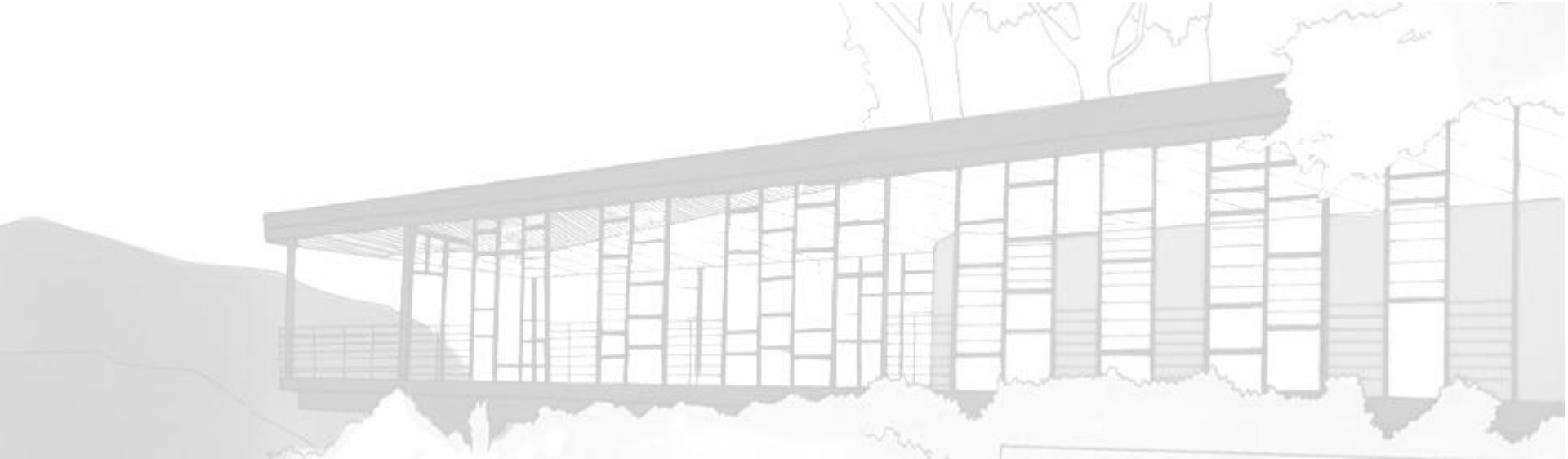
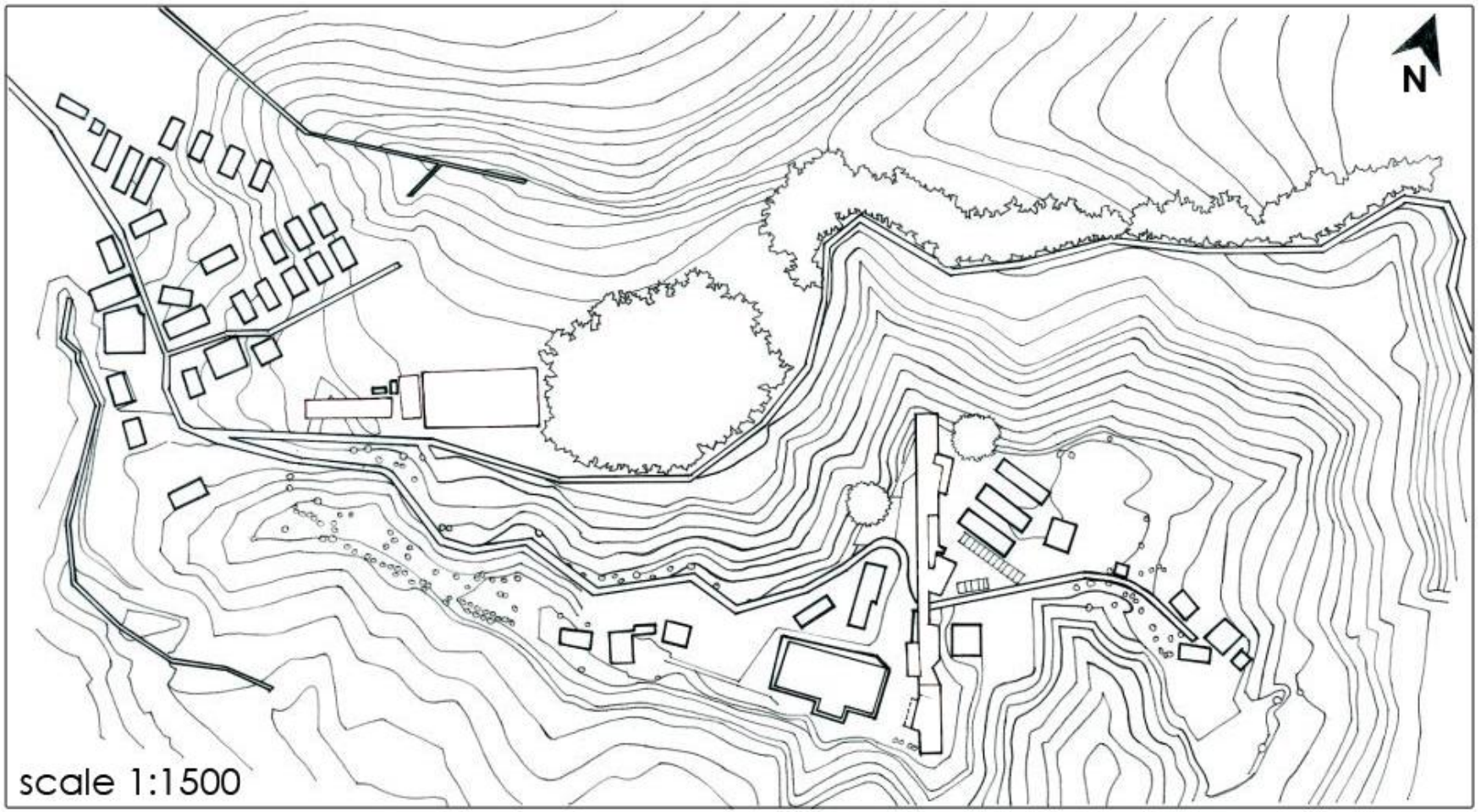

Explore
SG. PALAS
TEA PLANTATION

SITE PLAN

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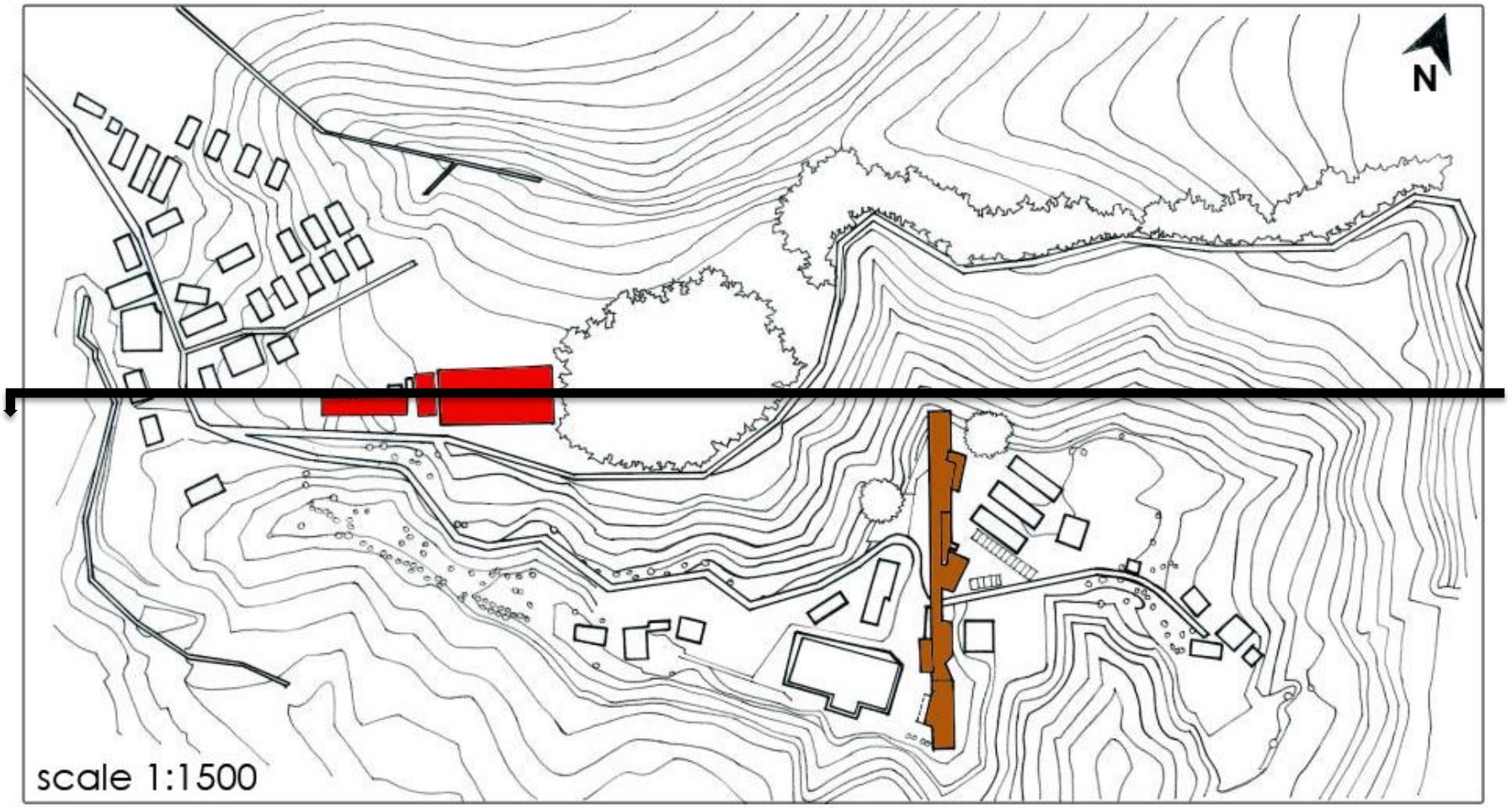
BOH Tea Plantation Visitors' Centre

Section A-A



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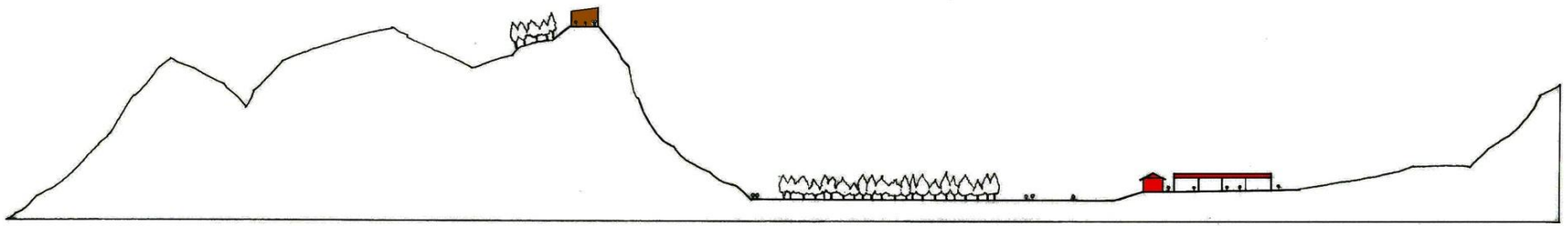

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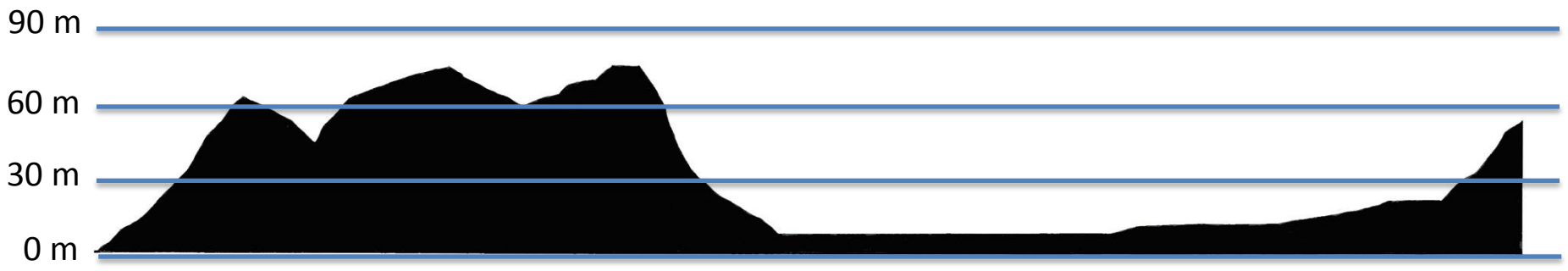

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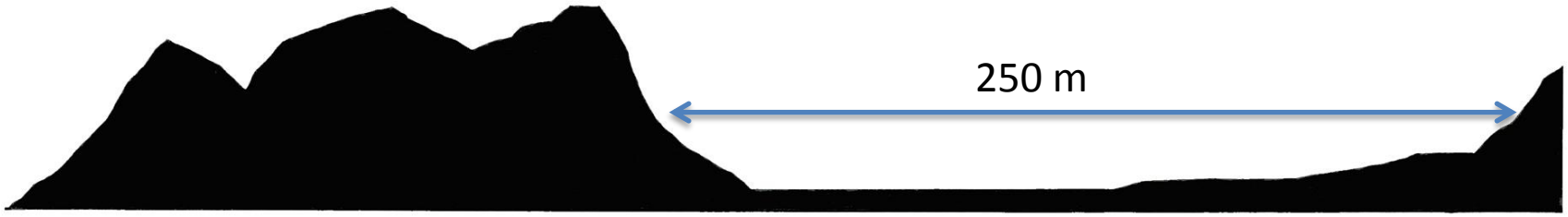

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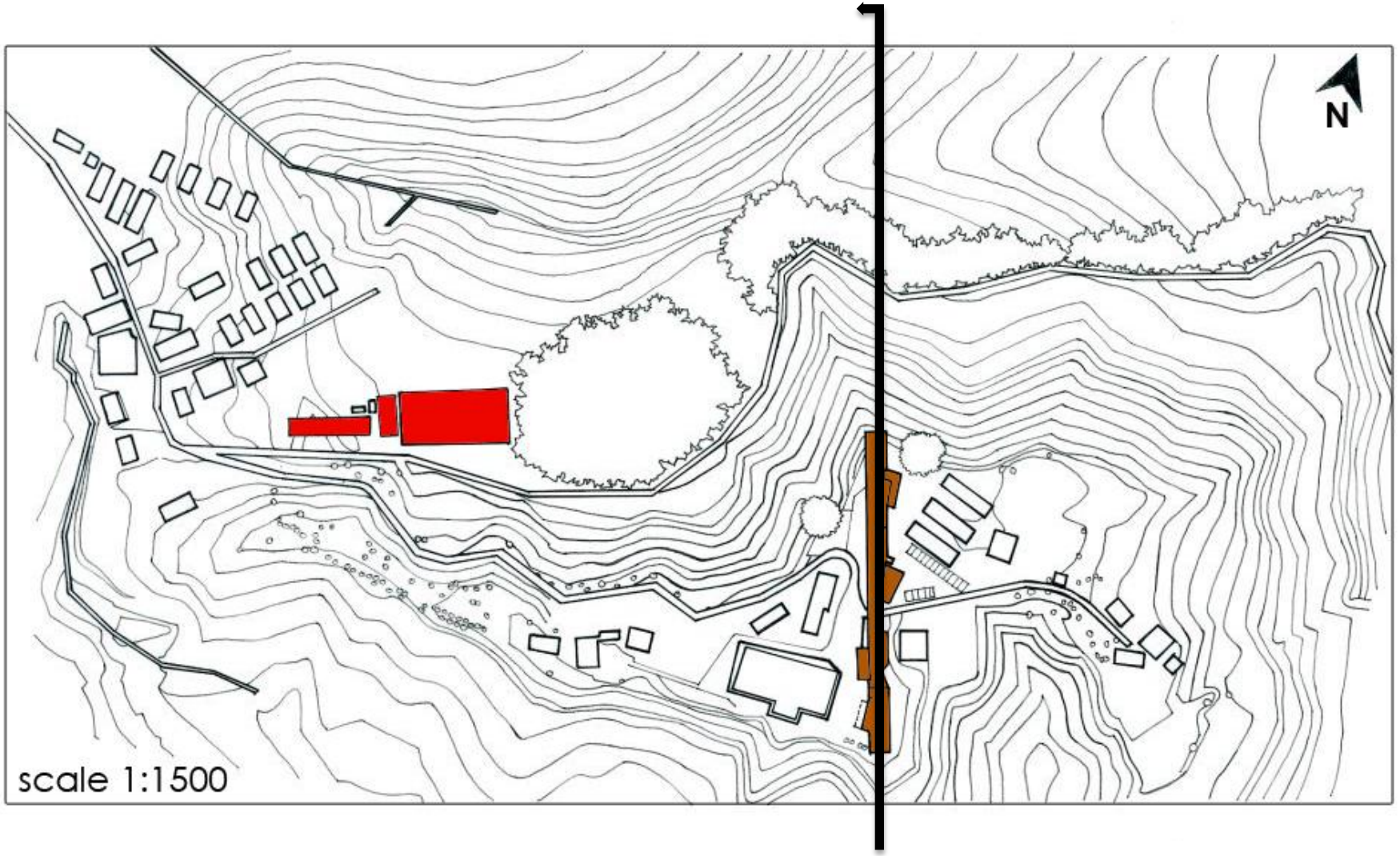

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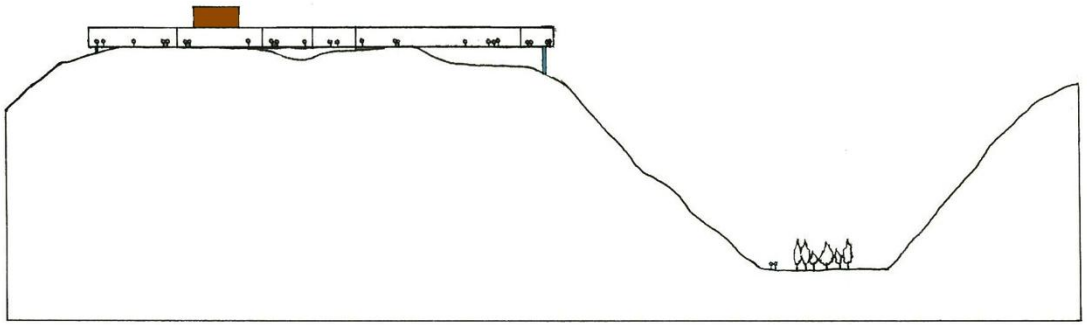

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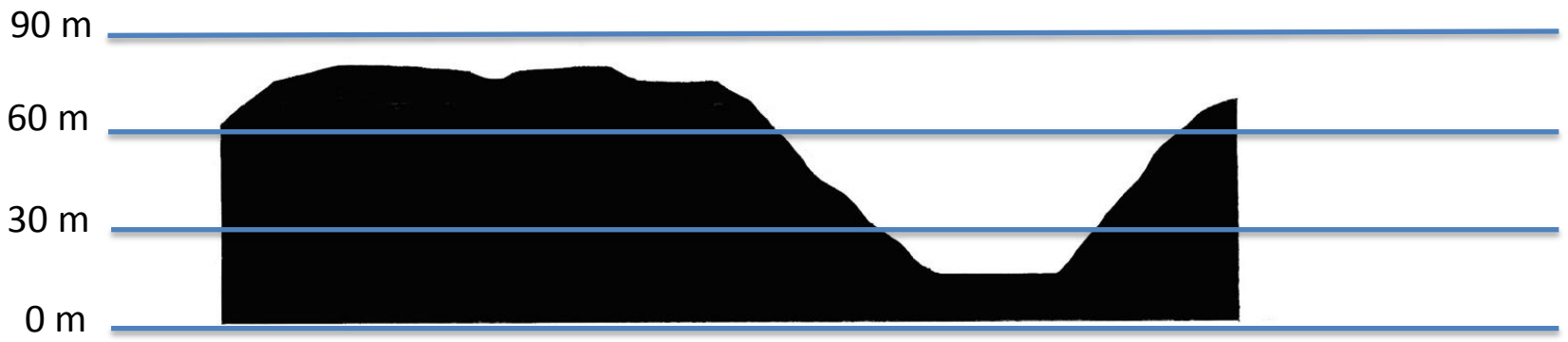

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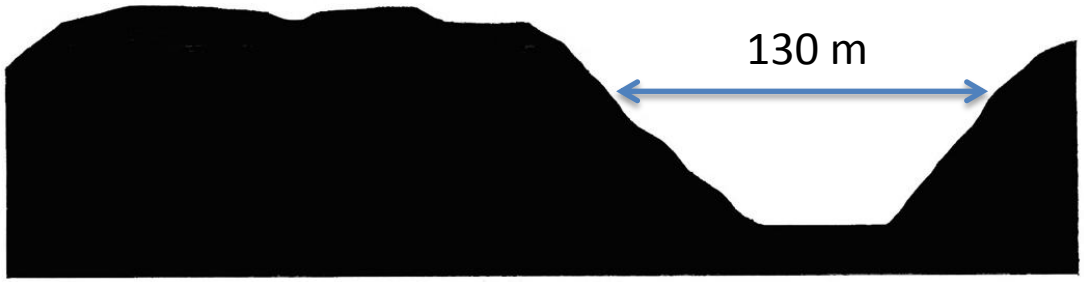

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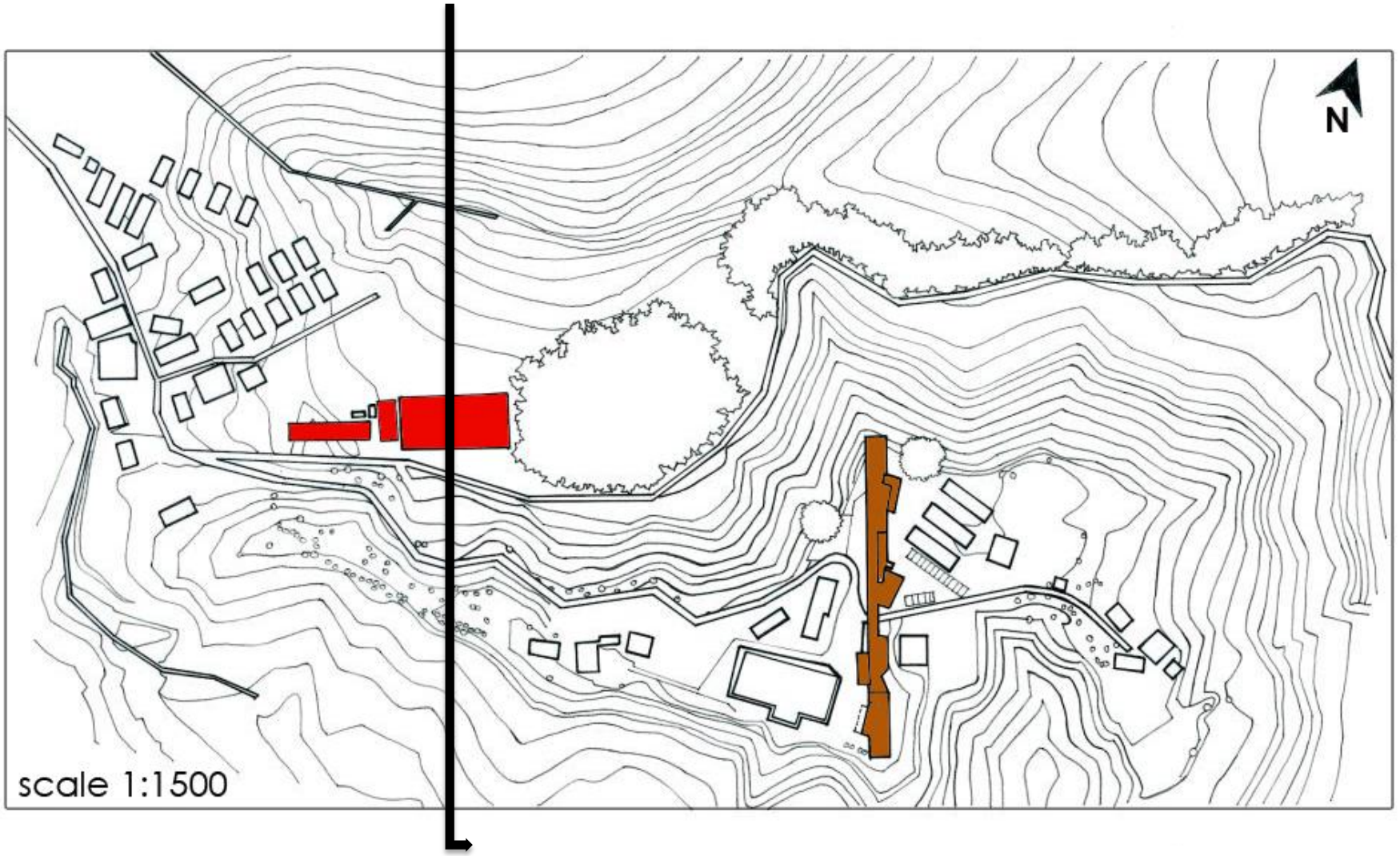

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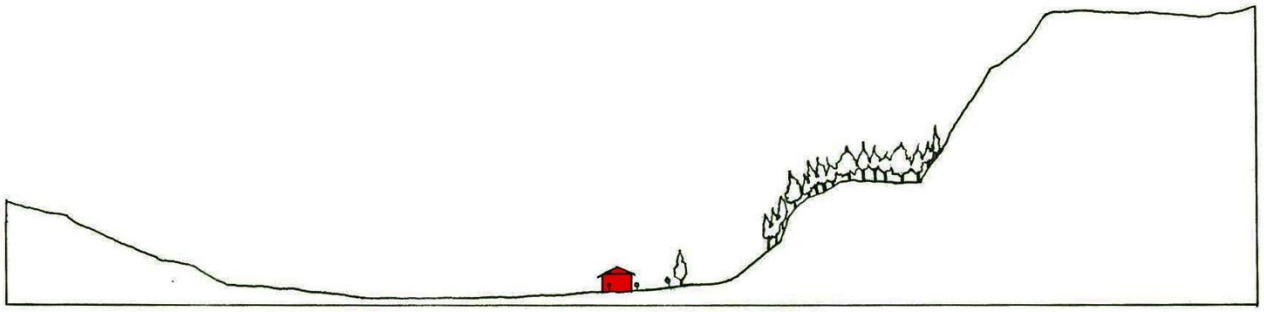

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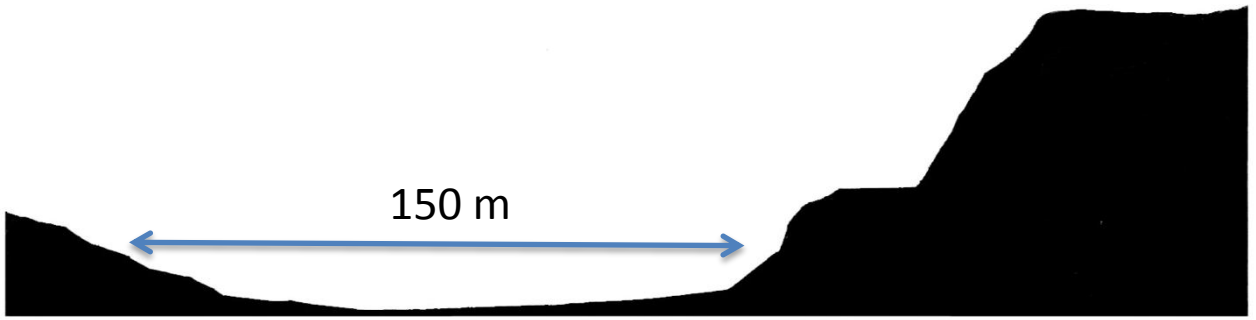


EXISTING BUILDINGS

Background & History

BOH Plantations was founded in 1929 by ***J.A. Russell***, a British businessman during the British colonial era in Malaya.

Sungai Palas Tea Plantation is the third tea garden for BOH Plantations.

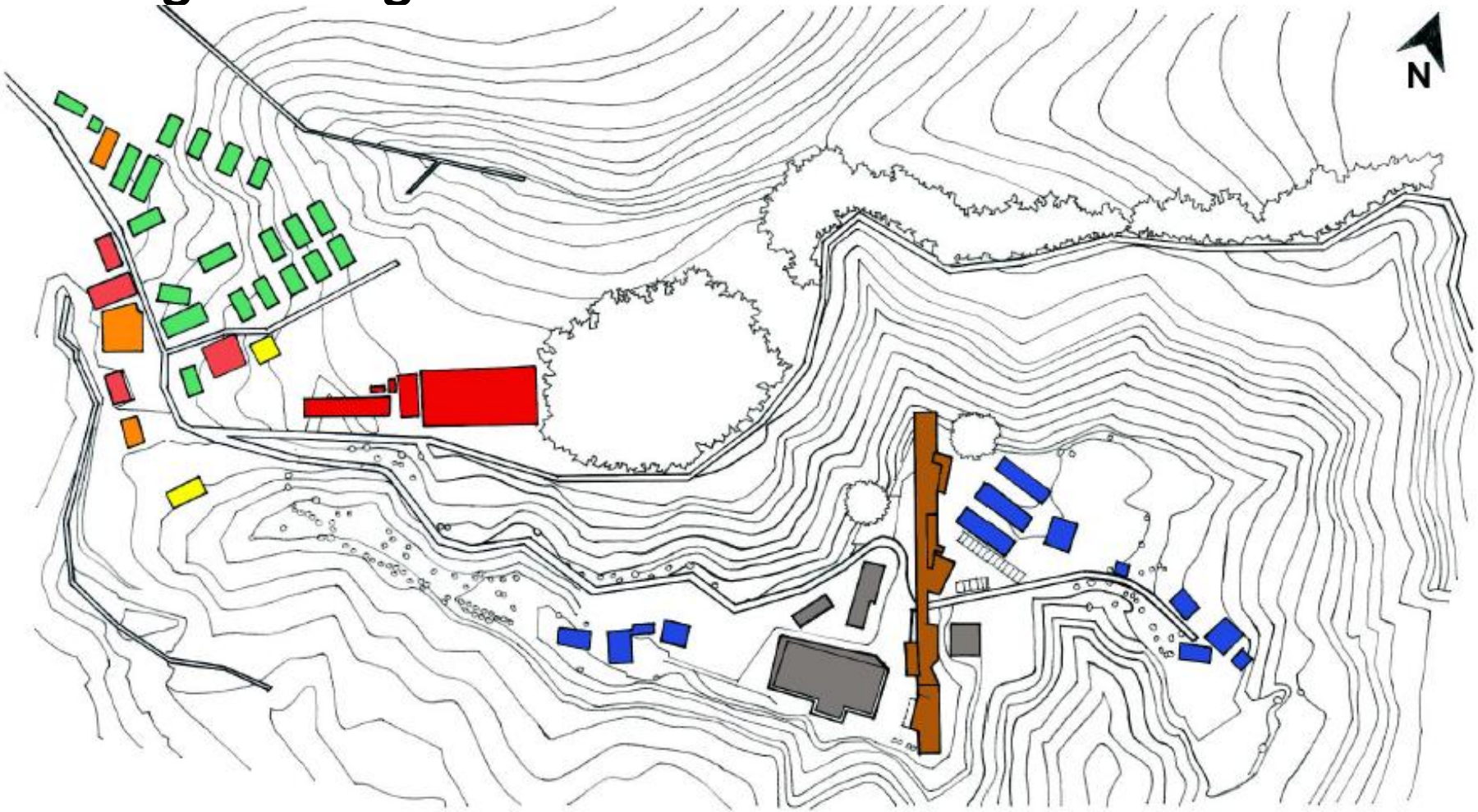
The Cameron Highlands is an old British hill station.

1. British ***bring the Indians from India*** (colonial country) here and plug them into the tea industry.
2. Indians were ***given specific jobs*** according to their caste and get paid.
3. The British ***brought over Sri Lankans (highly-educated)*** than the Indians, ***to supervise.***

Background & History is important for **SITE ANALYSIS:**

- To understand the **origin & development of tea**.
- To study the **residents** of Sungai Palas.
- To clarify the **context** in Sungai Palas.
- To learn the **culture & tradition** in Sungai Palas.
- To find out how the **context, culture & tradition affect the architectural style** in Sungai Palas Tea Plantation, Cameron Highlands.

Existing Buildings



Scale 1: 1500

Residential Building (Tea Plantation Workers)

Residential Building (Factory Workers)

Residential Building (Local Residents)

Facility Buildings

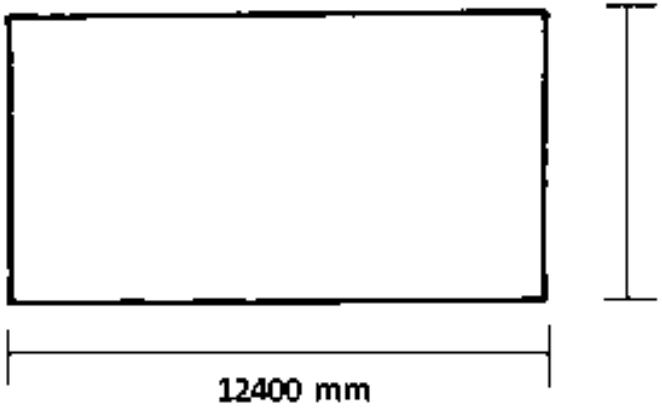
Religious Buildings

Educational Building

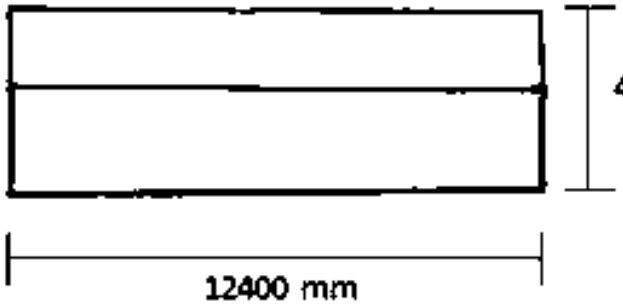
Industrial Building

BOH Tea Centre

Residential Buildings (*For Tea Plantation Workers*)



Floor Plan 1:250



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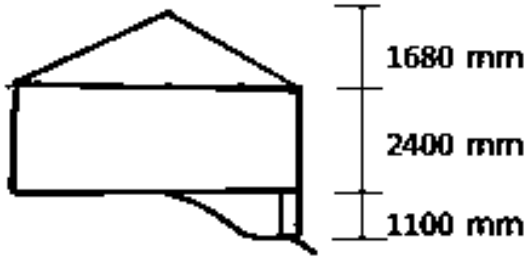

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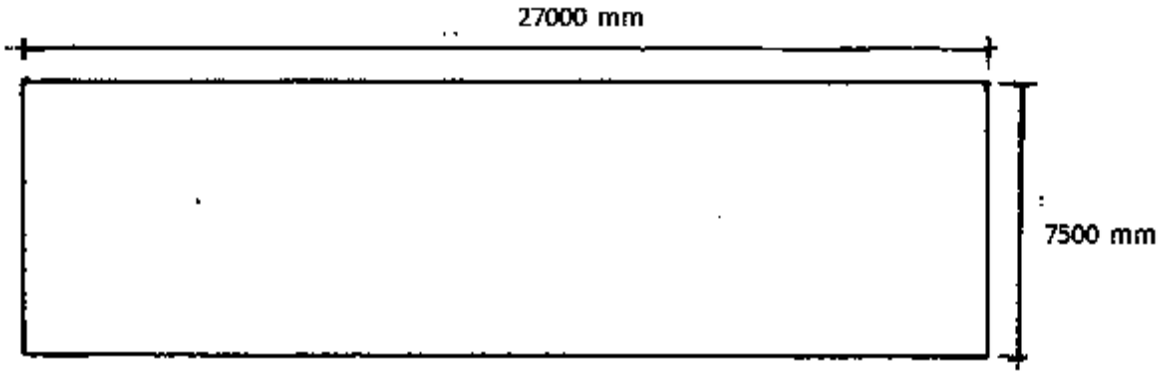
Residential Buildings (*For Tea Factory Workers*)



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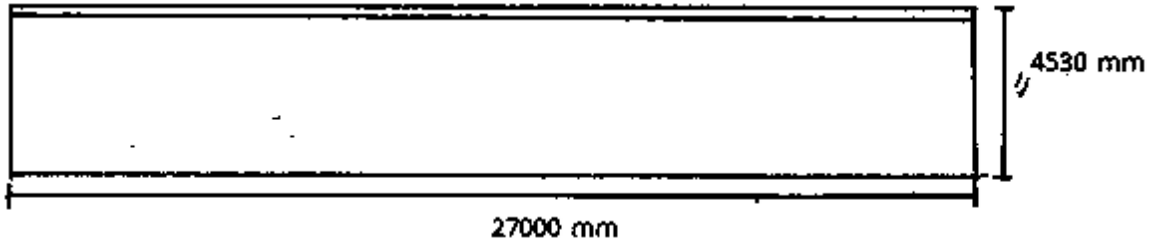

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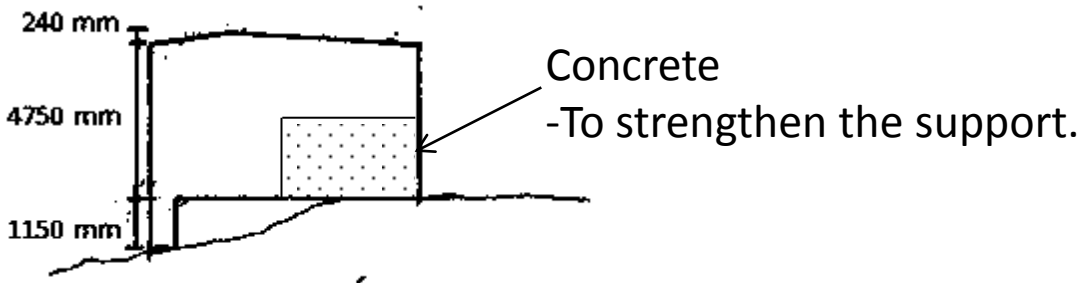
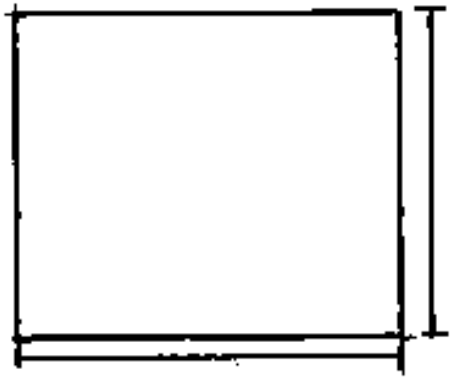


Elevation 1:250

Residential Buildings *(For Local Residents)*

Facility Buildings *(Public Toilet)*



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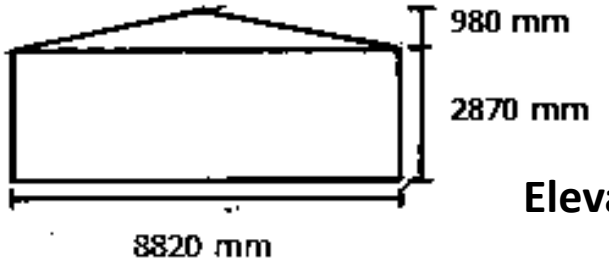

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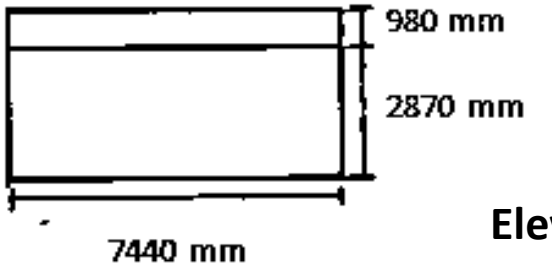

