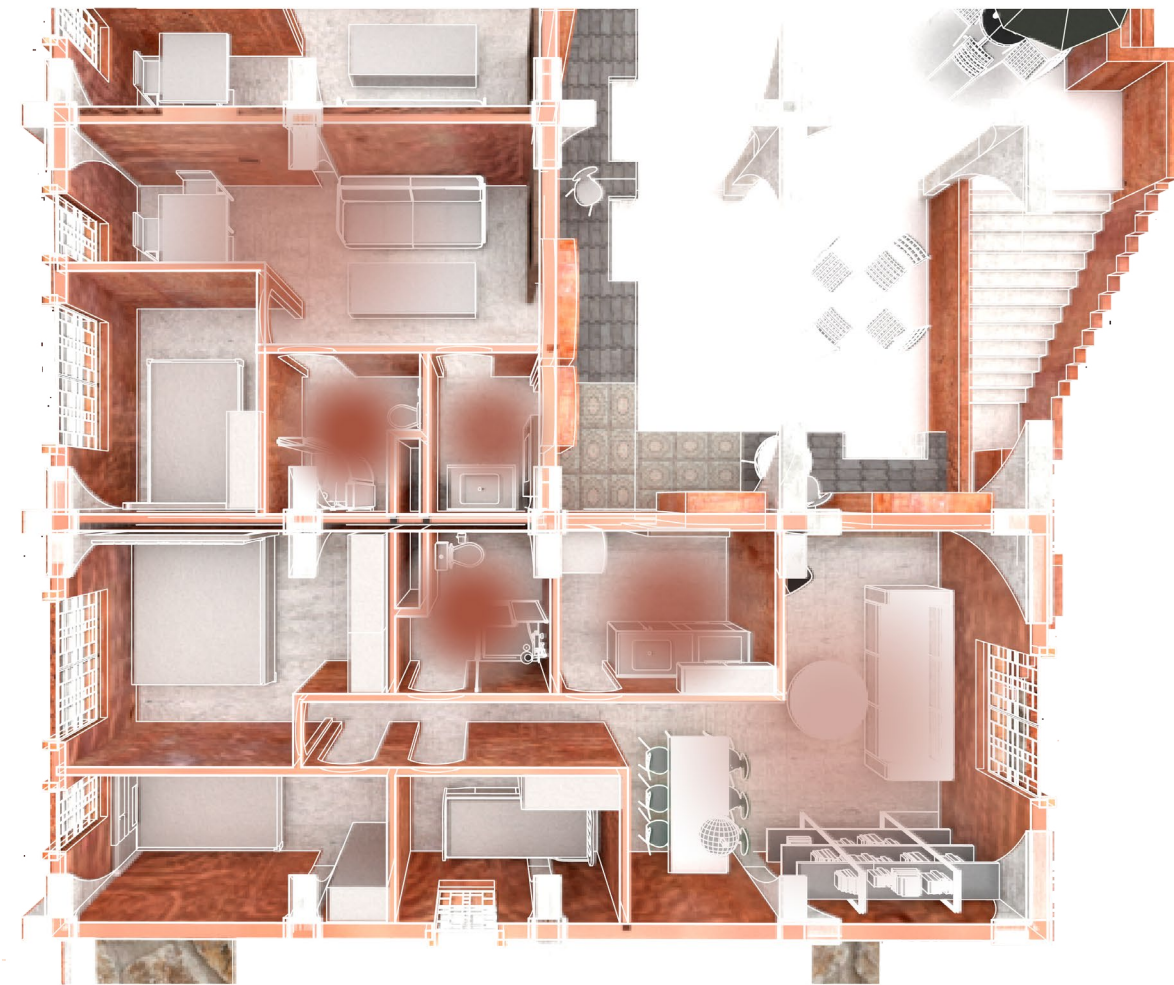
1 bedroom

+ 7.5 m² outdoor
+ common space

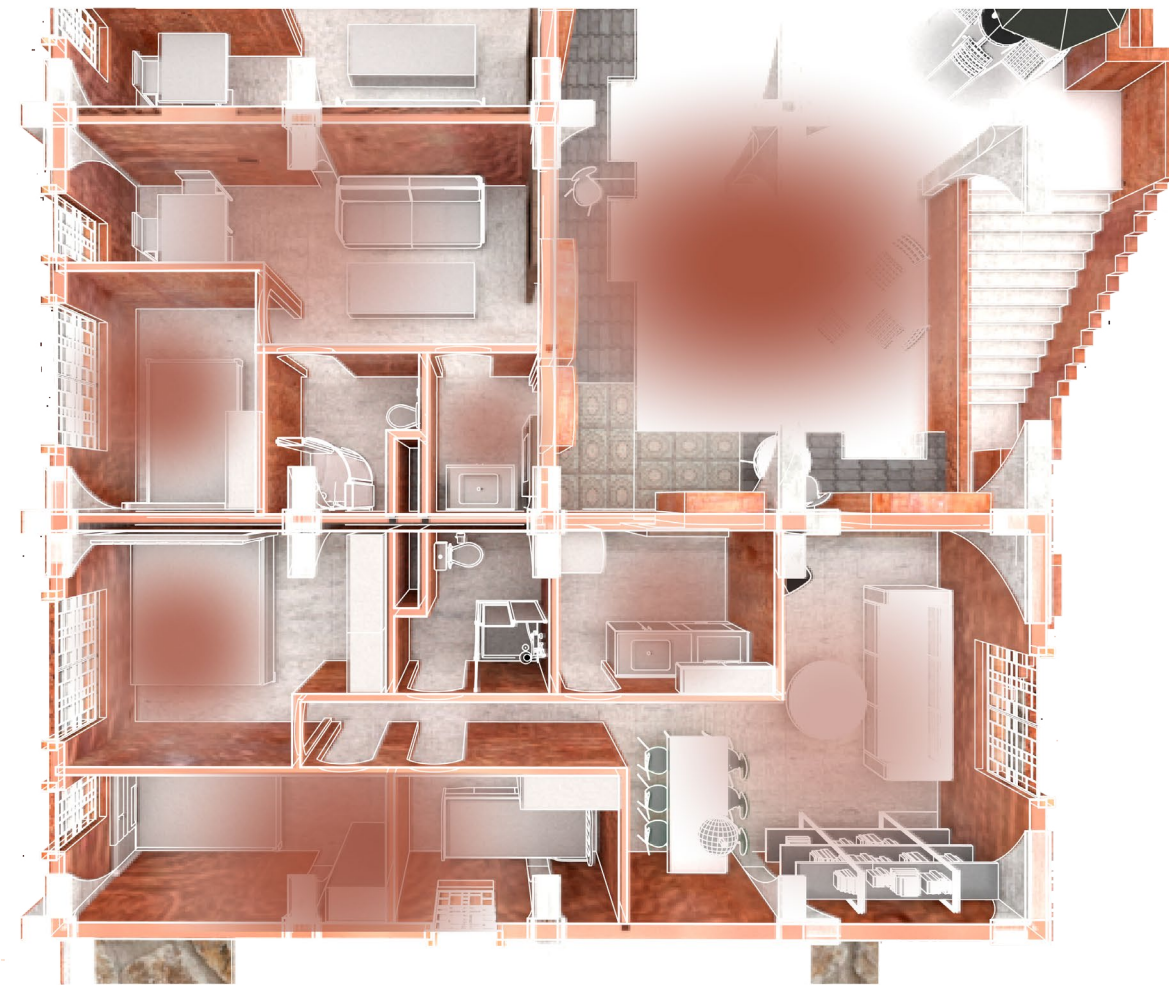


DESIGN

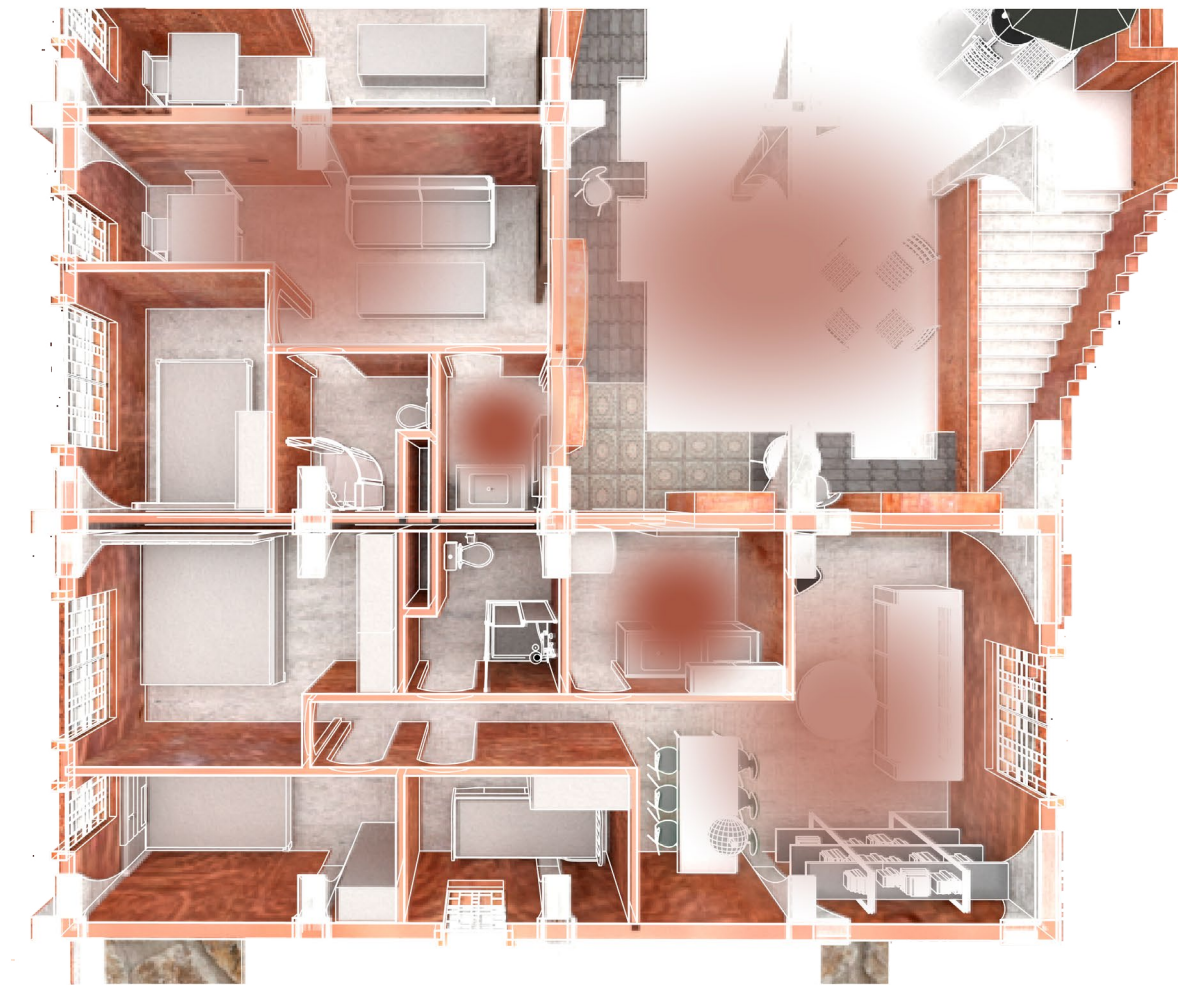
The apartments



Morning



Midday



Evening



DESIGN

The apartments

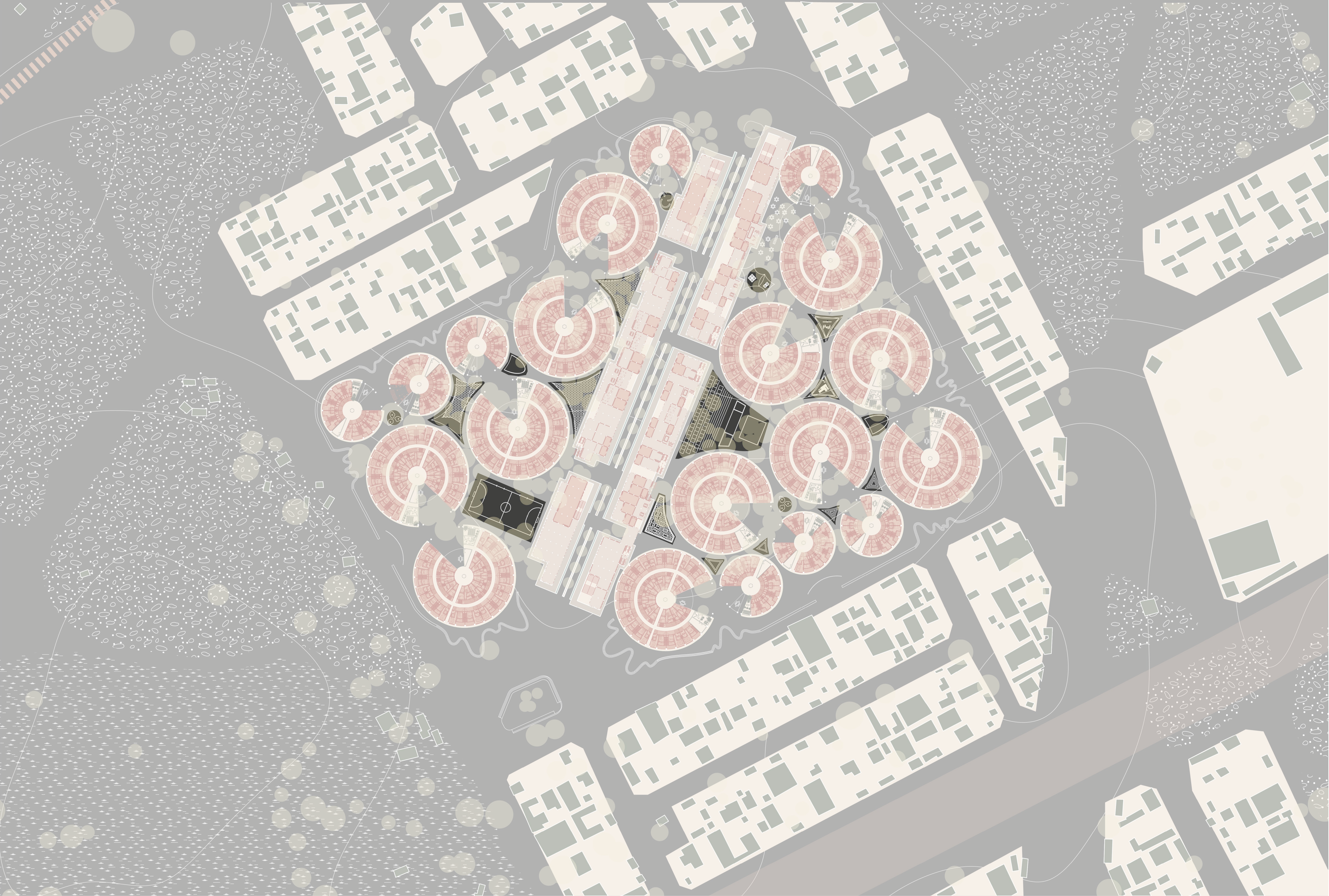


