

Mokhethi Gerard Rampeta - Master Thesis

A SUSTAINABLE ECOLOGICAL VILLAGE

Dealing With The In-Between In A Dispersed City, Maseru, Lesotho.

POLITECNICO DI MILANO





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Master of Science in Architecture

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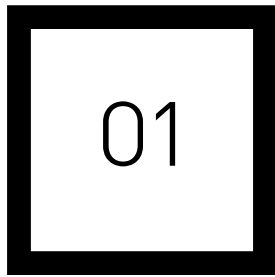
Supervisor: Professor. Paolo Debiaggi

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ABSTRACT

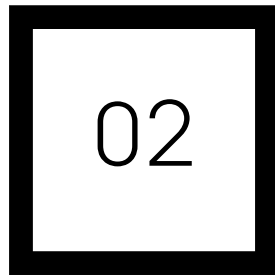
# ABSTRACT

A Sustainable Ecological Village.

Dealing with the in-between in a dispersed city, Maseru, Lesotho.

The aim is to create safe nodes for vulnerable communities, spaces for learning, skill share, and all round human development. To rehabilitate the in-between spaces through innovative solutions in urban design, planning. Regeneration of the left-over spaces as a viable community and cultural hub. To attract as many patrons as possible throughout day and night, contemporary mixed-use developments that combine different and sometimes unexpected programmatic areas, to give back to the city a number of public spaces such as re-naturalized landscape and pedestrian paths.

The ecological village is conceived as agent of change that acts as an attractor for patrons that extend far more than the local community, which could be the key to it's long term financial and social sustainability. A project of this nature is long overdue, because recent proposals in Maseru, Lesotho have been going in the direction of gated communities, which have had adverse effect especially in the global south. Lesotho is faced with high rates of unemployment of both the undereducated and the alumni of secondary and tertiary institutions.



INTRODUCTION

# INTRODUCTION

## LESOTHO

Lesotho, officially the Kingdom of Lesotho, is an enclaved country in Southern Africa. It is just over 30,000 km<sup>2</sup> in size and has a population of around 2 million. Its capital and largest city is Maseru.



*Figure 1, Map of the World with focus on Southern Africa*





*Figure 1.1, Map of Africa, showing the Kingdom of Lesotho*



Figure 1.2

# MASERU

Maseru is situated on a plateau in the extreme west of the country. The city is set against a backdrop of Hlabeng-Sa-Likhama, the foothills of the Maluti Mountains, at the heart of the most productive agricultural region of the country.

The urban landscape is broken by low rocky outcrops, with deep erosion gullies or “dongas”, which flood during the dramatic storms of the rainy season from October to April, and the undulating topography provides an attractive setting for the modern city. The city centre is situated on rising land surrounded on three sides by the River Mohokare, which is the international border between Lesotho and South Africa. This name, Maseru, means “place of the red sandstone” in Sesotho.

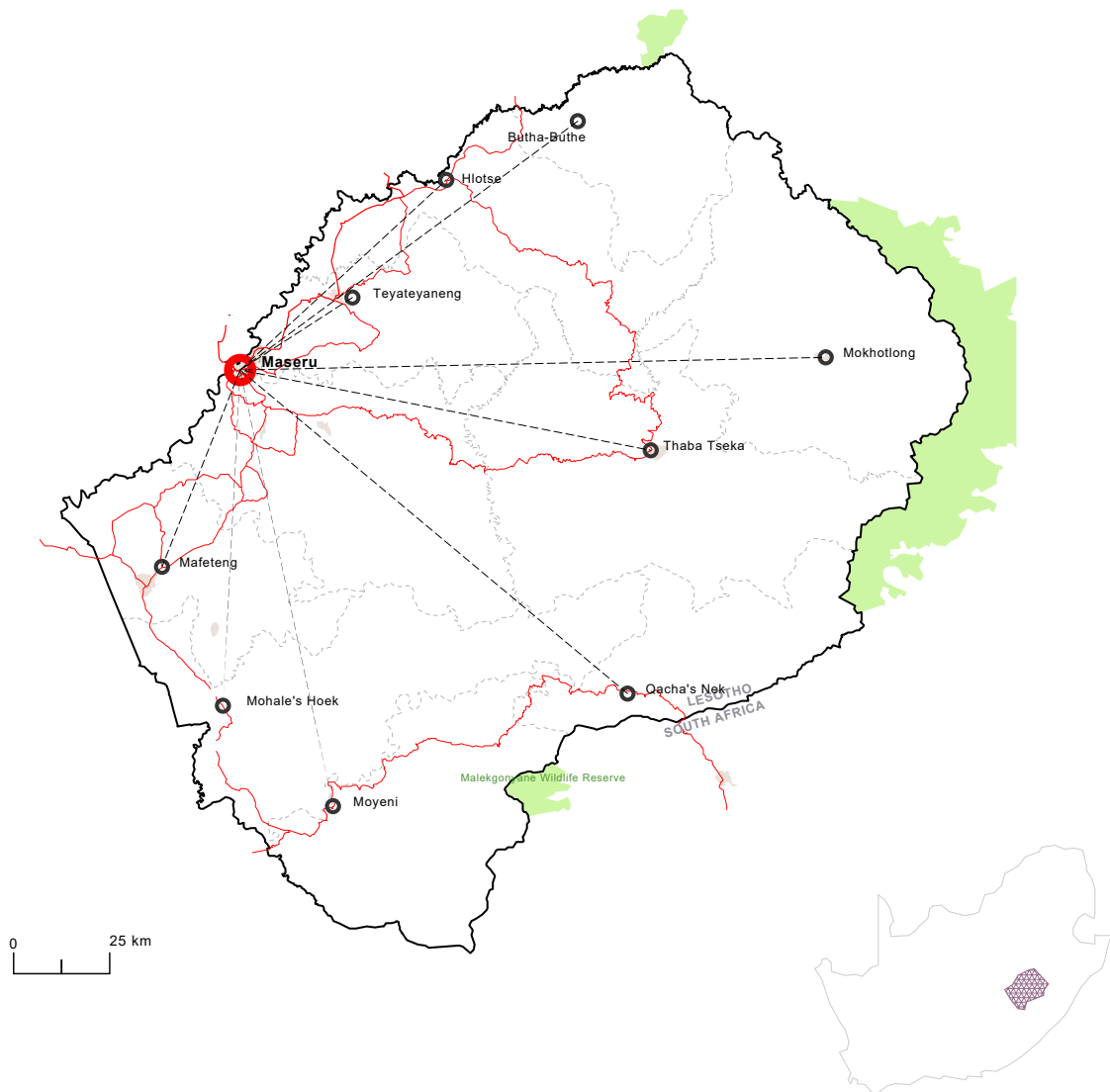
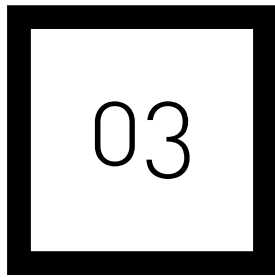


Figure 1.3





GEOGRAPHY

## THE MAGREB

This is an area of North Africa that borders the Mediterranean Sea and comprises the northern Slopes of the Atlas Mountains and the coastal plain of Morocco, Algeria, Tunisia and Libya. The Atlas extend from southwest to northeast, from Agadir on the Atlantic Ocean to Tunis to the Mediterranean. Their thick rim rises to form a high, sill separating the Mediterranean basin from the Sahara to the south.

## THE DESERT

The desert is third largest desert in the world after Antarctica and the Arctic. Its area of 9,200,000 square kilometers is comparable to the area of China or the United States. The desert comprises much of North Africa, excluding the fertile region on the Mediterranean Sea coast, the Atlas Mountains of the Maghreb, and the Nile Valley in Egypt and Sudan. It stretches from the Red Sea in the east and the Mediterranean in the north to the Atlantic Ocean in the west, where the landscape gradually changes from desert to coastal plains. To the south, it is bounded by the Sahel.

## THE SAHEL

The Sahel is the ecoclimatic and biogeographic zone of transition in Africa between the Sahara to the north and the Sudanian Savanna to the south. Having a semi-arid climate, it stretches across the south-central latitudes of Northern Africa between the Atlantic Ocean and the Red Sea. The Sahel region in Africa: a belt up to 1,000 km wide that spans the 5,400 km from the Atlantic Ocean to the Red Sea

## FOREST

The forest zone, a belt of lowland tropical moist broadleaf forests, runs across most of equatorial Africa's intertropical convergence zone. The Upper Guinean forests of West Africa extend along the coast from Guinea to Togo. The Dahomey Gap, a zone of forest-savanna mosaic that reaches to the coast, separates the Upper Guinean forests from the Lower Guinean forests, which extend along the Guinea from eastern Benin through Cameroon and Gabon to the western Democratic Republic of the Congo. The largest tropical forest zone in Africa is the Congolese forests of the Congo Basin in Central Africa. A belt of tropical moist broadleaf forest also runs along the Indian Ocean coast, from southern Somalia to South Africa.

## SAVANNA AND GRASSLAND

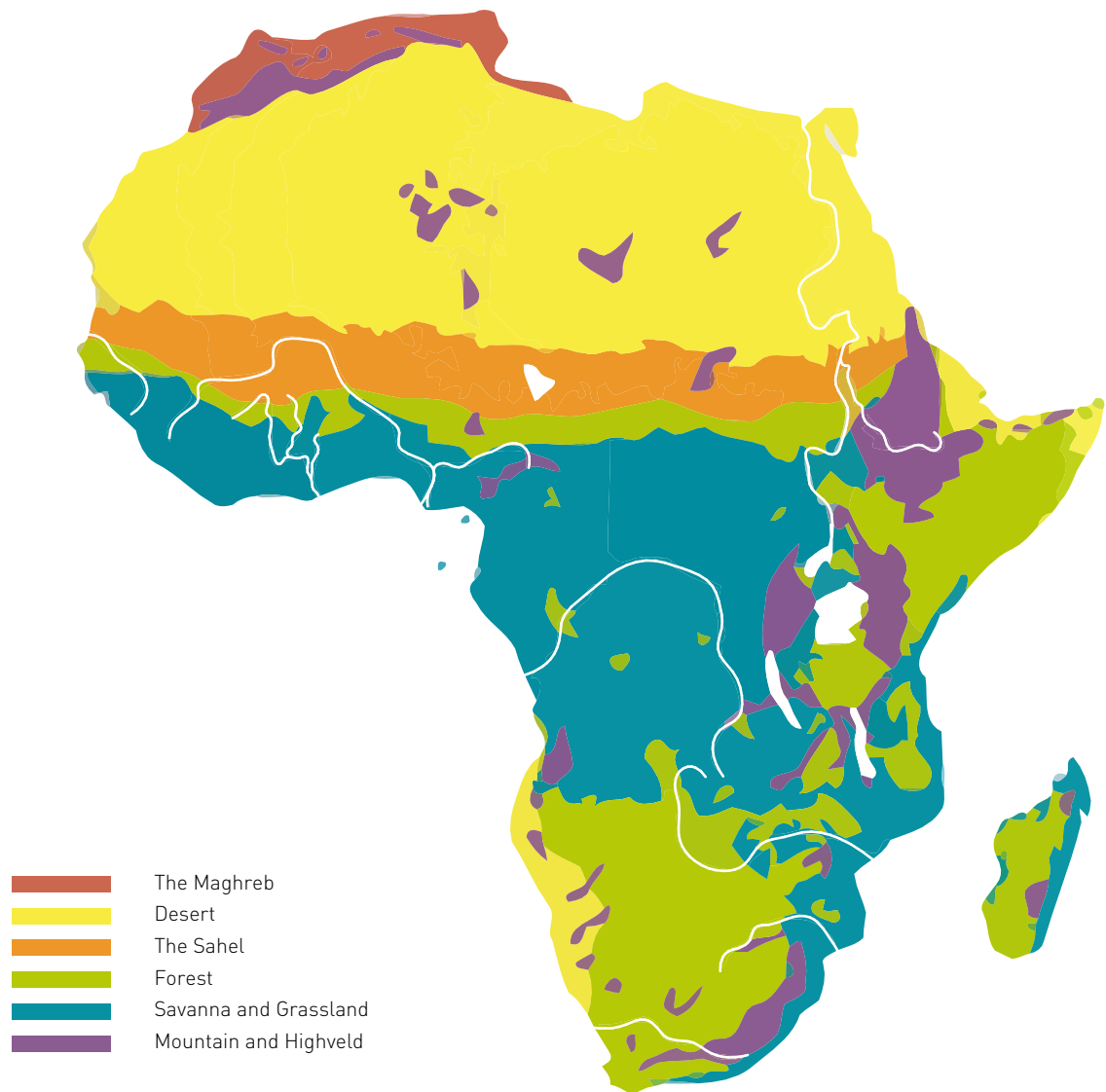
Savannas and Grasslands occur between forest or woodland regions and grassland regions. The climate varies, with an average temperature of 27 °C with peaks of 30 °C in April and October, and between 300 and 1500 mm of rain per year.

## MOUNTAIN AND HIGHVELD

The Highveld is the portion of the South African inland plateau which has an altitude above roughly 1500 m, but below 2100 m, thus excluding the Lesotho mountain regions to the south-east of the Highveld. It is home to some of the region's most important commercial farming areas, as well as its largest concentration of metropolitan centres, especially the Gauteng conurbation, which accommodates one-third of Southern Africa's population.

# GEOGRAPHY

## Africa's Geographical Composition



*Figure 3.1*



*Figure 3.2 Foothills, source: Google Images*



*Figure 3.3 Highlands  
source: Jaco van Tonder*

Lesotho's landscape is characterized by two major land divisions, namely "Lowlands" and "Highlands", each related to the underlying geology. The "Lowlands", ranging in elevation from 1,400 to 1,750m are composed by sedimentary formations of the Karoo Supergroup and minor igneous intrusions, whereas the "Highlands" consist of a dissected basaltic plateau with maximum height of 3,482m at Thabana-Ntlenyane level, the highest peak in Southern Africa. A transition zone composed of sandstones and basalts, known as the "Foothills", lies between 1750 and 2000m.



# Lesotho's Geomorphology

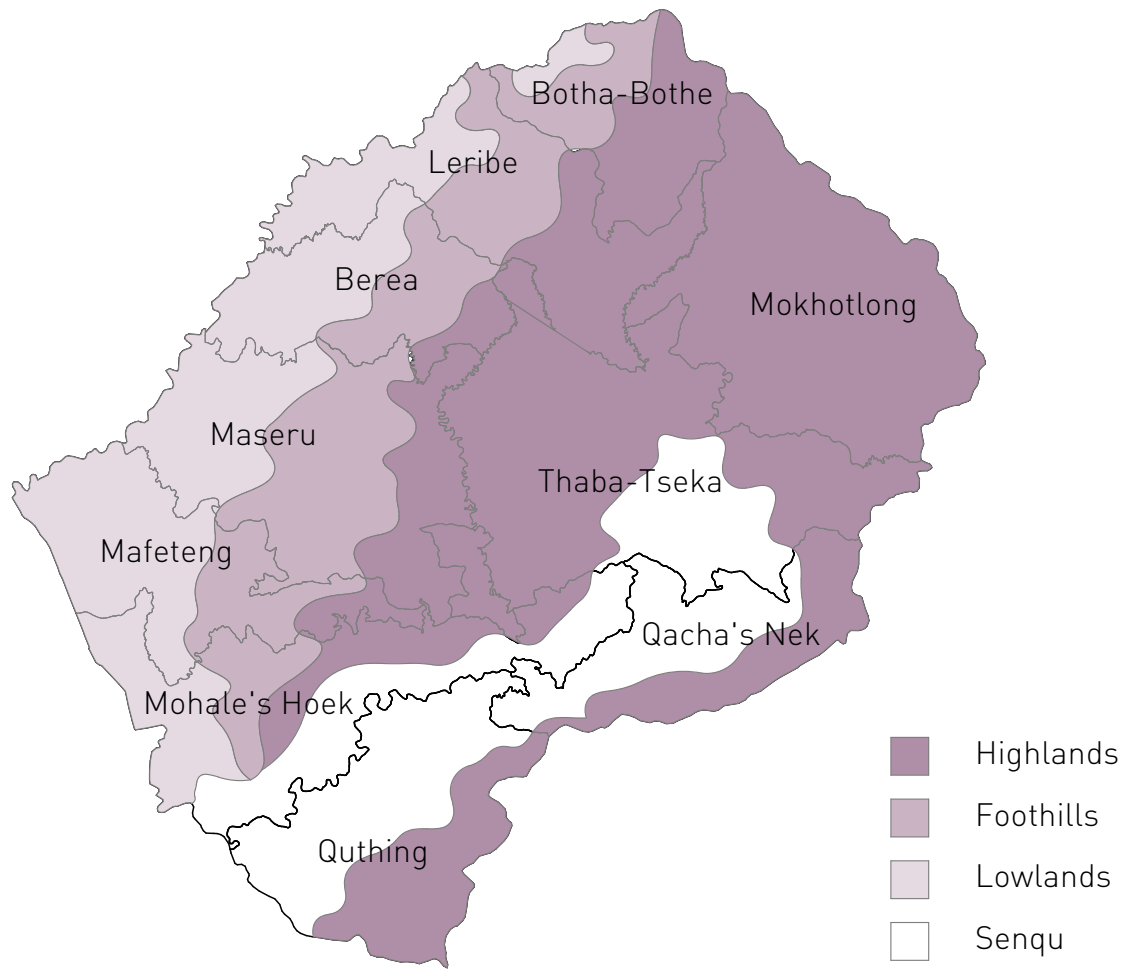
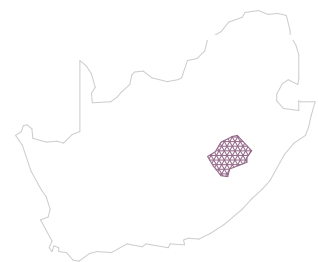
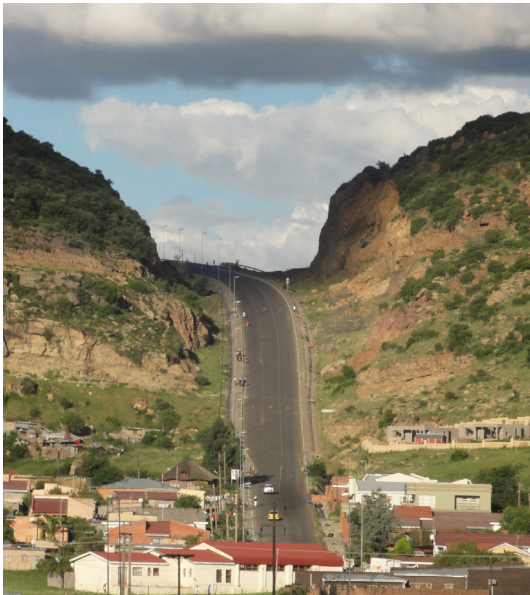


Figure 3.4





*Figure 3.5 Maseru, Semonkong Lodge 2018 source photo: Semonkong Lodge*



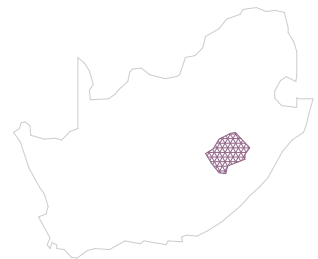
*Figure 3.6 Maseru, 2014 Katlehong source photo: Mark Johnson*



*Figure 3.7 Maseru 2013 source photo: Andrew England*



Figure 3.8



THE RIVER MOHOKARE TO THE WEST AND BEREA PLATEAU TO THE EAST FORM OBSTACLES TO URBAN GROWTH, AND THE CITY HAS ONLY TWO AXES FOR EXPANSION, TO THE NORTHEAST AND SOUTH-EAST ALONG THE ARTERIAL ROADS LINKING MASERU TO THE REST OF THE COUNTRY. SPRAWLING DEVELOPMENT NOW STRETCHES FOR 10 KILOMETRES FROM THE CITY CENTRE.

# MASERU URBAN AREA

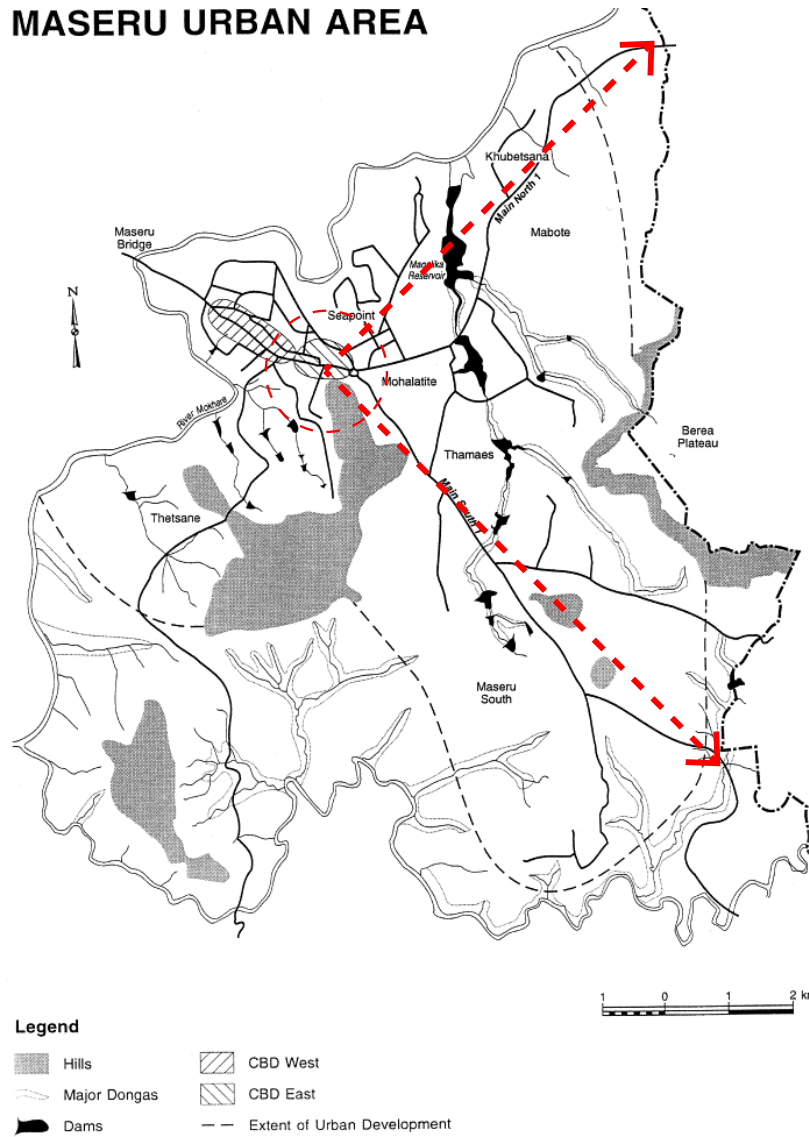


Figure 3.9

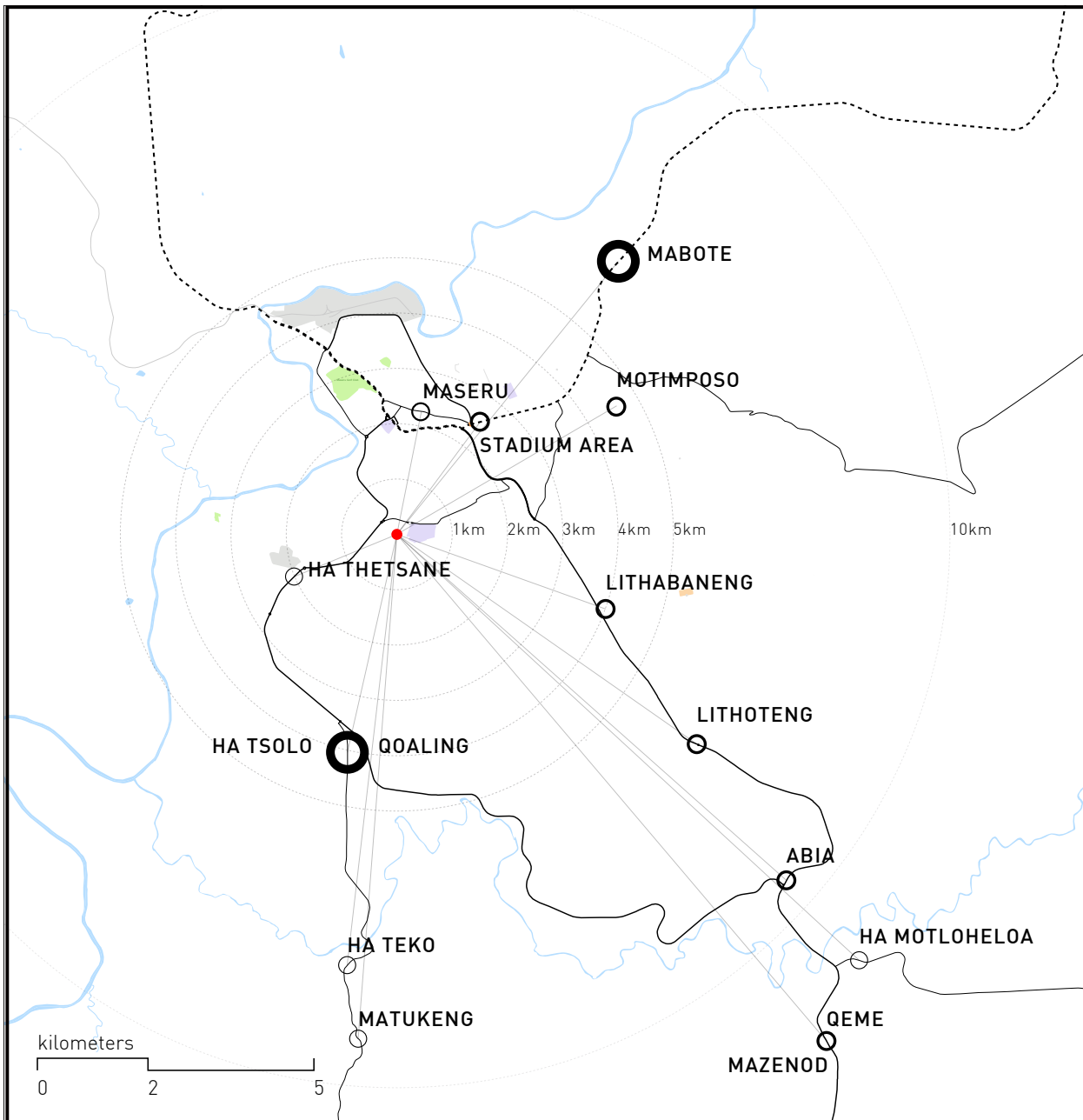
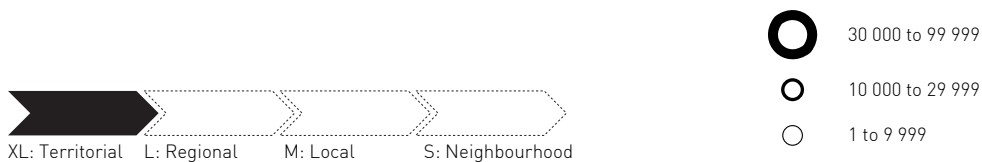
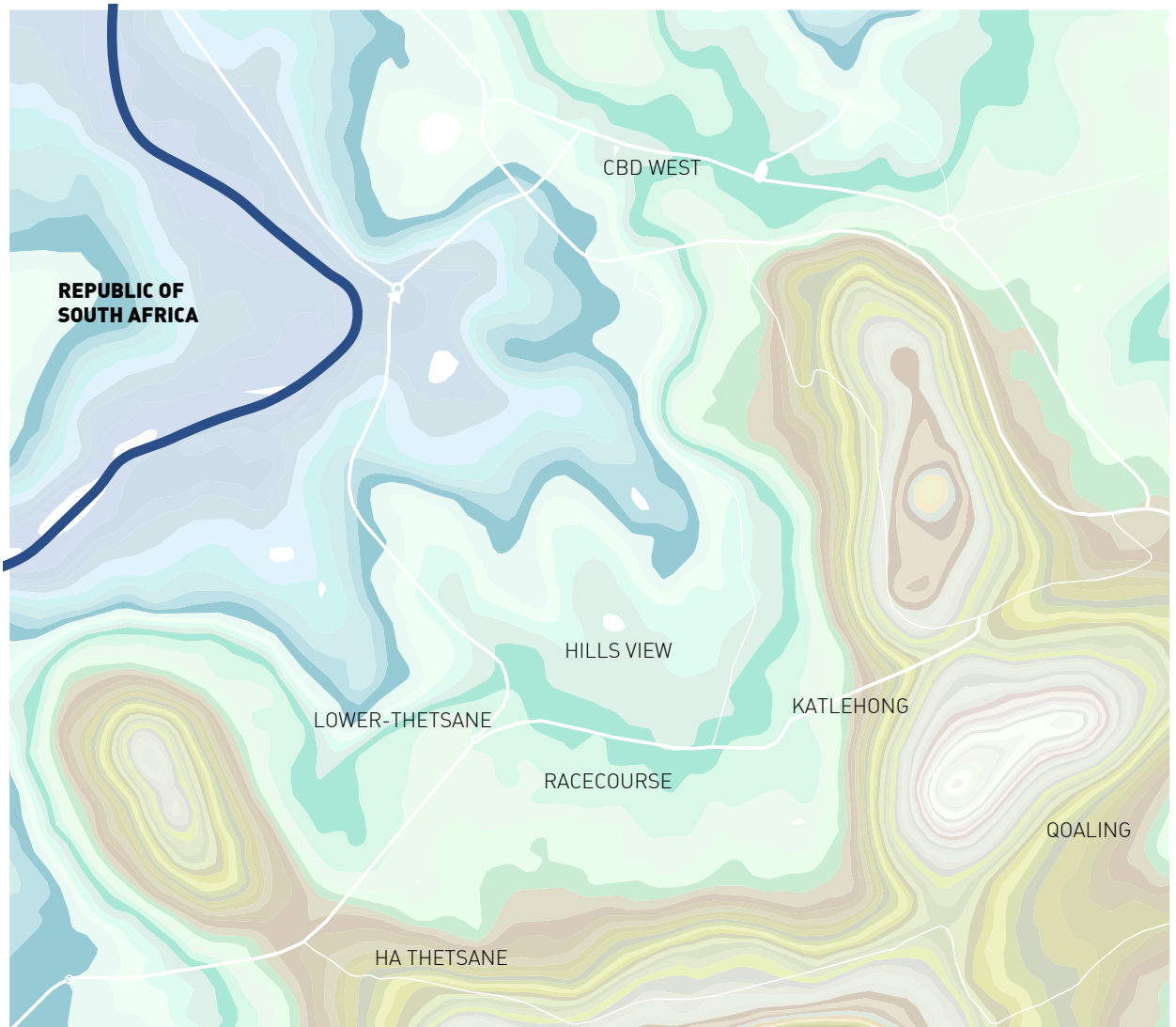


Figure 3.10

Population Distribution



Today, the town has expanded far beyond the original government reserve, and surrounding villages have been engulfed. The central area has been transformed, and although only 3 kilometres from the border, modern office blocks of the CBD vie with low sandstone buildings of the colonial era, and trucks laden with imports from South Africa compete with congested city centre traffic. The city's potential for expansion is constrained by the international border and by the surrounding hilly terrain.

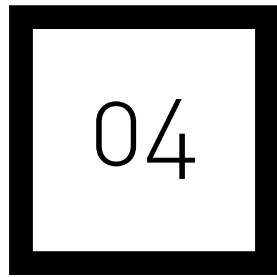


*Figure 3.11*

To the northwest lies the River Mohokare, which is the international border to the Republic of South Africa. Racecourse is gradled by the hills east, south and southwest. Which presents a unique environment to place the ecological village. This is a natural shield from the harsh winter winds.







HISTORY

# THE RISE AND DECLINE OF CRAFT SPECIALIZATION

Individual families in nineteenth-century Lesotho were not entirely self-sufficient in the production of household goods. The work requirements determined the level of specialization demand in each craft industry. The specialization was born naturally in the craft activities that require a high degree of skill. Activities that required intensive work such as leather preparation were also organized using labour from outside the family unit. Moreover, it was sometimes inefficient for each family to engage in labour-intensive activities that required little or no specialized skills, such as salt and red ochre excavation and ointment preparation.

Before the nineteenth century, iron workers who smelted and forged locally extracted ore were the main specialists in the economy of the Sesotho-speaking communities. The high level of competence witnessed by early European observers in activities such as the preparation and dressmaking of skins suggests that specialization in other trades has been present for a long time. When local and regional trade patterns were interrupted in the 1820s, however, craft production diminished when families dedicated their energy to basic food production.

In the early 1830s, the permanent settlement and boom of agricultural production by Basotho prepared the ground for the renewed specialization of craftsmanship. With the re-establishment of trade links between the Basotho and their neighbours, specialization and internal exchange were stimulated in the local economy. Prosperity increased local demand for hunting weapons, agricultural tools, woven barns, more substantial housing, more elaborate leather clothing and conspicuous consumer goods, including copper and brass jewelry. The increase in demand for craft products has stimulated local production of these goods. Subsequently, the integration of the local economy with the Europeanized regional economy has transformed the Basotho economy, however. By the end of the nineteenth century, opportunity costs and transaction costs determined the degree to which the specialization in a particular craft survived or declined.

## LOCAL CRAFTS AND INDUSTRIES, 1830-1910

### IRON-WORKING

Iron-working was the most important local industry in the nineteenth-century Lesotho. The presence of iron work in Lesotho has been largely ignored to date, perhaps because the historical sources are relatively obscure and there is no archaeological evidence. Written and oral sources, however, show that Basotho extracted, smelted and forged iron and copper in the period before European penetration in the area. Small deposits of iron ore were plentiful in Lesotho. Arbousset discovered an iron ore site in a valley near the Caledon River in 1836. In the northern Maluti mountains, he encountered Nguni refugees from Natal extracting iron ore and making iron axes and hoes that were interchanged with Batlokoa and Basotho. For the first time, Arbousset observed Basotho that smelted iron in 1839. Five leagues from the Morija mission station, he discovered a huge hill from which the Basotho extracted the iron ore.

*“These stones contain much iron oxide. The indigenous people have already exploited all of the deposits which are found on the surface, with a depth of only several feet. They smelt the iron in the same place ...” - Arbousset*

### WOOD-WORKING

Carpentry and carving were men’s work. The carpenter, sebetli or mobetli, He used only a spear and a very hard stone. Spoons, wooden plates, and the milking pots were the most common items carved from wood. Also carved in wood, there were clubs “knobkerries” or stick “molamu” used as weapons. Smoking pipes and spatulas were carved from the horn or bone. Even the musical instruments were handmade from wood.

The men also made several types of agricultural implements of wood. The wooden hoes had been used before the introduction of iron tools and could still be found in the nineteenth century. Other wooden objects were nineteenth century innovations copied from European instruments. The yoke used to harness the oxen for plowing was carved in cheche wood. Wood was used to build parts of the plow, which also had iron components. The sledge for dragging loads of shafts were made of wooden pillars connected to each other in a triangular shape. The cultivator or harrow was made with heavy wooden teeth.

# LOCAL CRAFTS AND INDUSTRIES, 1830-1910

## POTTERY

Making pottery was women's work. A certain amount of specialization developed in pottery production for two reasons. Firstly, deposits of preparing clay were not uniformly disseminated all through the nation. Clay, letsopa, was burrowed from deposits found along stream banks or in trench; a morafong was a burrowing or mine. The general population who lived in those spots which needed clay deposits, for example, mountain territories, were compelled to buy clay pots from individuals who lived somewhere else. Second, the fruitful generation of earthenware was troublesome. which invigorated specialization even in regions where clay was promptly accessible.

Every woman learned how to make pots as a young girl, but it was difficult to make good pots. The clay was allowed to dry thoroughly and ground to a powder on a millstone. Then it was mixed with ground pieces of old broken pots with water and a long-lasting lash. The clay was then molded in a pot, which was polished with smith stones until drying. To add designs to the clay. The woman ground small black stones into the powder and applied it smoothly. The finished pot was covered with cow dung, molded to prepare a stove or a small stove. And it was baked on the fire overnight until gray. The most common pot was used for cooking food and rested over a fire on three stones. Other pots were used for beer brewing, water transportation, preservation and serving of porridge and drinks, milking, fat-holding, and kitchenware. The largest type of pot used for beer on holidays can reach a height of three feet.

The manufacture of pots was a fairly labour-intensive process. Two days were required for sculpting and mould the pots, which were then allowed to sit for a few days. They needed additional two more days to polish and finish the pots, after which they were baked. Of all the pots prepared, only two or three will be unbroken. High rate of breakage likely occurred due to the baking or firing process that was used. On this reckoning, only two or three pots will be produced from four days of work. Therefore, the time and care required in the process led to specialization and trade in pots, in spite of the fact that every woman has learned this craft, when young. Specialists presumably had a higher success rate than non-specialists, and made the best pot. Several European observers in the nineteenth century were struck by the Basotho craftsmanship in the production of ceramics. One missionary described the pots made by Basotho women as perfectly regular in their lines and of the greatest elegance. Ellenberger noted that the techniques used required artistic talent: "Pottery was baked in the open air in a fire of dried cow-dung, sheltered from the wind. Much skill and art were required."

# LOCAL CRAFTS AND INDUSTRIES, 1830-1910

## BUILDING

Men and women cooperated in the building and maintenance of houses. Traditional dwellings were made of reeds and grass mats in the shape of beehives, with a long low entryway. They have been replaced with larger huts made pole or large sticks of small tree trunks, cut and planted in a vertical position close to each other to form a circular wall of the housing. This type of house was "mohlongoafatse" or "mohlomafatse", a precursor to stone "rondavel" or round houses, adopted at the end of the century. It was the duty of women to cut the grass and reeds for weaving and straw, and women constructed the reeds and grass enclosure, "seotloane", around the yard at home. According to one European observer in 1861, women have built themselves houses. Women plastering inside and outside walls with a mixture of dung and mud, men and women collaborating roofing the house with reeds and grass. Women continue to be responsible for the maintenance of the house and plastering walls often, at least several times a year. On the question of women's work, plaster or smearing, "ho lila"; this is one of the tasks that took the longest time to complete: Often the women embellished the walls with artistic designs in colors or in patterns etched into the plaster.

Gradually European influence inspired a transition to stone houses, and by 1888 grass huts had been mostly replaced by stone huts. The transition to stone houses created a demand for the skills of stone cutters, and building became a specialized trade of men (Eldredge 1993). Women's work in construction decreased because their work was no longer necessary in cutting and installing poles for the wall. In addition, it was no longer necessary to plaster the outside of the house, even if the floor and interior walls had to be plastered on a regular basis, and some women continued to decorate the exterior of their houses with plastered designs. The new stone houses lasted longer and required less maintenance than the old huts, for the benefit of both men and women. However, cutting stones and putting them together was a skilled workforce, and for many homesteads it was necessary to hire special stonemasons to build their homes. The construction of stone houses has involved a large initial investment in the working time of men from the farm or domestic resources to pay a builder. As settlements became more stable, more substantial investments in building more permanent houses became useful. Family members continued to roof their homes with reeds and thatch, however, and the men built the homestead's cattle kraals with stone.

# EVOLUTION OF A CITY

## HISTORICAL CONTEXT

The first settlements in the area were established in the early 19th century by Bakoena tribesmen under the leadership of the renowned King Moshoeshoe (Ambrose, 1993). During the campaigns in the 1860s against the Orange Free State, land to the west of the River Mohokare was lost. British protection was sought, and the land annexed in 1868 was named Basutoland, with boundaries which largely correspond to those of Lesotho today. A police post was established in Maseru in 1869.

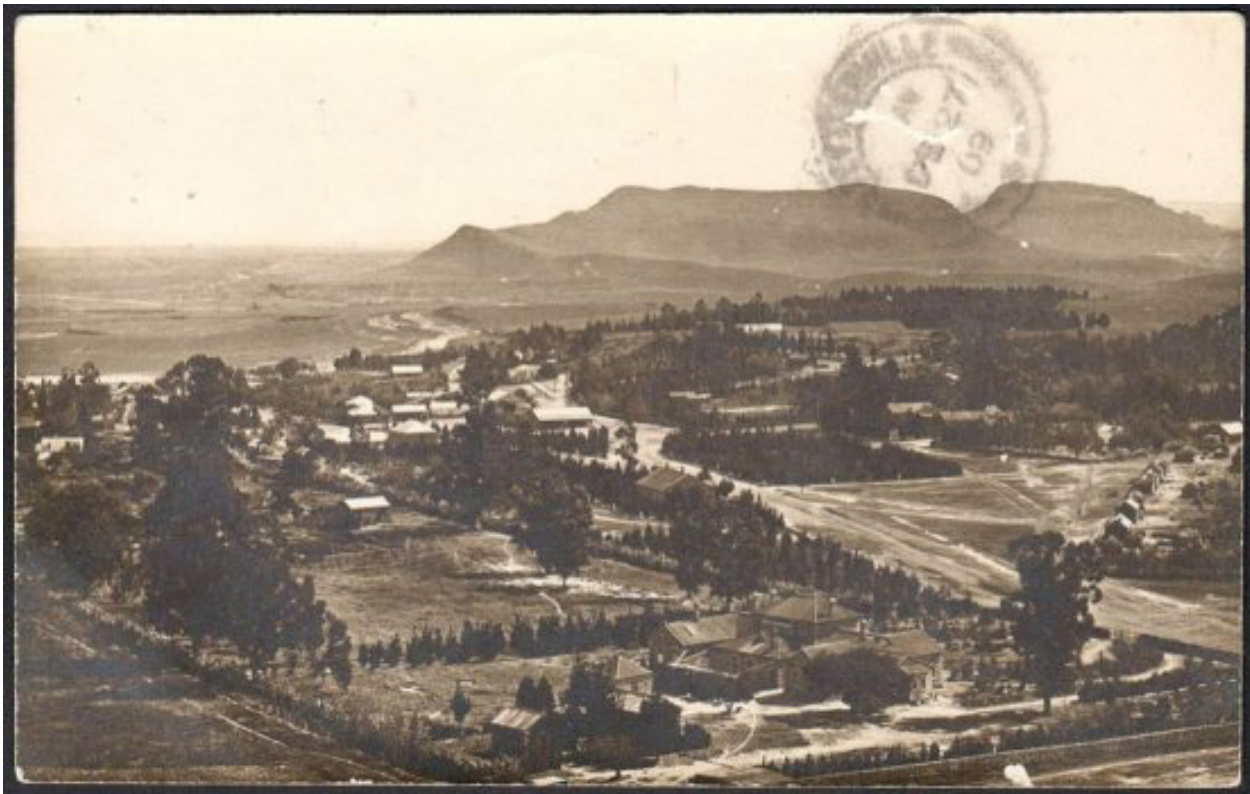
The land was taken over by the Cape Colony in 1871, but fighting broke out during the Gun Wars of 1880 and 1881 when tribesmen attacked Cape forces in protest at attempts to disarm them, and many buildings in Maseru were burnt. Agreement in 1881 established Lesotho as a separate Crown colony. Maseru developed as the seat of colonial administration, the railway and bridge over the River Mohokare were opened in 1905, and St John's Church was built in 1912. Around this time an influx of Basotho refugees from the Anglo-Boer wars led to population growth which the country could not support, and a pattern of migrant working was established which has persisted to this day.

The 1920s saw a period of commercial development although Maseru's economy was later affected by world recession and World War II. The first power plant opened in 1933, and in 1949 a new water plant replaced the old system of piped springwater. In the early 1950s regular air services and traffic controls were introduced, and work started on the Catholic cathedral in 1955.

Independence was agreed in 1964 and finally granted in 1966. At this time Maseru was ill equipped to serve as a capital city (Ambrose, 1993), with only one hotel, no paved roads outside the city centre, no passenger train service, and virtually no industrial development. Independence led to the creation of government offices which were highly centralised in Maseru and a small industrial sector was developed at the railhead in order to diversify the economy and reduce import dependence. The city benefited indirectly from apartheid in South Africa, providing facilities such as multi-racial convention centres and casinos. International aid supported industrial and other development, and brought demand for additional offices and services.

Today, the town has expanded far beyond the original government reserve, and surrounding villages have been engulfed. The central area has been transformed, and although only 3 km from the border, modern office blocks of the CBD vie with low sandstone buildings of the colonial era, and trucks laden with imports from South Africa compete with congested city centre traffic.

The city's potential for expansion is constrained by the international border and by the surrounding hilly terrain. The River Mohokare to the west and Berea Plateau to the east form obstacles to urban growth, and the city has only two axes for expansion, to the northeast and south-east along the arterial roads linking Maseru to the rest of the country. Sprawling development now stretches for 10 km from the city centre.



Maseru - 1909

*Figure 4.1*

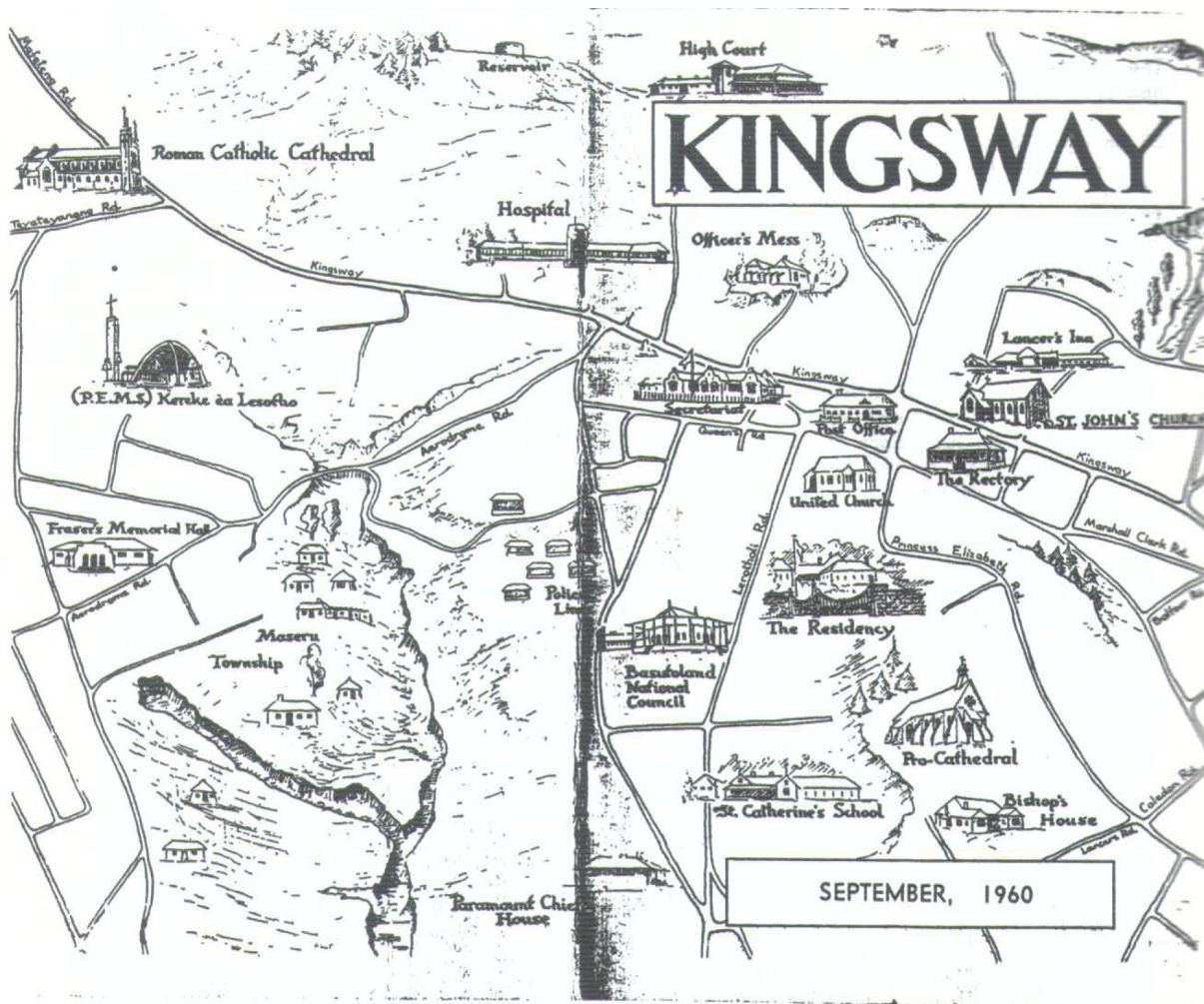




Maseru - 2017

*Figure 4.2*

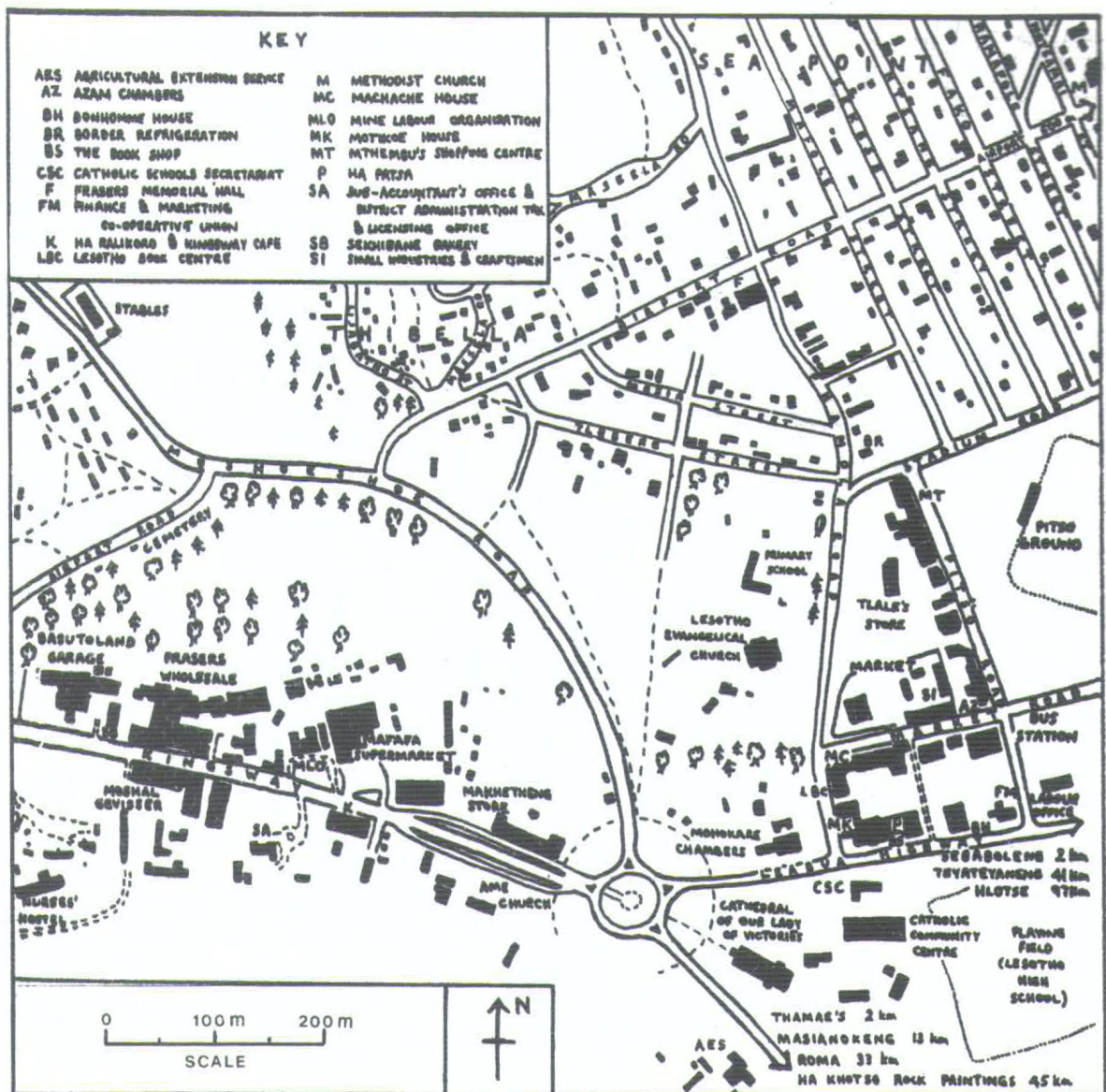
*These images were taken a hundred years apart, this exemplifies the slow nature of the development of Maseru. And also shows the main stage of business and governance*



1960 PICTORIAL SKETCH MAP BY JAMES WALTON

Figure 4.3

Used for the cover of the St. John's parish magazine, Kingsway, James Walton's sketch map shows many of the major buildings of Maseru existing in 1960. The Reservoir at top has now been incorporated into the Lesotho Sun. The former Paramount Chief's House today adjoins the offices of the Institute of Development Management. The Rectory opposite St. John's Church has now been replaced by Standard Lesotho Bank, and the Officers' Mess at the top of Griffith Hill is now the main Government Qhobosheaneng Office Complex. Like Prichard in 1880, James Walton has placed south at the top of his map.



1972 MAP of PITSO GROUND AND CATHEDRAL AREA  
 Figure 4.4

Of the areas shown, the oldest is Thibella at upper centre, where settlement goes back to the 19th century. Sea Point area to its east has a rectangular street pattern dating from the 1940s. To the south, development of the Pitso Ground area began only in the 1960s. Along the east of Kingsway, the oldest buildings date from the 1930s.



Reconstruction of Kingsway - 1967

*Figure 4.5 Source of photograph: C. K. Garach. Date: 1967*

In the foreground, the originally untarred portion of Kingsway at the eastern end is seen under reconstruction to provide parallel service roads a process which required Kingsway to be closed for some months in 1967 and all traffic to be diverted via Moshoeshoe Road.

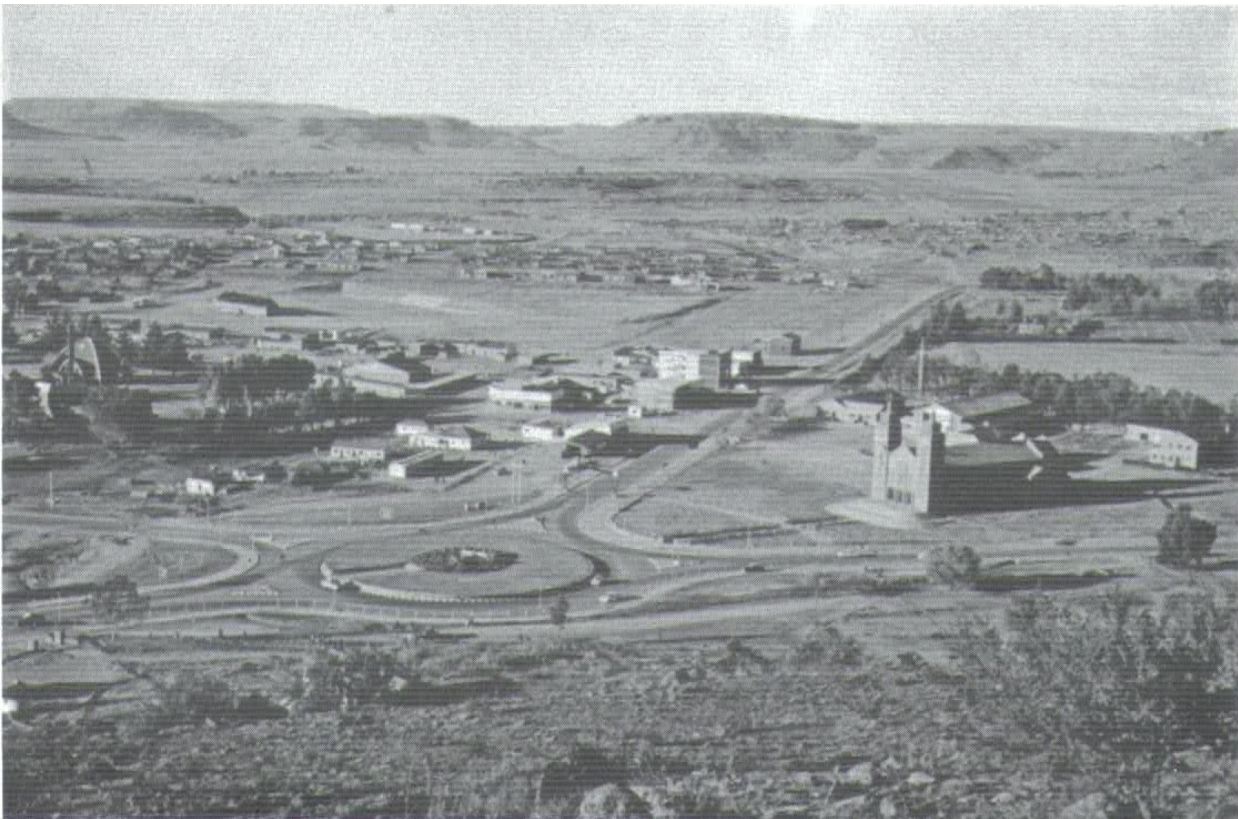
Prominent buildings visible on the left are the white Thala-Tu! Cafe (which became Fakhida Cash and Carry and was reconstructed in 1990); and the sandstone Ha Ralikoro Store of Collier & Yeats (built in the 1940s and today housing the Ha Ralikoro Spar). The electricity poles are apparently those installed in 1933, when Maseru acquired its first street lighting.