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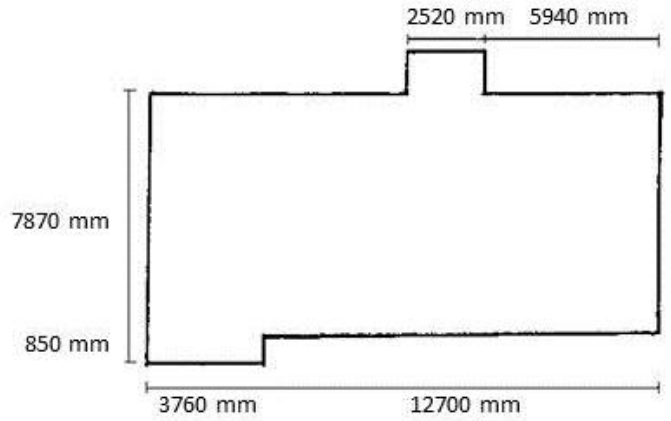
Facility Buildings *(Clinic)*



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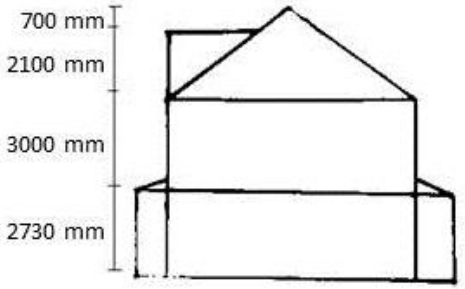

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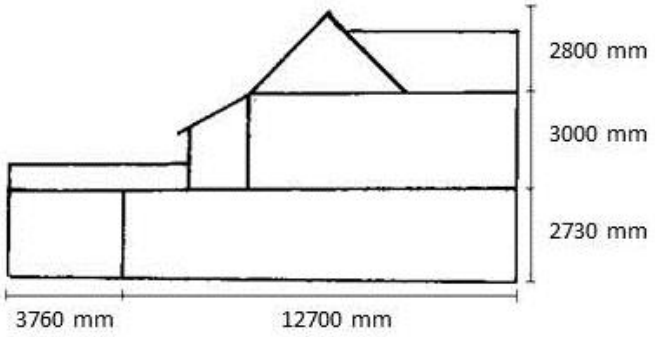

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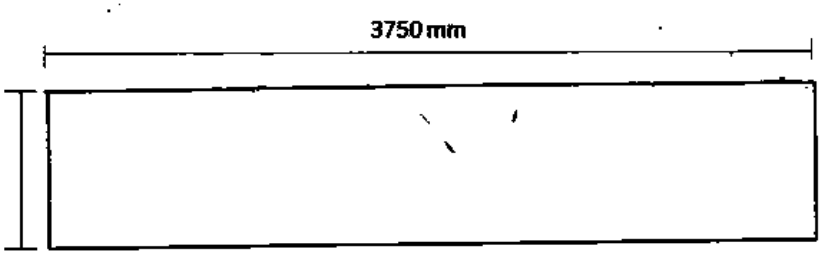
Religious Buildings

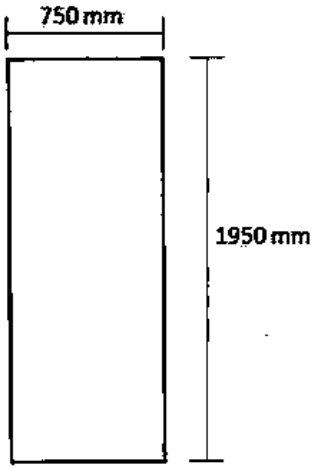
Hindu Temple

Church

Prayer (Surau)

Educational Building *(SJK (T) LADANG SG. PALAS)*





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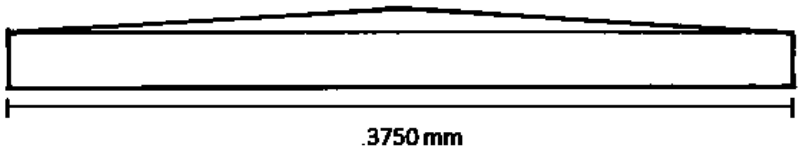
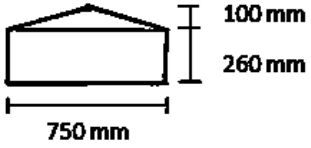
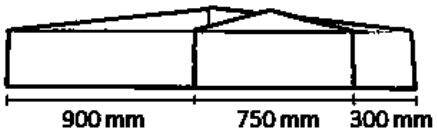
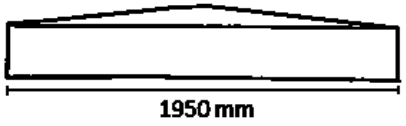


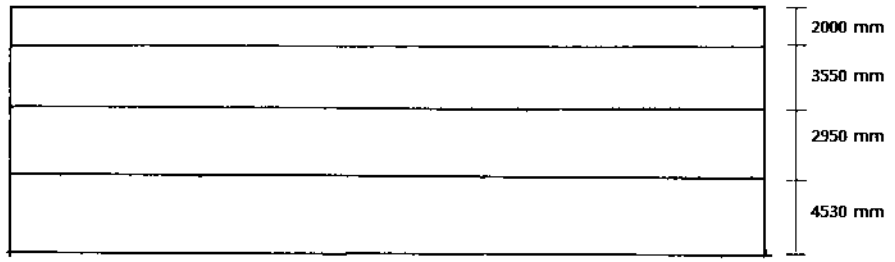






Elevation 1:250

Industrial Building *(BOH Tea Factory)*



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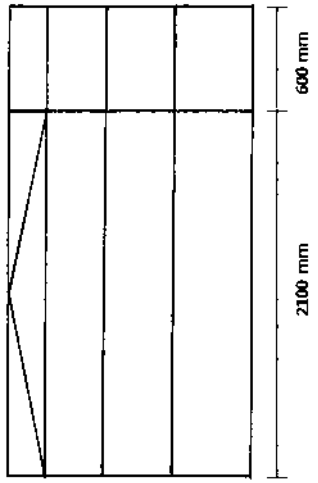

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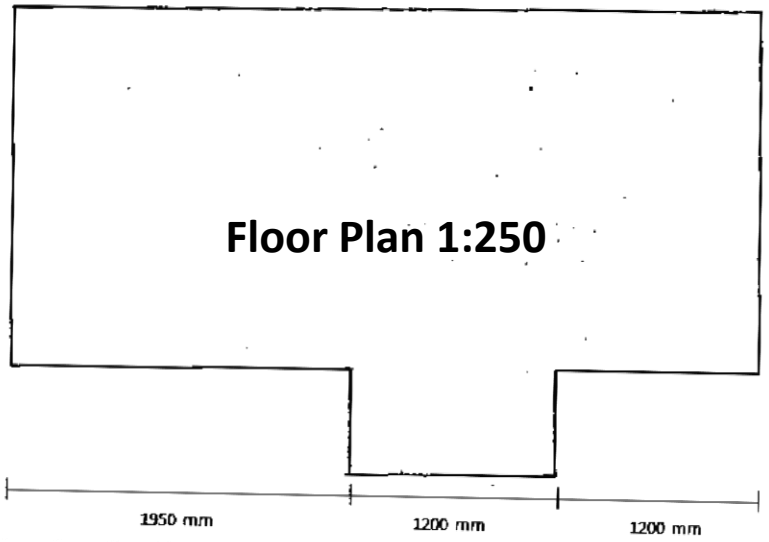

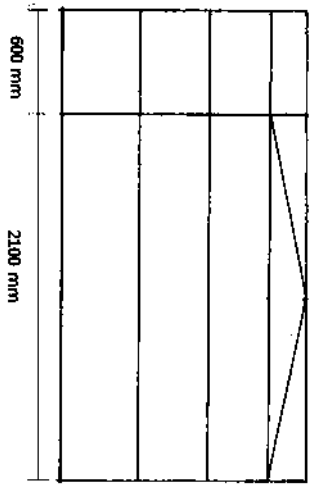

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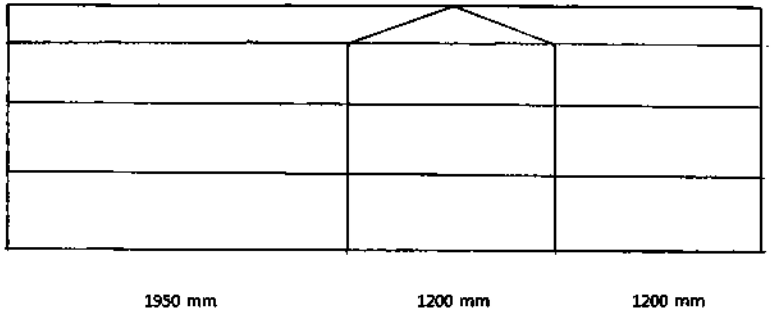
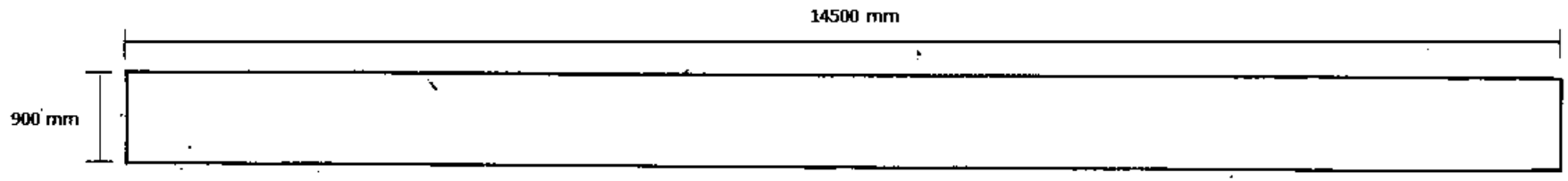
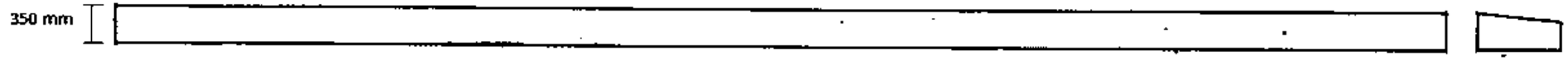


Elevation 1:250

BOH VISITOR CENTRE



Floor Plan 1:500



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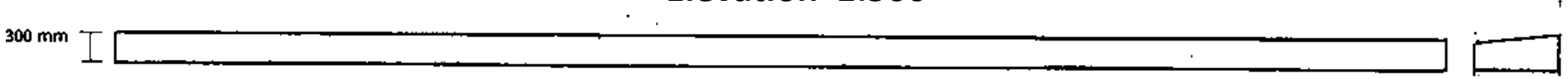


Architectural Style

"Attap House" Style

- More in Malay Traditional Style.
- Mostly built in the early period.
- Material used basically is **wood** as it is more **cheaper** during that period.
- Eg: Residential Buildings

Modern Architecture Style

- Built lately.
- Material used are **concrete & steel** as they are more **durable** and **better looking**.
- Eg: Hindu Temple, Public Toilet, Factory & etc.

Uses of Colours (GREEN & BLUE)

Reason 1:

To **highlight** which are the **residential buildings** for tea workers.

Reason 2:

To classify the types of workers.

Eg: **GREEN** - Tea **Plantation** workers.

BLUE - Tea **Factory** workers.

Reason 3:

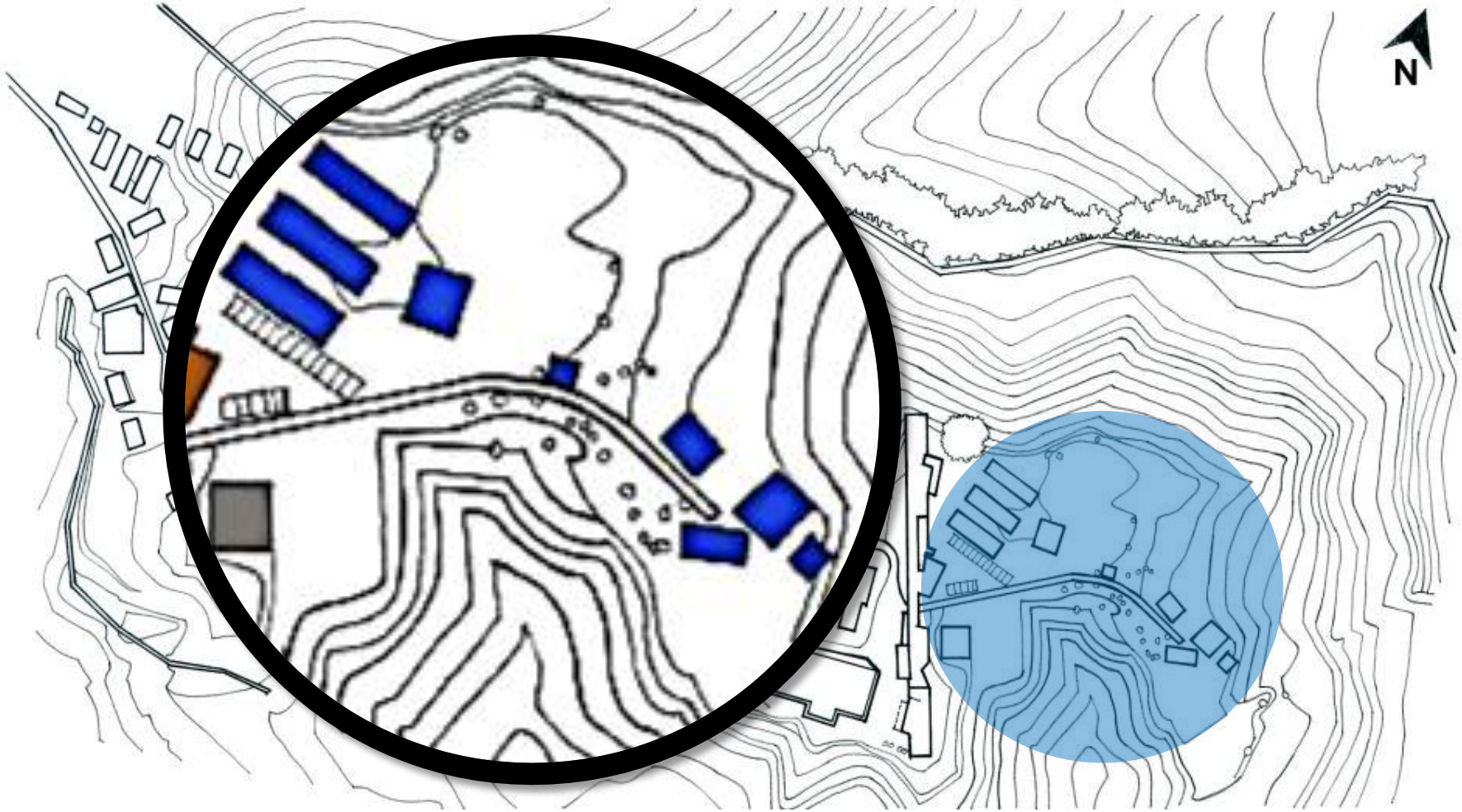
GREEN & BLUE are classified as **smooth colours**.

GREEN & BLUE are **suit to context** (Green Plantation & Blue Sky).

Arrangement of Residential Houses

1) The houses built by **following the contour**.

Arrangement of Residential Houses

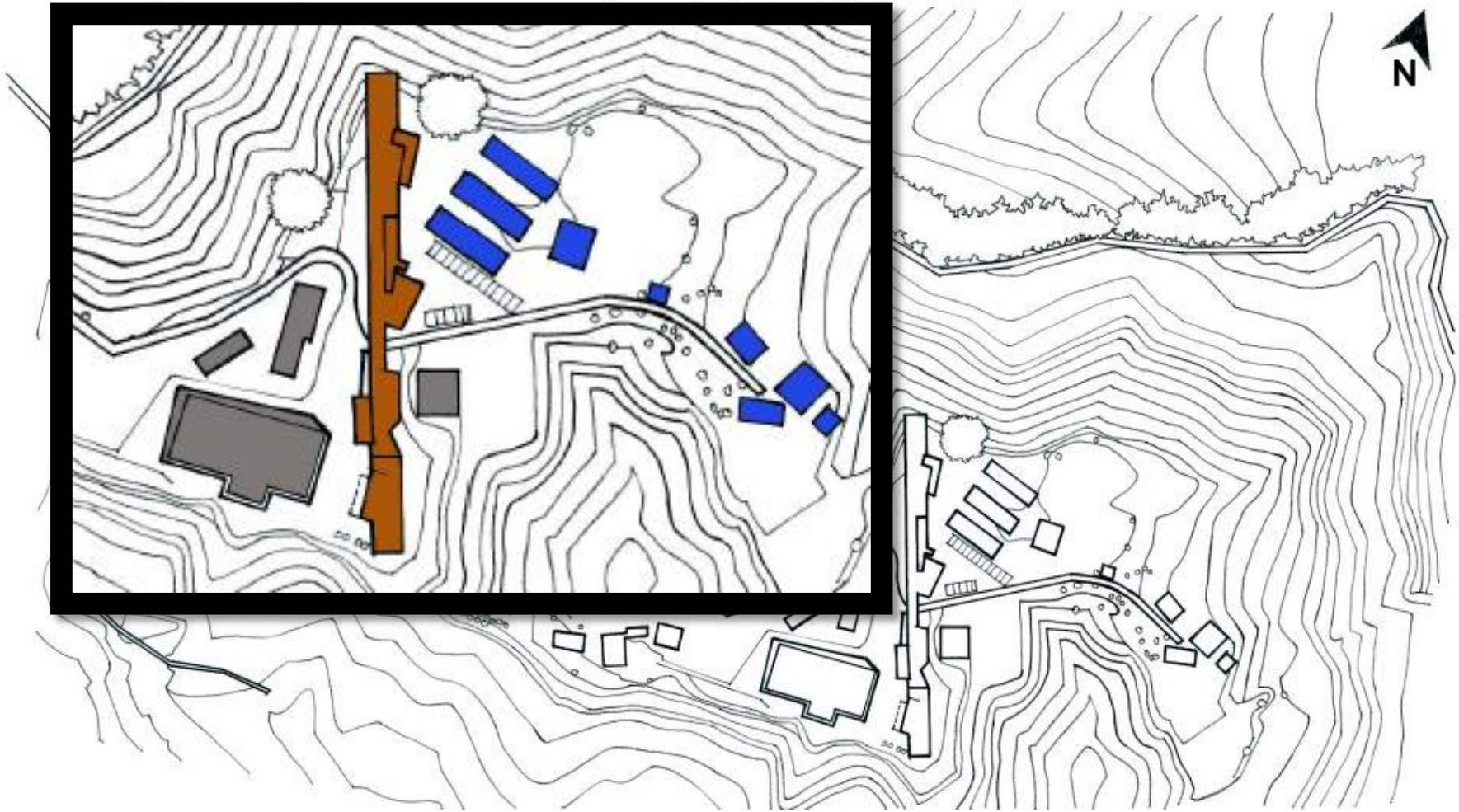


2) The houses built by **less steep area**.

Relationship between the Buildings

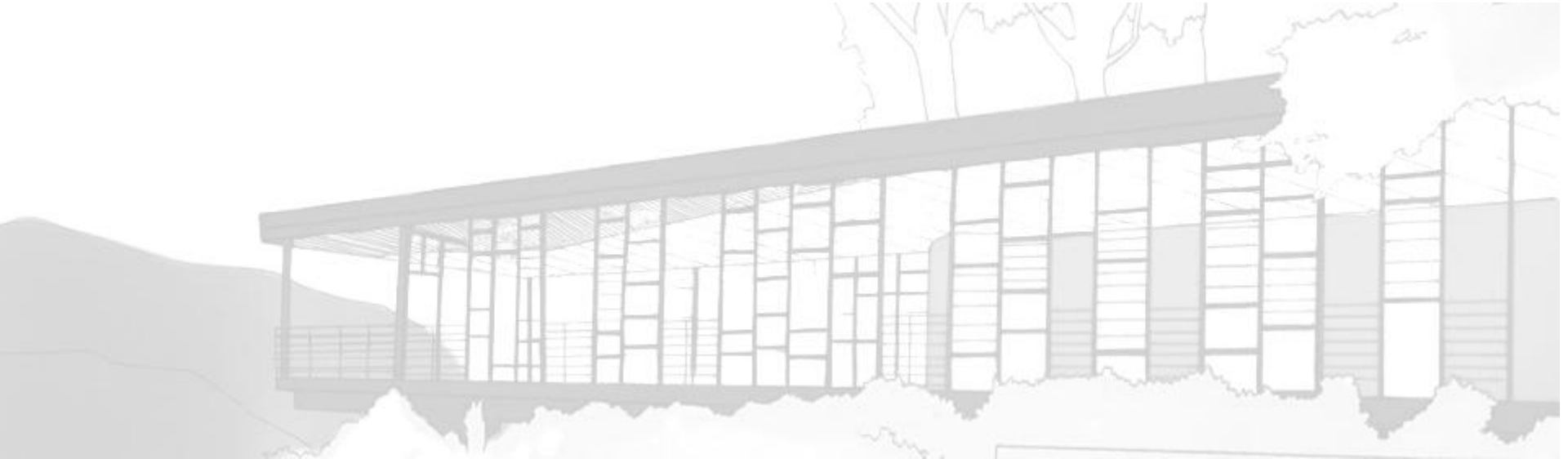
Residential houses (Tea Plantation Workers) is located ***near to tea plantation*** to **ensure the freshness of the tea** and can be **collected by workers on time.**

Relationship between the Buildings



Residential houses (Factory Workers) is located ***near to factory*** to ensure that all **the workers can work on time** and to **maintain the efficiency** of factory.

CIRCULATION




BOH VISITOR CENTRE


BOH VISITOR CENTRE
EE FENG GU BEE FARM


BOH VISITOR CENTRE
EE FENG GU BEE FARM

One way up, one way down.

Public Transport / Car

From **Ee Feng Gu Bee Farm** to **BOH VISITOR CENTRE**
- approximately 3.5km to the BOH VISITOR CENTRE.

Suggestion:

Continue to take public transport.

Reason:

a) There is no direction sign board on the split road
b) The road is too narrow and dangerous to drive
c) Not suitable for walking and cycling
d) Preferably the experienced ones to serve
e) Reduce the number of vehicles to maintain the qualities of tea plants.

Vehicle Circulation

Scale 1: 1500

Primary Circulation

Secondary Circulation

Intersection Points

Car Parks

Public Buildings

Private Buildings

Vehicle Circulation *(Primary Circulation)*

1. Both Public Transports and cars will drop off the passengers in front of the BOH VISITOR CENTRE.

2. Public Car Park
   -The cars have to travel down to that particular area to park their car.

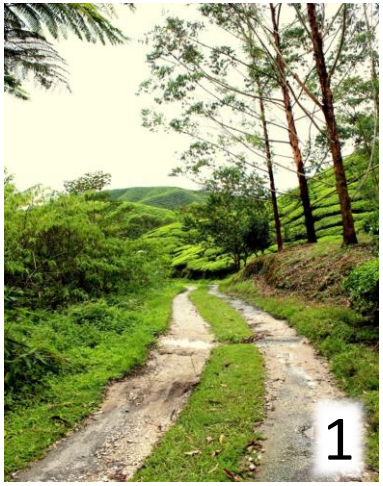
3. Private Car Park
   -It is located beside Boh Tea Centre.

Vehicle Circulation (*Secondary Circulation*)

1. Tractor's tire tracks can be found.

2. Tea Farm's workers are packing the tea leaves into bags and roll down.

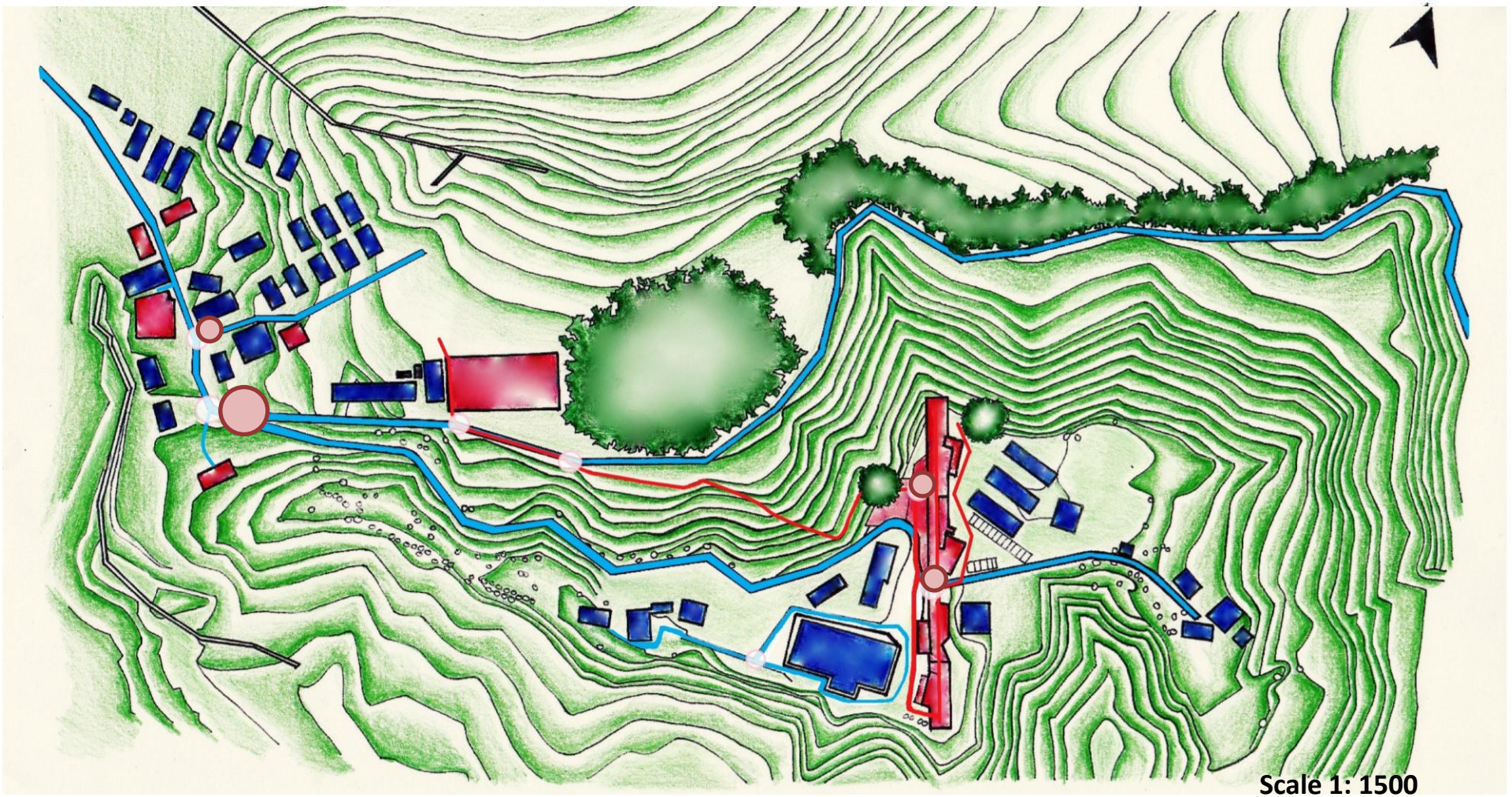
3. Tractors collect the bags of tea leaves.



Analysis:

- This place is for the tractor to transport the tea leaves.
- Private.
- Long and no ending walkway.
- No visitors but only tea plantation workers are walking around this area.

Pedestrian Circulation



Primary Circulation

Secondary Circulation

Intersection Points

Public Buildings

Private Buildings

Pedestrian Circulation *(Primary Circulation)*

Road condition:

1. The walkway is too sloped.
2. The steps are not consistently even.
3. The handrails are not extended until the end of the walkway.
4. Therefore, it is not suitable for children and old people to walk.

There is an alternative way that more people chose to walk through, that is the **Secondary Circulation**.

Pedestrian Circulation (*Secondary Circulation*)

Road condition:

1. The road is too narrow.
2. It is not suitable for people.
3. Heavy transportation passes by frequently.

Suggestion:

- Improve the primary circulation's step systems and condition.
- Extend the handrails along the whole walkway.
- Make the steps more consistent and stable.
- Build a proper drop-off area for the convenience of visitors.

Non-structure Circulation

Tea Bushes:

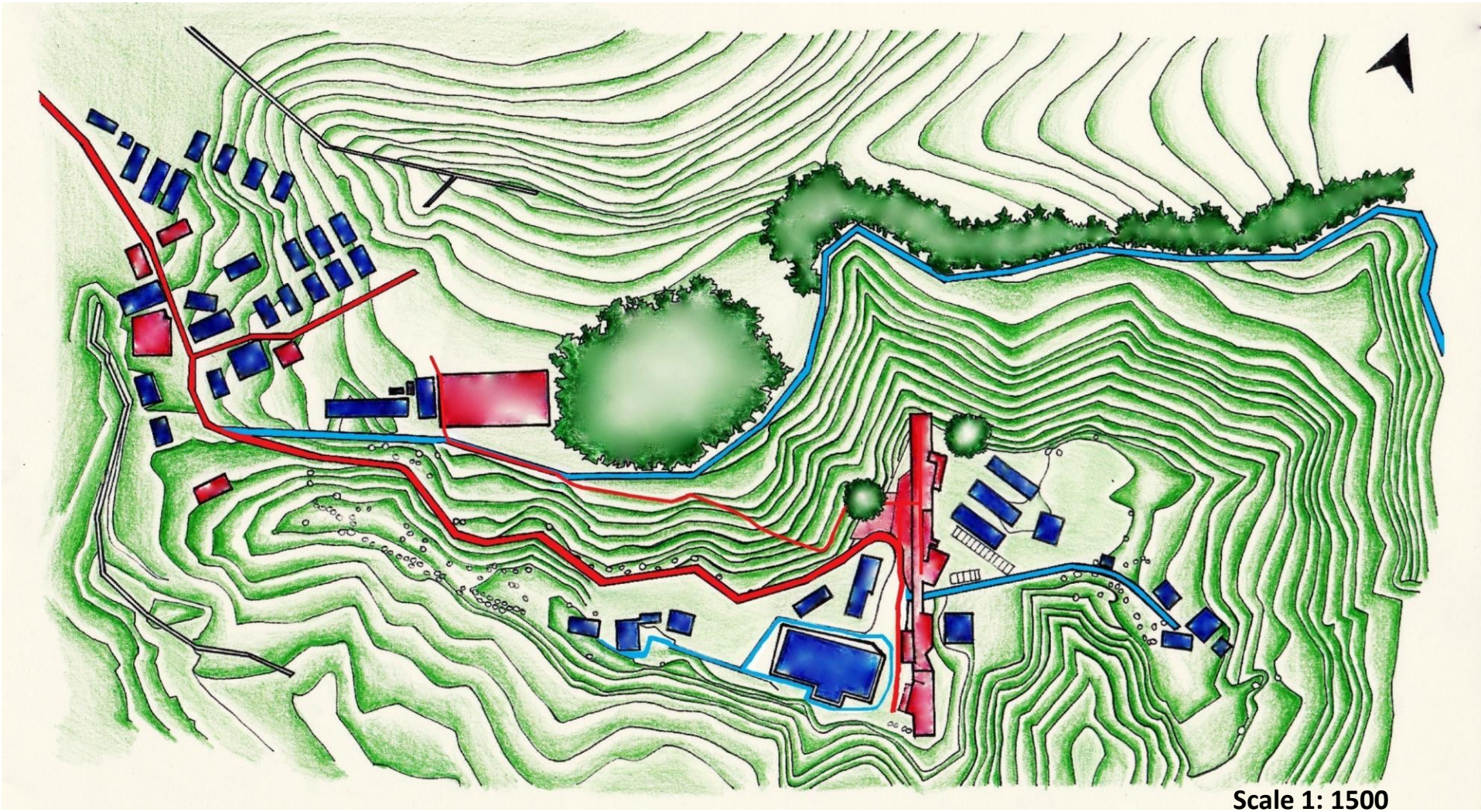
1. Distance between two rows of tea plants is not favourable to walk. The road condition is even worse if it rains.

2. No visitors are walking through the tea bushes except for photos taking.

Field:

1. Most of the people choose to walk through the football field to reach the opposite side.

Public & Private Circulation



Scale 1: 1500

Public Buildings

Private Buildings

Public & Private Circulation

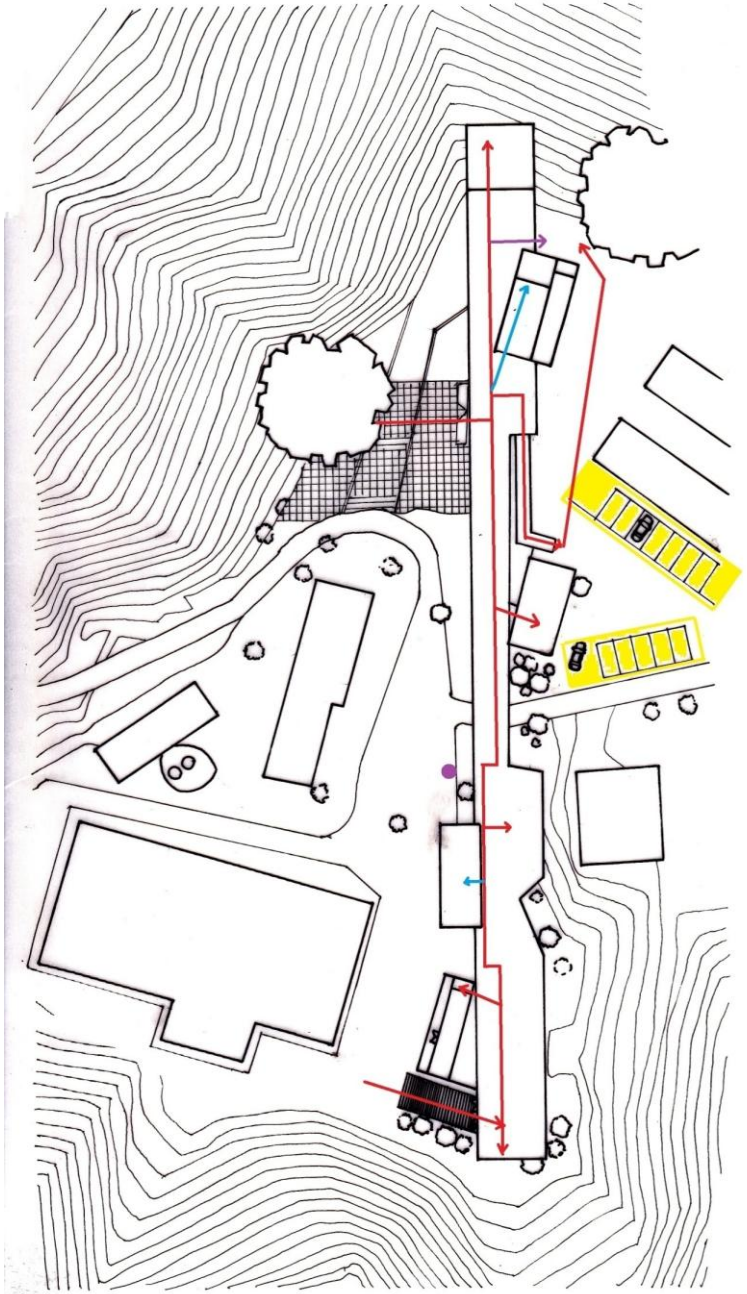
Public Circulation:

- Is formed by visitors who majorly walk directly and around BOH VISITOR CENTRE.

Private Circulation:

- Is formed by the local residents.
- They are mostly the workers of tea plantation.
- There are all open spaces which have no restrictions for visitors to walk around.