The commons



DESIGN

The commons



The clusters



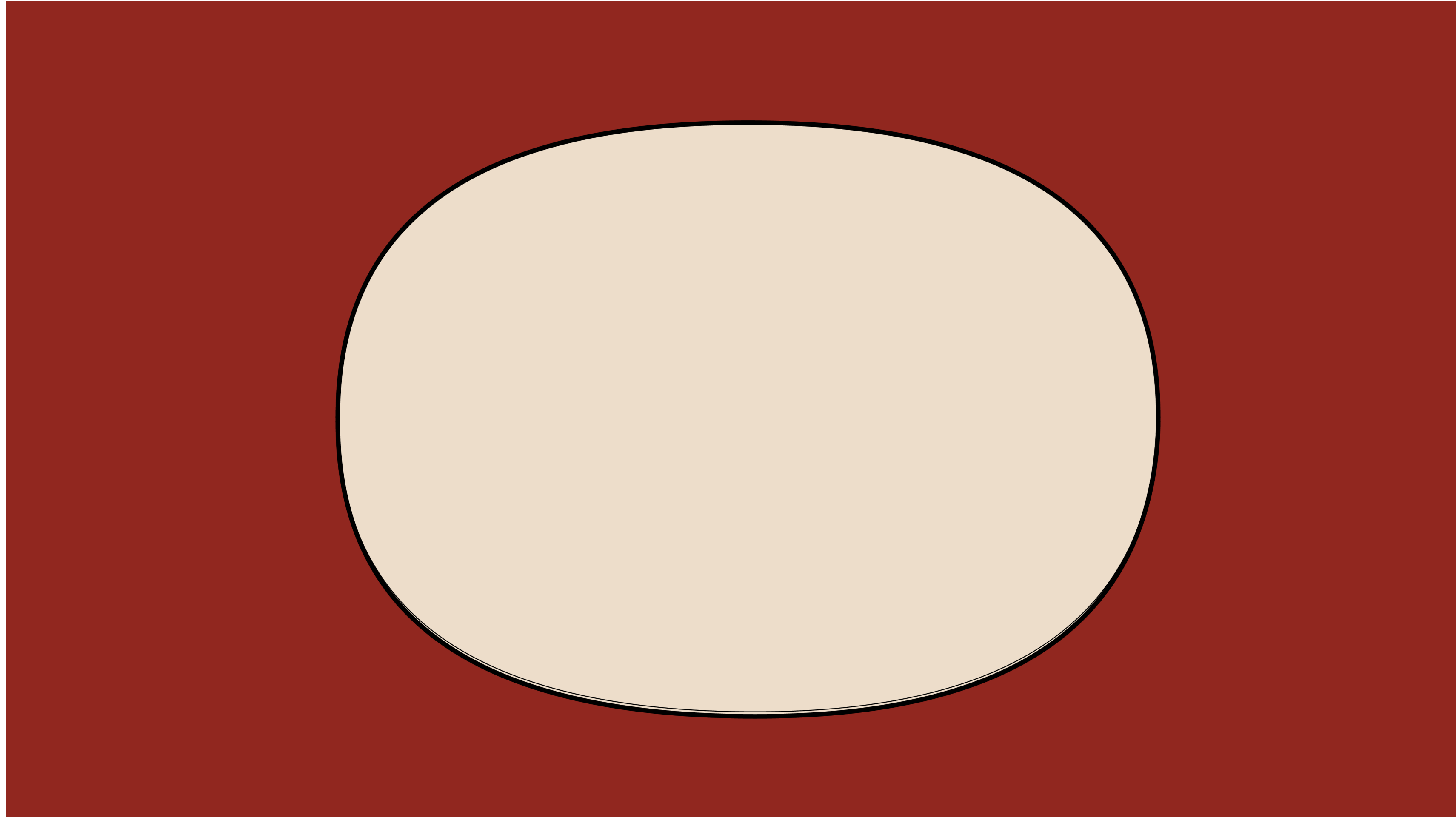
DESIGN

The clusters



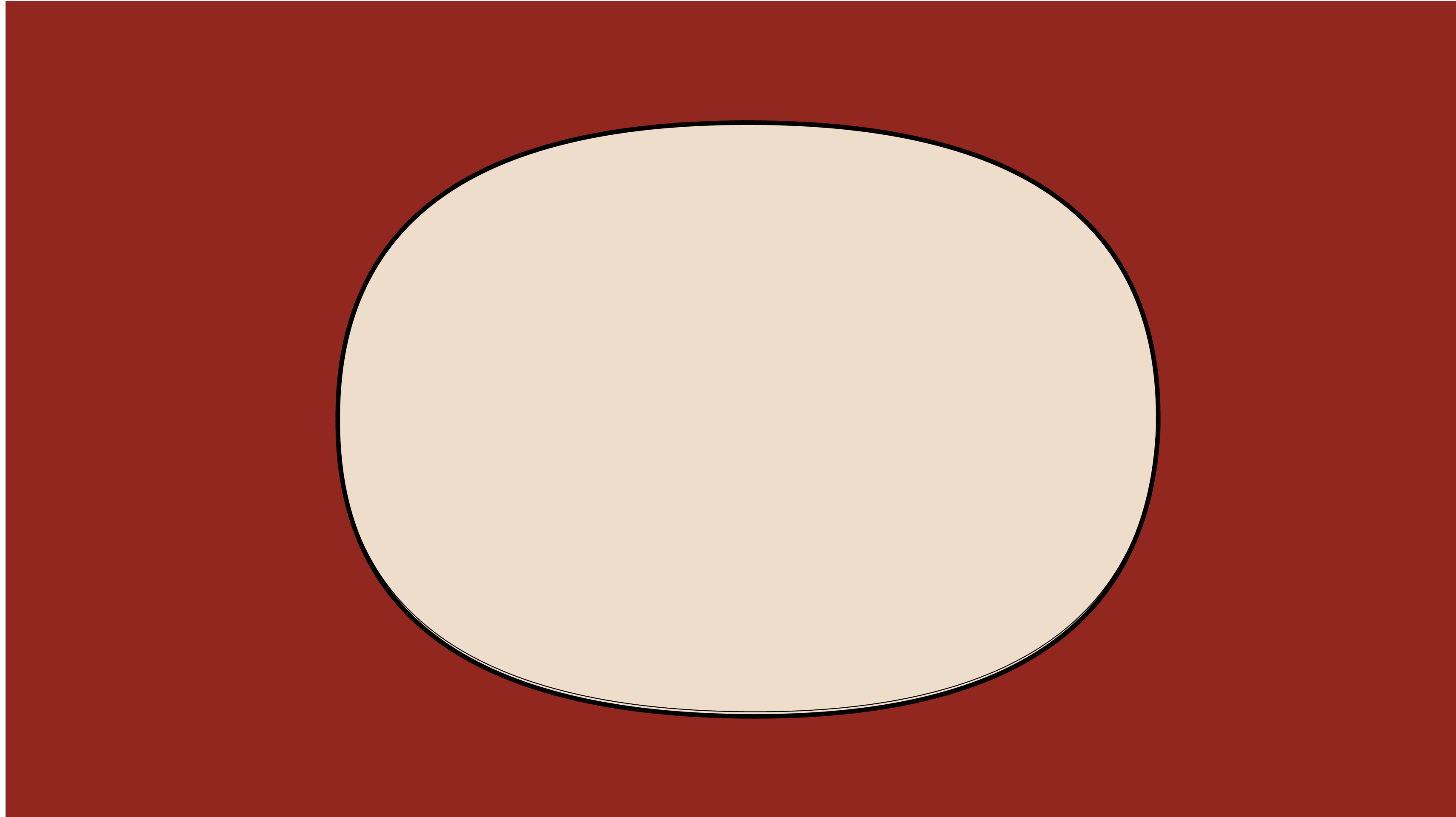
DESIGN

The clusters



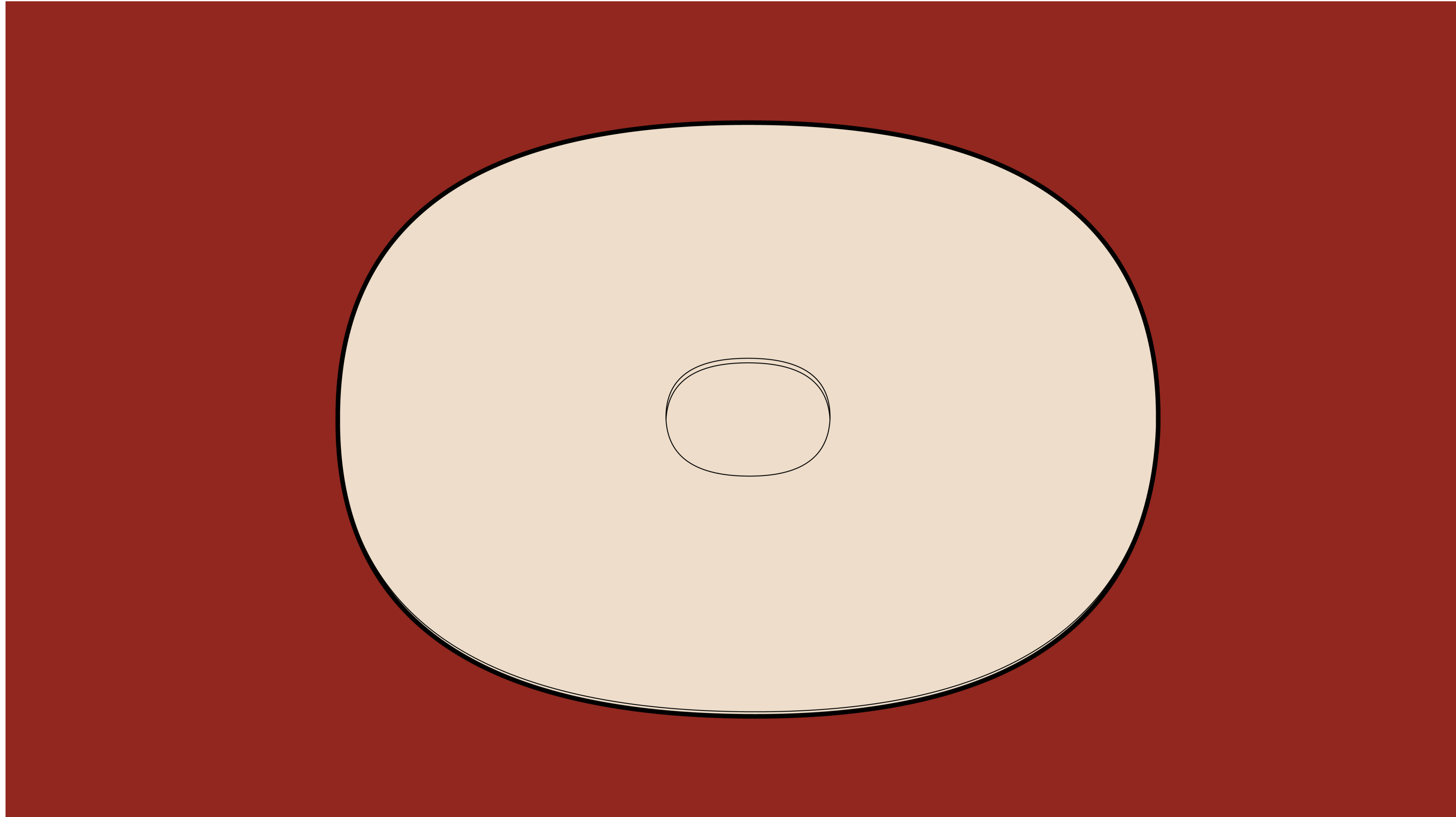
DESIGN

The clusters



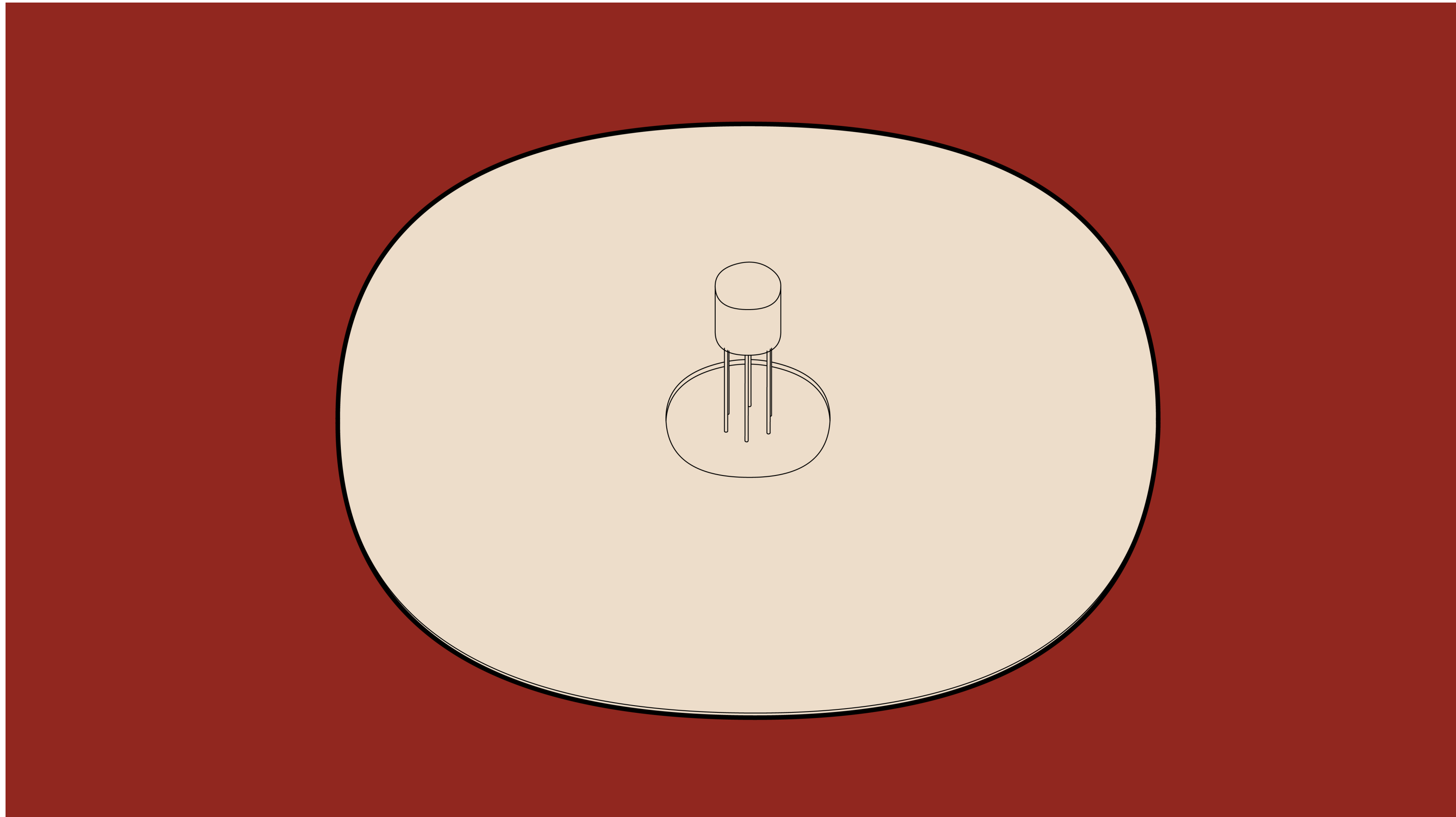