In this picture, the three mountains which used to dominate the skyline at the end of Kingsway looking westwards at ground level can still be seen, although today high rise buildings make them less conspicuous landmarks. The three mountains are situated in the Conquered Territory (now the Orange Free State) and are from (left to right): Nots'i (Moordkop), Nko-ea-Khomo (Beesneus, and more distant), and Teletsana (Pampoenkop)



Kingsway - 2018

*Figure 4.6*



Pitso Ground - 1968

*Figure 4.7, Source of photograph: post card from photograph by David Ambrose. Date: 1968.*

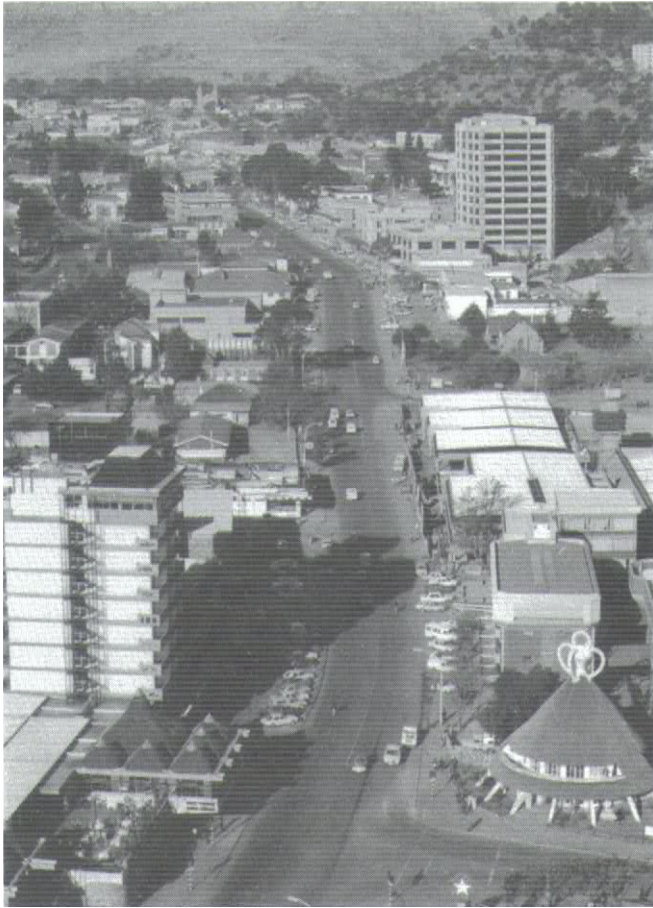
In this photograph, the Pitso Ground area remains relatively free of buildings, and the most conspicuous landmarks are the Lesotho Evangelical Church (completed in 1957) at extreme left, and the Catholic Cathedral of Our Lady of Victories (completed in 1958) at right. The tarred road to Teyateyaneng, opened in June 1968, and originally named "Leabua Highway", can be seen at several points, eventually disappearing into the distance at left, close to the present Khubetsoana housing area, which was open fields in 1968. At the time of the photograph, the Motimposo/Sebaboleng area can be seen to be relatively built-up, but Khubetsoana and Ha Mabote existed only as a small linear village settlement marked by trees on the near edge of the distant plain.

The roundabout in the foreground was laid out in 1962, and the roads leading to it were tarred in 1967. Of buildings along the Teyateyaneng road, the largest is the three-storey Bonhomme House. Farthest from the camera is the two-storey Labour Office, built in 1967, also visible in the upper photograph opposite, and barely visible (because the Oxford Furnishers Building is in front of it) in the lower photograph.



Pitso Ground - 2018

*Figure 4.8*



Kingsway 1981

*Figure 4.9 Source: Post card from photograph by Dirk Schwager. Dote c. Aug. 1981.*

This photograph can be dated fairly precisely by the fact that it was taken after the Maseru Cafe (seen just above the shadow of the Hotel Victoria tower) burned down on the night of 15- 16 February 1981, but before the opening of the LHDC Centre and the OK Bazaars late in 1981.

The old Maseru Cafe was approximately opposite the present premises and occupied the site of a tea room dating back at least until the 1930s. It was the main source of newspapers and take-away foods on Kingsway and had a restaurant area at the back with murals by the artist, James Dorothy. Adjoining it was Maseru Tattersalls, run by the bookmaker, Jack Hatton, who also owned the Cafe. The view in this picture begins on Kingsway, close to the Orpen Road junction, where the star at the top of the Holiday Inn sign is just visible. On the right of Kingsway are successively the Basotho Hat, the Liquor Commission Building, Mapetla House, the LHDC Centre (wider construction), Maseru Library, St. John's Church, the Maseru Post Office, and the Lesotho Bank complex, with an 11- storey tower block. The Catholic Cathedral is visible at the far end of Kingsway.





Kingsway 2010

*Figure 4.10*

“The Shield” building with thatch roof in the foreground has since been destroyed by fire, the land is currently being used as temporary parking lot.



Lesotho Technical School circa - 1906

*Figure 4.11, source of photo unknown author (google images)*

Chief Lerotholi first conceptualized Lerotholi Polytechnic as a technical and vocational school in 1894, to be the first of its kind in Lesotho. In 1905 the first building was erected, followed by introduction of various courses in trades. In 1929, a variety of new skills and trades in the curriculum were added, which marked the beginning of a revolutionary change to meet the needs and aspirations of the nation.

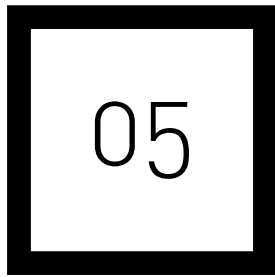
In 1960, the school changed its main objective as a craft-oriented institution. The impetus of growth and dynamism in the '70s and '80s led to the creation of two new schools of the Institute of commercial training and the training school of technicians. In 1991, the three schools were united. This fusion became known as Lerotholi Polytechnic. Today the Lerotholi Polytechnic has grown enormously, as evidenced by the wide range of programs it offers.



Lerotholi Polytechnic - 2018

*Figure 4.12, source of photo Molefi Mosese*









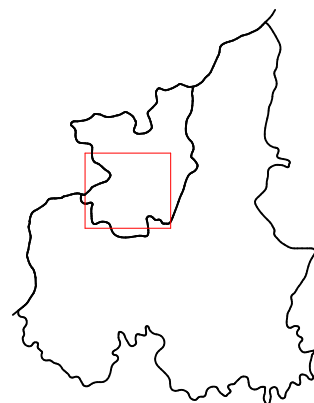
GRAPHIC ANALYSIS OF FORM & STRUCTURE

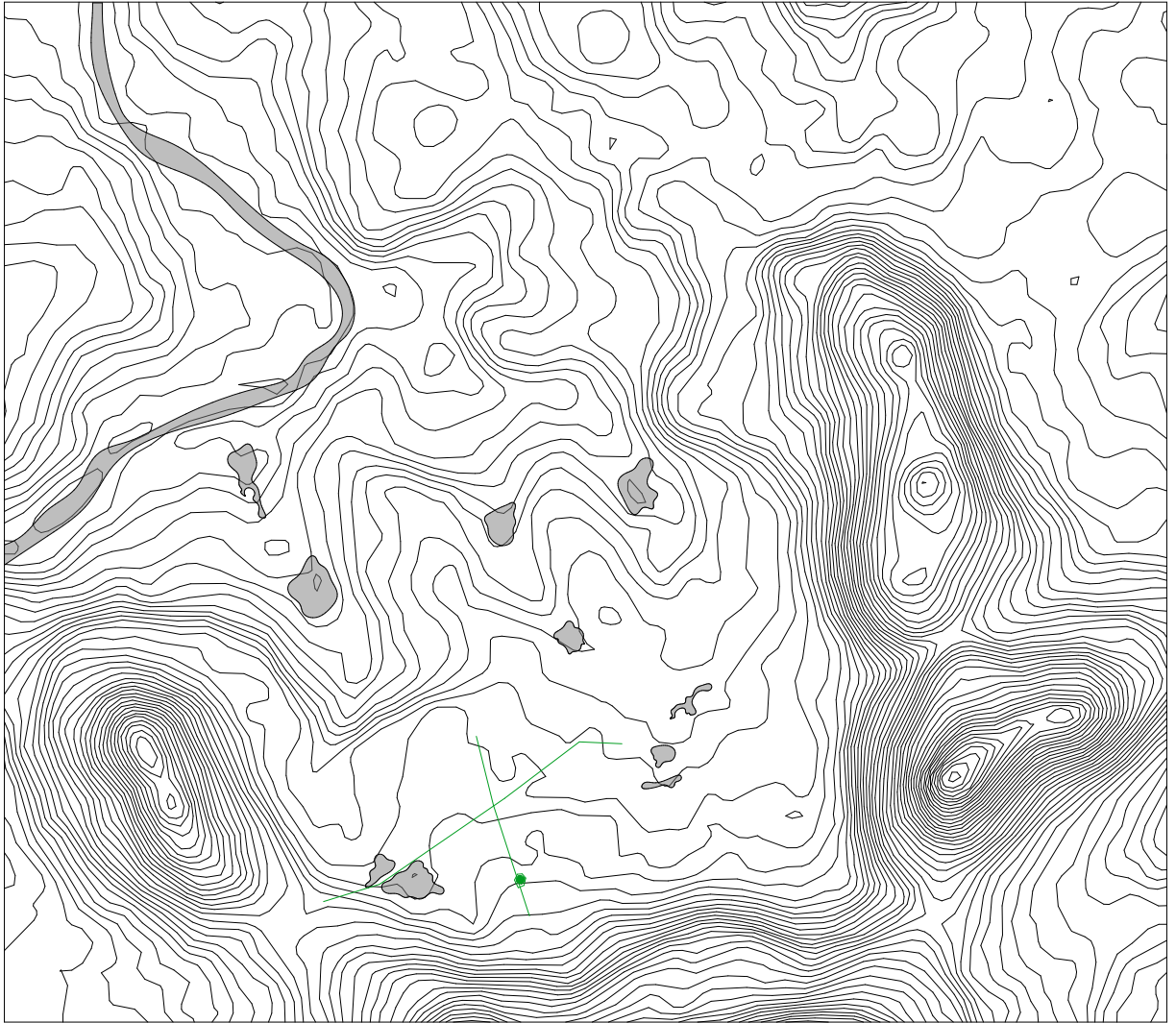


## HISTORICAL DEVELOPMENT



-  Republic of South Africa
-  Mohokare River | National Borders
-  Maseru 1901 - 1980
-  Maseru 1980 - 2018

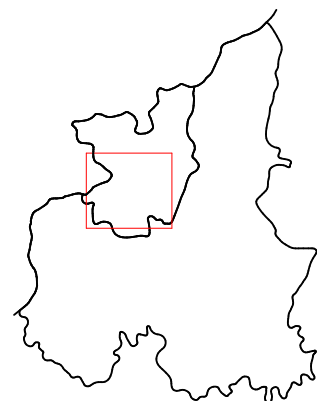


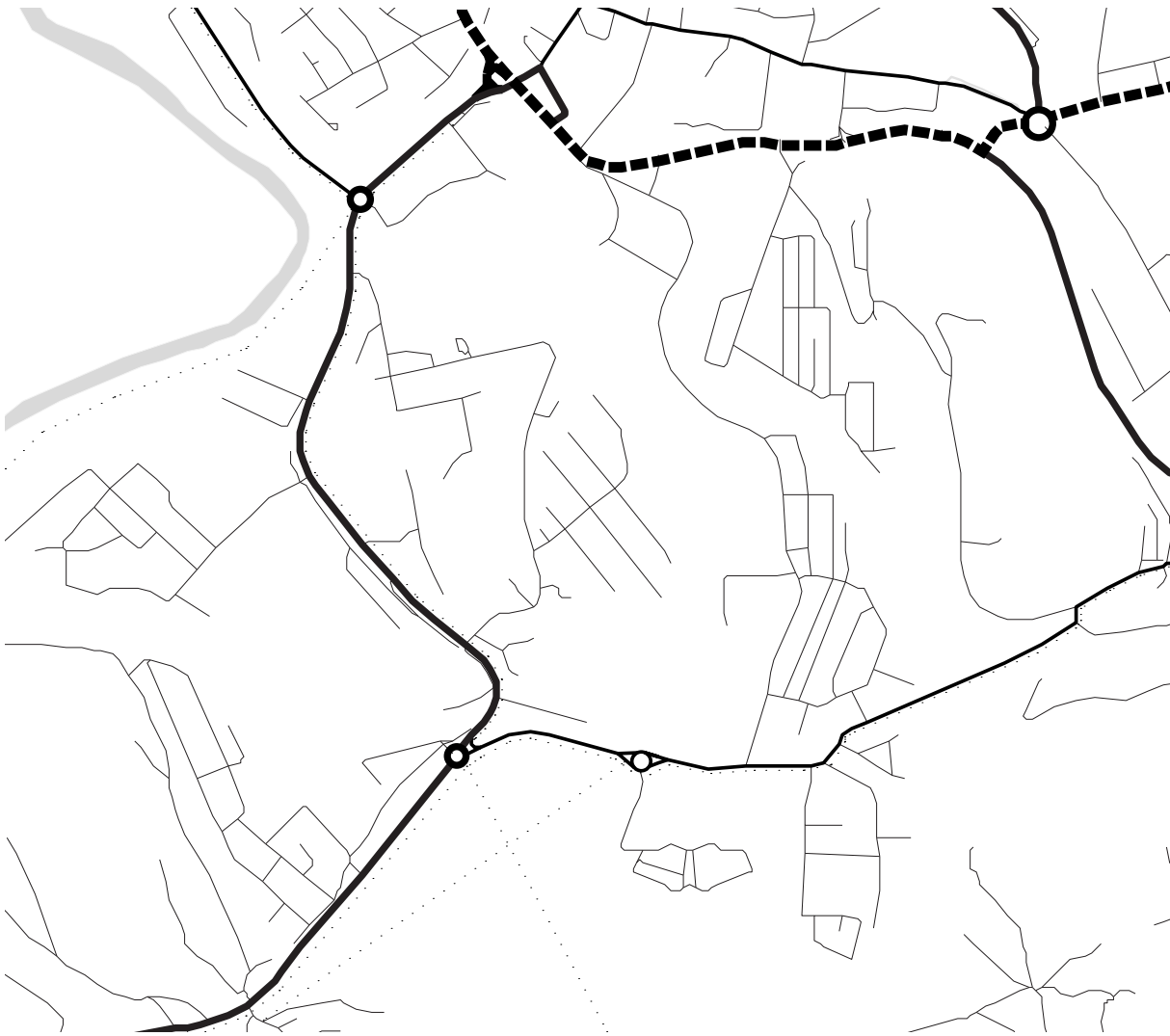


## LAND FORMS



The land form of Maseru is characterized by undulating and rolling hills, with sporadic rocky outcrops, the contours reveal natural water ways. Infrastructure and residential development, has disturbed the natural rain water flow patterns, storm water basins have been constructed. This dams serve as features in the landscape where numerous species thrives and are a back drop for tranquil environments.



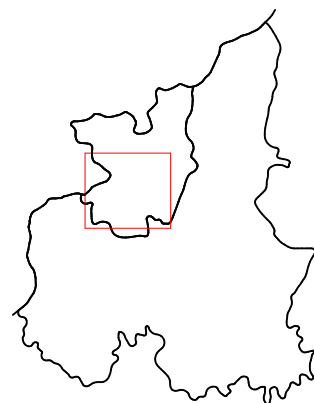


## MOVEMENT STRUCTURE

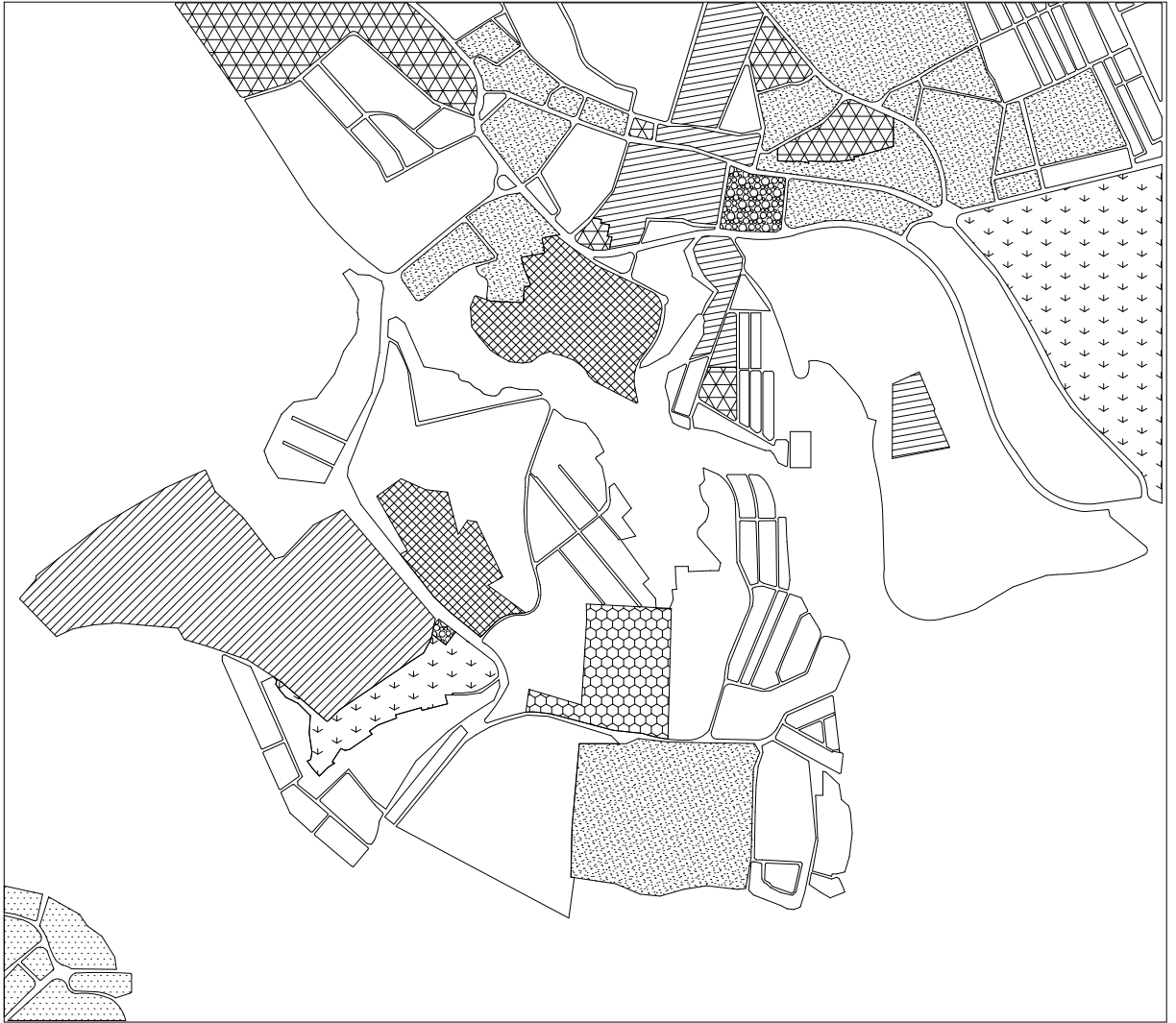


Vehicular movement is the dominant structure, however pedestrian footpaths facilitate access and circulation in and around Maseru too. These paths indicate undeveloped areas, but allow pedestrians to walk the shortest distance to water (the river and dams) and transport hubs. The Freeway connects Maseru to South Africa to the west, and other urban areas to the north of the country. The educational and commercial buildings are located on the main routes for easy access.

- Freeways
- Major Arterial
- Minor Arterial
- Local Road
- ..... Foot path













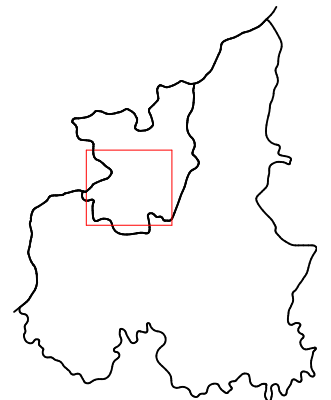




## LAND USE



-  Residential
-  Military Barracks
-  Health
-  Prison and Corrections
-  Industrial
-  Education
-  Commercial
-  Police Training College
-  Government Administration
-  Parks and Recreation

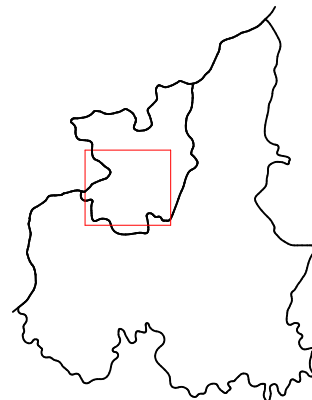




## INTERNAL SPACE PATTERN



The internal space pattern reveals an interesting phenomenon, Maseru is a very disconnected city. The internal pattern of the city is very organic, does not follow a strict grid system and it is however contained by the river to the west and the hills to the north-east and south. The nature of the street network is very heirarchical. The residential street, local roads collect the traffic and funnel it to the minor arterial, which feeds the traffic to major arterial and finally the freeway.

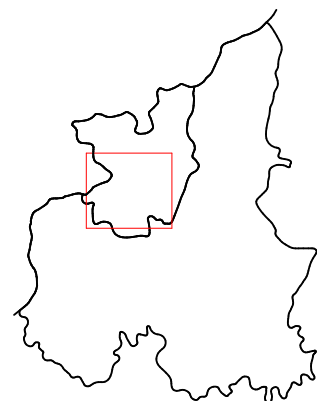




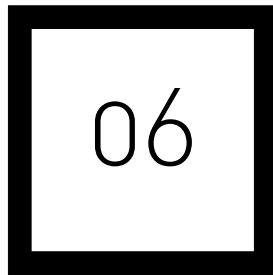
## GRAIN



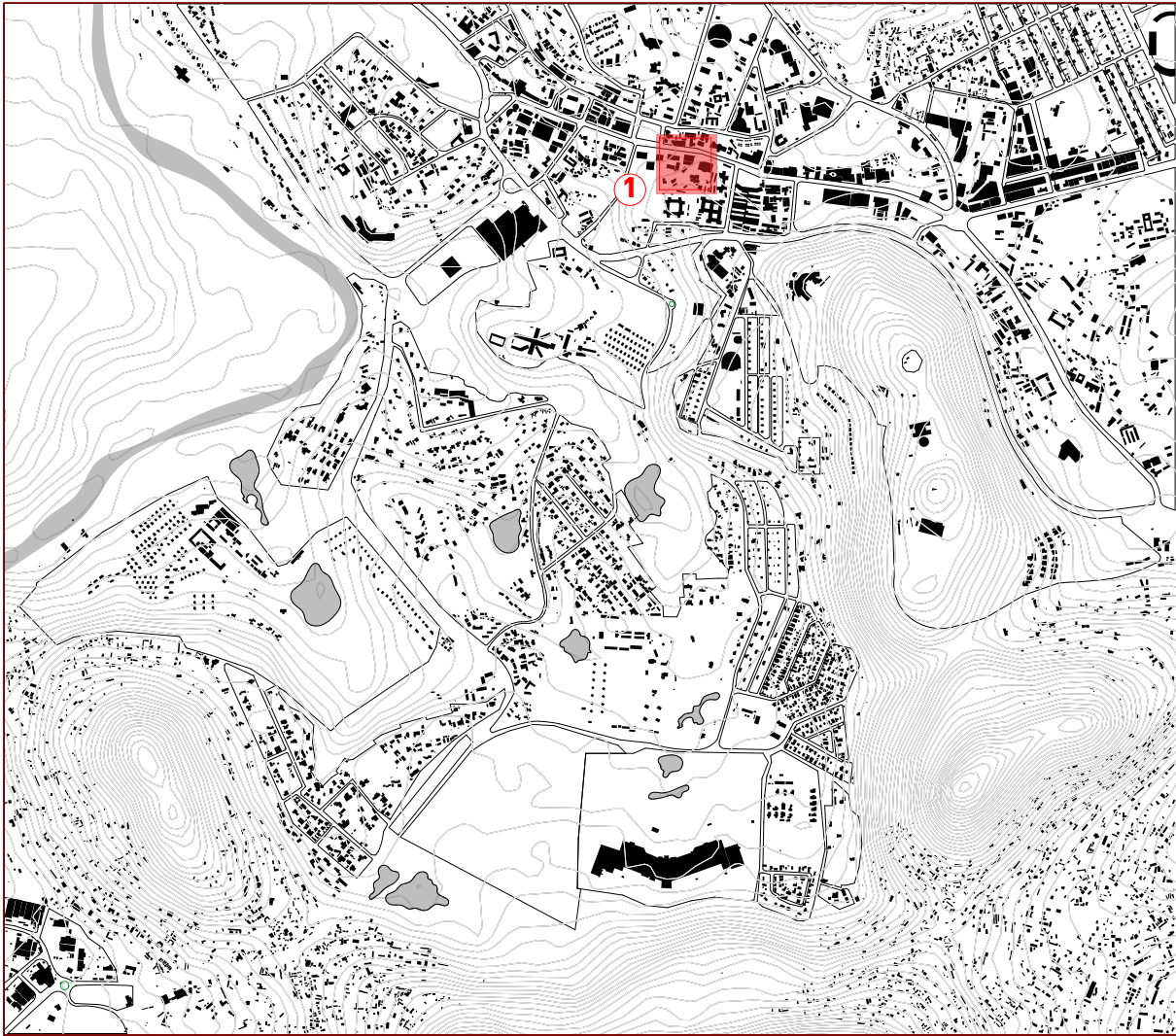
The grain is represented by the footprints of the buildings. These footprints indicate both the size of the buildings and their density. The land is characterized by rolling and undulating hills, and land value is relatively high towards the central business district, enabling a sprawl, thus the grain is loosely packed. Pockets where the grain appears closely packed are within the relatively new neighbourhoods, where planning policies have been adhered to the likes of Katlehong.







TPOLOGY & MORPHOLOGICAL ANALYSIS



## 01 CBD WEST

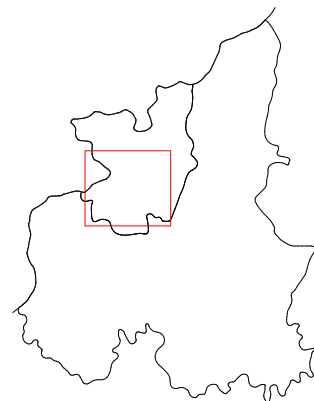
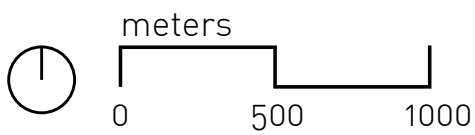
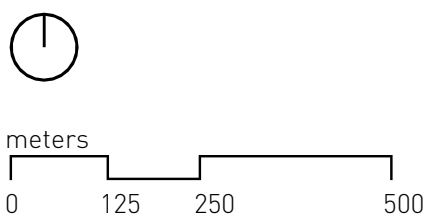
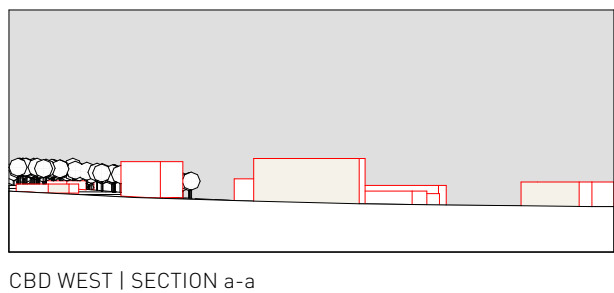
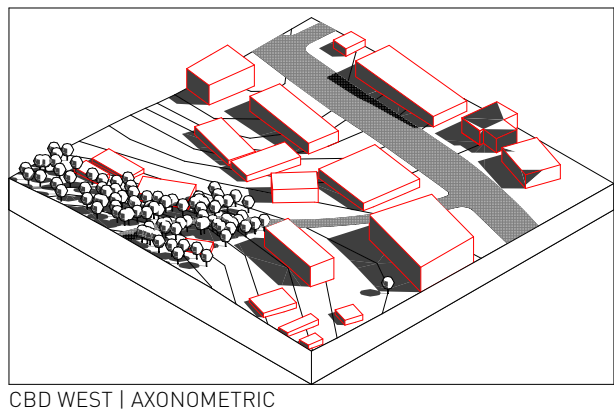
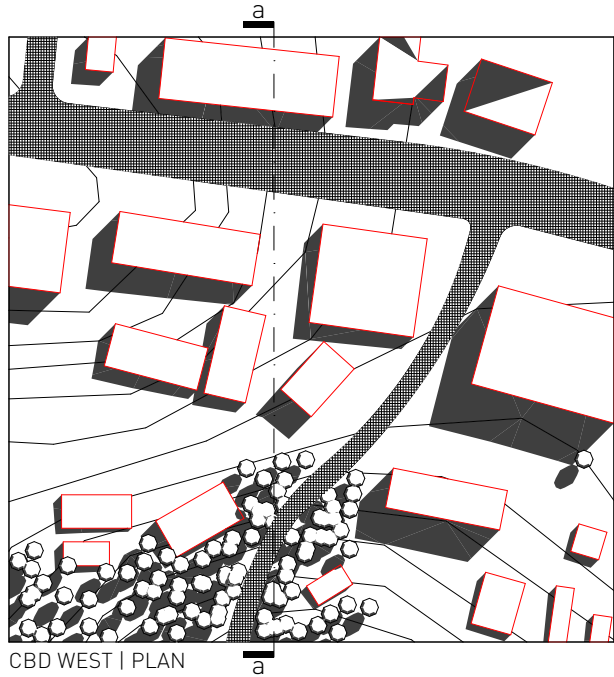


Figure 6.1, Maseru CBD source of photo: Google Earth

The architectural character of the CBD is an eclectic mix of colonial relics and the international style. This buildings sit loosely on their respective plots, the open spaces in-between are not permeable because of the barriers by means of fences, and walls.





## 02 PARLIAMENT

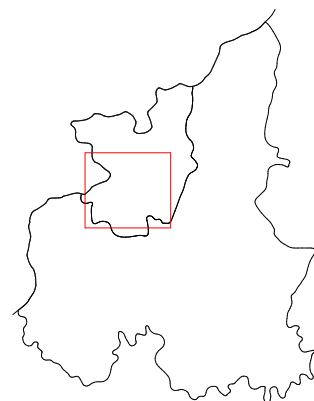
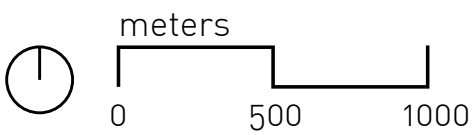
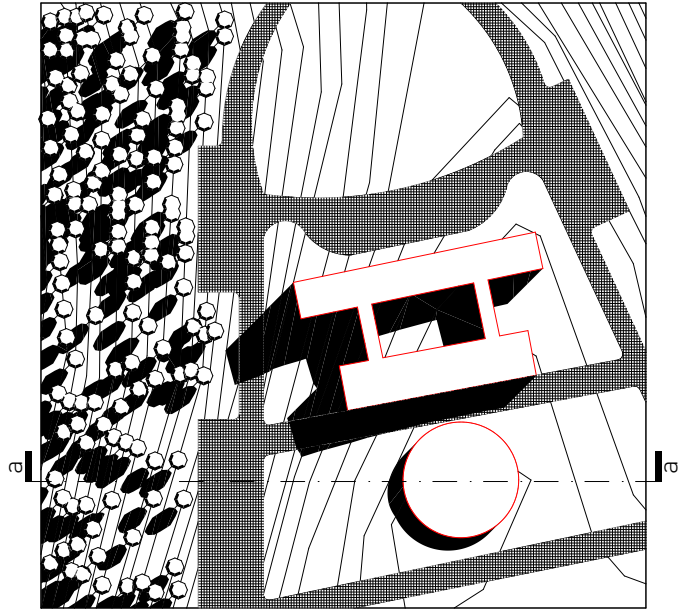


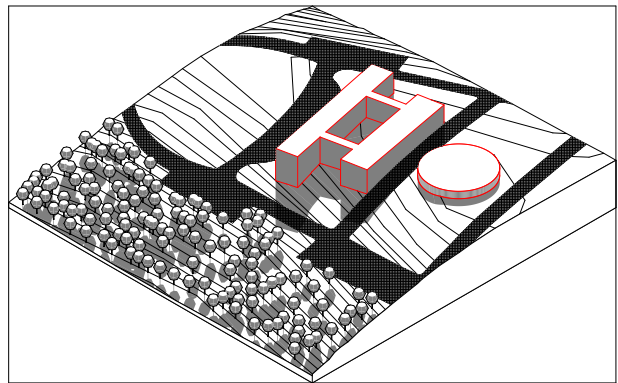
Figure 6.2, Parliament source of photo: Google Earth



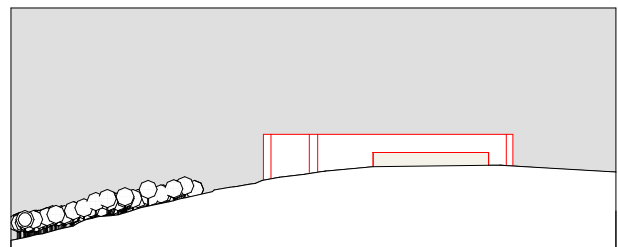
On top of the hill sits the Parliament Complex. It enjoys unobstructed panoramic views of the city. Thus it is visible from any direction of the city a constant reminder that Lesotho is a constitutional monarch. A symbol that the citizens govern.



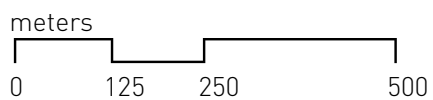
PARLIAMENT | PLAN

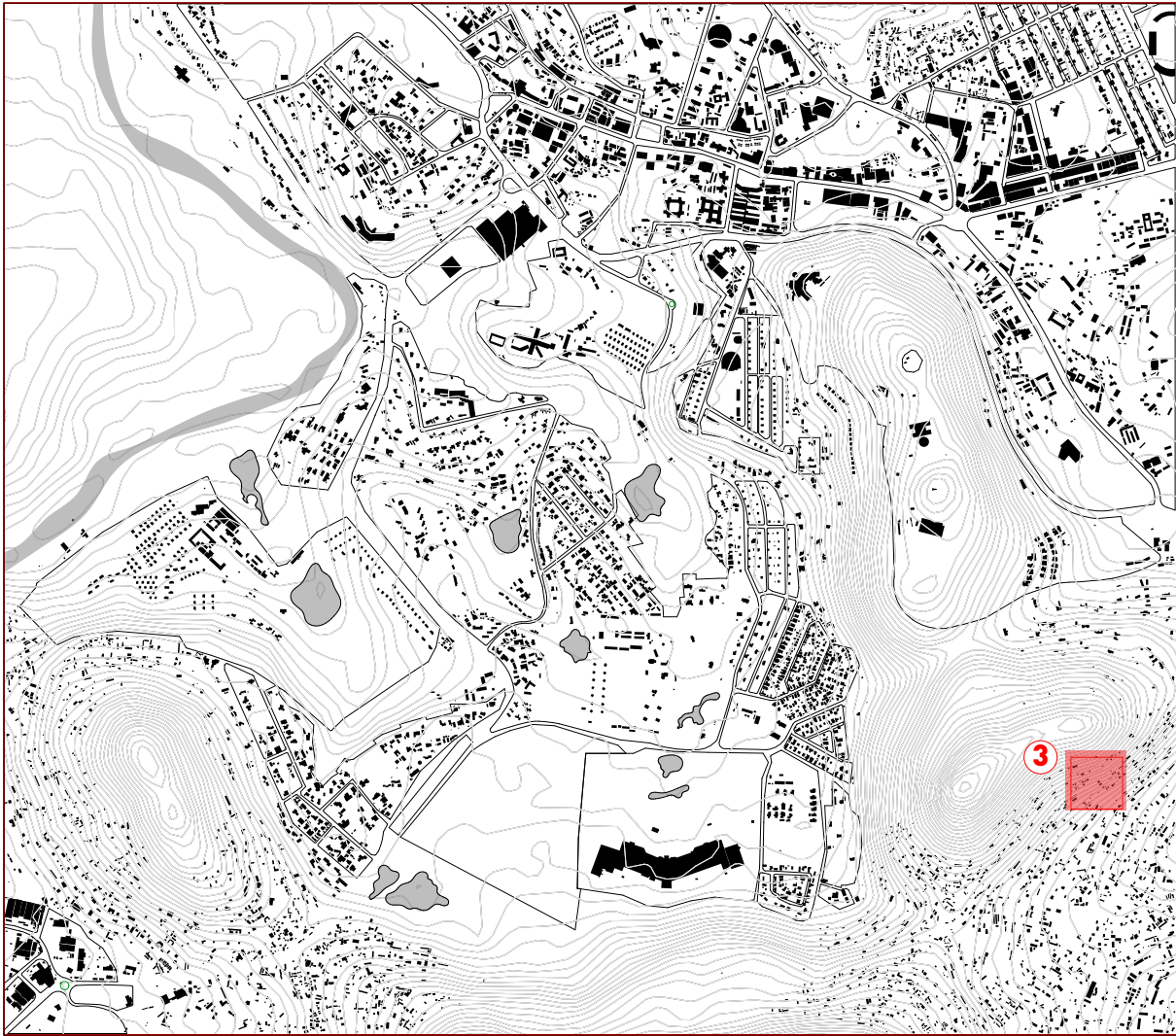


PARLIAMENT | AXONOMETRIC



PARLIAMENT | SECTION a-a





### 03 QOALING

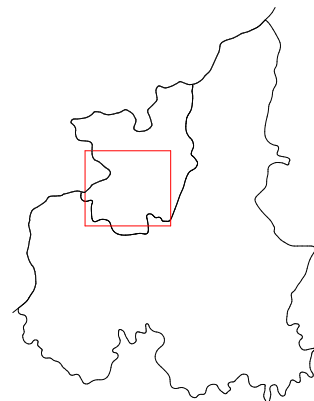
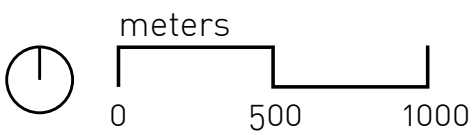
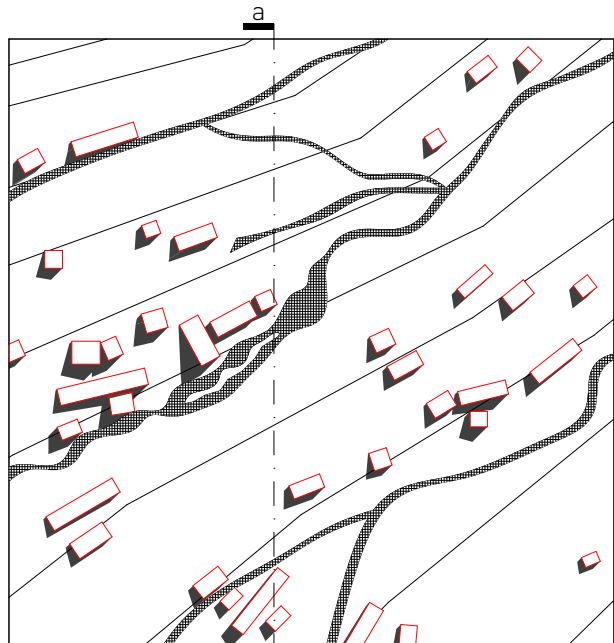
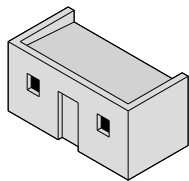


Figure 6.3, Qoaling source of photo: Google Earth

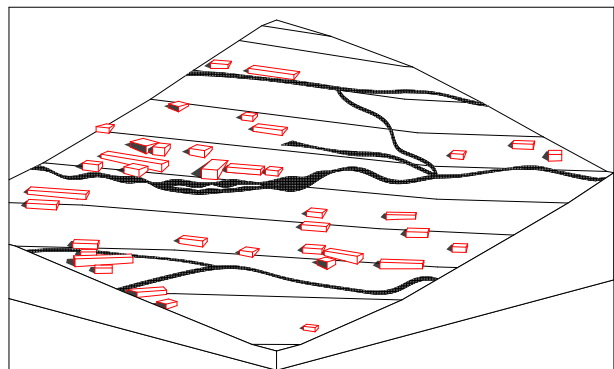
The character of this neighbourhood is typical of low income neighbourhood. Here neighbours know each other by name and their children often play in the hills. Their backyards are source of income where they plant crops for selling and consuming. Their crop is sold to market what is left over is consumed by the household. Access to this neighbourhoods is tough, because the cars have to navigate the trails primarily meant to be tackled on foot.



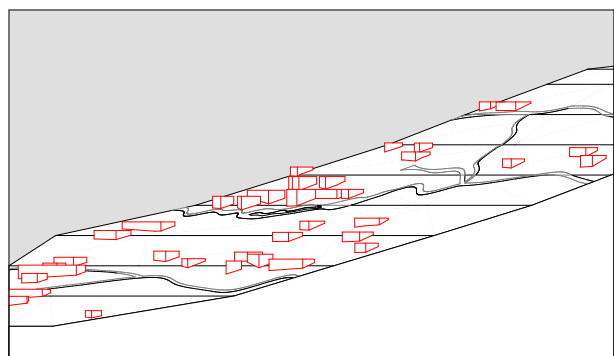
QOALING | PLAN



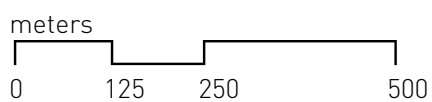
self built  
poor insulation  
outhouse

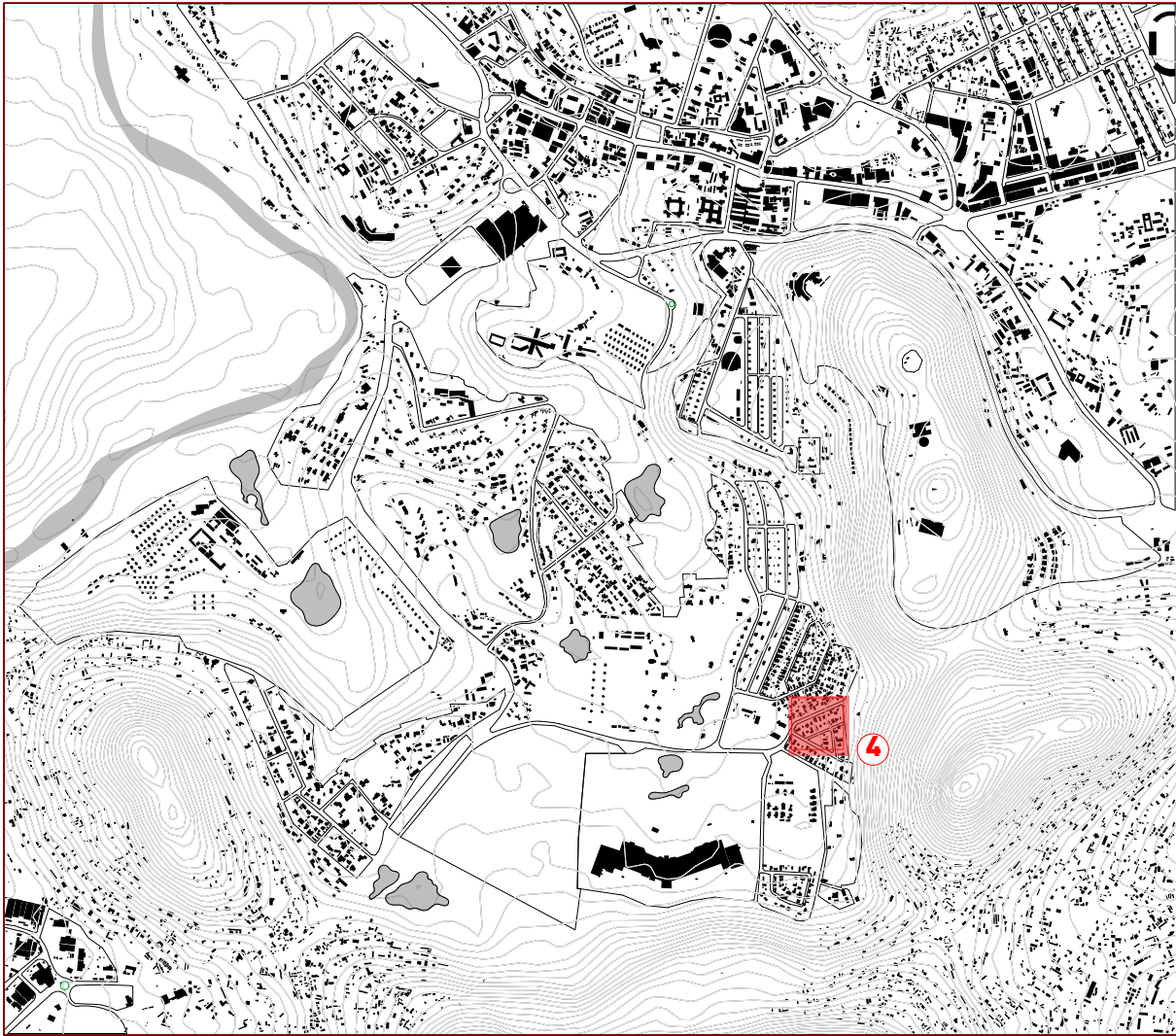


QOALING | AXONOMETRIC



QOALING | SECTION a-a





## 04 KATLEHONG

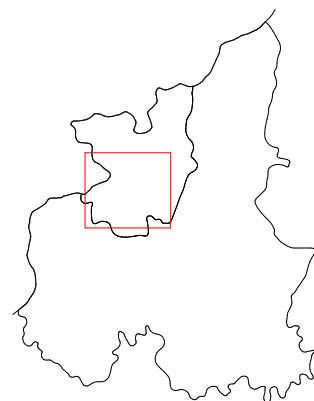
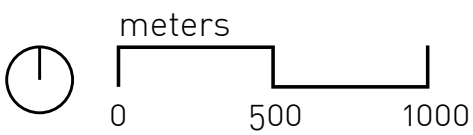
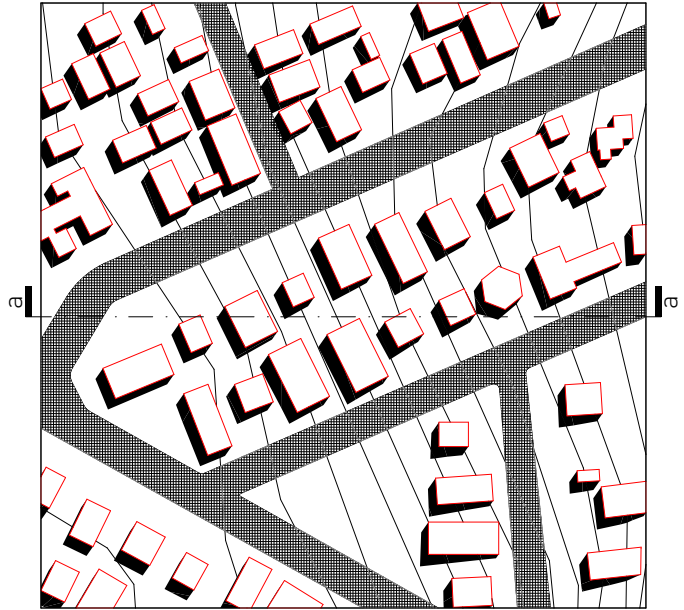
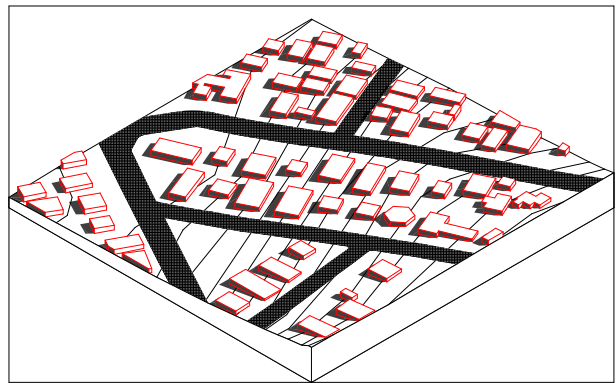
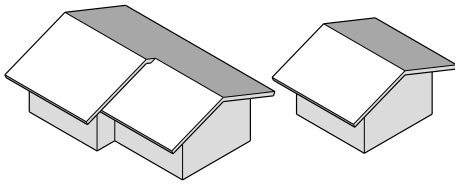


Figure 6.4, Katlehong source of photo: Google Earth

The character of this neighbourhood is typical of middle to higher income neighbourhoods. The social life is vibrant, children play outside, the neighbours interact with each other beyond the standard niceties of good morning and goodbye. Water, electricity and communication services are with some interruptions. The inhabitants are car dependent, even though they are very close to the city's centre.

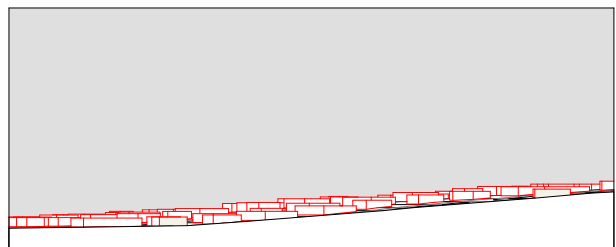


KATLEHONG | PLAN

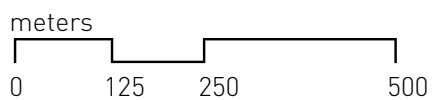


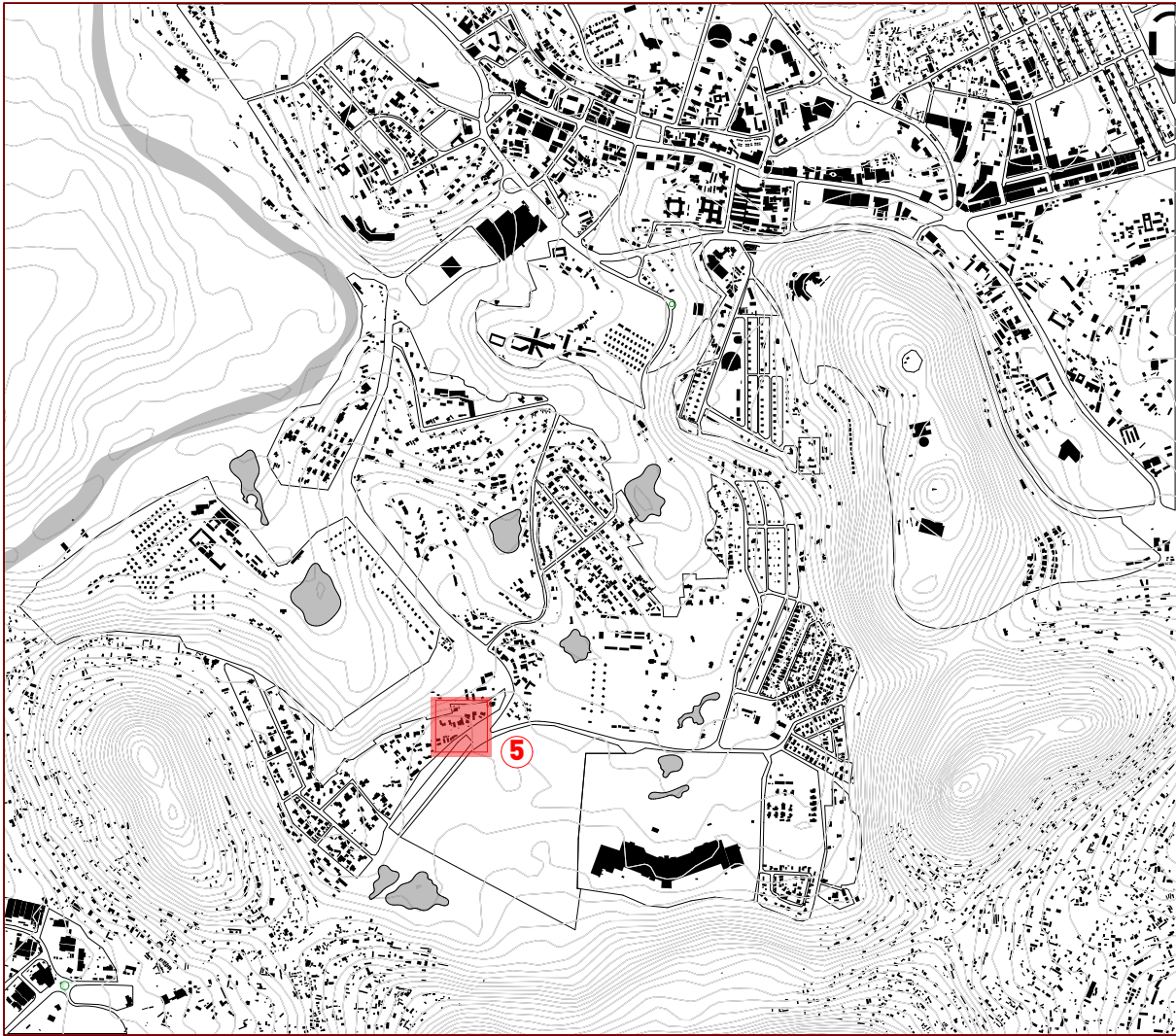
KATLEHONG | AXONOMETRIC

draughtsman or architect  
designed  
contractor built  
relative insulation  
self contained amenities



KATLEHONG | SECTION a-a





## 05 LOWER-THETSANE

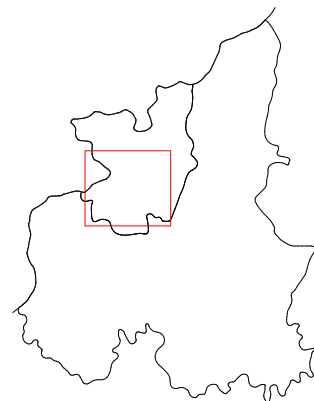
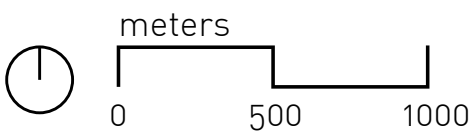
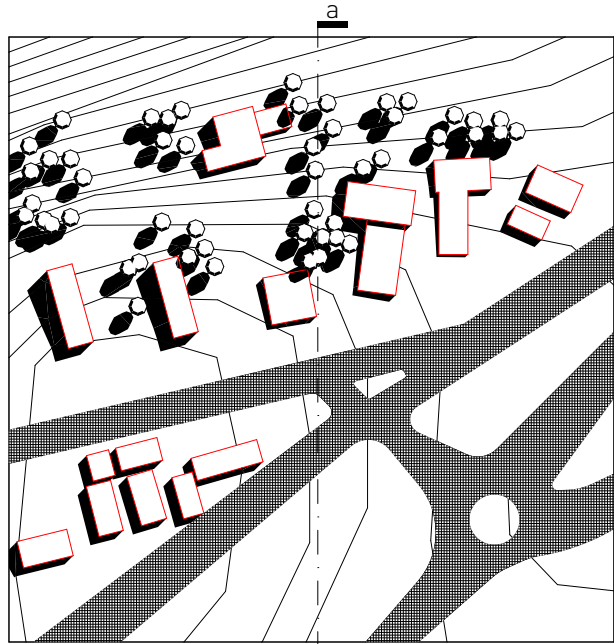
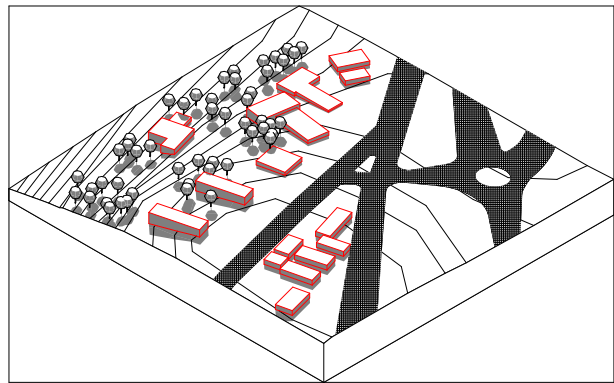
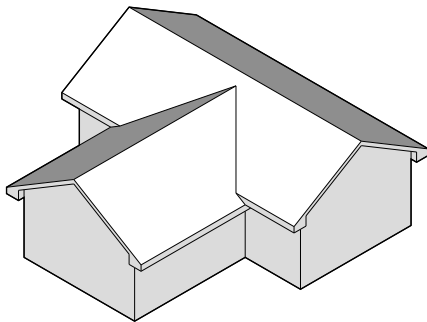


Figure 6.5, Lower Thetsane, source of photo: Google Earth

The character of this neighbourhood is typical of affluent neighbourhoods in Maseru, very reclusive they usually build high walls around the perimeter of the properties, which gives them false sense of security, they have 24 hours armed security services. There is usually little or no interaction with the neighbours. Water, electricity and communication services are without interruptions. The inhabitants are car dependent, even though they are very close to the city's centre.