Circulation inside BOH TEA CENTRE



Public Circulation

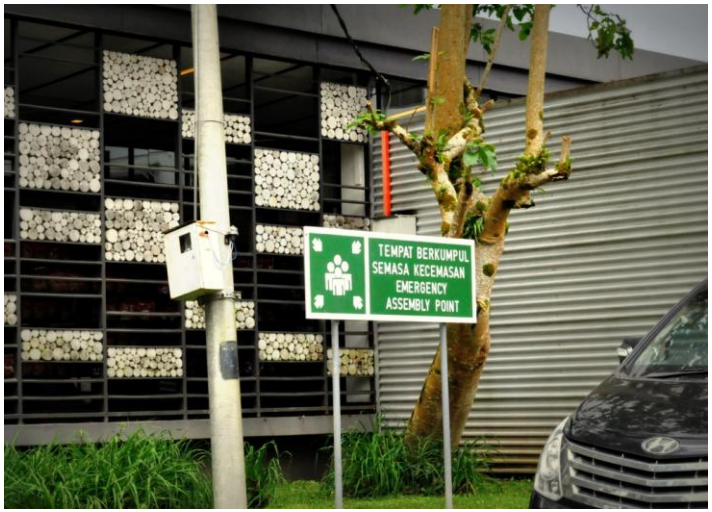
Private Circulation

Emergency Exit

Existing Car Park

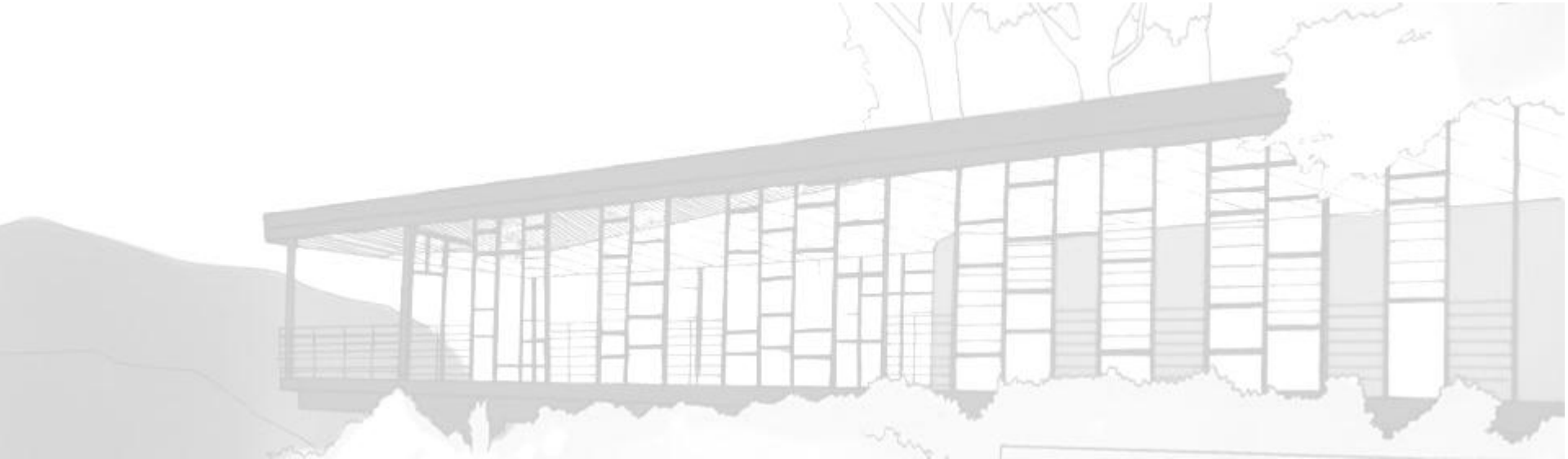
Emergency Assembly Point

Emergency Assembly Point

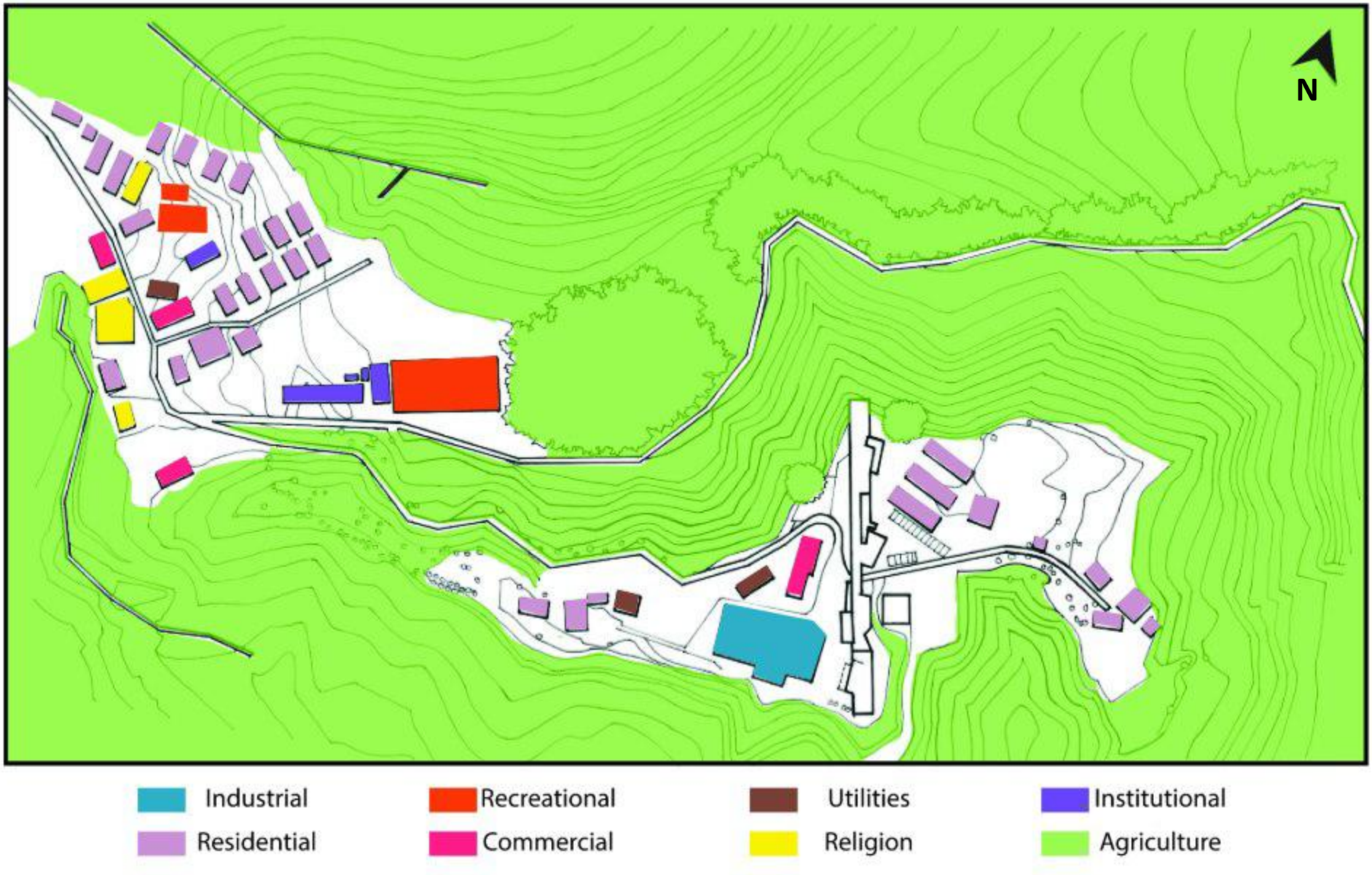


Emergency Exit

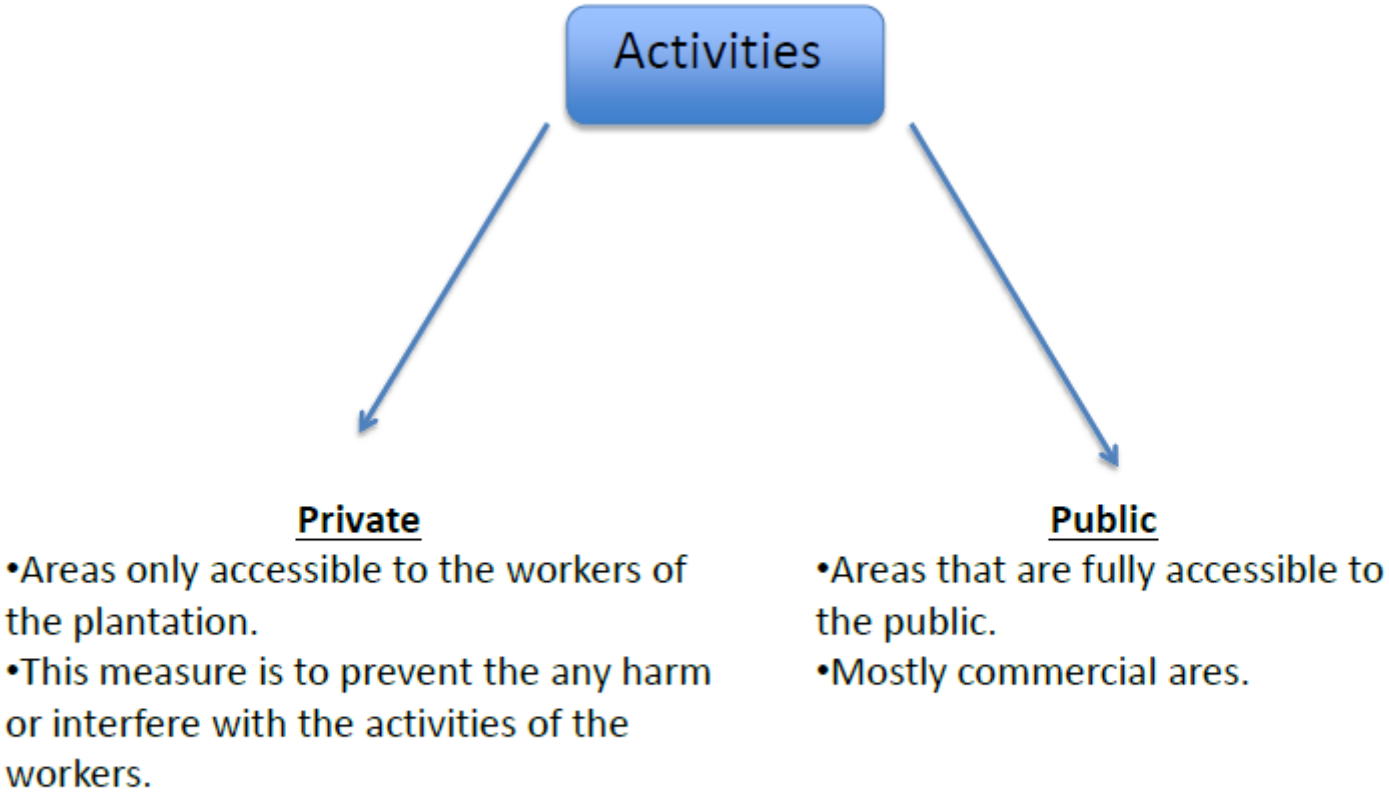
ACTIVITIES



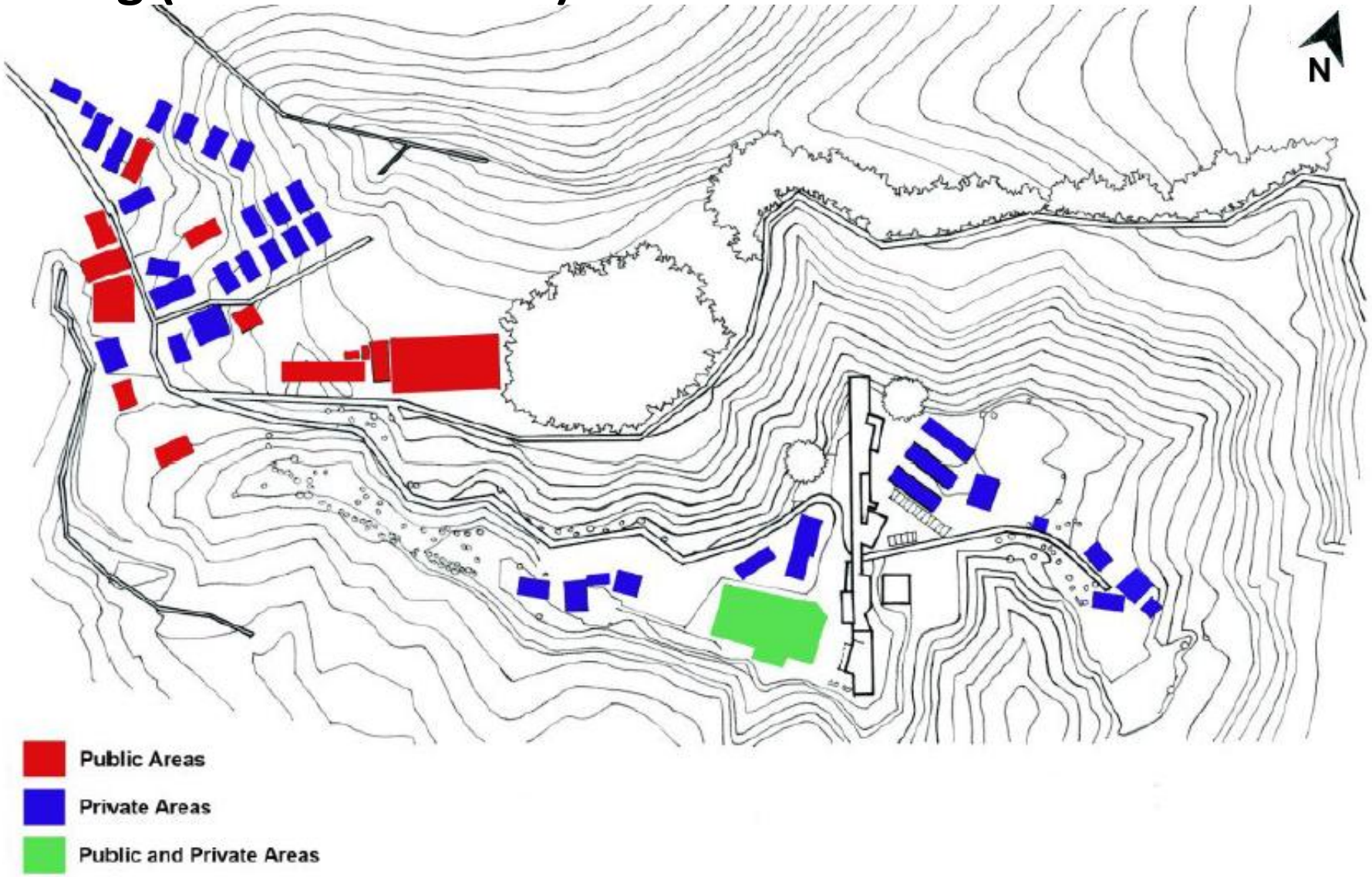
Zoning (Whole Site)



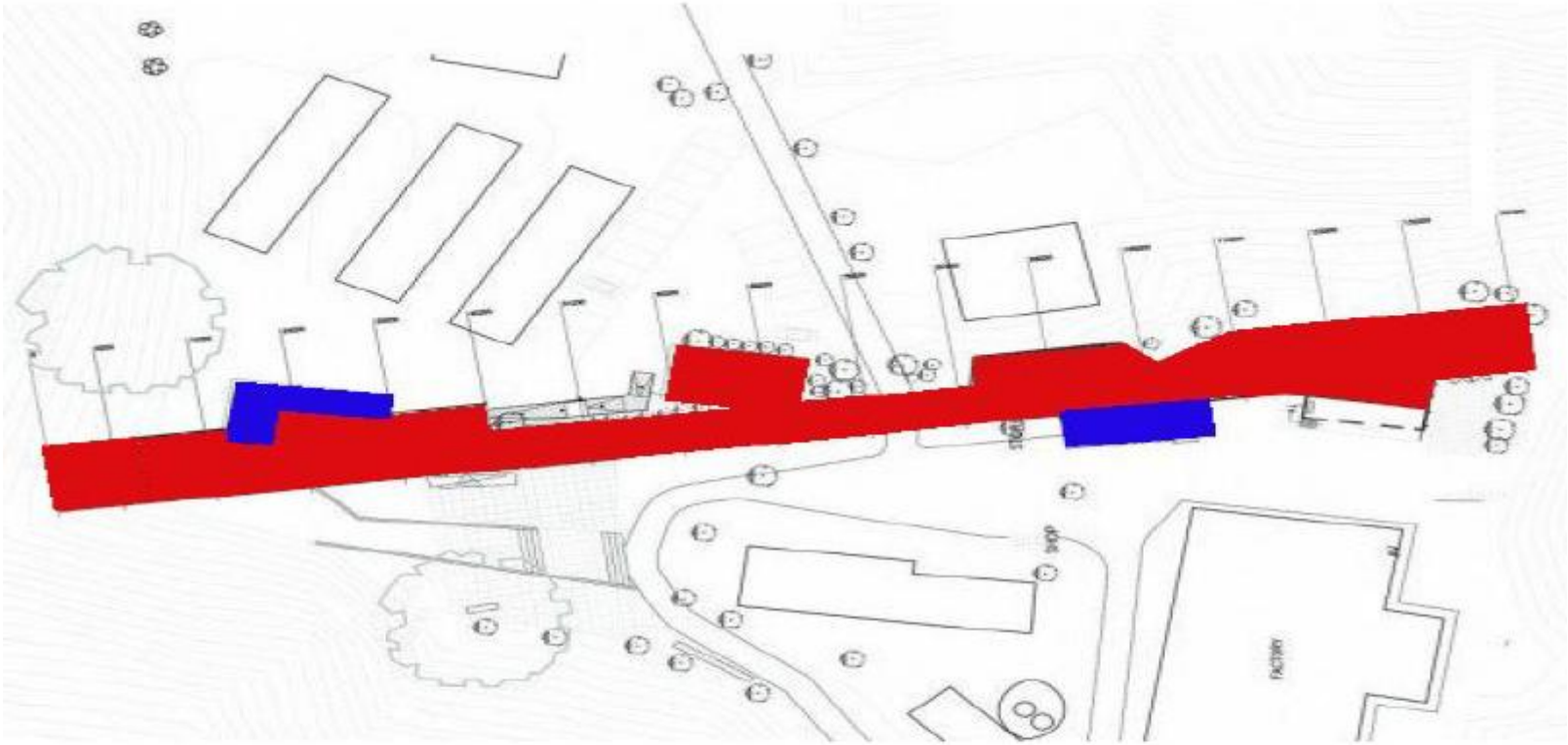
Zoning (Private & Public)



Zoning (Private & Public)



Zoning (Private & Public)

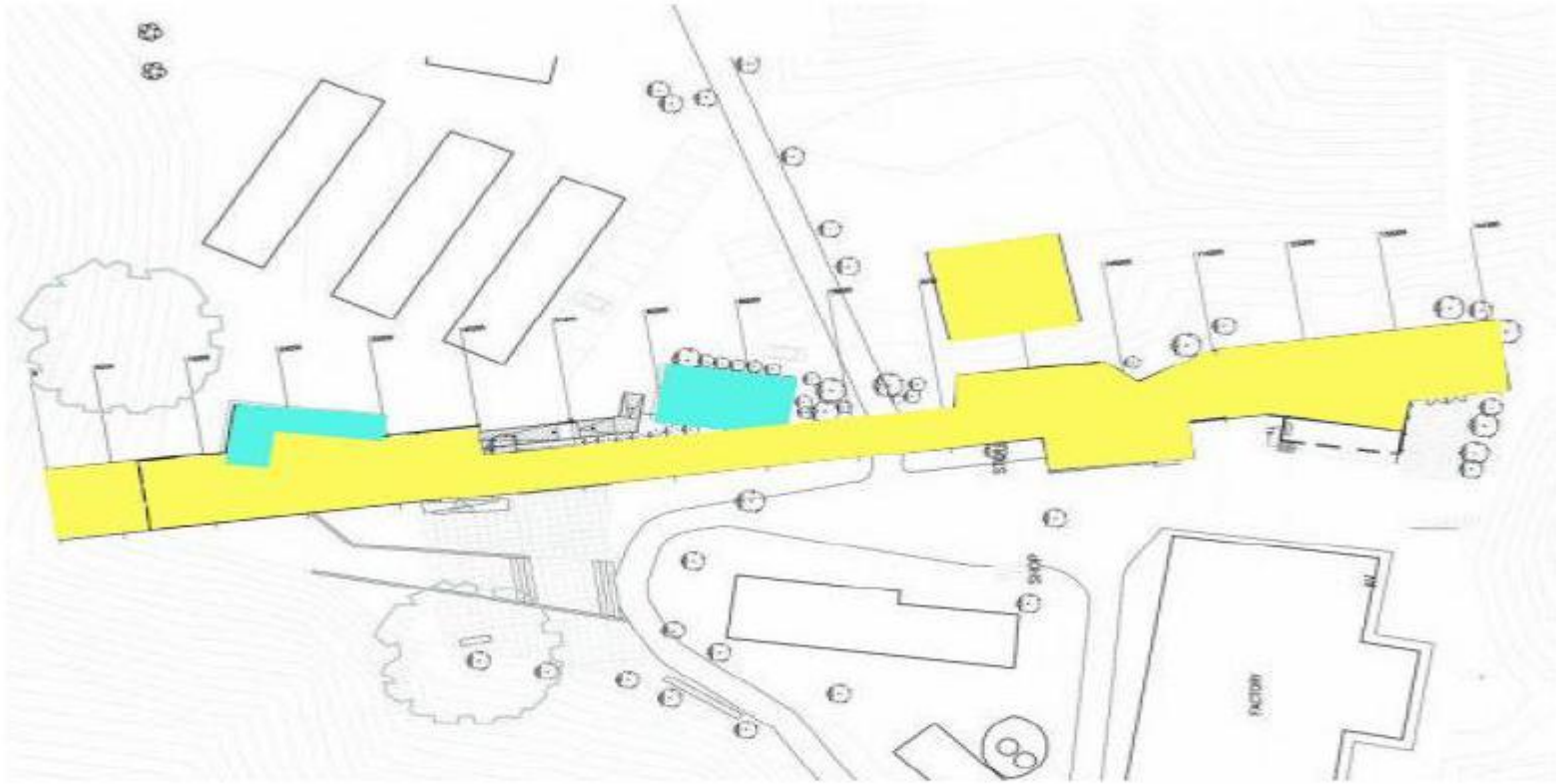


Public Areas (cafeteria, gallery, wash area, AV room and Exhibition))

Private Areas (kitchen, storage)

Zoning (Wet & Dry)

Zoning (Wet & Dry)

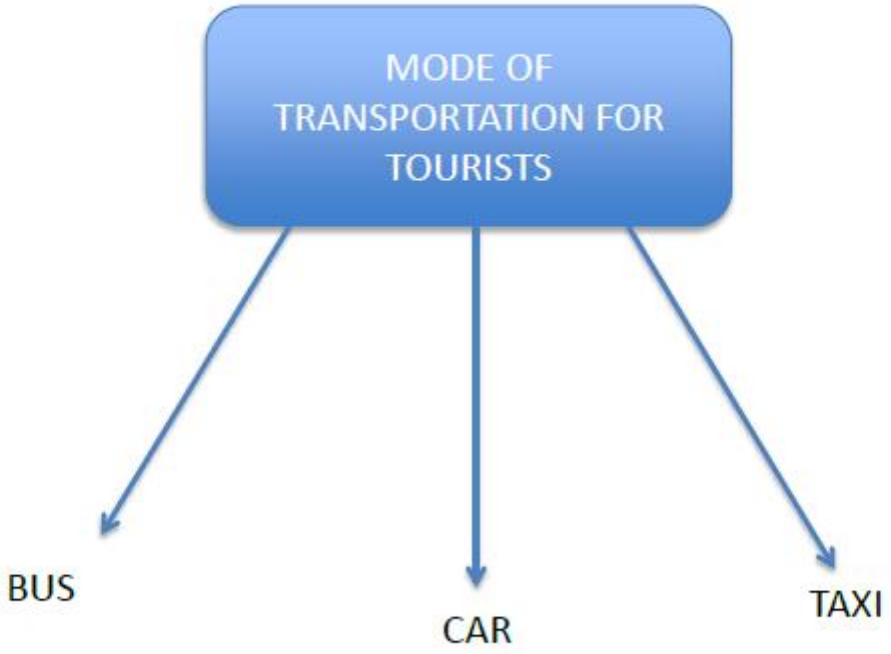


Wet/Dry Area - Space Usage

Wet Areas (kitchen and wash area)

Dry Areas (cafeteria, gallery,retail,storage, AV room and exhibition area)

Mode of Transportation for Tourists



Mode of Transportation for Tourists

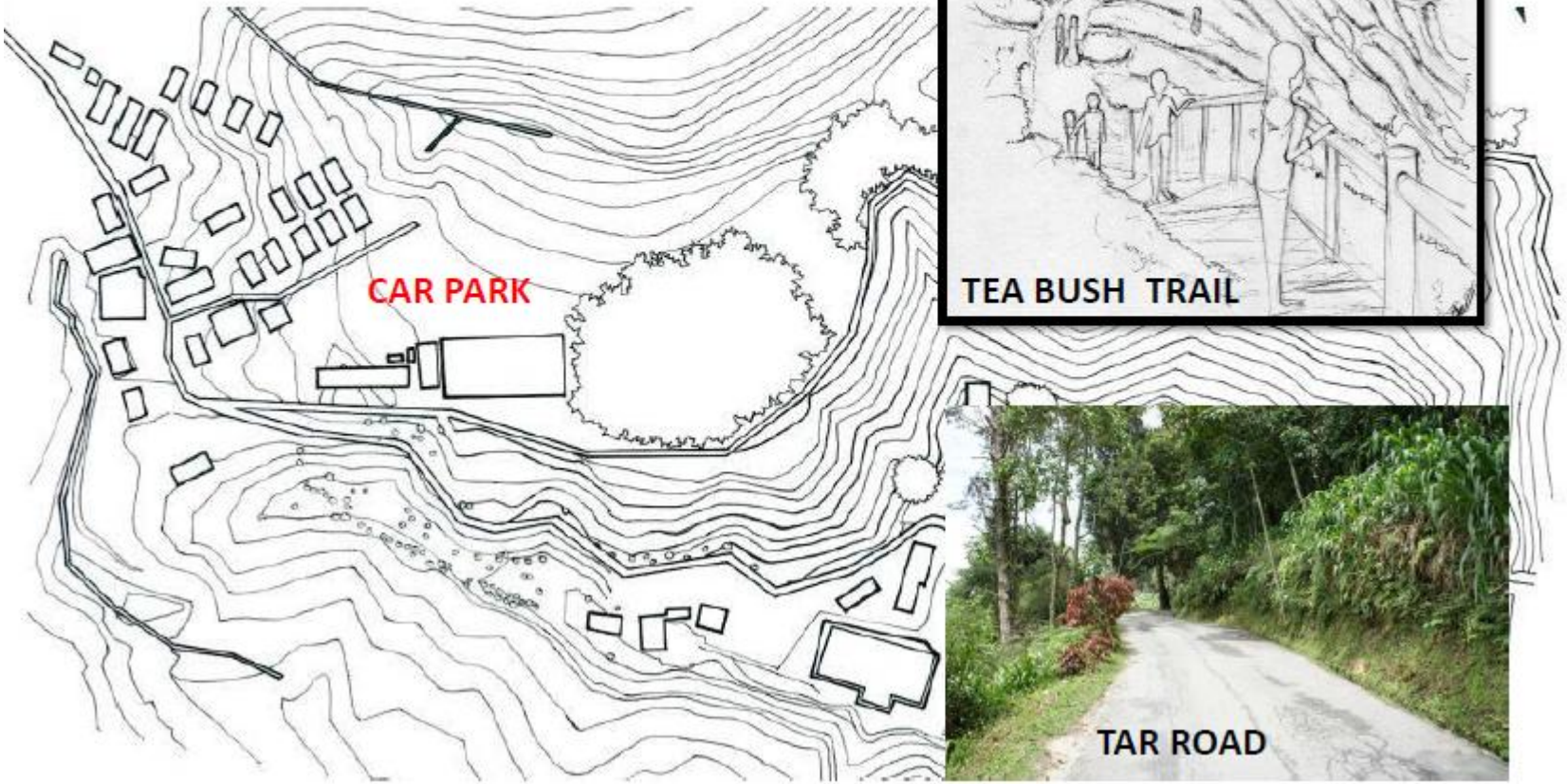
BUS

(Drop off point at Sungai Palas Estate or Near Factory)

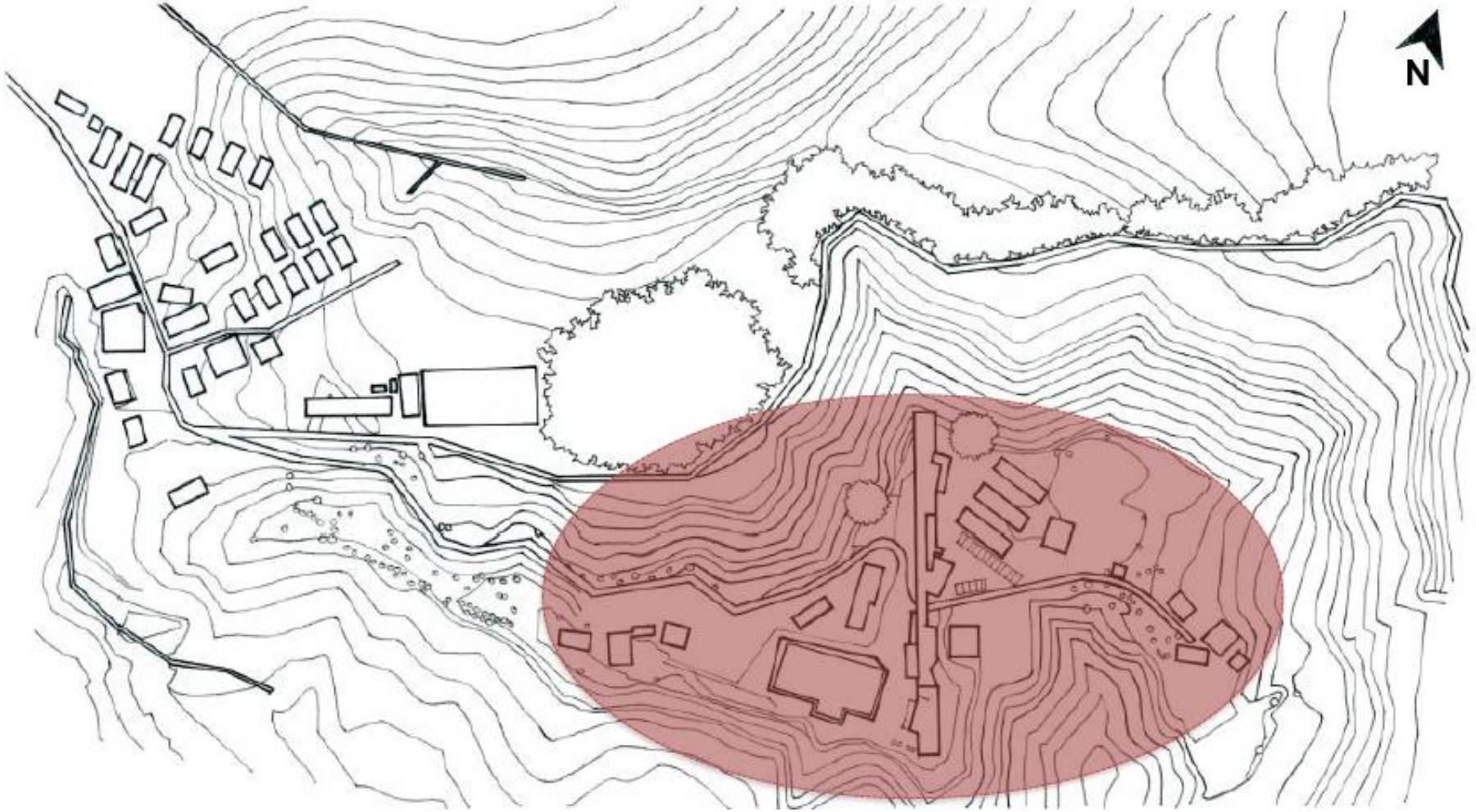
Mode of Transportation for Tourists

CAR

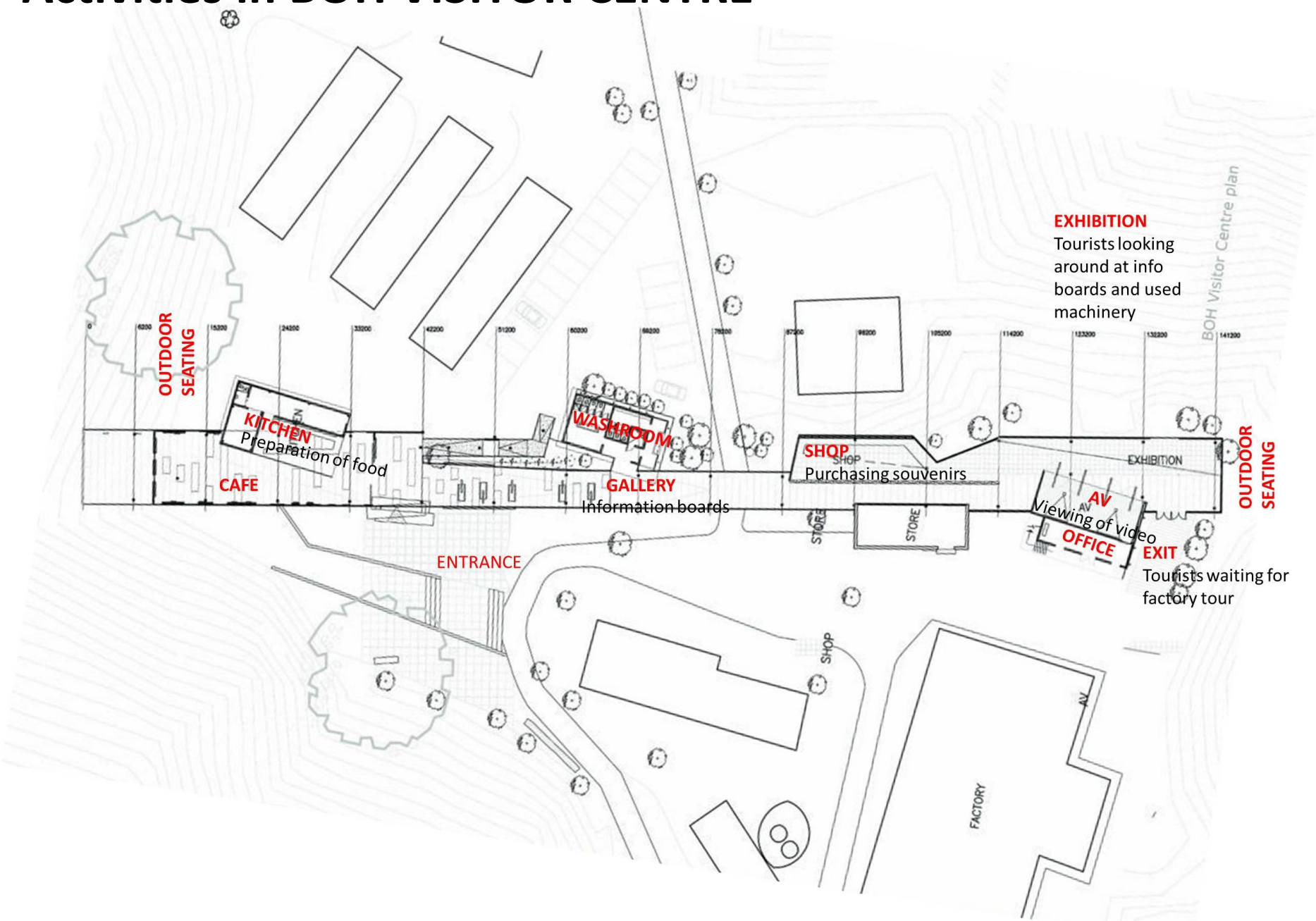
(Parking at car park and walk-on foot via tea bush trail or tar road)



Activities in BOH VISITOR CENTRE



Activities in BOH VISITOR CENTRE



Activities in BOH VISITOR CENTRE

TEA APPRECIATION TOUR

SCHEDULE:

9.00a.m.-11.00a.m.
1.00a.m-3.00p.m

DURATION:
45min to 1 hour

PRICE: ADULT (RM35)
CHILDREN (FREE)

Activities in BOH VISITOR CENTRE

FACTORY TOUR

FEE: FREE

EVERY HALF AN HOUR

TOURING IN VISITOR CENTRE

Exhibit boards in the visitor centre provide info regarding BOH tea

Activities in BOH VISITOR CENTRE

PURCHASING SOUVENIRS AT SHOP

There is also a high density of tourists at the shop to purchase BOH products that are cheaper than retail price.

Visitors paying for products

Free tea samples

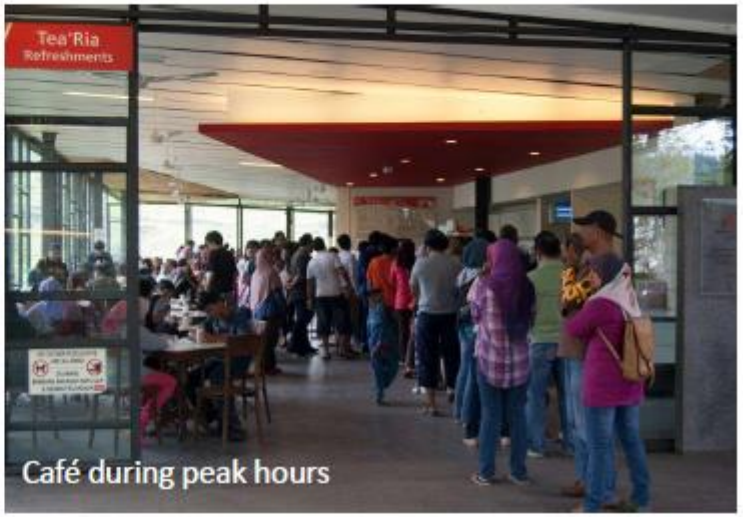
Visitors choosing products

Activities in BOH VISITOR CENTRE

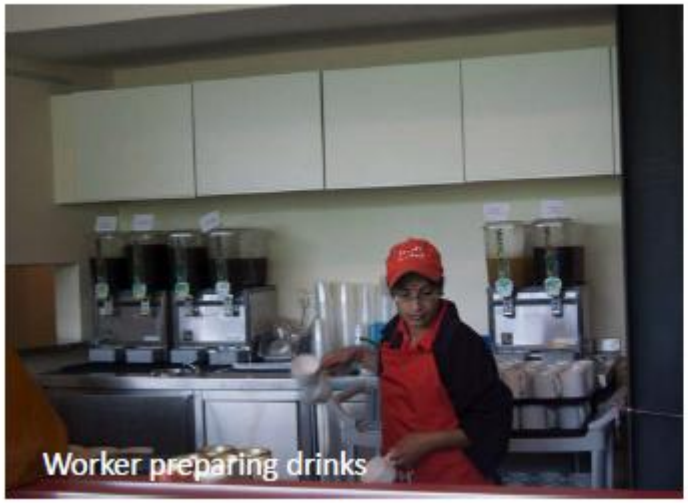
EATING & DRINKING AT CAFE

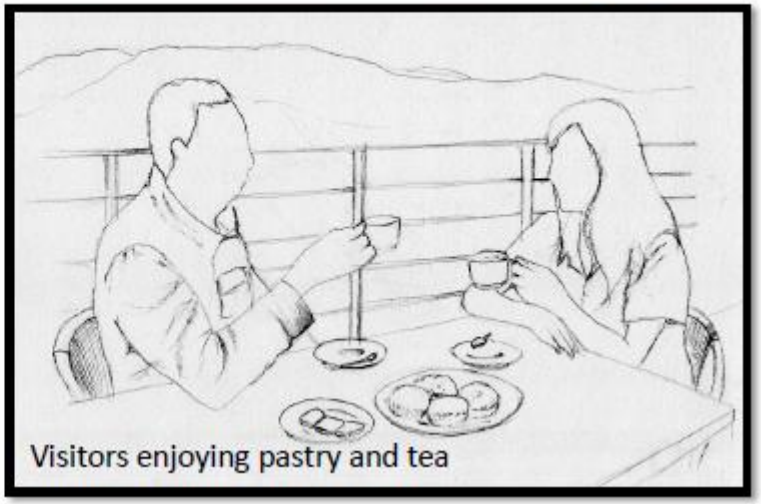
The café is most packed during peak hours (10am & 1pm) and when it's raining