DESIGN

The clusters



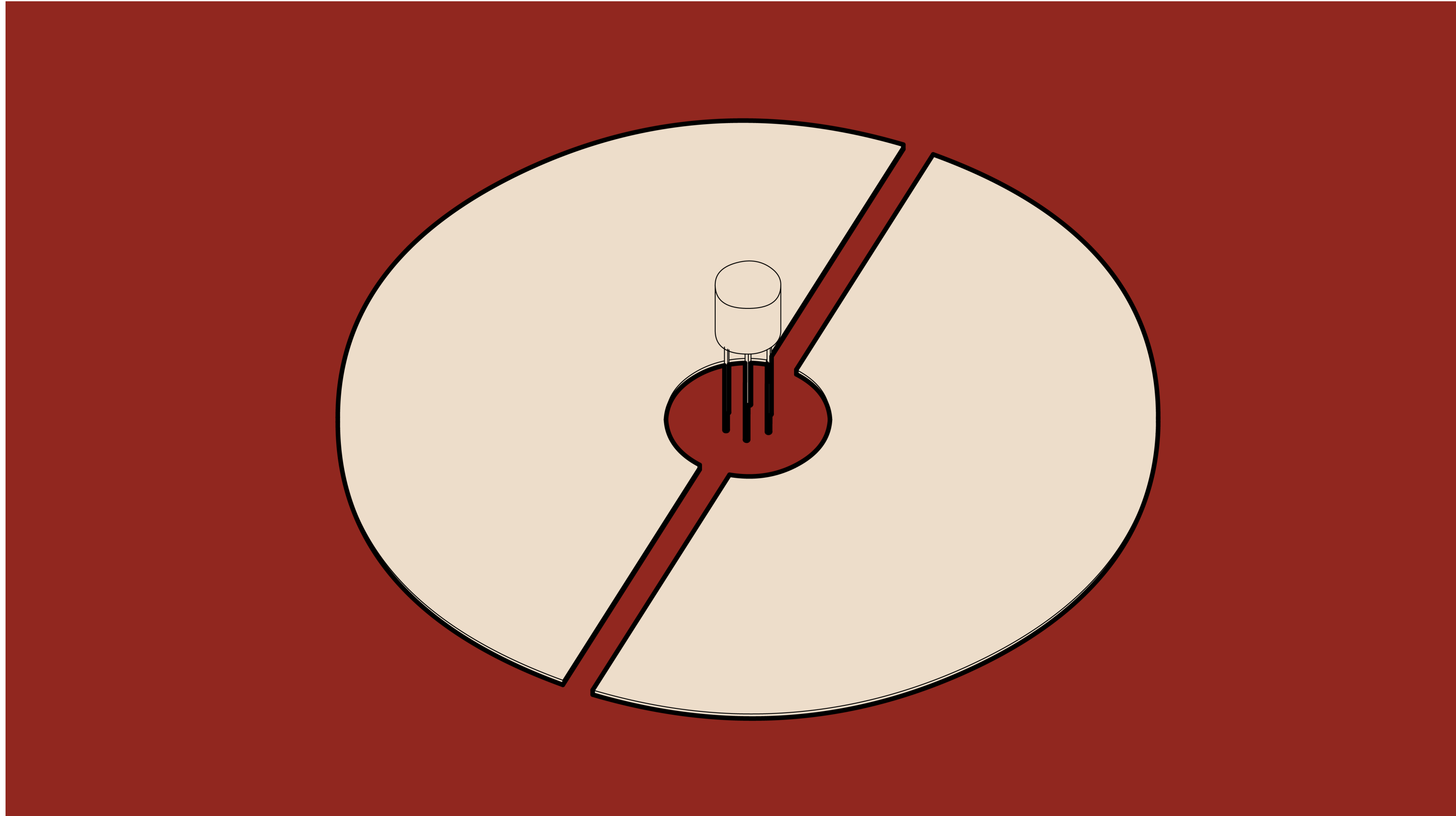
DESIGN

The clusters



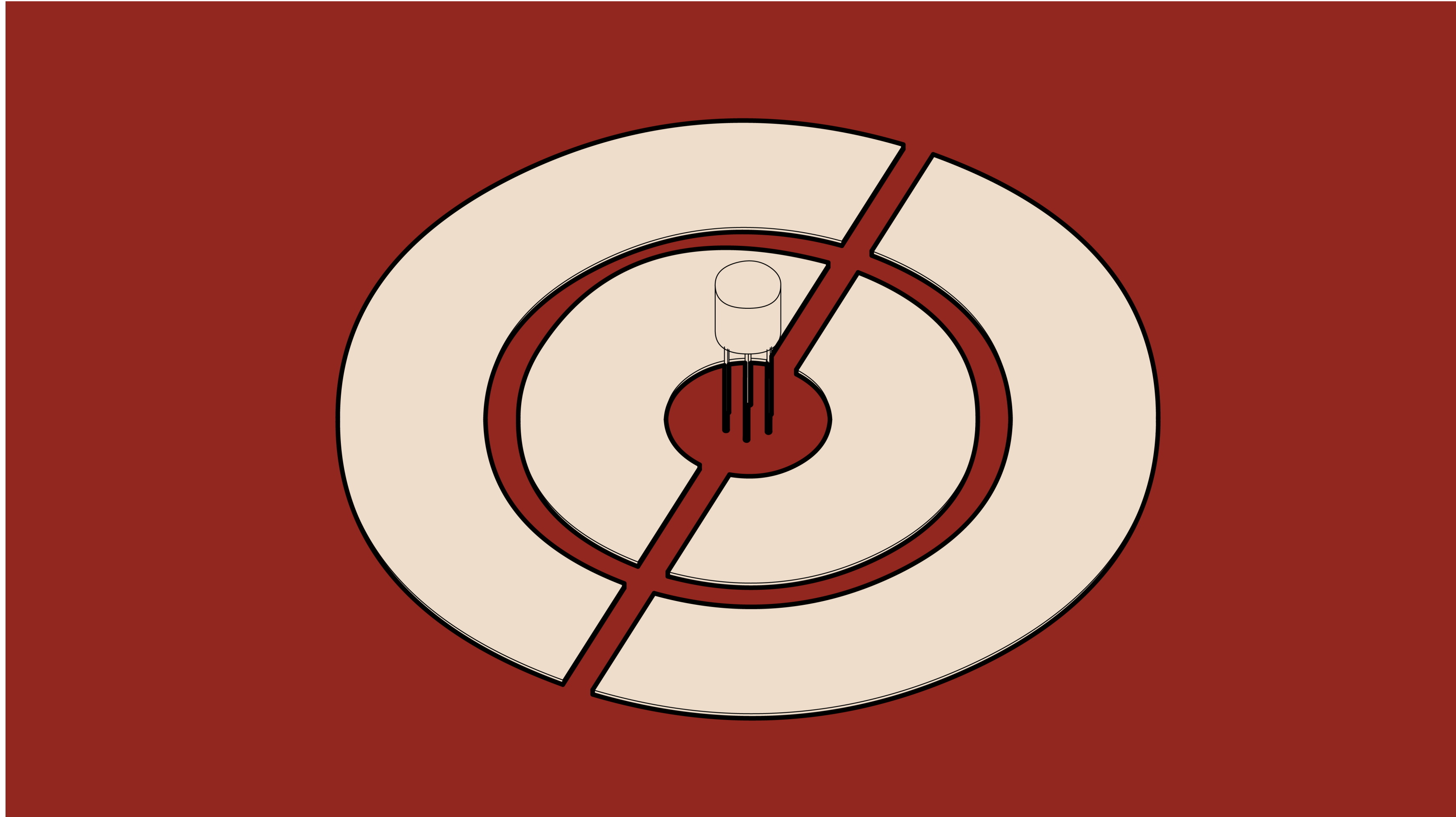
DESIGN

The clusters



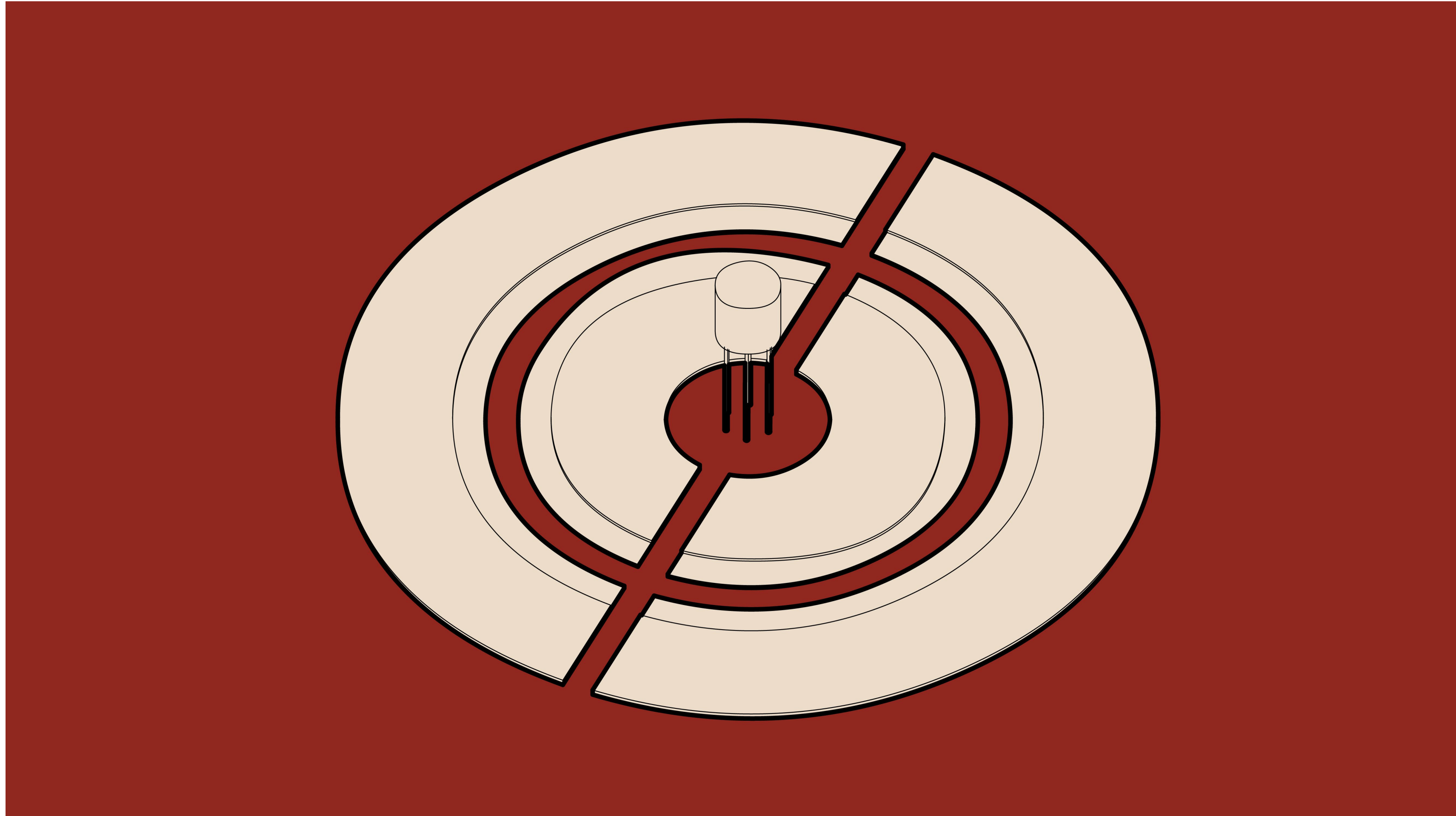
DESIGN

The clusters



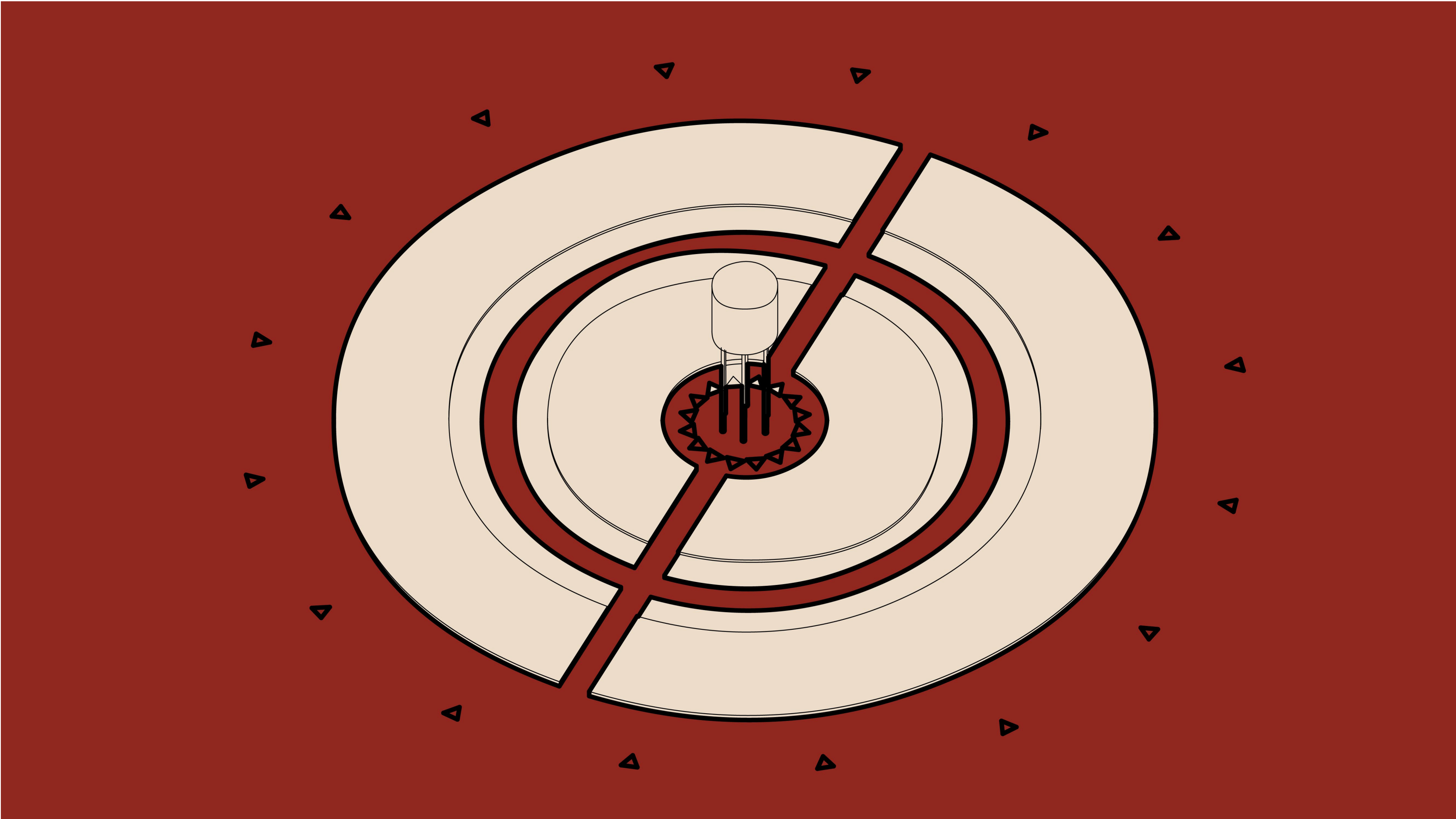
DESIGN

The clusters