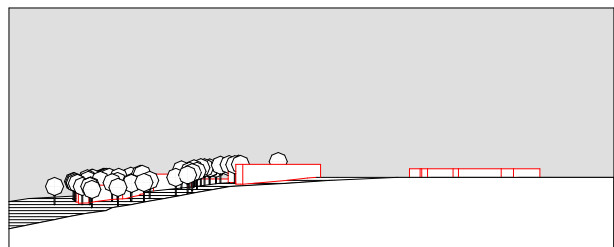


LOWER THETSANE | PLAN

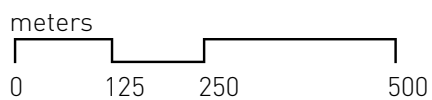


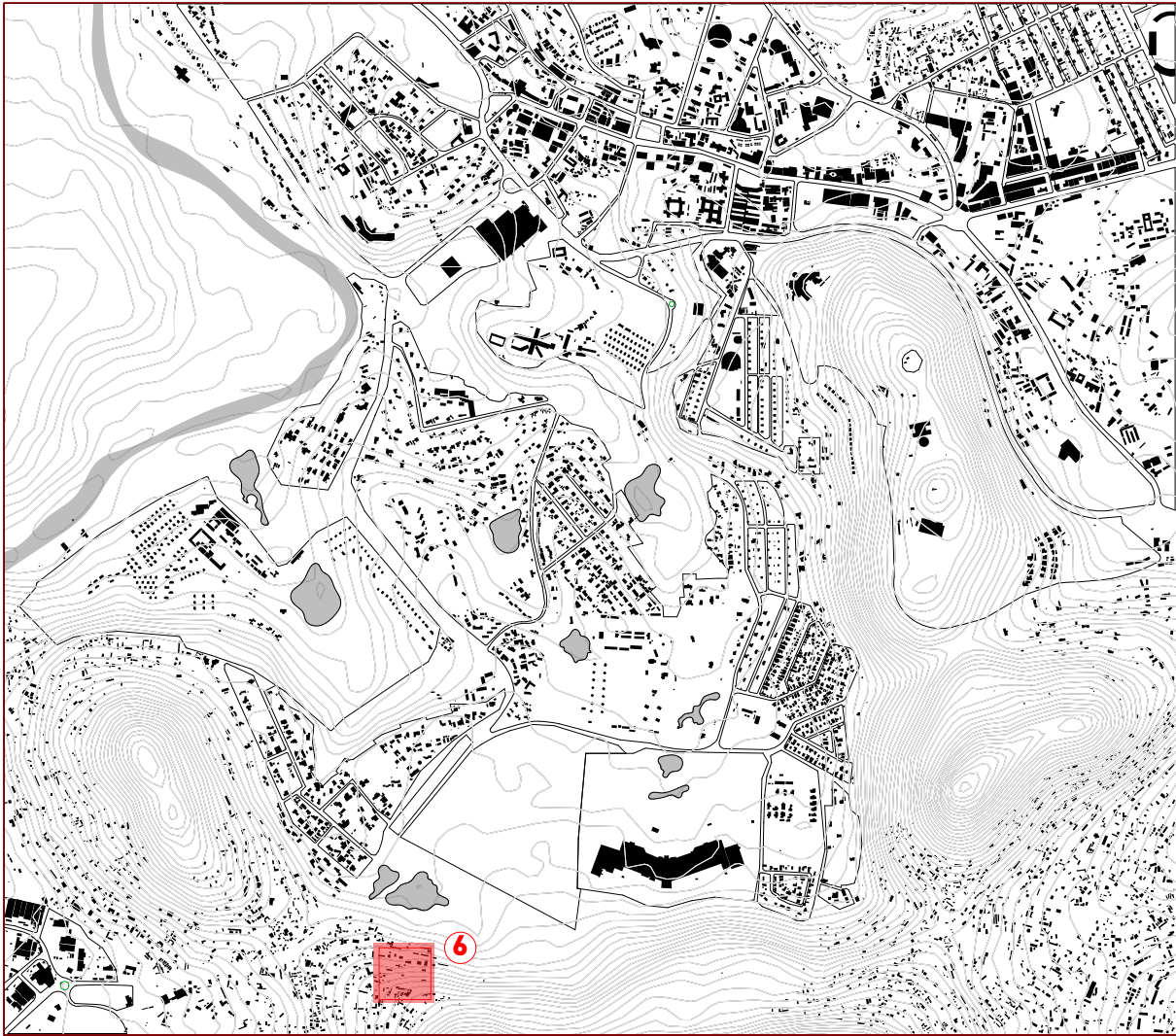
LOWER THETSANE | AXONOMETRIC

architect designed  
 certified contractor built  
 good insulation  
 self contained amenities



LOWER THETSANE | SECTION





## 06 HA THETSANE

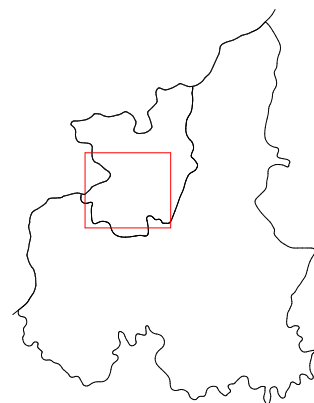
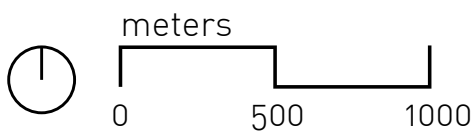
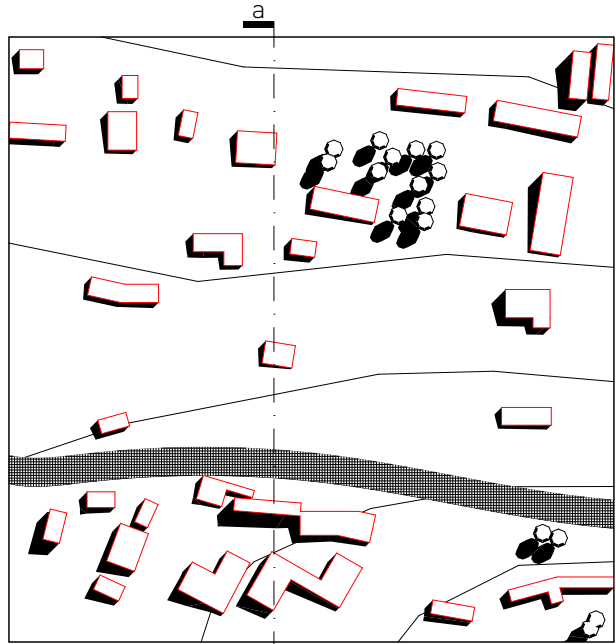


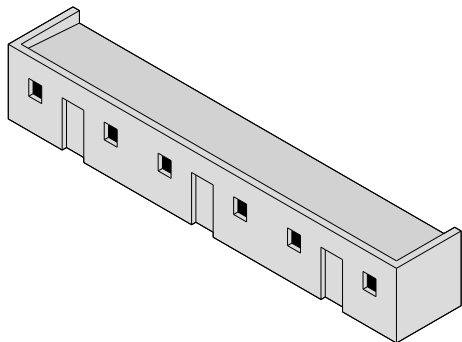
Figure 6.6, Ha Thetsane, source of photo: Google Earth



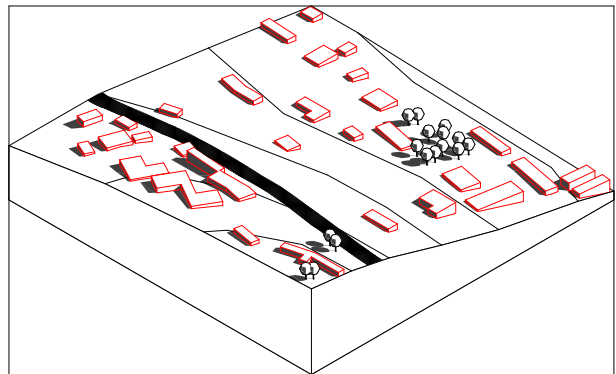
The character of this neighbourhood is typical of low income neighbourhood. Here neighbours are usually migrant workers from other districts of Lesotho. They are usually self employed or employed by the garment manufacturing industry. Access to this neighbourhoods is tough, because the cars have to navigate a mixture of paved and gravel roads.



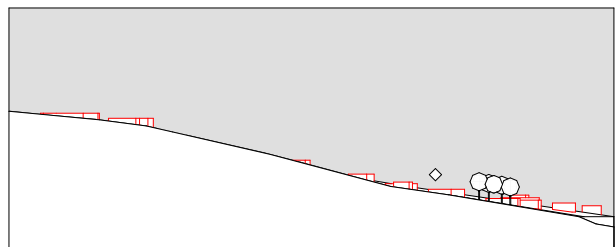
HA THETSANE | PLAN a



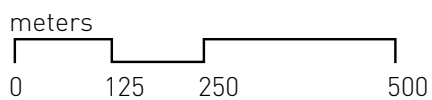
self built  
poor insulation  
outhouse



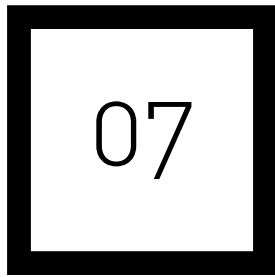
HA THETSANE | AXONOMETRIC



HA THETSANE | SECTION a-a







DEMOGRAPHICS

# DEMOGRAPHICS

The latest 2006 census lists the city's population at 227,880, or around a tenth of the entire population of the country, and half of the total urban population. This includes 103,520 males and 124,360 females, or around 100 women for every 83 men. The population of the city was at 28,000 by the 1966 census, and 110,000 by the 1986 census, demonstrating the early rapid expansion of the city after independence.

## Age breakdown (2015)

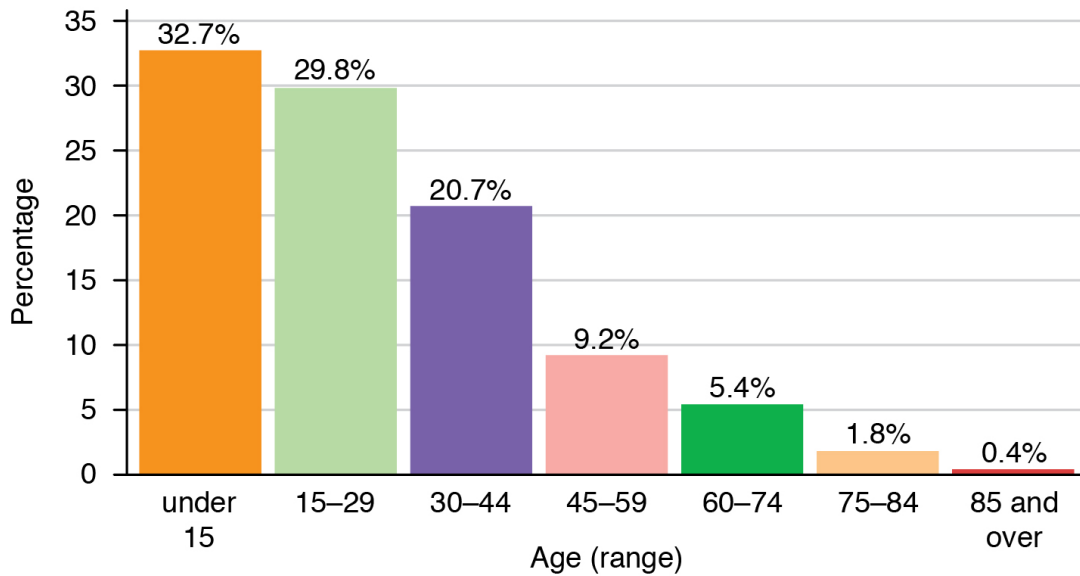


Figure 7.1 Encyclopedia Britannica

## Ethnic composition (2000)

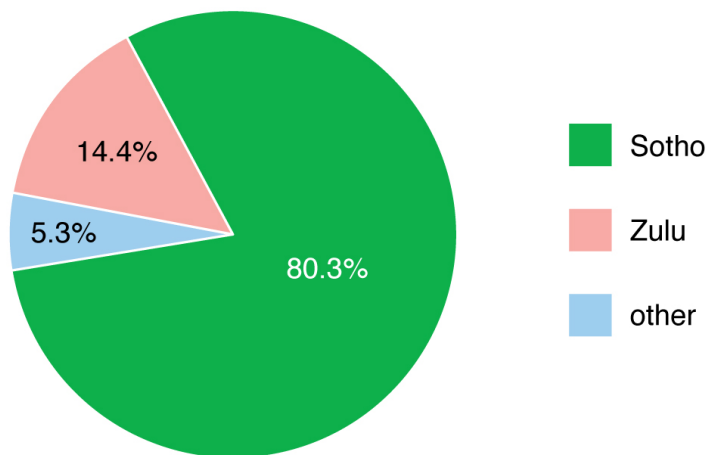


Figure 7.2, Encyclopedia Britannica

### Religious affiliation (2000)

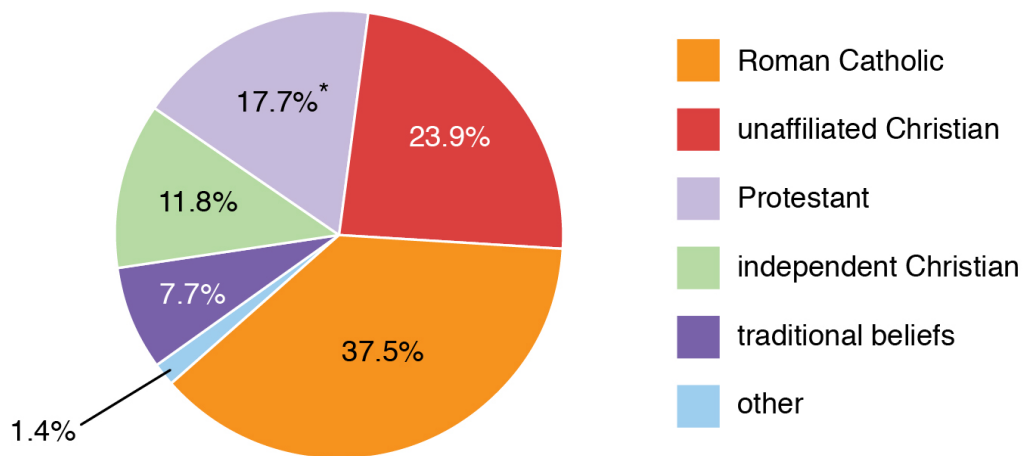


Figure 7.3, Encyclopedia Britannica

### Urban-rural (2014)

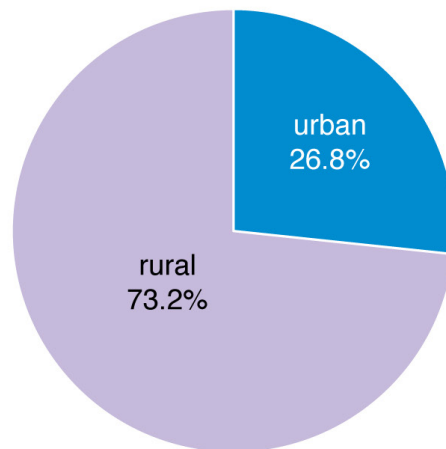


Figure 7.4, Encyclopedia Britannica



*Homeless boy sitting on a mattress made of recycled soda cans*  
*Figure 7.5, source of photo: unknown author google images*



*Garment Factory Workers Maseru*

*Figure 7.6, source of photo:*

The public service of Lesotho was the county's main employer until the garments and textile factories emerged and surpassed the government in this regard.

Since independence in 1966, unemployment has remained a problem in Lesotho with the undereducated masses suffering the most. Most Basotho men emigrated to work in South African mines, leaving unemployed women and youths.

Then came the promulgation of the African Growth Opportunity Act (Agoa) from the United States. This gave Lesotho textiles and clothing products access to the American market free of tariffs and quotas.

The country became the leading exporter of textiles and clothing from sub-Saharan Africa in the United States.



Figure 7.7, source of photo: Bokang Khoarai

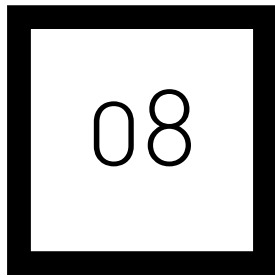


Figure 7.8, source of photo: Meri Hyöky

Figure 7.7, Wear Local Friday, is a youth initiative that encourages people to wear clothing made by local designers and artists to demonstrate a sense of pride in the community and trust in locally produced items. High level of youth unemployment, a generation afflicted by lack of opportunities, high levels of corruption and nepotism at the government level. Figure 7.8 the young man a taking part in their favourite past time basketball, the only issue is this kind of facilities are privately owned right of admission is reserved, thus not accessible to general public.







CASE STUDIES

## SOCIAL CONSIDERATION

Architects:	EFFEKT
Location:	Almere, The Netherlands
Collaborators:	James Ehrlich, ReGen Villages, Holding B.V.
Area:	15500.0 sqm
Project Year:	2016



*Figure 8.1*

The creation a self-sustaining ecological village is what drew me to Regen Village by Effekt Studio. This project embodies the core principles of sustainable living, it seeks to improve the quality of inhabitants by looking at the lifecycle of our scarce resources, their aim of reducing consumption, and recycling. The idea of working close is very appealing to the masses of vulnerable communities that are marginalized when the city is being carved by big corporations and the few that have a say. This project has similar DNA to how tradition settlements we organized in Lesotho.

A neighbourhood working around a central core, is ideal. Key functions of the village are located towards the centre of the village, thus very accessible.



Figure 8.2



**Program**



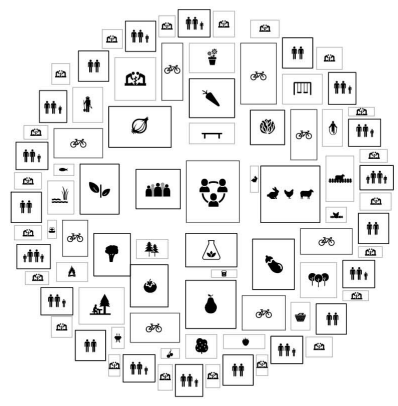
What are the basic needs for a family of 3 / year?

**TOTAL AREA:** 639 M<sup>2</sup>

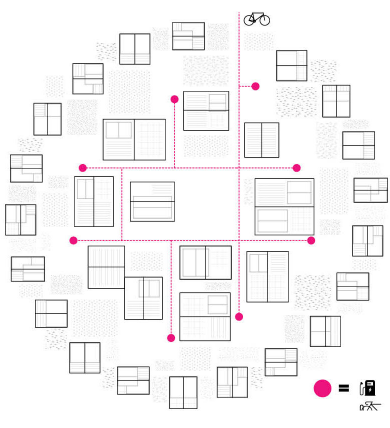
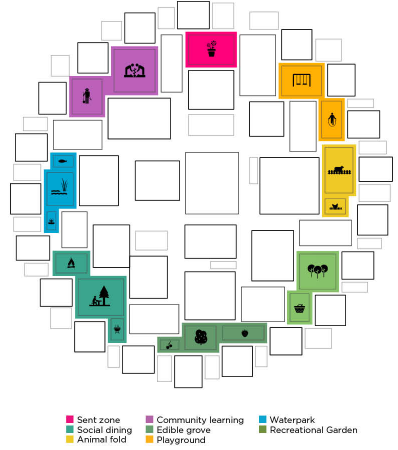
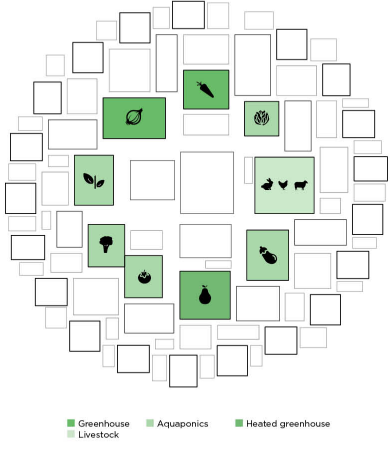
Figure 8.3



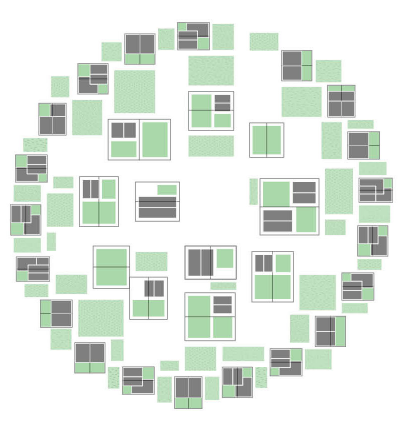
Site Plan



Program Layout



Infrastructure



Green Space

Figure 8.4



*Figure 8.5*

ReGen Villages is a new visionary model for the development of off-grid, integrated and resilient eco-villages that can power and feed self-reliant families around the world.

ReGen stands for regenerative, where the outputs of one system are the inputs of another. The concept has a holistic approach and combines a variety of innovative technologies, such as energy positive homes, renewable energy, energy storage, door-step high-yield organic food production, vertical farming aquaponics/aeroponics, water management and waste-to-resource systems.

With the integration of such technologies, ReGen Villages holds a potential in changing some of the challenges of a growing population, increasing urbanization, scarcity of resources, the growing global food crisis as well as reducing the global CO<sub>2</sub> emission and reducing the burdens on municipal and national governments in dynamically changing planetary and economic times.

ReGen Villages is all about applied technology. Already existing technologies are simply being applied into an integrated community design, providing clean energy, water and food right off the doorstep. ReGen Villages adds not only environmental and financial value, but also social value, by creating a framework for empowering families and developing a sense of community, where people become part of a shared local eco-system: reconnecting people with nature and consumption with production.

# LANDSCAPE CONSIDERATION

Lead architect:	MVRDV
Co-architect:	Diagram Architecture
Landscape architects:	Territoires
Urbanists:	Pro Développement
Infrastructure Specialists:	Egis
Sociologist:	Philippe Cabane
Model Maker:	Made by Mistake
Project Location:	Caen, Normandy
Project Year & Status:	2016   Proposed Masterplan



Figure .8.6



Figure 8.7



Figure 8.8

This project was studied because of the methodology employed, which offers a systematic way of arranging the landscape. A kind of kit-of-parts, for the ecological landscape, from world renowned architects.

# METHODOLOGY

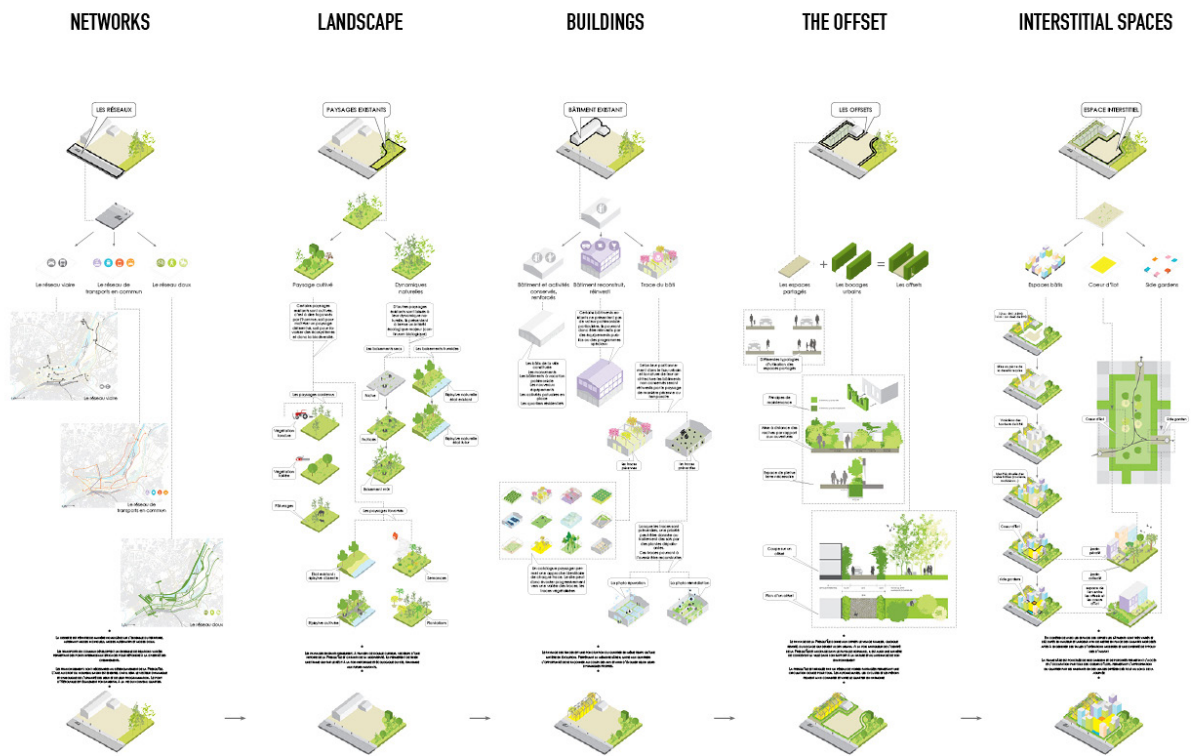


Figure 8.9

## LANDSCAPE

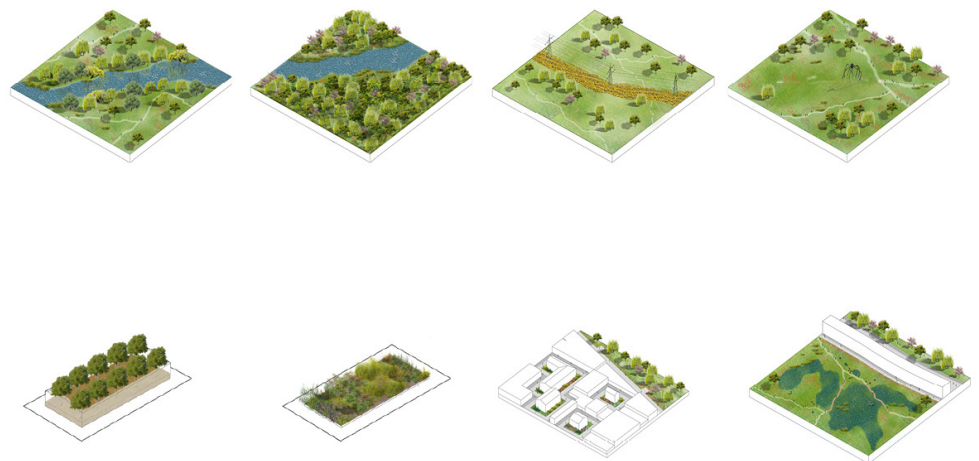


Figure 8.10

## ALTERNATIVE BUILDING TECHNOLOGY

Architects: MMA Design Studio  
Location: Mitchells Plains, Cape Town, South Africa  
Project Team: Luyanda Mpahlwa, Uli Mpahlwa, Sushma Patel, Kirsty Ronne  
Interior Décor: MMA Design Studio  
Project Year: 2009  
Photographer: Design Indaba, MMA Architects  
Website: [www.mmastudio.co.za](http://www.mmastudio.co.za)



Figure 8.11



Figure 8.12



Figure 8.13



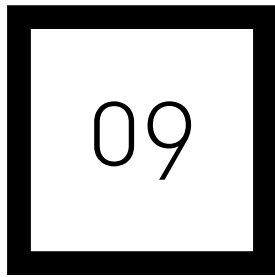


*Figure 8.14*

In Freedom Park, an informal settlement in the Mitchell's Plain township in Cape Town, corrugated-metal and scrap-material dwellings are being replaced by low-cost, two-story homes built with timber frames and sandbag in-fill construction. 10 × 10 Sandbag Houses are the answer of Luyanda Mpahlwa, a renowned South African architect, a project that was initiated by Design Indaba, design-advocacy organization. The project offers innovative residential solutions costing 50,000 Rand (US\$ 7,000) —the national government's housing subsidy—to build.

The design of the 10×10 Sandbag House borrows from indigenous mud-and-wattle building methods. A structural timber frame using EcoBeam technology (timber beams with metal inlays that provide tensile strength) is combined with sandbags reinforced with chicken wire and finished with plaster and timber cladding. The sandbags provide thermal insulation and, thanks to the EcoBeam technology, contributes to a system that is both wind-resistant (it is heavier than brick construction) and moisture-resistant. Moreover, the building method is cost-effective and energy-efficient, and requires little to no electricity and only minimal transport, since the EcoBeams are manufactured onsite. Little skilled labor is needed for construction, and local community members were involved in building the houses, demonstrating the possibility for replication in other communities.





THEORETICAL FRAMEWORK

# THEORETICAL FRAMEWORK

## HOW TO DISRUPT THE SPRAWL LIFESTYLE

The ecological relationship is developed through input and output fluxes. Hence, the aim of the clean dwelling is to reduce both inputs and outputs not only during the construction process but also during the use of the building.

Reduced input achieved through reduced consumption and self-sufficiency. Reduced output is achieved by neutralizing gas emissions and processing and recycling waste.

The materials used, from their extraction to the end of product life cycle of the building, as well as their source, form part of the carbon footprint dwelling.

However, the accountability of the building, as regards the domestic per capita carbon footprint, is less relevant than the transit resulting from urban sprawl or user habits. The dwelling will be clean to the extent in which it is inserted into the environment which engages with reducing CO<sub>2</sub> emissions through planning or lifestyle.

## PEOPLE AS INFRASTRUCTURE

“The question, “What is it that we can do together?” whoever and wherever that “we” may exist – is largely a question of what is in-between us; what enables us to reach toward or withdraw from each other. What is the materiality of this in-between – the composition and intensity of its durability, visibility and so forth? What is it that enables us to be held in place, to be witnessed, touched, avoided, scrutinised or secured? Infrastructure is about this in-between.”

– AbdouMalik Simone, 2004.

# THEORETICAL FRAMEWORK

## THE PRACTICE OF EVERYDAY LIFE

A theory of the productive and consumptive activity inherent in everyday life through the writings of Michel De Certeau, the practice of everyday life associates an active movement through time in space – a spatio-temporal activity as the materiality of the everyday, implying that space and the way that it is experienced is subject to transformation (Highmore, 2002). Through Walking in the city, everyday practices can be defined as an unconscious experiencing of space, a tactic that serves to transform space, an element of creative resistance to the commodification of resources enacted by women (De Certeau, 1984).

## THE RIGHT TO THE CITY

“The freedom to make and remake our cities and ourselves is, I [sic] want to argue, one of the most precious yet most neglected of our human rights” - David Harvey, 2008:1-2.

Harvey’s extension of Henri Lefebvre’s original concept is contextualised, recognising that the right to developing life in the city should be shared by all inhabitants, regardless of gender, race, or socio-economic status. What brings a community together are shared issues of concern, accessibility to water and space as common resources thus require a shared response (Cruz and Forman, 2015). Common thinking of the right to the city provides the possibility of the spatialisation of a rights paradigm that transcends privatisation and is based on common responsibility and giving (Shiva, 2002).

# THEORETICAL FRAMEWORK

## ON THE GEOMETRIC DESIGNS OF THE BASOTHO CALLED LITEMA

After the men have finished the house, women traditionally decorate the house. These high decorative designs are soft and flowing geometric patterns applied to walls of houses with fingers, forks and wand. Ornaments are sometimes painted with natural pigments or commercial coats and paints. Stones embedded in clay and relief motifs are sometimes used as permanent effect.

Litema (pronounced as “di-the-ma”) comes from the word “ho lema” and means cultivate, and “tema”, which denotes a ploughed field. Geometric patterns originally appeared in the interior of the house and only appeared in the 19th century outside the houses. At present, Litema practice is a seasonal event related to special events such as holidays and religious ceremonies. It not only proclaims birth, death, wedding, or Christmas, but also remembers the passing of time.

In 1976, Mr Motibe from Lesotho National College of Teacher Training expressed his fear that Litema as an art form was on the verge of extinction. Approximately thirty years later, the use of concrete, urbanization and modern paints leads to radical changes in art and decline of the indigenous art.

Before the major events, the entire village may have been decorated. Traditionally, the chief artist or advisor was called upon to direct and advise the women of the village on the types of design or methods of application. Whilst drinking tea and seating down, the most skilled Litema artist would sketch her intentions on the ground. Once consensus on a design had been reached, women set out to work. Today, every woman (perhaps including her family members and daughters) chooses her personal design and home decorations. The beginning of the decoration period is met with great interest by friends and neighbours who generously contribute to counseling and spiritual help. So, it is still a chance for social cohesion. Tradition of folklore art in South Africa, in particular, Litema tradition has not emerged recently.

One of the oldest written accounts of these murals is by a missionary John Campbell. In 1812 Campbell, in an attempt to establish diplomatic relations, visited the house of a certain chief Sinosee of the Hurutse lineage of the Tswana. He provided both illustrations as well as a verbal description of the chief’s house. His description on these unique ornamented walls were extremely enthusiastic:

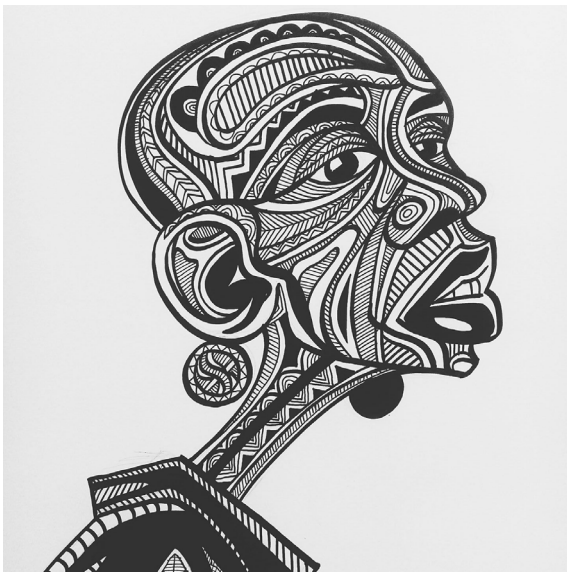
“Its walls were decorated with delightful representations of elephants and giraffes...In some houses there were figures, pillars, etc moulded in hard clay and painted with different colours that would not have disgraced European workmen. They are an ingenious people.”

## THEORETICAL FRAMEWORK

In 1880, historian George Stow compiled the accounts of Campbell. In 1905, Stow published a book titled *The Native Races of South-Africa*, recreated the four designs created by the South African Republic, Bakuena (Botswana). In his book, he talks about the traditional skills of unique paintings described by Campbell, which is still alive - this time in South Africa. Stow's paintings are a coded panel similar to Litema's engravings. The point where the other images are of a limited color reflects simple patterns of lines, triangles, and zigzags. The French missionary Eugene Casallis, working in the Free State / Lesotho area in 1861, Litema design as "ingenious" and far more intricate than those suggested by Stow.

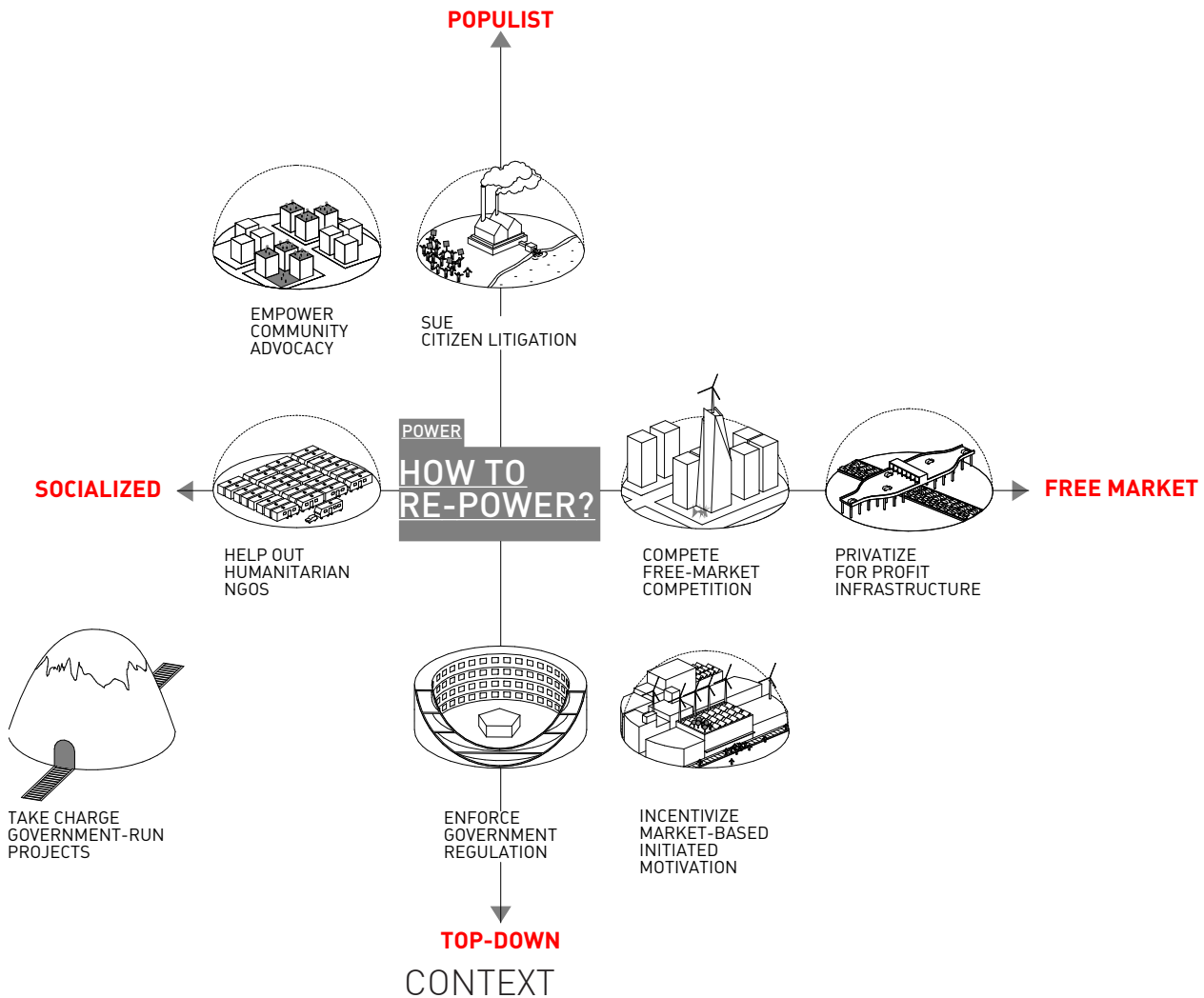
For more than a century separated, Stow's drawings from those drawings done by Motibe's students in 1976 of the Lesotho National Teachers' Training College. The students collected 29 designs for using classes in geometry classes and copying them for potato pressures. These pictures are named after Lekoko, Lithebe, Litepo and Moseme. The English interpretations of these names are animal skins, shields, spider web and reeds, leading people to believe that their main influence on these designs comes from direct contact artists with their environment. The most common opinion seems to be the copying of linear patterns resembling the furrows found in ploughed fields or the linear patterns in areas that are empty after harvesting. It is also clear that patterns are similar to natural forms, such as leaves, seeds, and flowers. Traditional "Basotho" blankets remind us of Art Nouveau design style.

Like the flowers, Litema blossoms with the coming of spring and wilts with the arrival of winter. It dies with the temporary surface of mud it adorns. When the sun rays and dries up the design, rain wash away "dead" design and leads to new decorative possibilities.



*Figure 9*

# THEORETICAL FRAMEWORK



As our world is increasingly focused on the scarcity of economic, material and space resources, we are looking for new ways to apply our specific knowledge and skills. Architecture can contribute to innovative solutions for today's challenges, as it has produced many visionary projects in difficult times. Yet many remain skeptical about the possibilities to contribute, particularly through the use of new technologies. In contrast to previous industrial revolutions, new digital technologies have arrived quietly, bringing not only improvements but also further complexity in people's lives.

As sites for architecture's agency, **Power** considers questions of control, governmental and otherwise; **Territory** maps planning, land use, and property regimes; **Lifestyle** looks at sociability and the individual; and finally, **Risk** asks how collectives are formed to manage uncertainty.



# THEORETICAL FRAMEWORK

## TERRITORY

How does the energy efficiency rethink the networks of the contemporary metropolitan region? As we develop notions of the sustainable metropolis, what city are you imagining, utopian or not? What narratives (agrarianism, functionalism, cosmopolitanism, liberalism) are being smuggled?

## POWER

Energy networks have grown symbiotically with the ruling machines, from community councils to regulated monopolies. Alliances between disparate factions cross the public and private sectors and change with changes in technology and the general political climate. Who generates and whom they serve the new energy streams?

## LIFESTYLE

How do energy schemas imagine norms and public behaviour? Sumptuary regulations now speak less of the limits of the police classes and more of the configuration of public health and the management of resources. How can we decode the complex refractions of energy and social policies through the lens of lifestyle?

## RISK

How can we establish priorities in the face of uncertainty? Energy decisions are made against a changing terrain of unseen and unknown future costs. As risk managers weigh global catastrophes against non-mundane returns, what are the priorities and what new groups are being formed?

# THEORETICAL FRAMEWORK

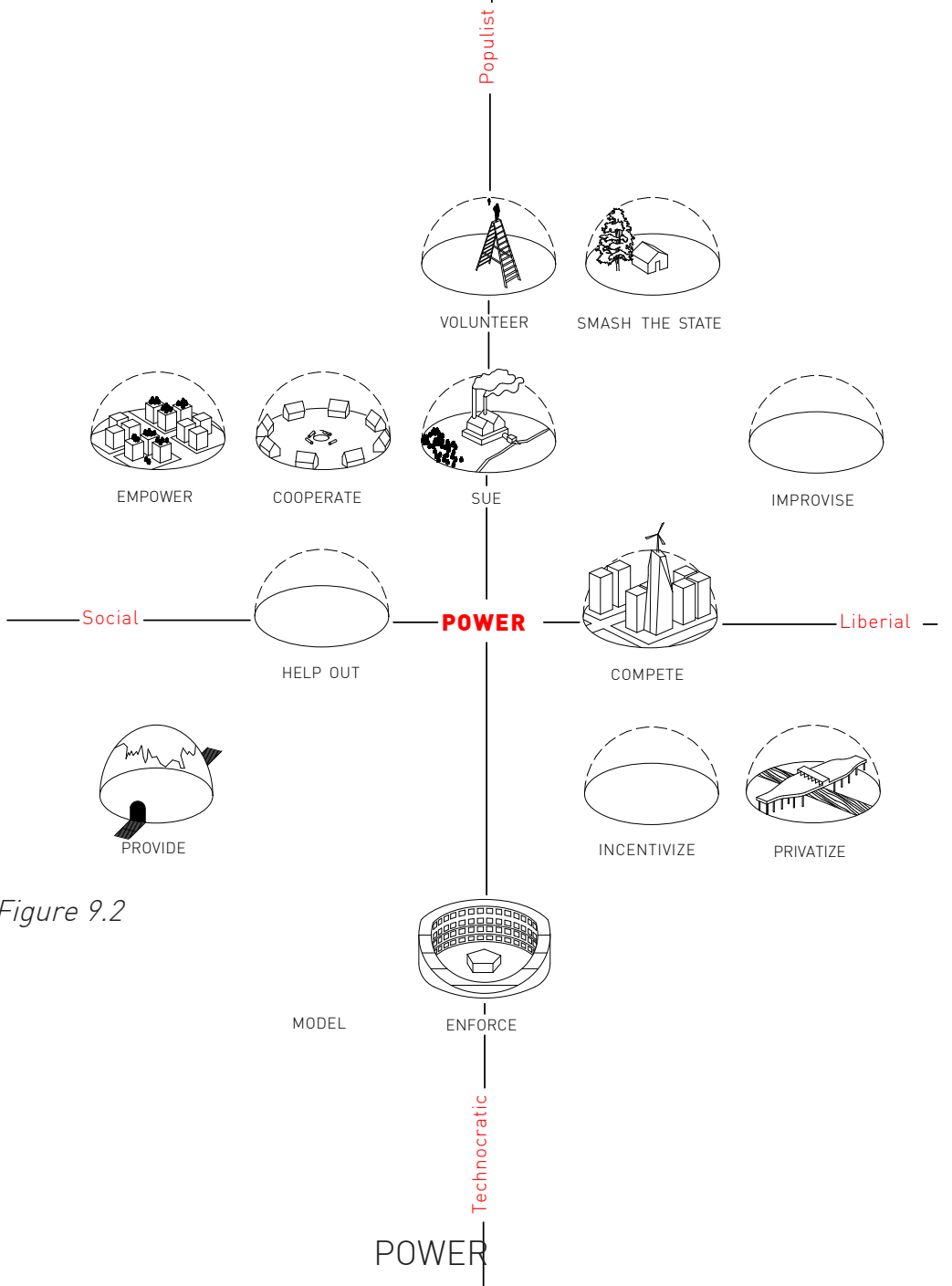


Figure 9.2

Power claims territories, disciplines individuals and regulates the flows of people and things. Of many instruments of power (authority's), power (energy) plays a structural role. Beyond the linguistic identity of the term lies an intricate story, from the equation of communism by Vladimir Lenin with "Soviet power plus electrification", to the American oil wars. But the government is just one of many places of power. Over the last century, the nation's energy grid has been shaped and helped to support its dominant machines, community councils and regulated monopolies to regional markets.

# THEORETICAL FRAMEWORK

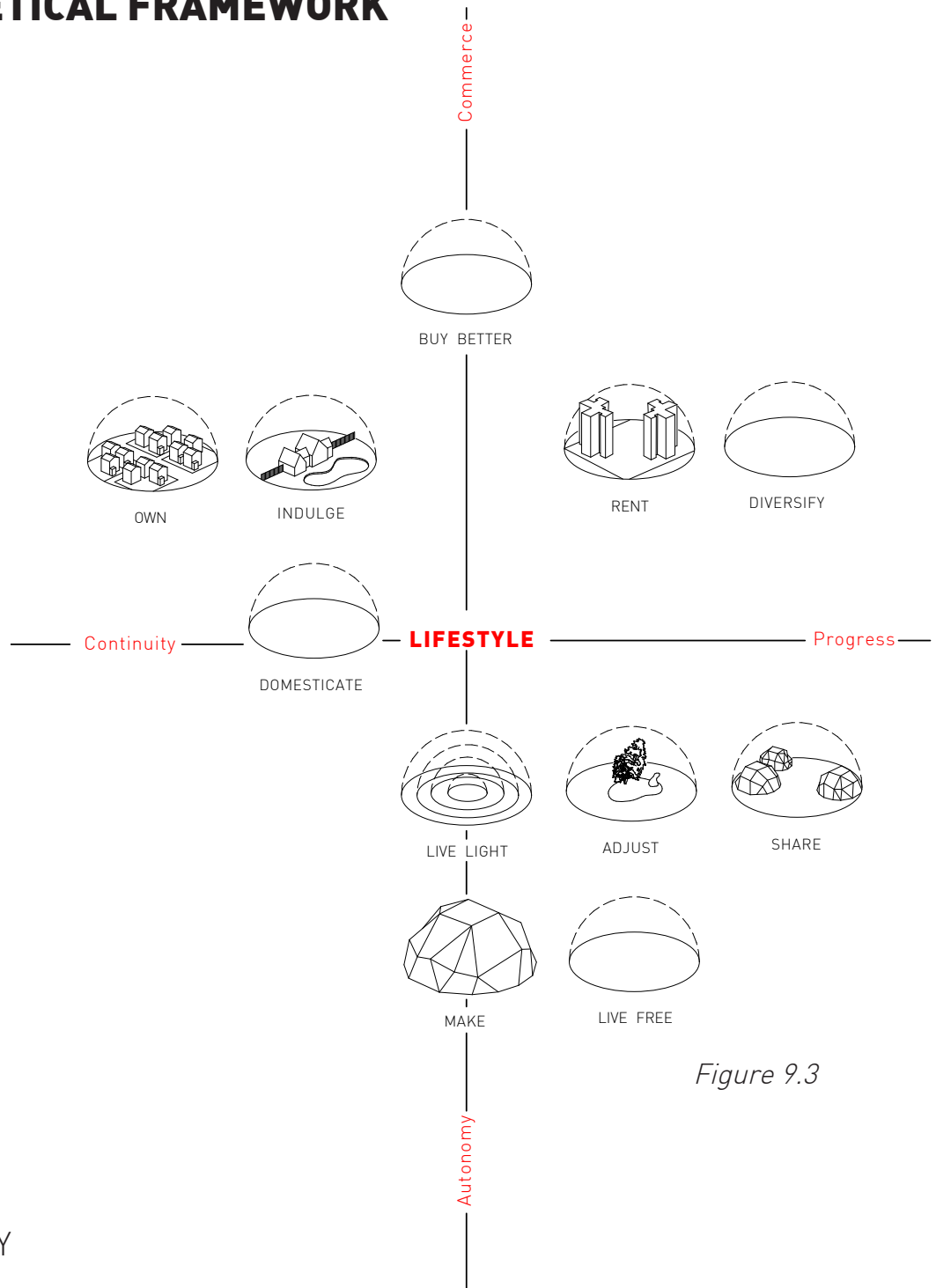


Figure 9.3

## TERRITORY

Modern power is rooted in the territory. The rulers divide the earth into spaces to coordinate the citizens. Infrastructures are the environments that regulate the circulation of people and goods. These manifold ways of governing shape the earth, defining the limits of jurisdiction and collective rights as they embody the changing imaginaries. In turn, the visions of the responsible metropolis - from pastoral to engineering, from pragmatic to utopian-smuggle in unruly agitations.

# THEORETICAL FRAMEWORK

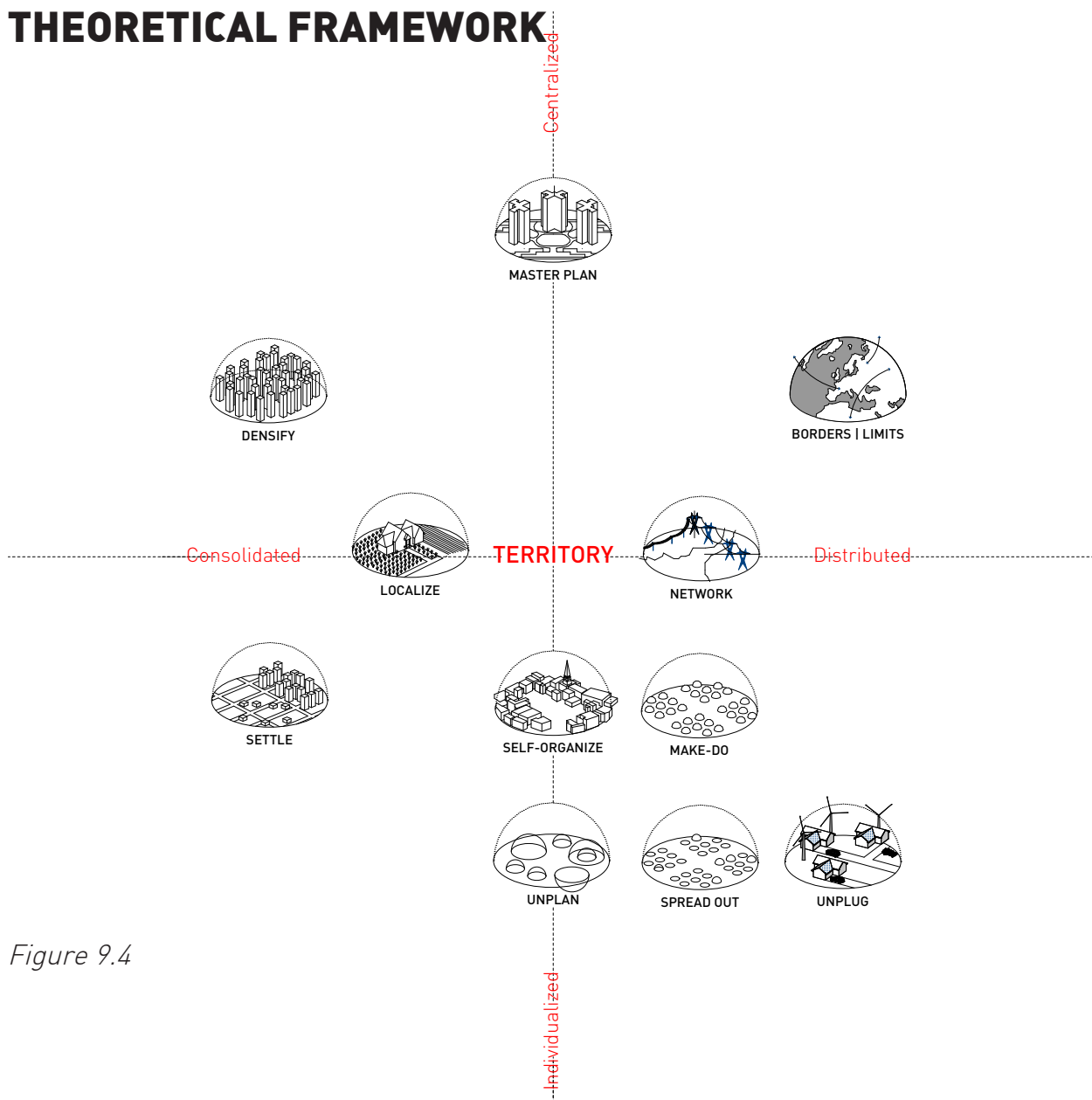


Figure 9.4

## LIFESTYLE

The lifestyle operates in the realms of consumption and sociality. From television programs that make post-industrial urban life fascinating, the lifestyle expresses who we are: which groups we belong to and what our priorities are. At the same time, it is the modern self-determination of the individual - a unified and purposeful self, incorporated into communities and environments - and the use of this self with power. In the 1960s, when hippies tuned into alternative life, companies stopped selling products and began to market lifestyles.

# THEORETICAL FRAMEWORK

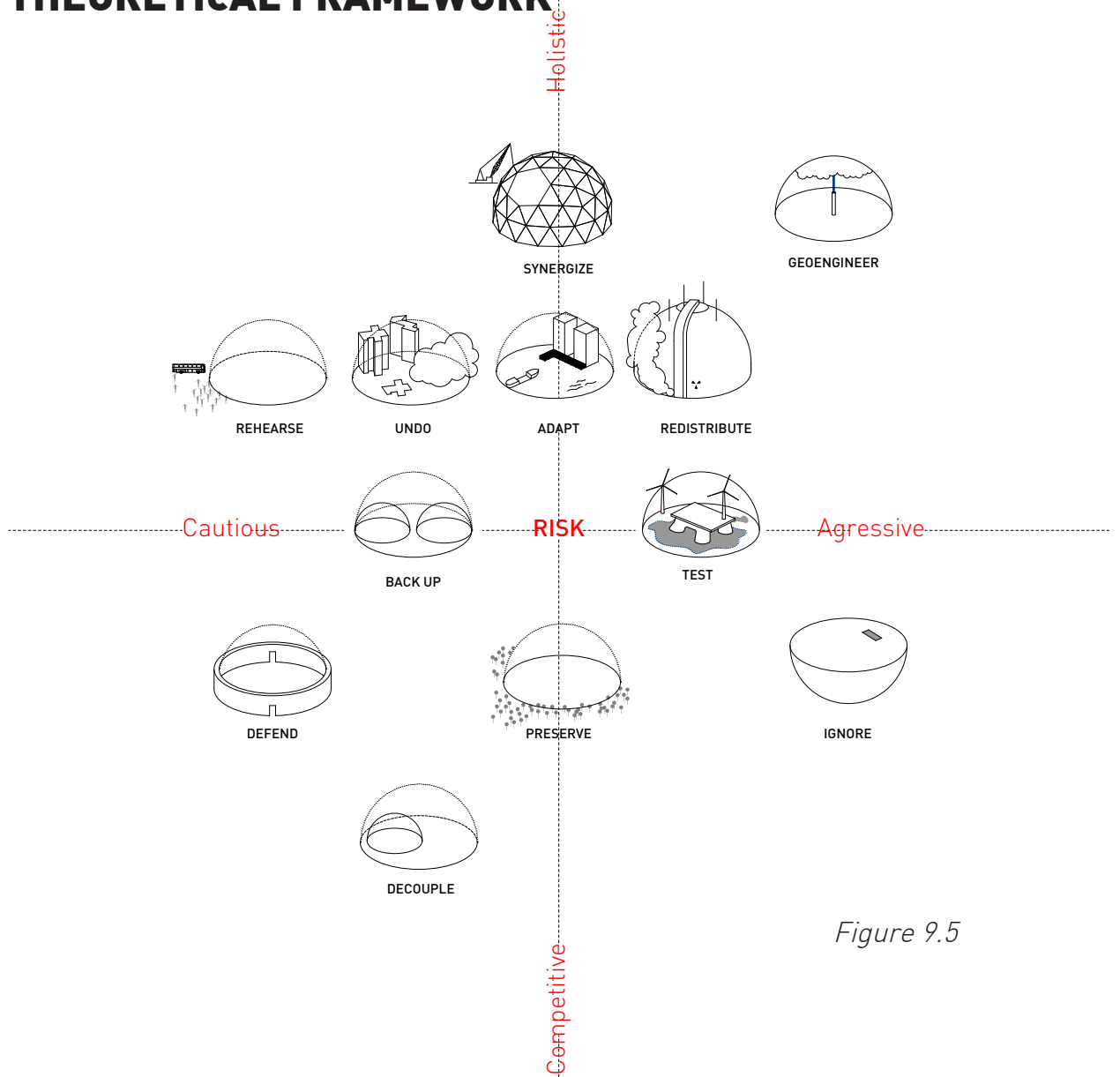


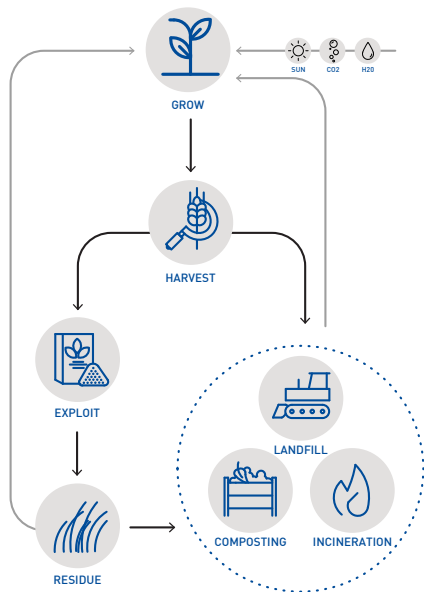
Figure 9.5

## RISK

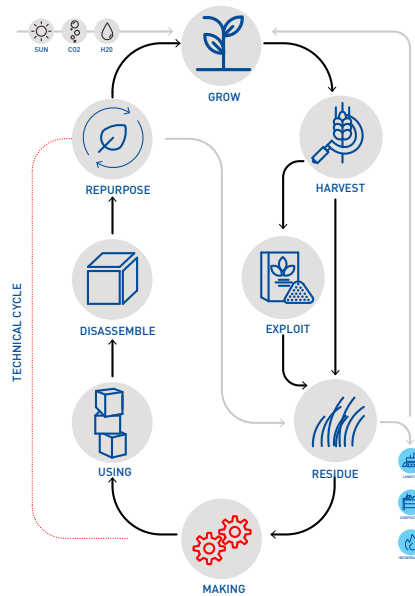
Risk frames the world in terms of future risks and shared responses. When we invest in new infrastructures, we dimension mechanical systems and design new atmospheres, mitigate and combine threats. We withdraw concerns as we try to calculate the probabilities of diminishing resources, economic crises and political breakdowns. The consequent distribution of gains and losses in turn triggers new alliances and conflicts. At an unprecedented level, contemporary society finds non-common solidarity with blood, soil, class or belief but in common threats.