Visitors queuing to order food



Café during peak hours


Worker preparing drinks


Visitors enjoying pastry and tea

Activities in BOH VISITOR CENTRE

PHOTOGRAPHY

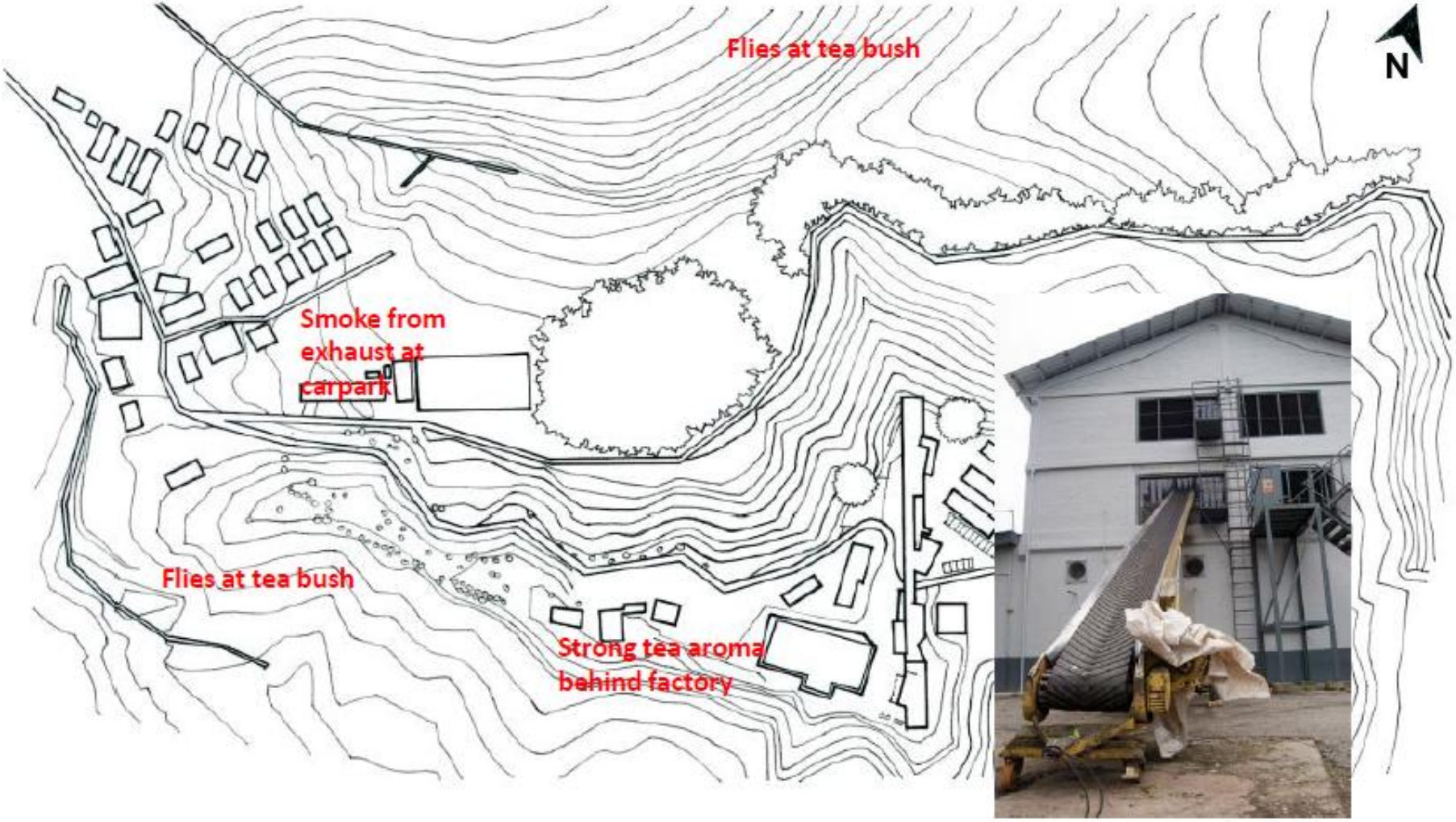
- **Mainly at 3 locations**

Outdoor deck of cafe

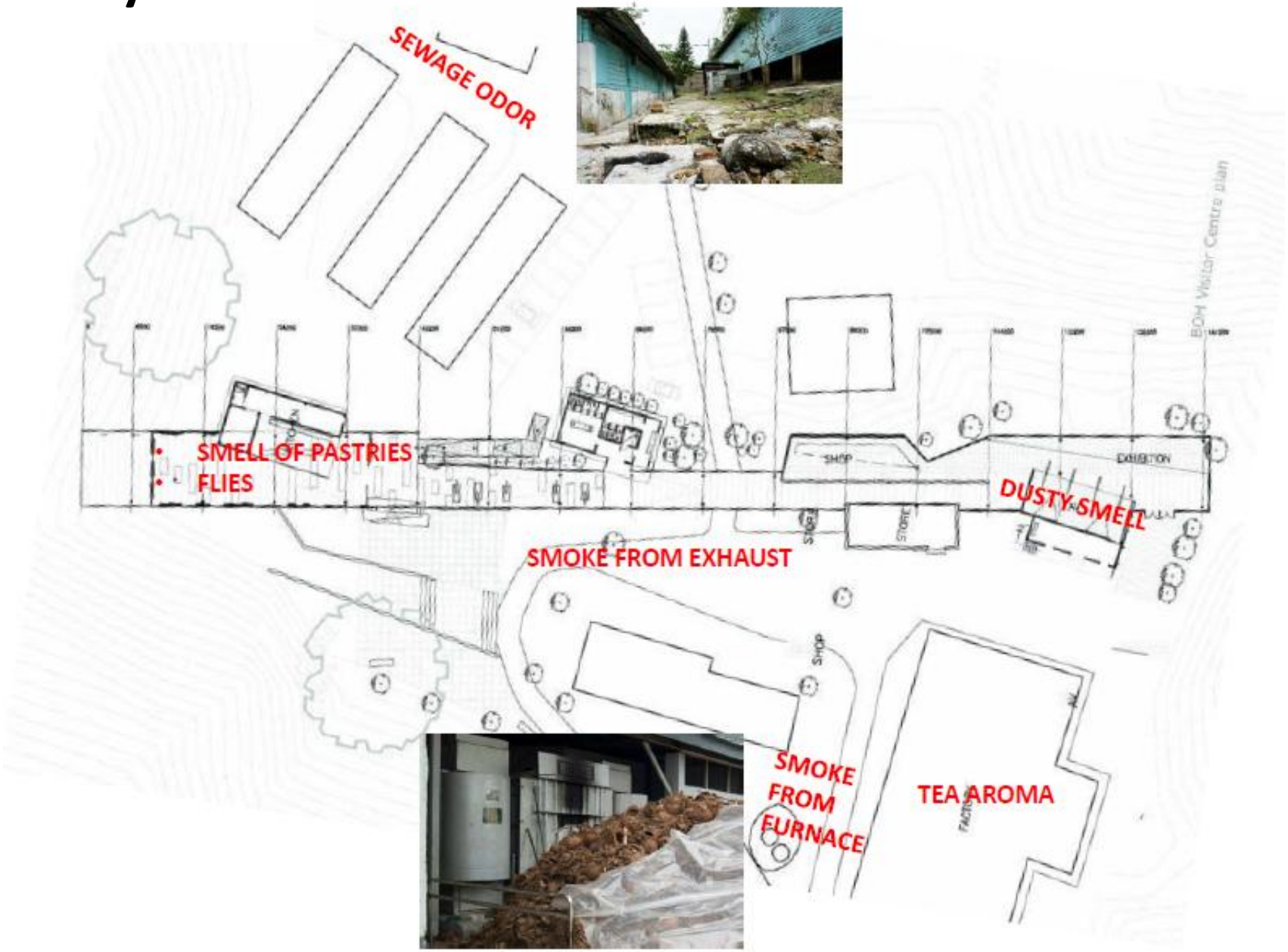
Tea bush trail

'BOH' signage

Sensory Factors



Sensory Factors

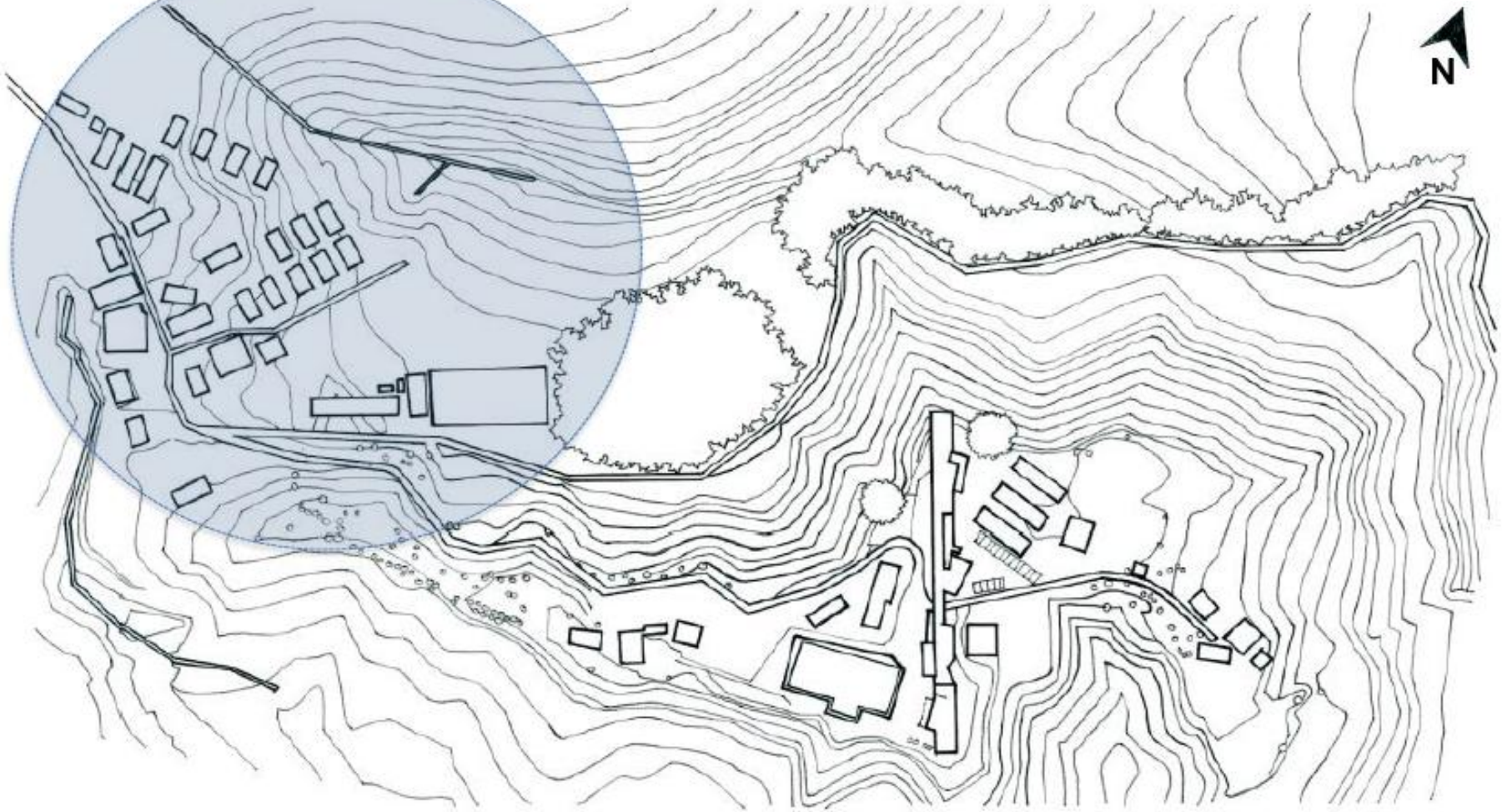


Sensory Factors

Flies?

- House Flies (*Musaca domestica*) are common at Sungai Palas Tea Plantation.
- Highest density at 20-25 degree Celsius
- Breed in the organic fertilizer
- High density at **cafeteria** (feeding**)** and **tea bushes** (breeding)

Other Activities in SG. PALAS Tea Plantation



Other Activities in SG. PALAS Tea Plantation

The buildings at Sungai Palas Estate are **small scaled** to satisfy the needs of the workers. (approx. 142)

EDUCATIONAL

- The only school at the estate for the worker's children

Other Activities in SG. PALAS Tea Plantation

HEALTH

Clinic for welfare of workers and their families

COMMERCIAL

Grocery shop

Day care centre

Other Activities in SG. PALAS Tea Plantation

RELIGIOUS

Hinduism (Main)

Christianity

Islam

Other Activities in SG. PALAS Tea Plantation

RECREATIONAL

Playground

Badminton court

Computer centre

Other Activities in SG. PALAS Tea Plantation

LOCAL COMMUNITY

Divisional Office

Other Activities in SG. PALAS Tea Plantation

5. TRANSPORTATION

- After harvesting the leaves are immediately transported via lorries to the factory
- Higher places – evacuation line

Growing Tea – *Camellia Sinensis*

1. CULTIVATION

- Young tea plants are cultivated and grown in a nursery and are later transplanted to site after 3 years.

4. *HARVESTING*

- *Done every 3 weeks.*
- *2 methods (machinery/Hand picked)*
- *Normally collect 1 shoot with 2 buds)*

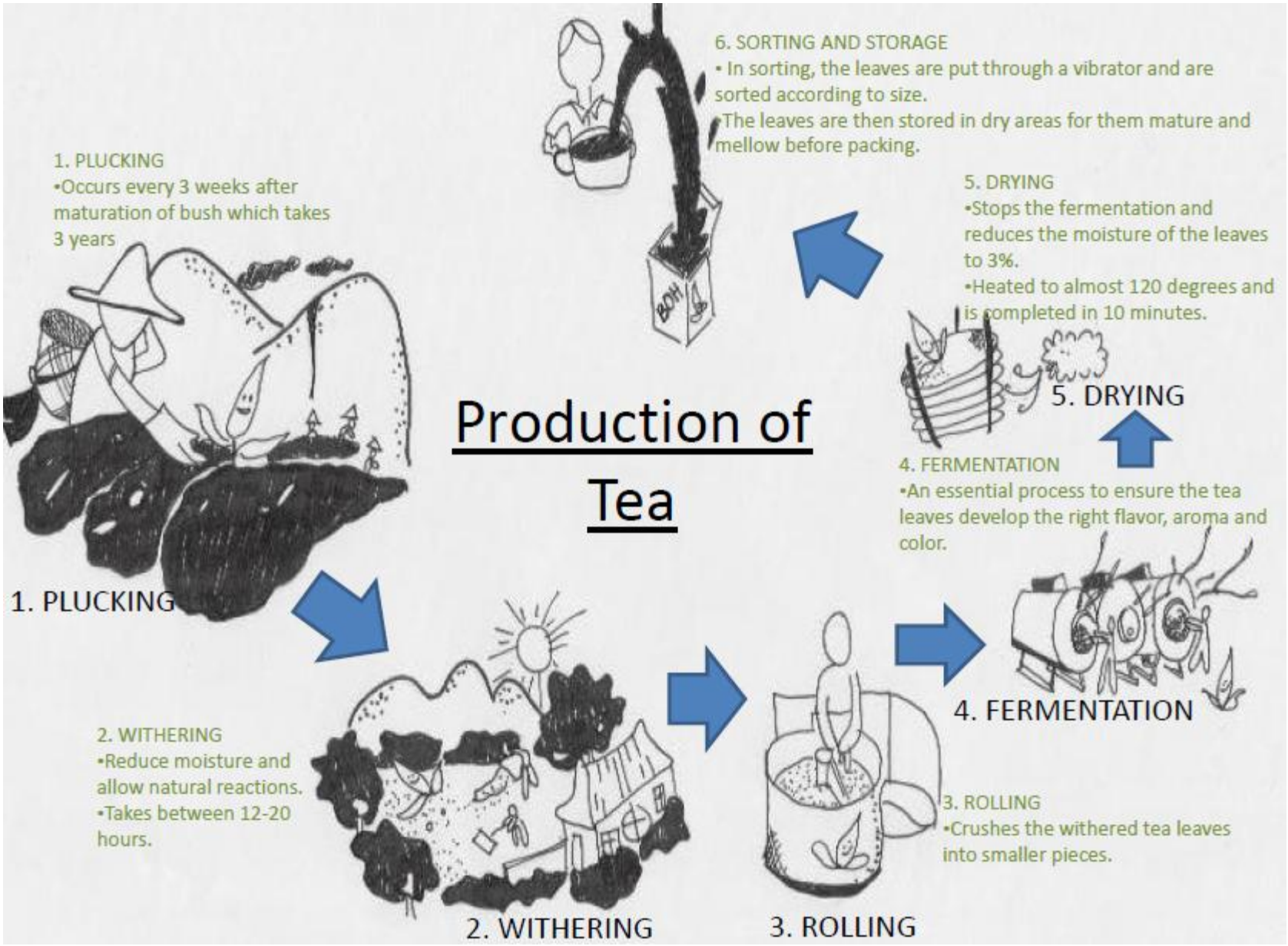
2. PRUNING

- The tea bushes are pruned once every 3 years to all new shoots to grow.
- Bushes are pruned to the height of 3 feet(plucking table).

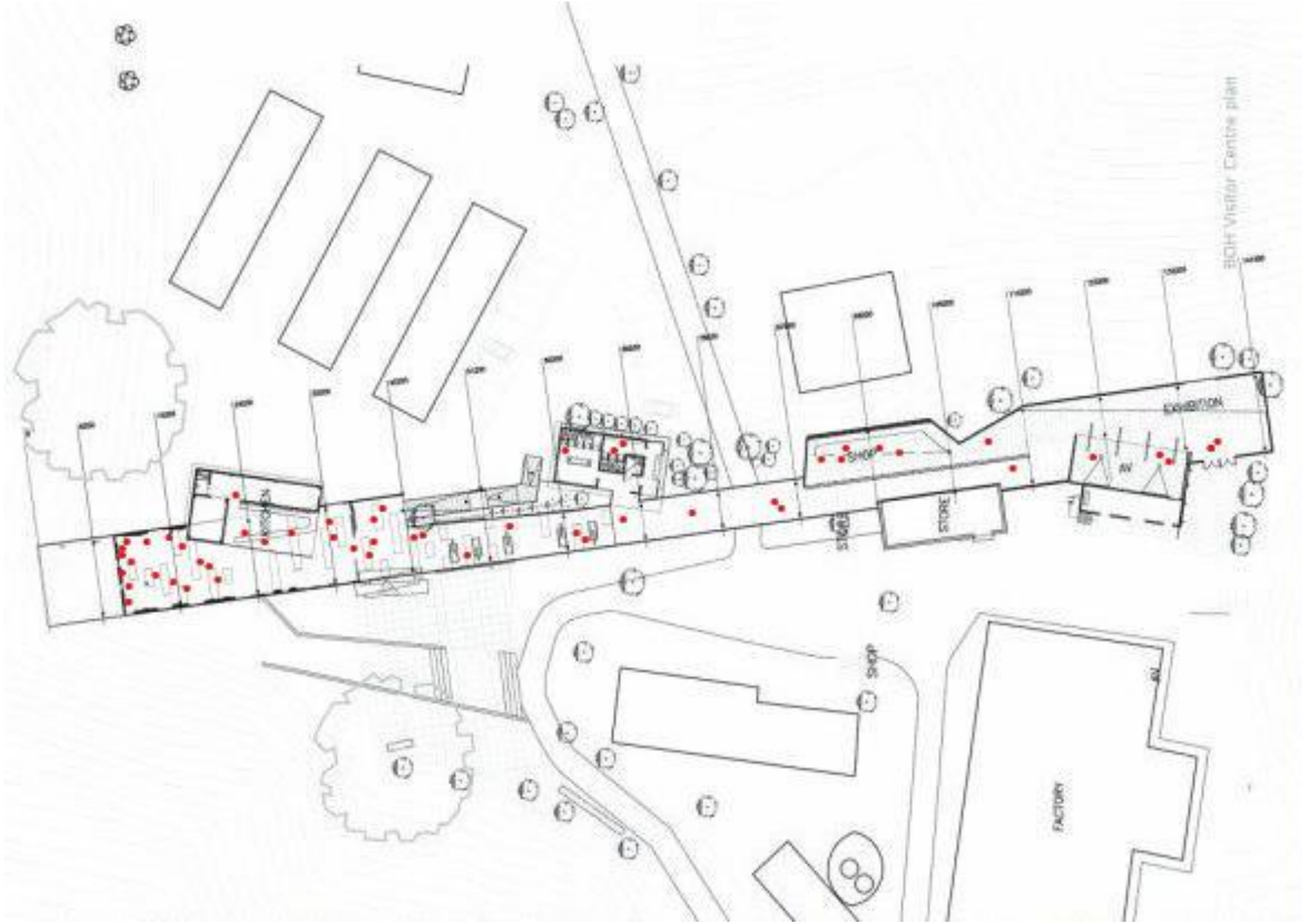
3. FERTILIZATION & PESTICIDES

- Carried out via airplanes. (due to huge are to cover & even spread out)
- Done throughout the year.

Other Activities in SG. PALAS Tea Plantation



Density *(MORNING 11 AM)*

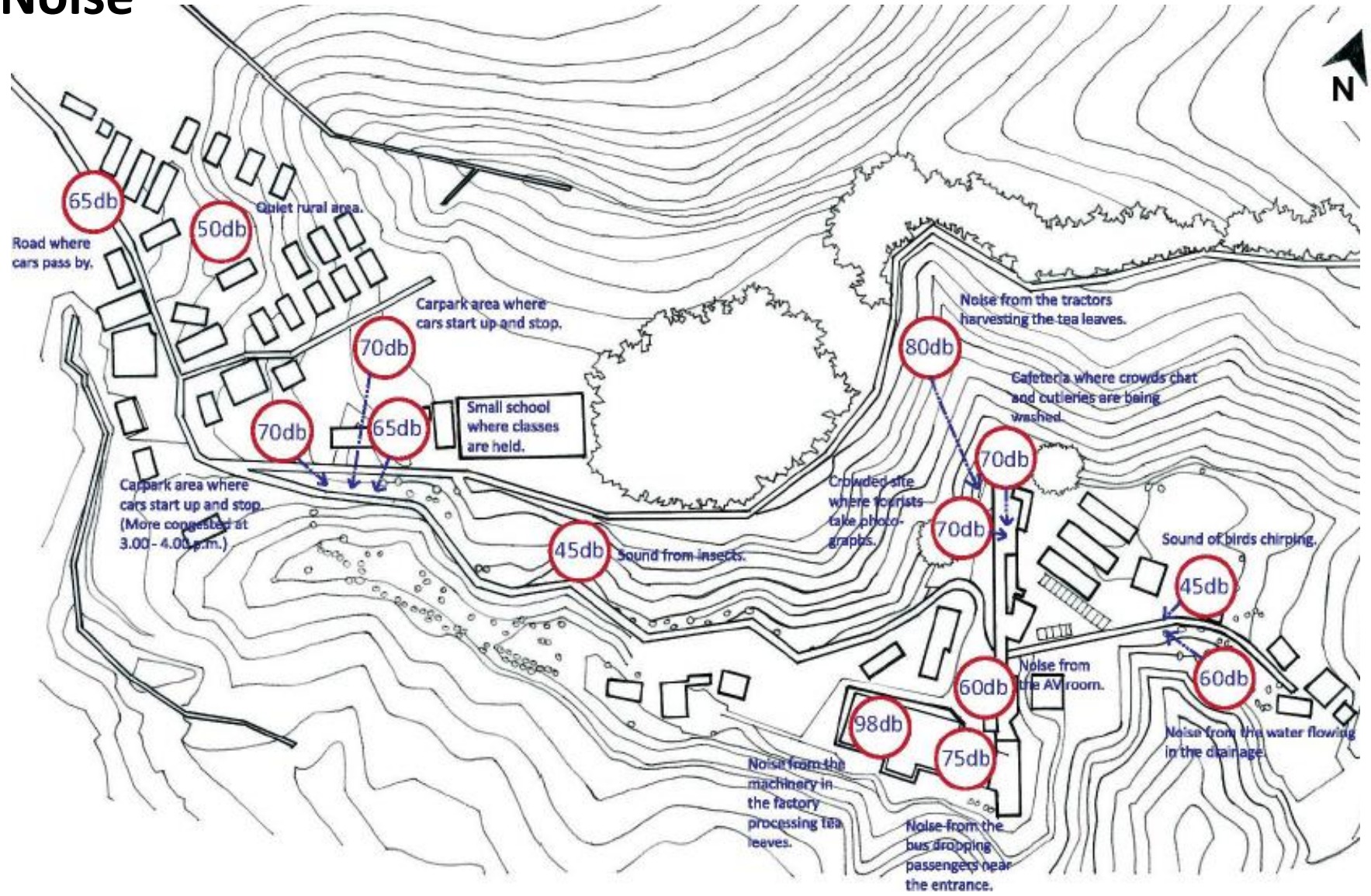


Density *(AFTERNOON 1-2 PM)*

Density *(EVENING 4-5PM)*

Density *(DURING RAINFALL)*

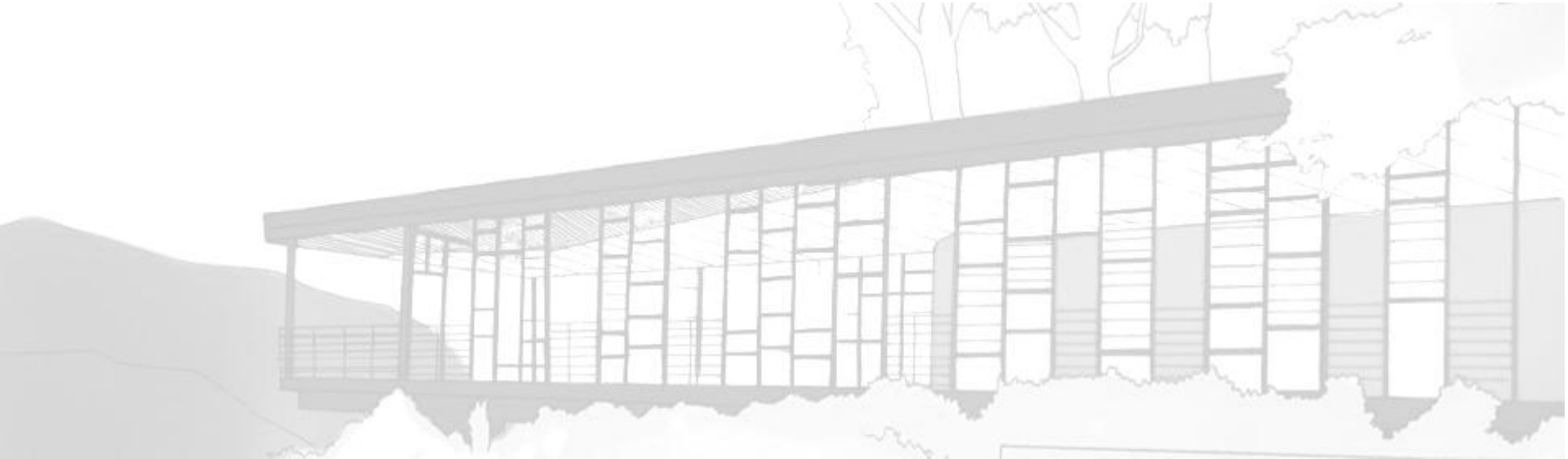
Noise


N
65db
Road where cars pass by.
50db
Quiet rural area.
Carpark area where cars start up and stop.
70db
70db
65db
Small school where classes are held.
Carpark area where cars start up and stop. (More congested at 3.00 - 4.00 p.m.)
45db
Sound from insects.
80db
Noise from the tractors harvesting the tea leaves.
Cafeteria where crowds chat and cutleries are being washed.
70db
70db
Crowded site where tourists take photographs.
Sound of birds chirping.
45db
60db
Noise from the AV room.
98db
75db
Noise from the machinery in the factory processing tea leaves.
Noise from the bus dropping passengers near the entrance.
Noise from the water flowing in the drainage.

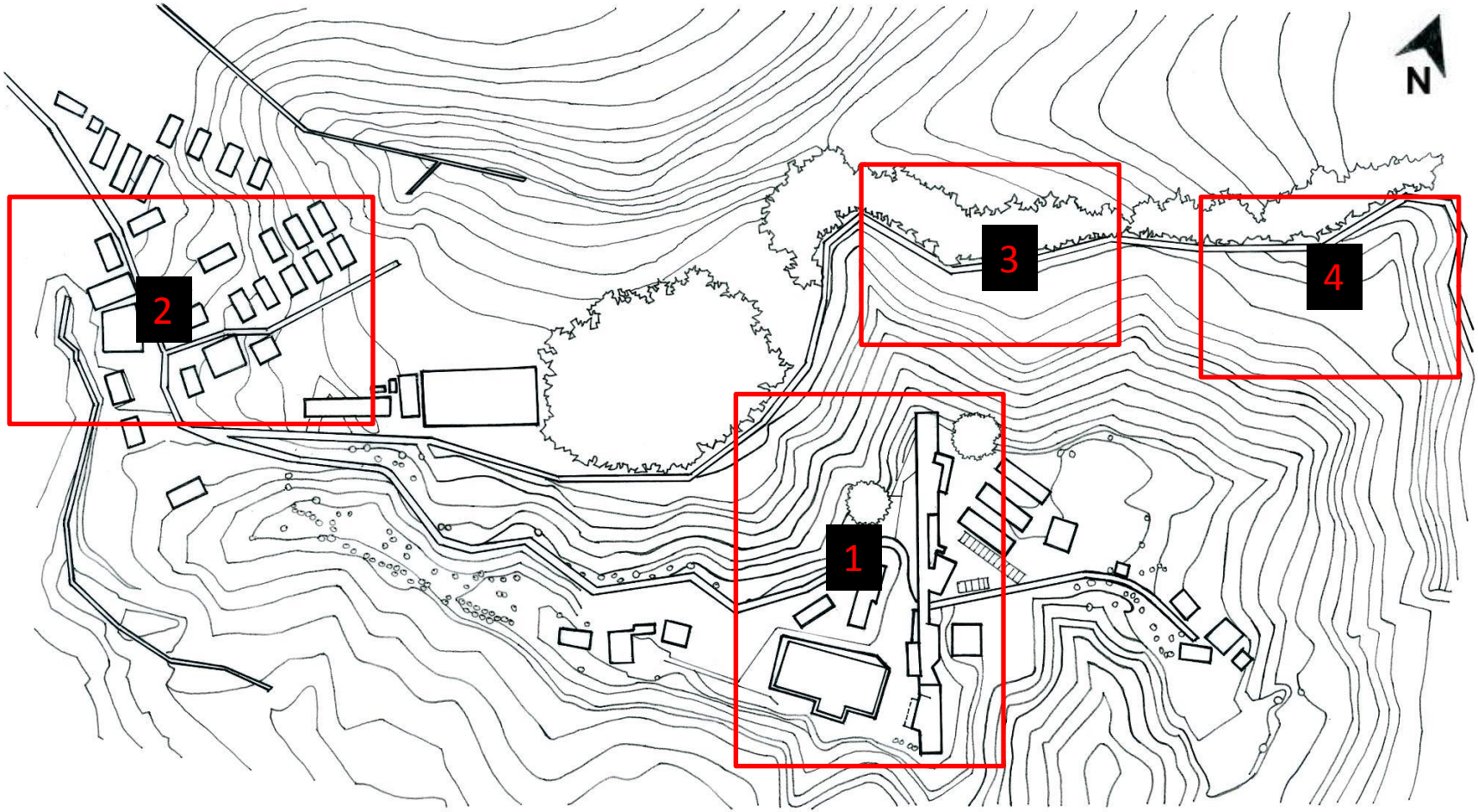
Noise
Analysis: How The Noise Affects Building Placement

- The BOH Tea Centre is situated high above the tea plantation, providing not only view but also to distance the building from the noise of the machinery down at the plantation.
- The Factory, the bus stop and the entrance are all situated on the opposite side of the cafeteria because they wanted the patrons to enjoy their tea in peace and enjoy the view. (Number 19, 20, 21)
- School is situated at the end of the village and far away from religious temples to prevent the noise of cars and students from disturbing the peace. (School No. 06)
- The entire BOH Tea Centre is also a good distance away from the village to avoid noise from traffic.
- Drainage/Reservoir at one end of the village. With traffic going over the drainage causing a lot of noise. (Drainage Pipe No.03) (Reservoir No. 02)

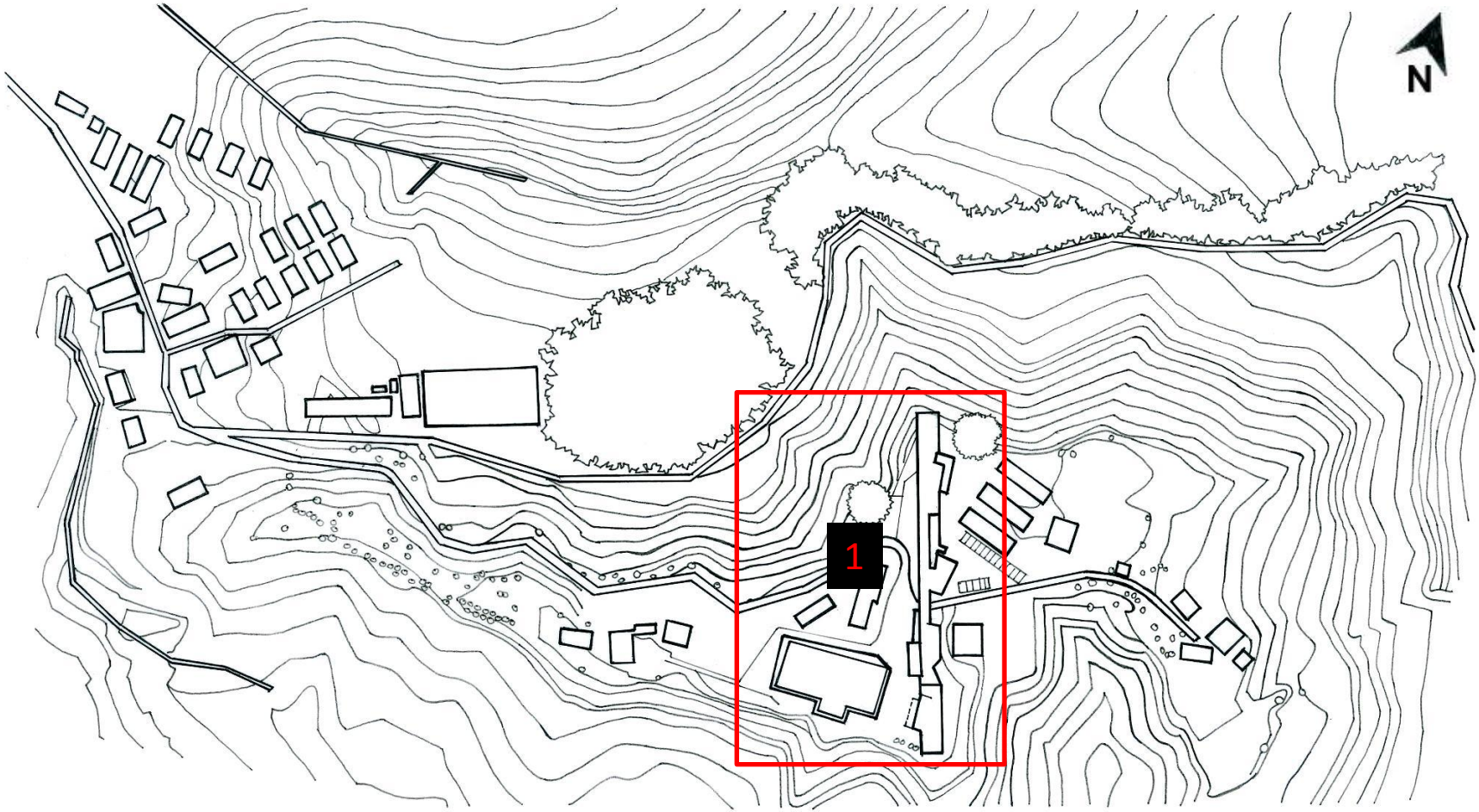
VIEW



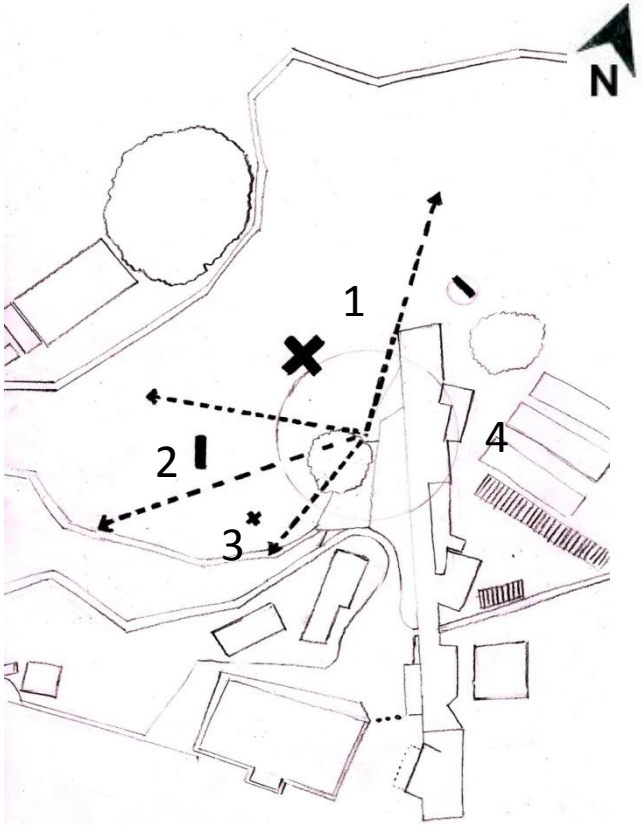
Site Plan

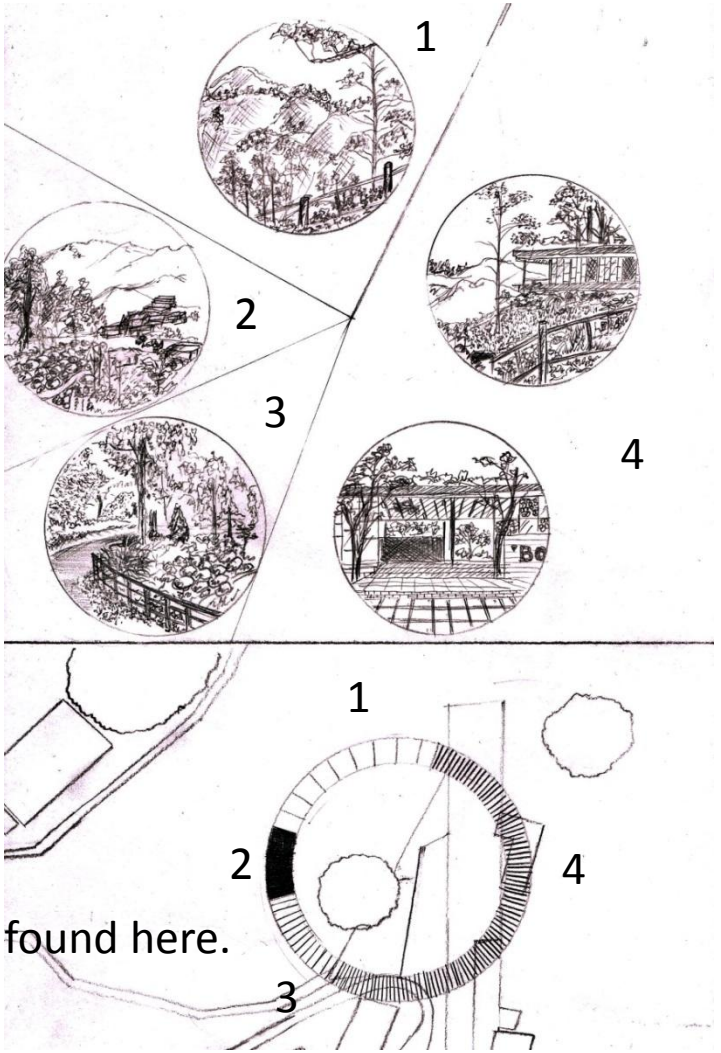


Area 1: Main Entrance



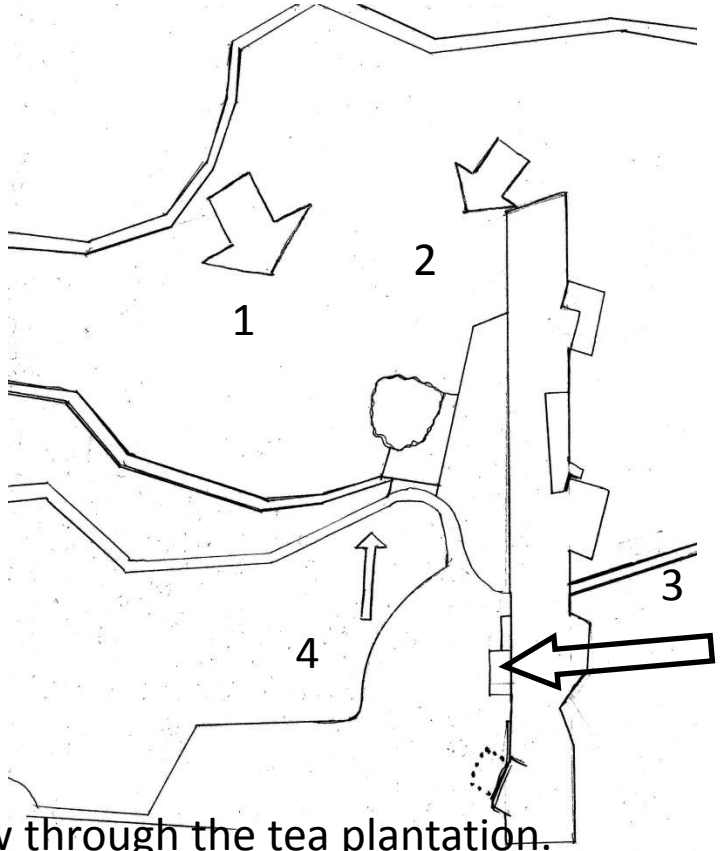
View from the site

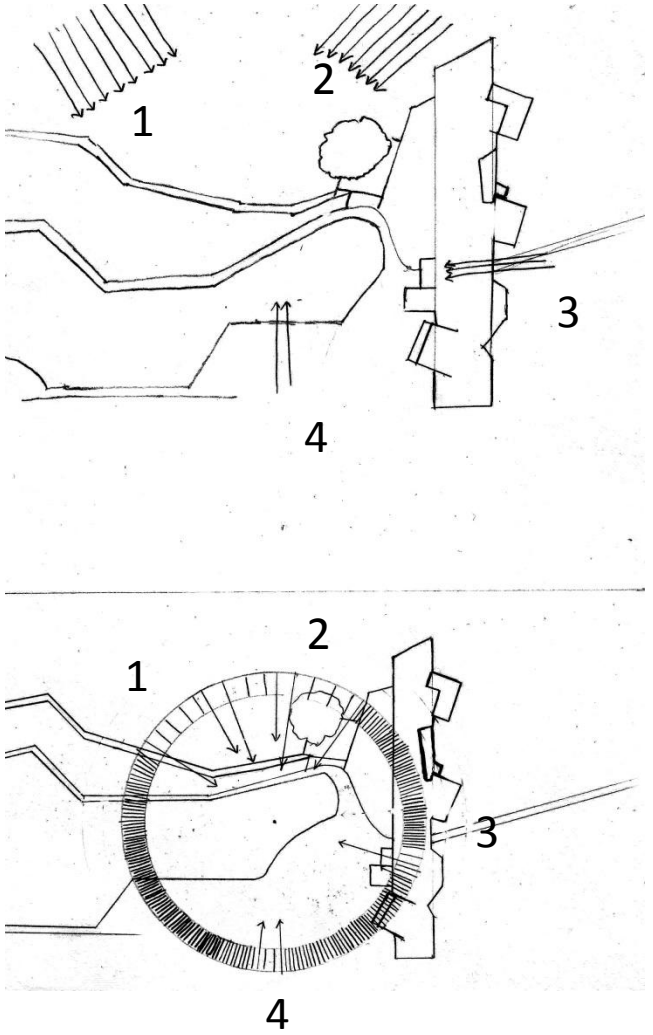




1. The best view of the tea plantation. No any distraction found here.
2. Construction and car park is very distracting.
3. View from the small road and some tea plantation looks very calm.
4. Crowded situation in the BOH's tea plantation café causes a messed view.