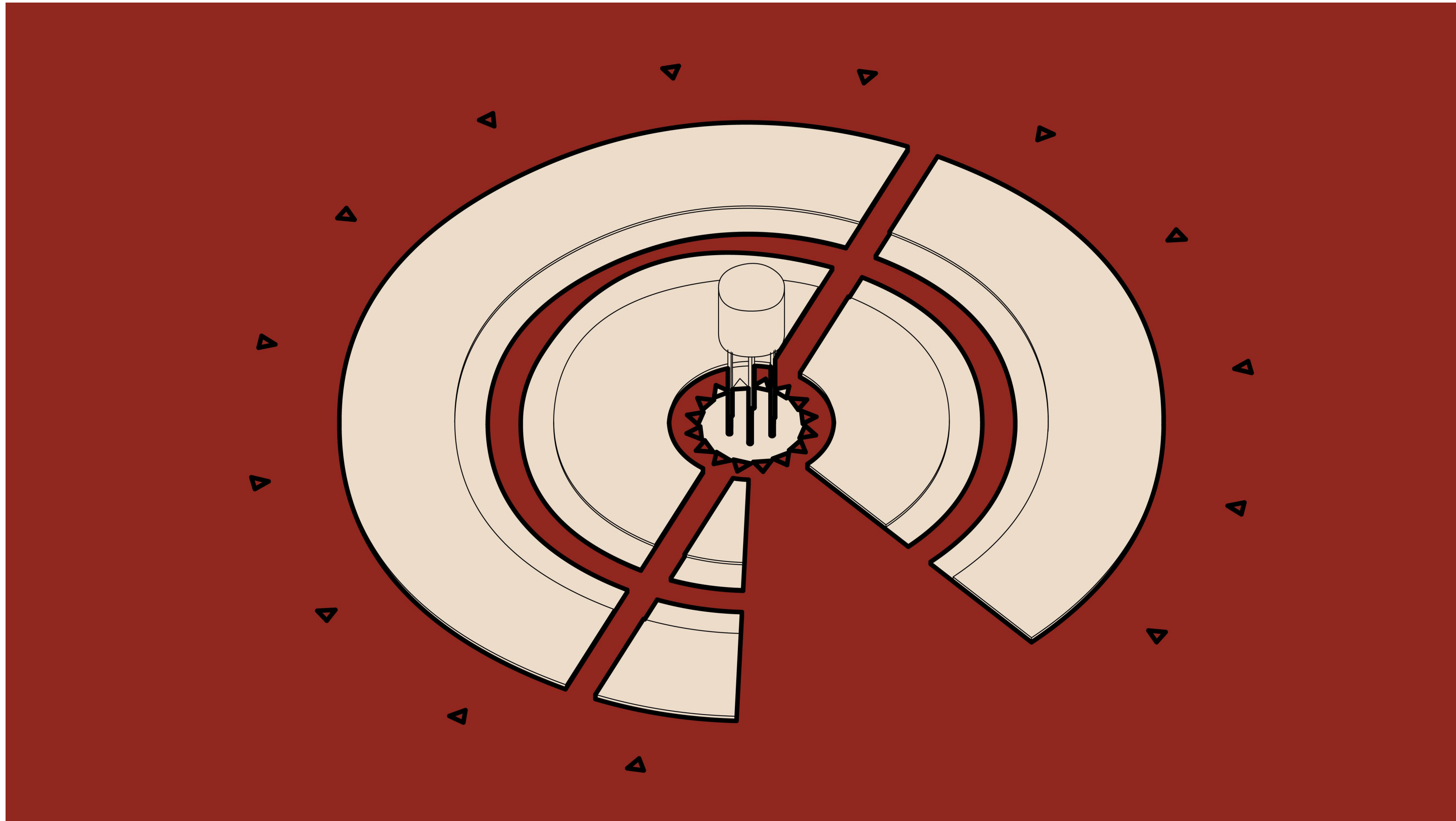
DESIGN

The clusters



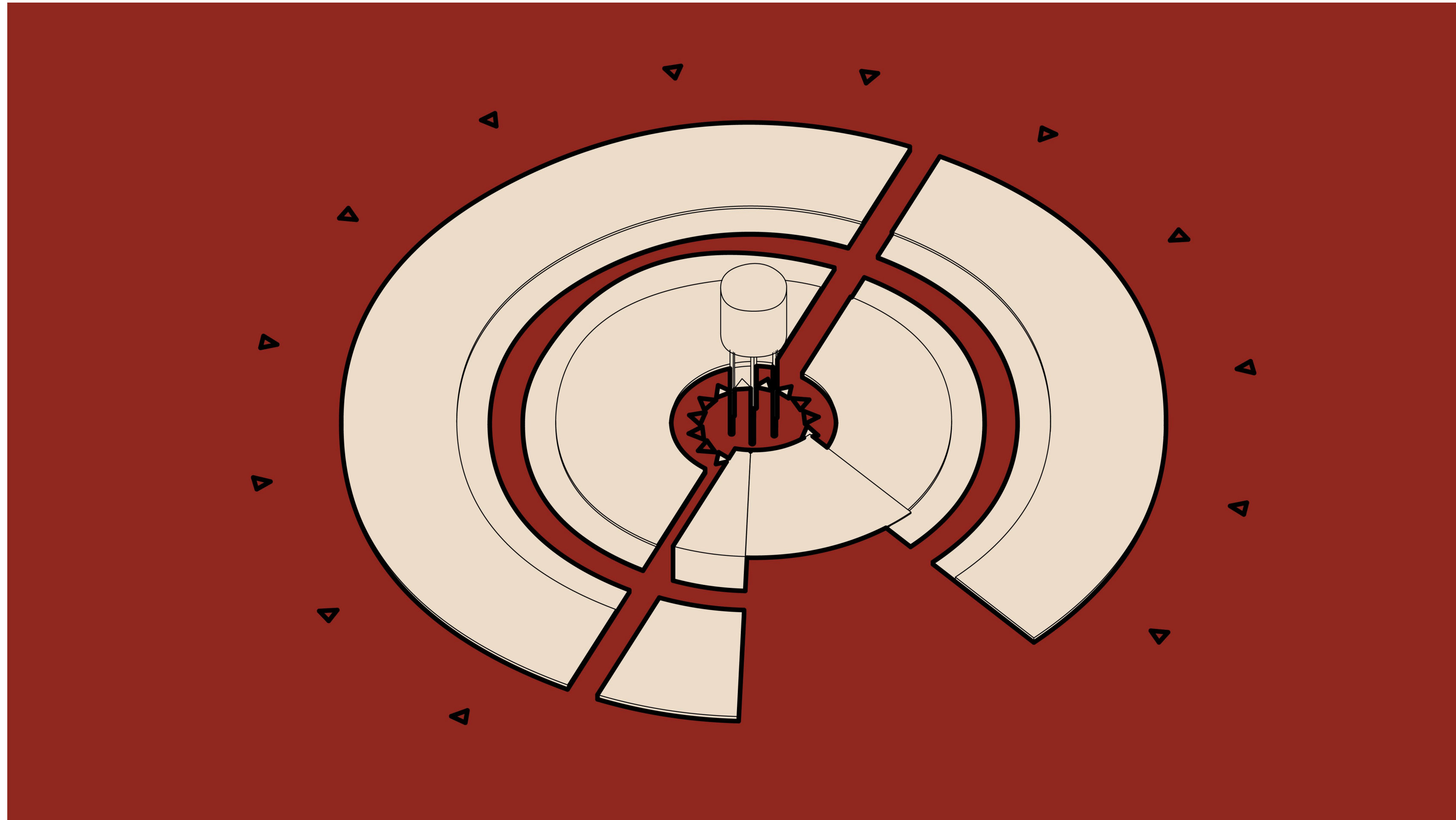
DESIGN

The clusters



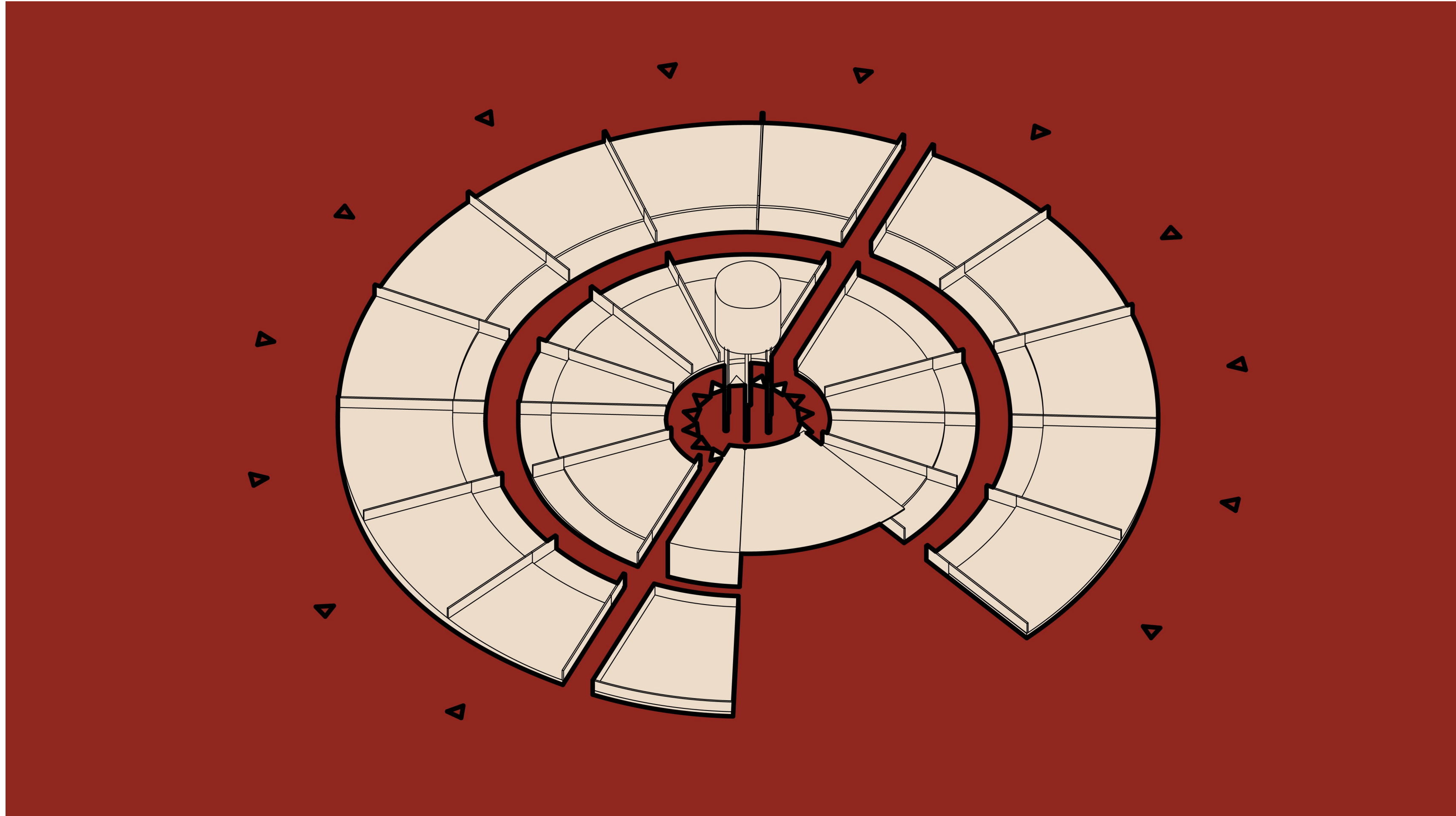
DESIGN

The clusters



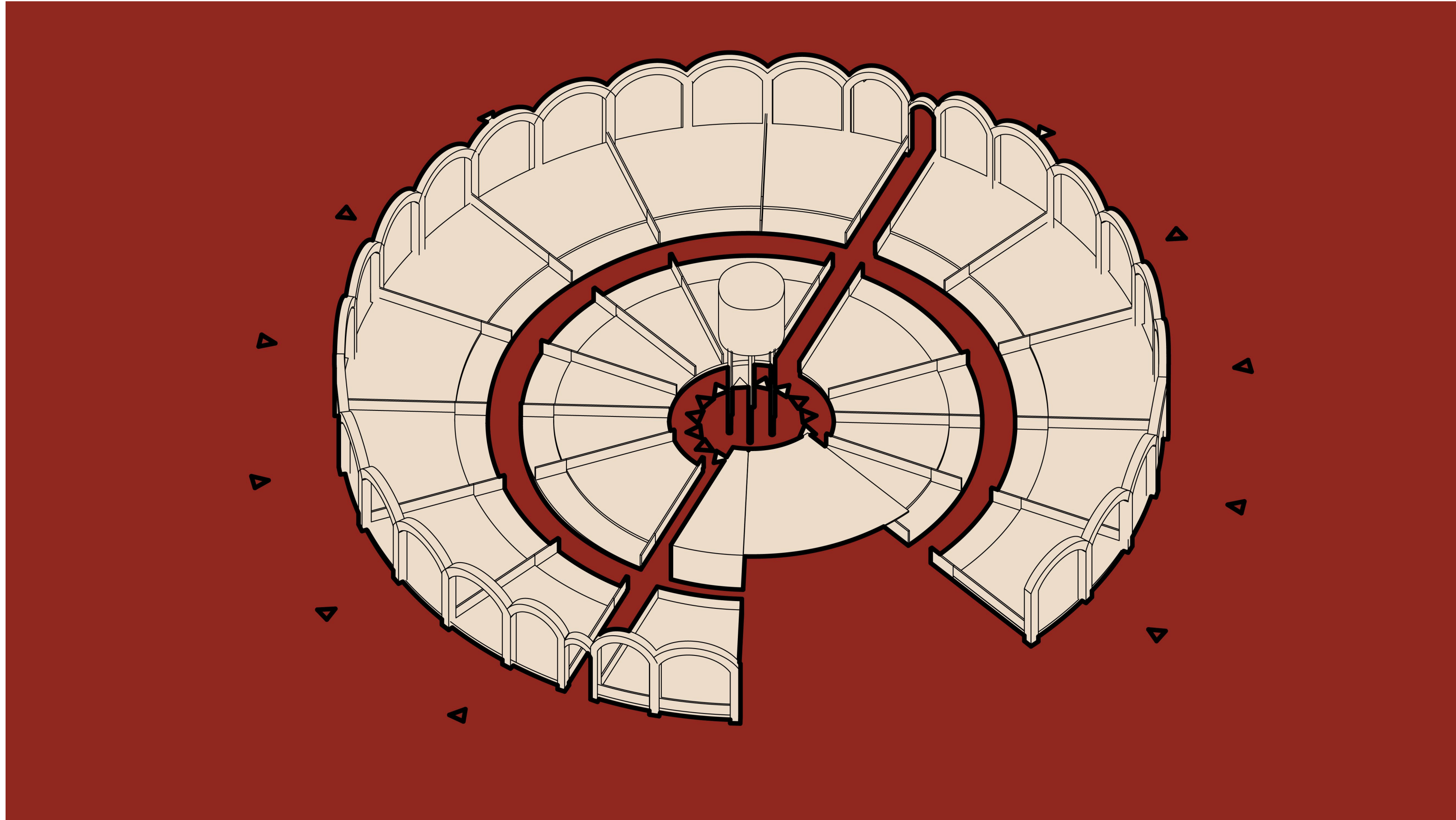
DESIGN

The clusters



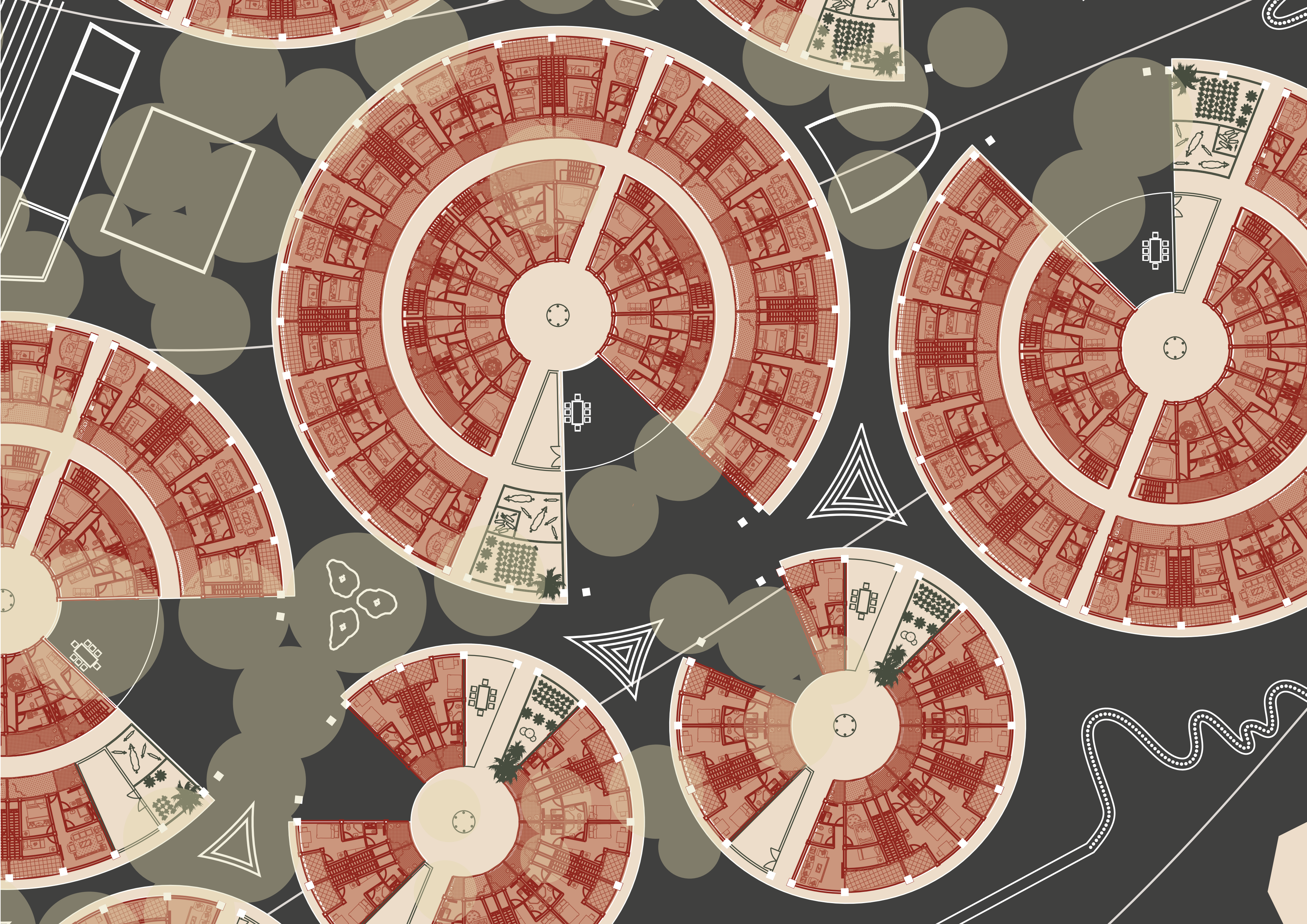