# THEORETICAL FRAMEWORK

WASTE AS A BEGINNING OF THE NEW CYCLE

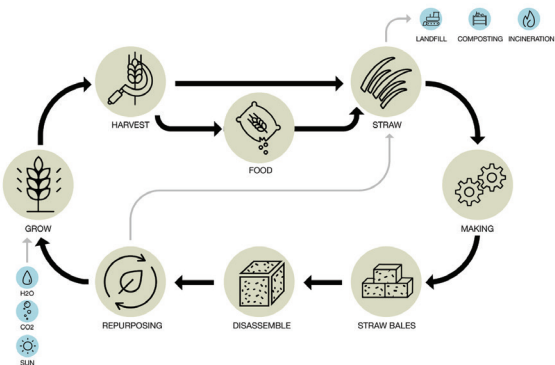


Traditional waste disposal options



Organic waste acquires value through technical exploitation

## Straw bales bricks



## Urban organic waste board

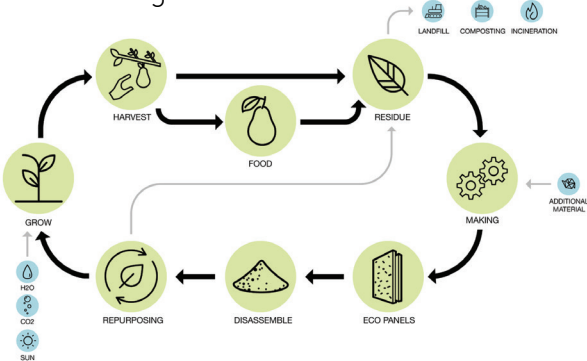


Figure 9.6, Arup

# THEORETICAL FRAMEWORK

WASTE AS A BEGINNING OF THE NEW CYCLE

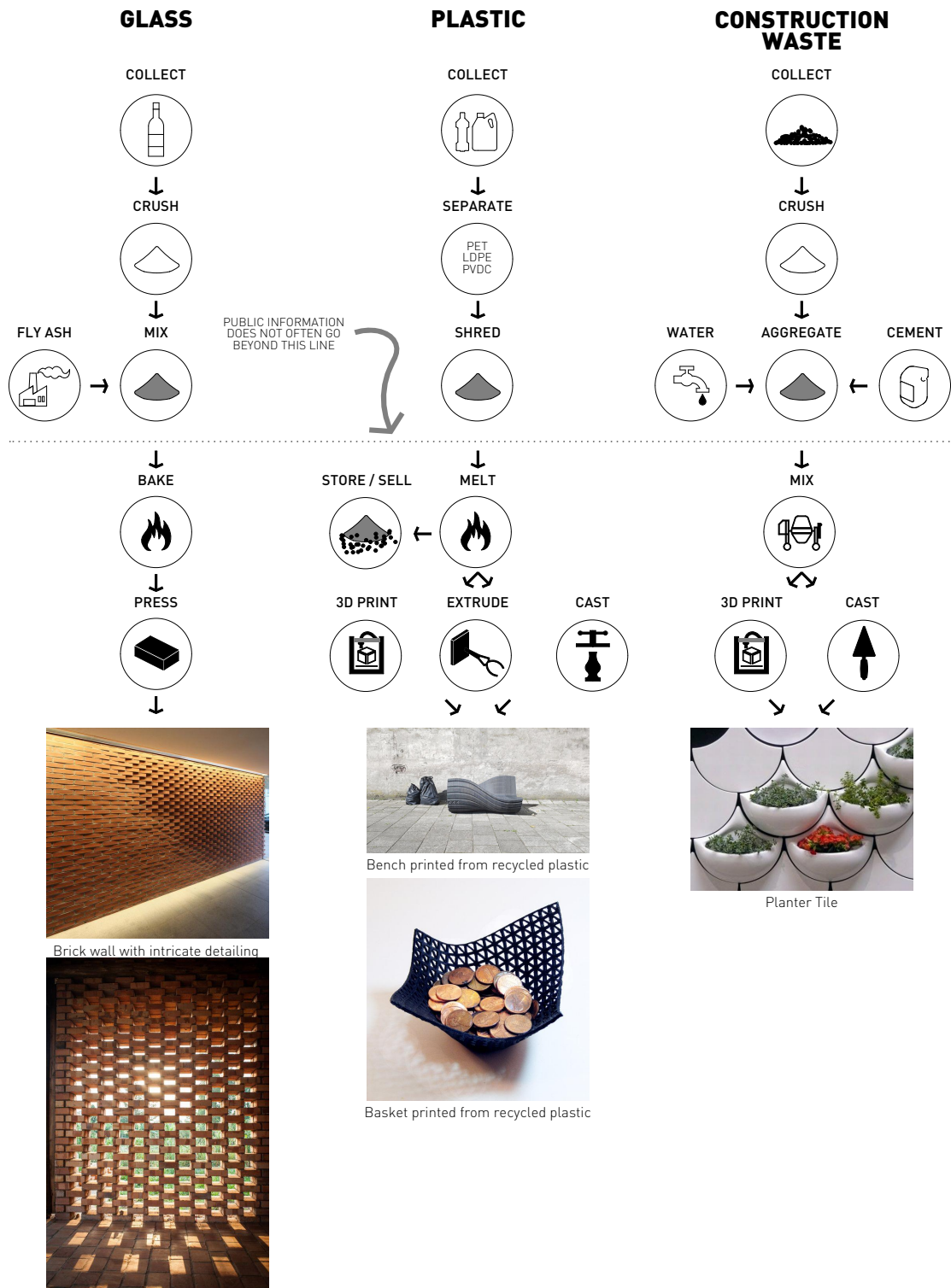
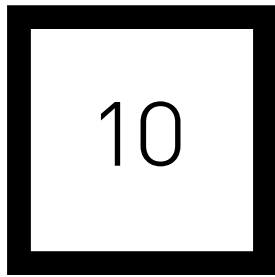


Figure 9.7

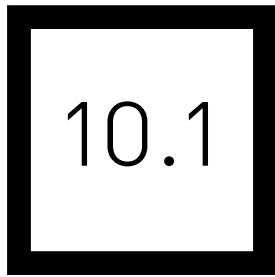




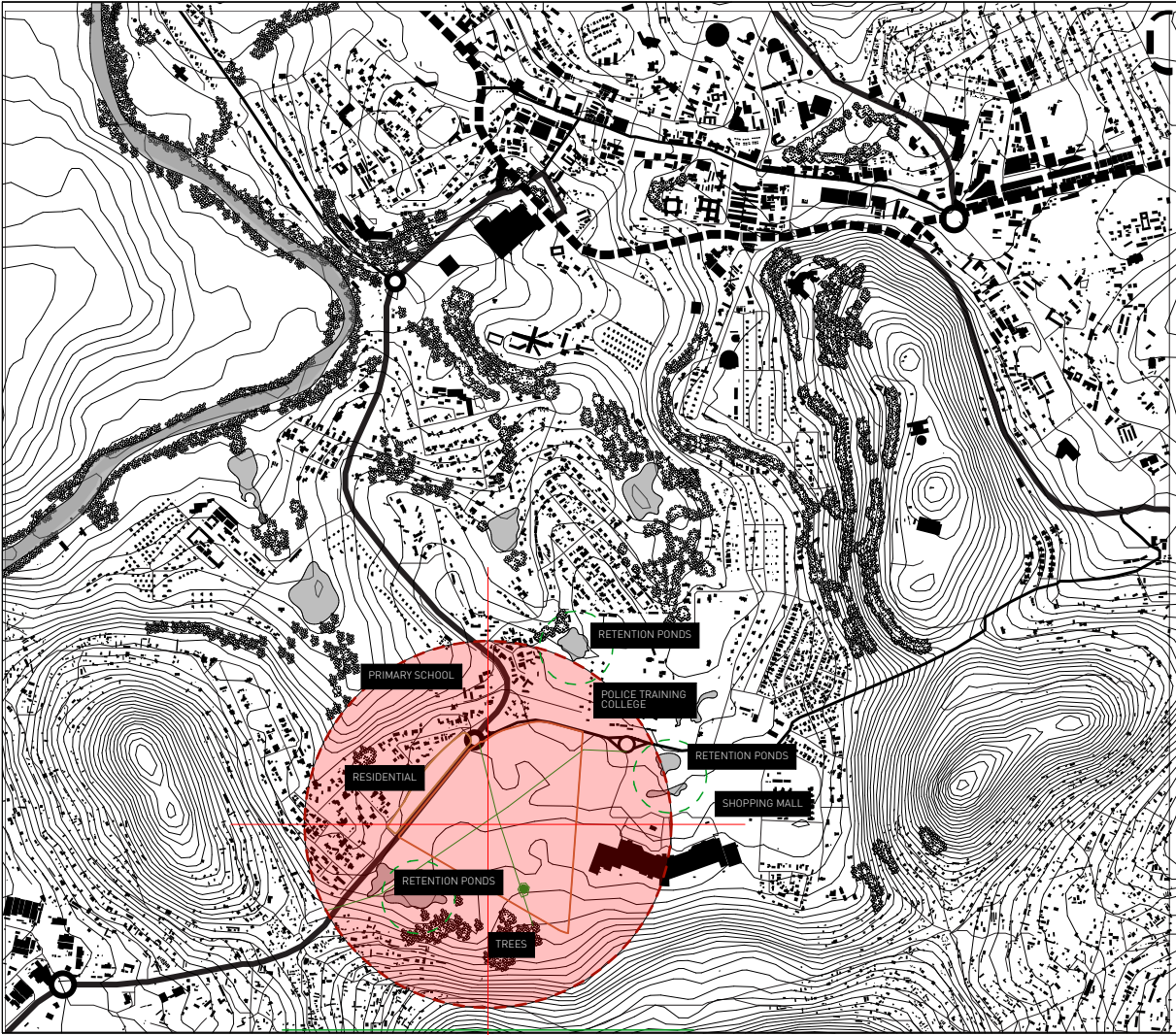


PROJECT





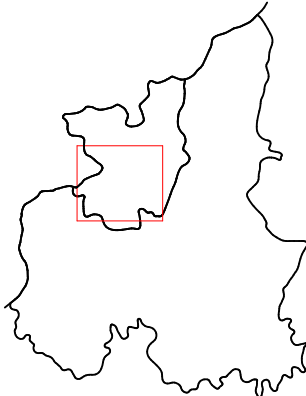
SITE ANALYSIS

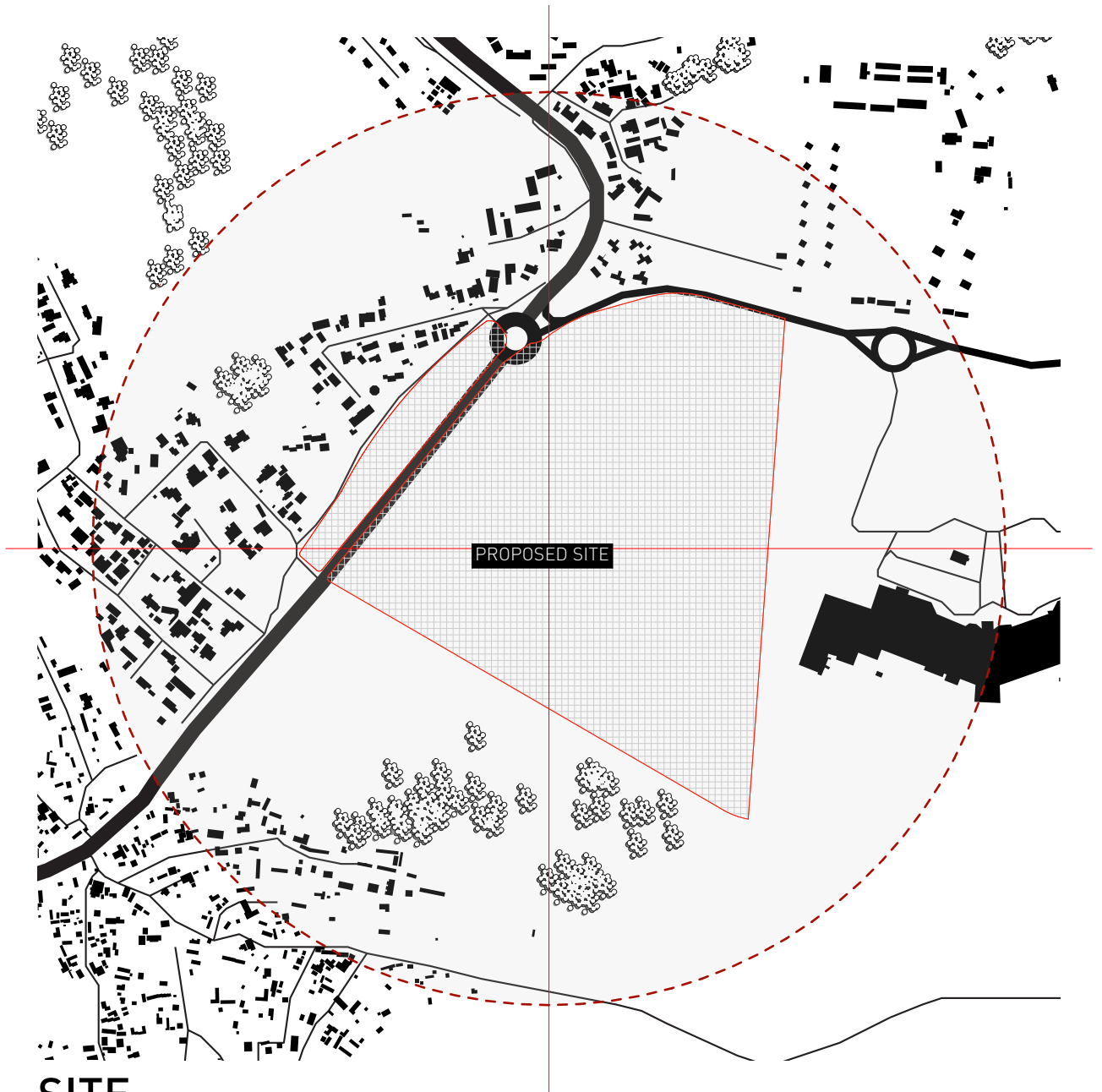


# RACE COURSE



The Race Course site lies, less than 3 km South of the Maseru CBD, 5 km from the South African Border and 12 km from the Moshoeshe 1 International Airport. It is located at the gateway to the Maseru Central Business District, on the corner of Pope John Paul II and Pioneer Roads. The Proposed Ecological Village is situated on the historic site formerly known as the RaceCourse site.

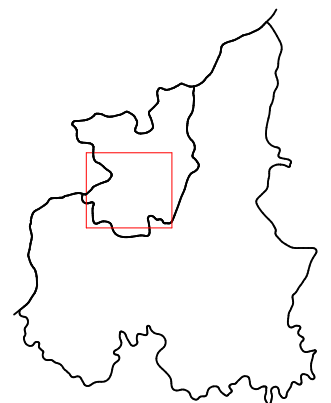


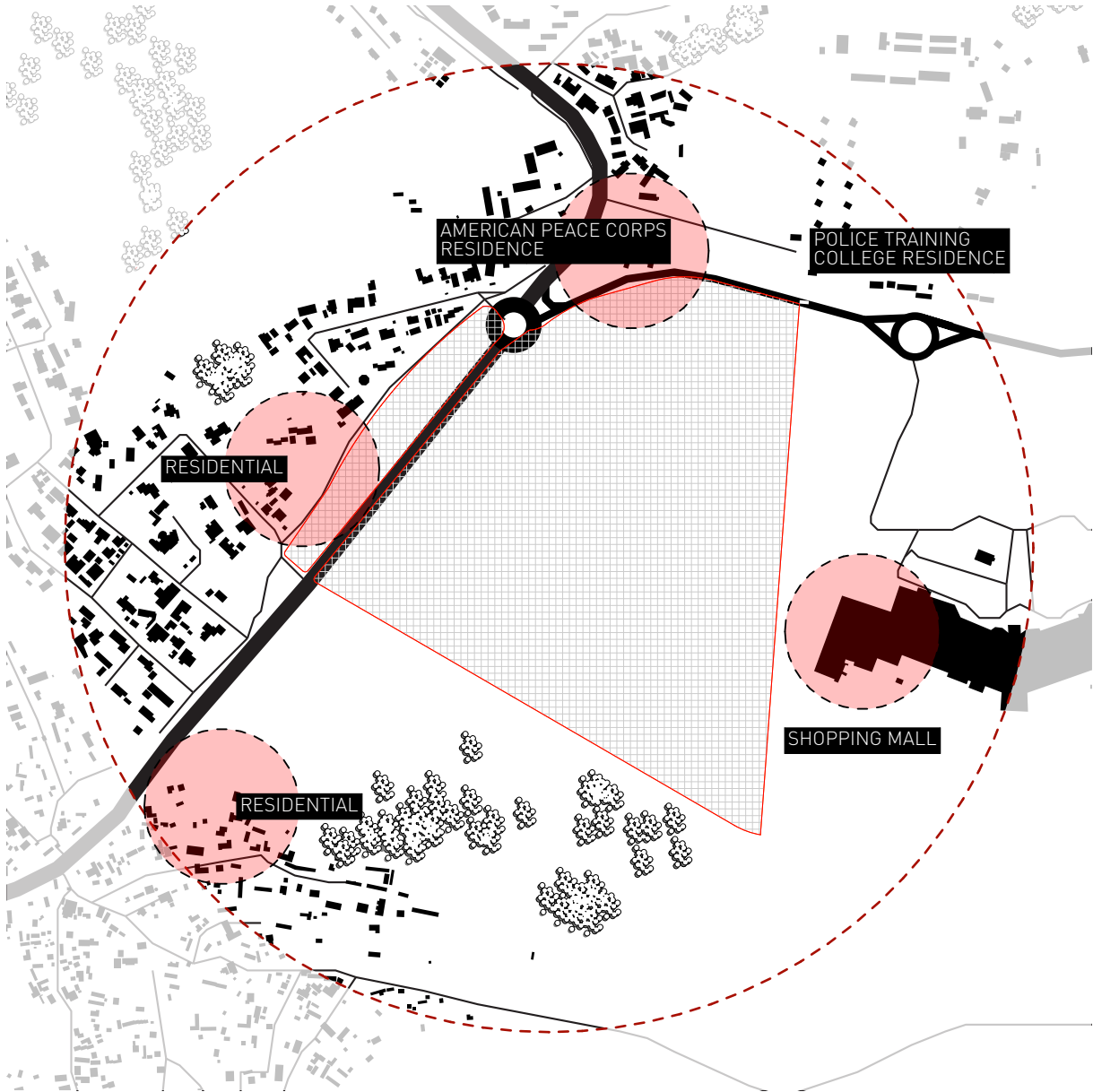


## SITE



The site's unique position in the city; makes the ecological village proposal viable, RaceCourse is a stones throw away from the South Africa border, by way of Mohokare River. RaceCourse is at the foot of the hills which gradles and protects it from the harsh south winter winds. Two main arterial boulevards off Pope John Paul Rd provide ingress and egress into the greater development, the integration of the public facilities into the precinct design is without doubt crucial as its connection to factories at Ha Thetsane to the south and the outlying suburbs, makes it the new centrality. The city does not have a definitive centre, it is in a constant state of flux.



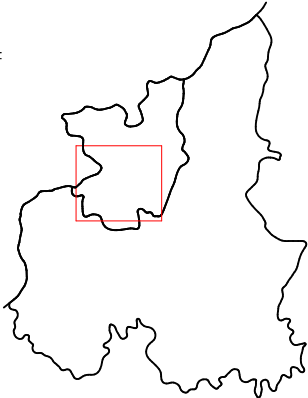


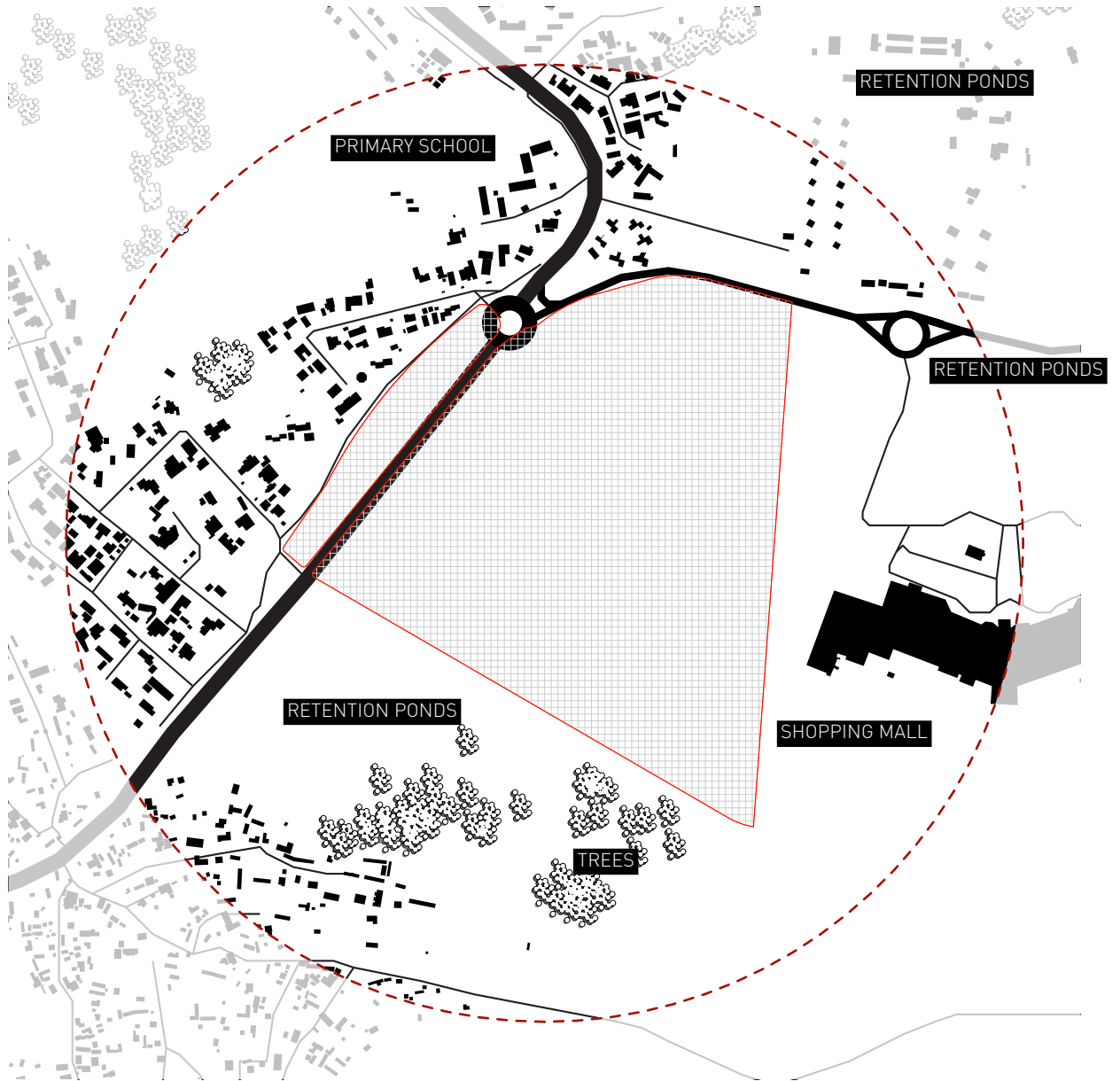
# NEIGHBOURING BUILDINGS



## 02 - Neighbouring buildings

Distances:	500m from approximate centre of the site
Heights:	1F - 3000   2F - 6000   3F - 9000
Uses:	Residential   Commercial
Vernacular:	Clay Brick   Concrete Block   Corrugated Metal Roof
Site lines:	
Rights to light:	Buildings enjoy
Legal restrictions:	7m setback from the main street
Noise levels:	Relatively quite neighbourhood



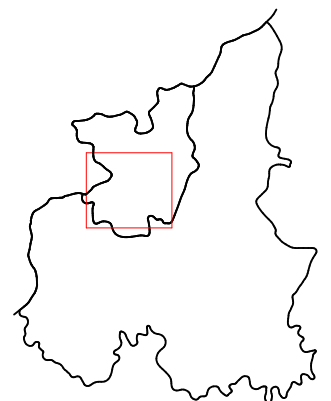


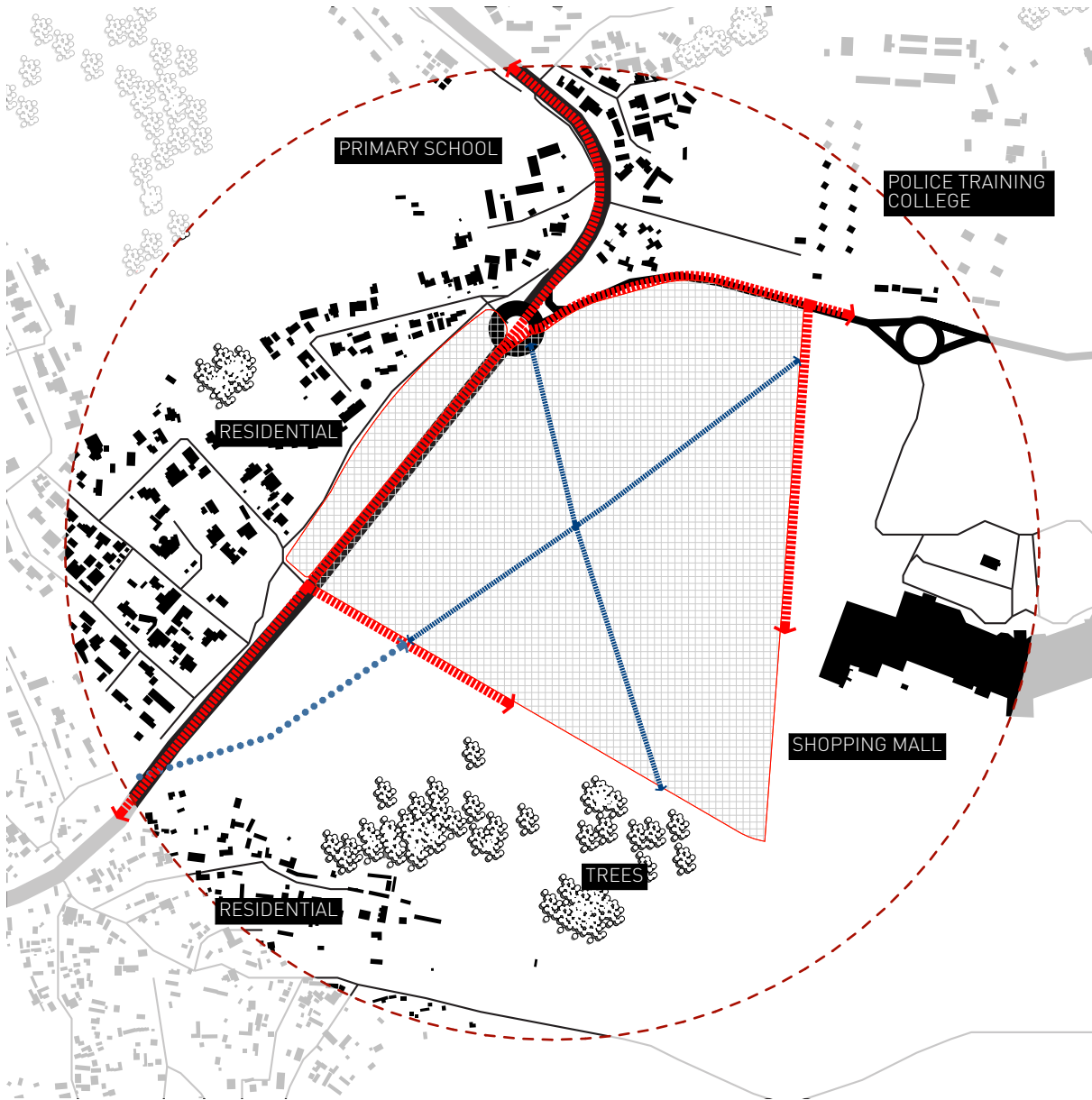
## LEGAL RESTRICTIONS



### 03 Legal Restrictions

Conservation areas:	No
Covenants and easements:	No
Rights of way:	No
SSSI ( Site of Special Scientific Interest):	No
Listings (Grade II, II*, I):	Pope's Monument
TPO's (Tree preservation orders):	No
Previous planning permissions and applications:	No



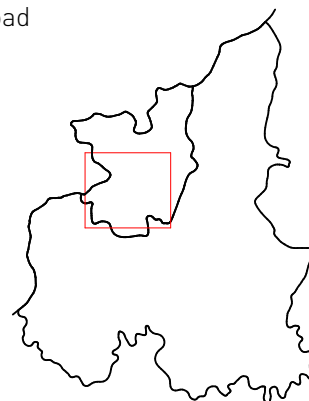


## ACCESS

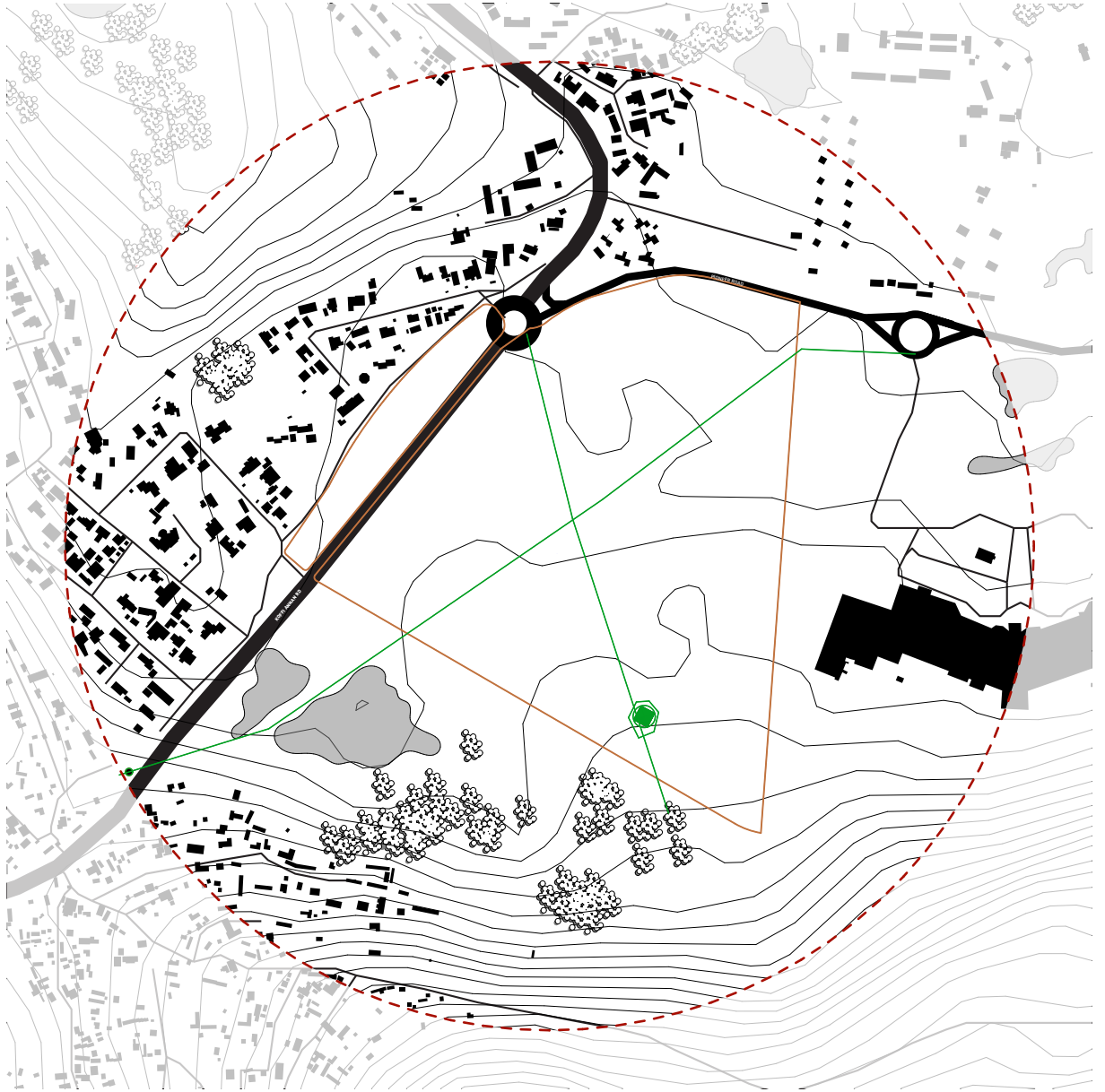


### 04 - Access

Public routes:	Yes   Koffi Annan Road
Private routes:	Yes   Koffi Annan Road   Pioneer Road
Vehicle access:	Yes   Koffi Annan Road
Pedestrian access:	Yes
Existing circulation routes within:	Existing Pedestrian footpath

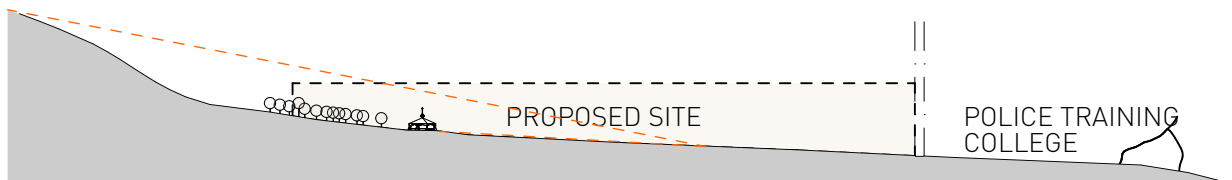






# TOPOGRAPHY

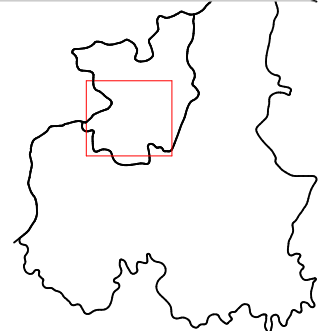
PIONEER ROAD

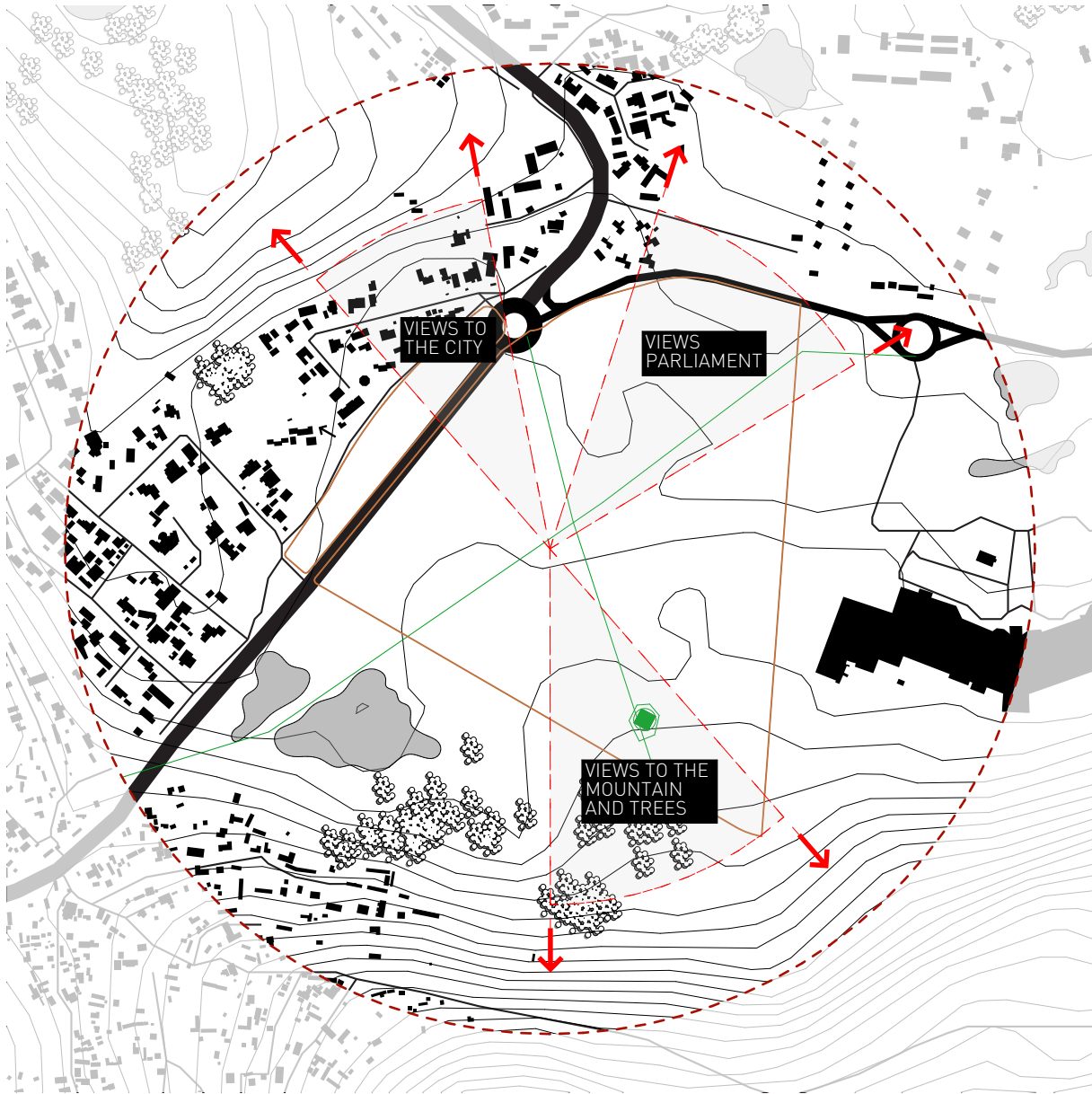


## SITE SECTION

05 - Topography

- Levels
- Gradients
- Key features/restrictions
- Exposure





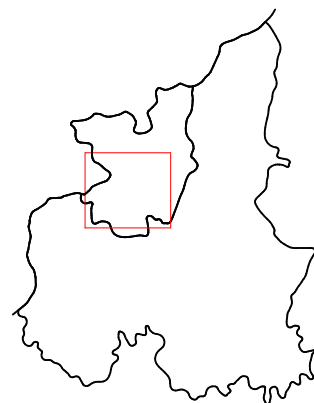
# VIEWS

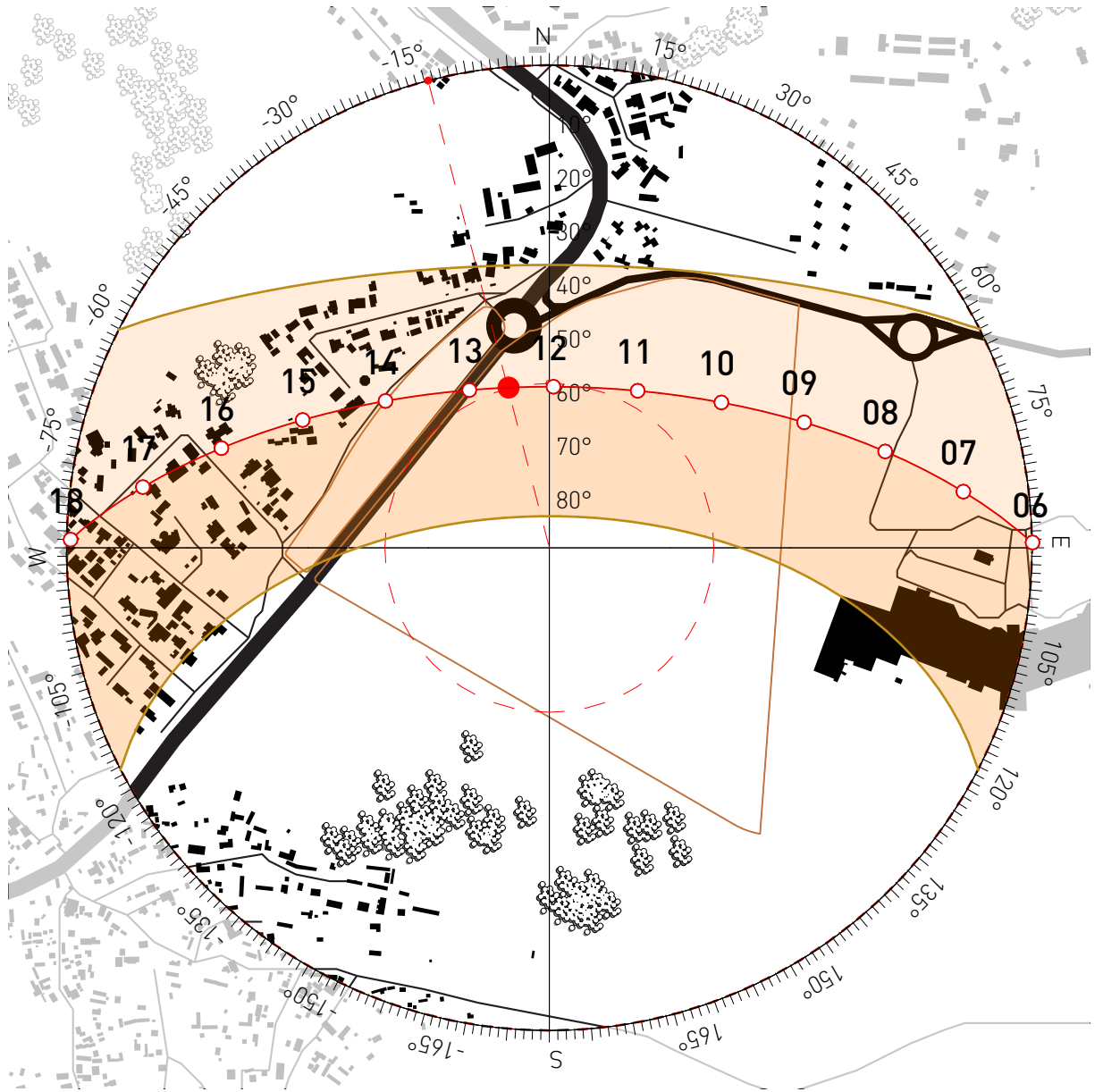


06 - Views

Private views out:  
Public views in:

There are no view restrictions  
The site is exposed on all sides





# SUN PATH



07 - Sun paths

Sun paths  
Solar gains  
Shading

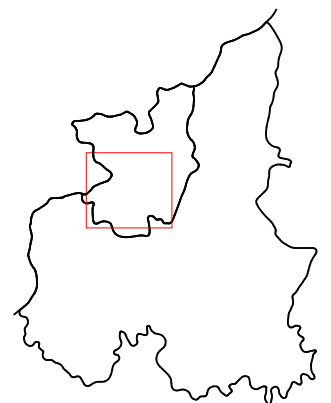
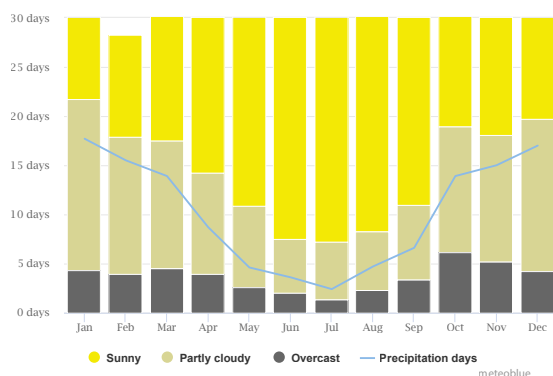
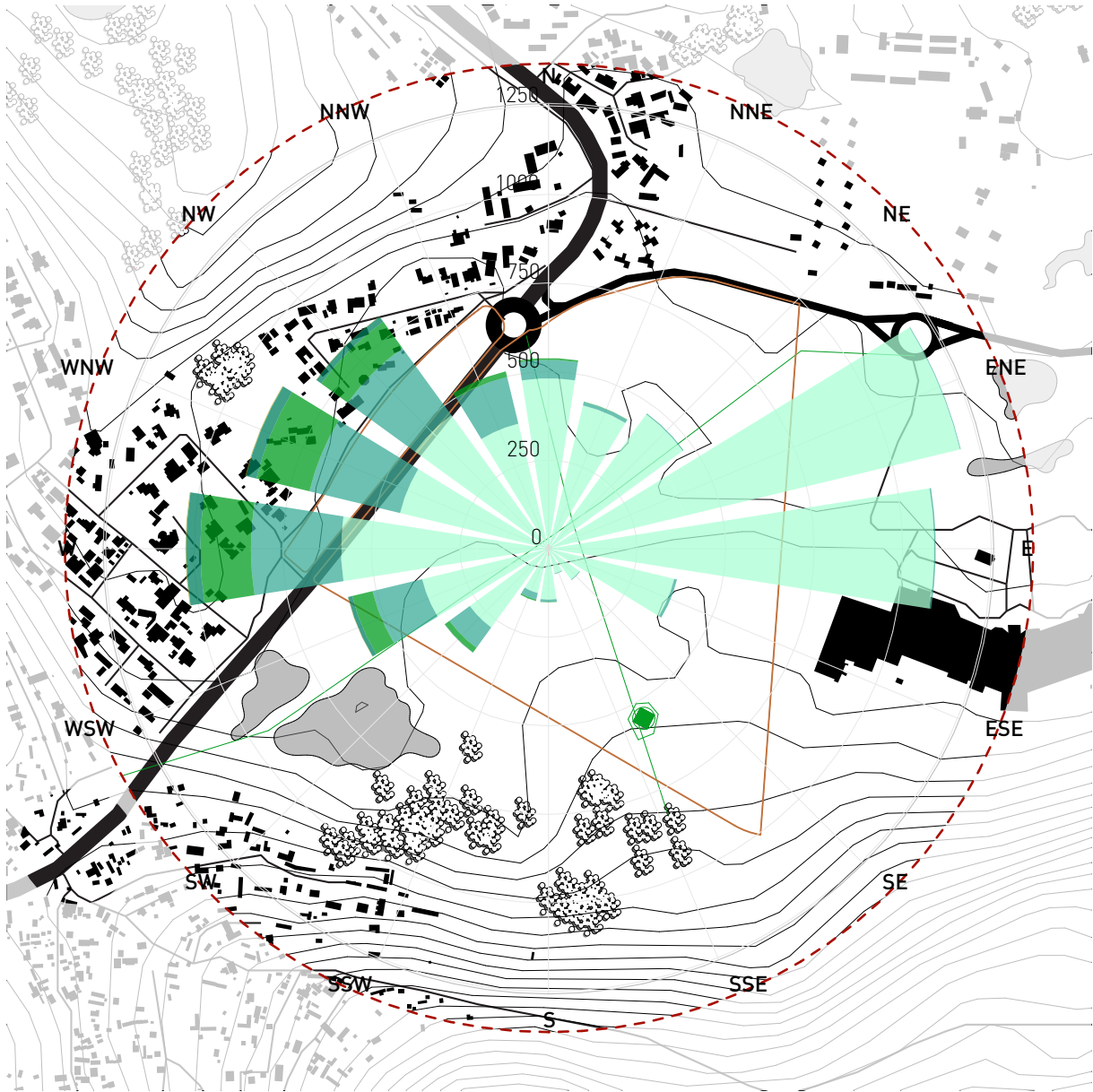
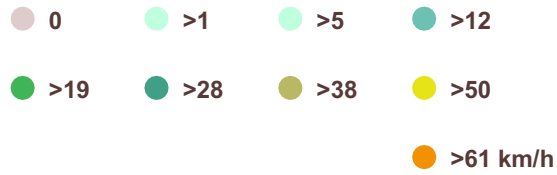


Figure 10.1



# WIND PATTERNS



08 - Wind patterns

Prevailing direction: West South Westerly  
 Shelter: No  
 Exposure: The is exposed to the elements

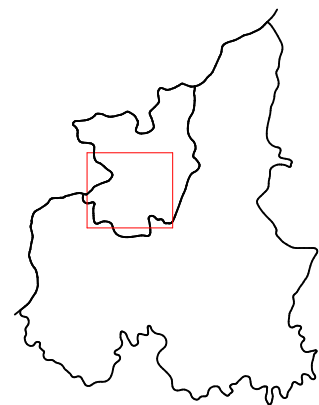
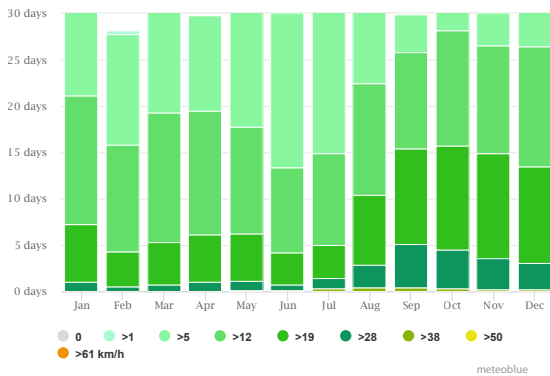
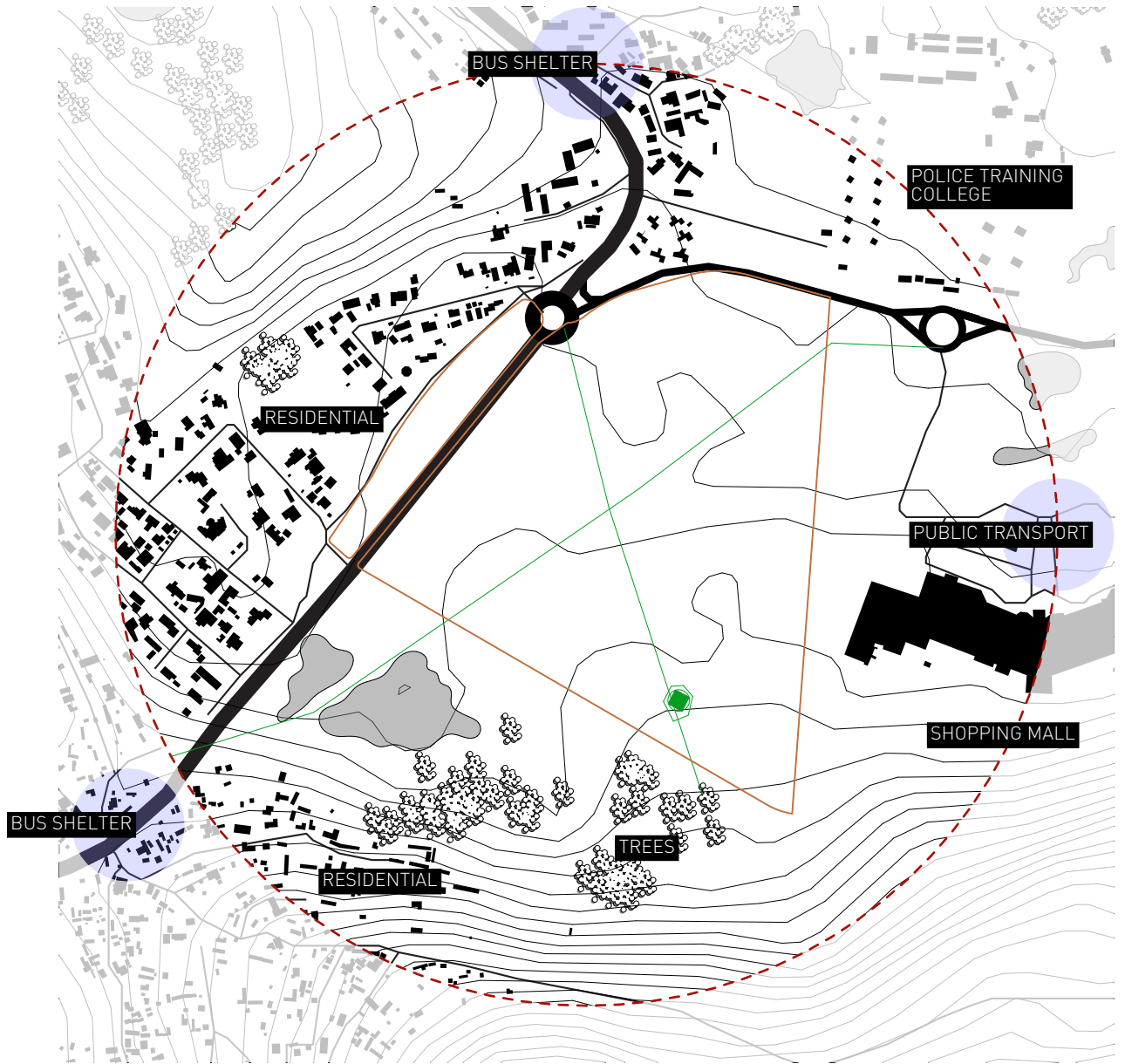


Figure 10.2



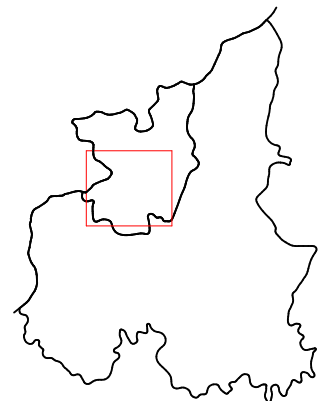
## PUBLIC TRANSPORT LINKS

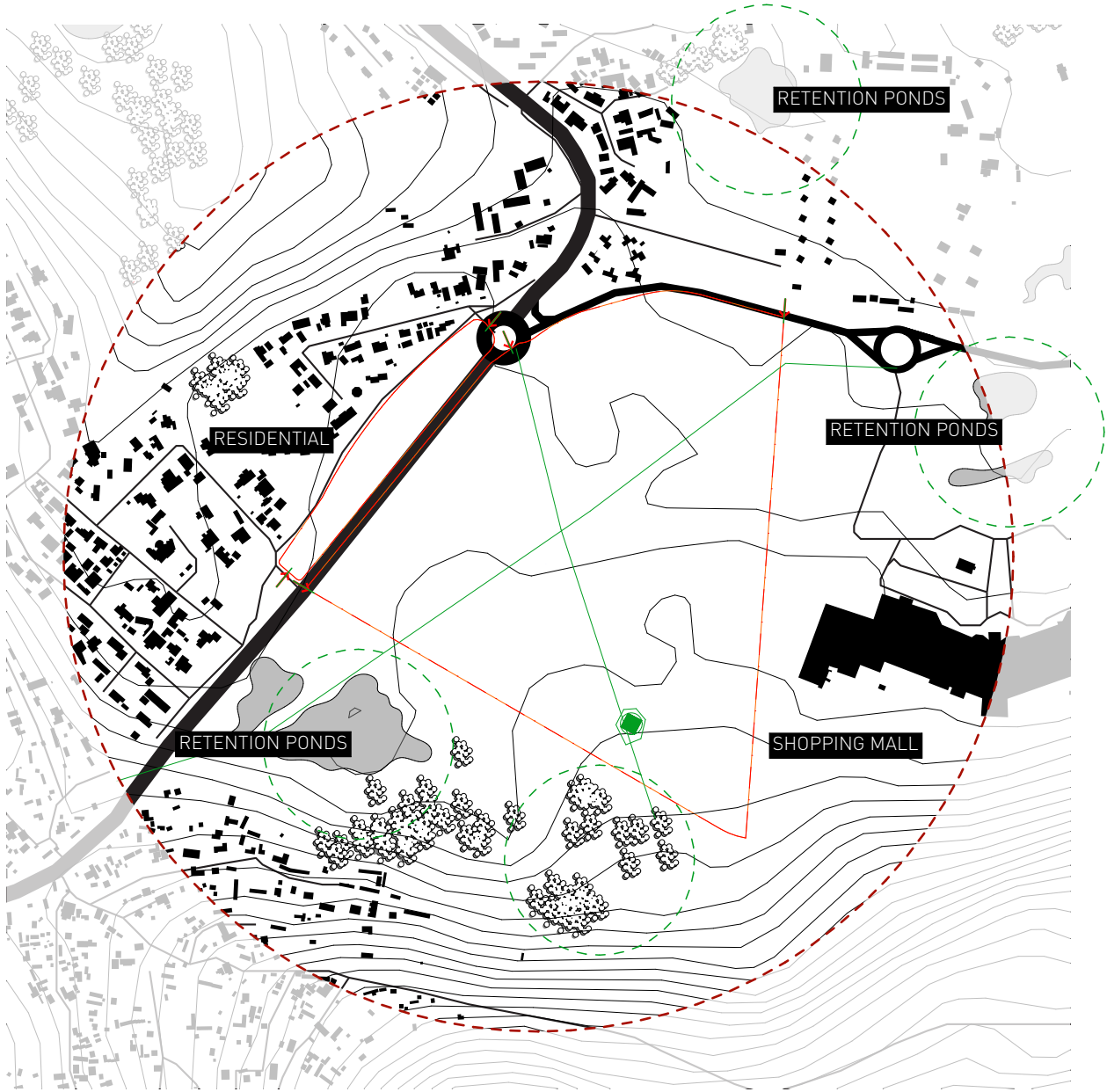


### 09 - Public Transport Links

Mini Buses:  
Taxi's:

Pioneer Road Bus shelter | Koffi Annan bus shelter  
Maseru Mall Taxi stop (4+1)