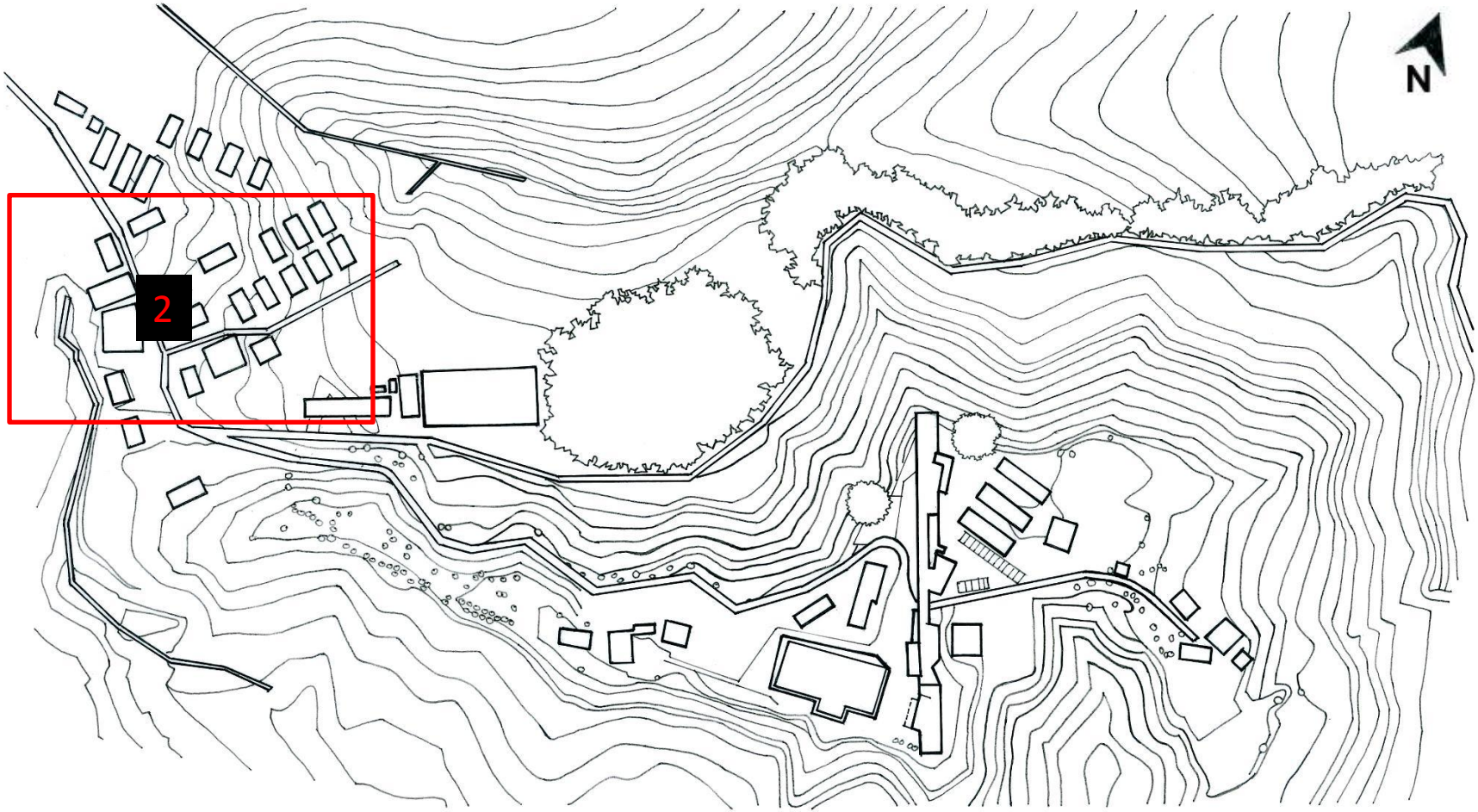
View into the site



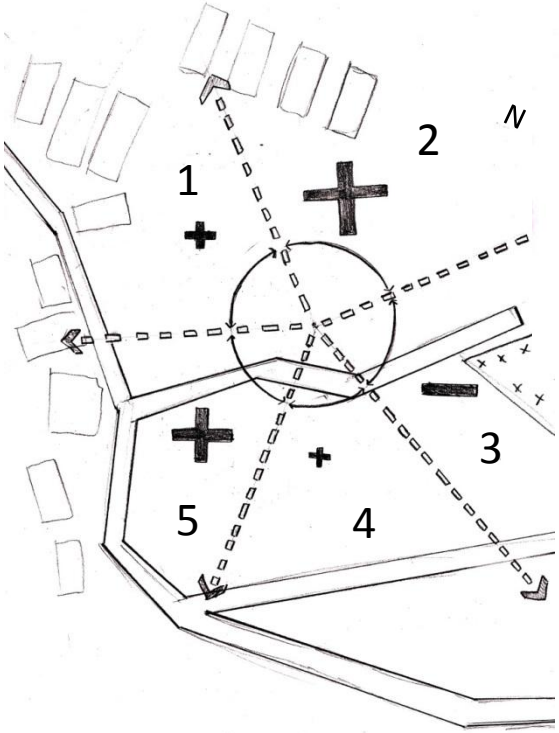


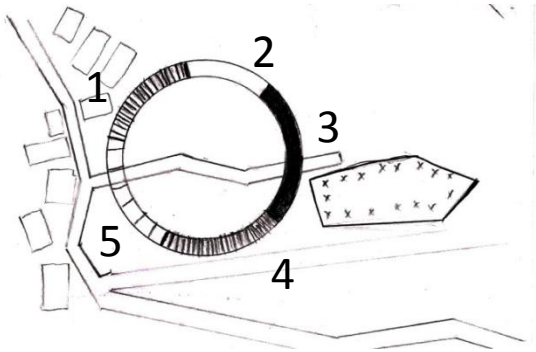
1. The view through the tea plantation.
2. The view from the pathway towards to the café.
3. The view through from the café.
4. The view from the road towards the old factory.

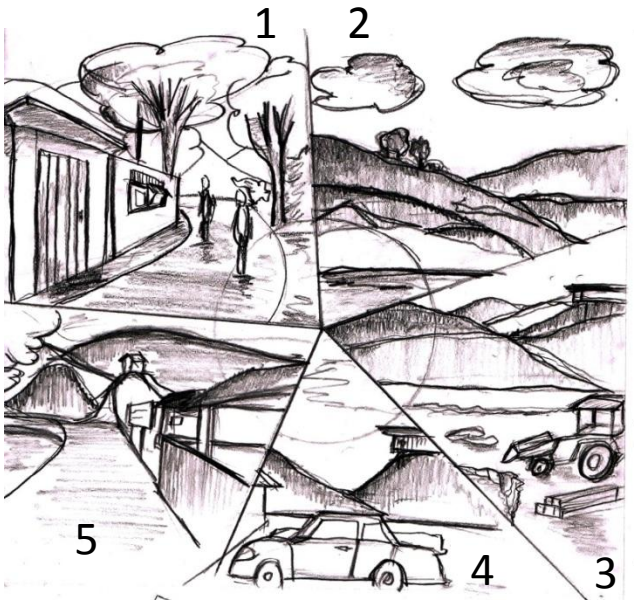
Area 2: Settlement – Foothill of the tea house



View from the site

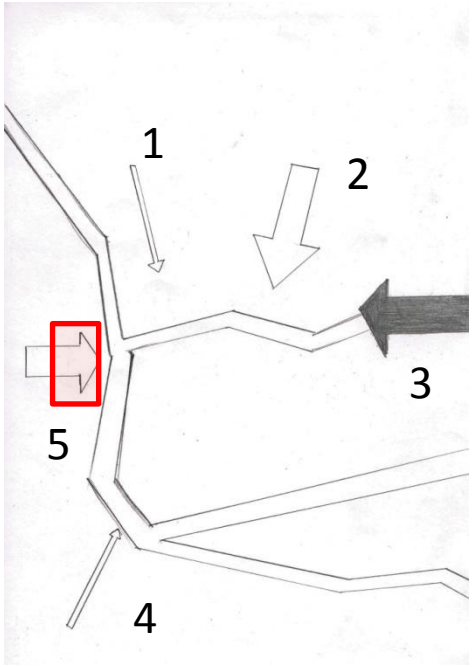


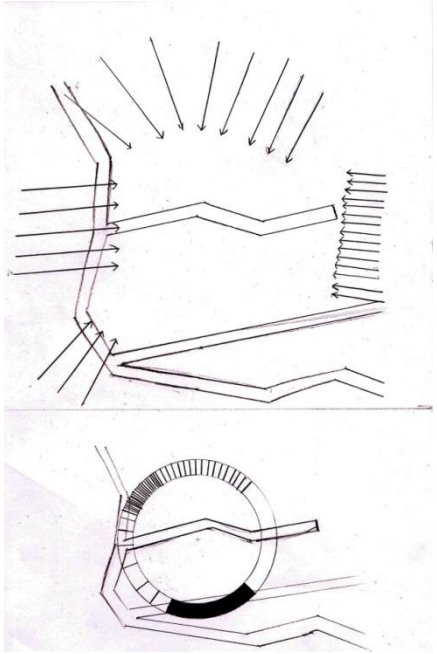




1. A good view towards the mountains though it is blocked partly by trees.
2. A perfect view towards the plantations with no distractions.
3. Though the tea house occupies the view, the construction site ruins the view.
4. The view of the tea house through the car park.
5. From this position, a tudor like house can be spotted from the reigns of mountains.

View into the site





1. The view from the road leading to the foothill of Sungai Palas. Partly distracted by trees.

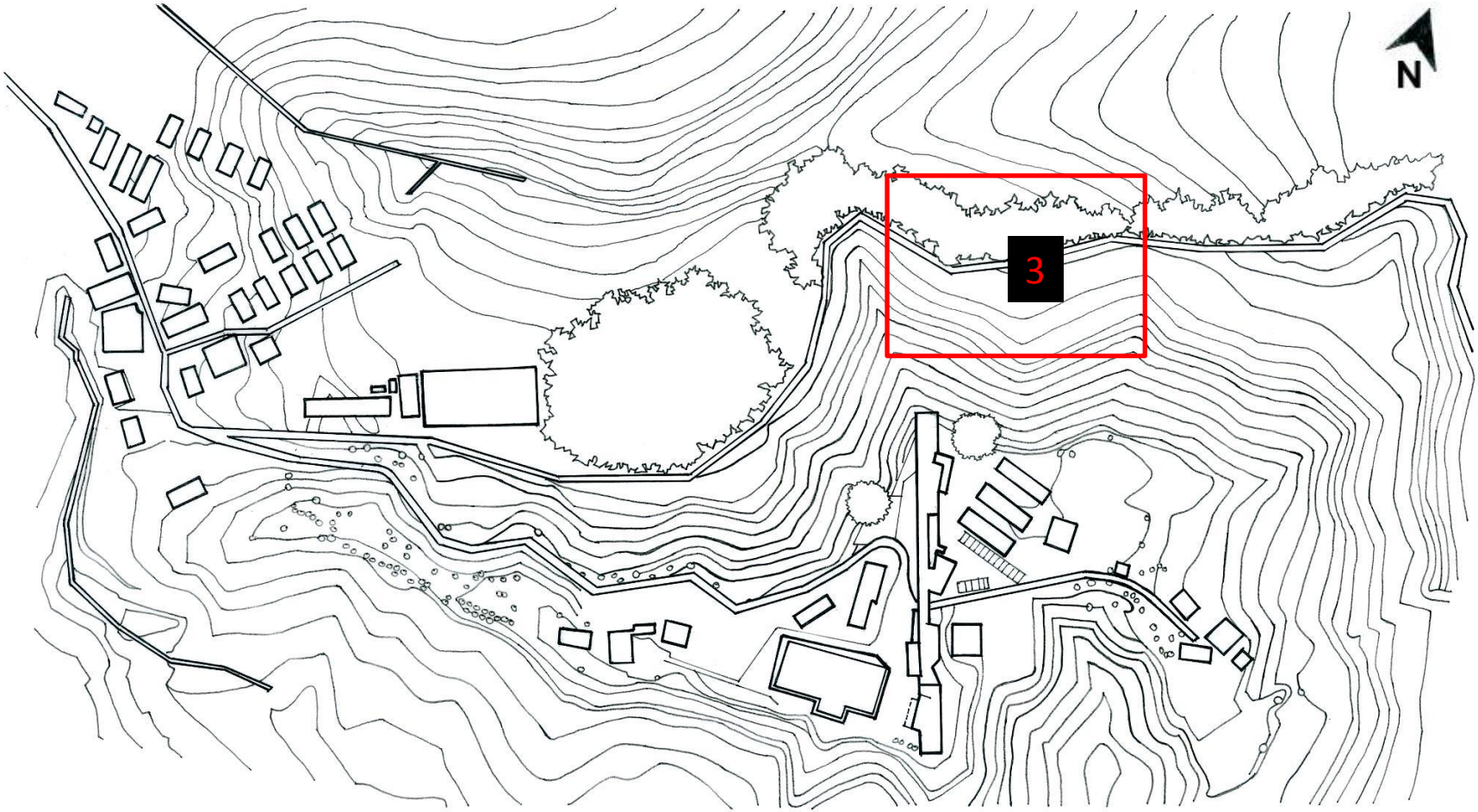
2. No distractions from the peaks of the tea plantations around.

3. A good clear view from the tea house café balcony, but however negatively impacted from car parks and construction site.

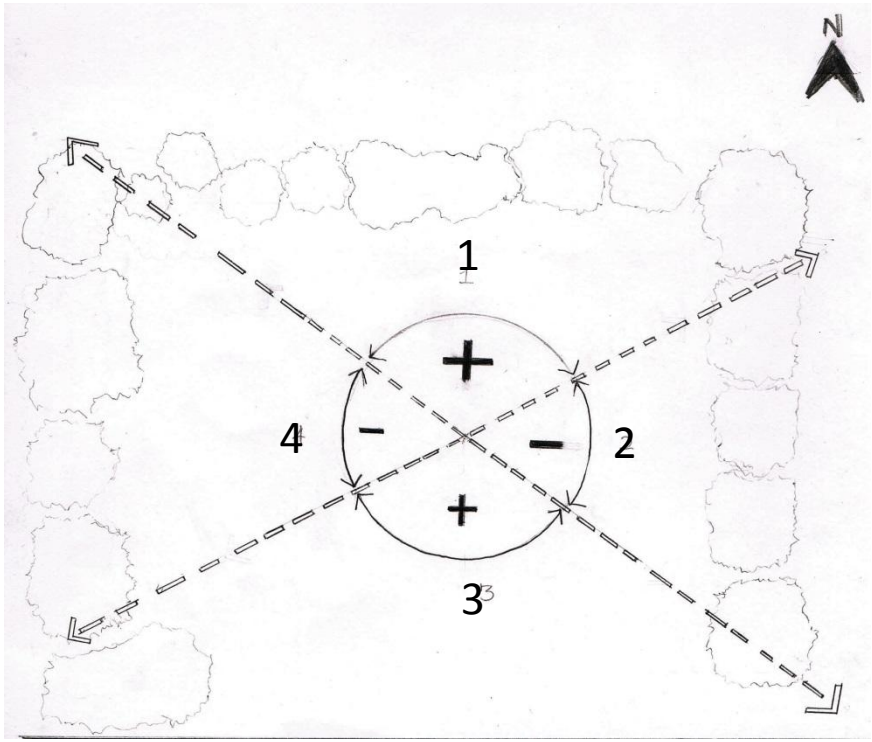
4. The view of the settlement if looked from a tudor house and the hills around it.

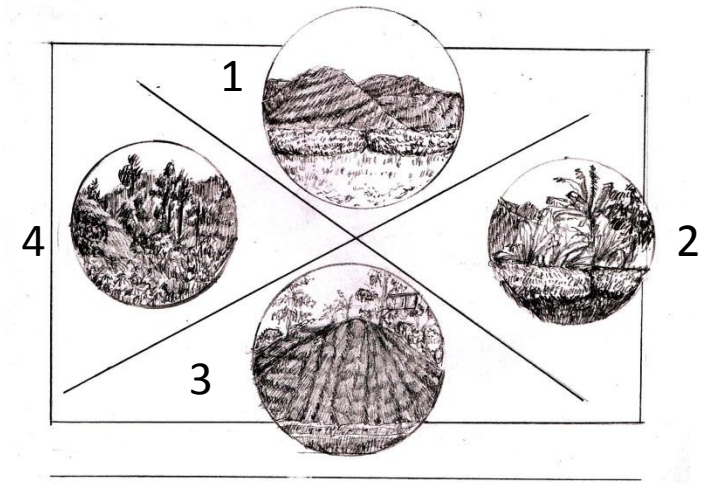
5. Another view from the summer's tudor house on the peak of the mountains behind the only Indian temple in the area

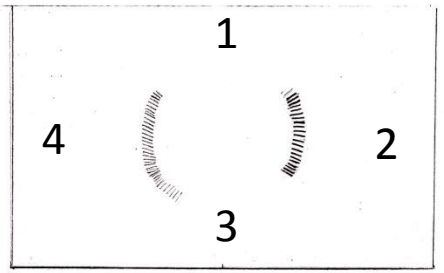
Area 3: Foothill of the plantations



View from the site

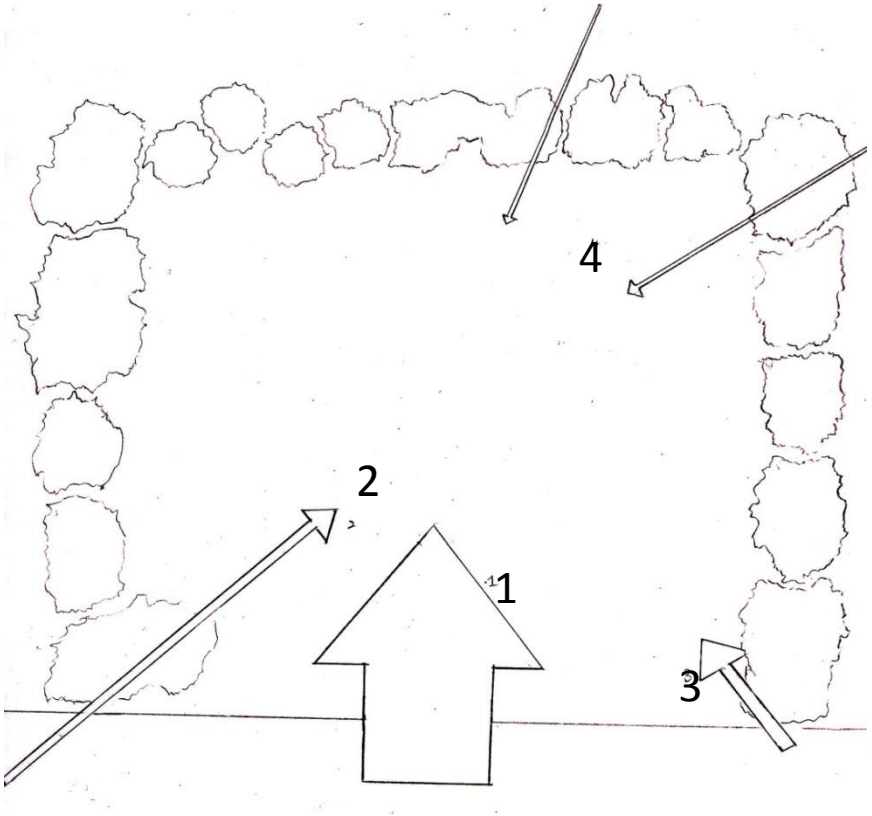


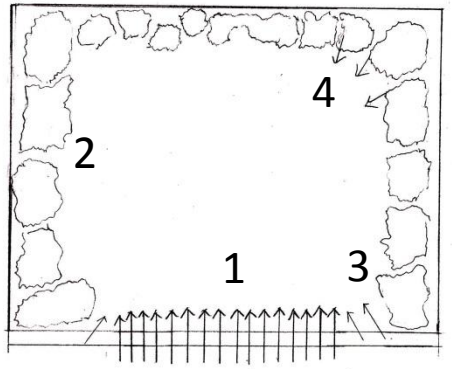


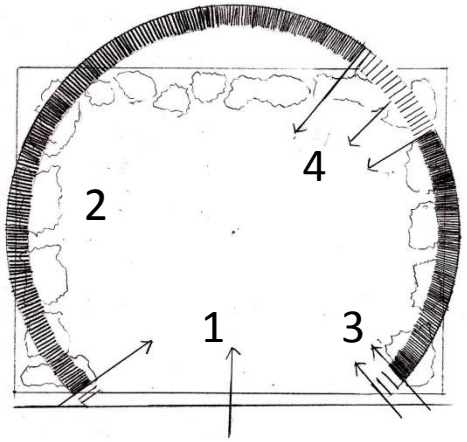


1. Excellent view of tea plantation.
2. Bushes and banana trees blocking the views to the path.
3. View of the road and the adjacent tea plantation. The tea visitor centre also can be seen from a low angle.
4. The random orientation of trees makes the view messy and unorganized.

View into the site

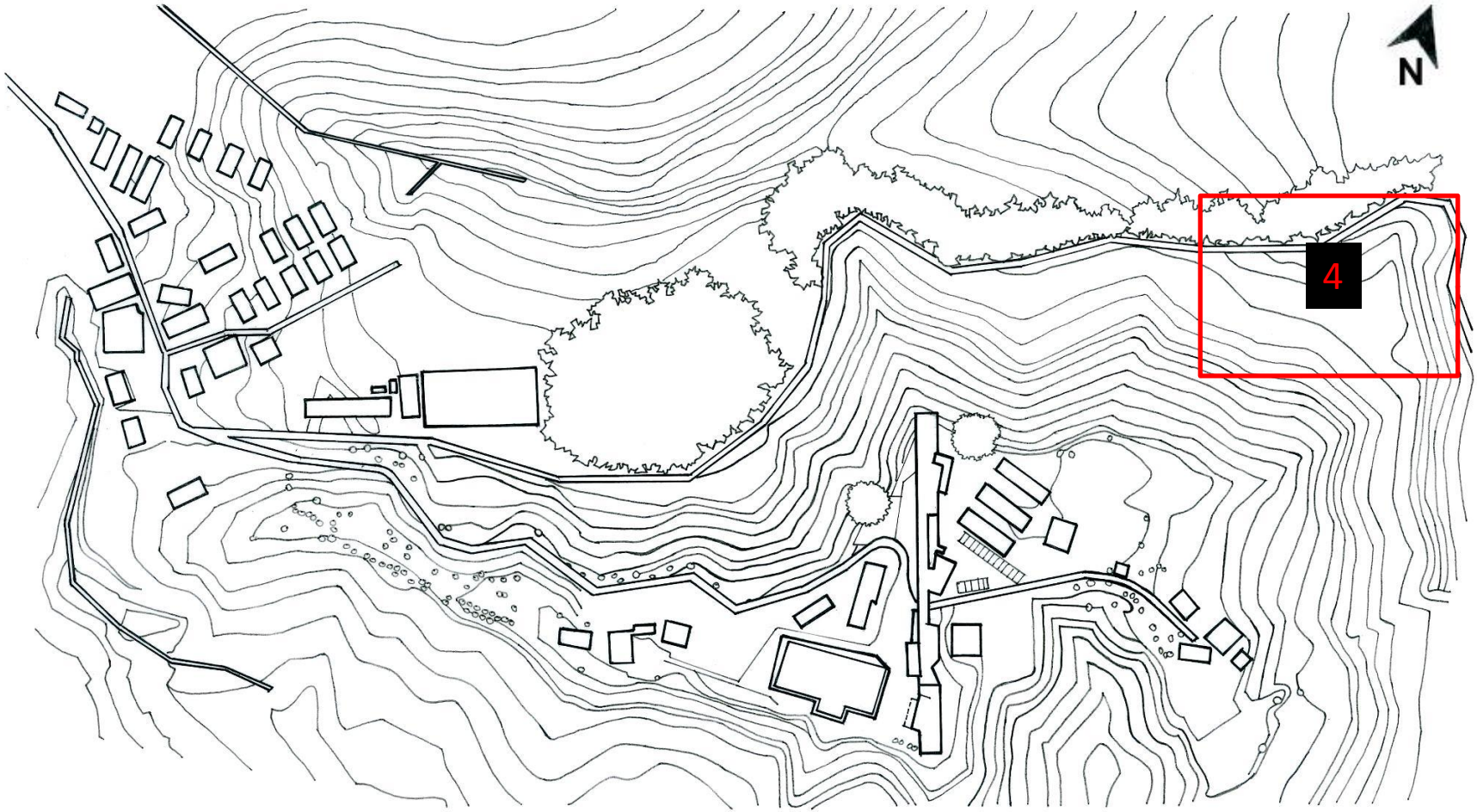




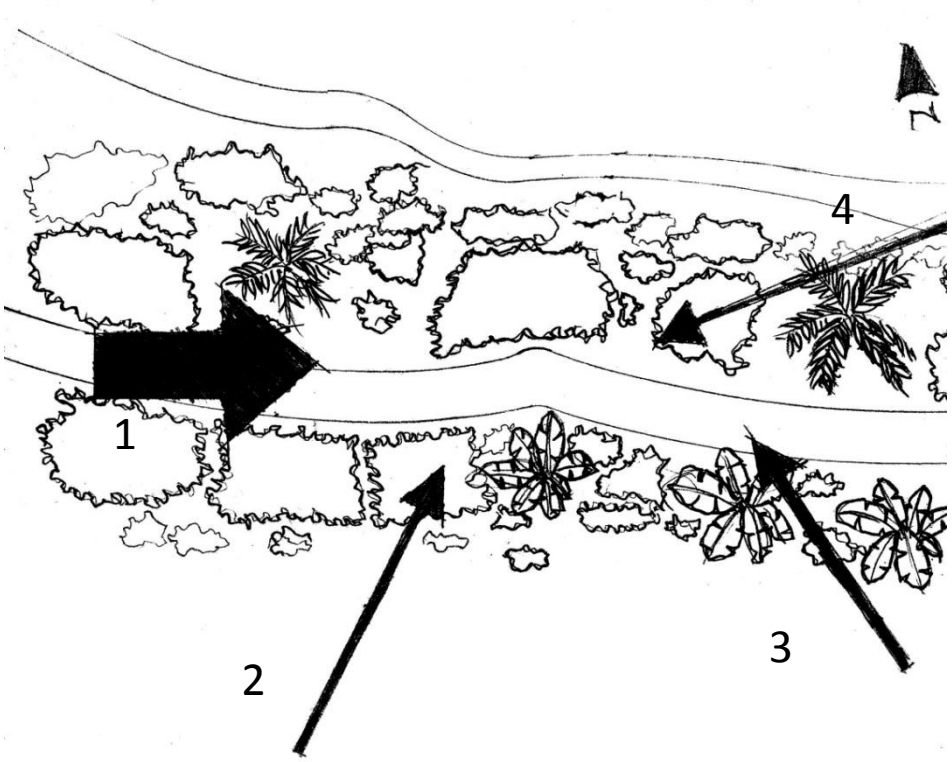


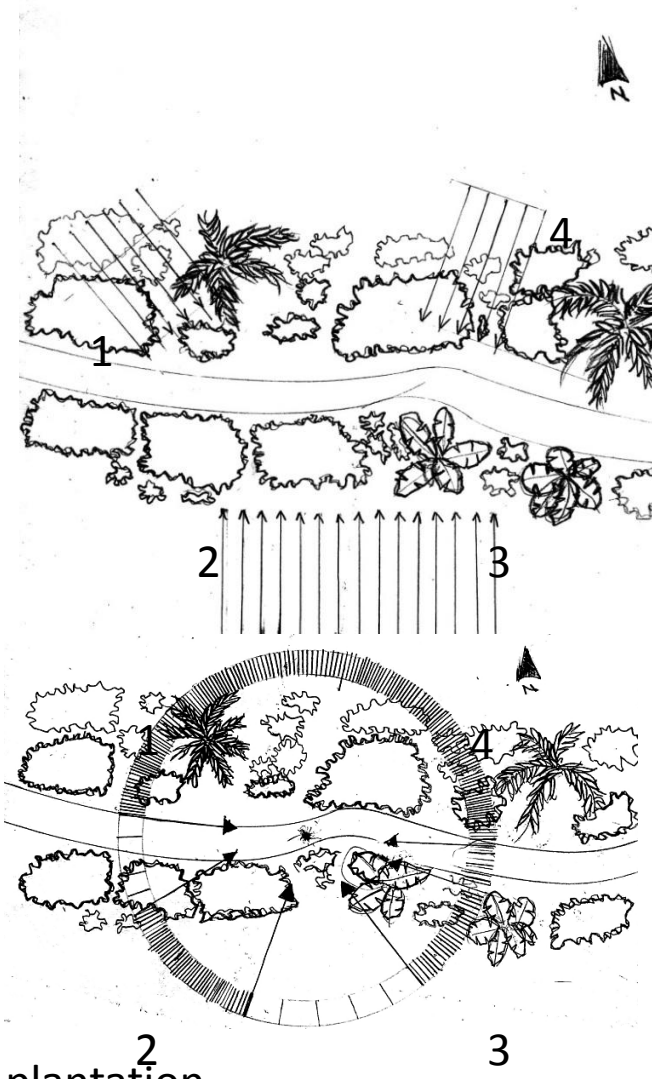
1. View from the main road directly approaching.
2. A bird's eye view from the tea visitor centre.
3. View from the road which is partly blocked by trees and bushes.
4. View from top of the hill .

Area 4: Dirt Path Through the Plantations



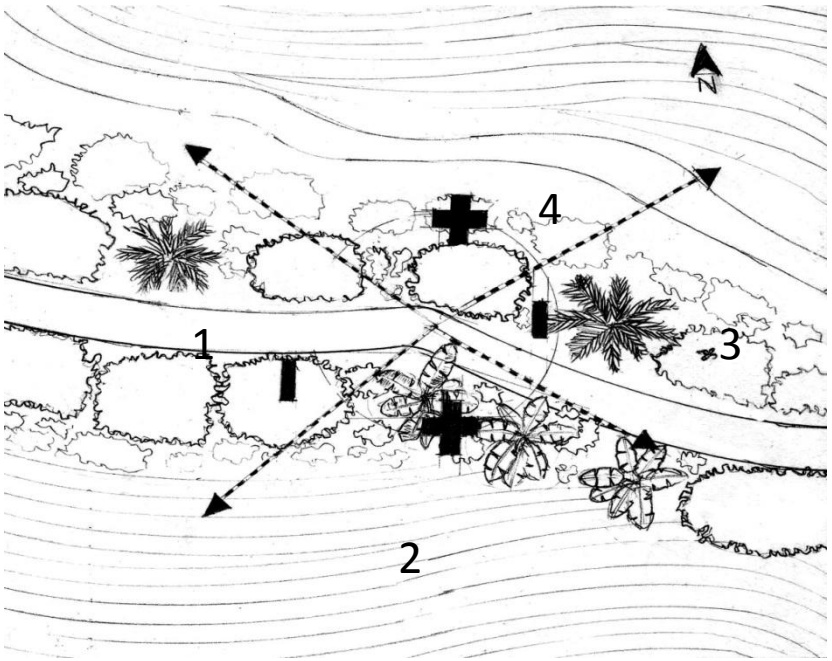
View from the site

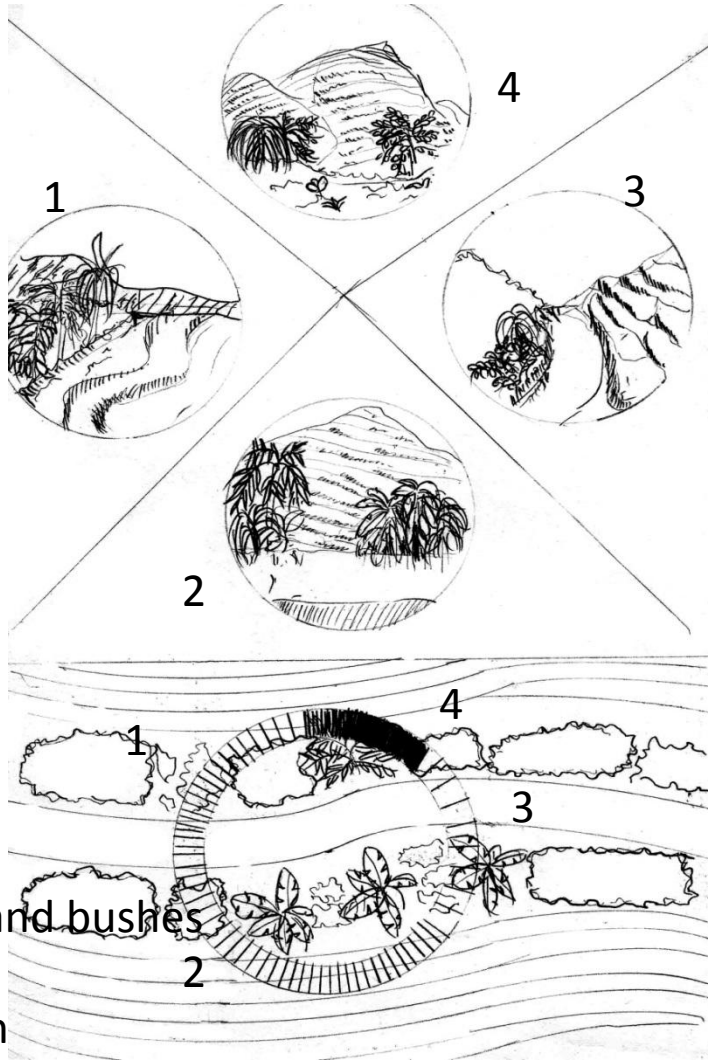




1. View of road heading in, not much obstacles
2. Bushes and banana trees blocking the views to the tea plantation
3. View towards the settlement although being blocked by several bushes.
4. Bushes and trees fairly obstructing but the view towards the site is clear.