DESIGN

The clusters



DESIGN

The Clusters



DESIGN

The Clusters

60 m²
2 bedroom
+12 m² outdoor

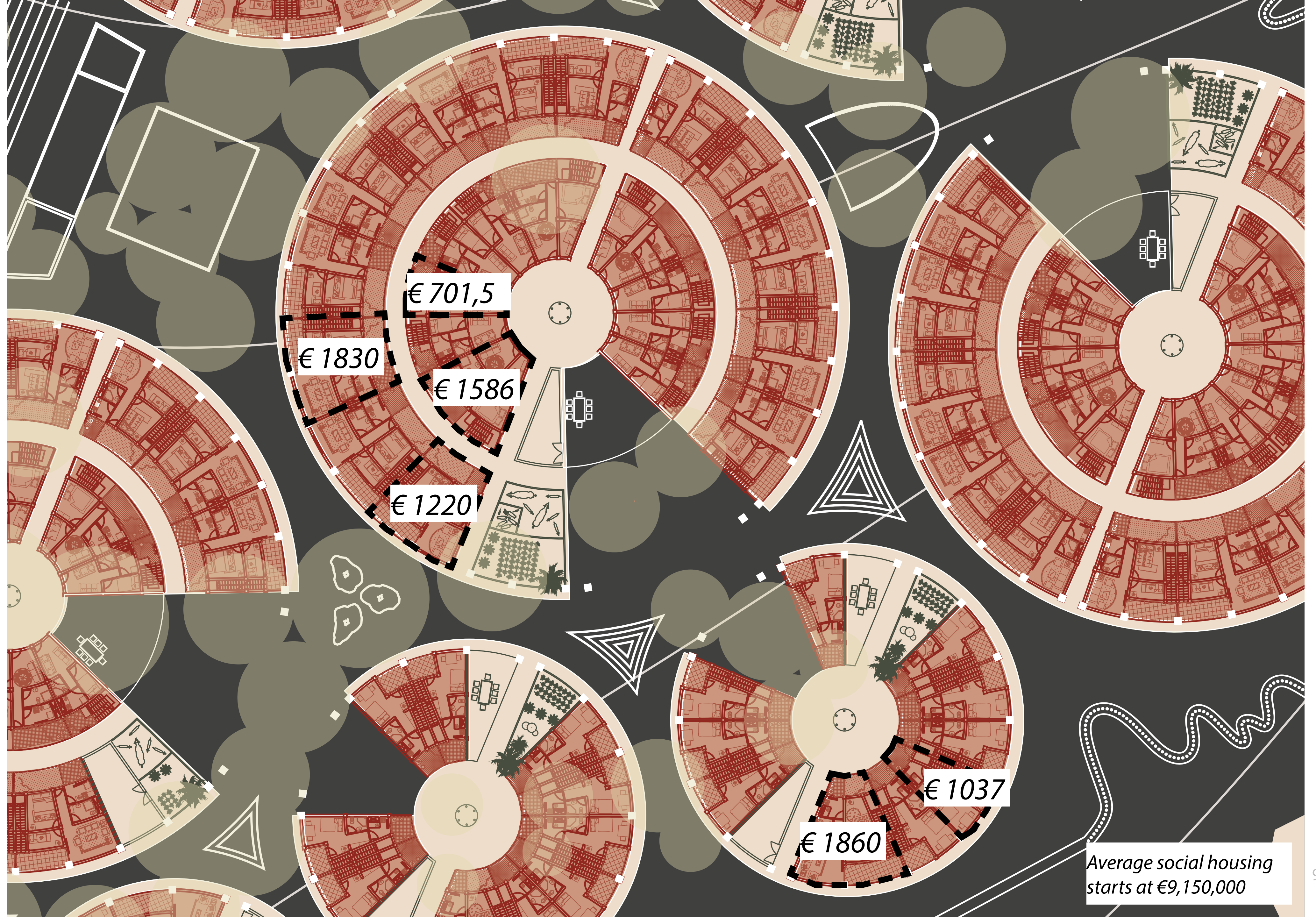
52 m²
2 bedroom
+ 11 m² outdoor

40 m²
2 bedroom
+ 18 m² outdoor

23 m²
1 bedroom
+ 10 m² outdoor

61 m²
2 bedroom
+7 m² outdoor

34 m²
studio
+ 5 m² outdoor