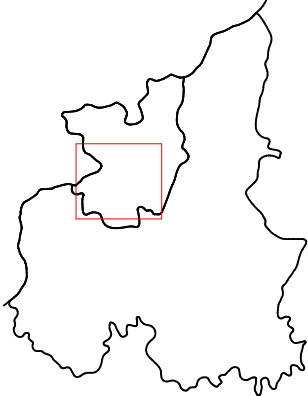


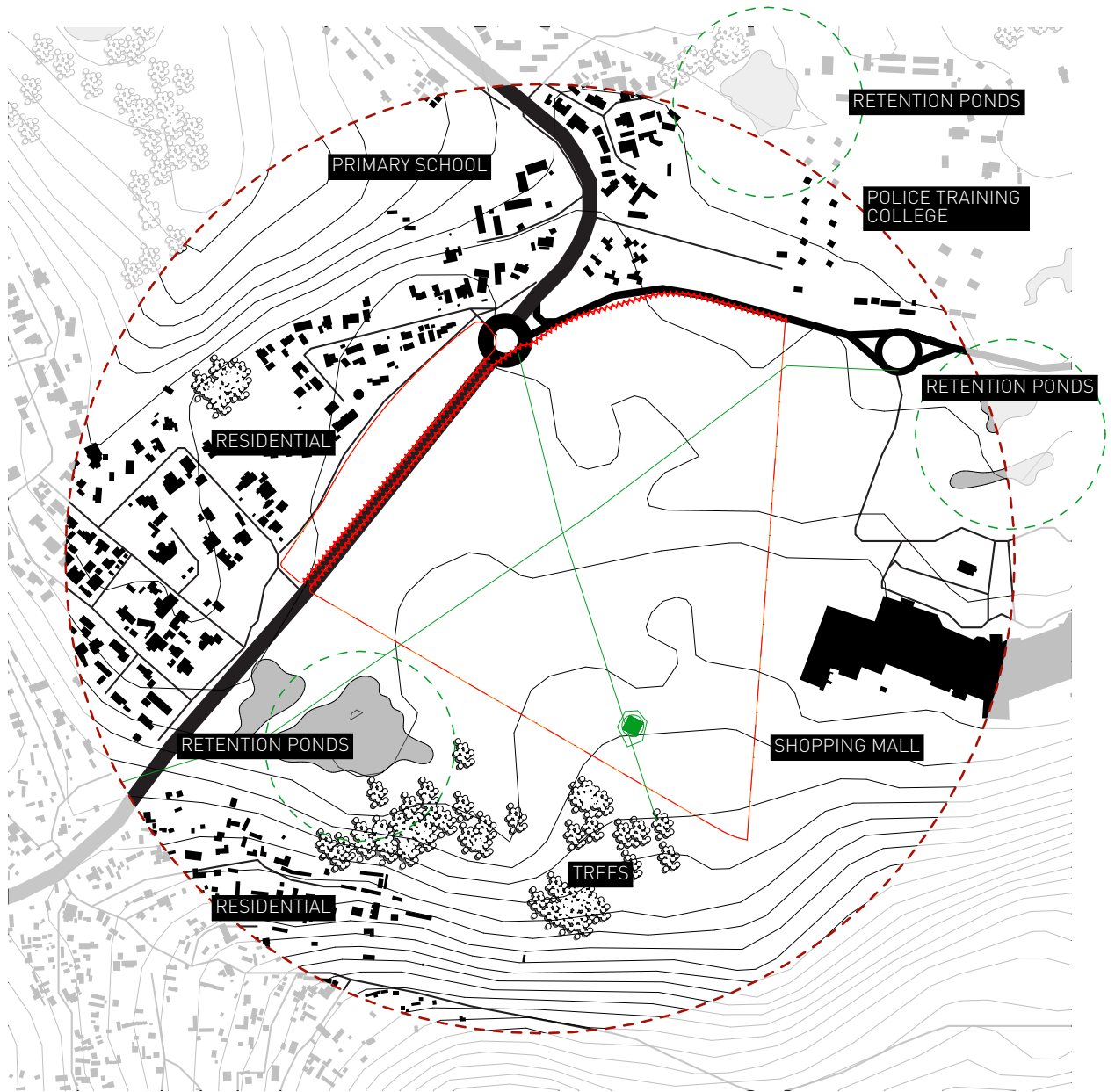
# ECOLOGY



011 - Ecology

- Protected species:
- Protected zones:
- Impacts:



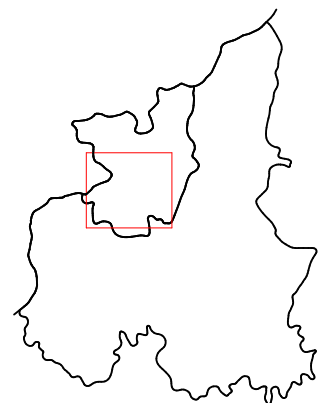


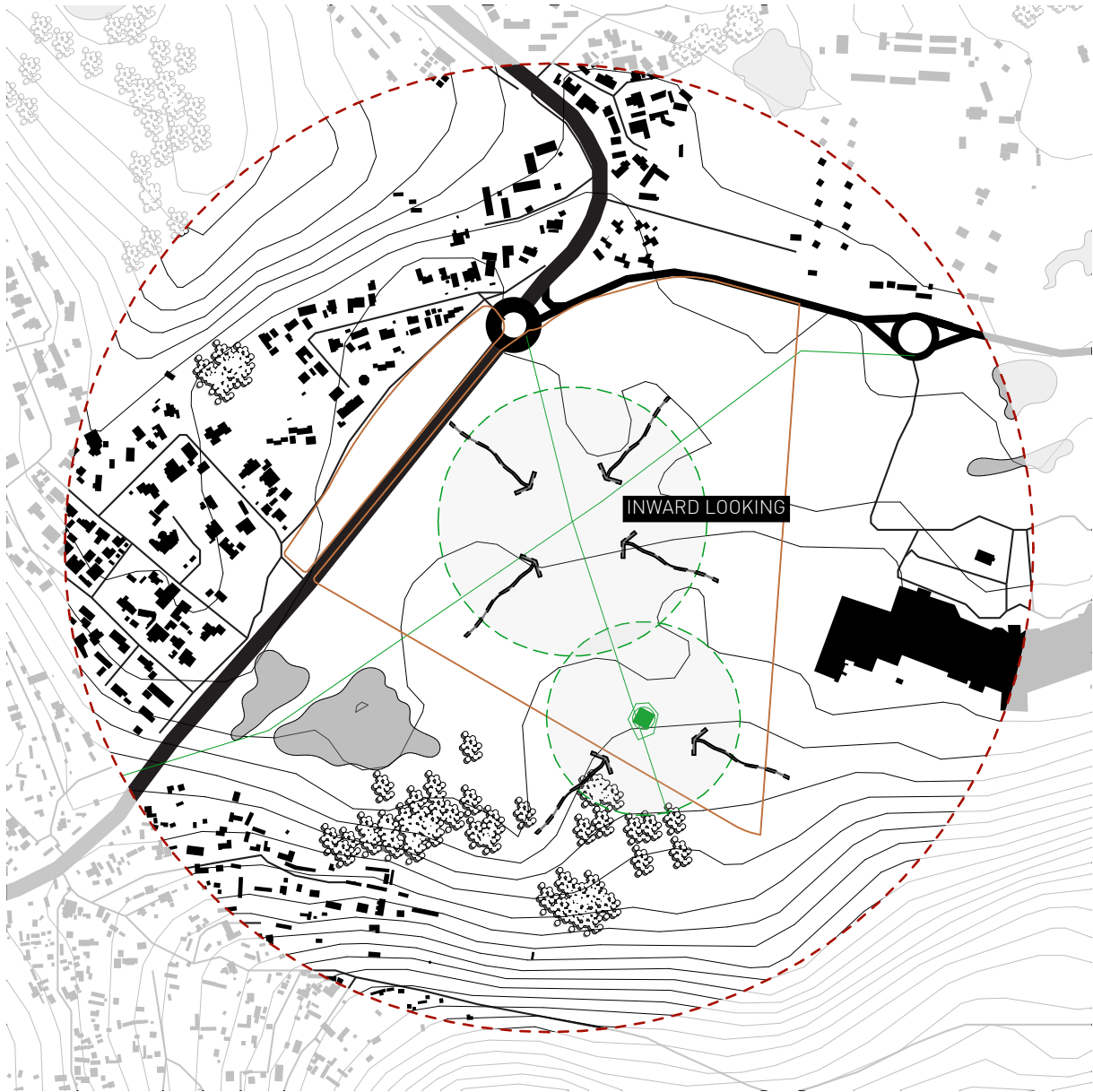
# OBSTRUCTIONS



012 - Site restrictions

Visibility:	No
Light:	No
Views:	No Restrictions
Neighbours:	Commercial Centre   Residential
Pollution:	Air Pollution relatively low
Flooding:	No Risk of Flooding
Land slides:	No Risk of Land slides



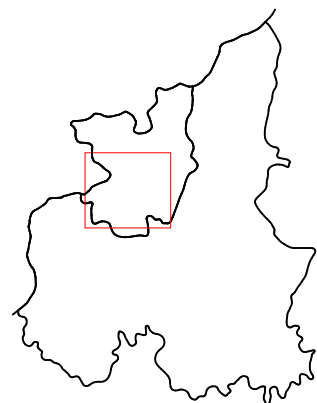


# FEATURES

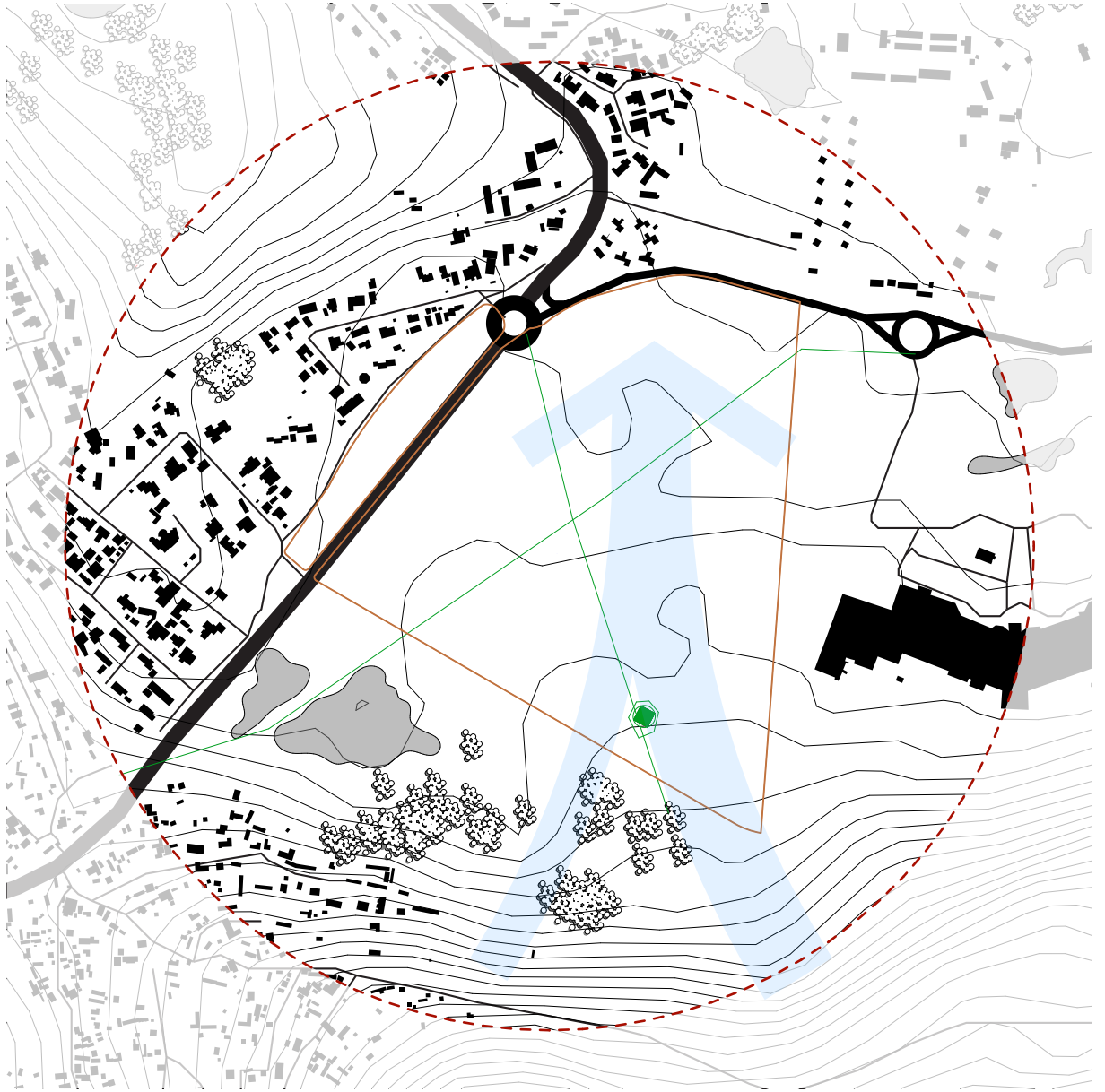


013 - Features

Areas to expose/use:	Existing footpath
Areas to improve:	Pope's Monument axis
Areas to hide:	None







# HAZARDS



014 - Hazards

(Electricity lines, Drainage, Telephone lines, Sub-stations):

Derelict Buildings:

Unfinished building works:

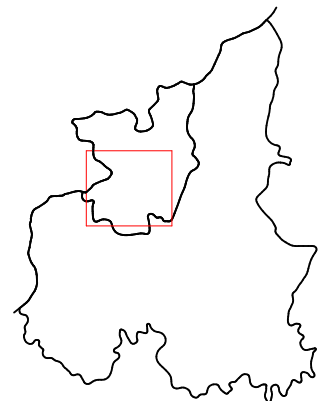
Seasonal stormwater runoff:

No

No

No

Yes



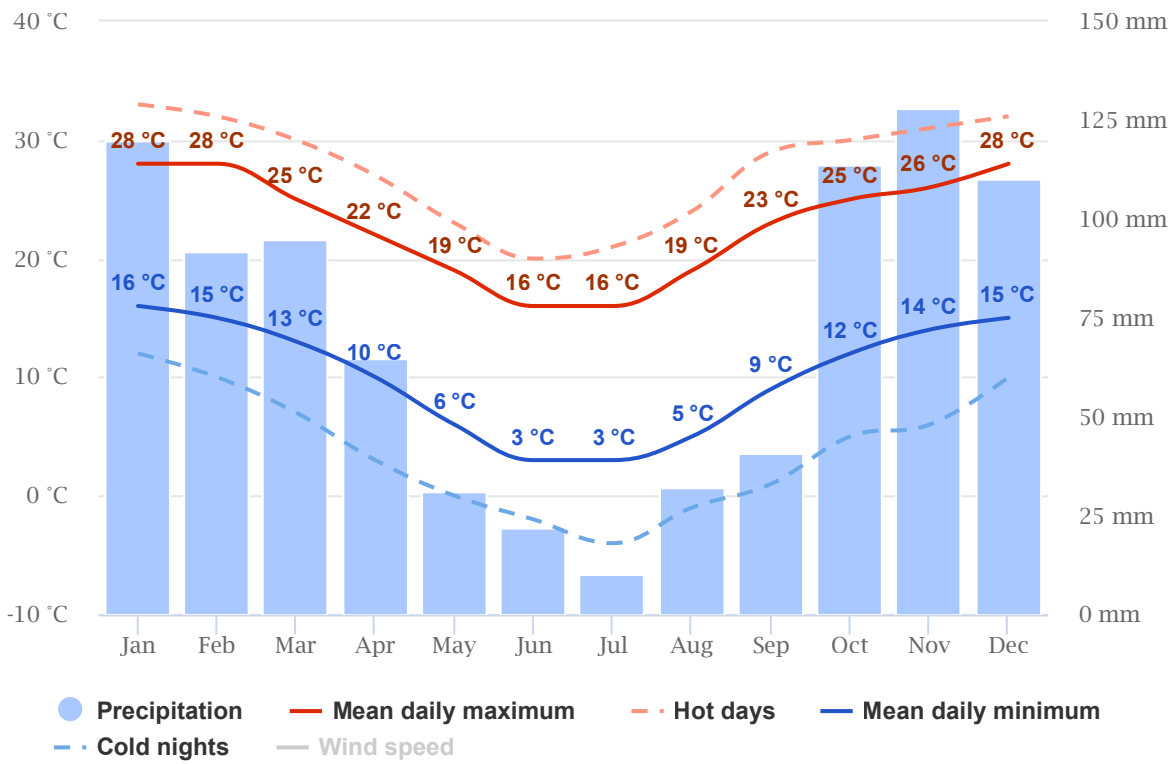


Figure 10.3

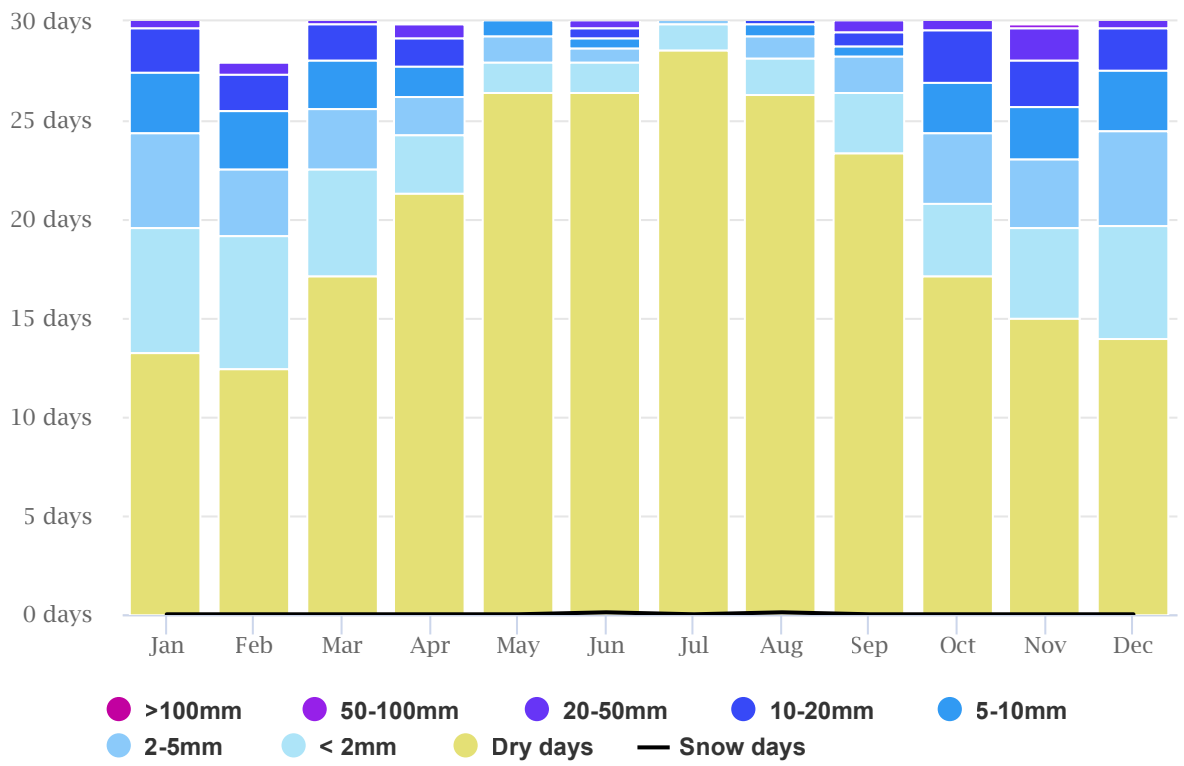


Figure 10.4

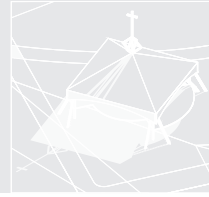


# 10.2

STRATEGY

1 | PRESERVE |

Preserve natural ecologies  
agrarian landscape and cultural  
heritage sites



2 | MIX |

Create mixed-use, mixed-age groups  
and mixed-income neighbourhoods



3 | WALK |

Design walkable streets and human  
scale neighbourhoods



4 | BIKE |

Prioritize bicycle networks and auto-  
free streets



5 | CONNECT |

Increase density of road network,  
and limit block size.



6 | RIDE |

Develop high quality transit and  
affordable Bus Rapid Transit (BRT)

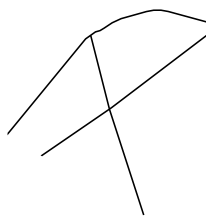


7 | FOCUS |

Match density and mix to transit capacity



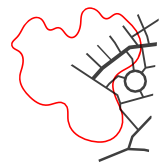
# STRATEGY & VISION



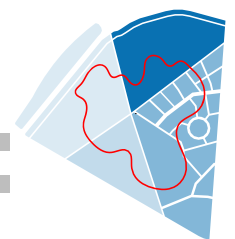
CIRCULATION



INTERNAL DIVISIONS



PUBLIC LOOP

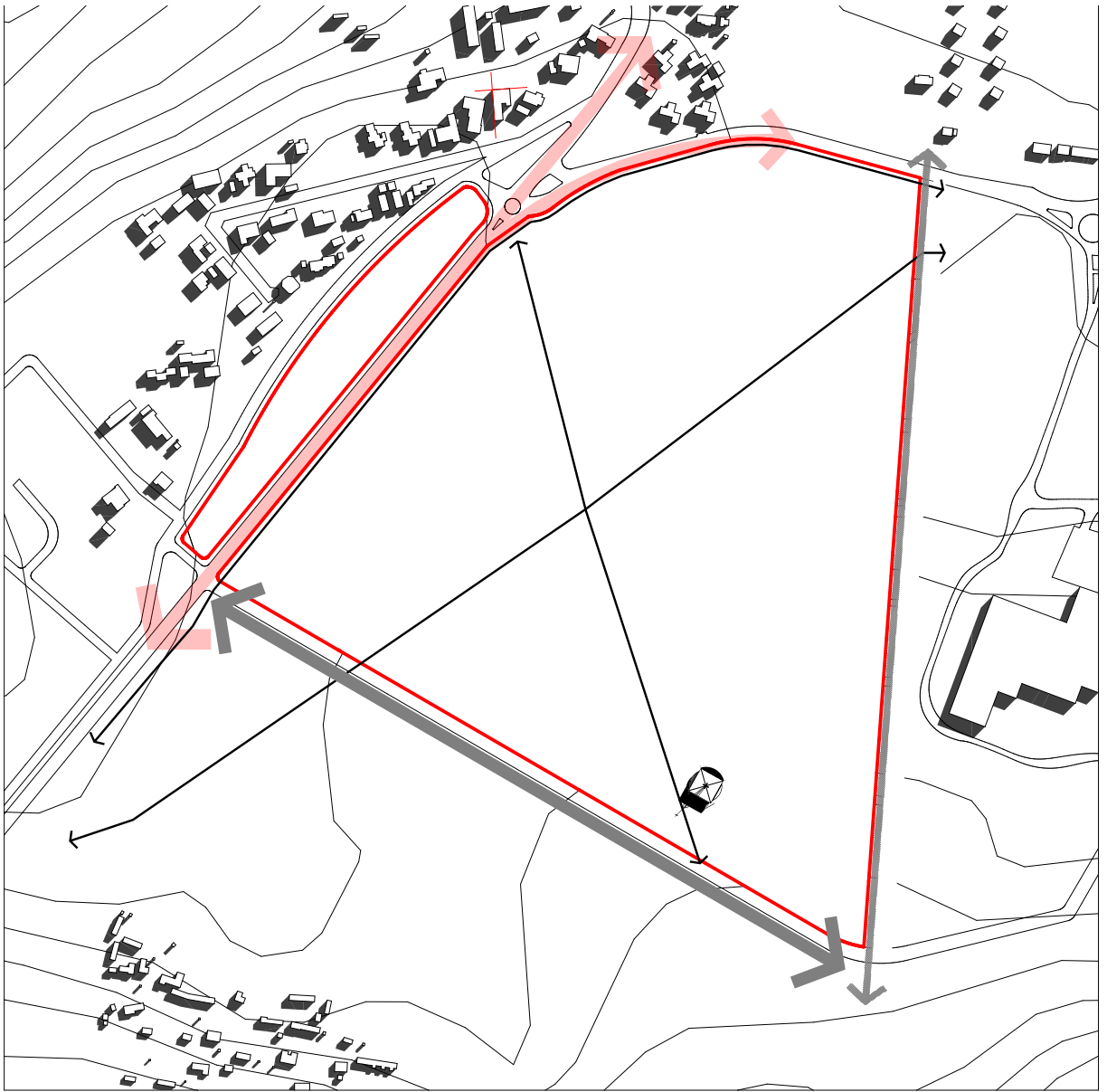


RACE COURSE  
ECOLOGICAL VILLAGE

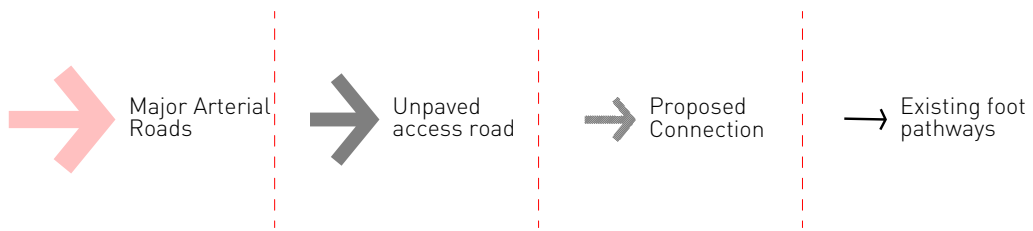


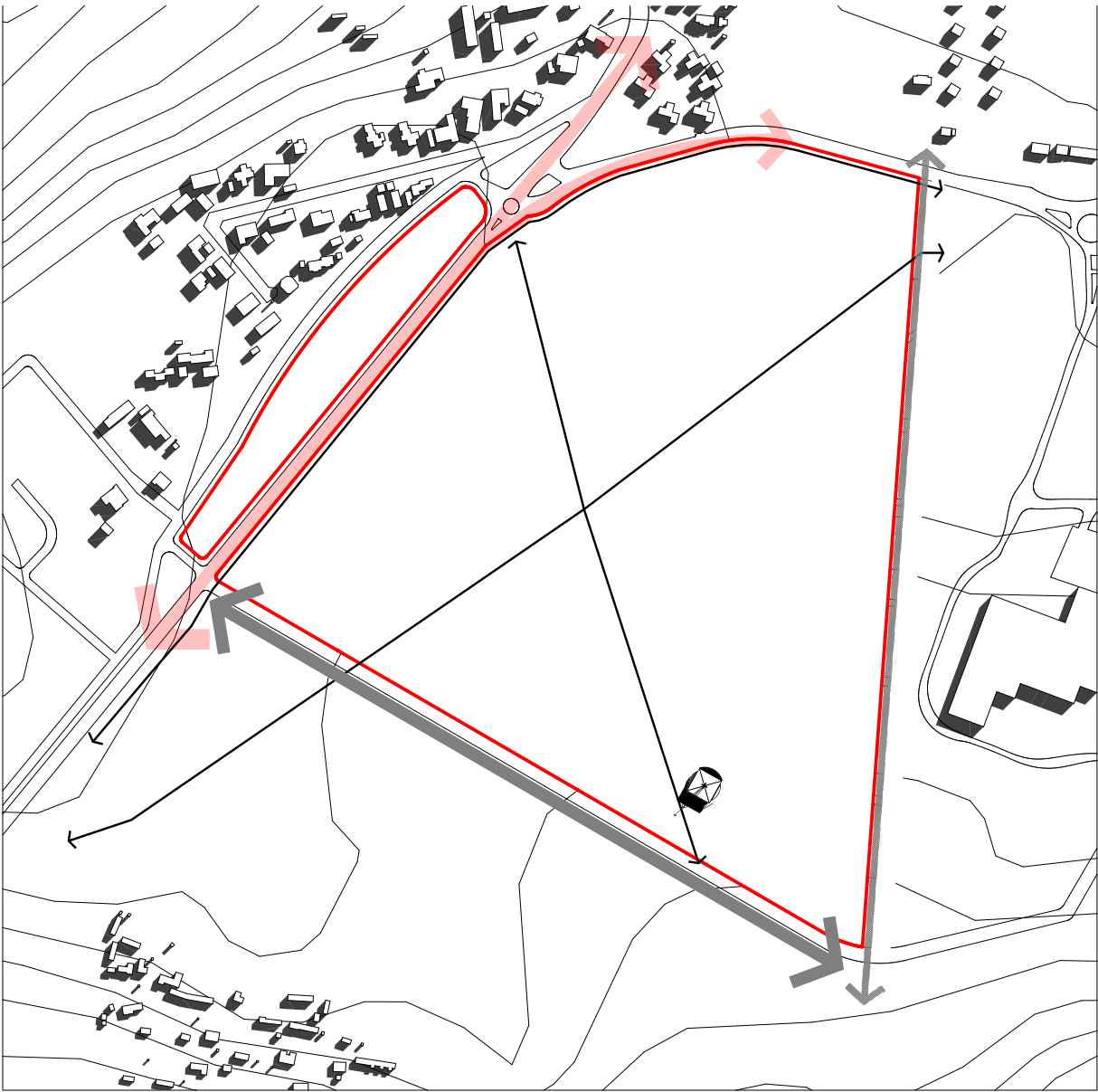
BORDERS | THRESHOLD



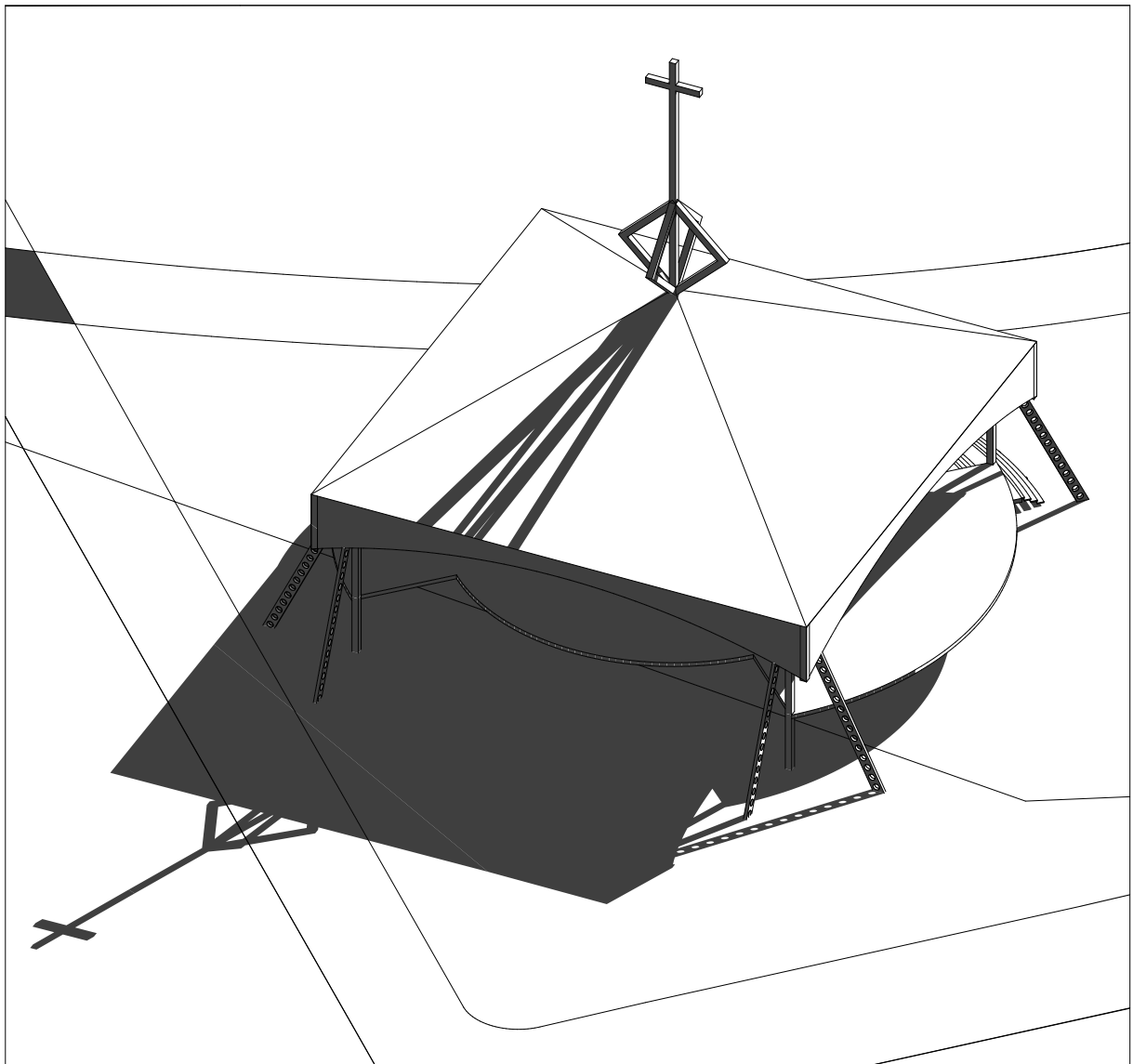


# CIRCULATION





MONUMENT | PRESERVE

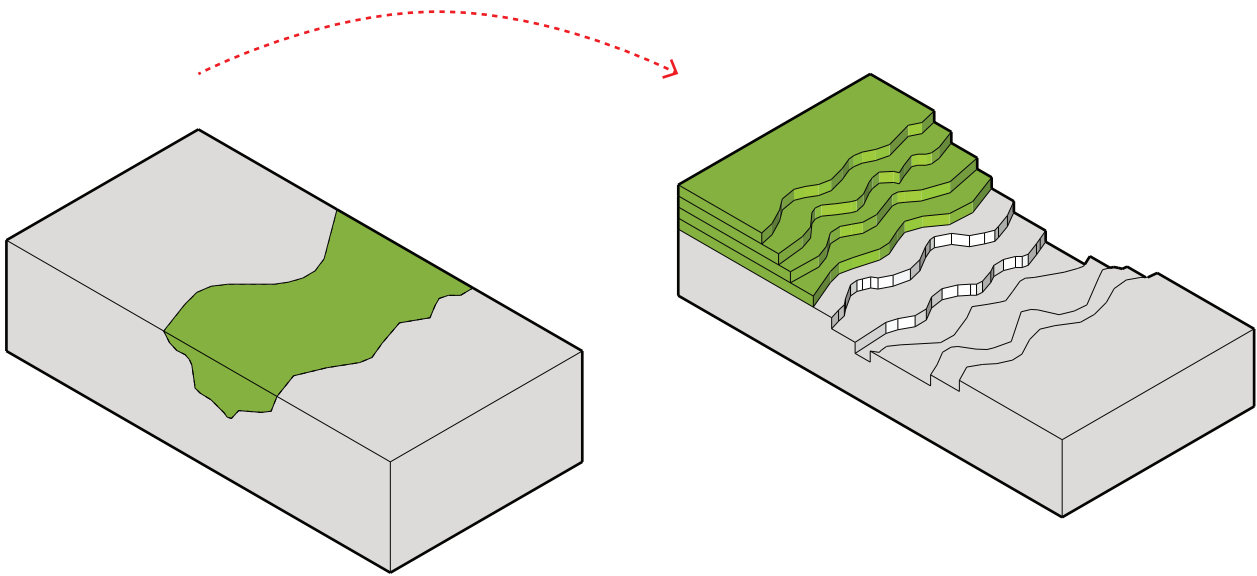


## POPE'S MONUMENT | PRESERVE

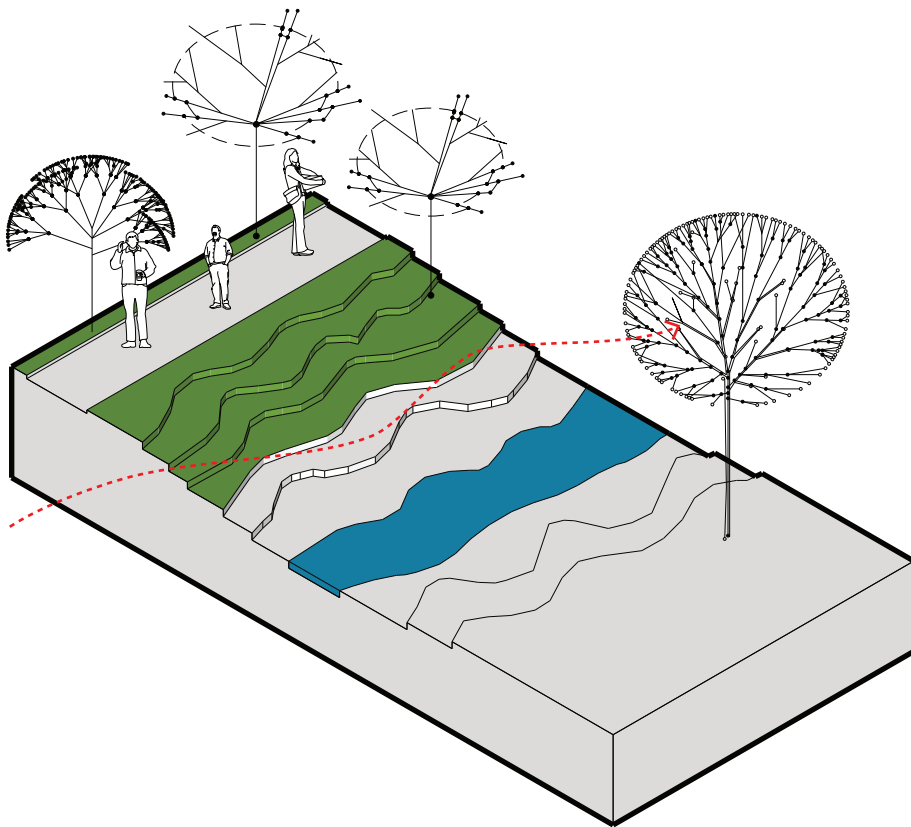
Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

[P]reservation is no longer a retroactive activity but becomes a prospective activity.

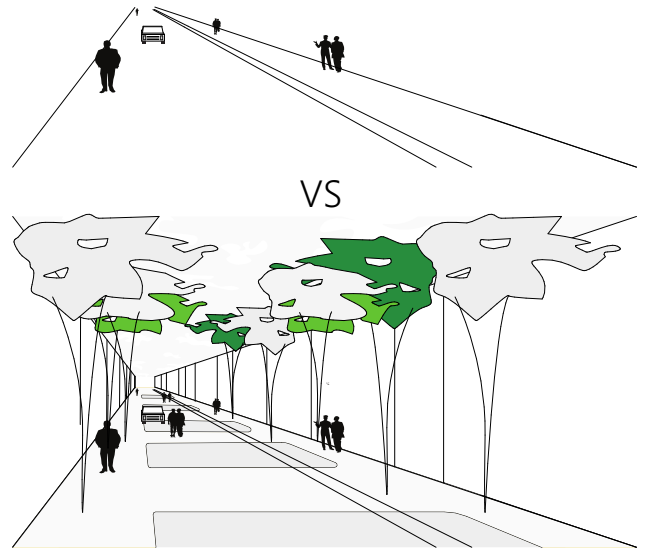
REM KOOLHAAS, 2004



BALANCED USE OF LOCAL SOIL FOR THE NEW TOPOGRAPHY



RE-NATURALIZATION



### MAKE STREETS INTO PLACES



**SHORT**  
Plant trees and other vegetation to manage storm water, create shade, and cultivate resiliency



**MEDIUM**  
Alter the design and surface of the street to promote storm water management and a mix of transit options



**SHORT**  
Develop and support events held along or on streets, linked with storefront shops, to stimulate commerce and provide more opportunities for neighbours to socialize



**LONG**  
Add a dynamic roof canopy to provide shade and shelter, encouraging an active street life



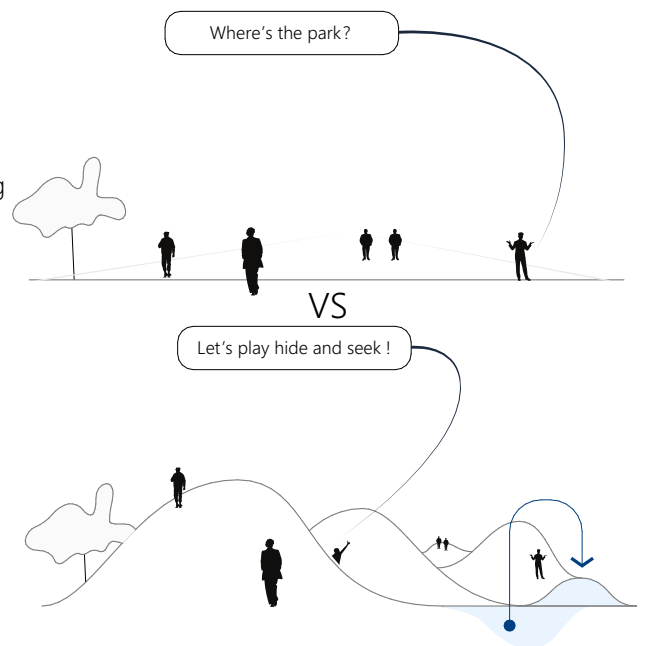
**SHORT**  
Create more diverse landscapes, welcoming areas to gather, and collaborative programming to attract more people and wildlife



**MEDIUM**  
Make edges beautiful and bold with art, furniture, and greenery that continues into the street to highlight parks' presence and extend their inviting reach

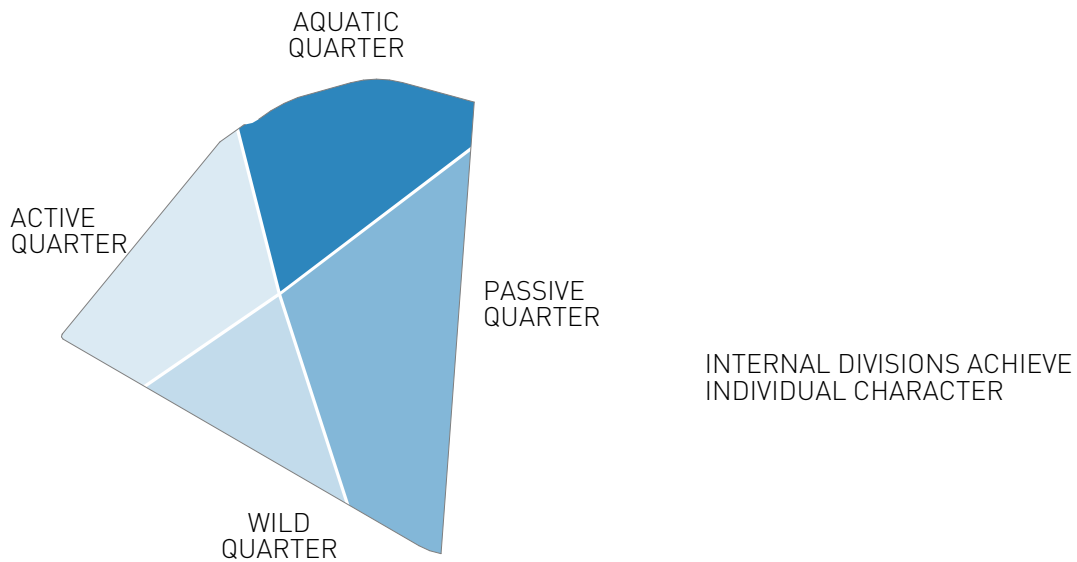
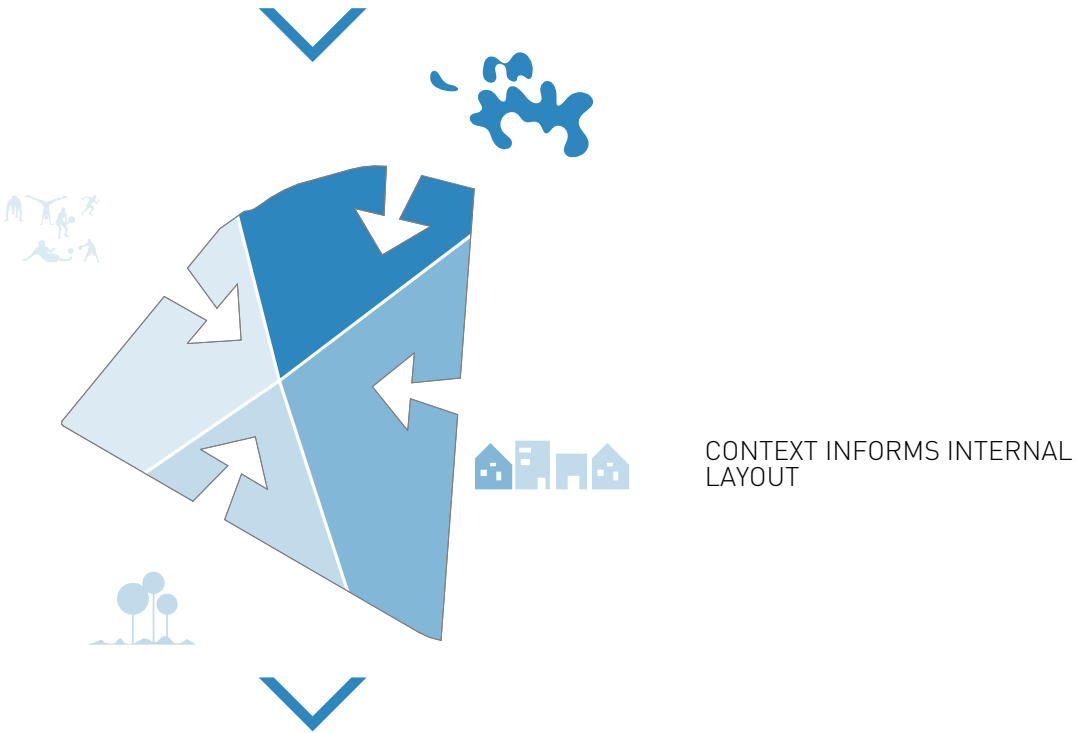
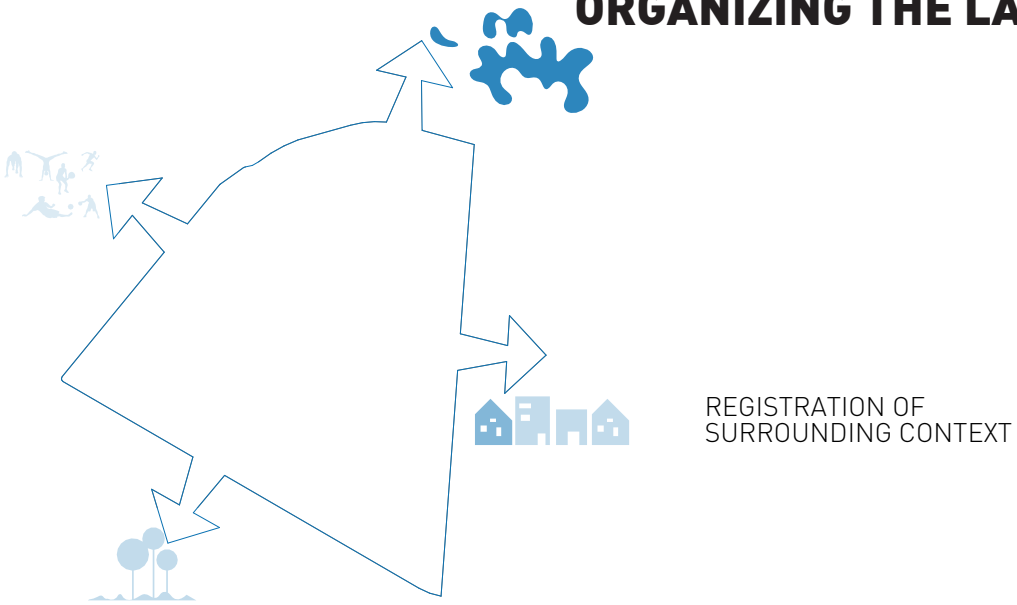


**LONG**  
Cut and fill to add texture and topography that multiplies experiences and manages storm water



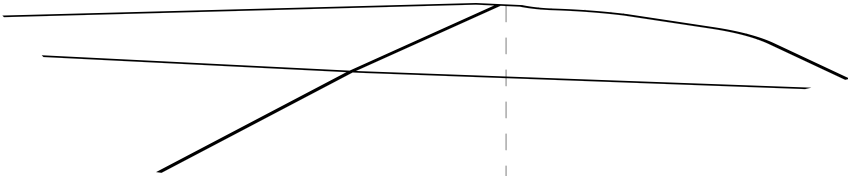
### SHAPE PARKS INTO EXPERIENCES

# ORGANIZING THE LANDSCAPE

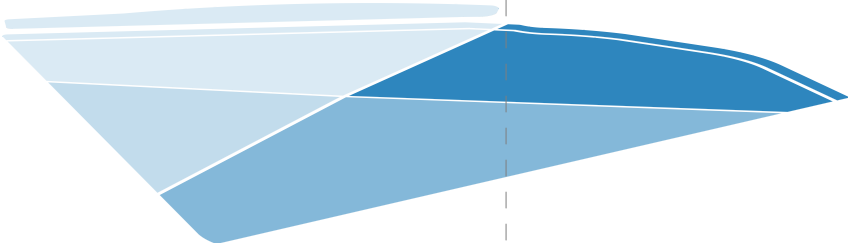


# ESTABLISHING A ORDERING PRINCIPLE

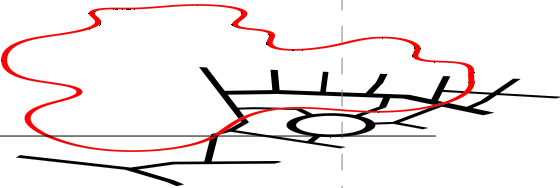
Circulation



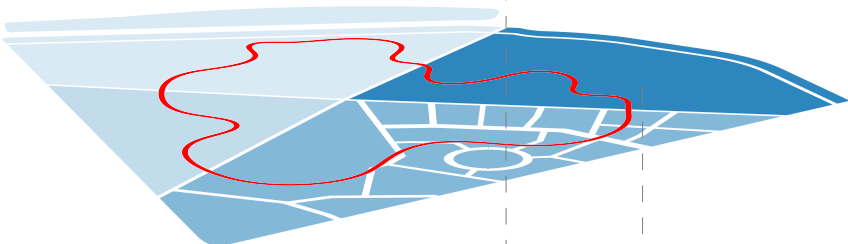
Internal Divisions



Public Loop



Proposed Spatial Ordering System



Ecological Village

Surrounding Context

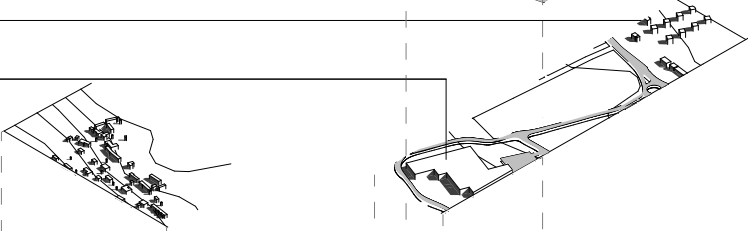
Buildings with a square footprint are oriented 20° of the East West axis.



Police Training College

Maseru Mall

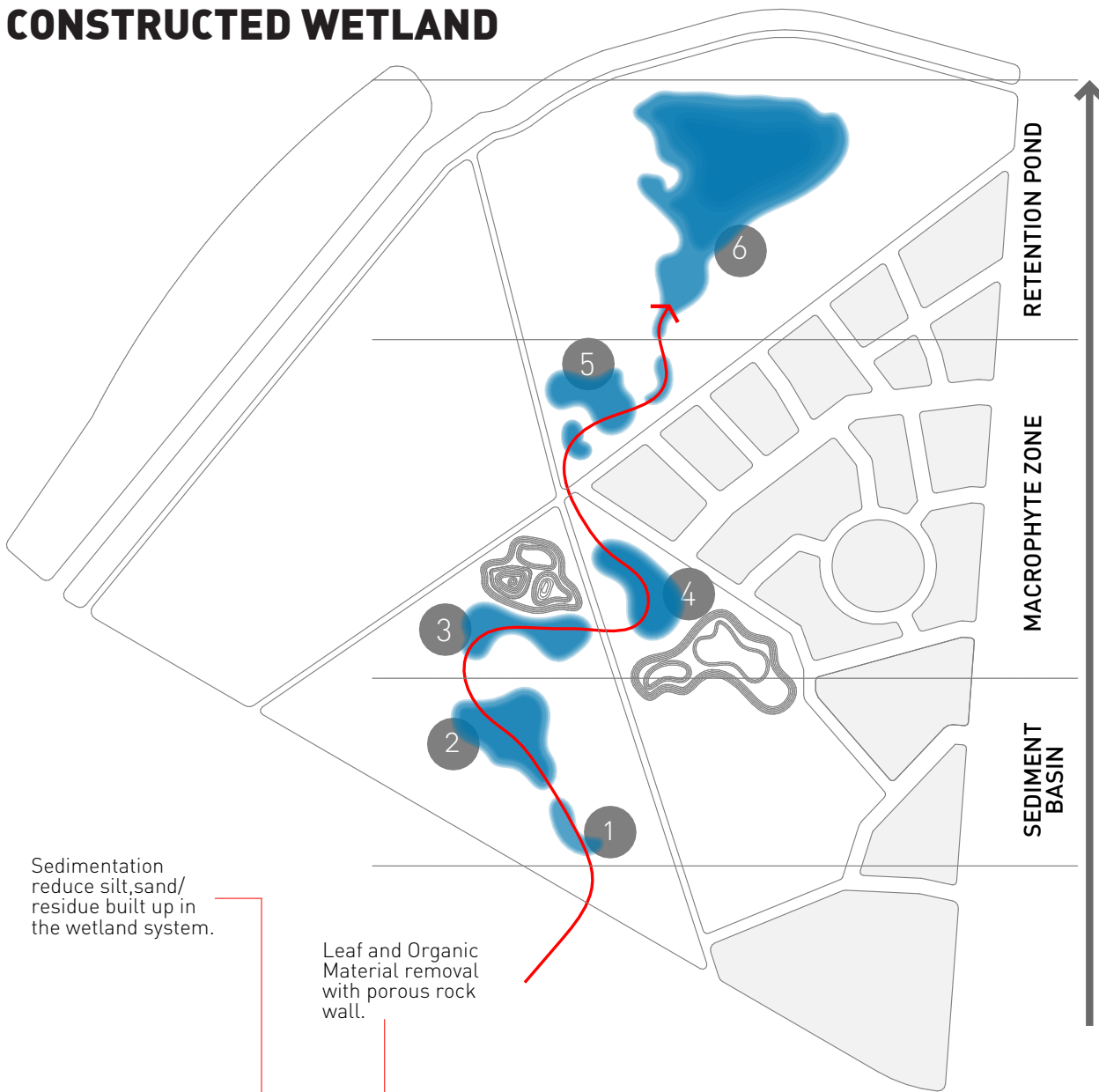
North orientation and narrow footprint access remains a huge problem lack of infrastructure



Base Map

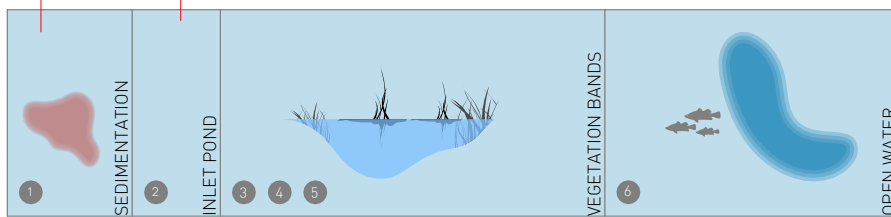


# CONSTRUCTED WETLAND



Sedimentation reduce silt, sand/ residue built up in the wetland system.

Leaf and Organic Material removal with porous rock wall.



Bands of mixed vegetation (floating, submergent, emergent plants) slow and filters water while creating habitat for biofiltration microbes. The macrophyte zone should have at least 80% coverage.

Retention Pond

## SEDIMENT BASIN

Suspended particles in water are settling under the effect of gravity.

## MACROPHYTE ZONE

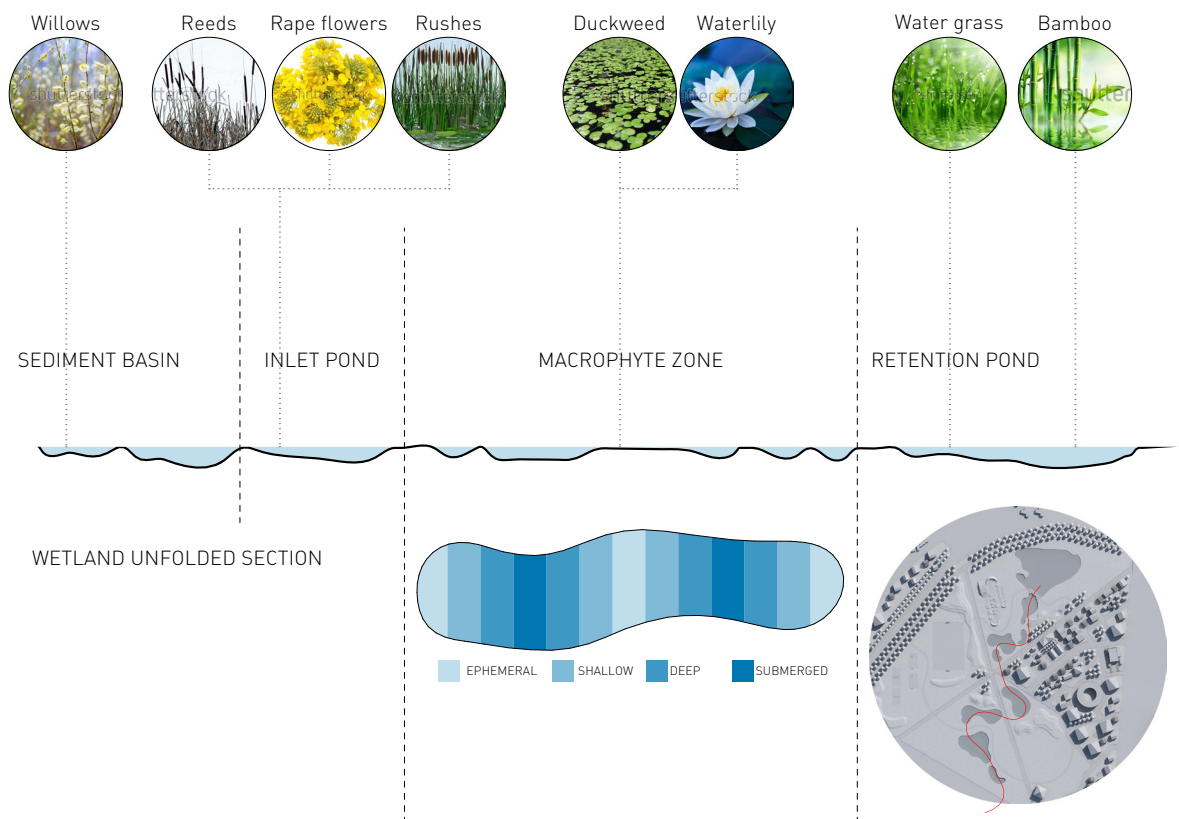
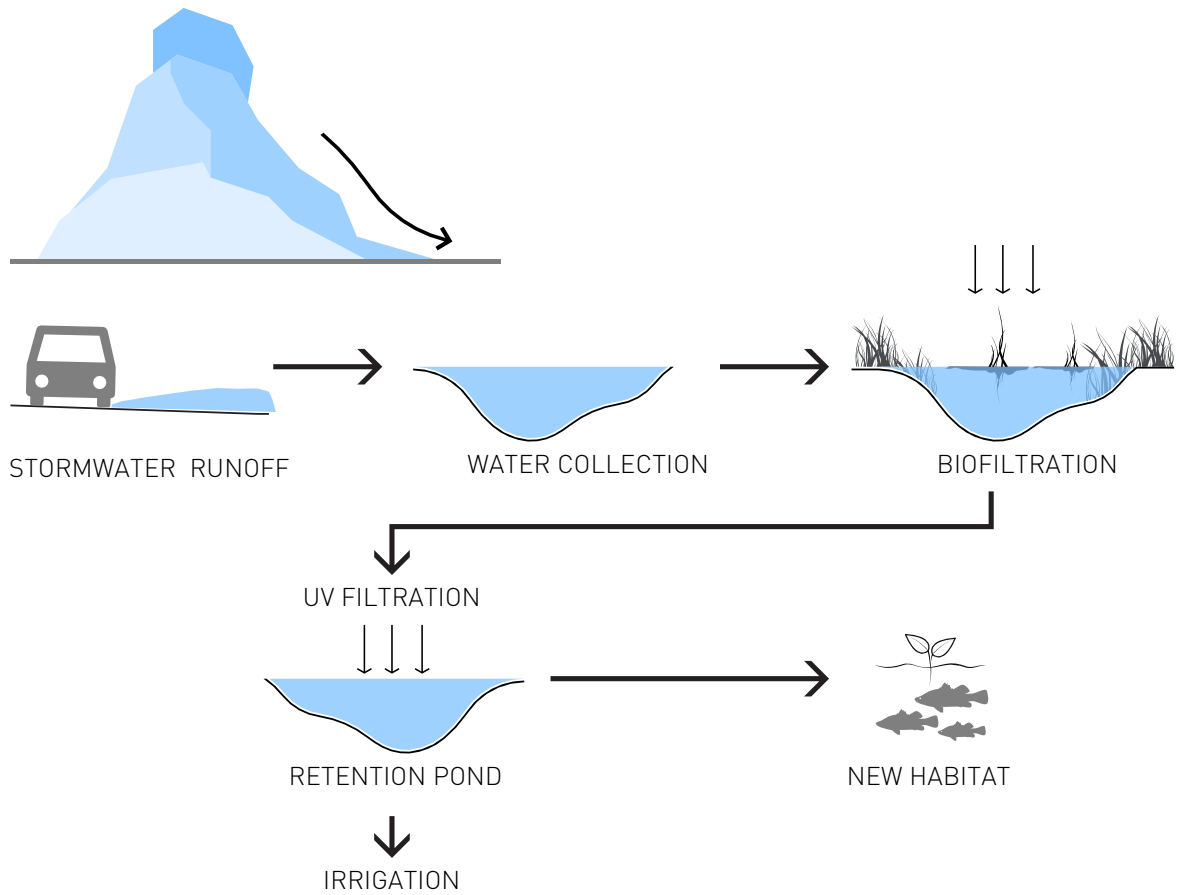
This is the area where most of the water treatment occurs. Dissolved chemicals and excess nutrients are trapped and absorbed by plants and microorganisms. Water is cleaned as it flows through the plants in the S-shaped treatment wetland.