View into the site



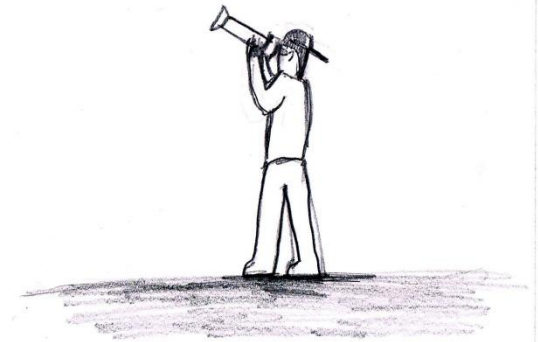


1. View of road heading in, partially distracted by trees and bushes
2. View of the site and nice contour of the tea plantation
3. View of road heading to the site
4. Excellent view of tea plantation

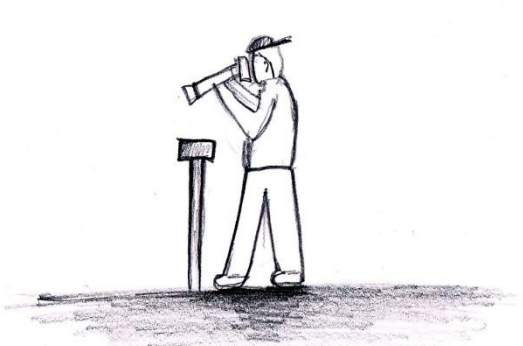
Camera Postures

Straight angle

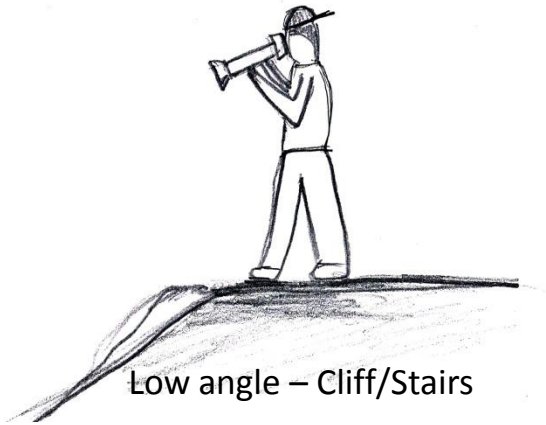
Crouched angle



High angle

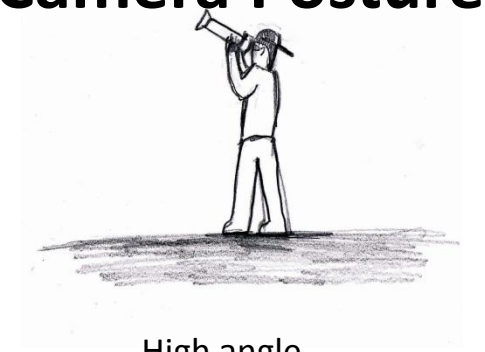


Low angle - Balcony



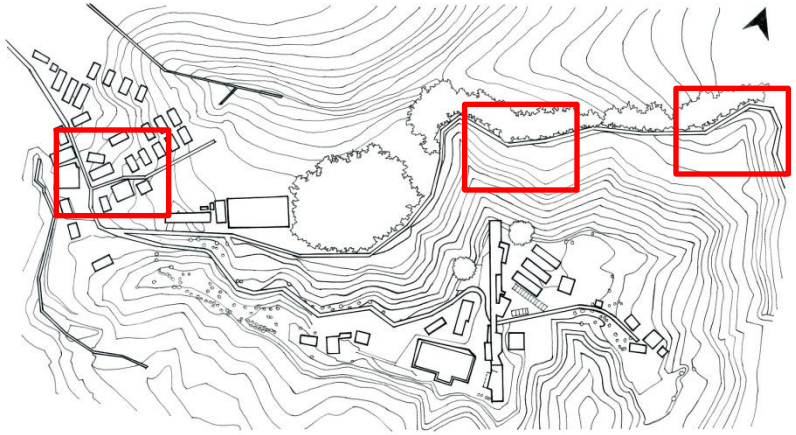
Low angle – Cliff/Stairs

Camera Postures

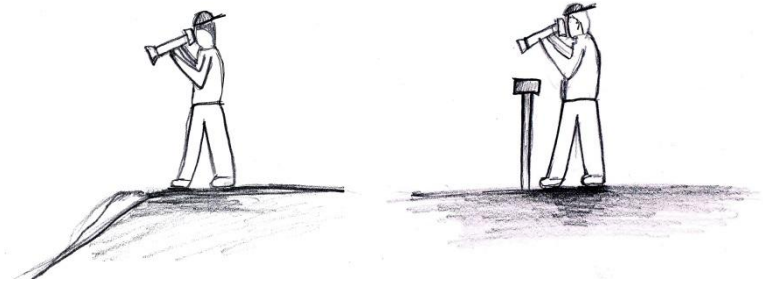


High angle

- Usually taken at zones 2,3 and 4.
- Altitude: 5000 ft – 5025ft above sea level

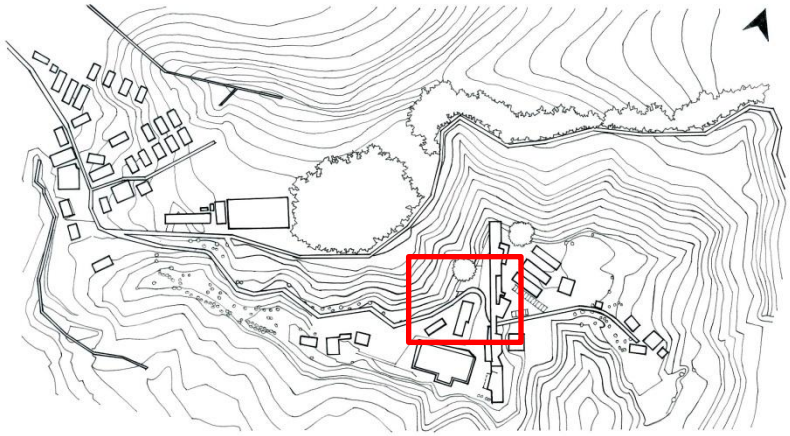


Camera Postures

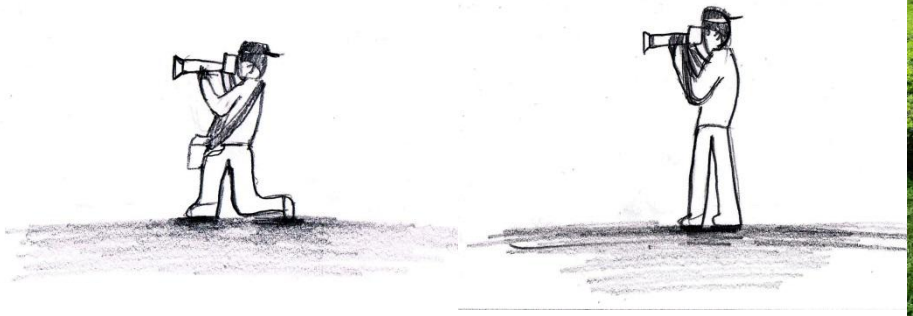


Low angle

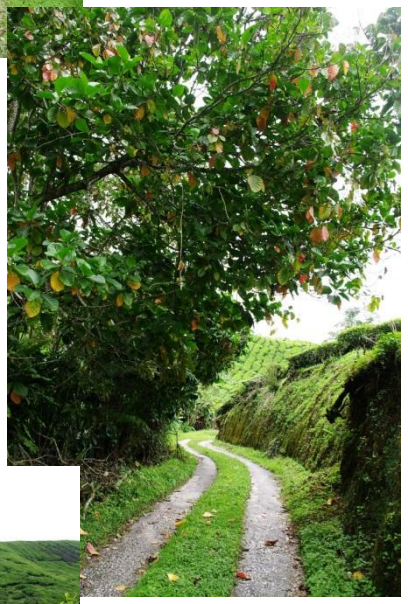
- Usually taken at zone 1.
- Altitude: 5035- 5050ft above sea level



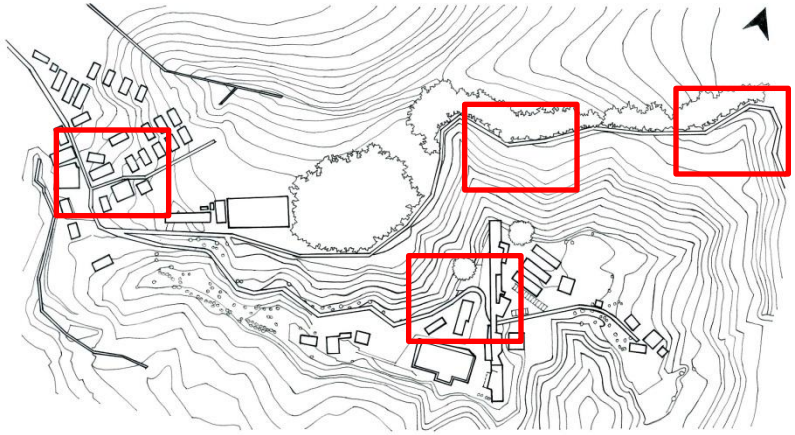
Camera Postures

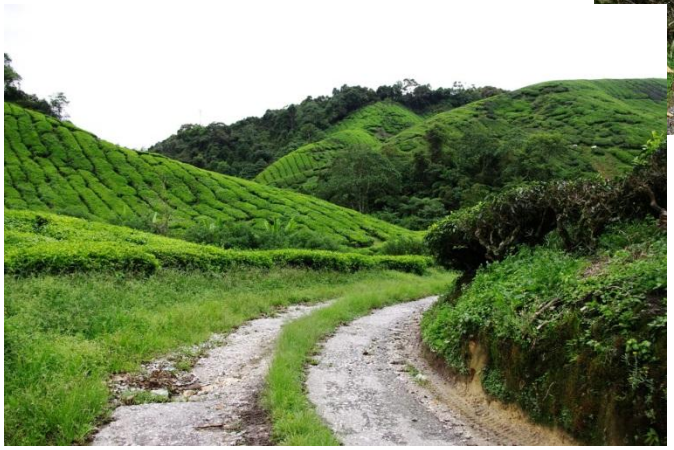


Straight and crouched angle

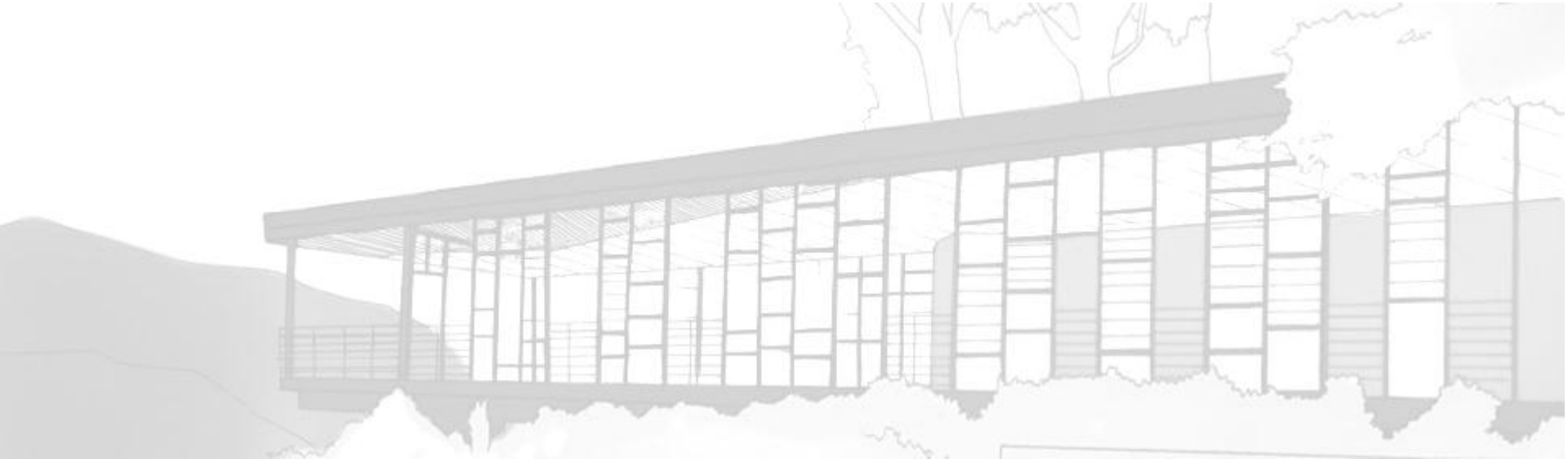


- Suitable on all zones (1-4)
- Altitude: 5000- 5050ft above sea level

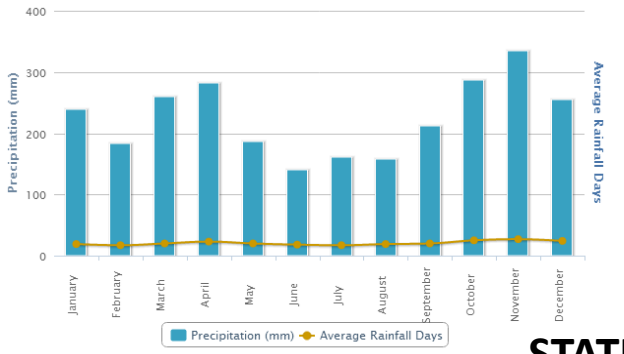


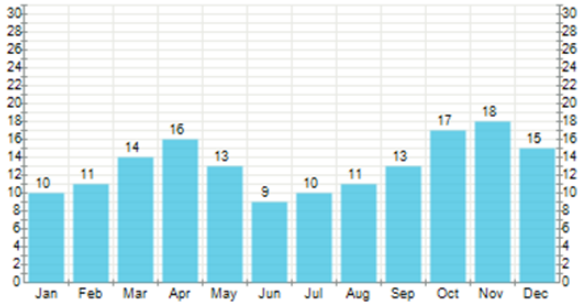


CLIMATIC

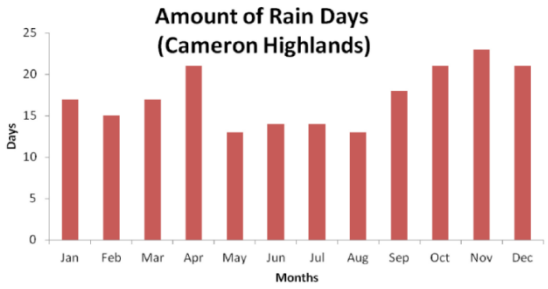


The weather in Malaysia is characterized by two monsoon which are Southwest monsoon from late May to September and northeast monsoon from November to March. The northeast monsoon brings heavy rainfall particularly to the east coast states of peninsular Malaysia whereas southwest monsoon normally signifies relatively drier period.



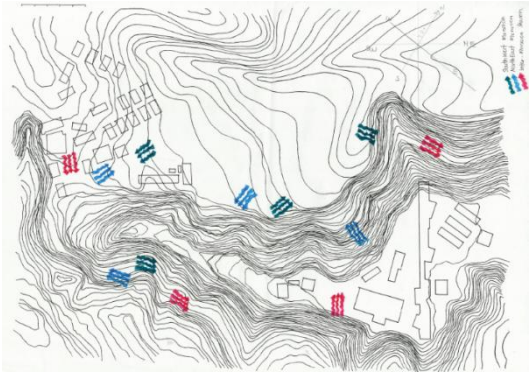


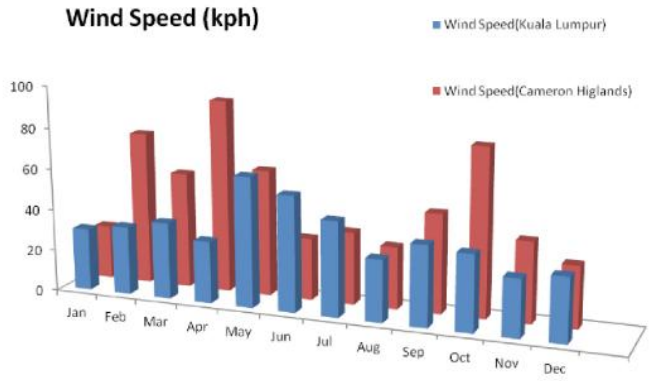
STATISTIC



Precipitation is any product of the condensation of atmospheric water vapor that falls under gravity. The water vapor suspense in the air and does not condense sufficiently to precipitate creates fog and mist.

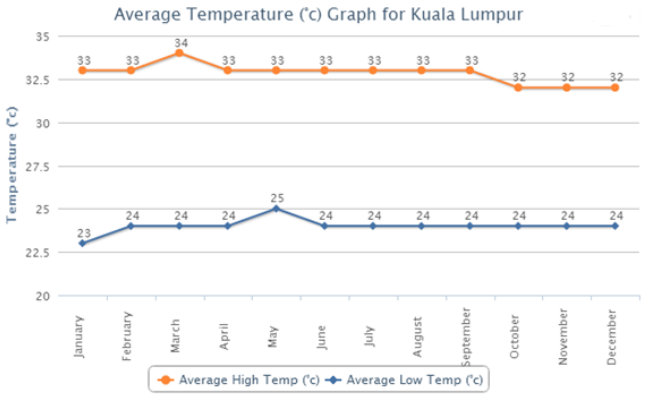
WIND DIAGRAM

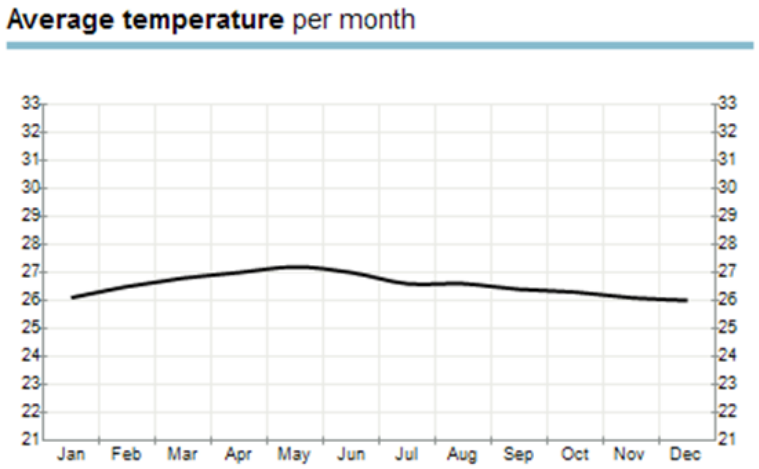




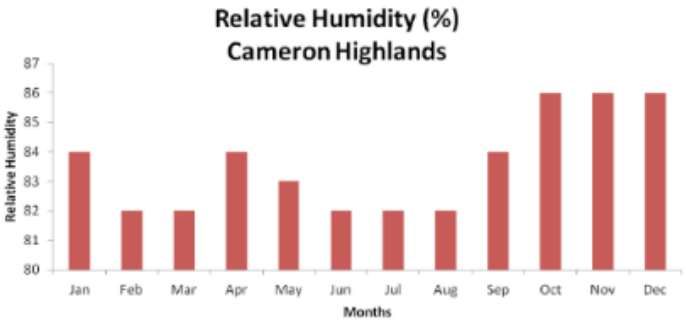
The monsoon season bring strong winds to Malaysia every year. In Cameron the top wind speed recorded was 81kph to 93 kph. With the strong winds and rains each year, the materials and the design must be able to withstand the strong wind.

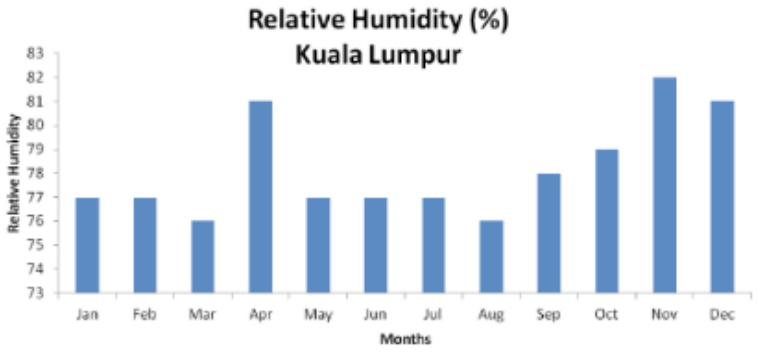
TEMPERATURE AND RELATIVE HUMIDITY





STATISTIC





CLIMATE EFFECT

GROWTH OF MOSSES

PAINT PEELING OFF

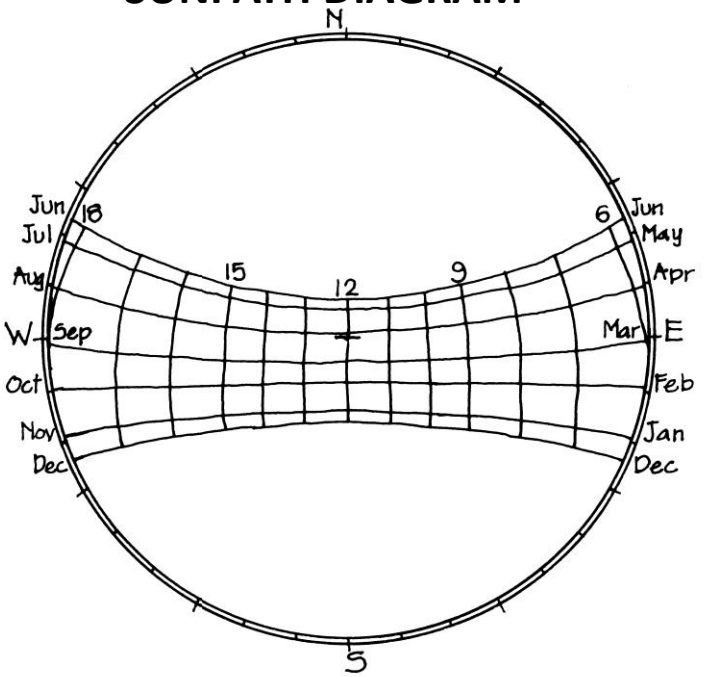
RUSTING OF STEEL

CLIMATE

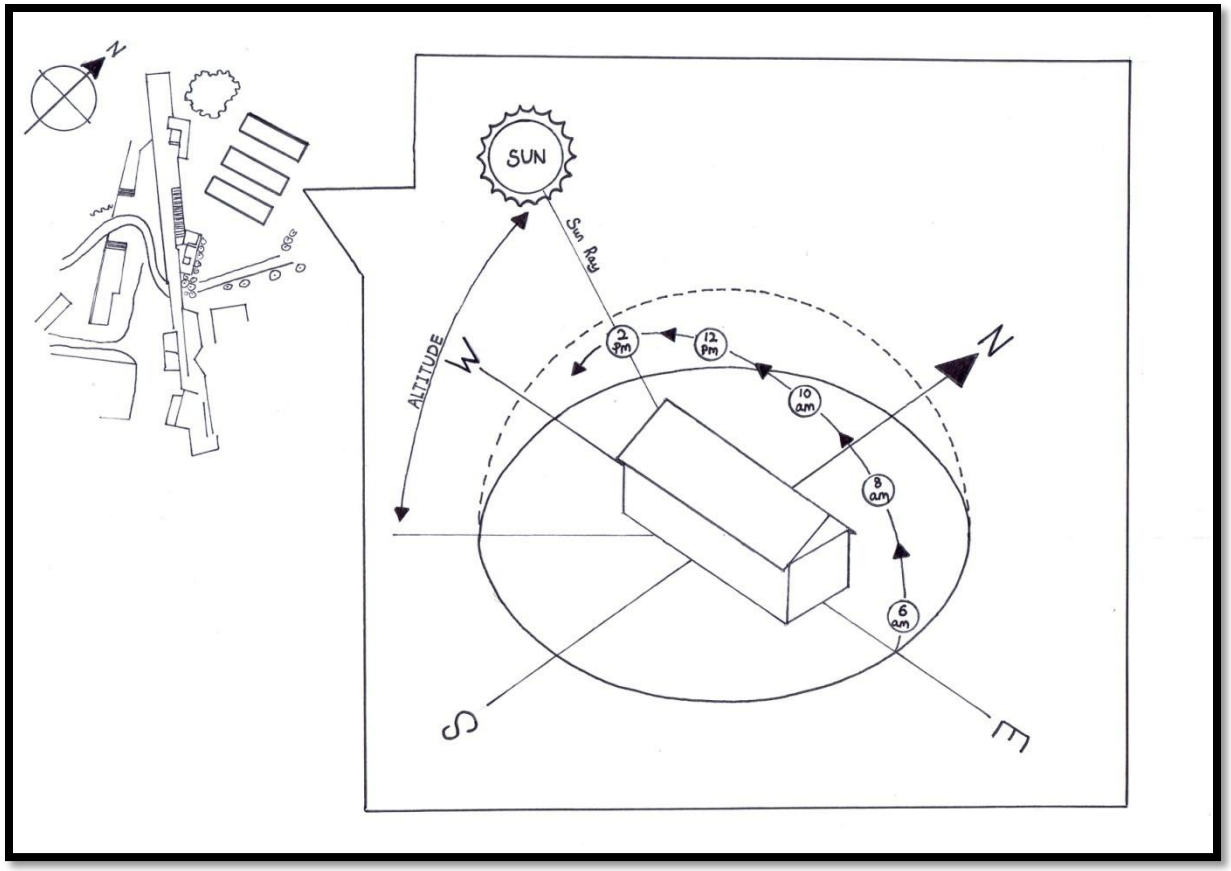
Cameron Highland in generally has a fairy cool weather all year around, compared to Kuala Lumpur it is the most suitable area to grow tea. Since Malaysia is located on the equator, the weather varies based on it. The equator's sun path does not change much, so regardless of the sun's movement we still get most of its rays. The downpour in Cameron Highland also is higher because of the increase precipitation in the air. Besides that the temperature in Cameron in lower thus making the tea leaves moist and hydrated for the best quality of tea.

So, the climate in Cameron Highlands requires our design to withstand tremendous amounts of rain, strong winds, UV radiation, cold temperature and high relative humidity. In such cases shades are needed to protect us from radiation and rain. Numbers and types of opening must be accounted for as the cold weather. will influence or reduce. Materials are important as well as the air relative humidity is high causing moss growth, peeling of paint, rusting, termite invasion and so on.

SUNPATH DIAGRAM



Malaysia is located at the equator of the earth. Thus allowing our country to have access to a lot of sunshine. The angular position of the sun as seem from a particular place on the surface of the earth varies from hour to hour and from season to season. The seasons occur because the earth axis of rotation is not perpendicular to its orbital plane, currently makes an angle about 23.44 degree. For half the year the Northern Hemisphere is inclined toward the sun while for the other half year the Southern Hemisphere has this distinction and vice versa.



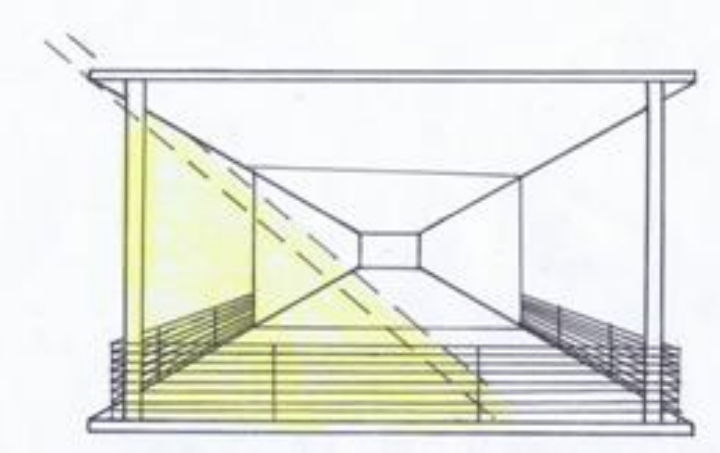
ORIENTATION

-The position of the building in relation to an east –west axis. The important features of the building such as entrances and passages face to east in the direction of the rising sun.

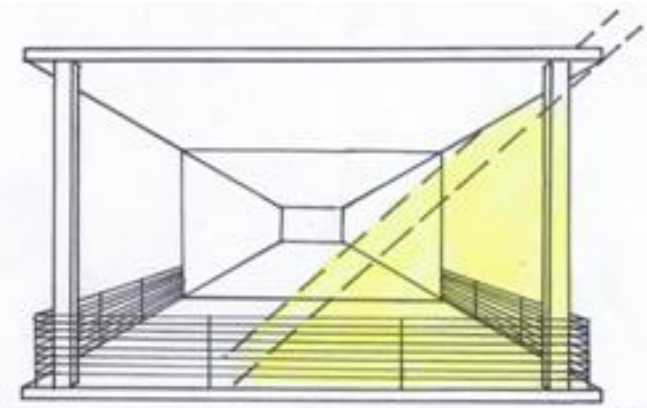
-The knowledge of sun paths for any site is fundamental in design building facades to let in light and passive solar gain, as well as reducing glare and overheating to the building interior.

-The houses is not only designed according to the control of the hill and also designed to be orientate is because to reduce the sunlight to enter the houses.

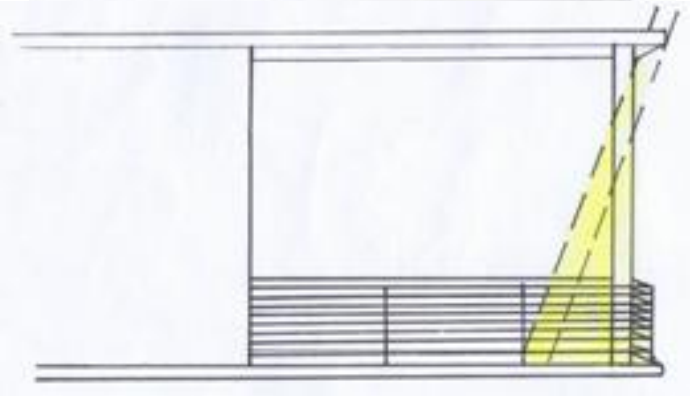
SUNSHINE AND SUNSET



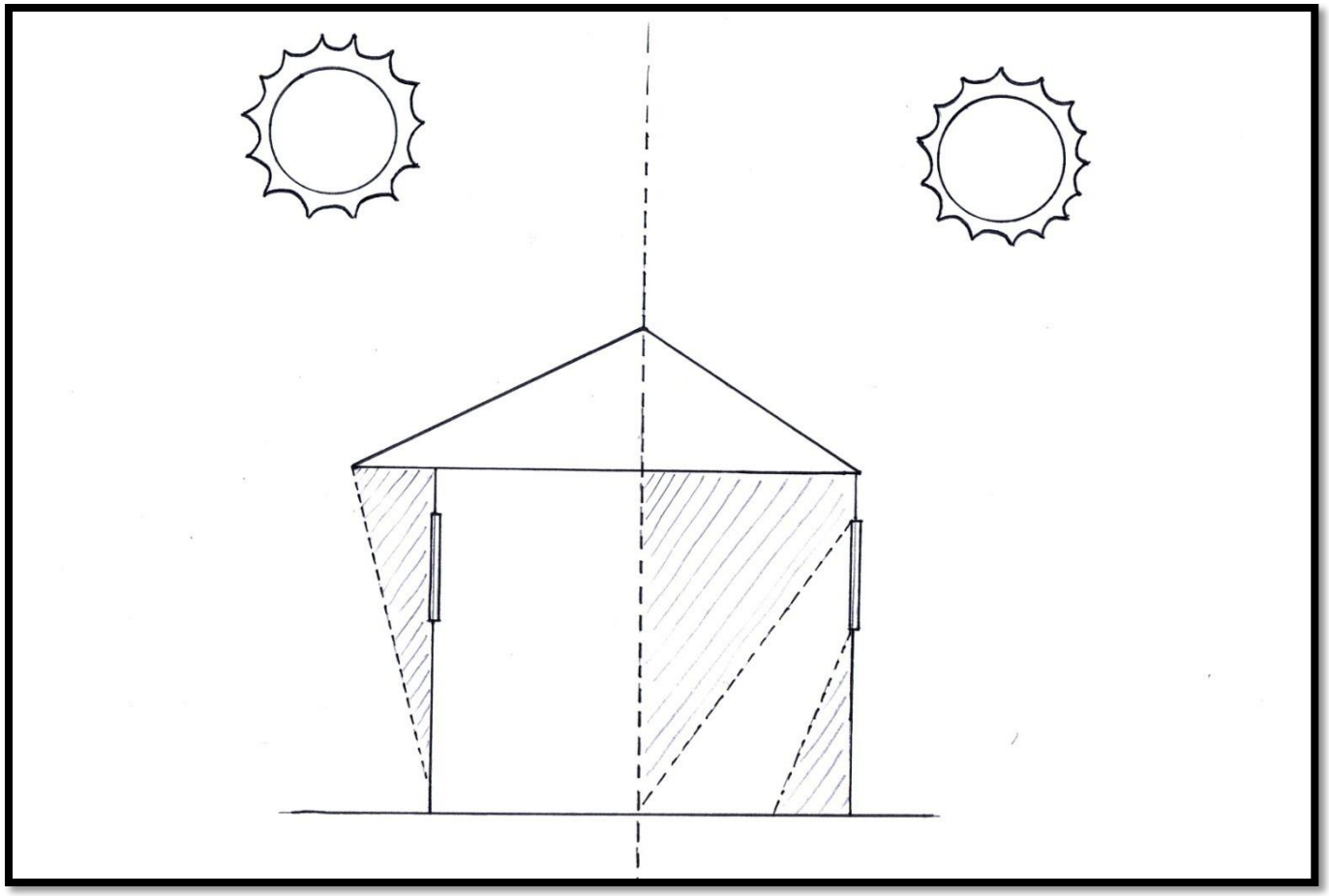
Morning sunrise
9am from the east



Evening sunset
5pm from the west



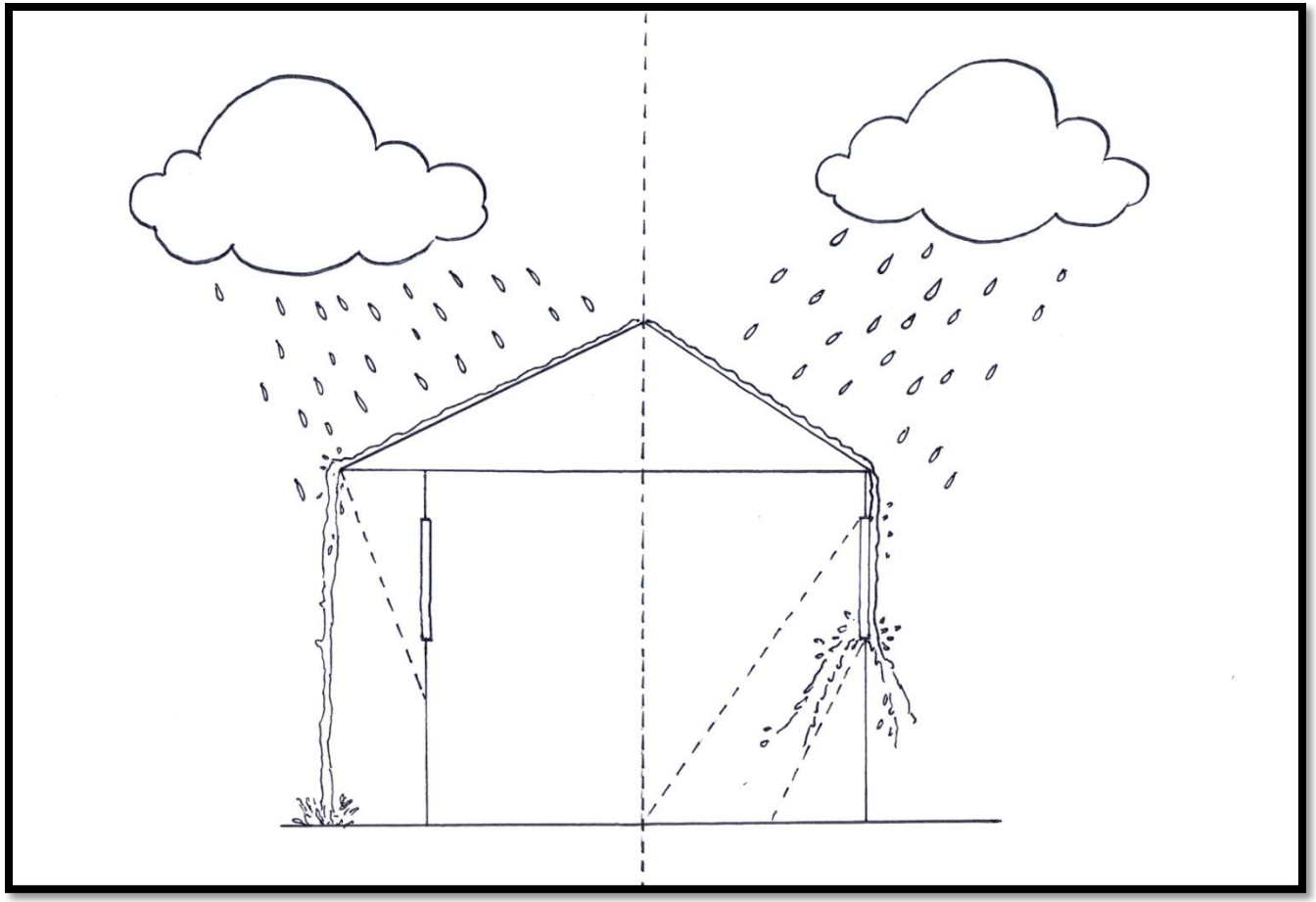
Afternoon sun
12pm



ROOF OVERHANG & WITHOUT OVERHANG

-Roof is the first line of defenses in protecting our homes from the deterioration effects of driving rain and UV glaring sun. so that roof overhangs play a critical roll in helping perform these roof functions.

-The exterior shading devices are more effective than interior devices in reducing solar heat gain, because they block radiation before it passes through a window. Light-coloured shades are preferable to darks ones, because they reflect more and absorb less radiation.



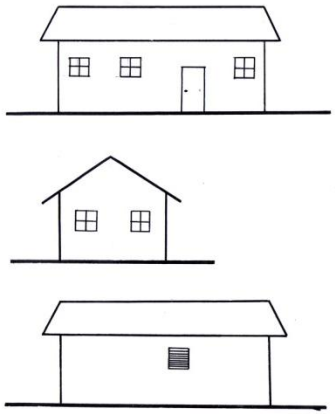
ROOF OVERHANG & WITHOUT OVERHANG

-The projection factor for the horizontal overhang is also to avoid the driving rain straight into the window .

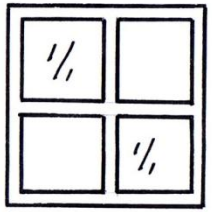
-The water flow from the roof won’t flow into the houses through the window instead to the ground.

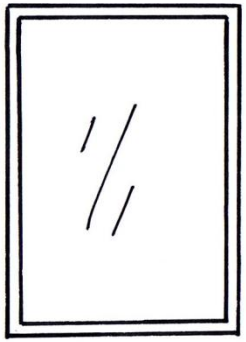
Air Ventilation

Air ventilation is a kind of passive ventilation, using the force of the wind (or local air pressure differences) to pull air through the building. Wind ventilation is the easiest, most common, and often least expensive form of passive cooling and ventilation. Successful wind ventilation is determined by having high thermal comfort and adequate fresh air for the ventilated spaces.

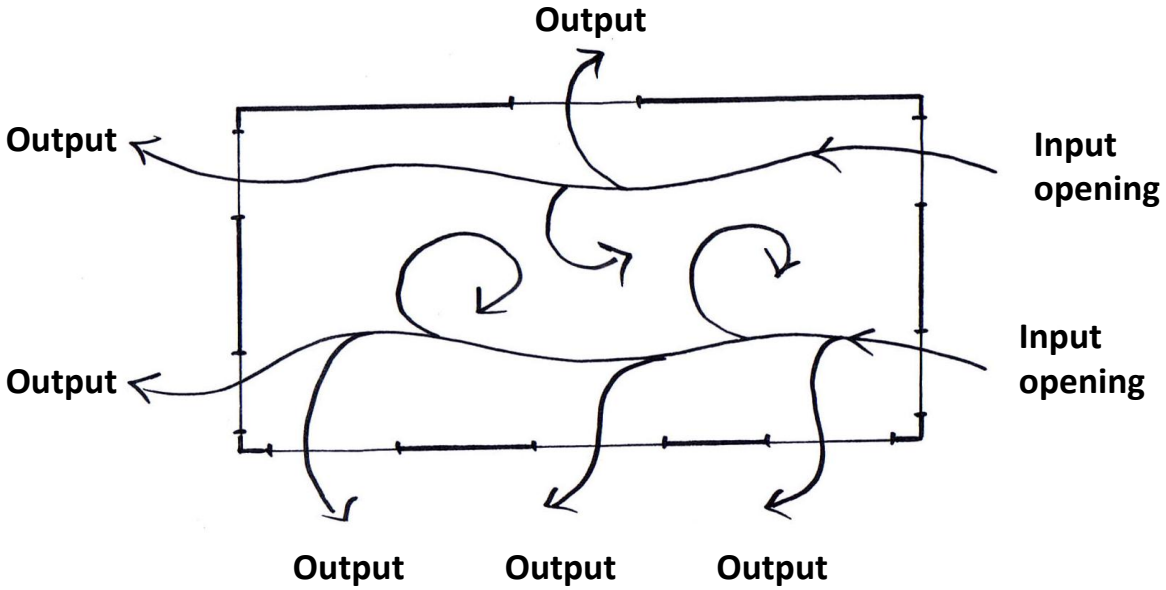


The houses in Cameron Highland have small, high placed openings. All of the openings of the houses on the site are not located faced to the wind direction, which is east. This is to avoid the strong wind in Cameron Highland to flow direct into the house.

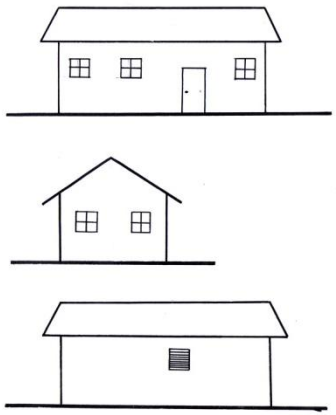




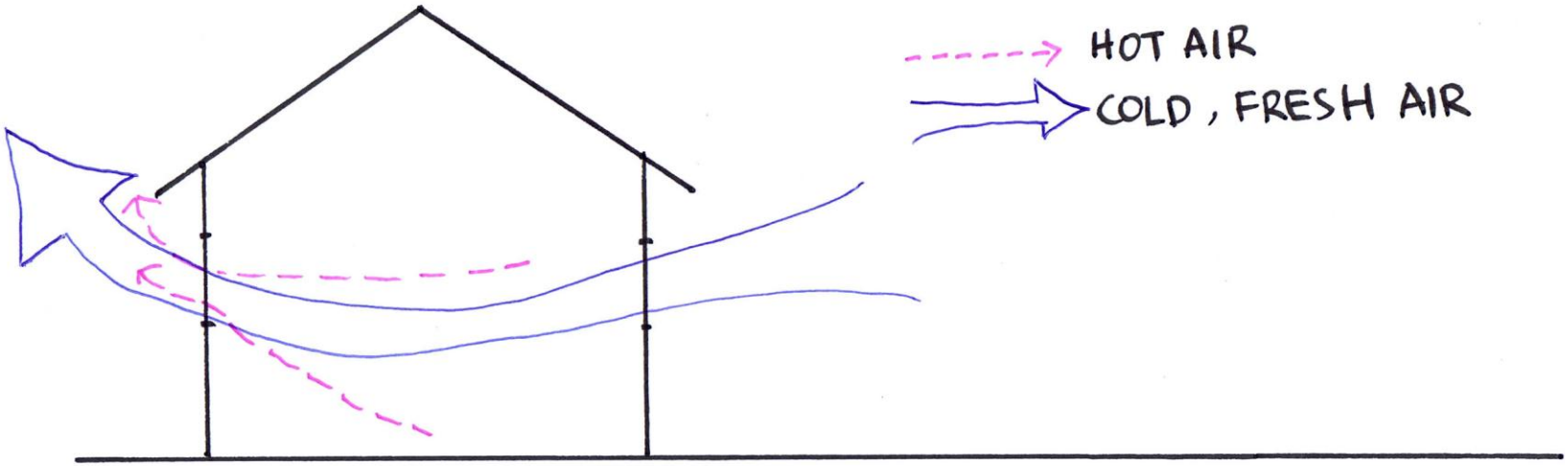
The openings are designed to be small to control the amount of wind flow into the interior and to boost up the speed of the ventilation system to cause an effective ventilation system.