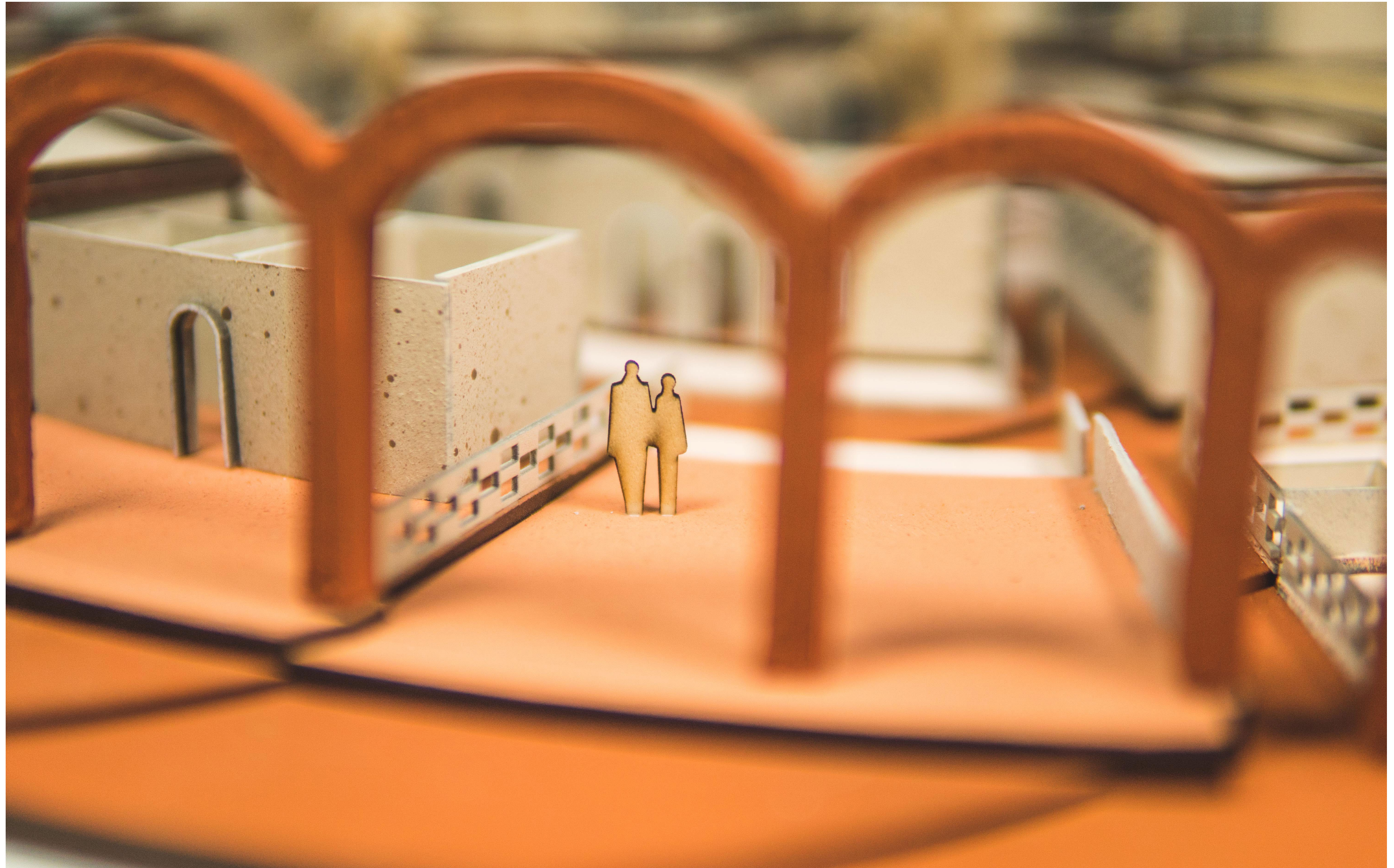
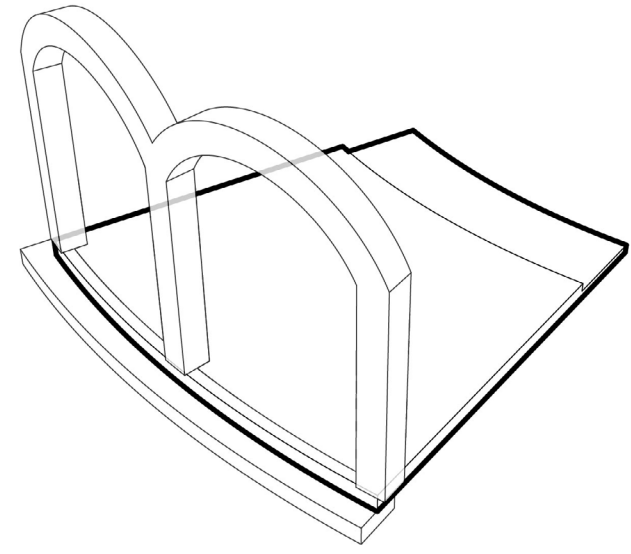
Average social housing
starts at €9,150,000

The Incremental Growth



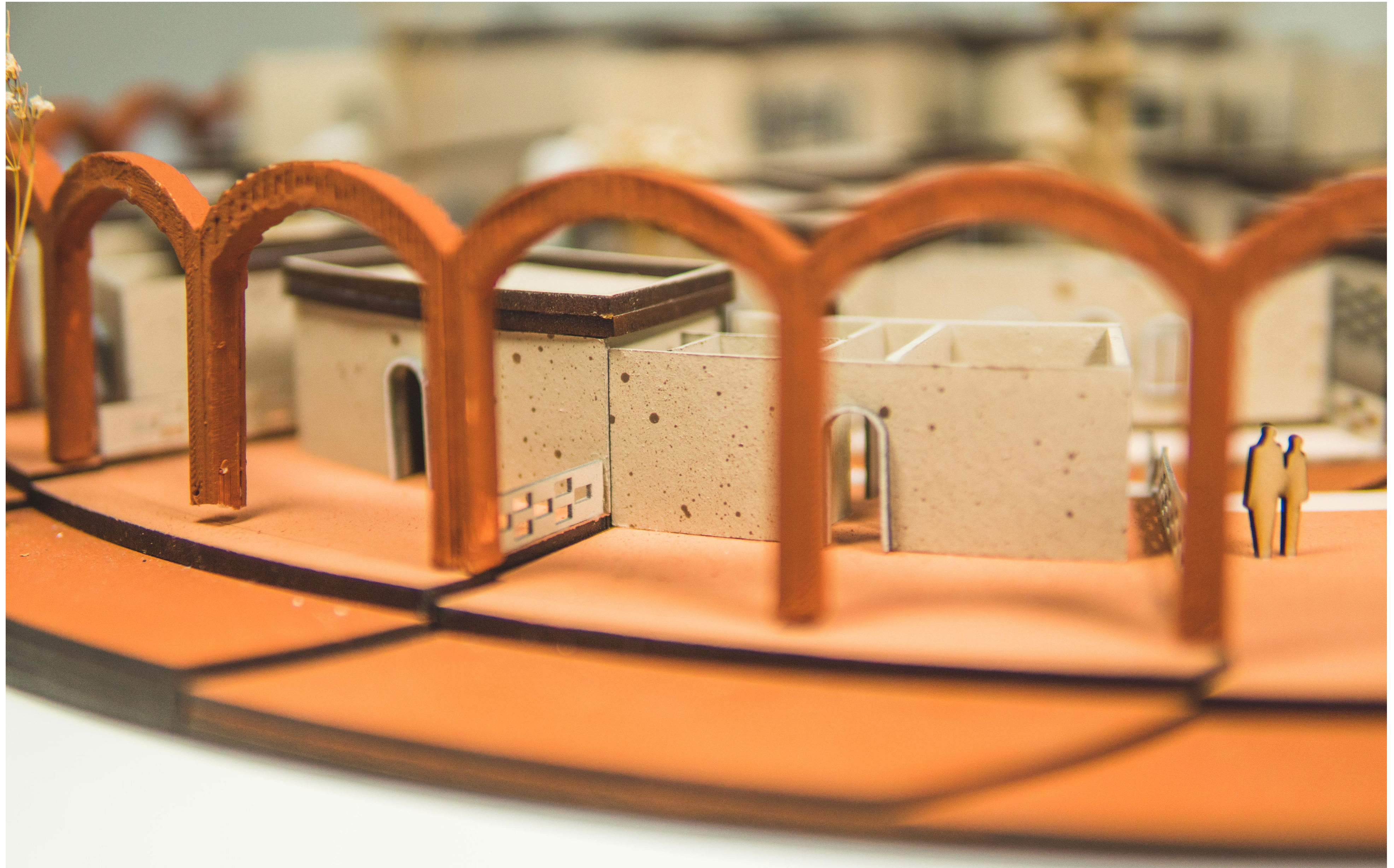
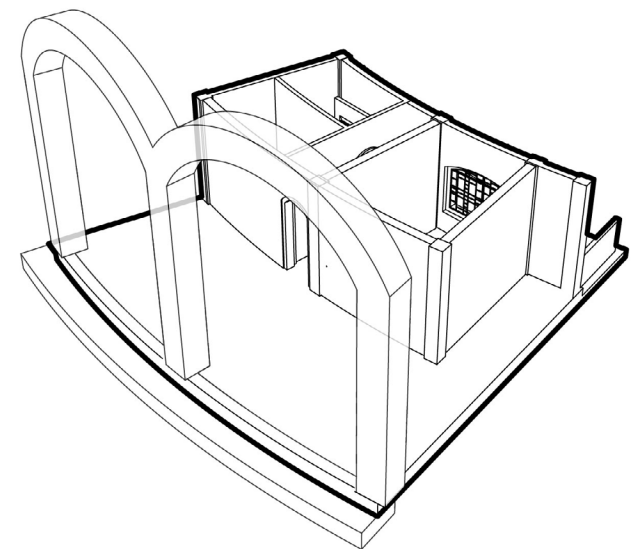
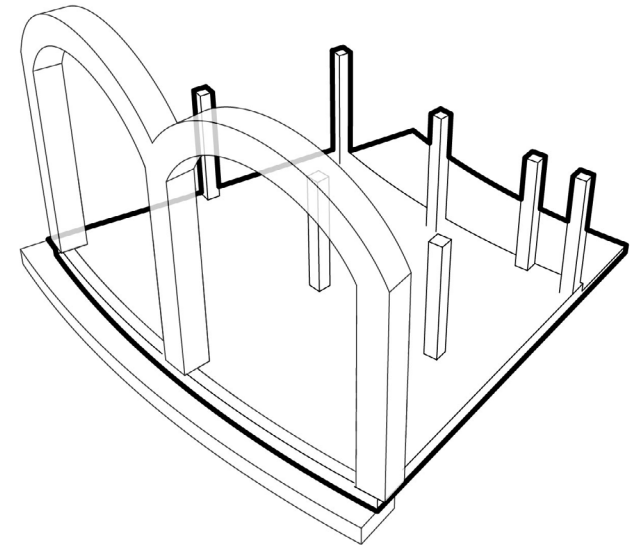
DESIGN