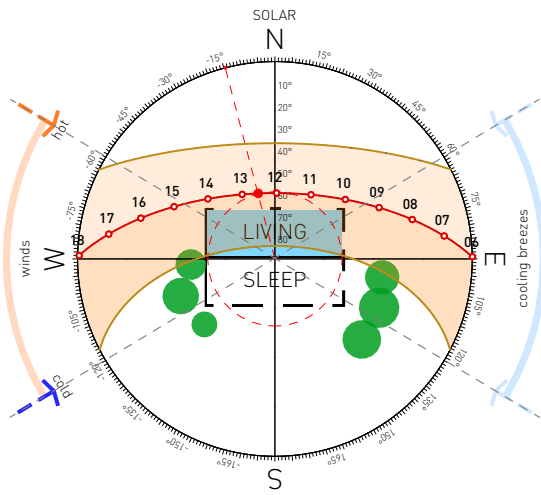
## RETENTION POND

The storage wetland is larger than the treatment wetland because it stores the treated water. A deep-open water pond which allows water to rest before exiting the system; exposure to the sun's UV helps to destroy harmful pathogens.



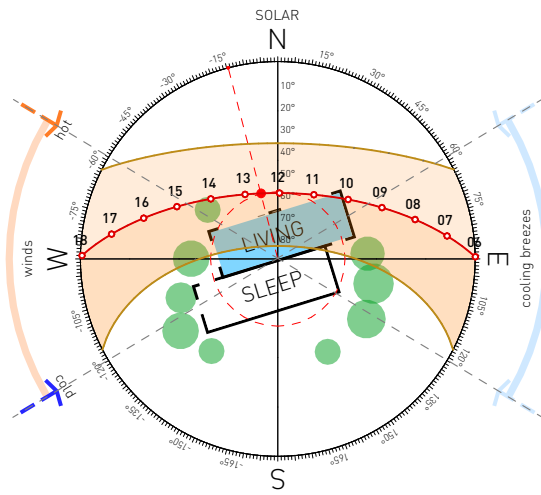
# CONSTRUCTED WETLAND





Summer Sun Winter Sun

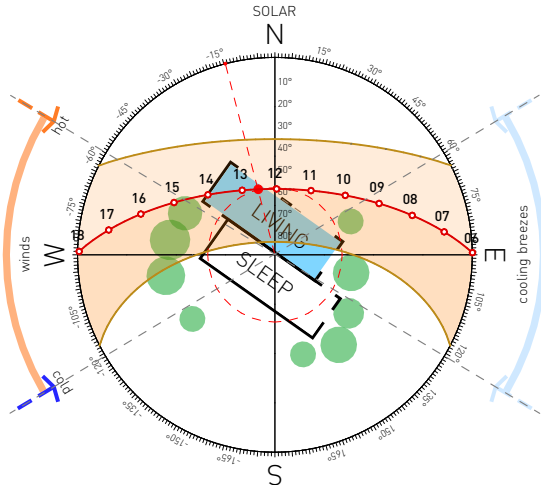
Solar North



Summer Sun Winter Sun

Up to 15° West of Solar North

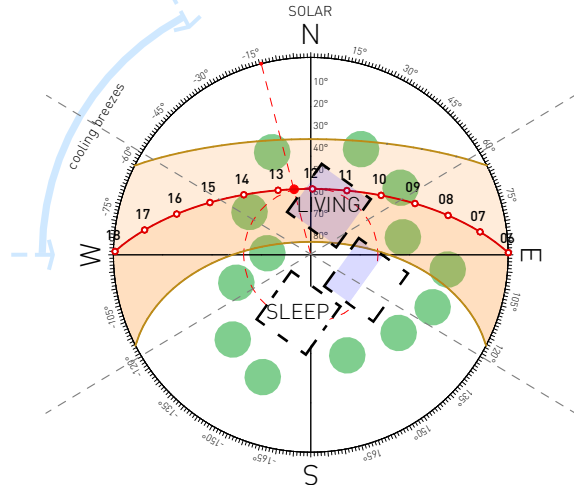
Mixed Climate Orientation



Summer Sun Winter Sun

Up to 30° East of Solar North

Heating Climate Orientation



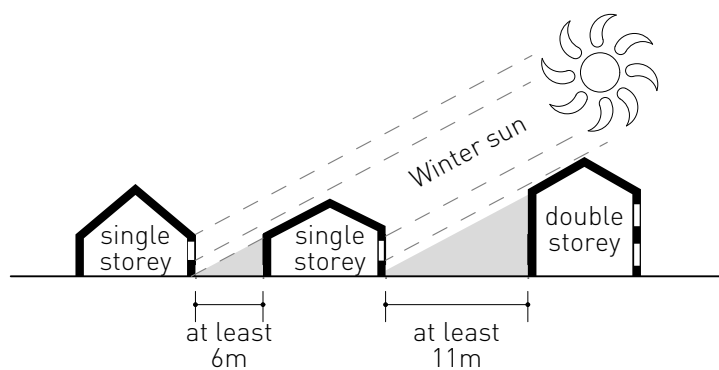
Summer Sun Winter Sun

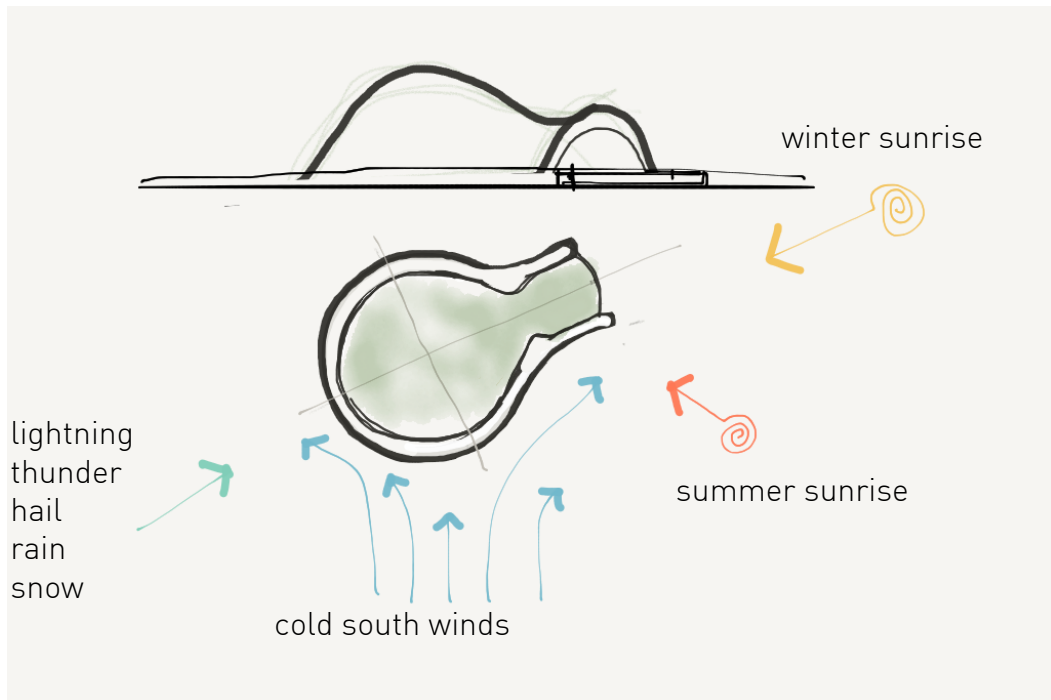
Orient for cooling breezes

Cooling Climate Orientation

Hot Humid Orientation

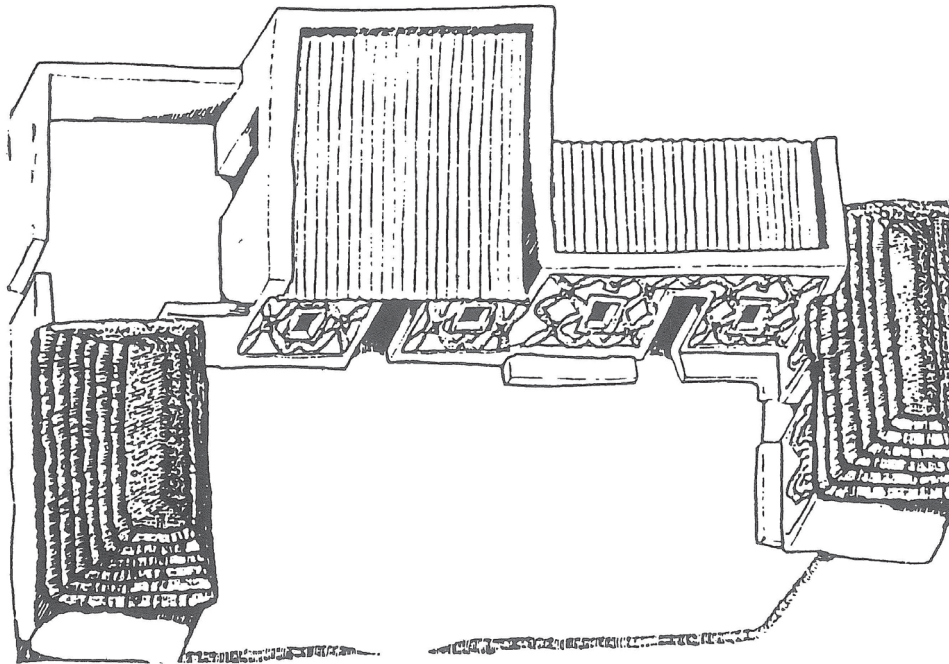
# OPTIMUM ORIENTATION OF BUILDINGS





Typical North Orientation of the vernacular architecture

Figure 10.1 source of sketch: author



Basotho settlement, Orange Free State, 1981

Figure 10.2 source of sketch: Franco Frescura 1990

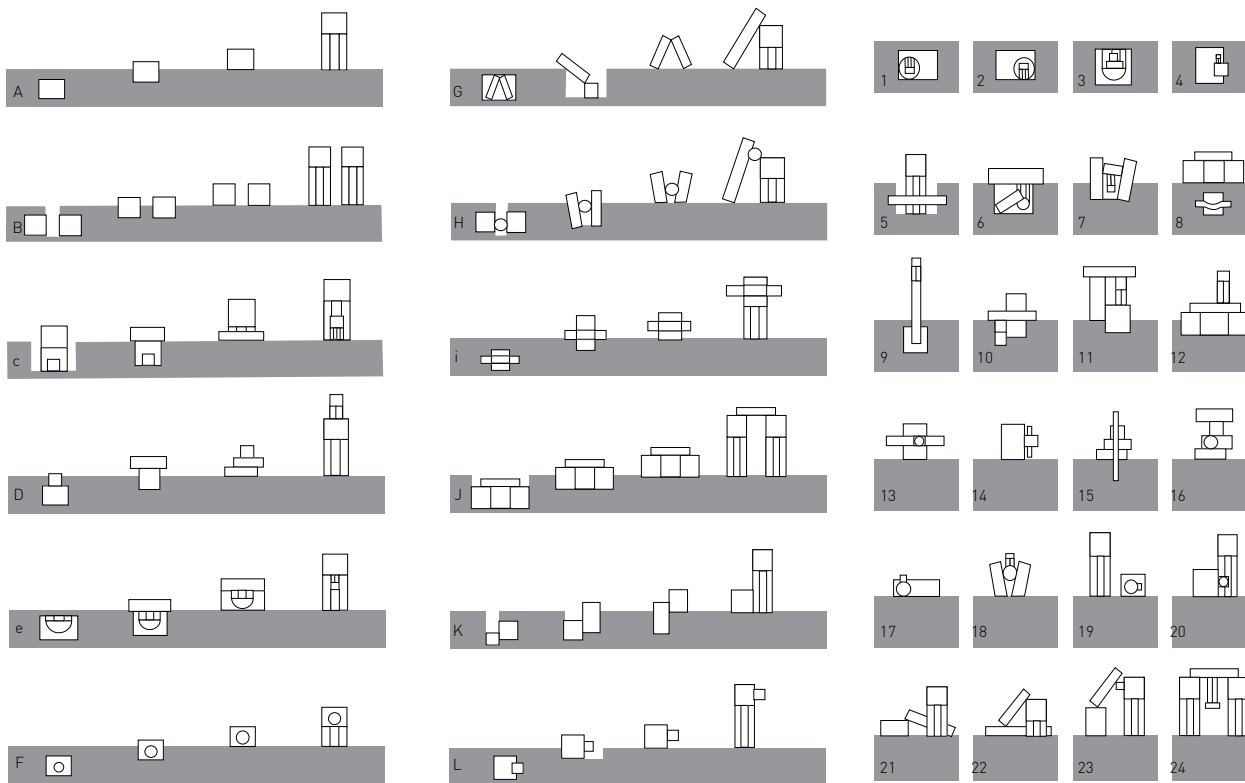
# con•cept

*/'kɒnsɛpt/*

noun

- an abstract idea
- a plan or intention

*Steven Holl's 'Correlational Programming' studies in Parallax explored the idea of spatial formation through two-dimensional line drawings that imply active relationships between defined areas and also between those areas and a ground plane, or datum.*



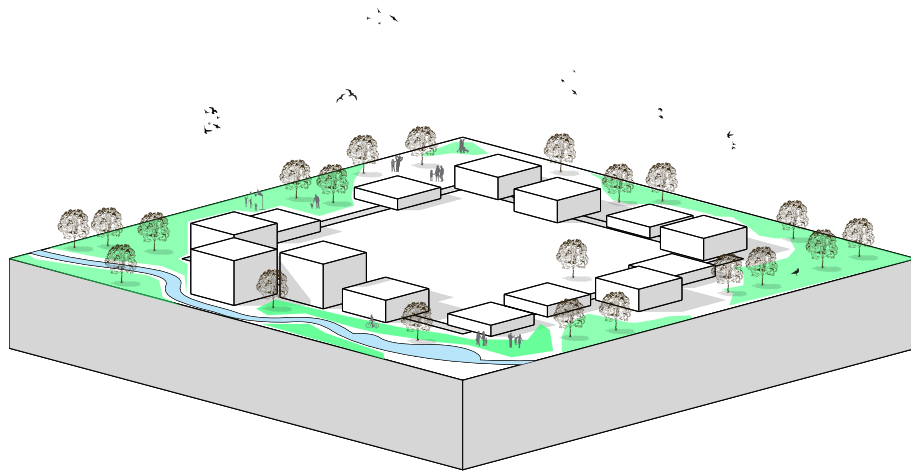
- A Primary Relations
- B Near
- C Over
- D Atop
- E Under
- F Within
- G Against
- H Between
- I Through
- J Across
- K Beside
- L From

- 1 Under within a within (below)
- 2 Over within a within (below)
- 3 Atop an under (below)
- 4 Atop a from (below)
- 5 Over a through (in)
- 6 Against an under (in)
- 7 Under a between (in)
- 8 Across (on) over a through (under)
- 9 Atop a vertical through (in)
- 10 Through a beside (in)
- 11 Across an atop beside

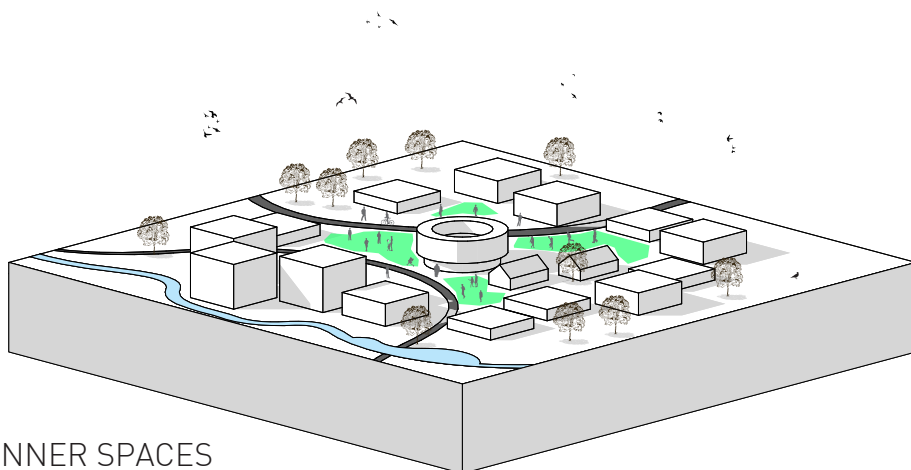
- 12 Atop an across (in)
- 13 Within a through (on)
- 14 Through a from (on)
- 15 Through atop (on)
- 16 Within atop (on)
- 17 From a within through (on)
- 18 Atop a between (on)
- 19 Above near from a within (on)
- 20 Within a from beside (above)
- 21 Over an against (on)
- 22 Against an over (above)
- 23 Across against a from (above)
- 24 Under an across

*Figure 10.3, Steven Holl. 'Correlational Programming' in Parallax. (Princeton: New York, 2000), 212-213.*

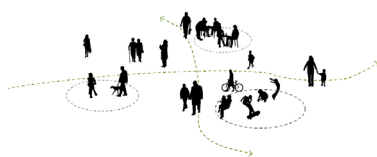
# CONCEPT | ECOLOGICAL VILLAGE



INHABITED PERIMETER



SHARED INNER SPACES



life



space

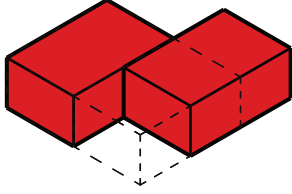


buildings

Figure 10.4, Jan Gehl - Cities for People

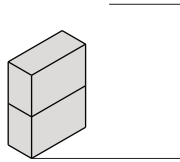
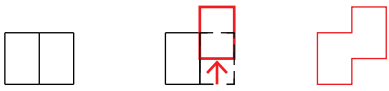
# SHIFT

Displace | Multi Volume

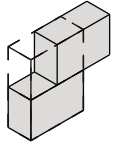


Procedure

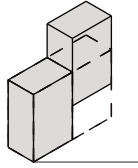
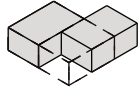
1 2 3



Base Volumes

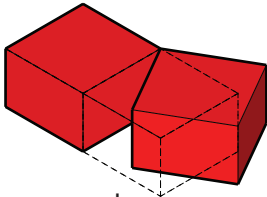


Orientation



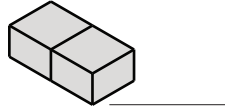
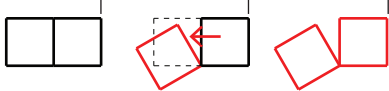
# ROTATE

Displace | Multi Volume

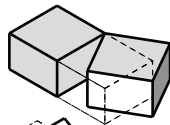


Procedure

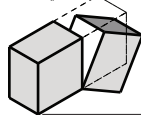
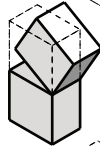
1 2 3



Base Volumes

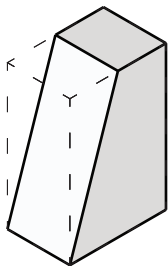


Orientation



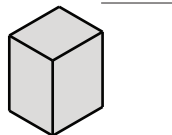
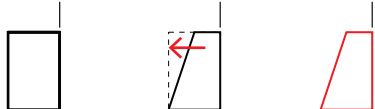
# SHEAR

Subtract | Single Volume



Procedure

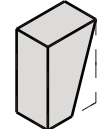
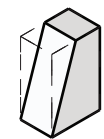
1 2 3



Base Volume

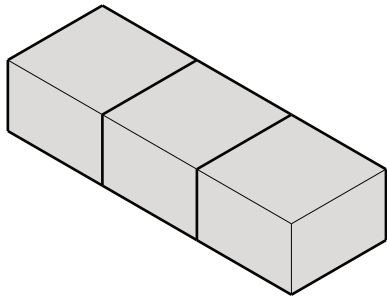


Orientation

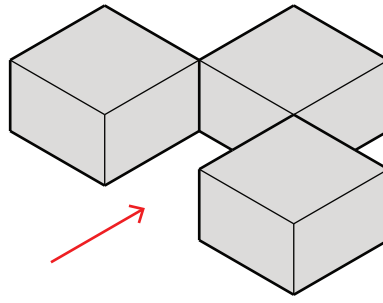


# CONCEPTUAL LAYOUT

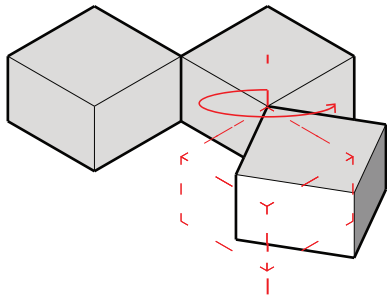
Concept explained in term of Spatial Verbs



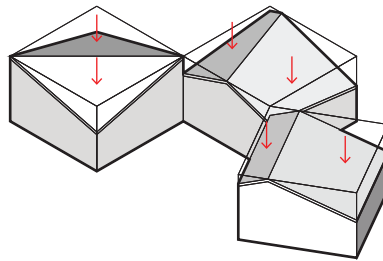
1 Base Volume



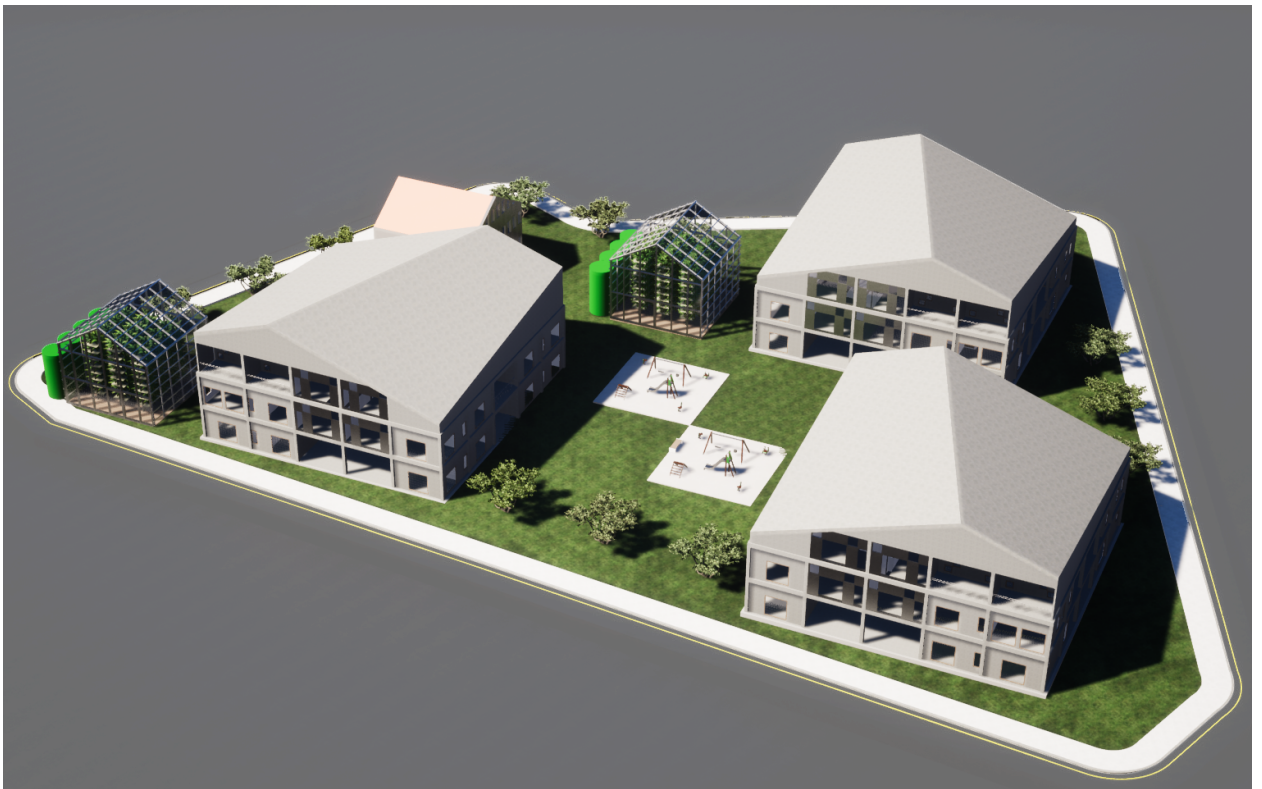
2 Shift



3 Shift + Rotate



4 Shift + Rotate + Shear





LIVING

WORK

LEISURE

CARE

MARKET



COMMUNITY

CULTURE

CUISINE

SPORT

CONNECTIVITY

VILLAGE



ENERGY PRODUCTION

FOOD PRODUCTION

BIODIVERSITY

WATER RECYCLING

RECREATION



WILDLIFE PASSAGE

SPORTS

STORMWATER RETENTION

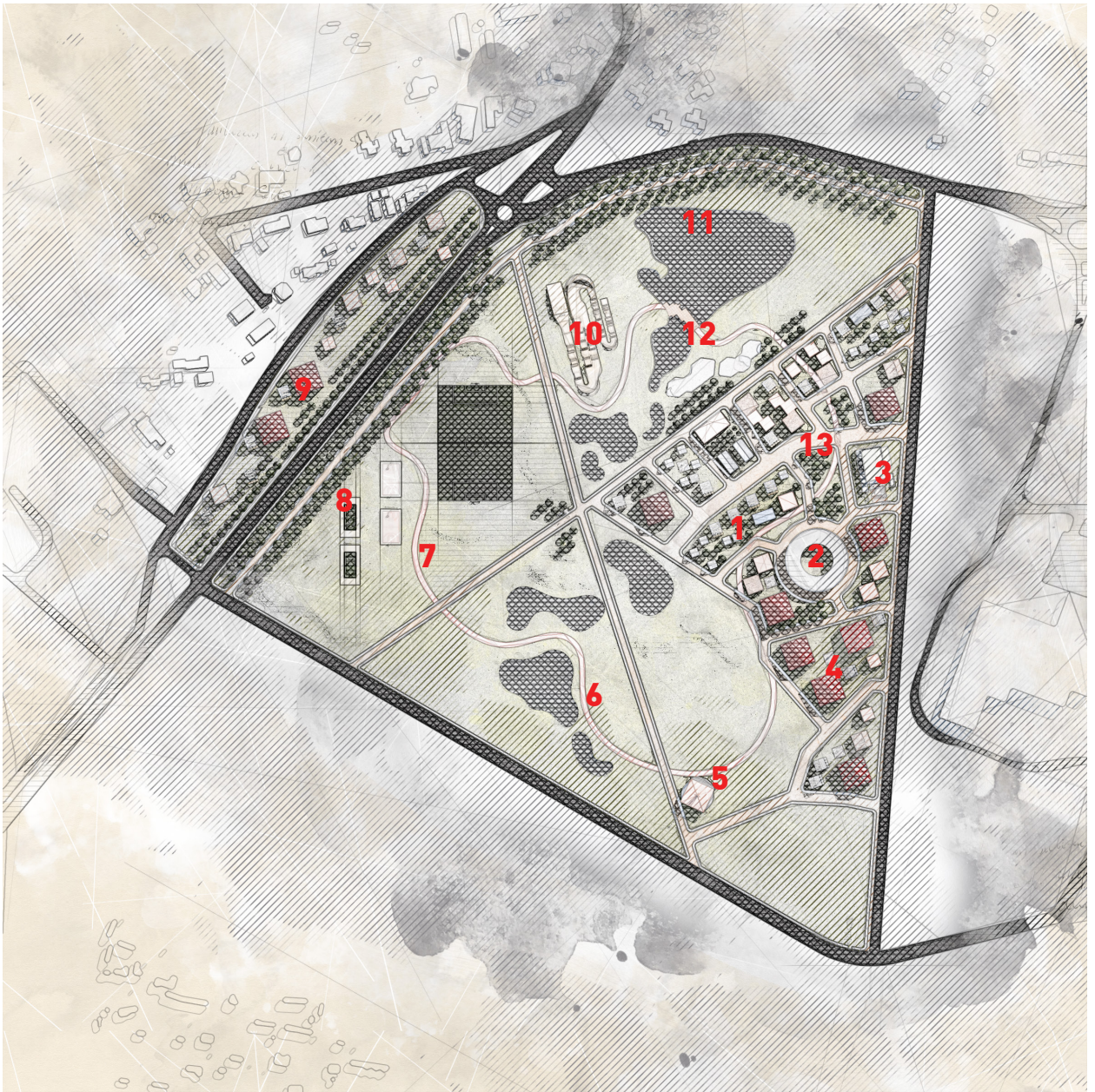
ANIMAL HABITAT

CONNECTIVITY

GREEN

# PROGRAM





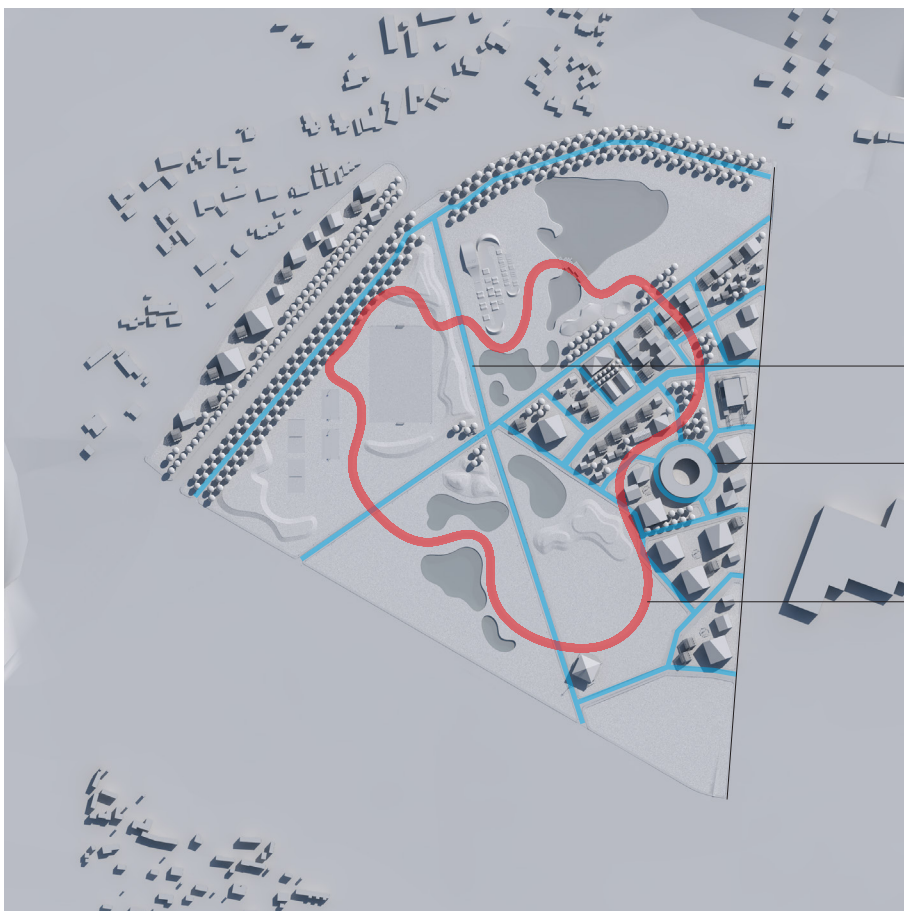
- 1 VERTICAL FARMS
- 2 LIBRARY
- 3 AUDITORIUM
- 4 HOUSING COMPOUND
- 5 POPE'S MONUMENT
- 6 CONSTRUCTED WETLAND
- 7 TRAIL
- 8 COURTS
- 9 FARM
- 10 BMX TRACKS
- 11 RETENTION POND
- 12 SKATE PARK
- 13 DAILY MARKET

## site activities



- retention pond
- bmx racer
- daily market
- auditorium
- vertical farms
- multimedia library
- sports fields
- popes monument

## infrastructure



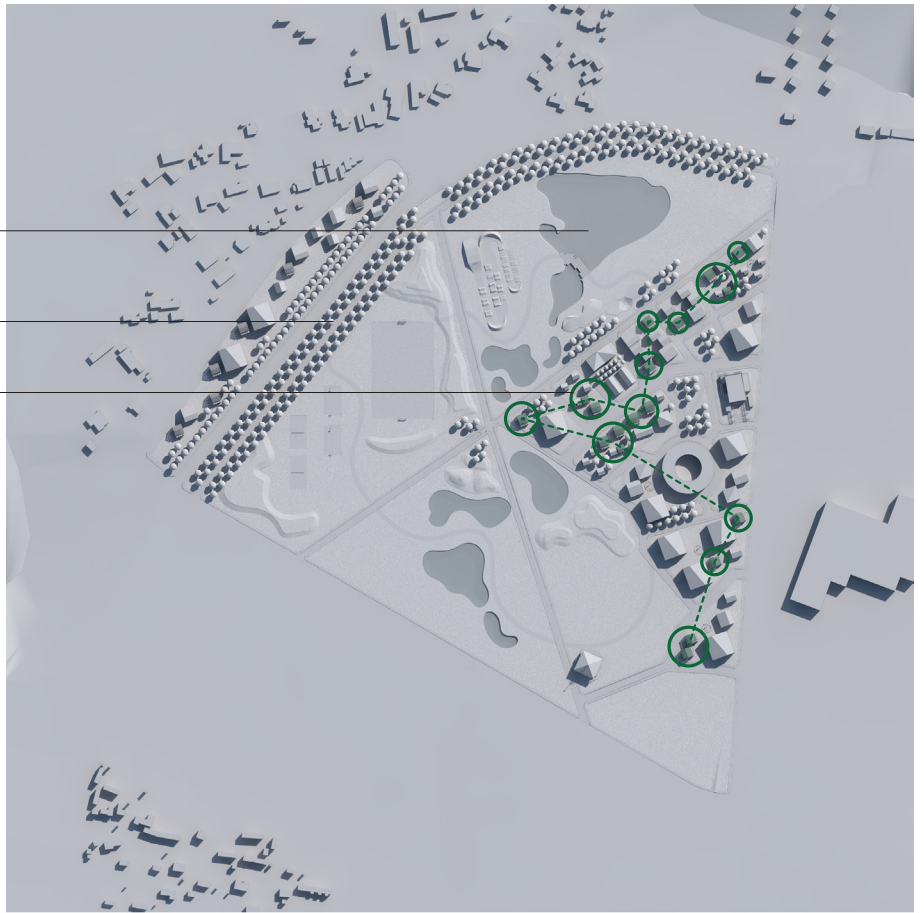
- improved pedestrian paths
- better storm water management paved roads
- public loop

## food production

fish farm

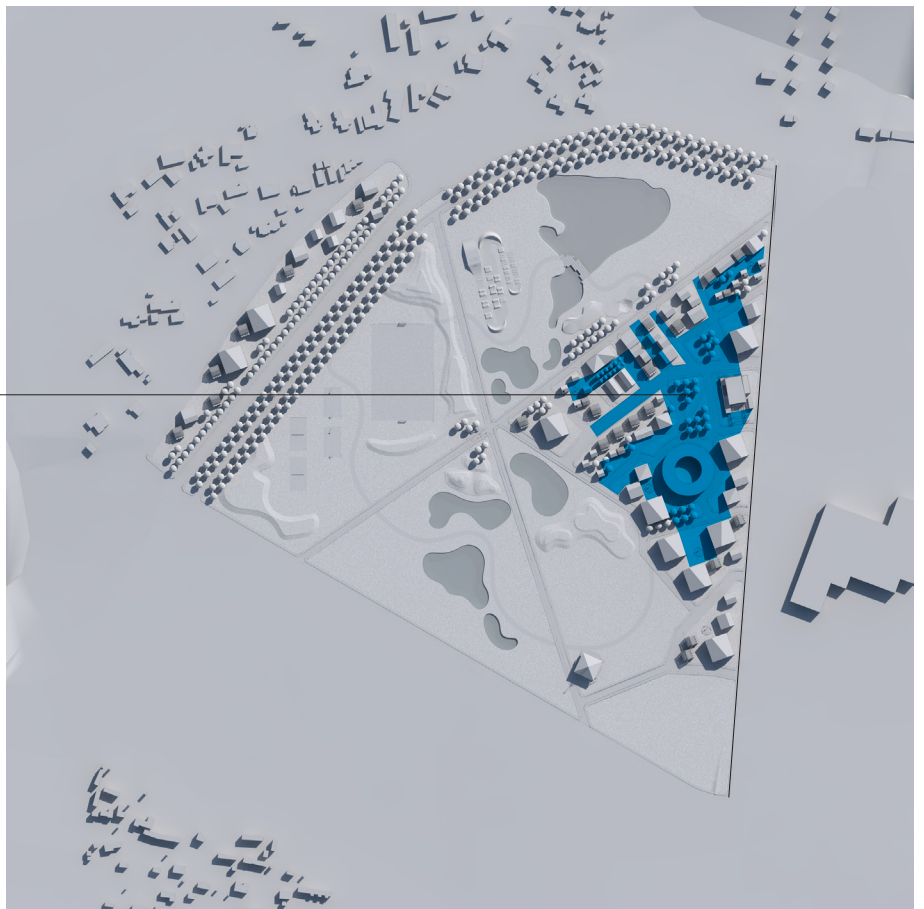
orchards

vertical farms



## common spaces

shared inner spaces



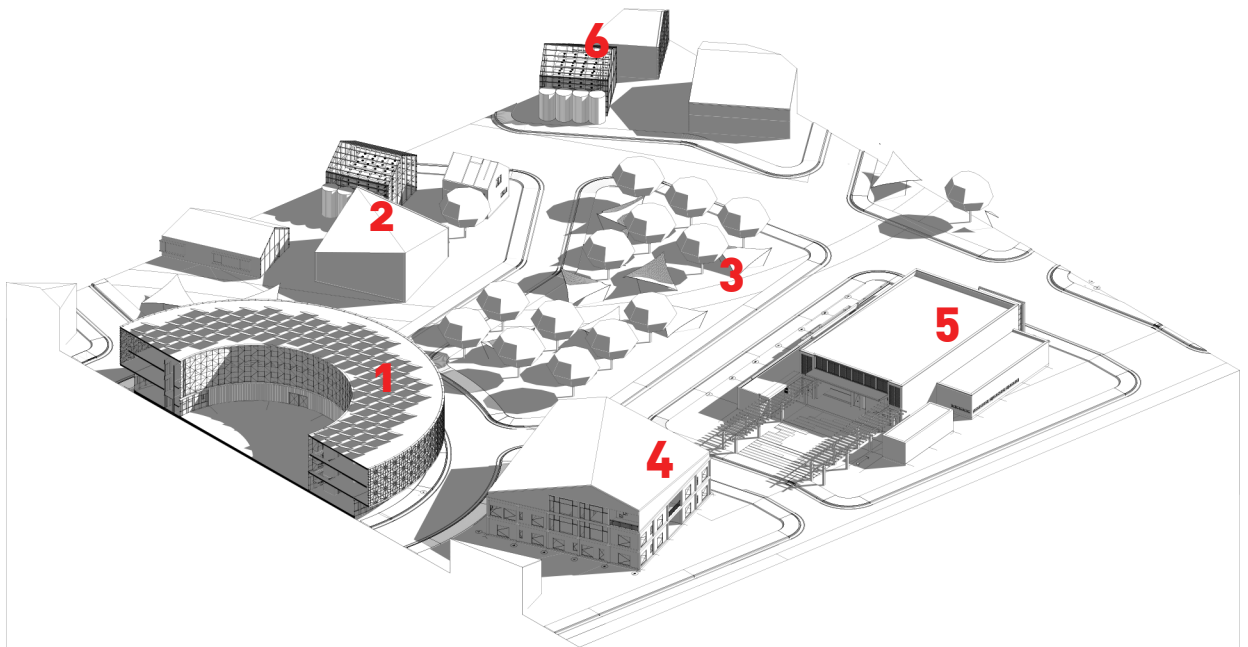
# IMPROVISE

## Informal Markets

Grassroots businesses should extend infrastructures to reach residents living on urban periphery.

# POWER

- 1 LIBRARY
- 2 CULINARY INCUBATOR KITCHEN
- 3 DAILY MARKET
- 4 HOUSING
- 5 AUDITORIUM
- 6 VERTICAL FARM



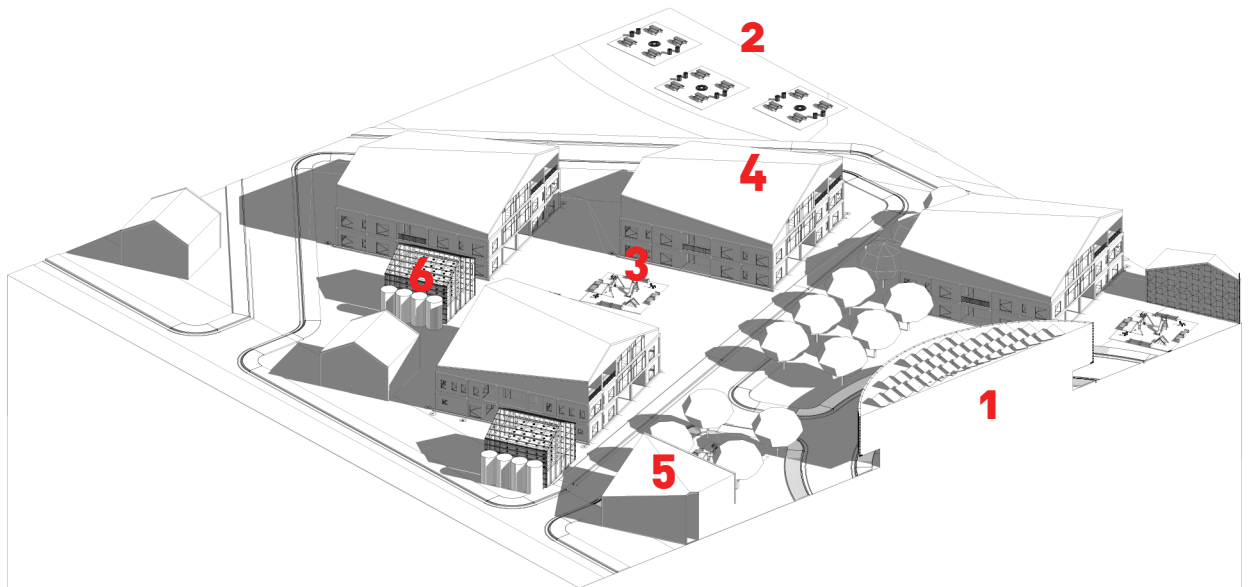
# DENSIFY

## Dense Urban Development

By making this village denser, we can centralize transportation infrastructure and village services, and improve building efficiencies.

# TERRITORY

- 1 LIBRARY
- 2 PICNIC AREA
- 3 PLAYGROUNDS
- 4 HOUSING
- 5 CRAFT WORKSHOP
- 6 VERTICAL FARM



# MAKE

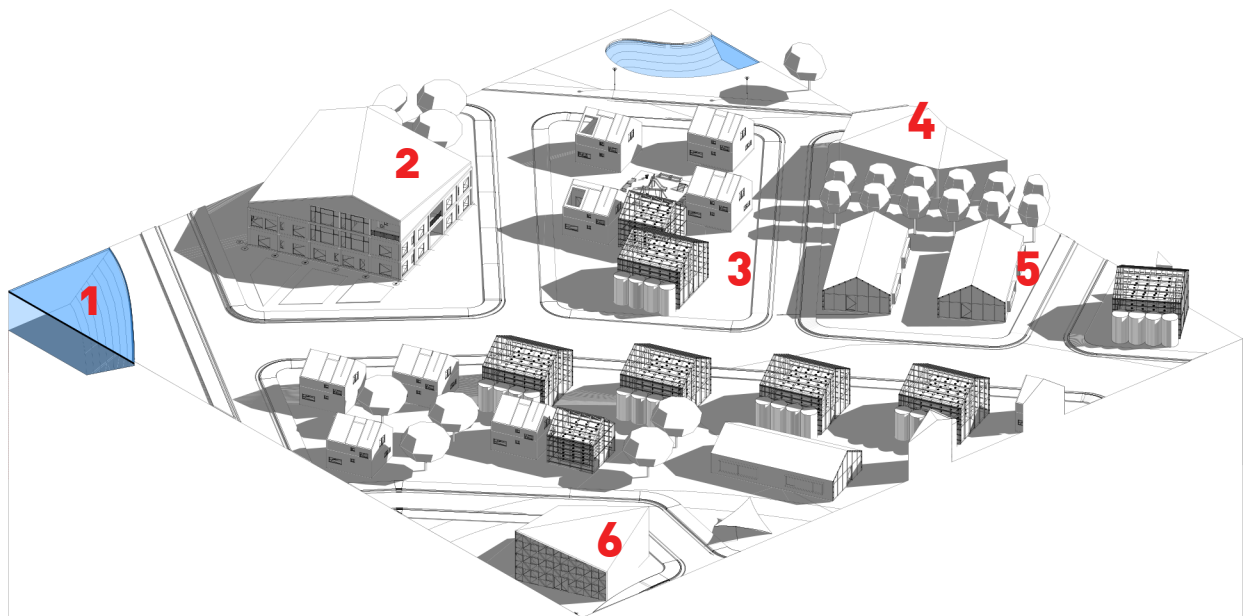
## Do-It-Yourself Economy

By making our own products, we can reduce waste, save on fuel and packaging, and escape the alienation of consumer society. The gardens at the village serve as showcase for a healthy eating and locally grown food. The community maintain it, and it is fertilized with the Ecological Village composts. It provisions meals, and nearby Culinary Incubator Kitchen.



# LIFESTYLE

- 1 CONSTRUCTED WETLAND
- 2 HOUSING
- 3 VERTICAL FARM
- 4 ADMINISTRATION
- 5 TEST SHED
- 6 WORKSHOP



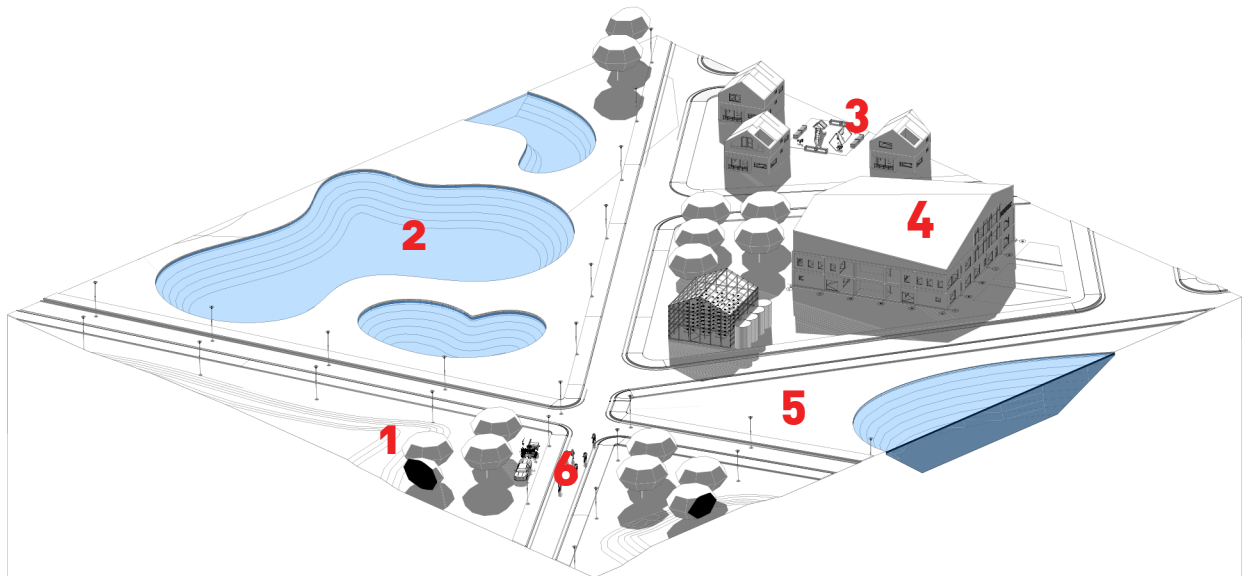
# ADAPT

## Modification

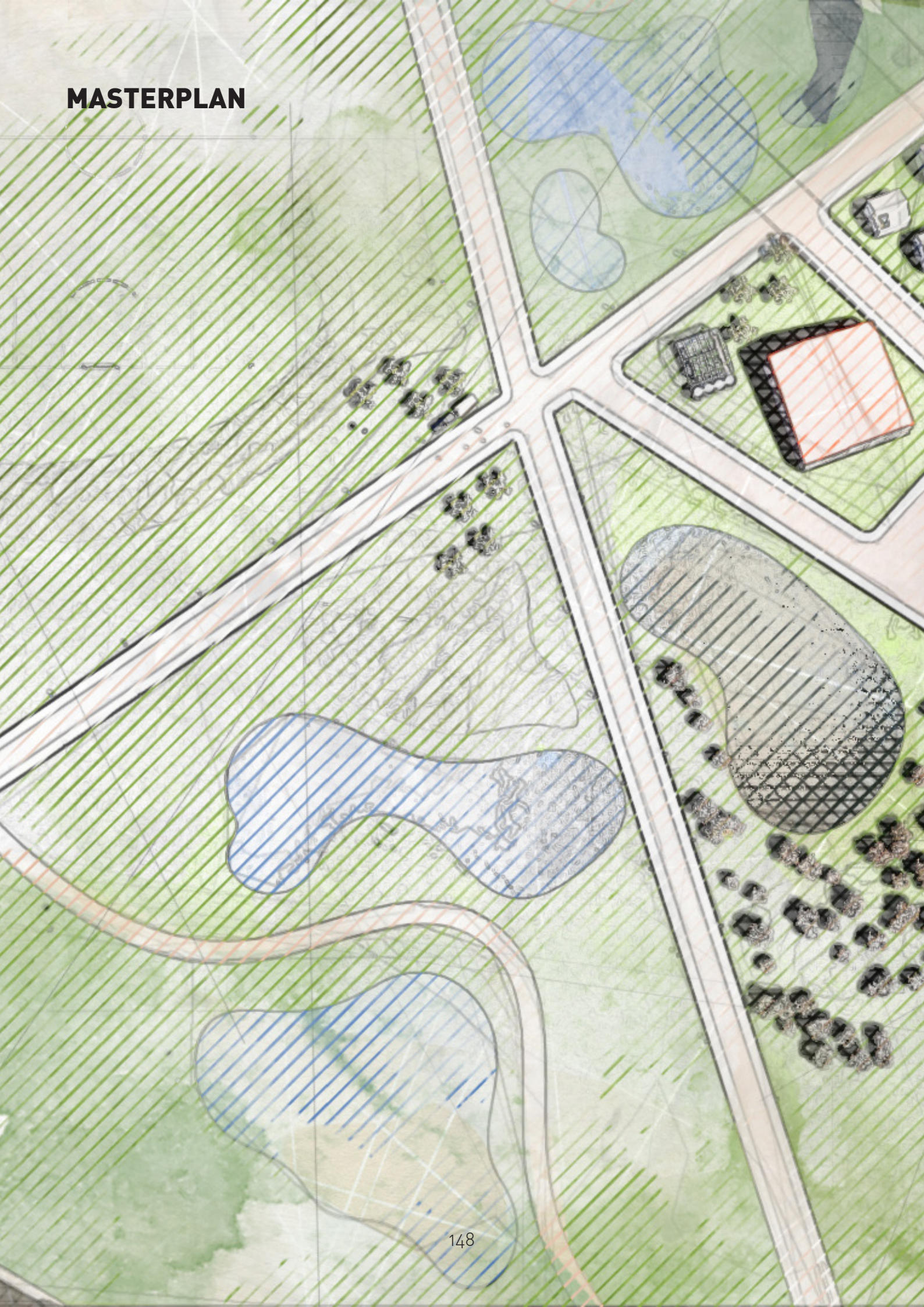
The constructed wetland and re-naturalization of the landscape is an example of how we can use our resourcefulness to adapt ahead of time to changing circumstances. By modifying the land to deal with stormwater during the brief but tumultuous rainy season, also to mitigate against soil erosion; and the creation of a new habitat for fish and other water species

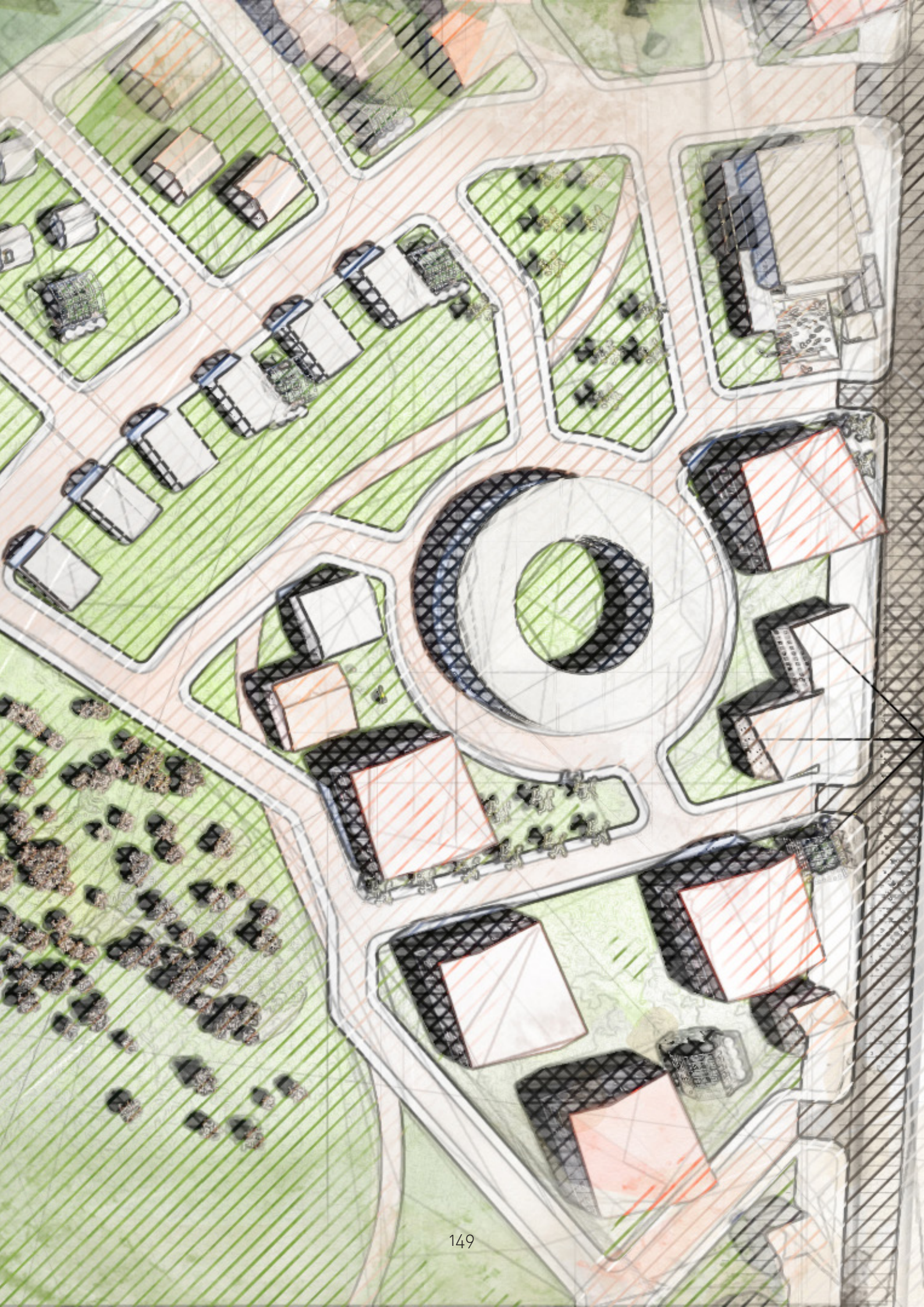
# RISK

- 1 RE-NATURALIZED LANDSCAPE | FILL HILL
- 2 RETENTION POND
- 3 PLAYGROUND | SOCIAL COLLECTOR
- 4 HOUSING
- 5 SCULPTURE GARDEN
- 6 STREET FOOD TRUCK LANE

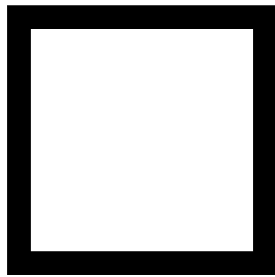


# MASTERPLAN



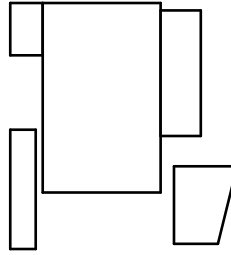
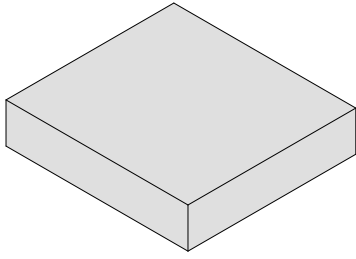




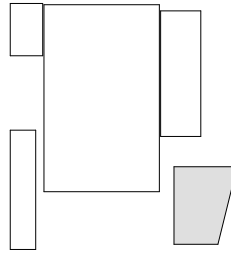
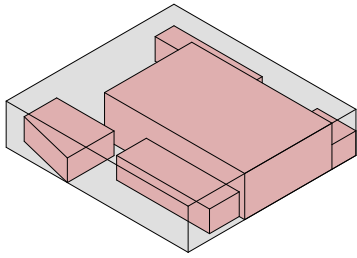


ARCHITECTURAL DESIGN

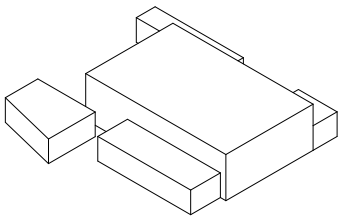
# CONCEPT | MULTIPURPOSE HALL



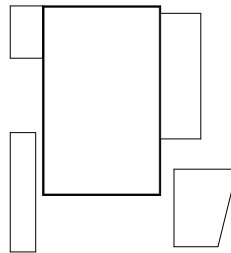
UNIT TO WHOLE



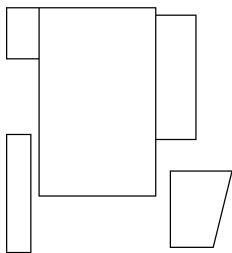
REPETITIVE TO UNIQUE



CARVING | SUBSTRUCTIVE



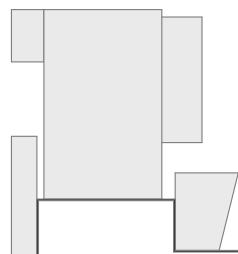
HIERACHY



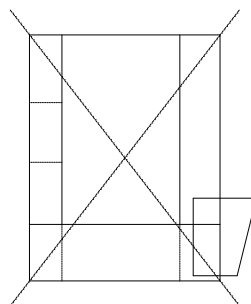
STRUCTURE



MASSING



PLAN TO SECTION



PARTI



## CARVING

The formative ideas of additive and subtractive are developed from the processes of adding, or aggregating, and subtracting built form to create architecture. Both require the perceptual understanding of the building. Additive is used to generate built form, thus renders the parts of the building as dominant.