The ventilation is boasted but using the number of wind input and wind output of the house. There are just 2 wind input opening and 5 to 6 output opening. This will cause the pressure of the interior lower than exterior, thus pulling the wind into the house and speed up the air change rate.



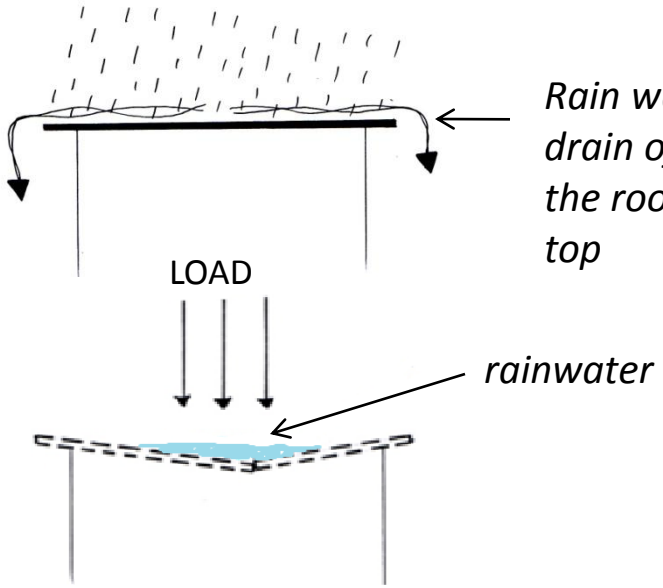
Hot air are less dense than cold air, thus the hot air will flow to a higher place while cold air sink to the bottom. The cold air that flow into the interior push the hot air out of the building from the high placed opening. Air change and effective ventilation occur within the interior.



Rooftop Design

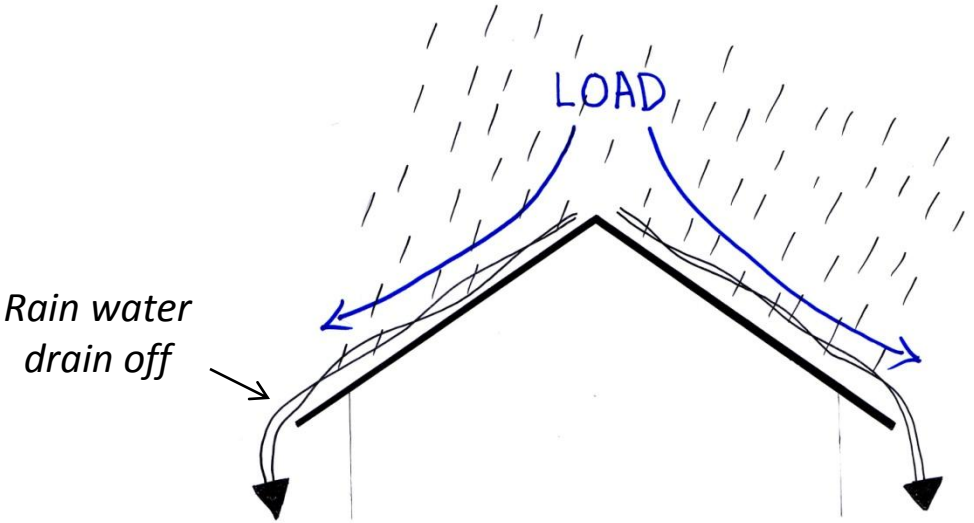
The rain in Malaysia are heavy and strong. Thus, the design of rooftop of building are important in order to drain up the rain water faster or else the rooftop might be collapse due to the heavy load. The statistic shows that there are at least 15 days in a month in Cameron Highland are rainy days. This is due to the high precipitation of the environment. However the rain there are not as strong as the rain in Kuala Lumpur and other states. But, we still having the heavy rain problem because the amount of rain is high.

The topography of Cameron Highland are a natural drainage system. The water will flow downward the hill automatically so the drainage system on the ground are not necessary. The problem of the damage that the rain water brings to the residents on the down hill are solved naturally. The trees and tea bushes will create an obstacle to the downfall rain water so the water cannot gain momentum to bring damage to building on downhill.



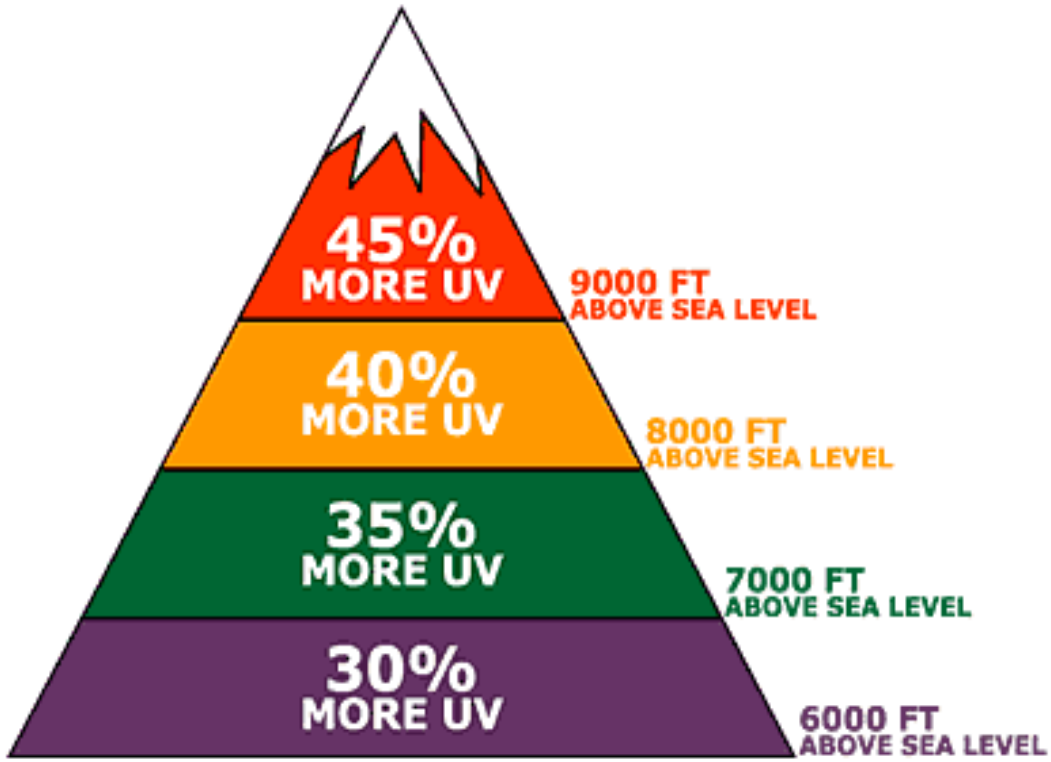
Rainy days are quite a normal weather in Cameron. So the drainage system should be efficient in order to drain out the rain water to prevent the heavy load that might make the roof collapse. This is the reason why the rooftop there are designed in such way.

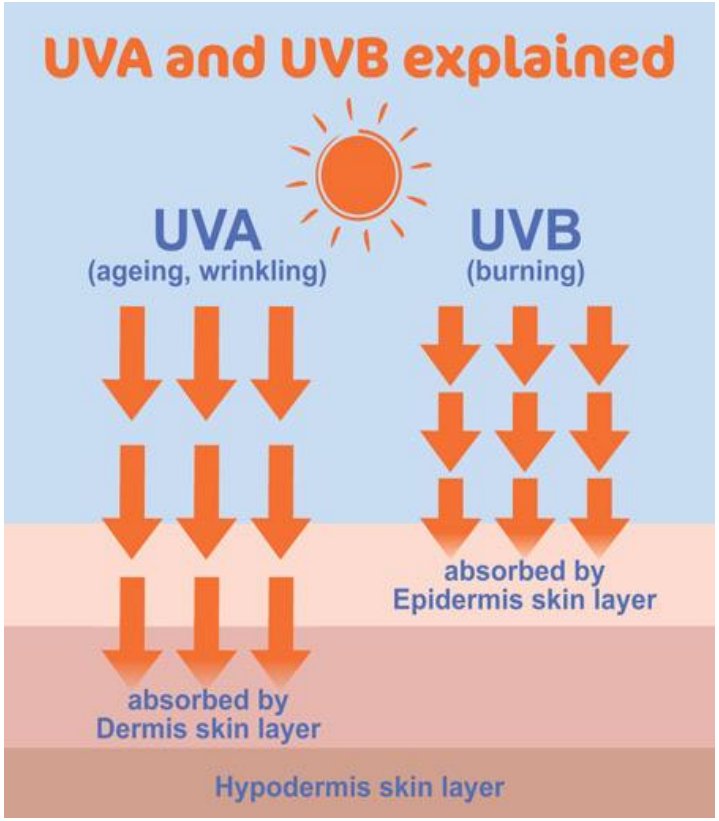
Gabled roofs were designed to help water runoff. The angled sides act as a slide, using gravity to help water flow off of the roof. They are also very useful in climates with heavy rain. The steep slopes of gabled roofs help to alleviate the pressure and weight of and rainfall.



The UV radiation at Cameron Highland are higher than Kuala Lumpur and other states because of it located at higher altitude,1500m above sea level thus the UV rays that we received on Cameron Highland are higher.

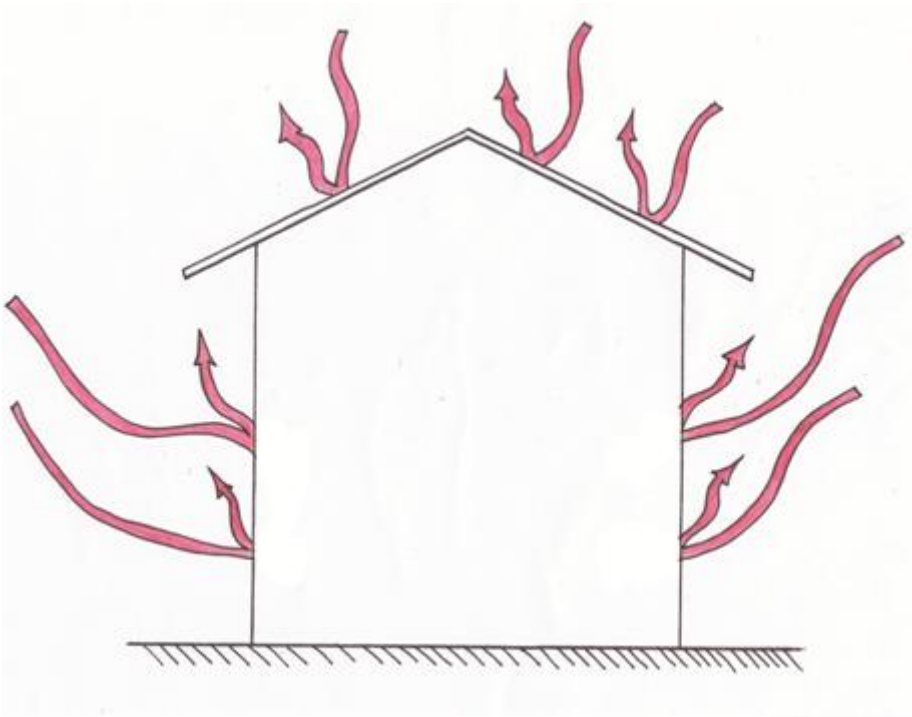
The UVA radiation can cause damage to our skin, like sunburn, skin cancer. But UVB radiation helps the skin produce a type of vitamin D.





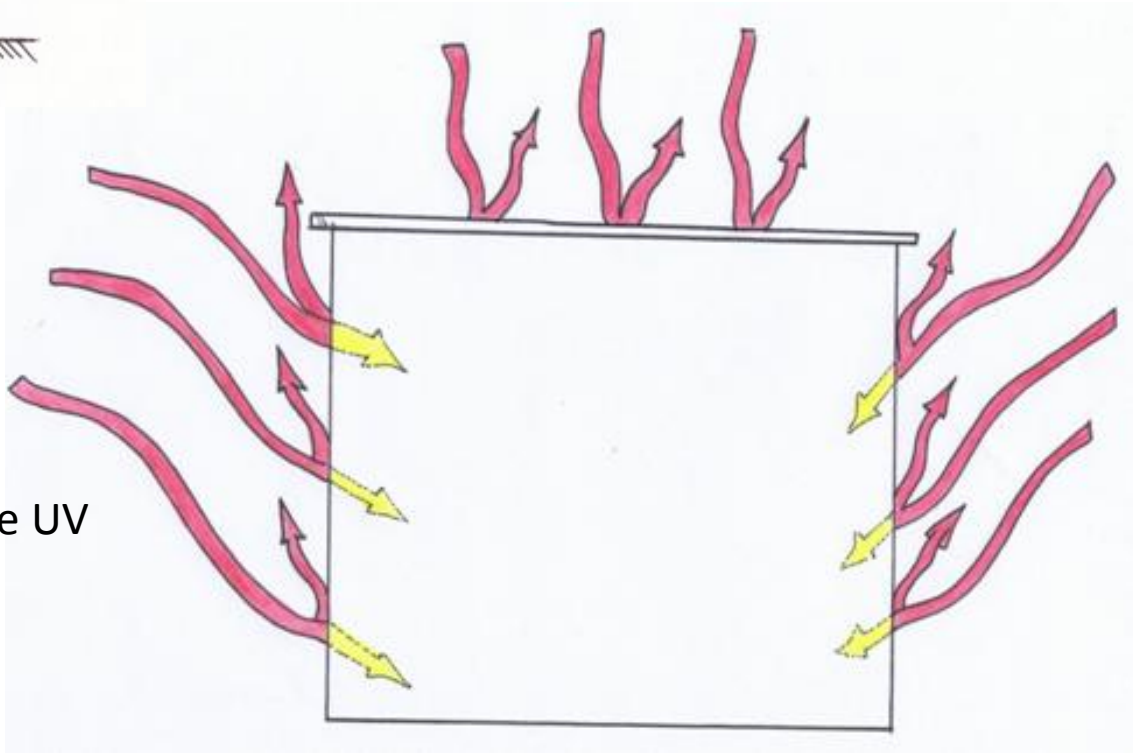
UV INDEX

The UV index is an international standard measurement of the strength of the UV radiation from the sun at a particular place on a particular day, It is scale primarily used in daily forecasts aimed at the general public and is now available as an hourly forecast as well. Its purpose is to help people to effectively protect themselves from UV light, of which excessive exposure causes sunburns, eye damage such as cataracts, skin aging, and skin cancer.



UV is most intense at noon when the sun is at its highest point in the sky.

UV can be reflect by some of the solid surface, Either the grass and water can also reflect the UV but not reflect 100% of the UV.



Solve:

-Using the material that can block the UV such as laminated glass

- Build roof or under a shade

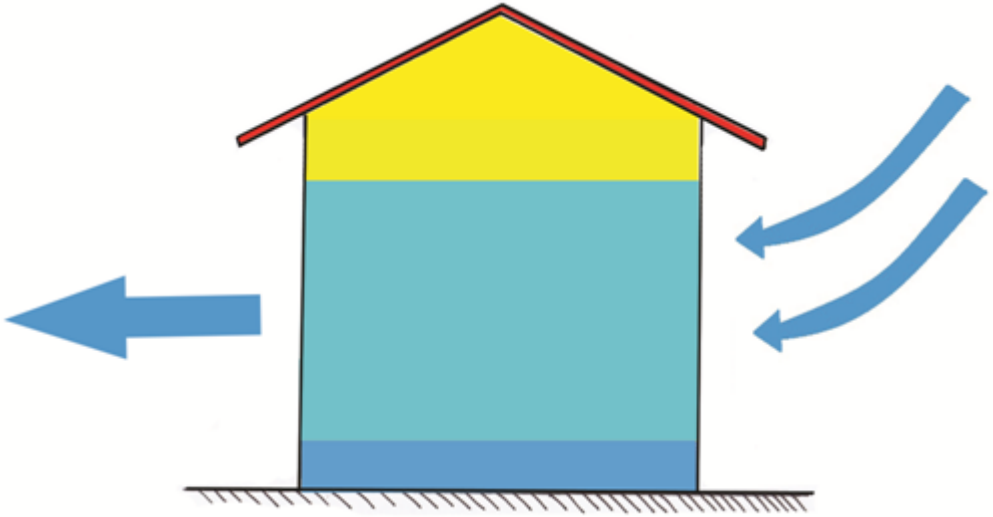
Zoning Temperature

RED: The roof is the most higher temperature because of it exposure under the sun.

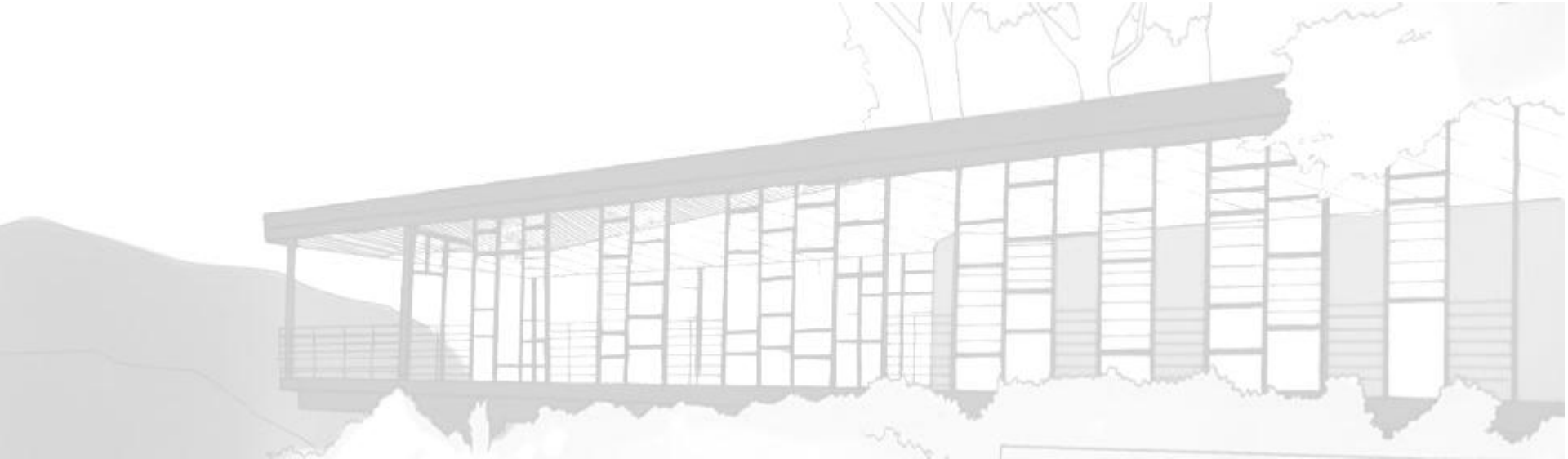
YELLOW: The upper part of the building it's temperature is high because the hot gas is light. Hot air is less dense so it move to the upper place.

BLUE: The normal temperature because of the opening and the wind ventilation

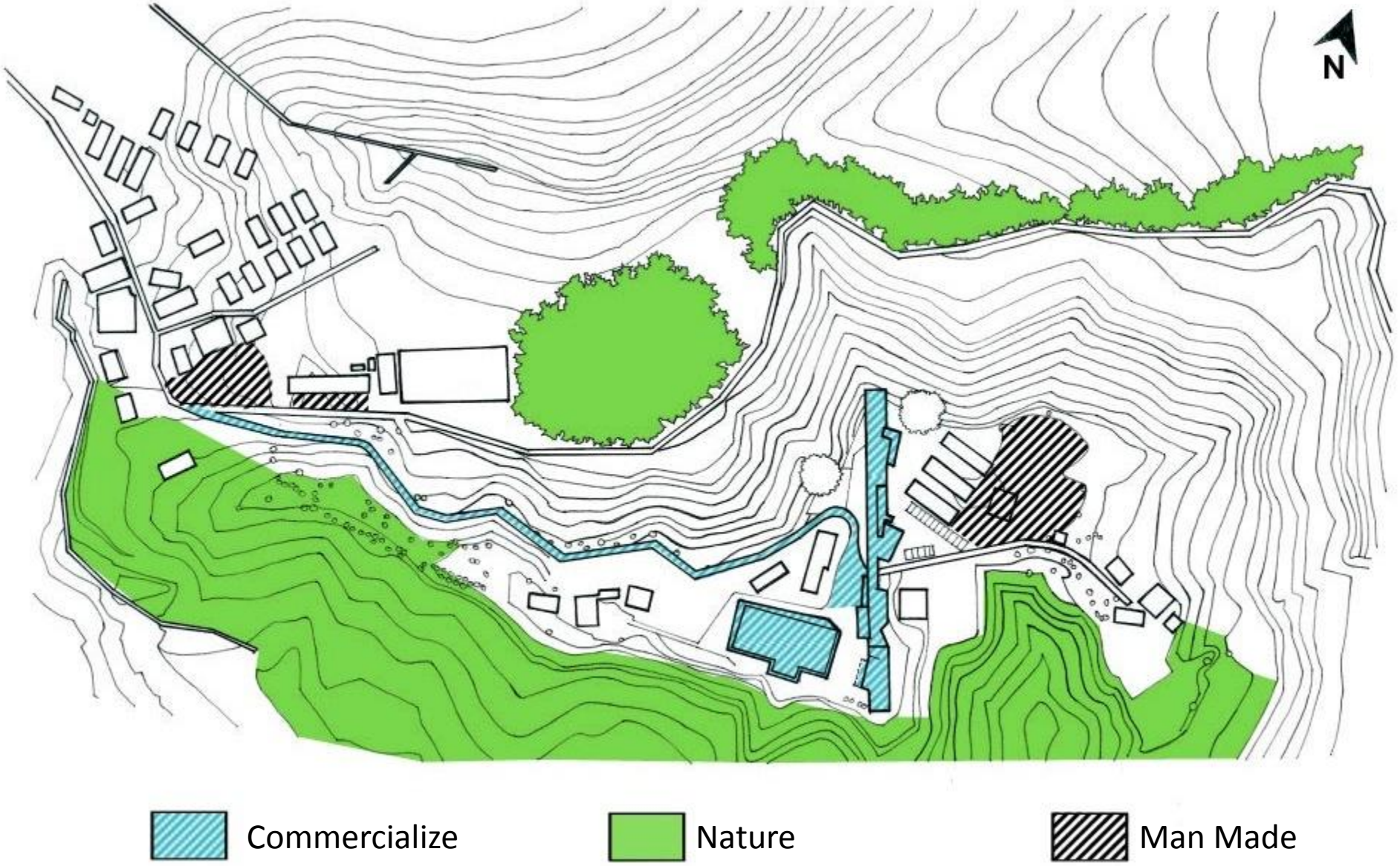
DEEP BLUE: The cold air are denser so it will sink causing the lower temperature of the building.



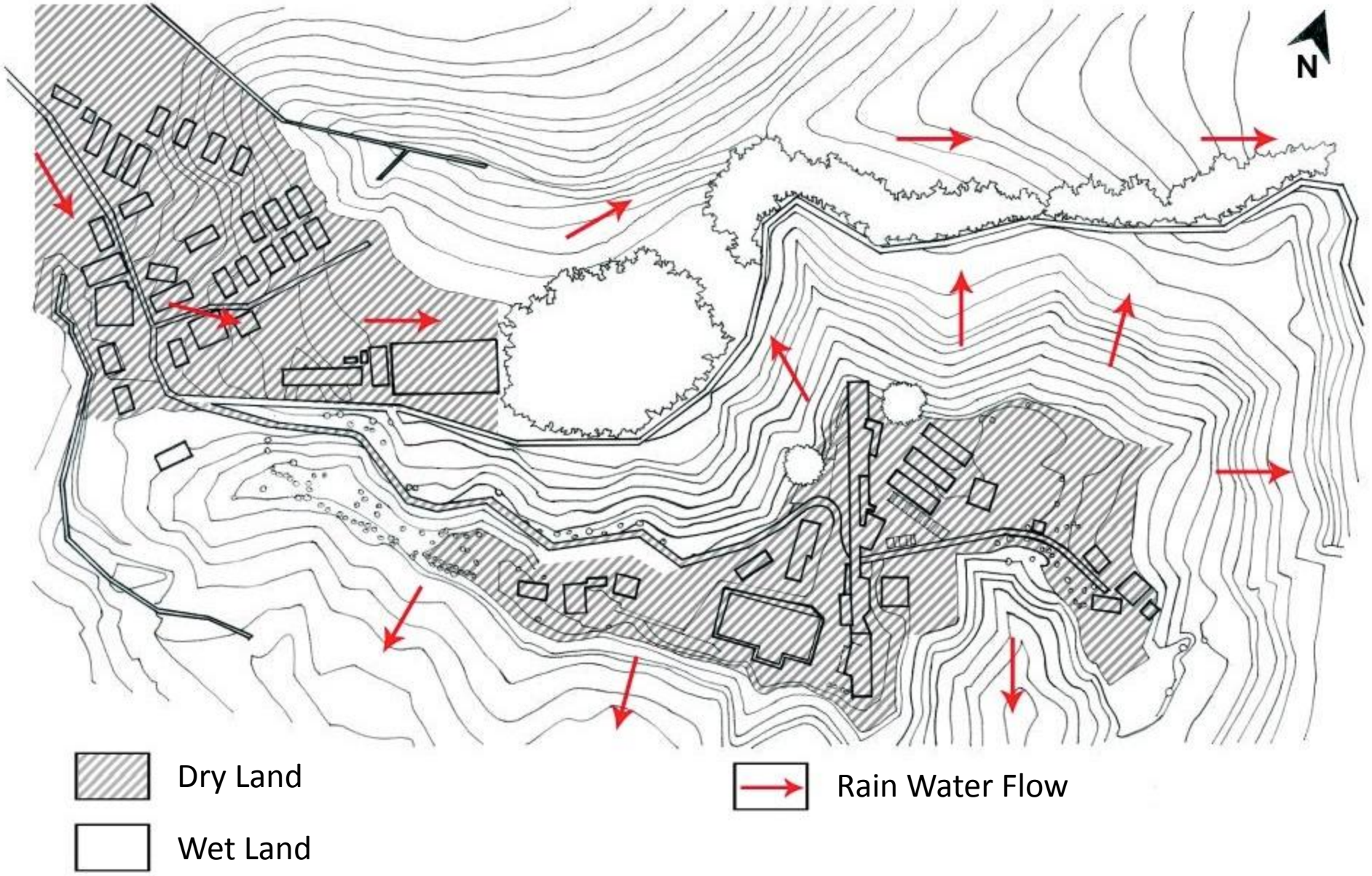
LANDSCAPE



Zoning

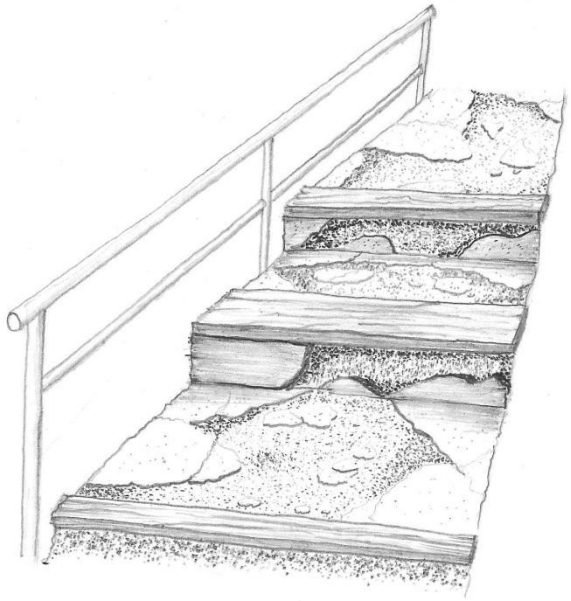


Zoning

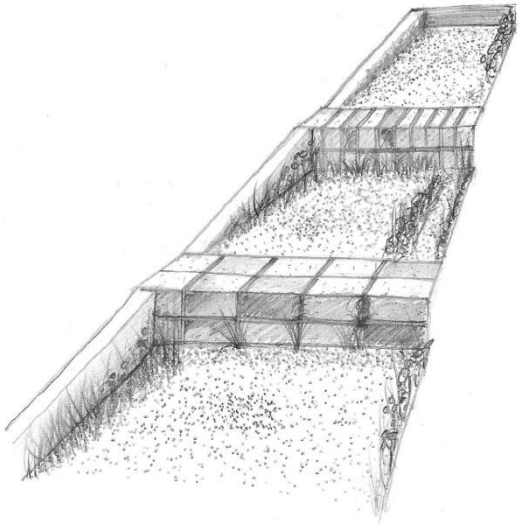


Soft & Hard Scape *(Types of Stairs)*

Wooden Stairs

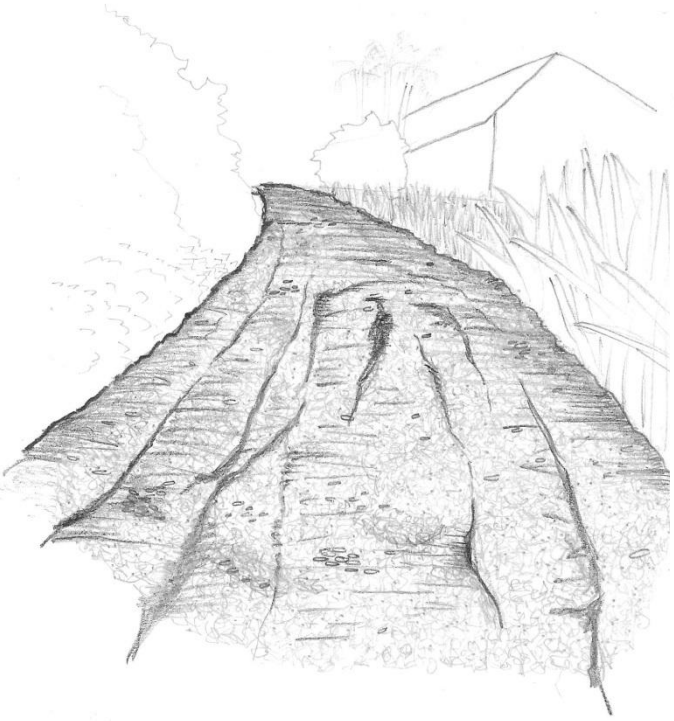


Cracked Concrete
with Wooden Plank

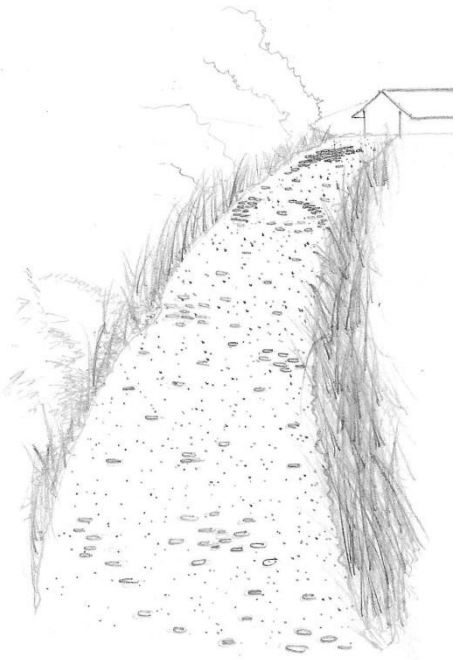


Hard Soil with Clay Brick

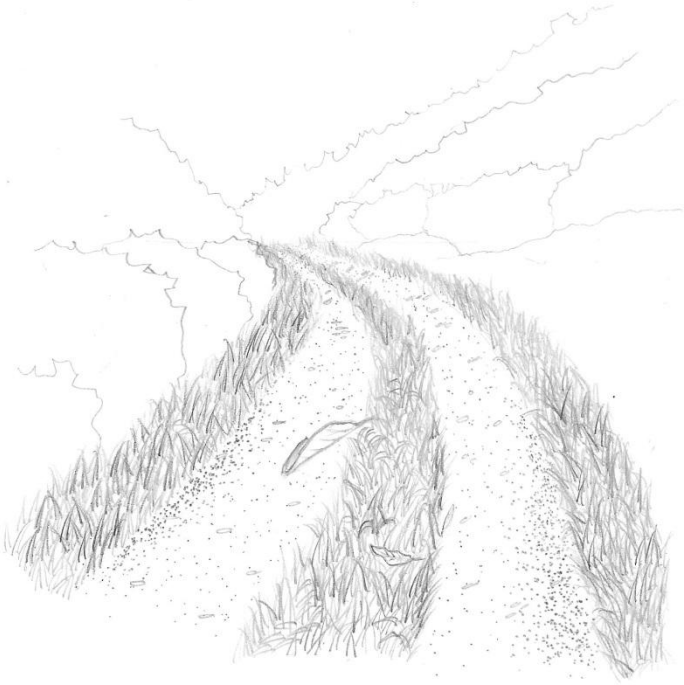
Soft & Hard Scape *(Types of Roads)*



Cracked Tar Road
with Concrete Layer



Hard & Dry Soil Road



Stone with Dry Soil Road
with Grass

Soft & Hard Scape *(Types of Soils)*

Common Sandy Soil

Dark Fine Sandy Top Soil

Identification of Plants *(Ornamental)*

Name : Morning Glory or Heavenly Blue

Family : Convolvulaceae

Bloom Season : June

Colour : Blue Violet with Dark Green Leaves

Size : Maximum Height 2.5 - 4 meters
Maximum Width 0.5 – 1 meter
*Takes 1 Year to grow up to 4m

Identification of Plants *(Ornamental)*

Name : Lollipop Plant or Golden Shrimp Plant

Family : Acanthaceae

Bloom Season : All Year Round

Colour : Yellow and White with Dark Green Leaves

Size : Maximum Height 0.5 – 1 meter
Maximum Width 0.5 – 1 meter
*Takes 5 - 10 Years to grow up to 1m

Identification of Plants *(Ornamental)*

Name : Yellow King Humbert

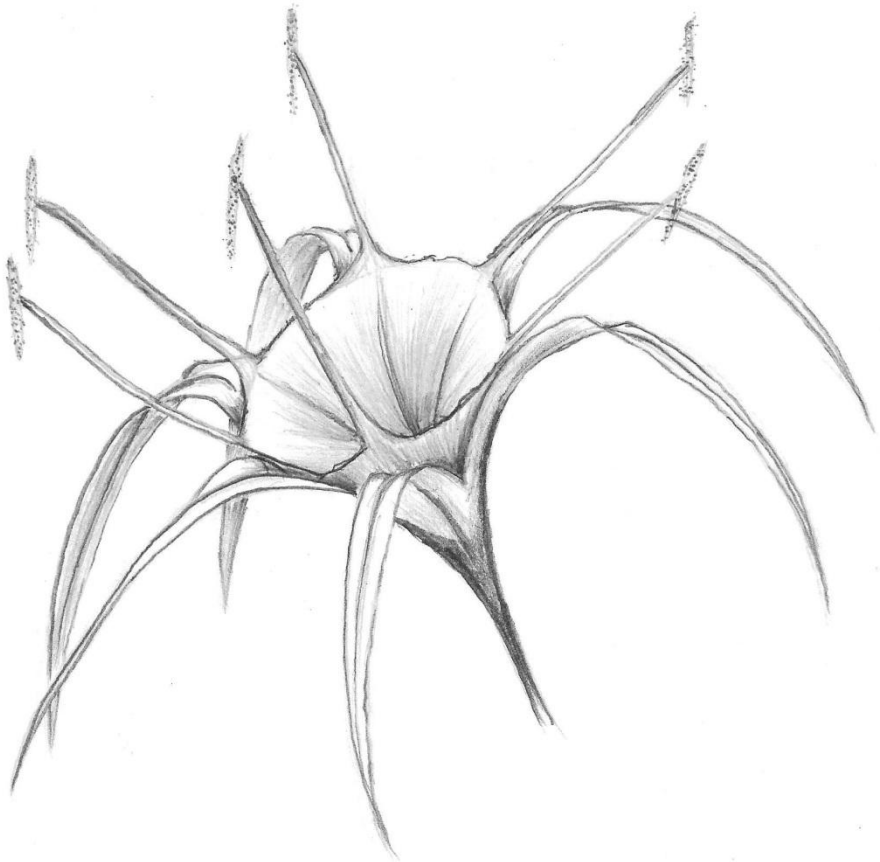
Family : Cannaceae

Bloom Season : July, September & October

Colour : Buttery Yellow Flowers with
Orange dots & Bright Green
Leaves

Size : Maximum Height 0.9 meters
Maximum Width 6 inches
*Takes 3 Years to grow

Identification of Plants *(Ornamental)*



Name : Spider Lily

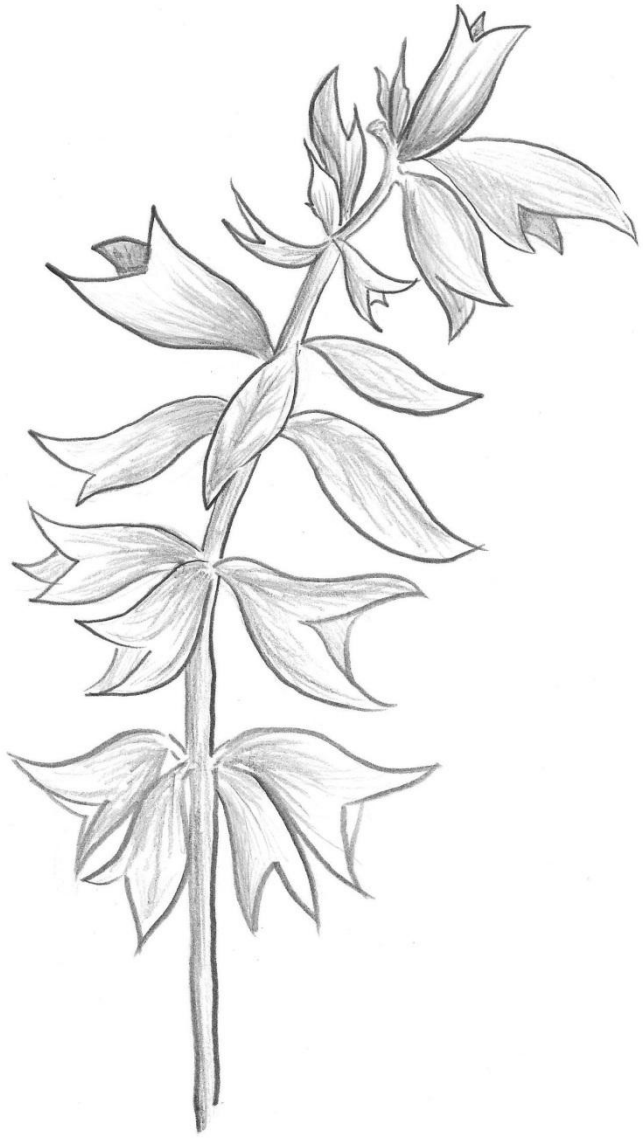
Family : Amaryllidaceae

Bloom Season : March - September

Colour : White with Green Leaves

Size : Maximum Height 0.5 – 1 meter
Maximum Width 0.5 – 1 meter
*Takes 2-5 Years to grow

Identification of Plants *(Ornamental)*



Name : Scarlet Sage

Family : Herbaceous Perennial

Bloom Season : December – March &
September - December

Colour : Bright Red with Bright Green Leaves

Size : Maximum Height 0.3 – 0.6 meters
Maximum Width 0.2 – 0.45 meters
*Takes 1 Year to grow

Identification of Plants *(Ornamental)*

Name : Bougainvillea “Poulton’s Special”