The Incremental Growth



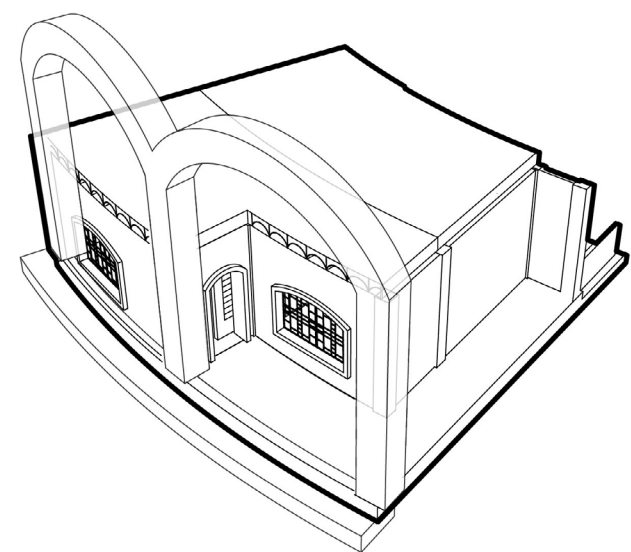
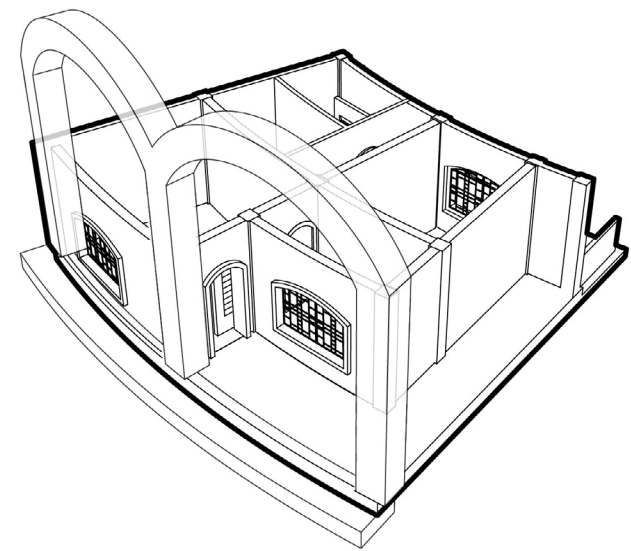
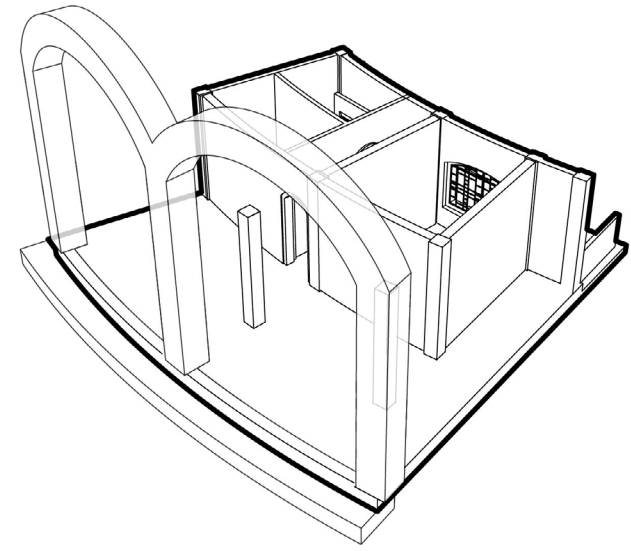
DESIGN

The Incremental Growth



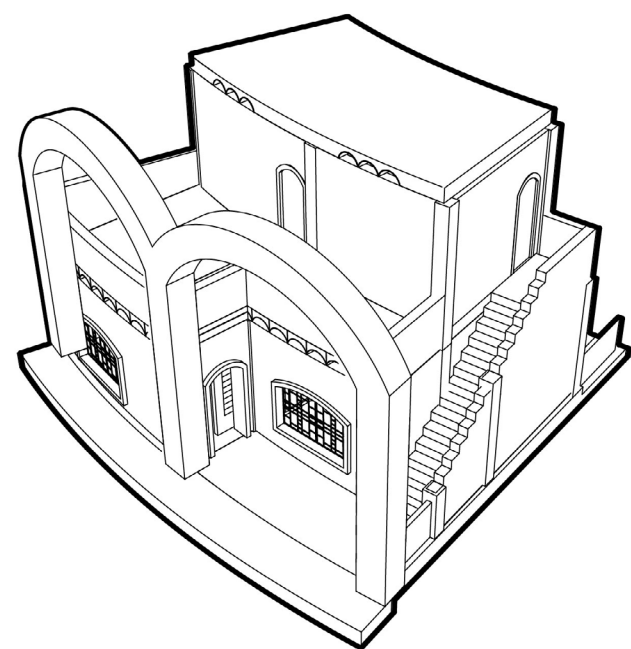
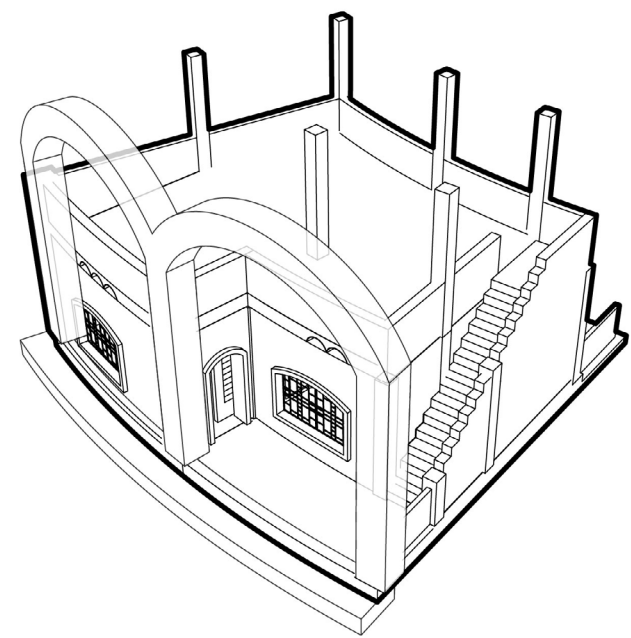
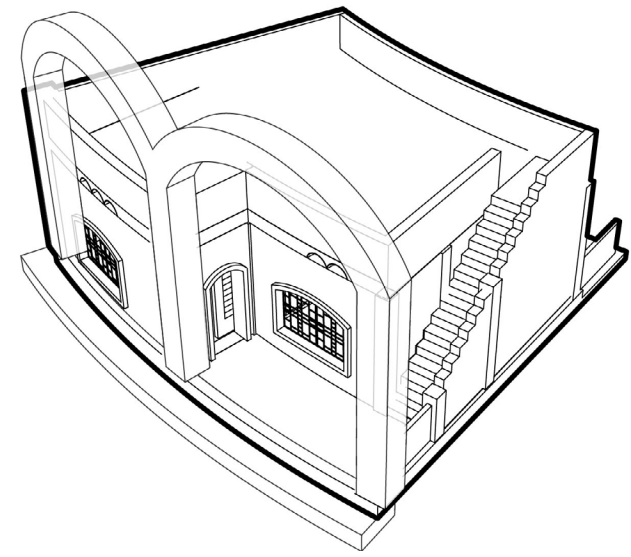
DESIGN