## STRUCTURE

At a basic level, structure is synonymous with support, and therefore exists in all buildings. At a more germane level, structure is columnar, planar, or a combination of both. Here intentionally used to reinforce the design ideas.

## PLAN TO SECTION

The reciprocity and the dependence of one on the other is a vehicle for making design decisions, and has been used as a strategy for design. Considerations in plan, section, or elevation influence the configurations of the other through the concepts of equality, similarity, proportion, and difference or opposition.

## UNIT TO WHOLE

The relationship of unit to whole examines architecture as units which can be related to create buildings. A unit is an identified entity which is part of a building

## REPETITIVE TO UNIQUE

The relationship of repetitive to unique elements entails the exploration of spatial and formal components for attributes which render these components as multiple entities.

## HIERARCHY

As a formative idea, hierarchy in the design of buildings is the physical manifestation of the rank ordering of attributes. Embodied in this concept is the assignment of relative value to a range of characteristics.

## MASSING

As a design issue, massing constitutes the perceptually most commonly encountered three-dimensional configuration of a building. Massing is more than the silhouette or elevation of a building. It is the perceptual image of the building as a totality.



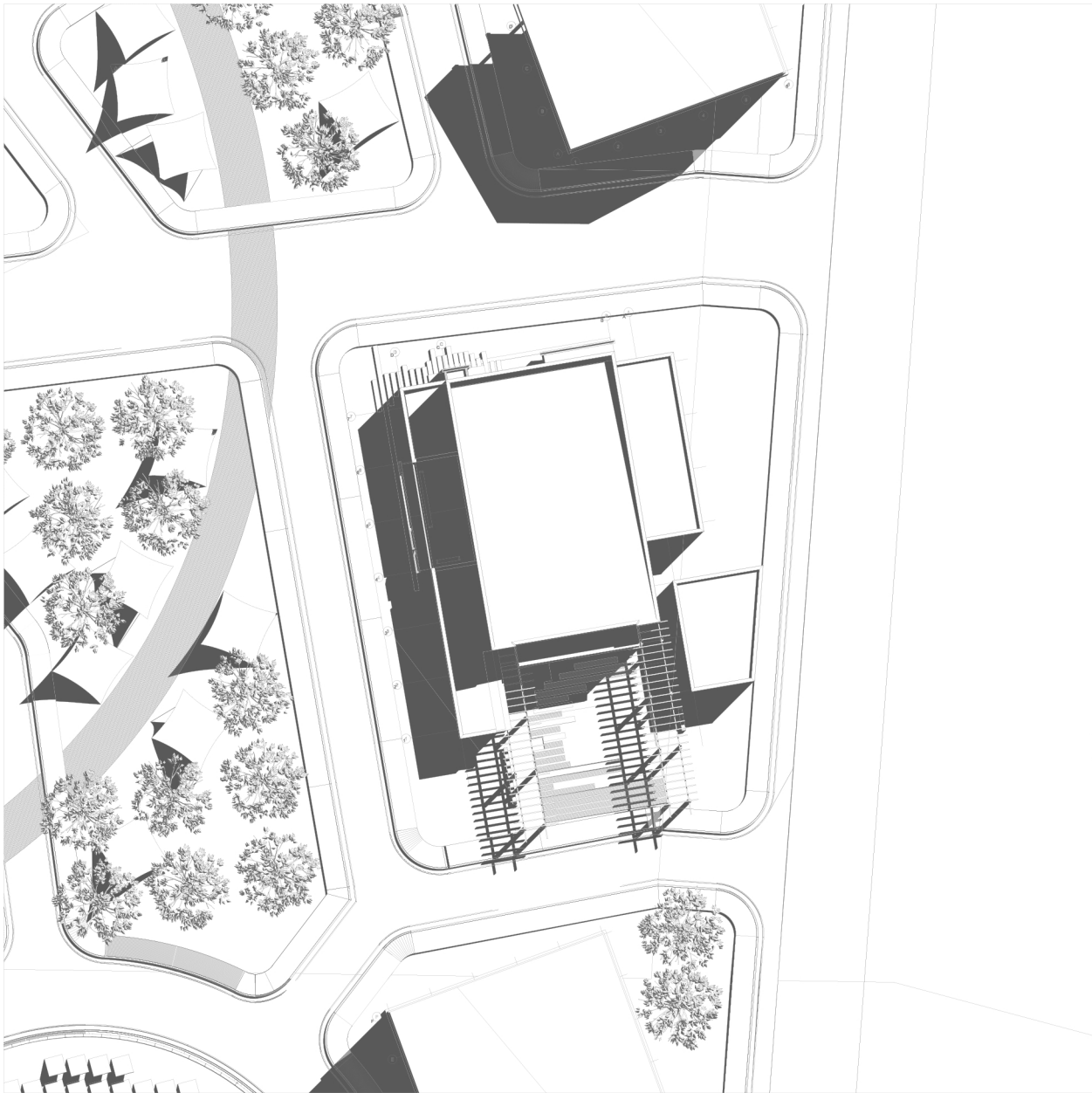
*Ariel View showing the relationship and connections between the Auditorium/Multipurpose Hall, Housing, Daily Market, Vertical Farms and The Public Loop*





*Auditorium & The Neighbouring Daily Market*

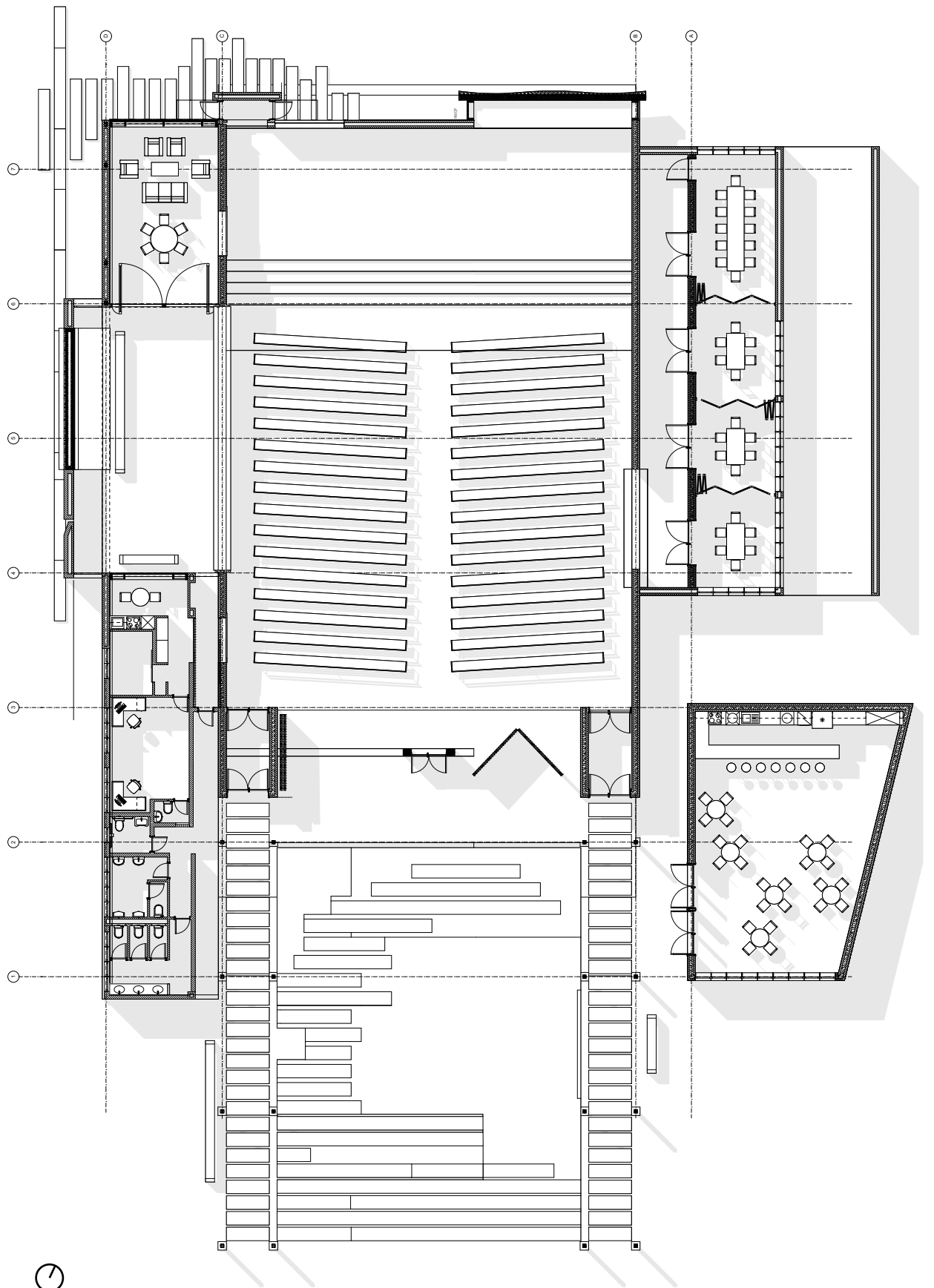




AUDITORIUM | MUTLI-PURPOSE HALL  
ROOF PLAN | WITH CONTEXT

*The Auditorium | Multipurpose Hall is conceived as a learning and entertainment center and can be used to watch local movies and documentaries. It can also be a place of worship on Sunday.*

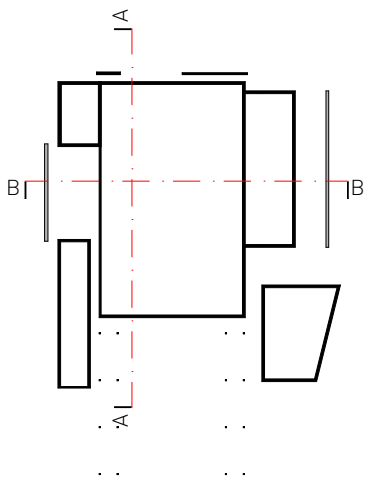




GROUND FLOOR PLAN | 1:250

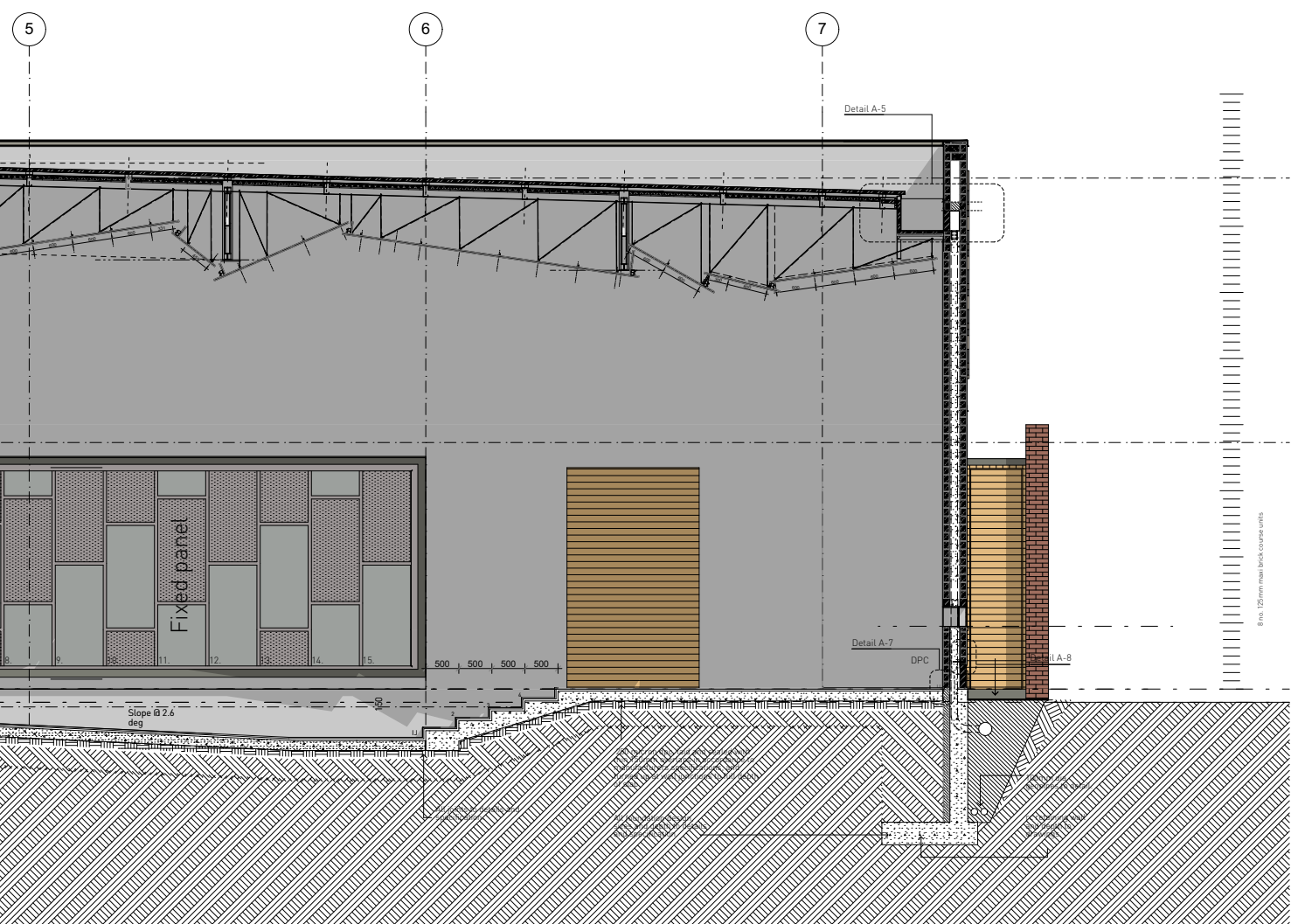


SECTION AA | 1:100



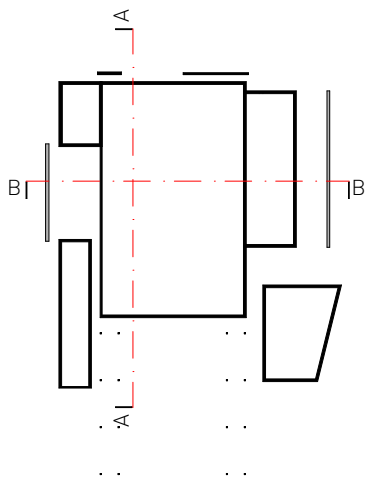
KEY PLAN





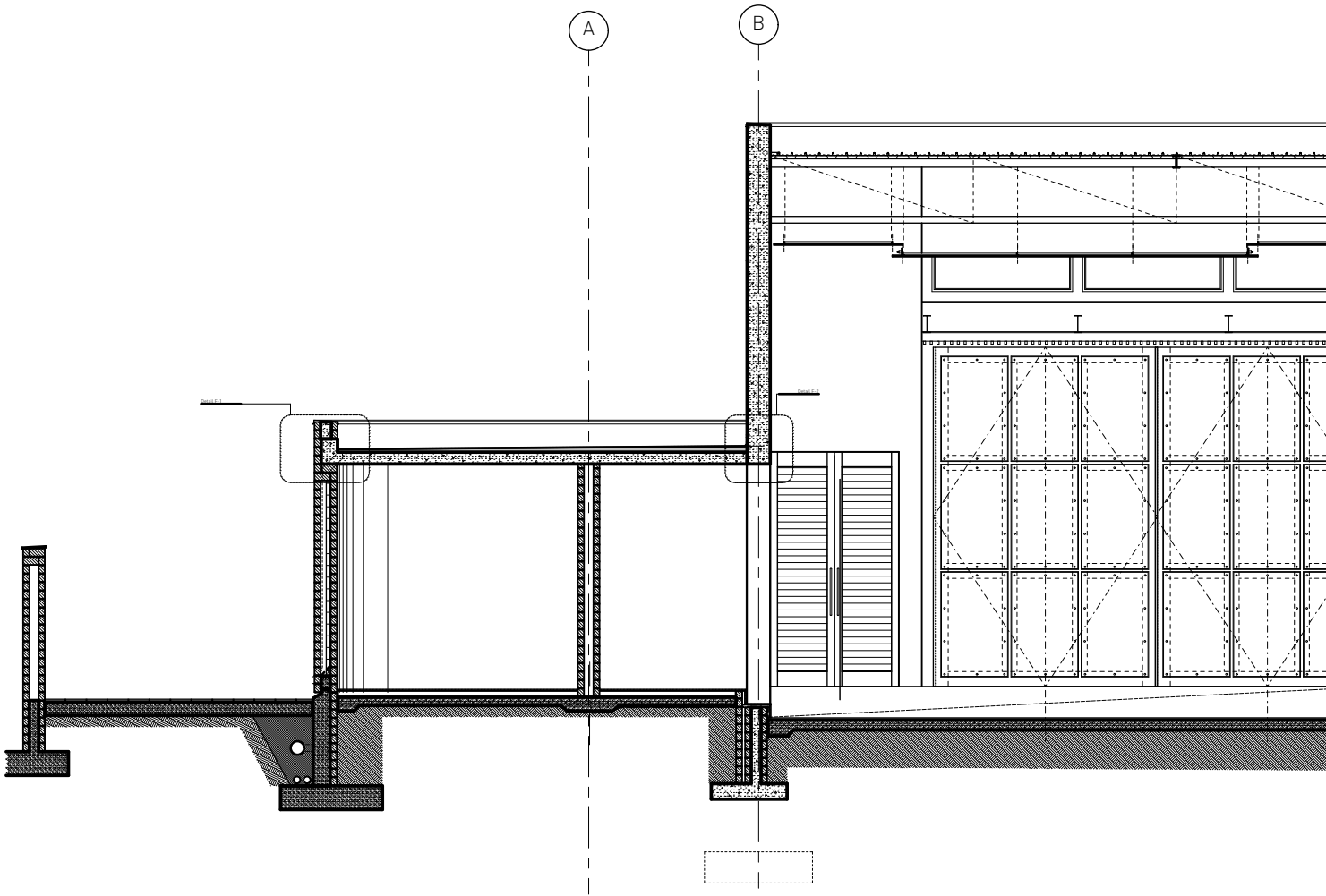


Sectional Perspective through A-A

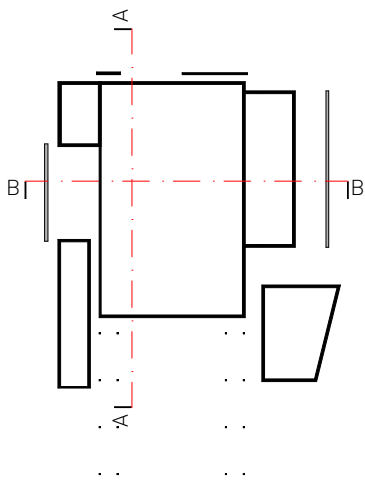


KEY PLAN

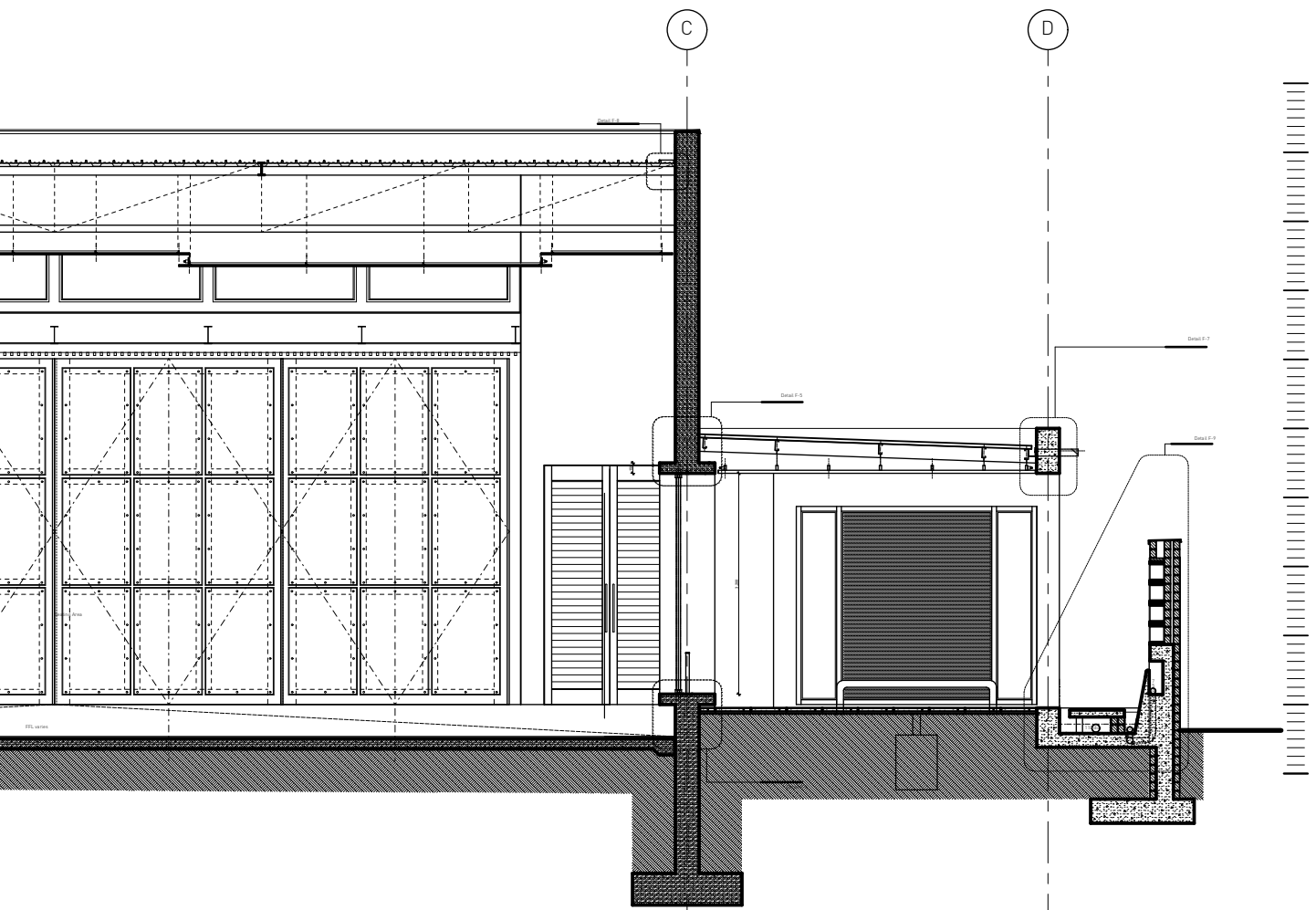




SECTION BB | 1:100



KEY PLAN



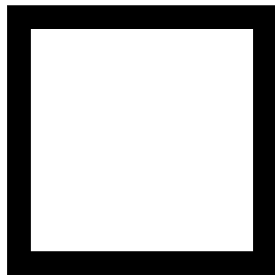
*A climate-based building facade is a filter, between exterior and interior that creates comfortable internal living conditions.*

*Climate-based component facade design strategies include:*

*Mixed Climates:*

- *Warm Season: Passive cooling, shaded glazing, reflected daylighting.*
- *Cold Season: Passive solar heating, daylighting.*
- *Insulation (min.): RSI 3.5 (R 20)*
- *Glazing: double (thermal break)*





FACADE STUDY

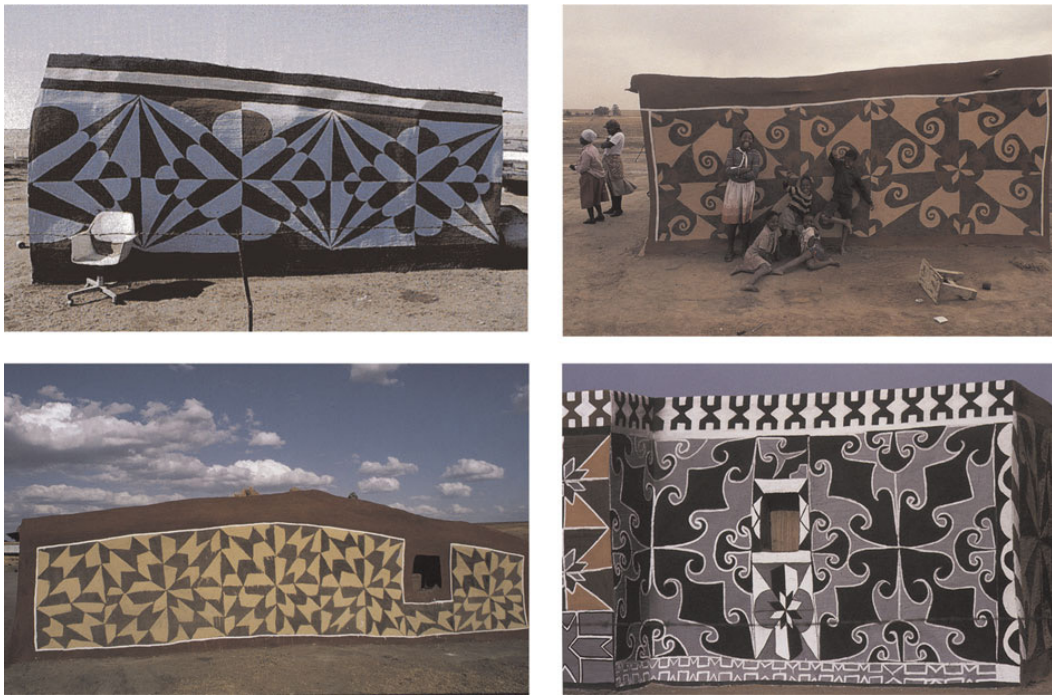


Figure 10.5

Litema are traditional, colourful designs painted by the Basotho on the mud walls of their houses in the small African country of Lesotho and in the surrounding, larger country of South Africa. Figure 10.5 shows some examples. The ritual of making, the design and painting of litema is a gender-specific practice: they are made only by women. Litema are ephemeral designs. They are washed away by seasonal rainstorms and then repainted. Litema have numerous, important cultural meanings related to fertility, cultivation, and respect for ancestors. The practice of painting houses is gradually disappearing because of changing construction practices and housing patterns.

Thus, litema are very appropriate as the basis for new building systems that incorporate vernacular decoration. The underlying construction of a tema (singular of litema) is based on a grid of squares, or diamonds if the grid is rotated. The squares (or diamonds) may be further subdivided into half-squares or quarter-squares.

A coloured, abstract motif is defined and repeated within each square, half-square, or quarter-square cell of the grid. Copies of a motif within a grid often include colour (figure-ground) reversals of the motif and symmetry transformations (rotations and reflections) of the motif and its colour reversal.

A striking feature of litema is that the underlying motif is often masked by the overall pattern and symmetries that emerge from the repetitions and transformations of the motif. Figure 10.6 shows a typical grid pattern for litema. The motif is defined within a square cell. It repeats identically (technically, through translations) across all the white squares of the grid. Half-turns or  $180^{\circ}$  rotations of the motif repeat across all the dotted white squares. Combined colour reversals and reflections of the motif repeat across the black squares.



# LITEMA

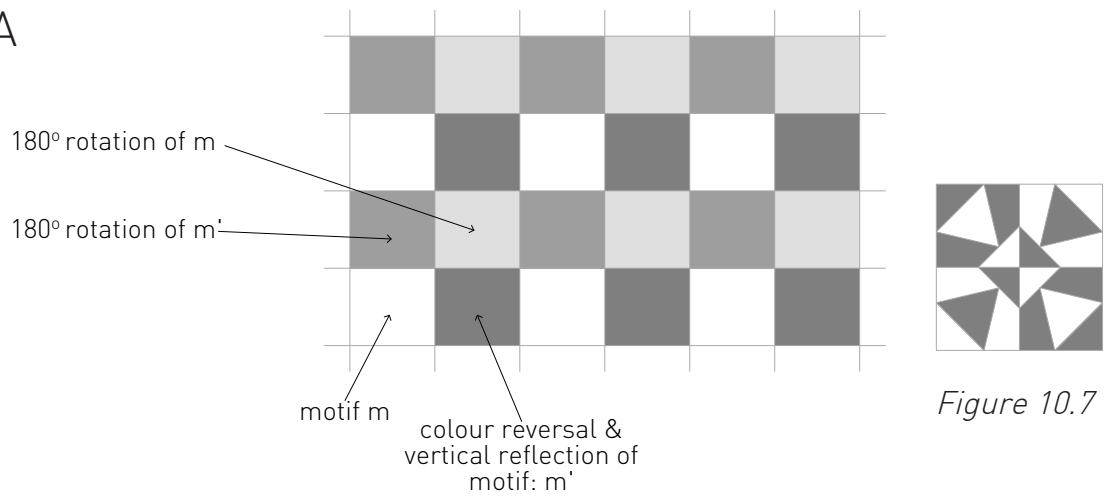
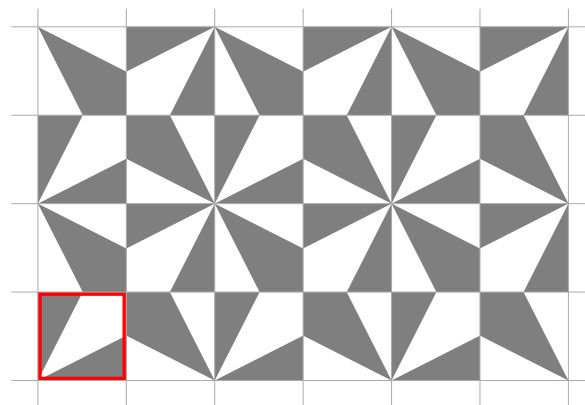
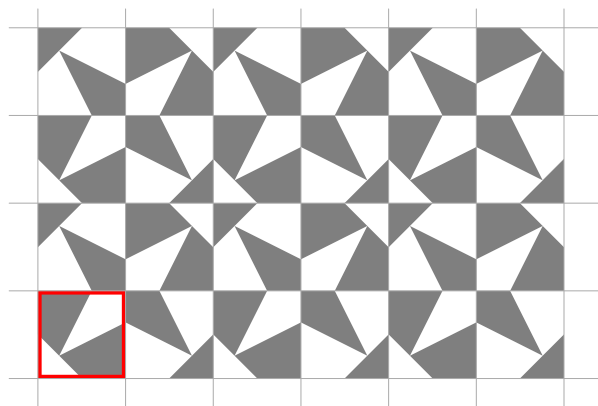


Figure 10.6

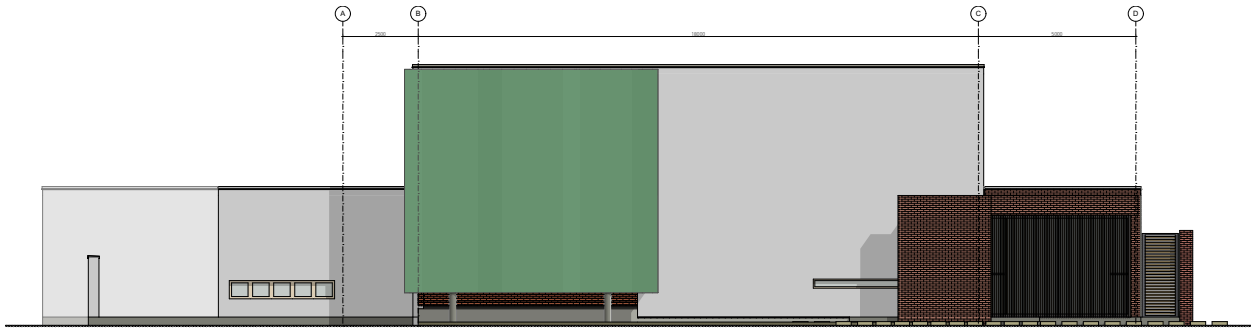


tema design I

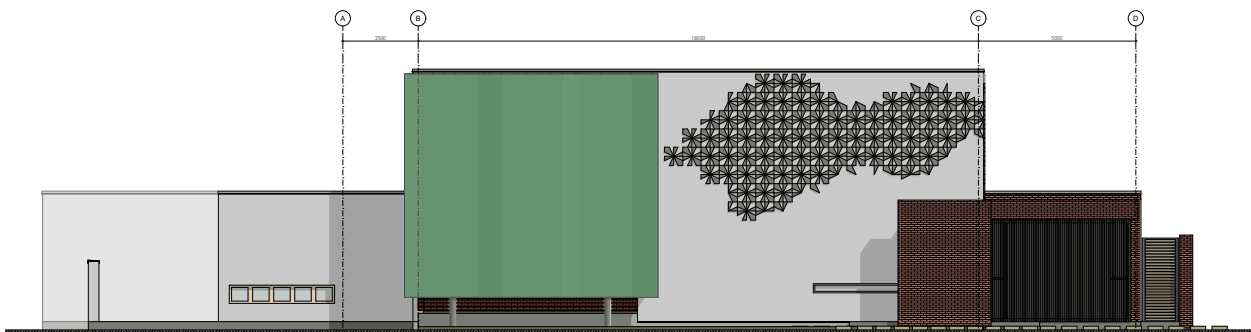


tema design II

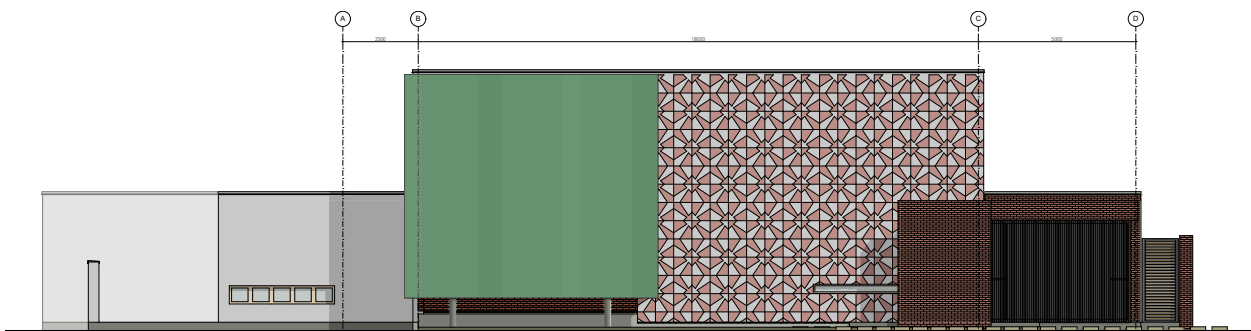
Half-turns of the reversed and reflected motif repeat across all of the dotted black squares. Figure 10.7 shows a 2x2 portion of the grid, with an actual motif and transformations of it in neighbouring cells. The top left house in Figure 10.5 exemplifies this type of grid.



FACADE STUDY |



FACADE STUDY | LITEMA | tema design i



FACADE STUDY | LITEMA | tema design ii

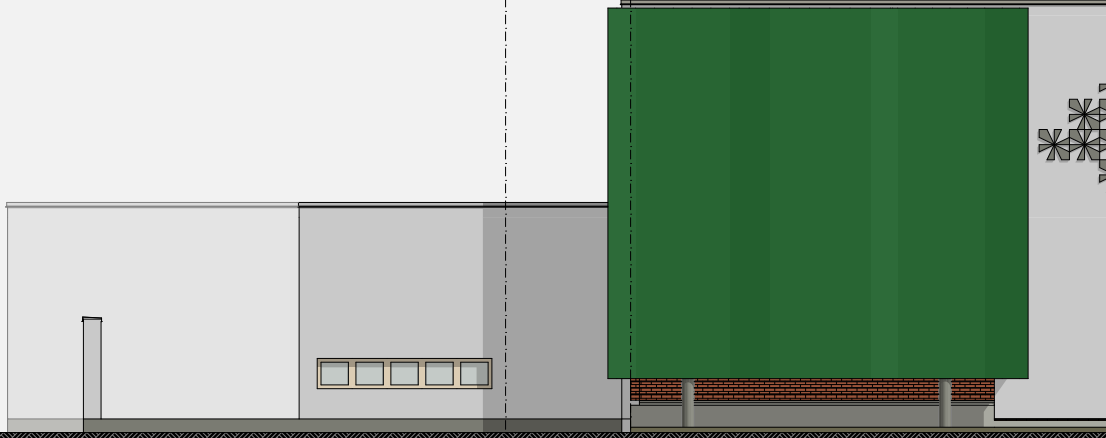
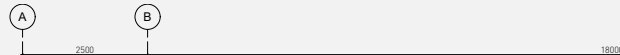
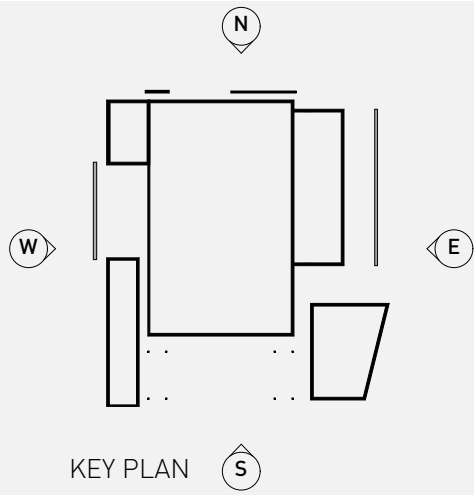




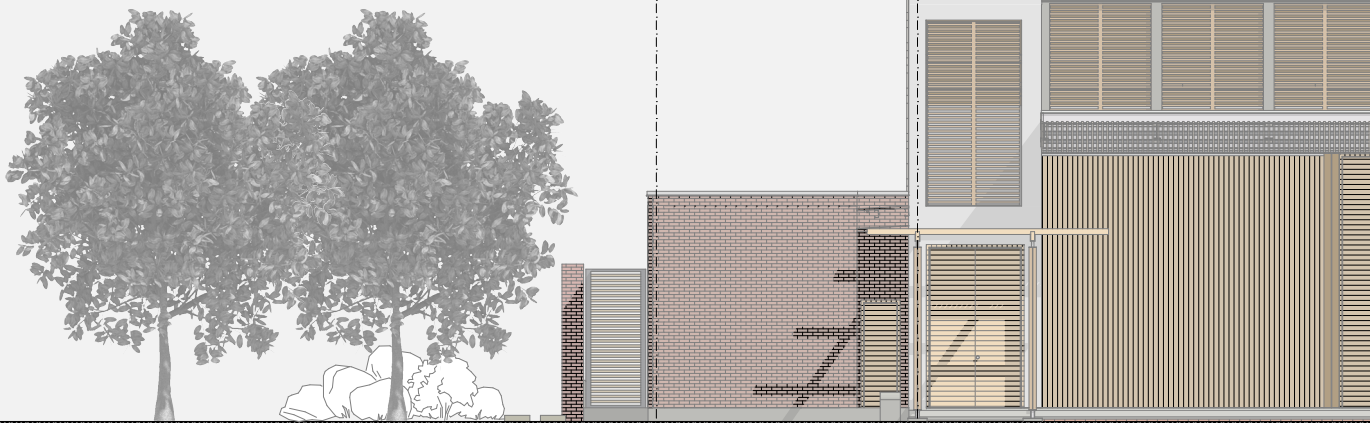
*The facade shows the tema designs applied to the white washed walls using a stencil and paint brush to imitate the undulating hills of Maseru.*



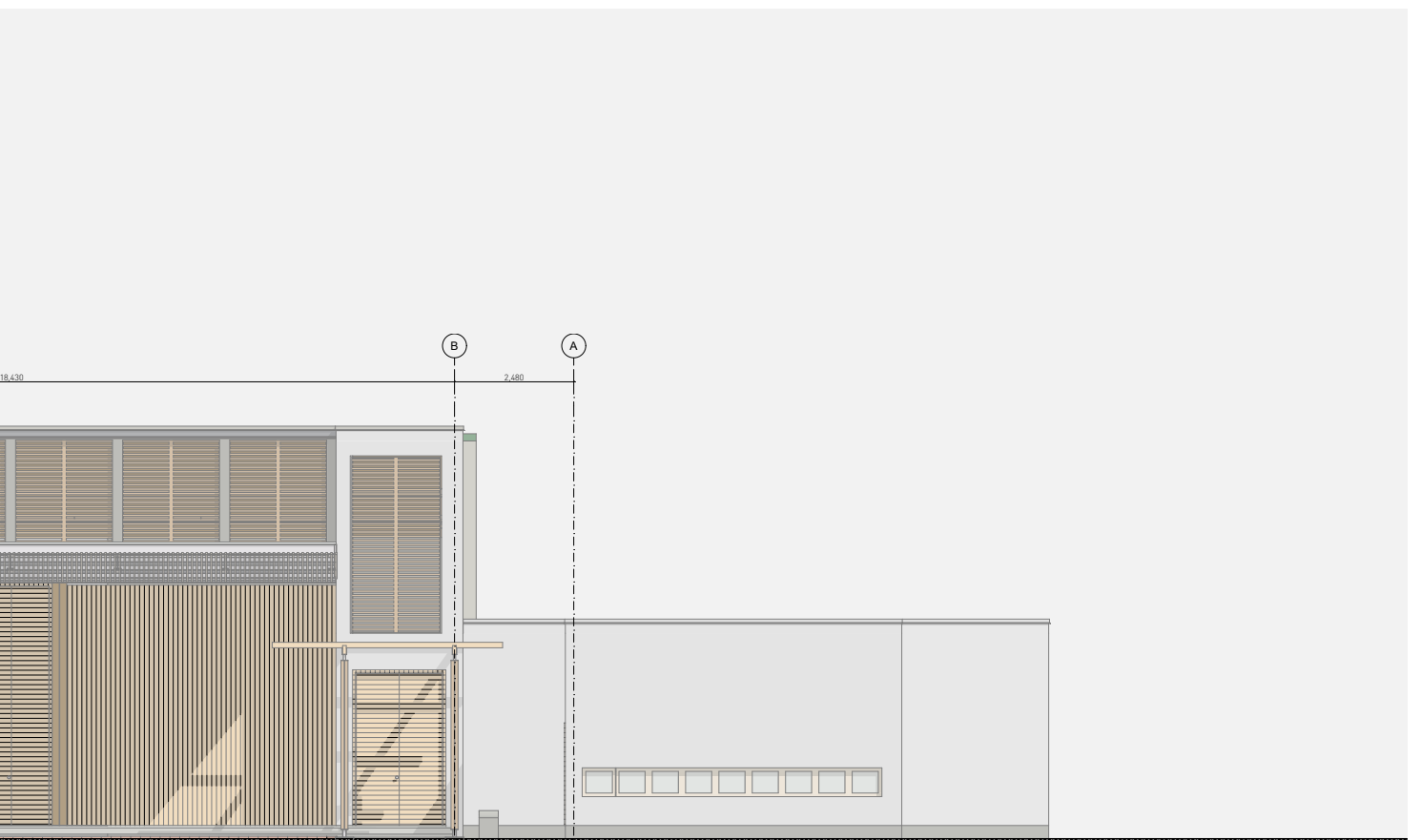
*The facade shows the tema designs applied to the white washed walls using a stencil and paint brush in a uniform repetitive manner.*

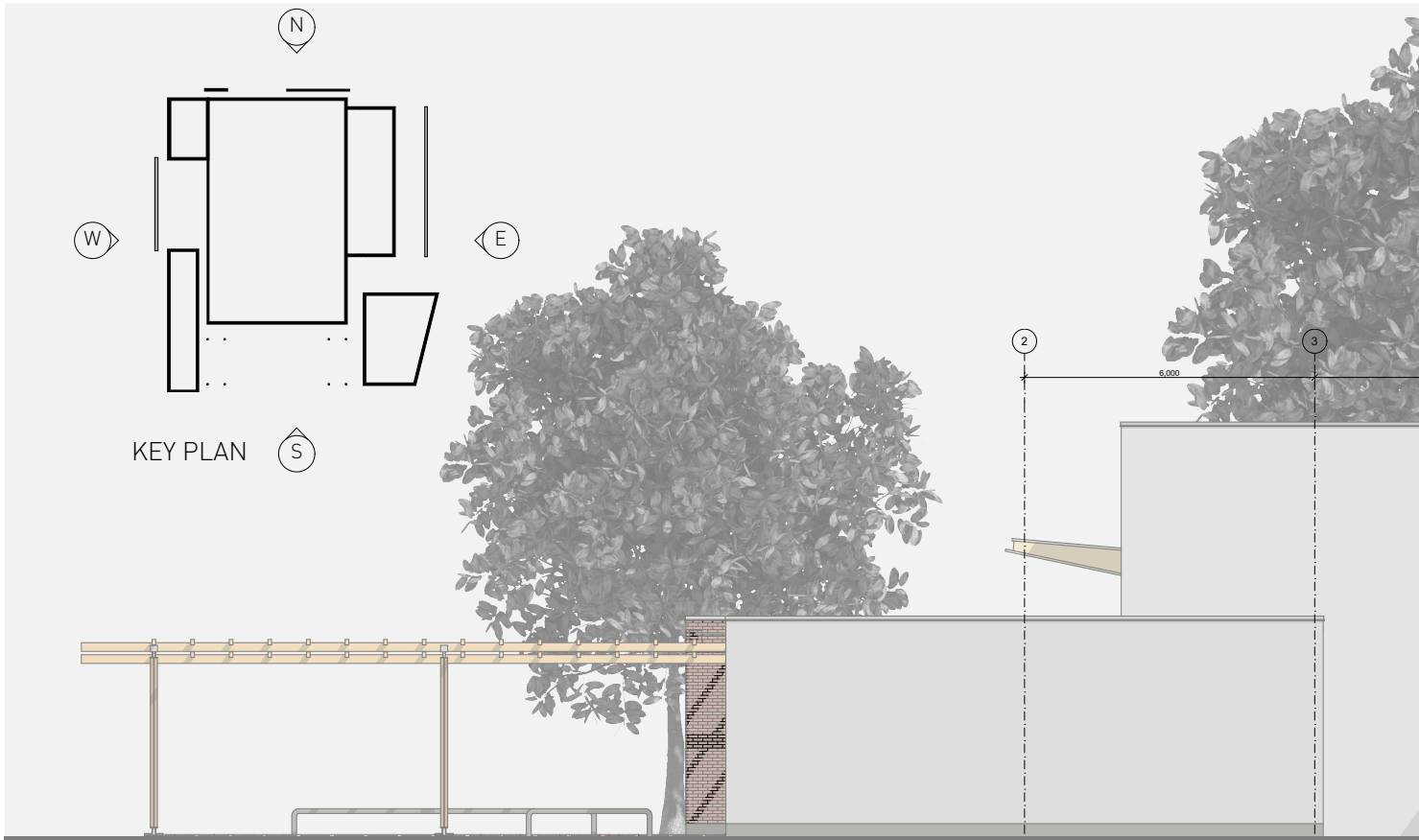


NORTH ELEVATION

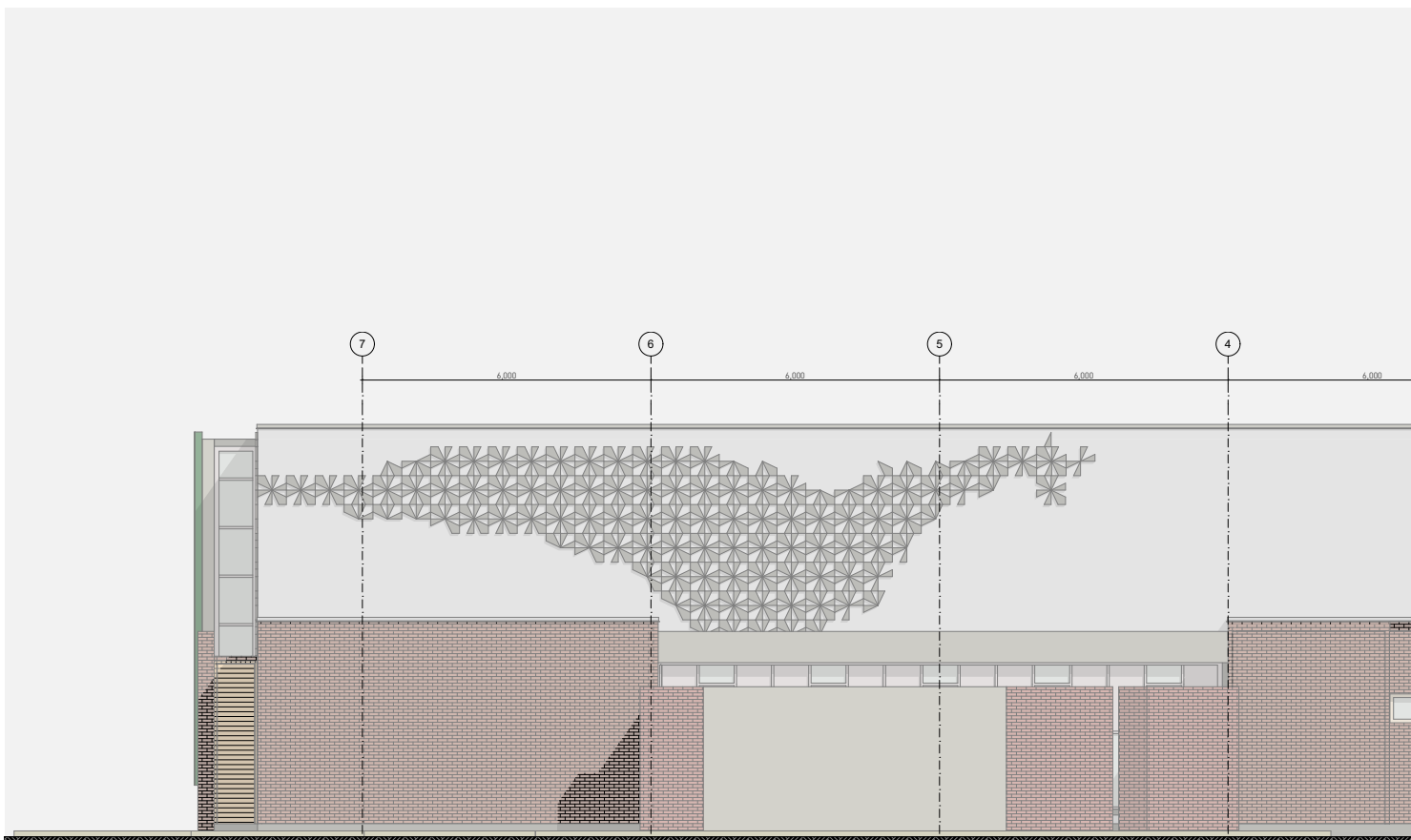


SOUTH ELEVATION

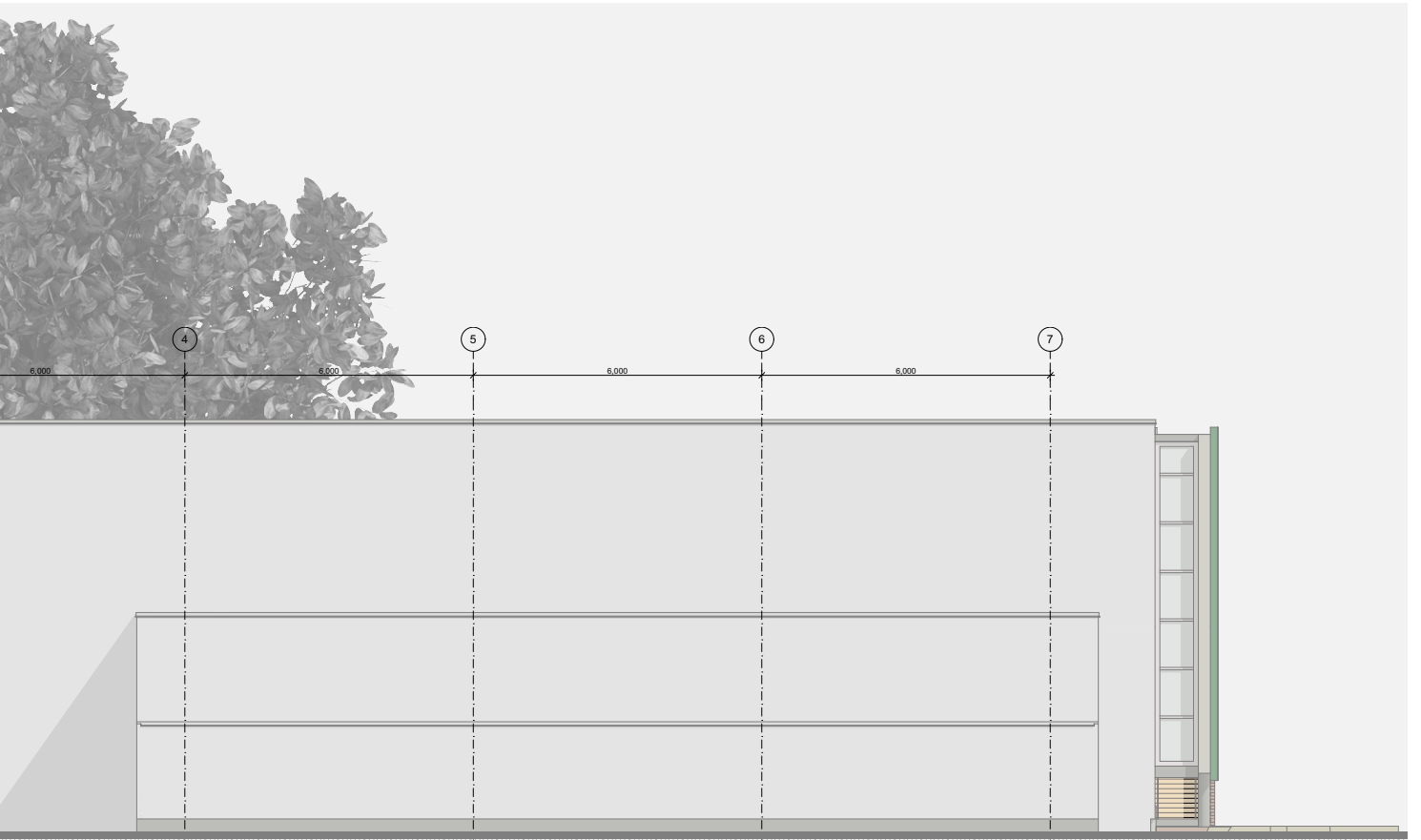




WEST ELEVATION

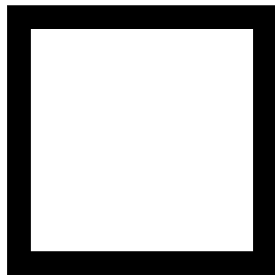


EAST ELEVATION

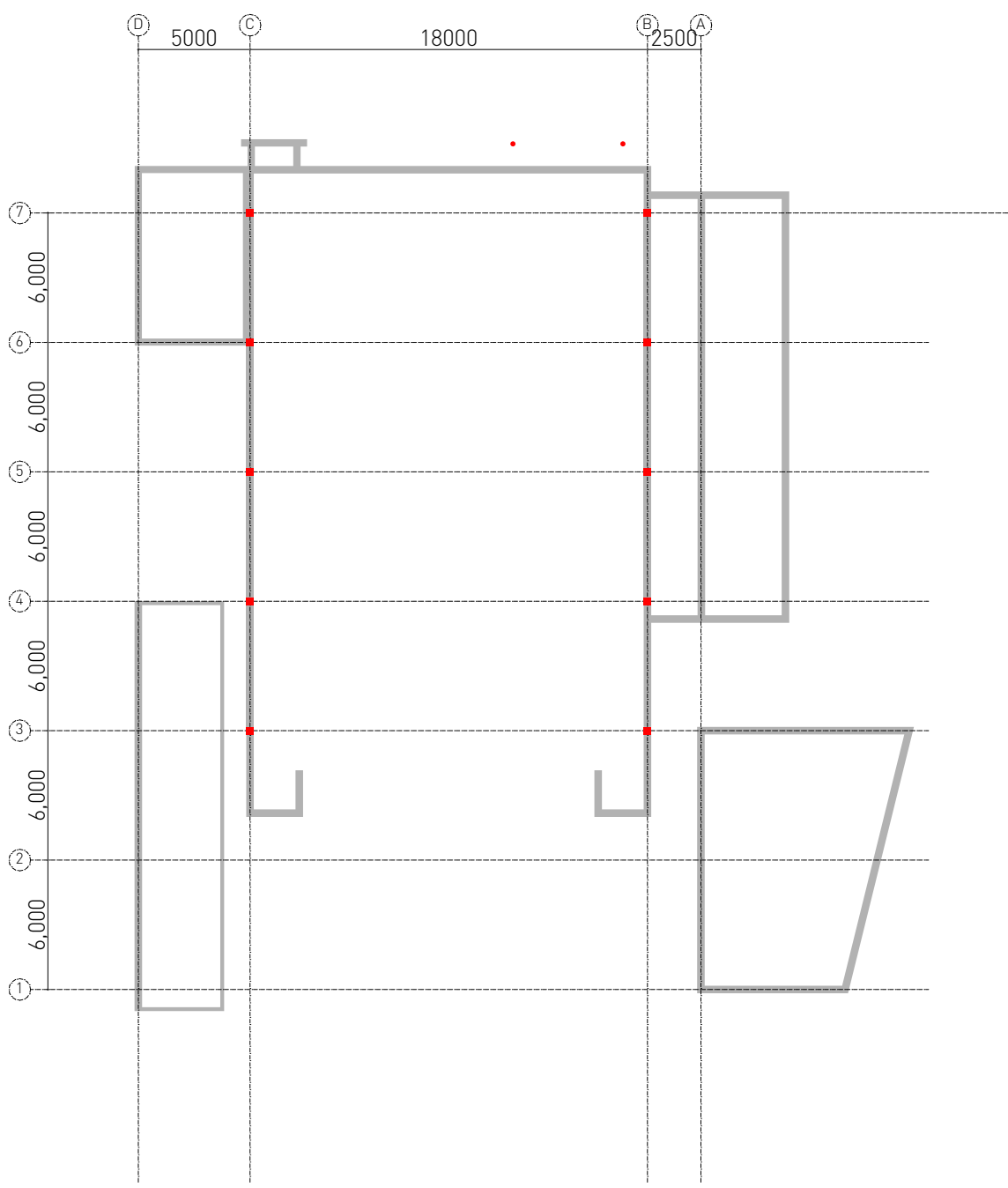








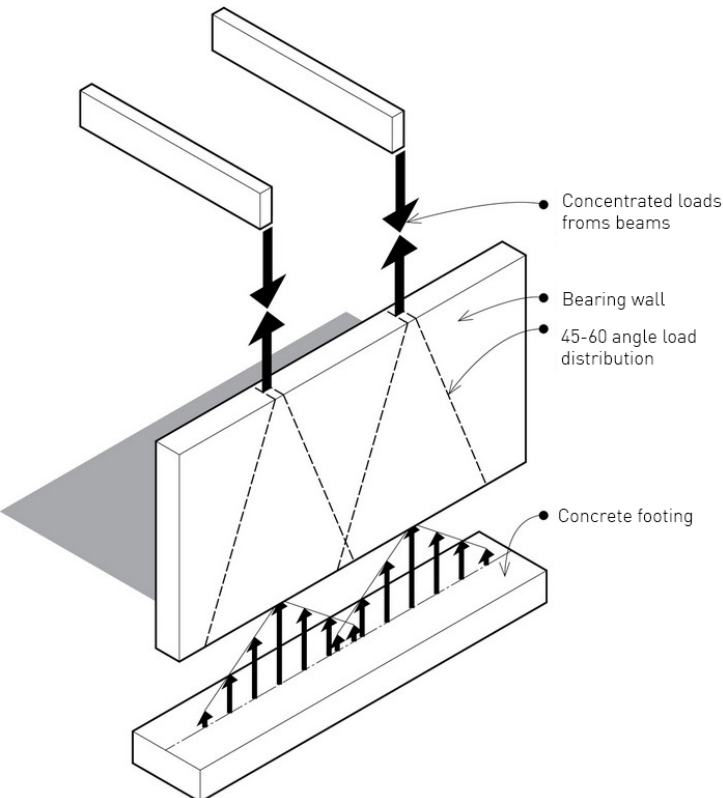
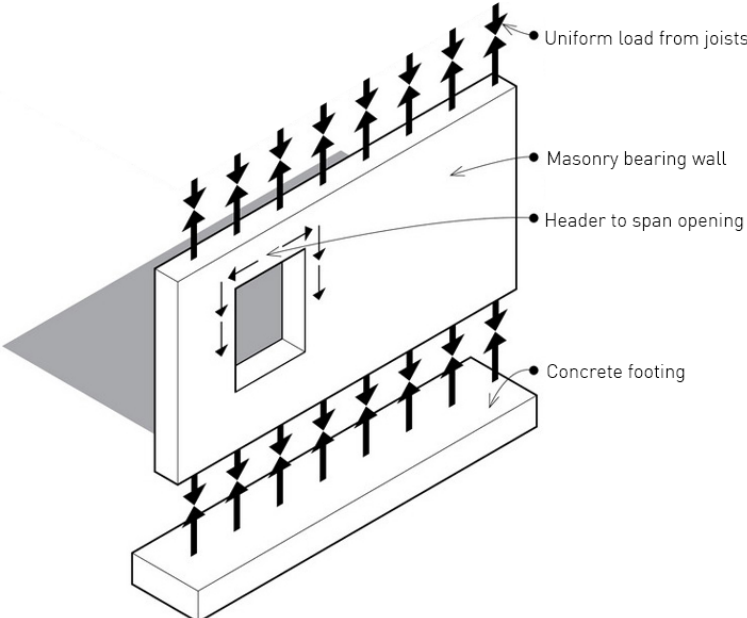
STRUCTURE AND DETAILS

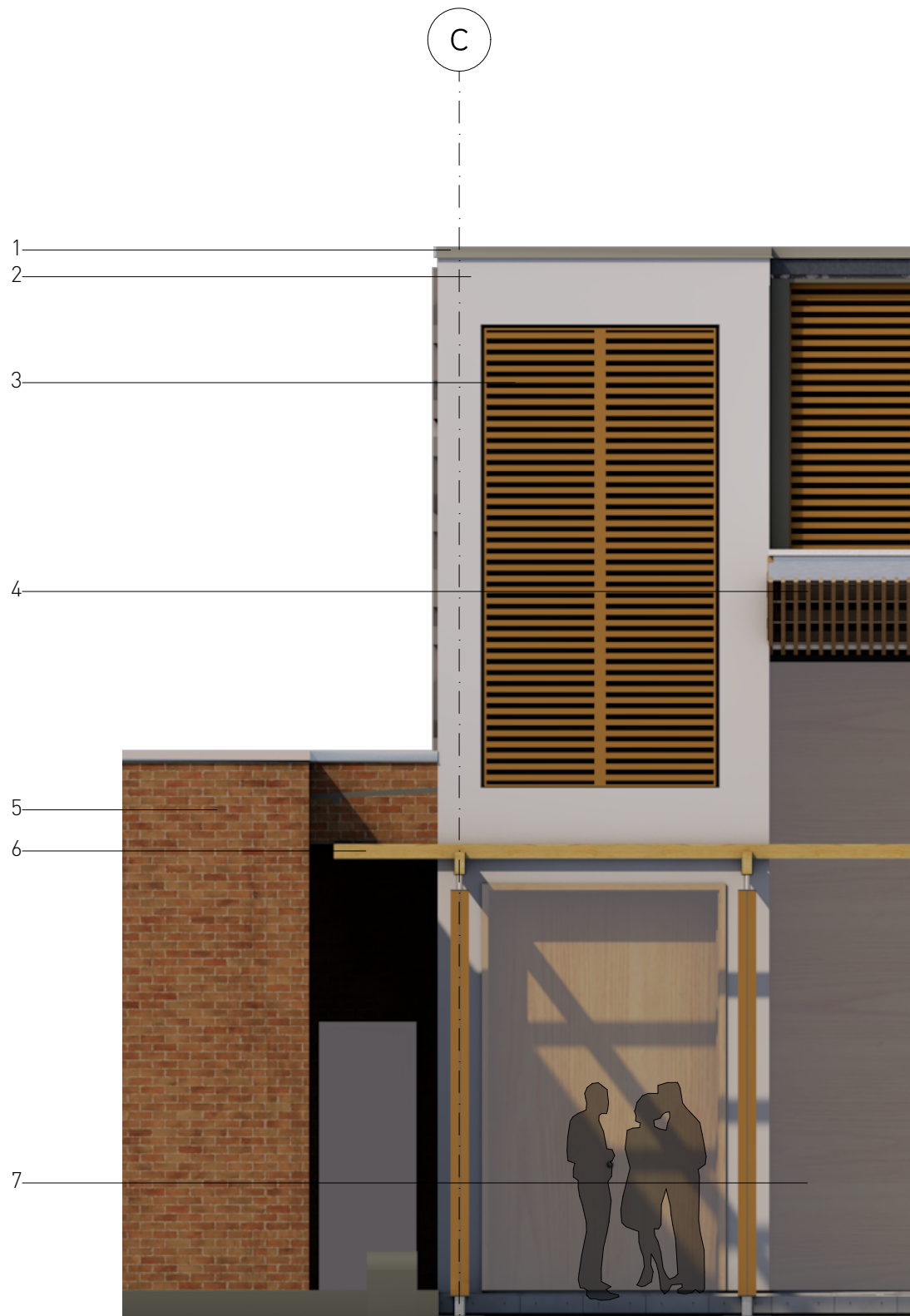


■ Structural Column  
 Load Bearing Wall

GROUND FLOOR PLAN | STRUCTURAL LAYOUT PLAN

# MASONRY STRUCTURAL SYSTEM | LOAD BEARING WALL





PARTIAL FACADE DETAIL | 1:50

1. 2mm powder coated aluminium flashing
2. plaster and paint
3. 16x44mm hardwood slats at 90mm cc in steel frame
4. hardwood slats at 100mm cc to soffit
5. stretcher bond face brick finish
6. pergola
7. purpose made door

2

2mm powder coated aluminium flashing and counterflashing with drip bent as indicated on drawings, epoxy fixed to steel and concealed clip fixing as per roof sheeting manufacturer's details.

Polyclosure by 'Sondor', brown built profile, with adhesive strip on both sides.

150mm SHS vierendeel truss

Aluminium gutter by gutterfast.

Clear polycarbonate sheeting, Kiplok profile by 'Modek'.

254x146x31 I-section, with bottom flange removed and tapered.

32x44mm p.a.r hardwood slats at 100mm cc to soffit

50mm slope down

Detail A-1

3

Parapet wall behind

16x44mm p.a.r hardwood slats at 90mm cc in steel angle frame to detail, set in vierendeel truss.

457 I-section support.

Detail A-3

Detail A-2

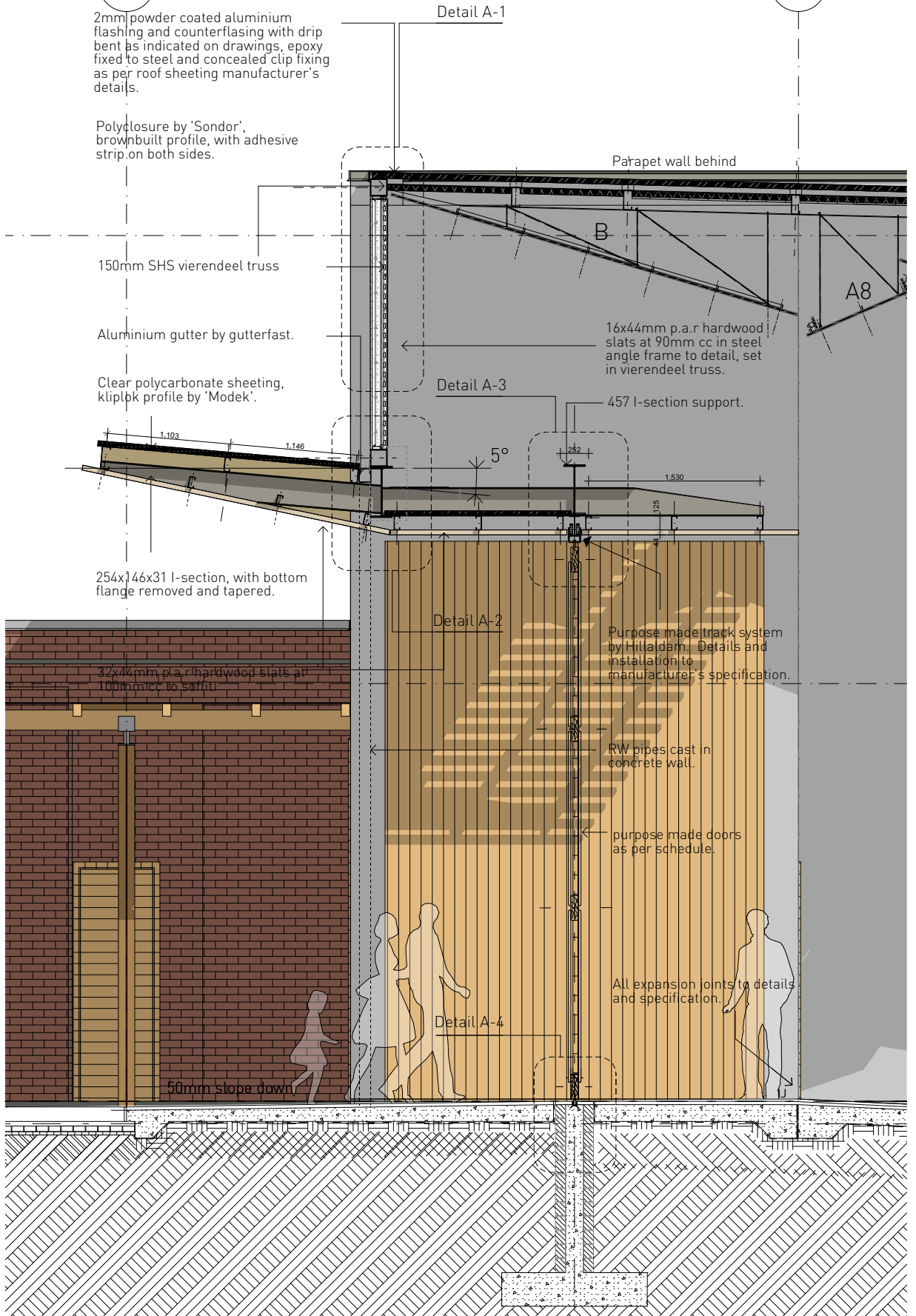
Purpose made track system by Hilladam. Details and installation to manufacturer's specification.

RW pipes cast in concrete wall.

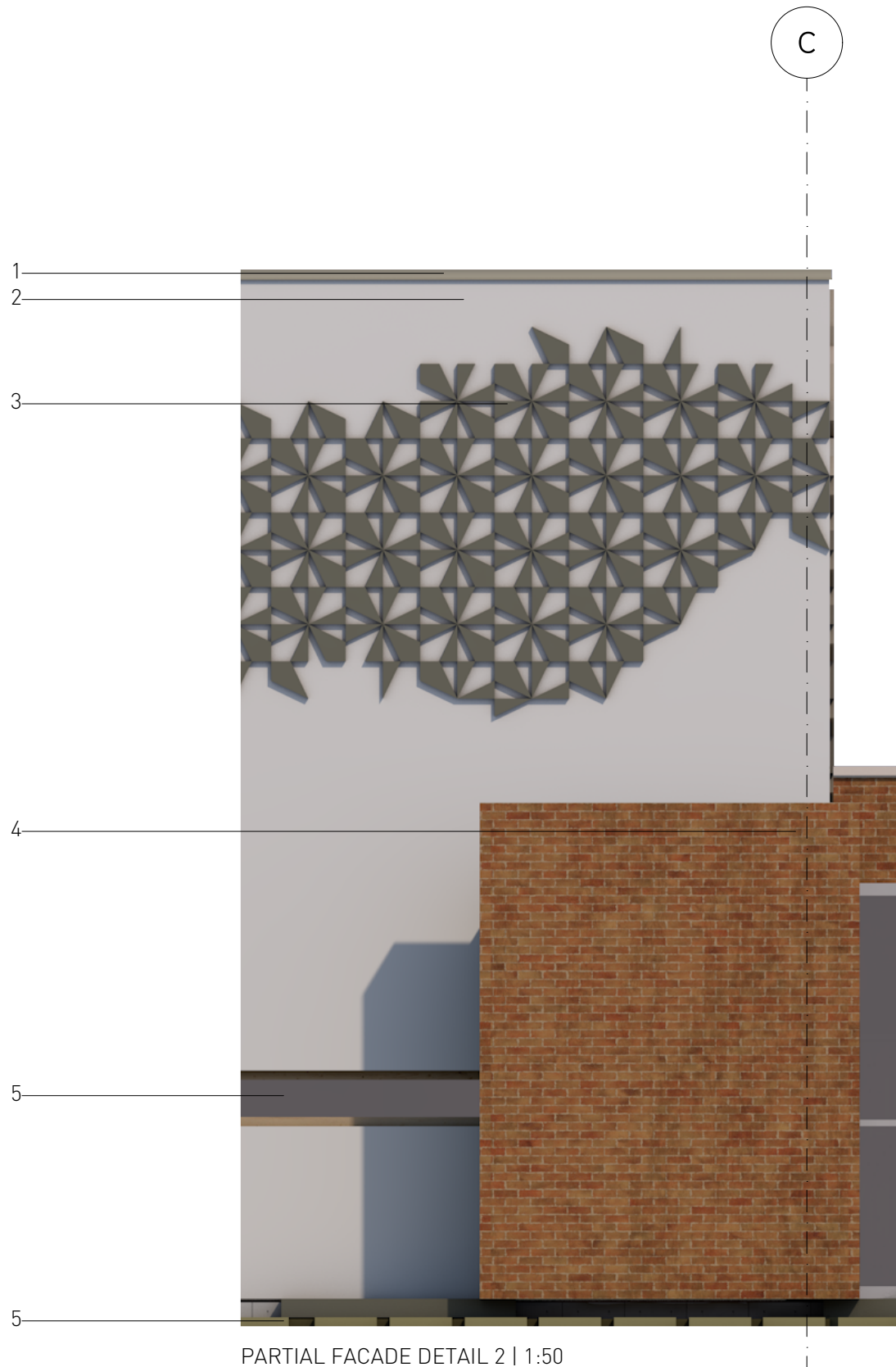
purpose made doors as per schedule.

All expansion joints to details and specification.

Detail A-4

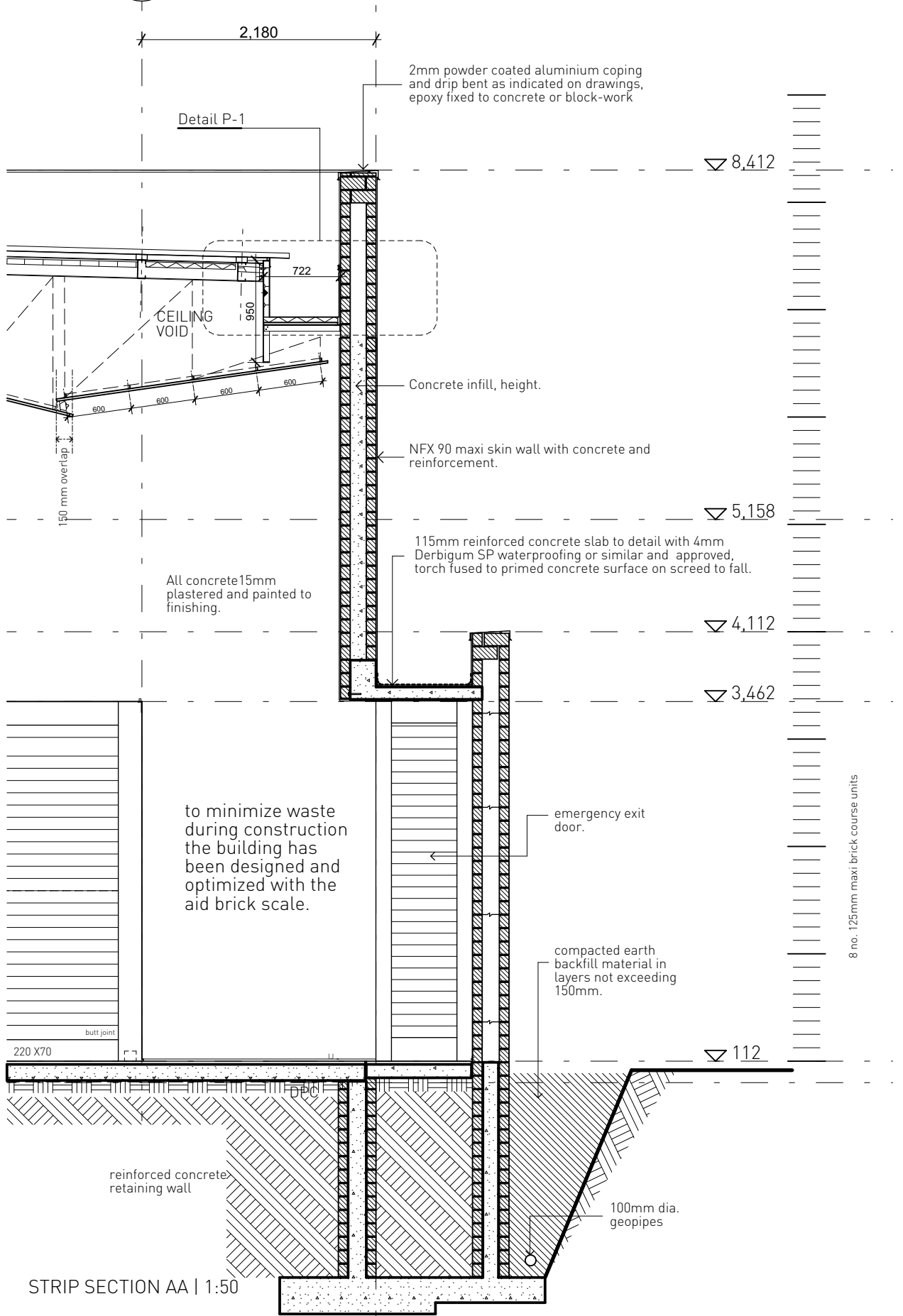


STRIP SECTION AA | 1:50



1. 2mm powder coated aluminium flashing
2. plaster and paint
3. tema design i
4. strecher bond face brick finish
5. purpose made window

7



2,180

Detail P-1

2mm powder coated aluminium coping and drip bent as indicated on drawings, epoxy fixed to concrete or block-work

▽ 8,412

CEILING VOID

722

Concrete infill, height.

NFX 90 maxi skin wall with concrete and reinforcement.

▽ 5,158

115mm reinforced concrete slab to detail with 4mm Derbigum SP waterproofing or similar and approved, torch fused to primed concrete surface on screed to fall.

All concrete 15mm plastered and painted to finishing.

▽ 4,112

▽ 3,462

to minimize waste during construction the building has been designed and optimized with the aid brick scale.

emergency exit door.

compacted earth backfill material in layers not exceeding 150mm.

8 no. 125mm maxi brick course units

220 X70

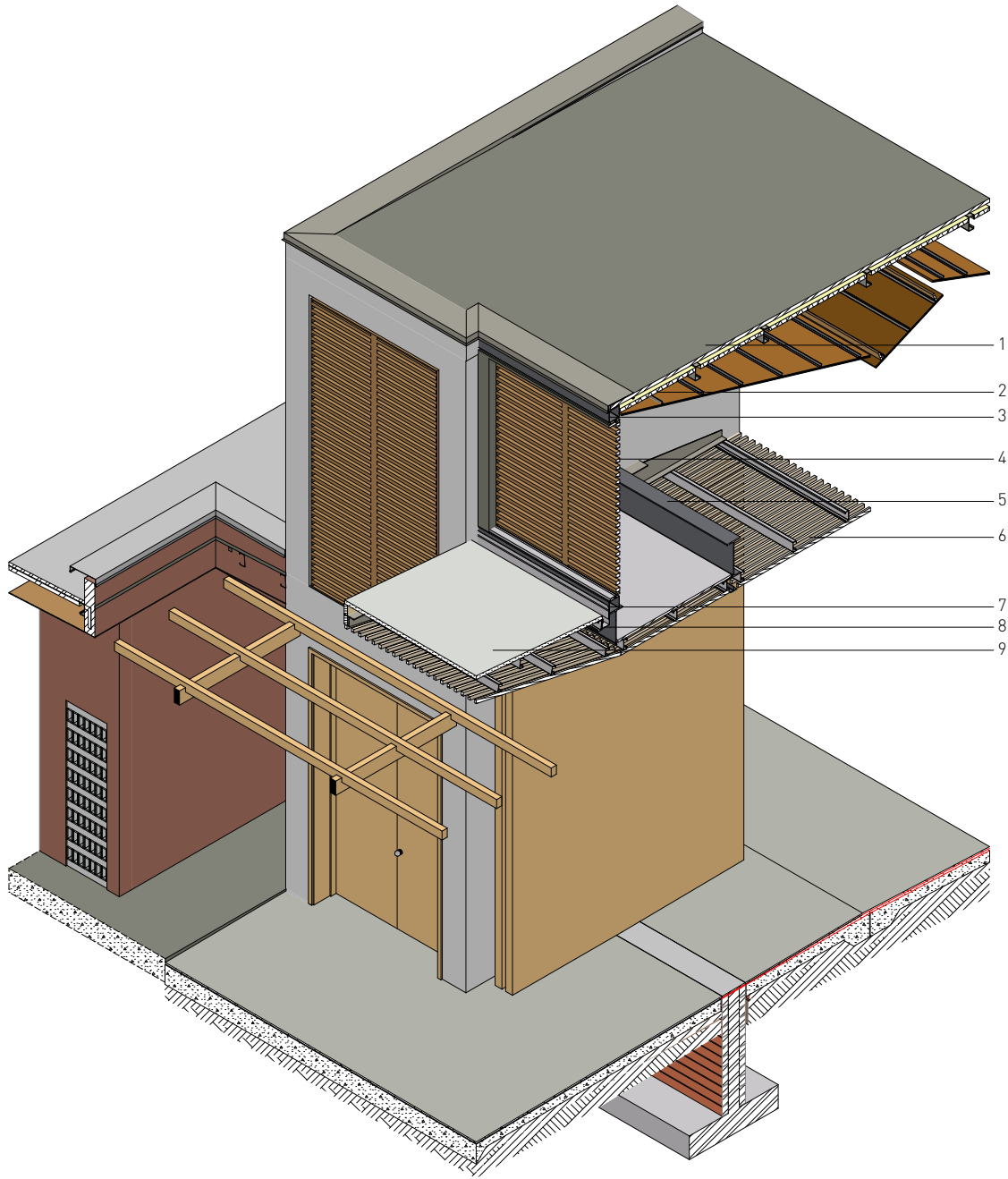
butt joint

▽ 112

reinforced concrete retaining wall

100mm dia. geopipes

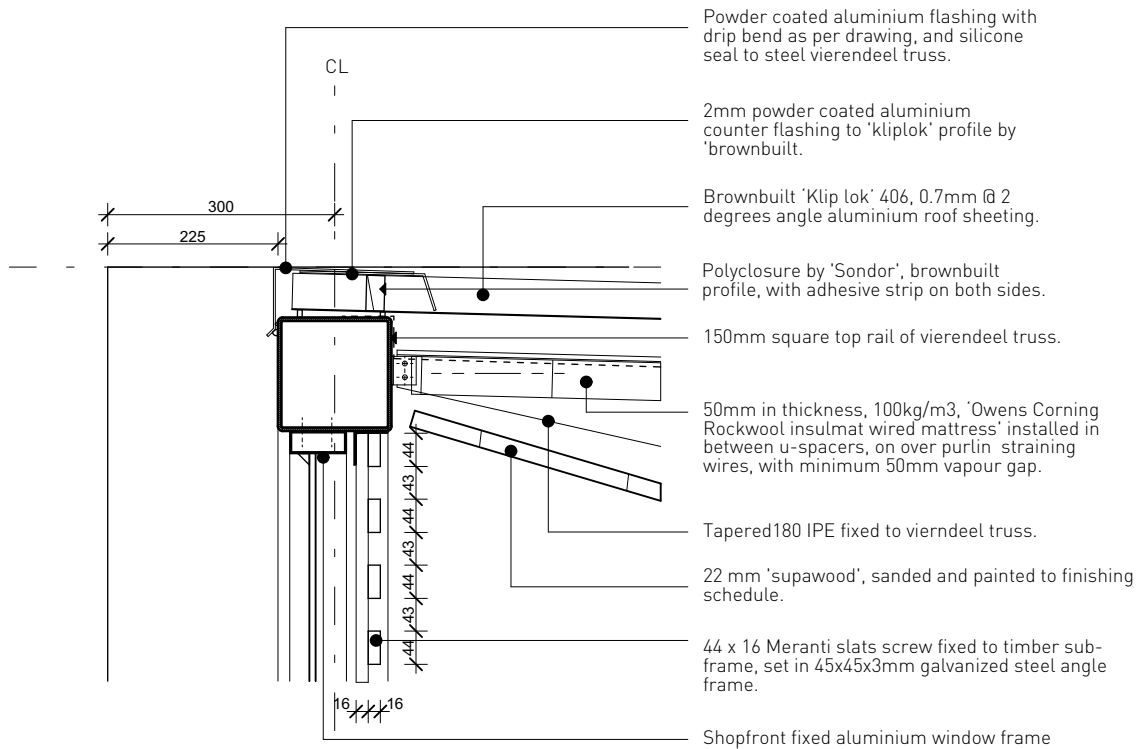
STRIP SECTION AA | 1:50



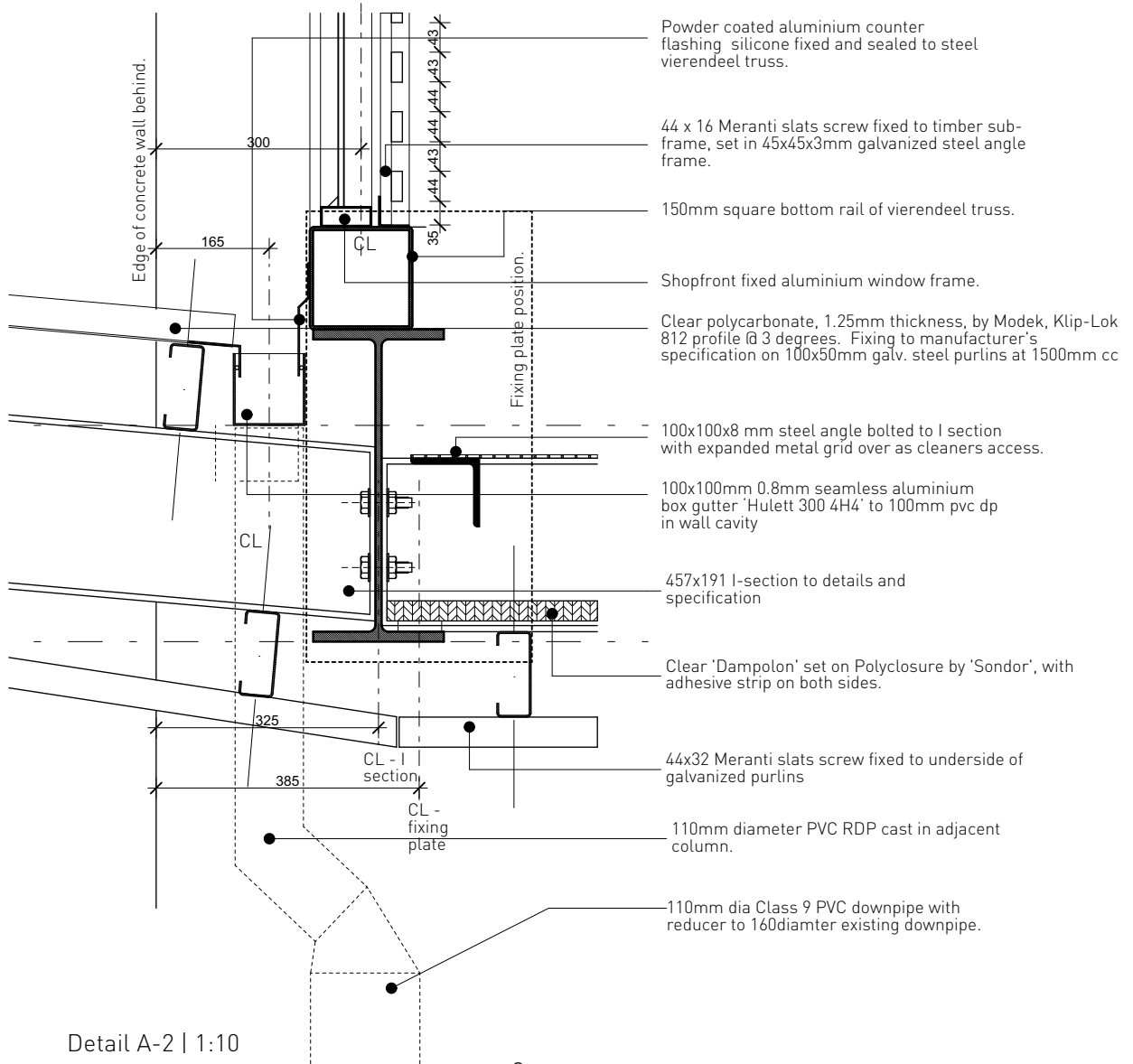
1. Brownbuilt 'Klip lok' 406, 0.7mm @ 2 degrees angle aluminium roof sheeting.
2. 50mm in thickness, 100kg/m<sup>3</sup>, 'Owens Corning Rockwool insulmat wired mattress' installed in between u-spacers, on over purlin straining wires, with minimum 50mm vapour gap.
3. 150mm top bottom rail of vierendeel truss.
4. 44 x 16 Meranti slats screw fixed to timber sub-frame, set in 45x45x3mm galvanized steel angle frame.
5. 457x191 I-section to details and specification
6. 44x32 Meranti slats screw fixed to underside of galvanized purlins
7. Powder coated aluminium counter flashing silicone fixed and sealed to steel vierendeel truss.
8. 100x100mm 0.8mm seamless aluminium box gutter 'Hulett 300 4H4' to 100mm pvc dp in wall cavity
9. Clear polycarbonate, 1.25mm thickness, by Modek, Klip-Lok 812 profile @ 3 degrees. Fixing to manufacturer's specification on 100x50mm galv. steel purlins at 1500mm cc

AXONOMETRIC ENTRANCE DETAIL

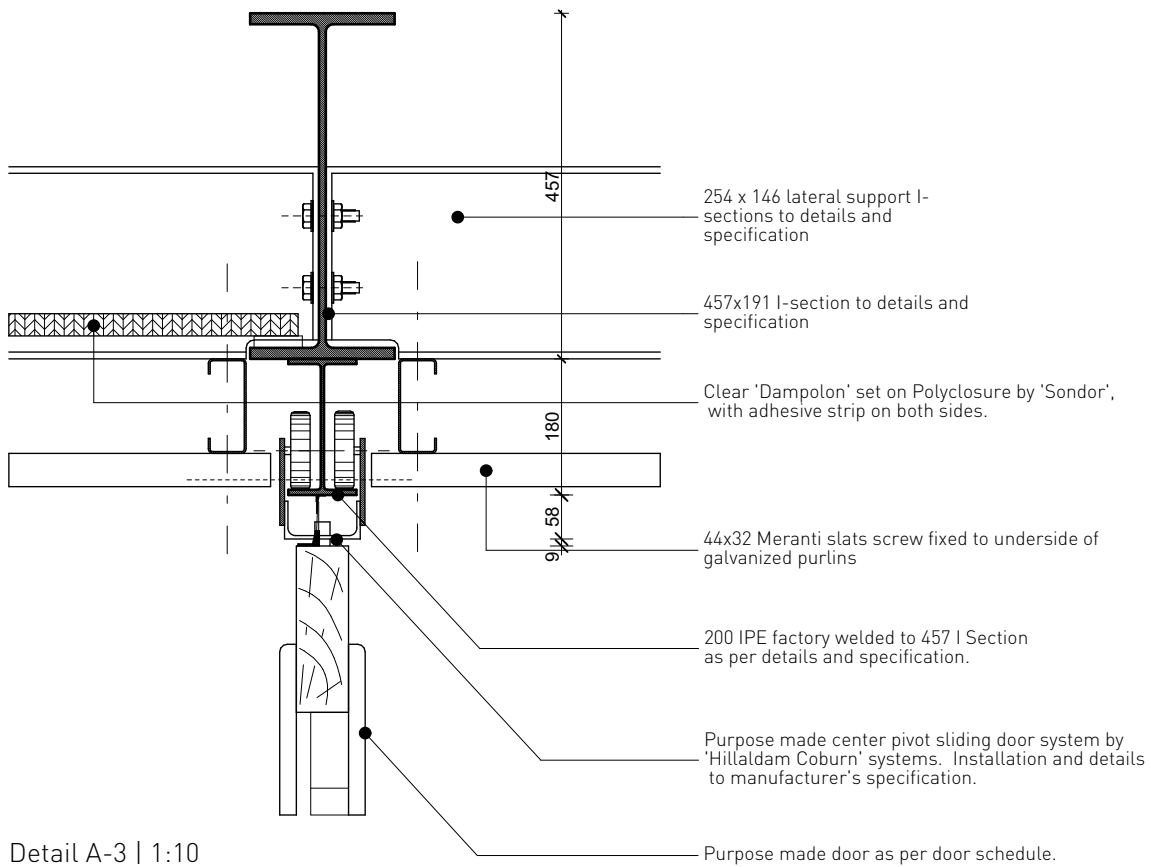




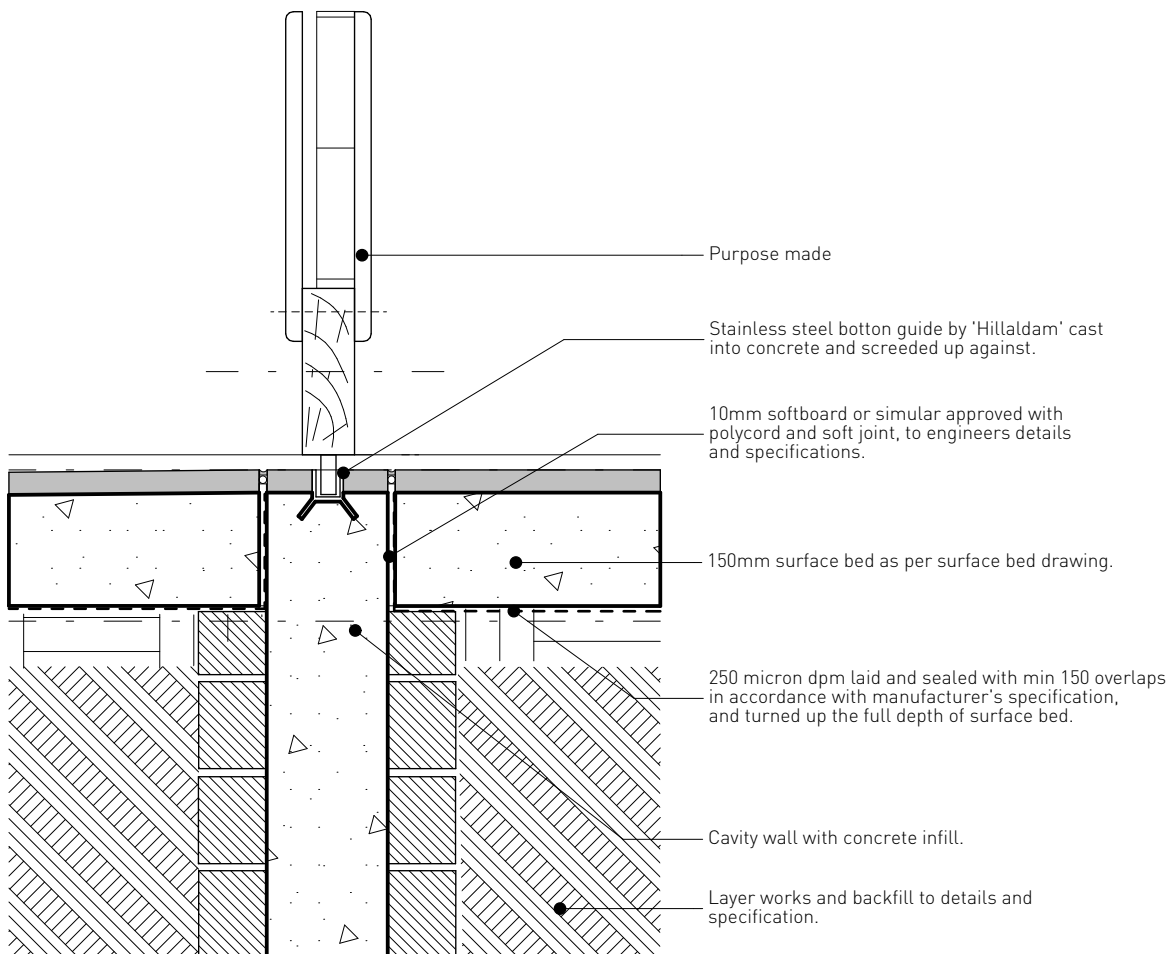
Detail A-1 | 1:10



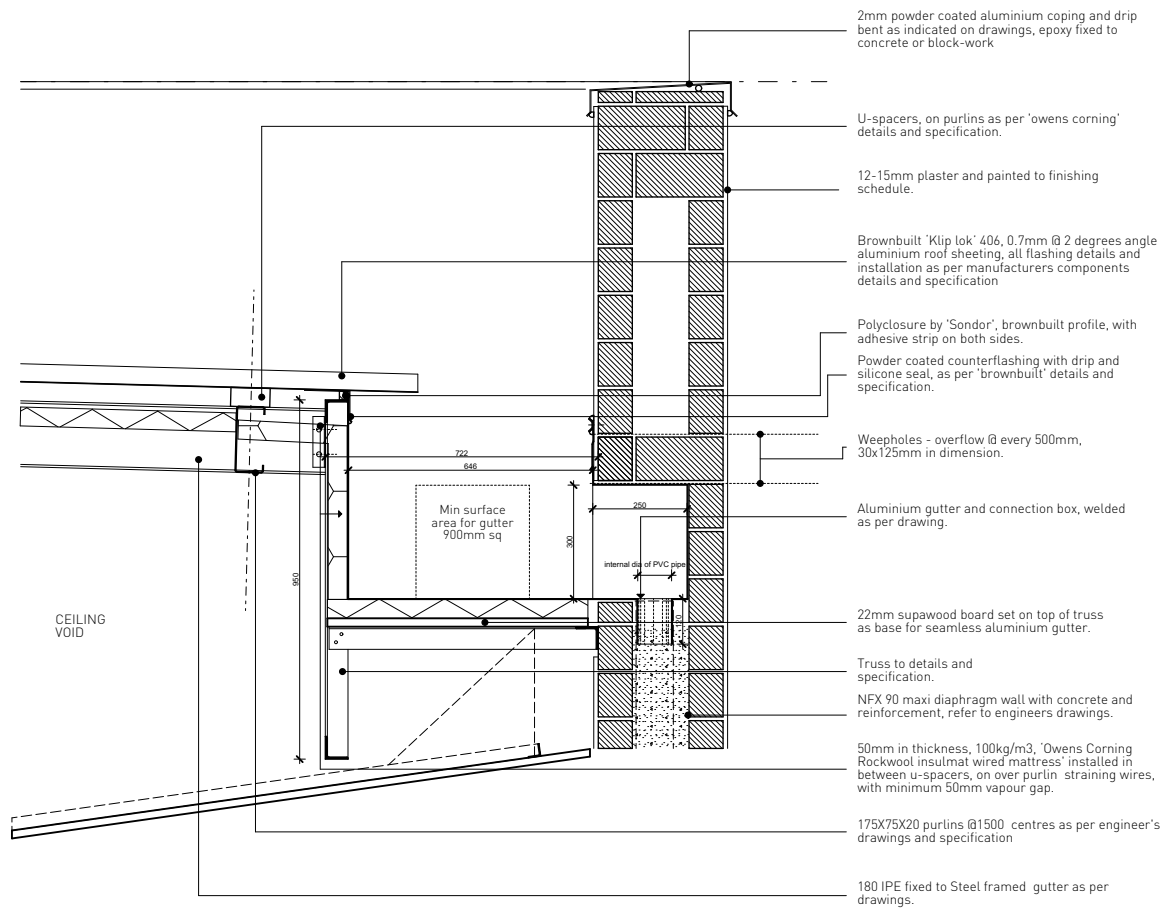
Detail A-2 | 1:10



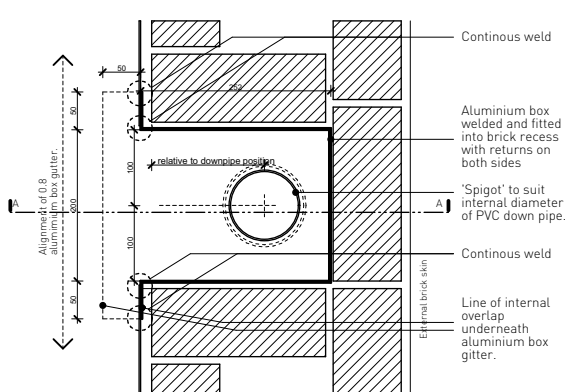
Detail A-3 | 1:10



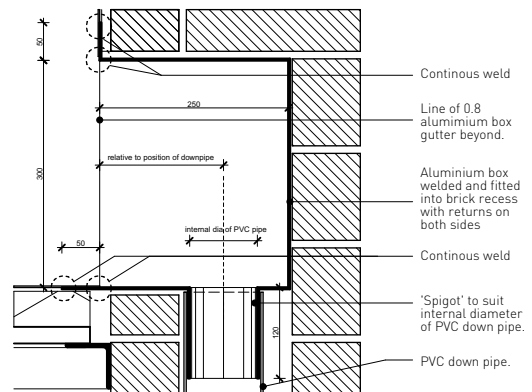
Detail A-4 | 1:10



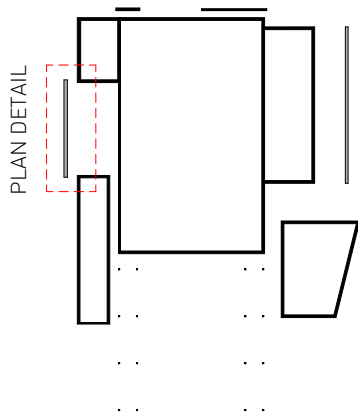
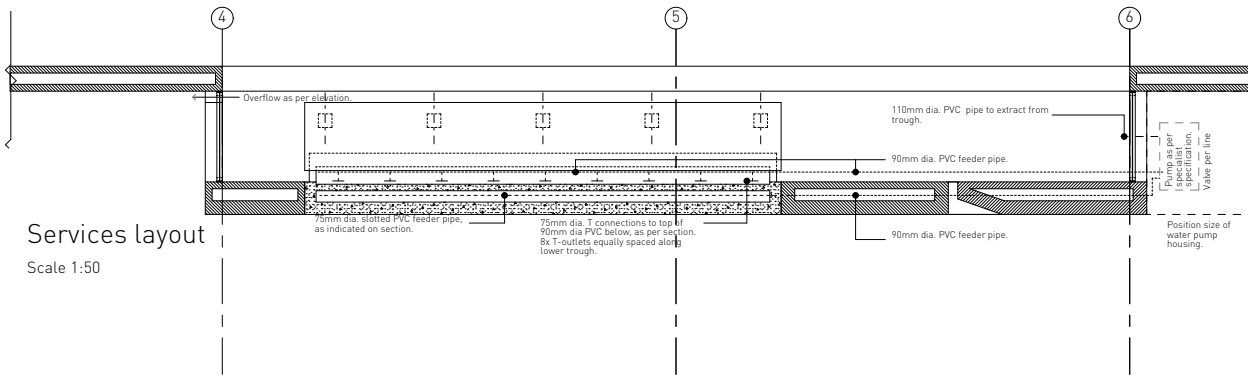
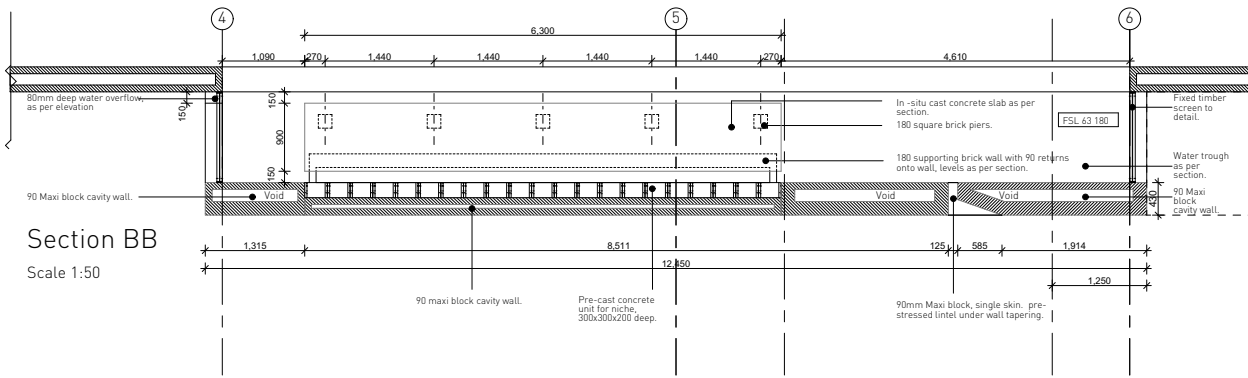
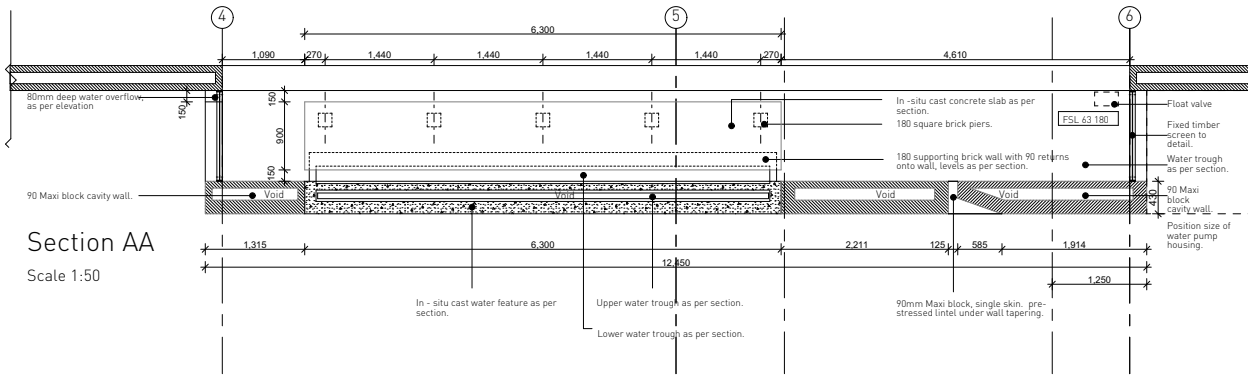
Detail A-5 | 1:20

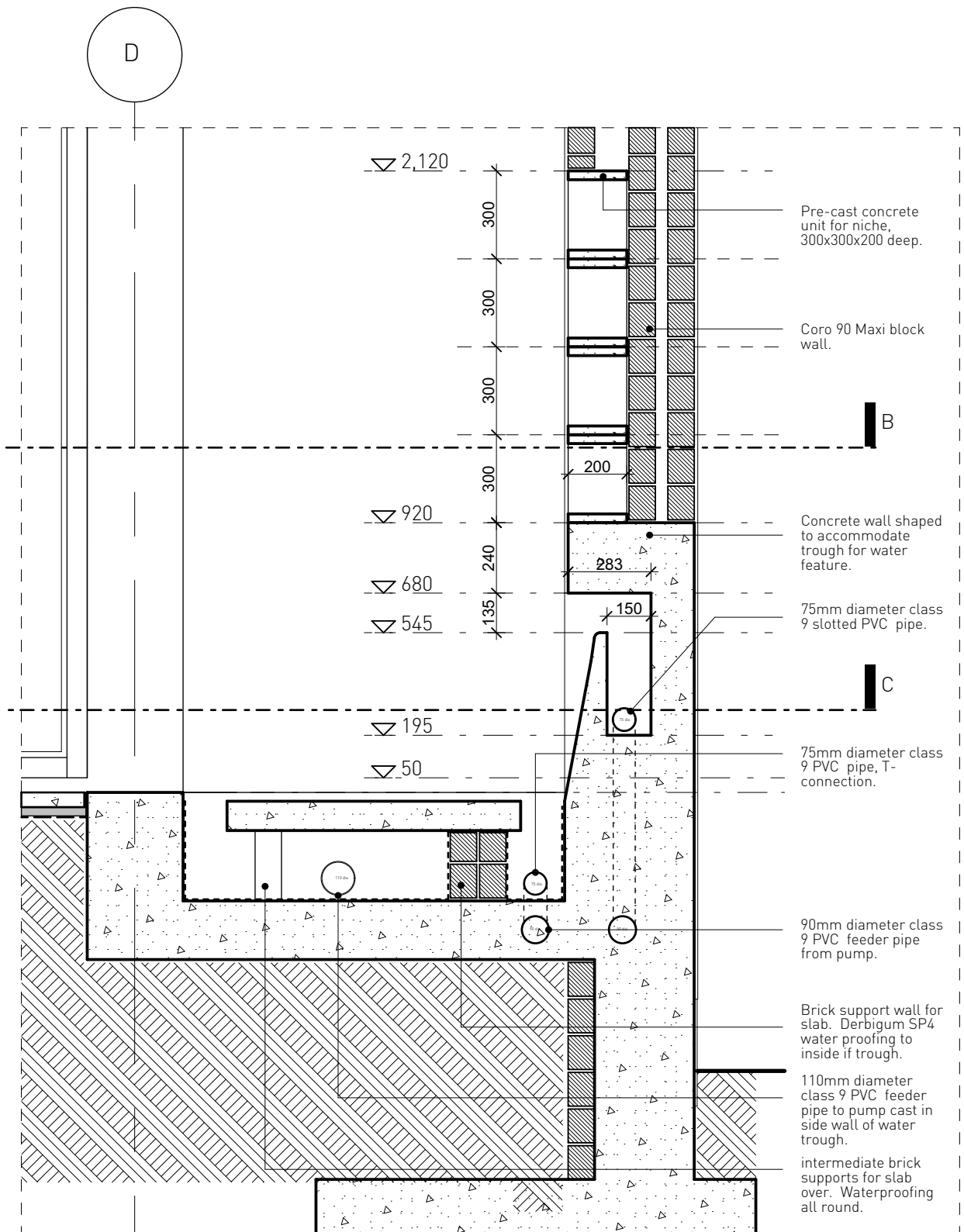


Plan Detail A-5a  
1:10



Sectional Detail A-5a  
1:10





Section DD  
Scale 1:20

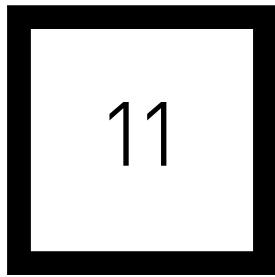


## CONCLUSION

The Ecological Village is the result of merging vernacular and current design thinking, to find a more suitable intervention to the dispersed city of Maseru. Both sensitive and intuitive measures must be considered when merging tradition and future technology, to avoid pastiche mimicry that would devalue the process. This has been a process orientated endeavour rather than product orientated pursuit. Thus, there is room for improvement.

The village seeks an alternative to the current development trends and is a natural progression in sustainable living. Urban farming is a central driving force that is supplemented by other suitable measures, such as waste management and recycling for profit. Density and diversity make these as an almost self-sustainable cluster, where each programmatic area is complementing the other. The project combines both architectural design and urban planning principles to speculate current and future urban growth.

Tradition has been maintained in the way the people live, in the way spaces interact, more so the way they relate to their built environment. Basotho have traditionally been sensitive to the environment. By borrowing some of the ornamental motifs, that are slowly fading away in people's memory and thus reinterpreting them and applying them using modern techniques, a tradition that was prevalent before the transition into concrete construction will be preserved and continue to document the passage of time. The legacy of the past can be translated into materiality and proportions. Litema has a potential to be translated into structural system because of the logic inherent in their design as has been illustrated. And this can be an independent study on its own.



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