The Incremental Growth



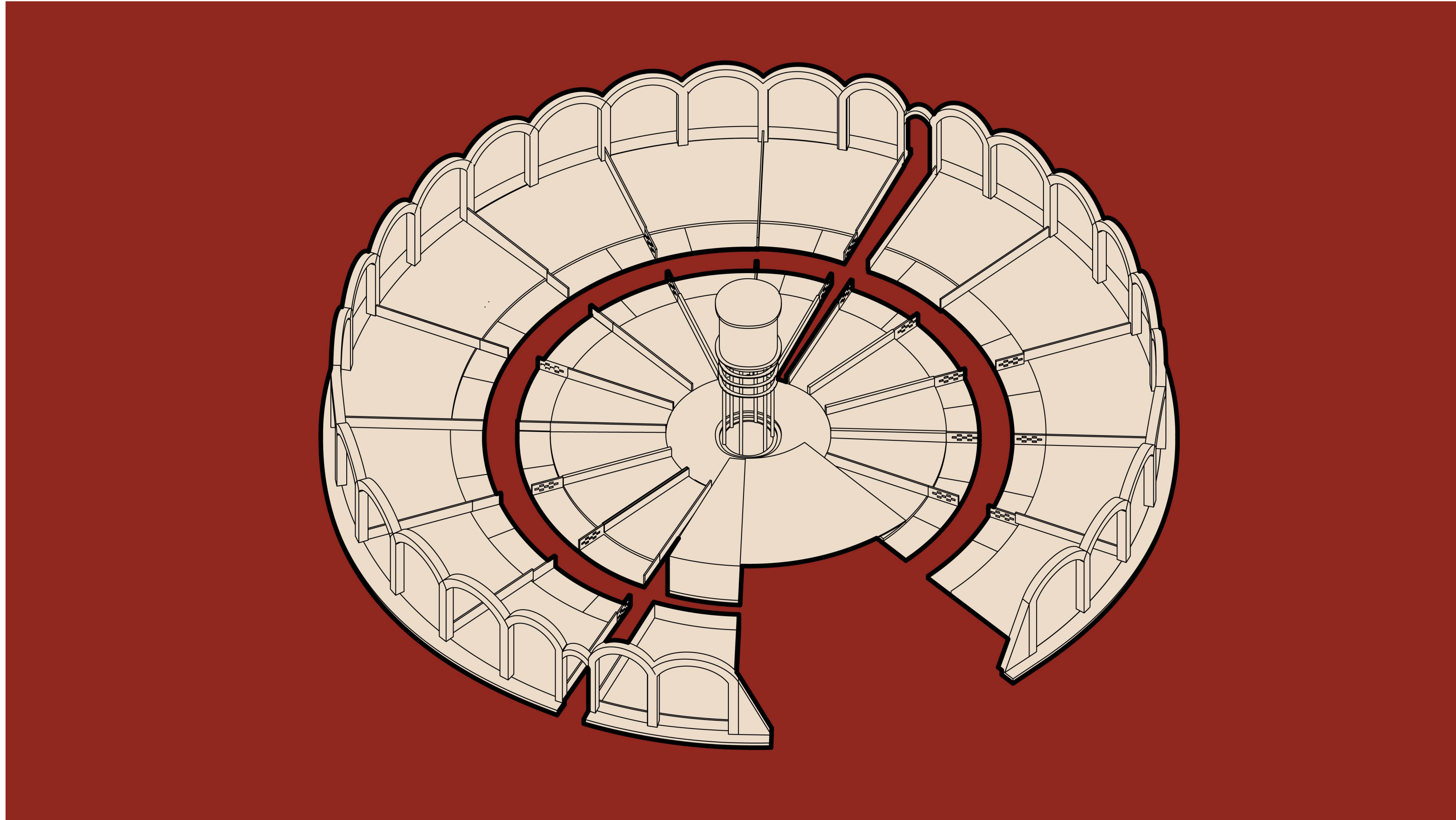
DESIGN

The Incremental Growth



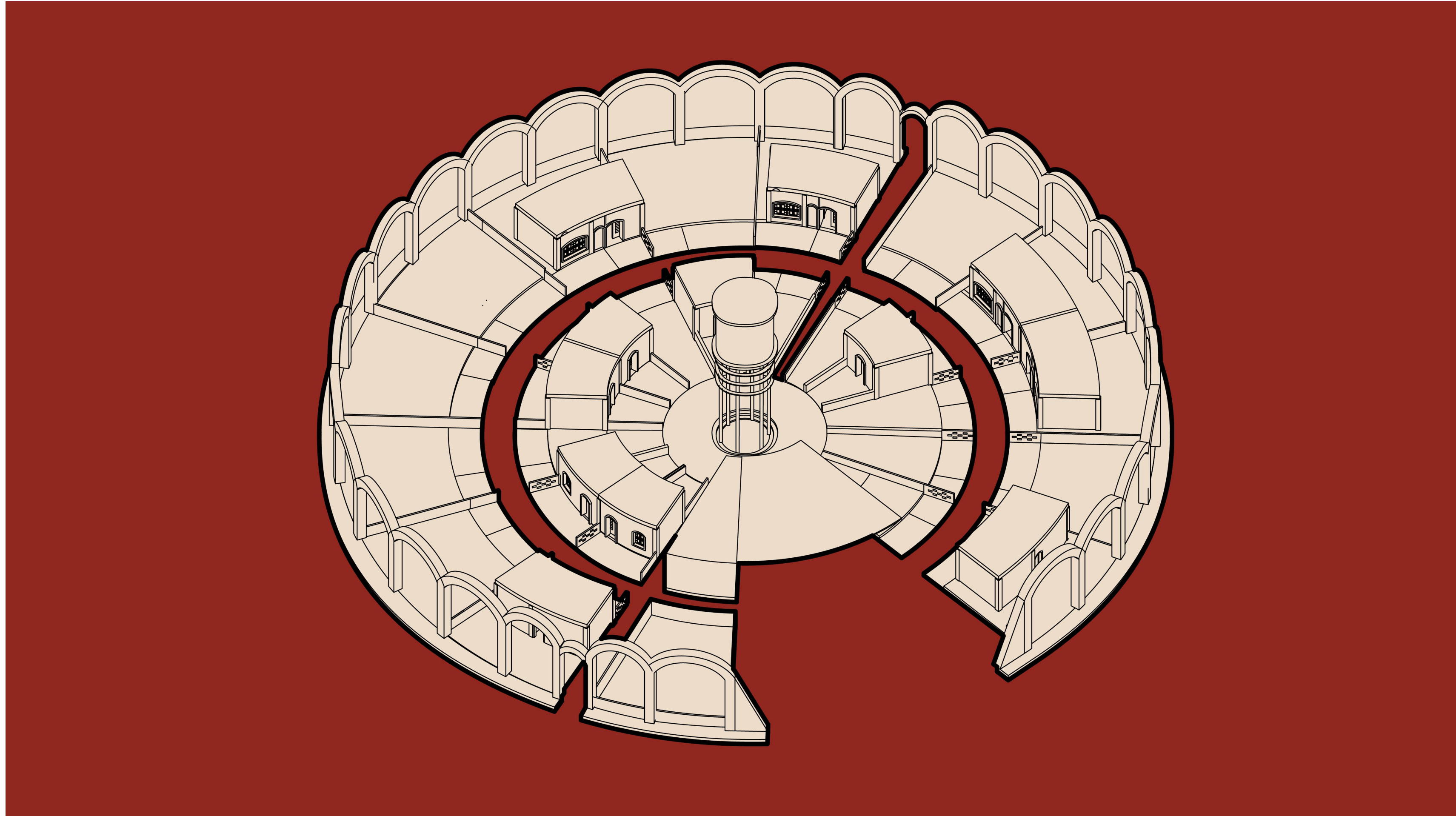
DESIGN

The Incremental Growth



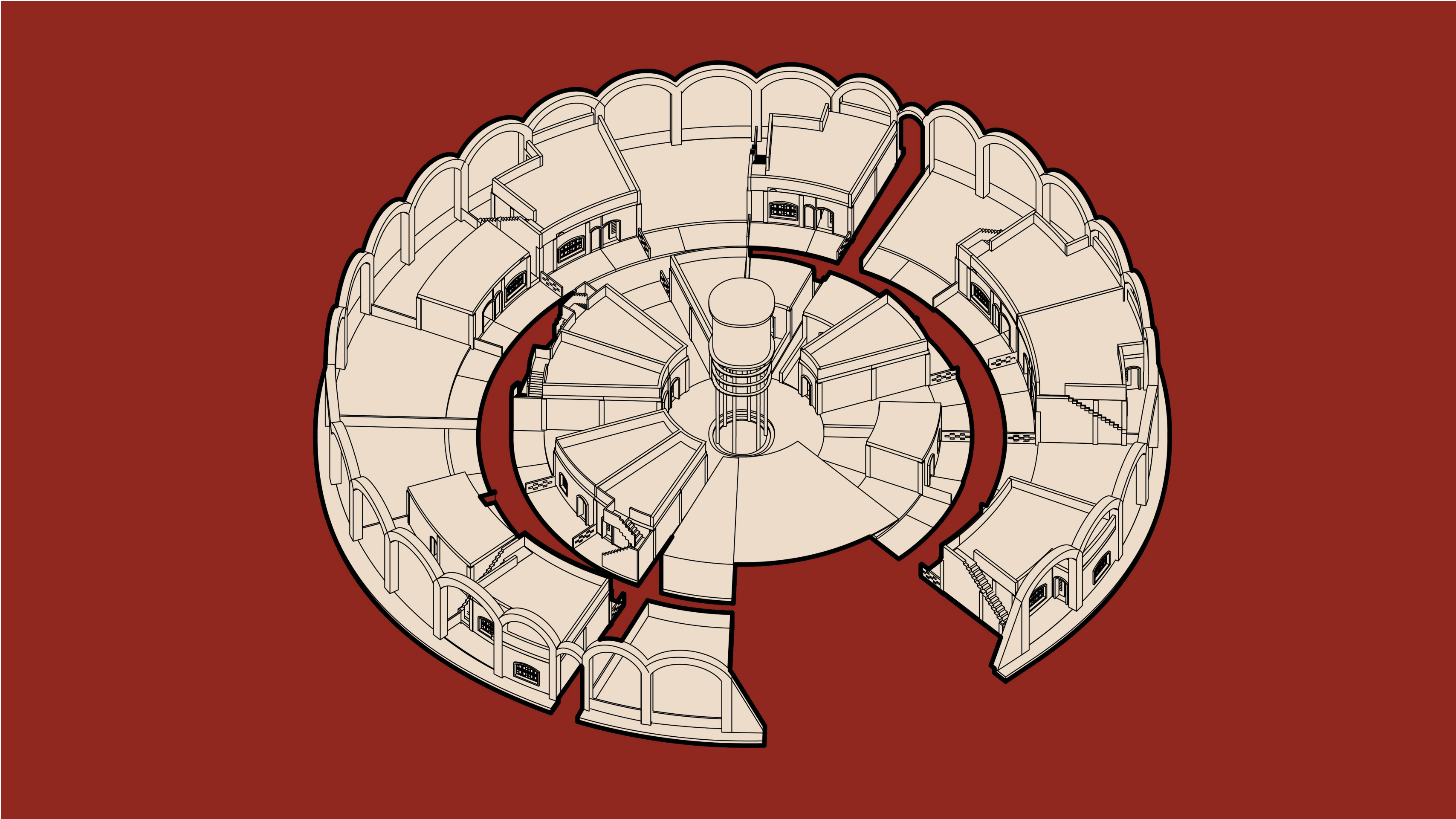
DESIGN

The Incremental Growth



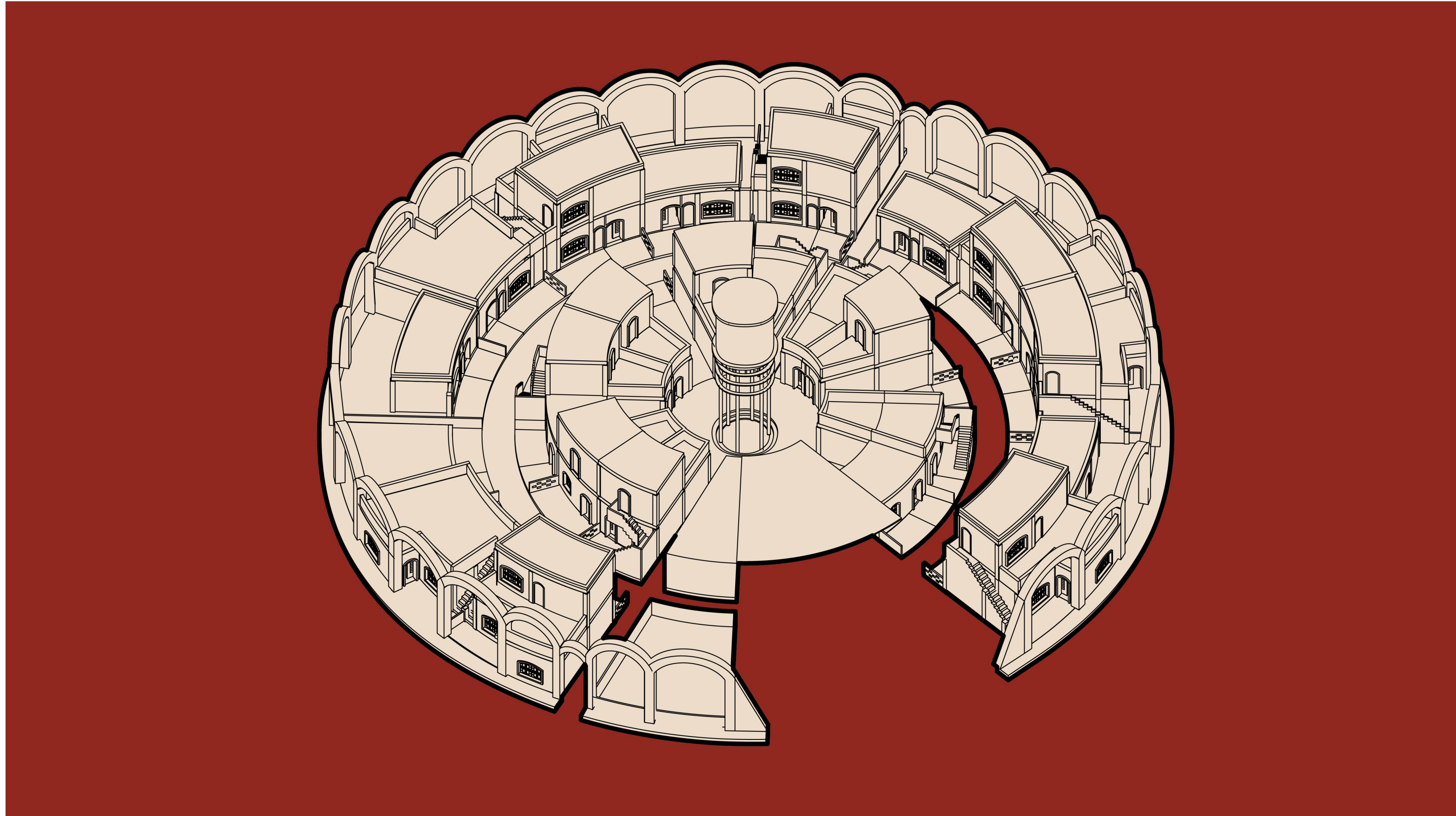
DESIGN

The Incremental Growth



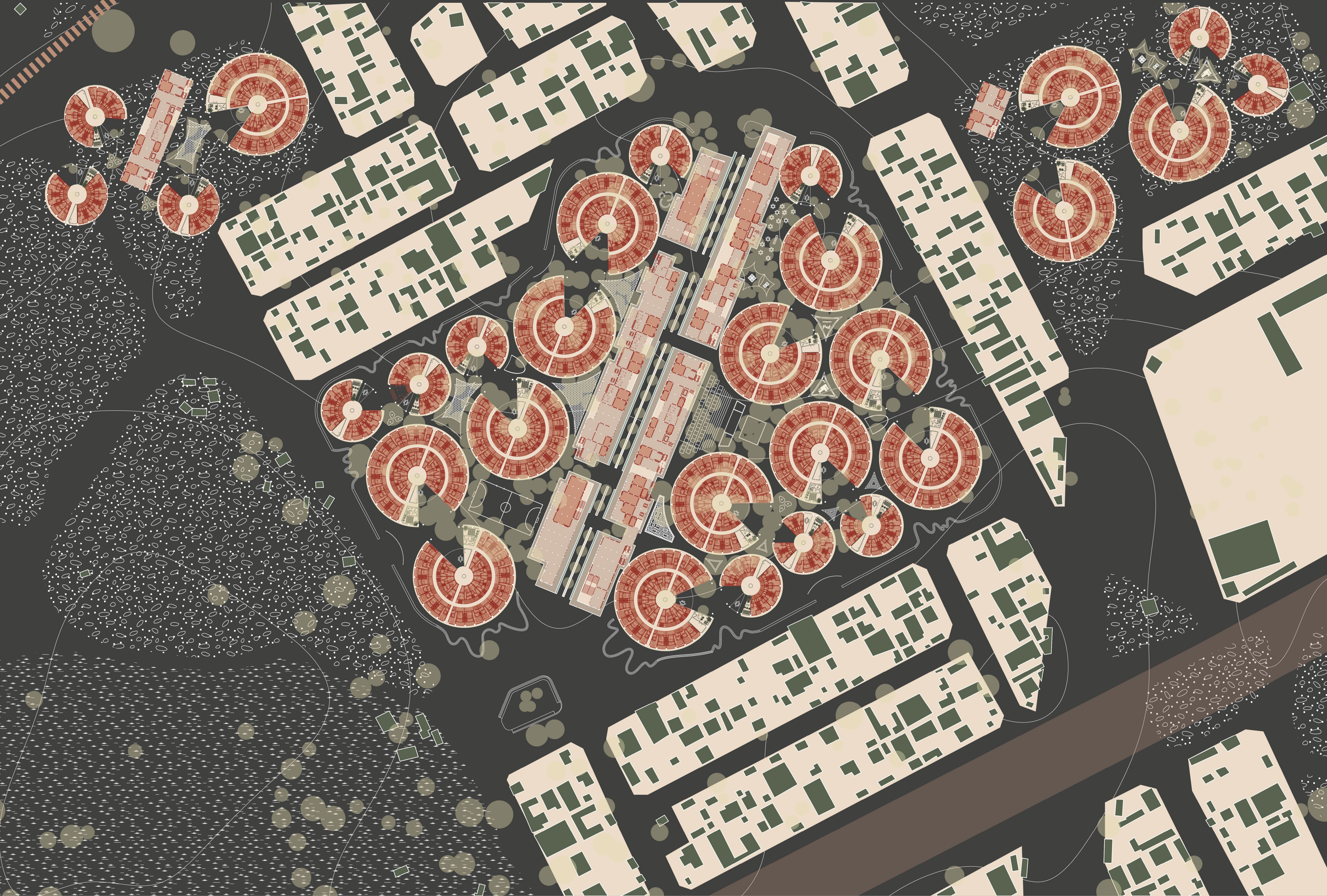
DESIGN

The Incremental Growth



DESIGN

The Clusters



The "Leftovers"



The Round Square





THANK YOU



1,632,500

	Unité	Quantité	Prix uni	Total
MAT GO				596,000
Briques banco	38*17*15	3,000	50	150,000
Terre petits briques	Béne	2	35,000	70,000
Terre maçonneris	Béne	4	35,000	140,000
Caïoux	Béne	3	50,000	150,000
Eau	Barrique	100	500	50,000
Bache	Metres	50	600	30,000
Gouttieres		2	3,000	6,000

MO GO	Nombre	Jours	Prix uni	395,000
		18		
mo	2	18	2,000	72,000
C1				0
C2	1	18	3,000	54,000
C3	1	18	3,500	63,000
C4	1	18	5,000	90,000
Logement	1	1	20,000	20,000
Noureture	1	18	4,500	81,000
Transport	1	1	15,000	15,000

MAT FIN				456,500
Portes	Unité	1	30,000	30,000
Fenêtres		2	15,000	30,000
Terre	tri	5	3,500	17,500
Sable	bene	1	60,000	60,000
Gravier	tri	6	36,000	216,000
Ciment	sac	7	6,000	42,000
Goudron	seau	1	13,000	13,000
Huil	l	10	200	2,000
Petrole	l	5	1,000	5,000
Boix	F	1	2,000	2,000
FIOLE		3	8,000	24,000
Dallettes				0
Eau		30	500	15,000

MO GO	Nombre	Jours	Prix uni	160,000
		8		
mo	2	8	2,000	32,000
C1				0
C2	1	8	3,000	24,000
C3	1	8	3,500	28,000

???

2

90

30

60x40 ou 60x70

C4	1	8	5,000	40,000
Logement	1	8	0	0
Noureture	1	8	4,500	36,000
Transport				0
MATERIEL	Unité	Quantité	Prix uni	25,000
brue	Unité	1	25,000	25,000
bar		1		0
planches				0
pelles				0
pioche				0
daba				0
seau				0

C4
Logement
Noureture
Transport

MO GO
mo
C1
C2
C3
C4
Logement
Noureture
Transport

MO GO
mo
C1
C2
C3