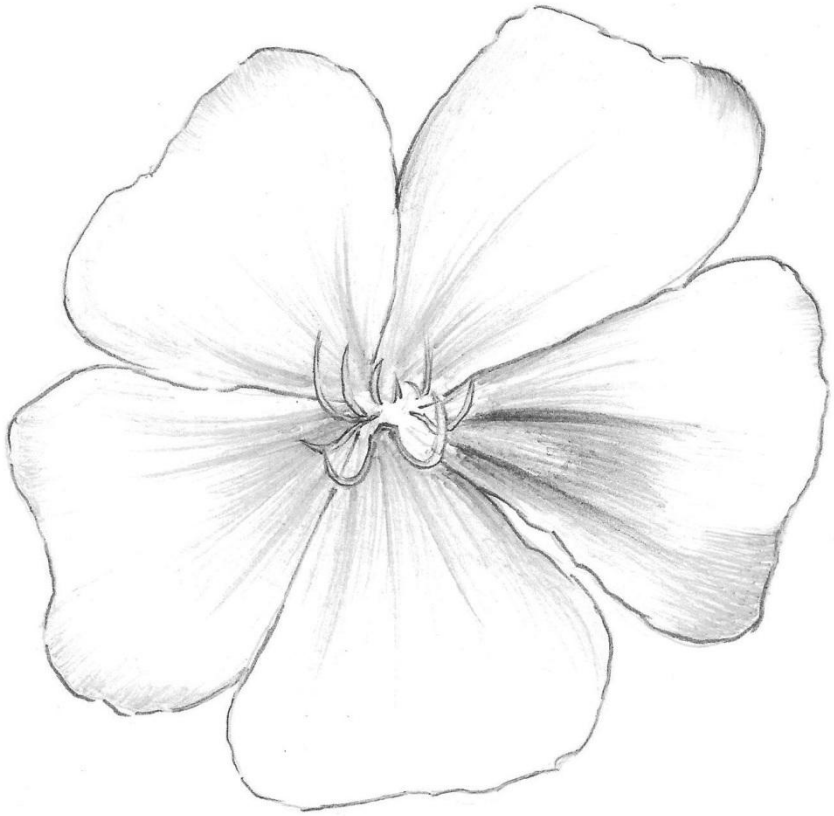
Family : Nyctaginaceae

Bloom Season : March - September

Colour : Pinkish Purple with Dark Green Leaves

Size : Maximum Height 4 – 8 meters
Maximum Width 1 – 1.5 meters
*Takes 10 – 20 Years to Grow

Identification of Plants *(Ornamental)*



Name : Glory Bush

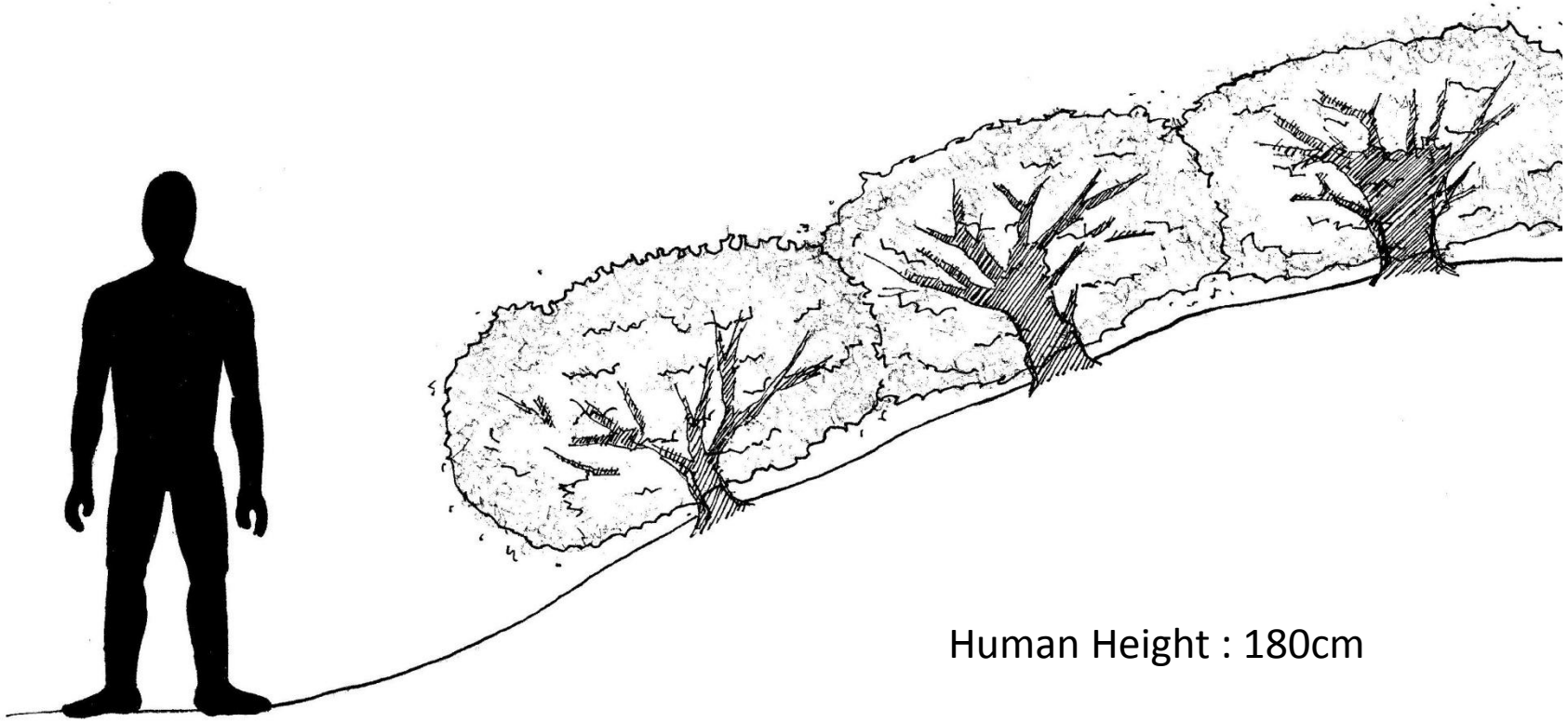
Family : Melastomataceae

Bloom Season : December – March &
September - December

Colour : Purple with Green Leaves

Size : Maximum Height 2.5 – 4 meters
Maximum Width 1.5 – 2.5 meters
*Takes 5 – 10 Years to Grow

Section of Tea Plant



Human Height : 180cm

Tea Plant Height : 90 - 110cm

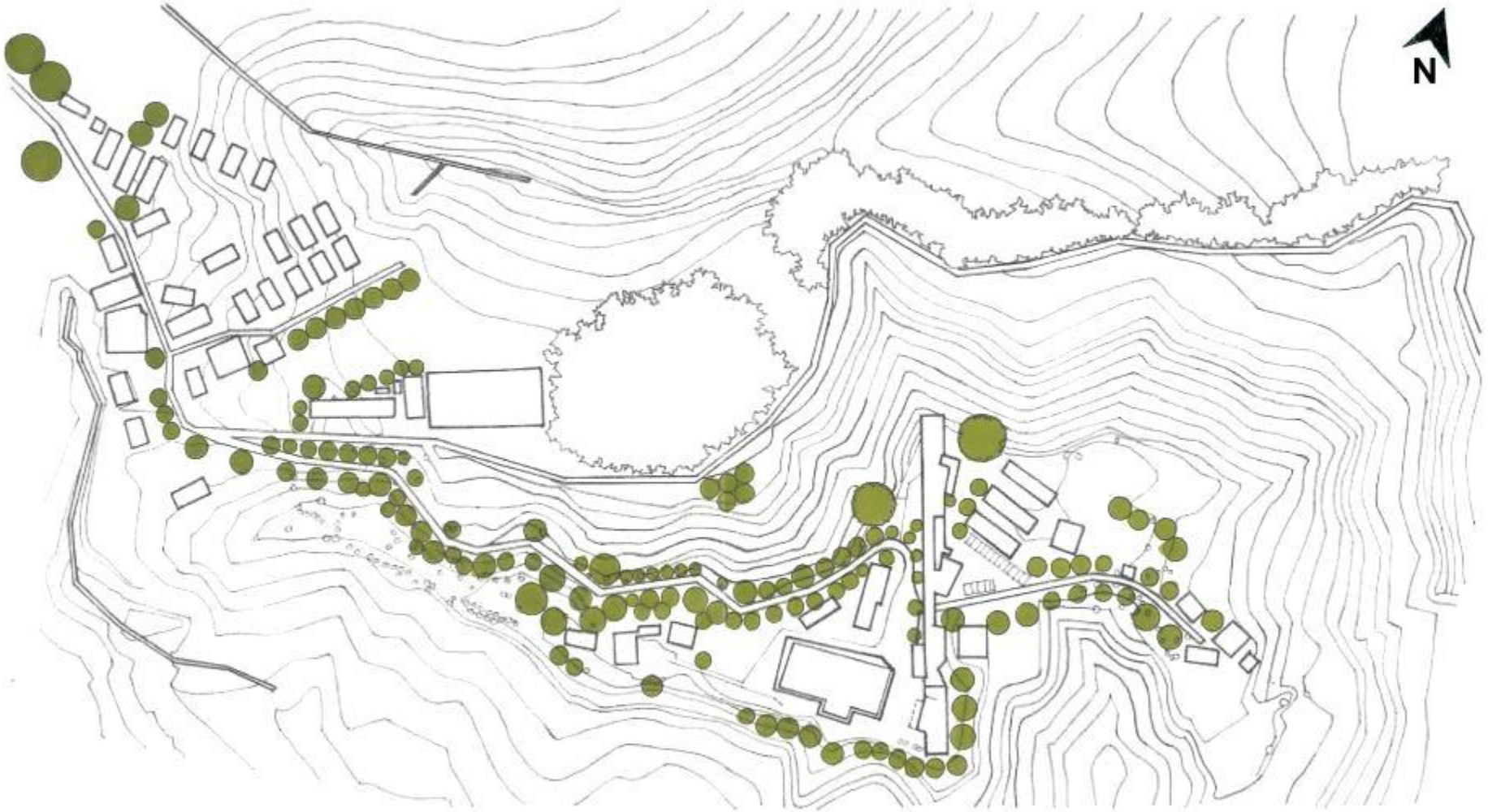
BOH Tea Plantation Leaves

- Tea leaves are pluck every 3 weeks

- Leaves can be picked year-round.

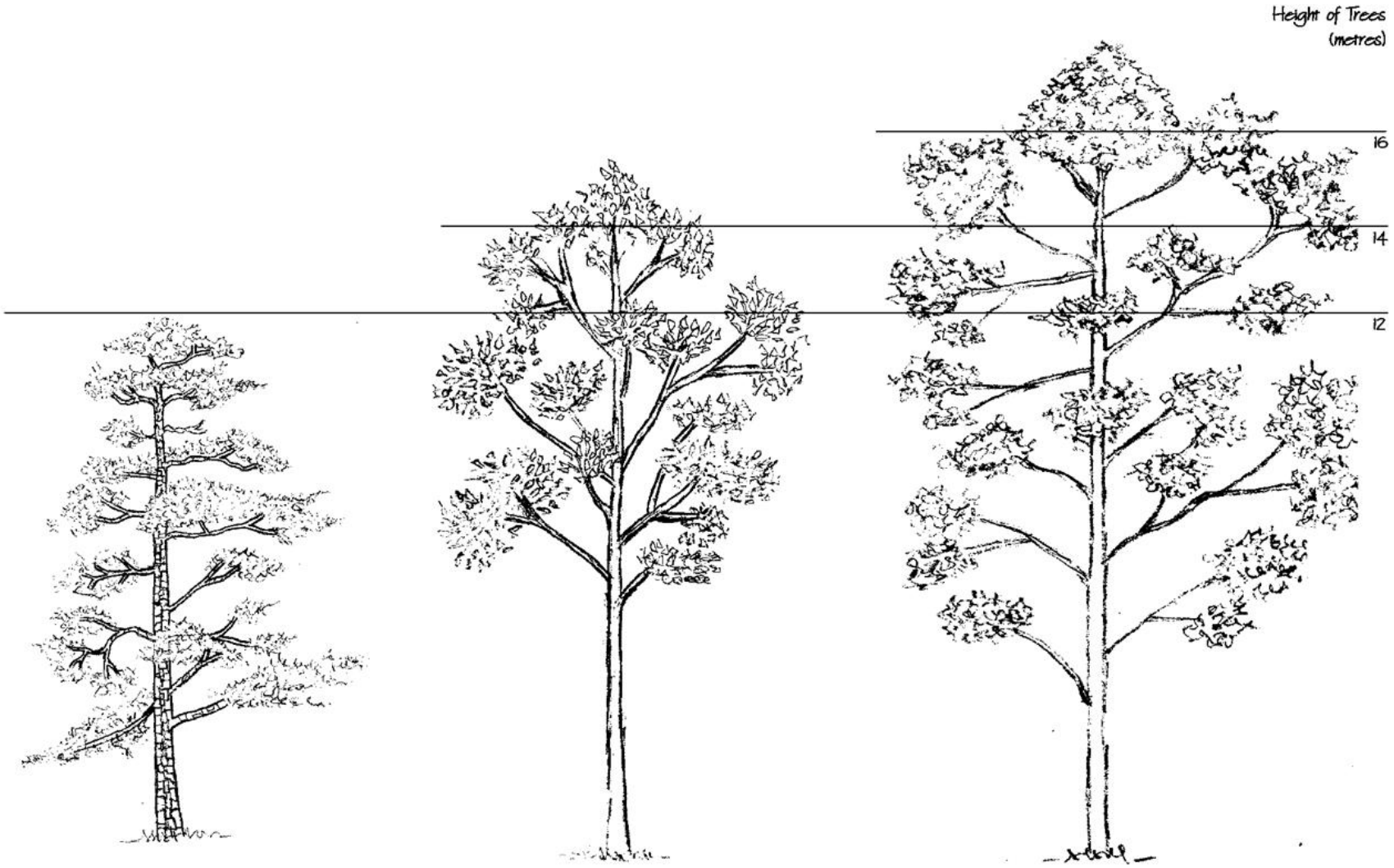
- Tea leave flushes during March – June (giving the finest quality due to cold weather on higher ground areas)

Radius of Trees

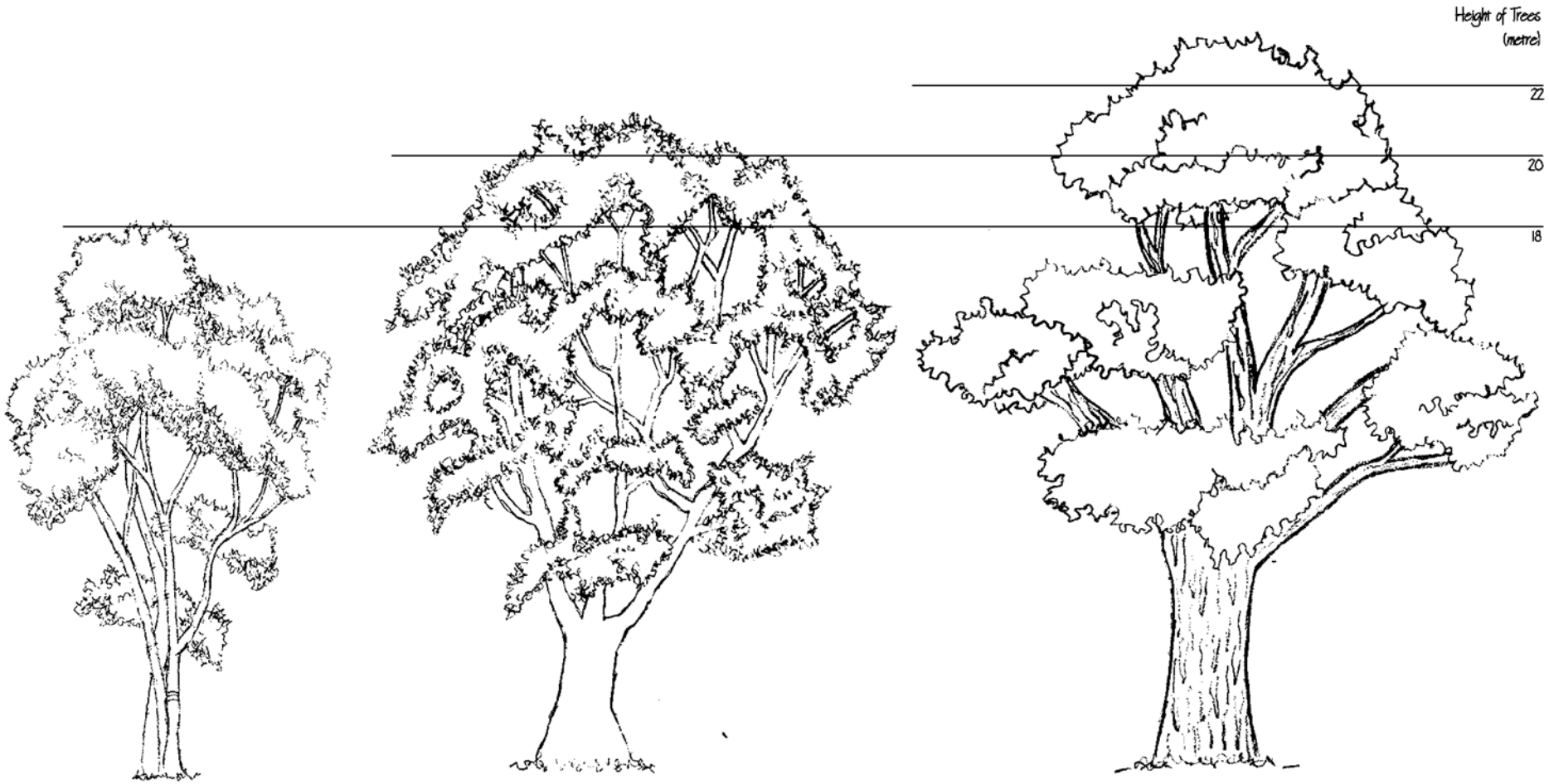


Height of Trees

Height of Trees



Height of Trees

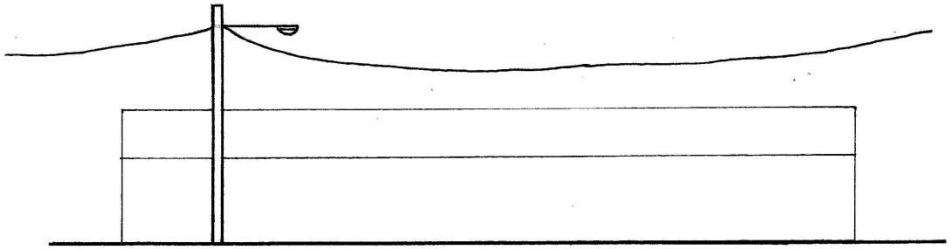


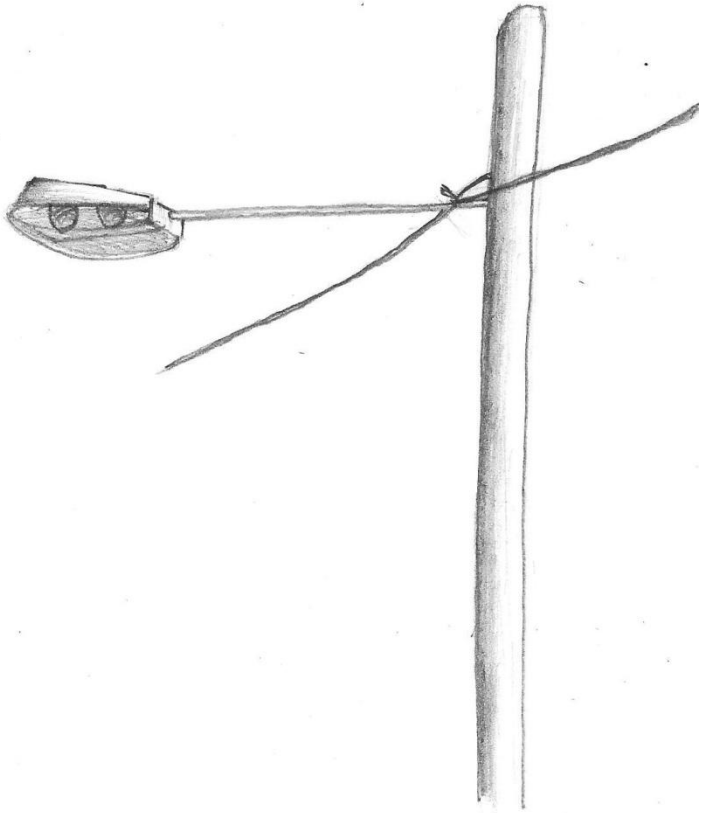
Recreational *(Football Field & Parking)*

Cark Park

Football Field

Recreational *(Lamp Pose)*





Attraction of Insects & Birds

Attraction of Insects & Birds

Positive & Negative Things

POSTIVE

1. Nice sceneries around the site.

2. Even though the sun is shining bright, it does not feel hot.

3. Due to the plantation on the slope/mountain, there won't be any drainage problem because as the rain water flows, it will do down all the way to the small river.

Positive & Negative Things

NEGATIVE

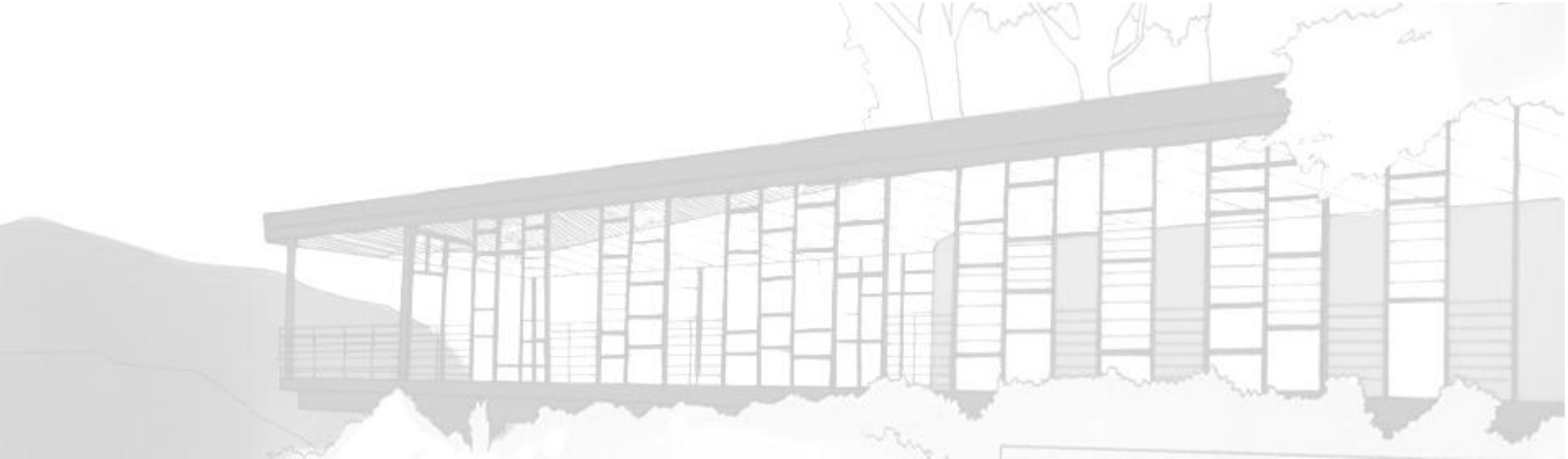
1. A lot of flies at the site due to organic smell.

2. The man made stairs are not consistent.

How to Reduce Flies

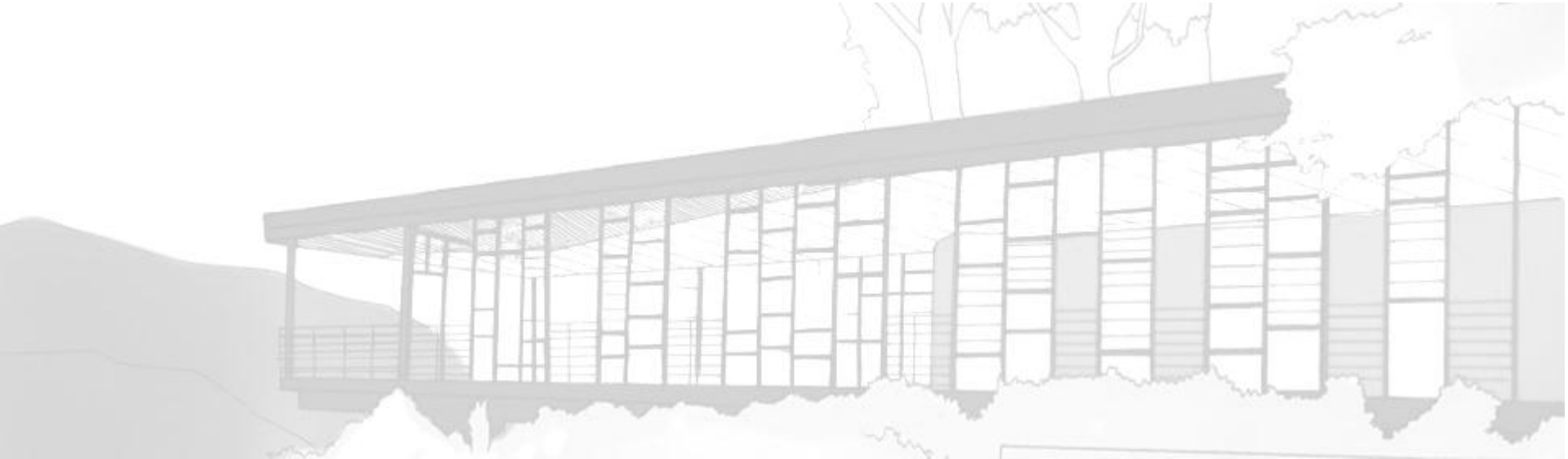
1. Lavender Flower
2. Basil Flower
3. Elderberry

CASE STUDIES



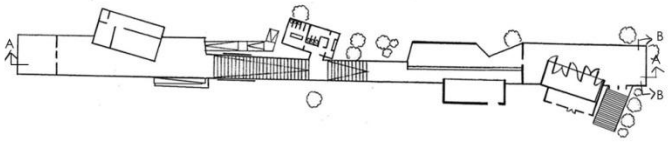
BOH TEA CENTER

SUNGAI PALAS, CAMERON HIGHLAND

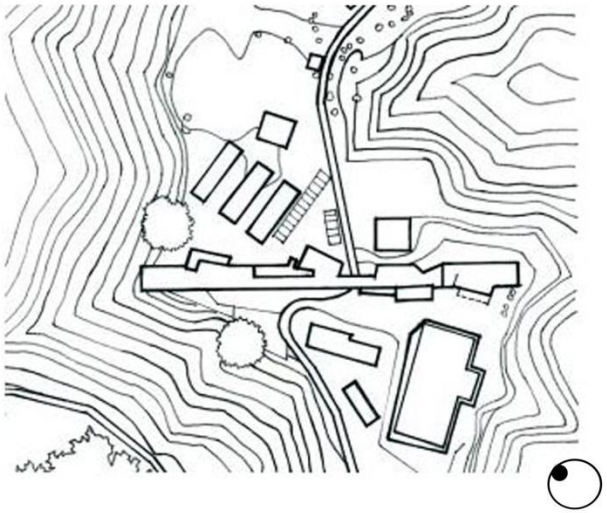


BOH TEA CENTRE

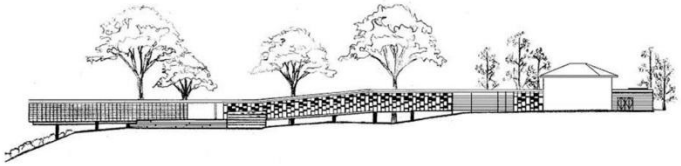
Boh Tea Centre
Sungai Palas,Cameron Highland
ZLG Design
2005



Floor Plan

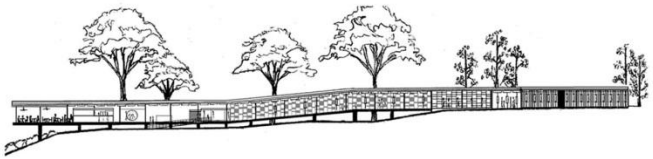


Site Map



Elevation 1

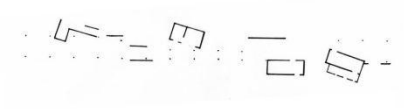
Elevation 2



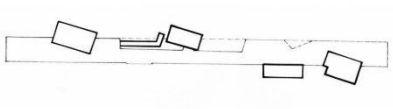
Longitudinal Section A-A

Cross Section B-B

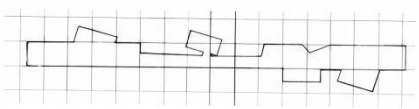
BOH TEA CENTRE



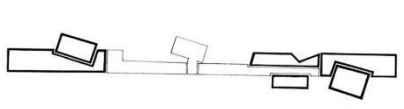
Structure



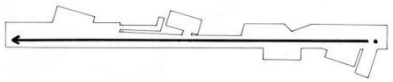
Additive & Substractive



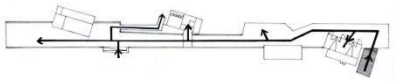
Grid



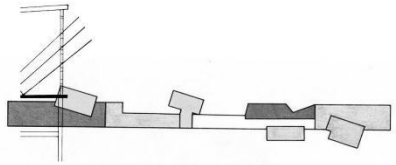
Unit to whole



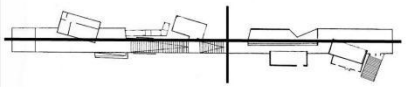
Linear form



Circulation to Use



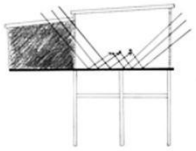
Hierachy



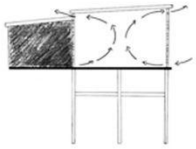
Symmetry & Balance

Structure Underneath

Transparency



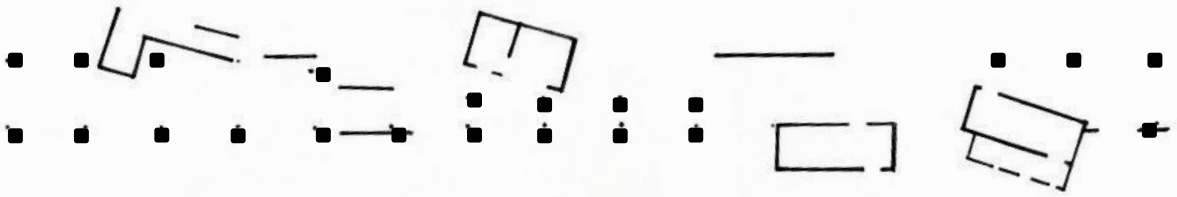
Natural Light



Ventilation

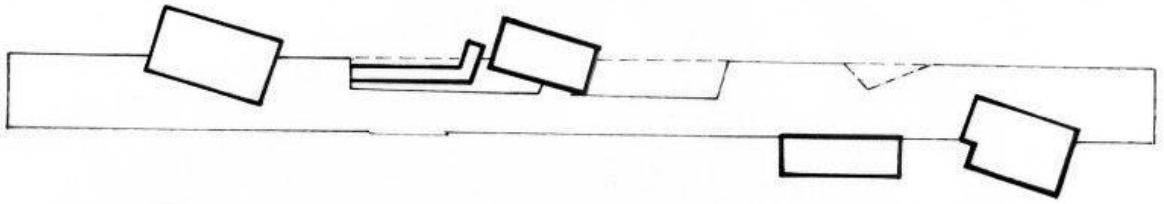
BOH TEA CENTRE

- The structure is mainly supported by columns.



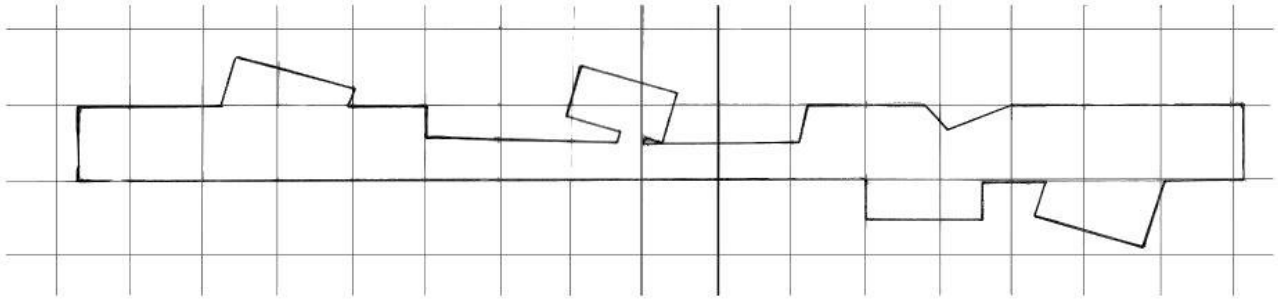
STRUCTURE

- Both additive and subtractive are utilized in the design to give a sense of spatial consequences.



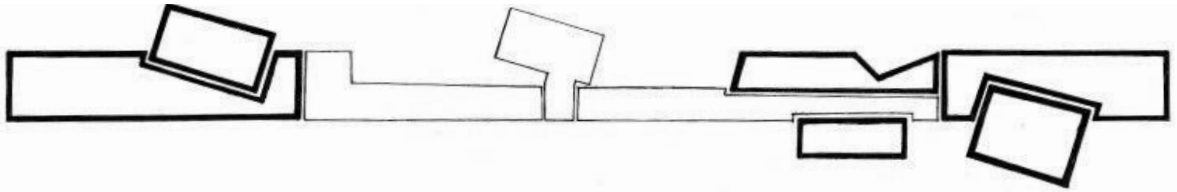
ADDITIVE & SUBTRACTIVE

- The design based on a range of 9m grid.



GRID

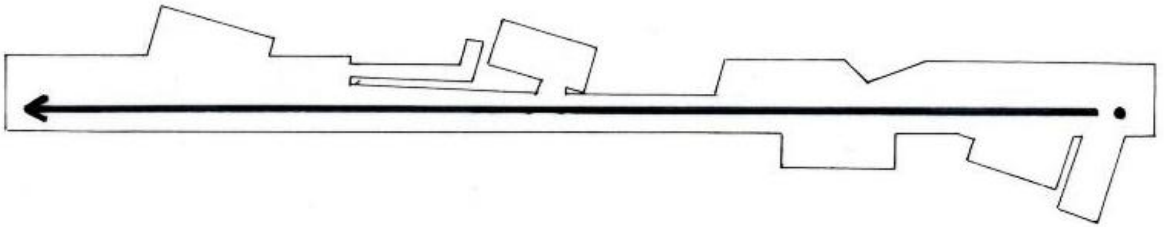
- Collecting the various buildings (café, visitor center, gift shop) into a **single unified whole** .



UNIT TO WHOLE

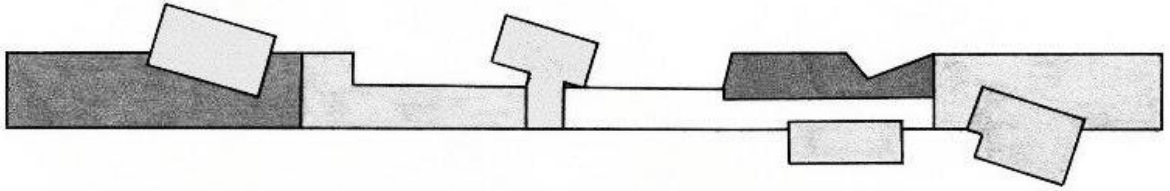
BOH TEA CENTRE

- Linear form links the spaces of the tea house.



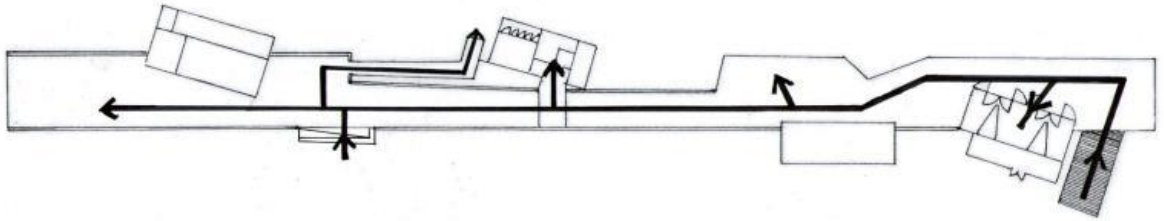
LINEAR FORM

- Spaces that symbolically important to the organization articulated by their size and form.



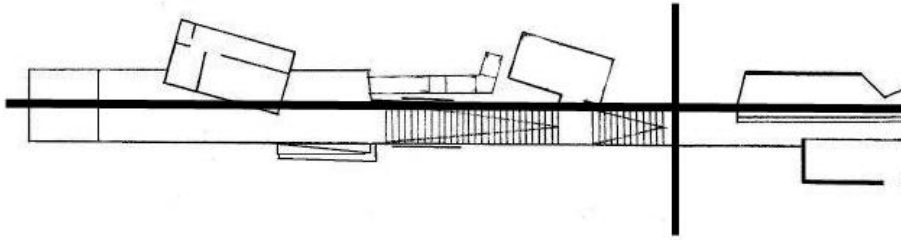
HIERARCHY

- Linear form terminated by a dominant space that is the big outdoor terrace area and also by the topography of its site.



CIRCULATION TO USE

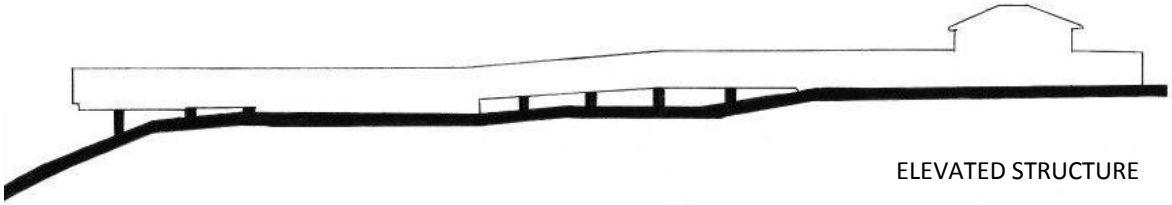
- Balance occurred in the form of rotation about the intersection point.



SYMMETRY & BALANCE

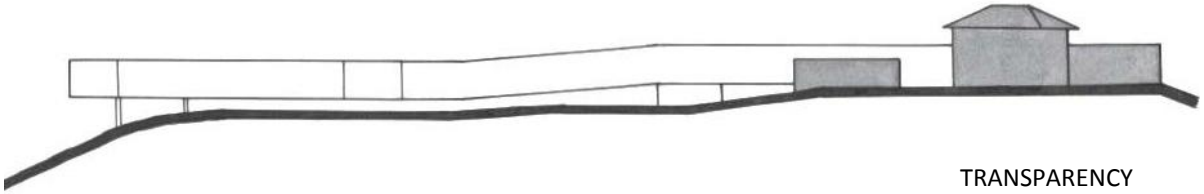
BOH TEA CENTRE

- It is elevated to provide space below the underside of the structure to reduce impact on any of the original contours of the terrain.



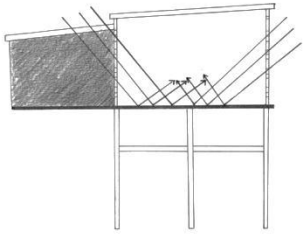
ELEVATED STRUCTURE

- The transparent wall allow visitor to truly appreciate the valley view from inside.



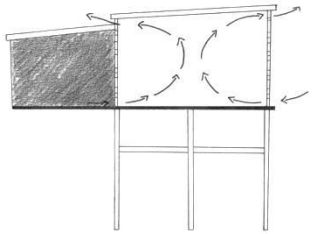
TRANSPARENCY

- The entire building glazing were kept open and transparent to bring in natural daylight.



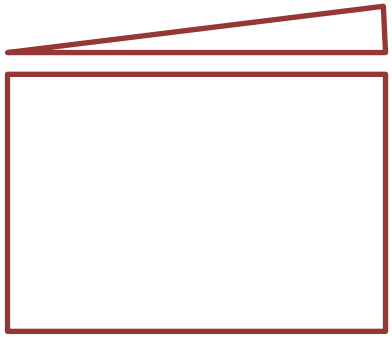
NATURAL LIGHT

- It is a naturally ventilated building with a minimum need for any mechanical ventilation.

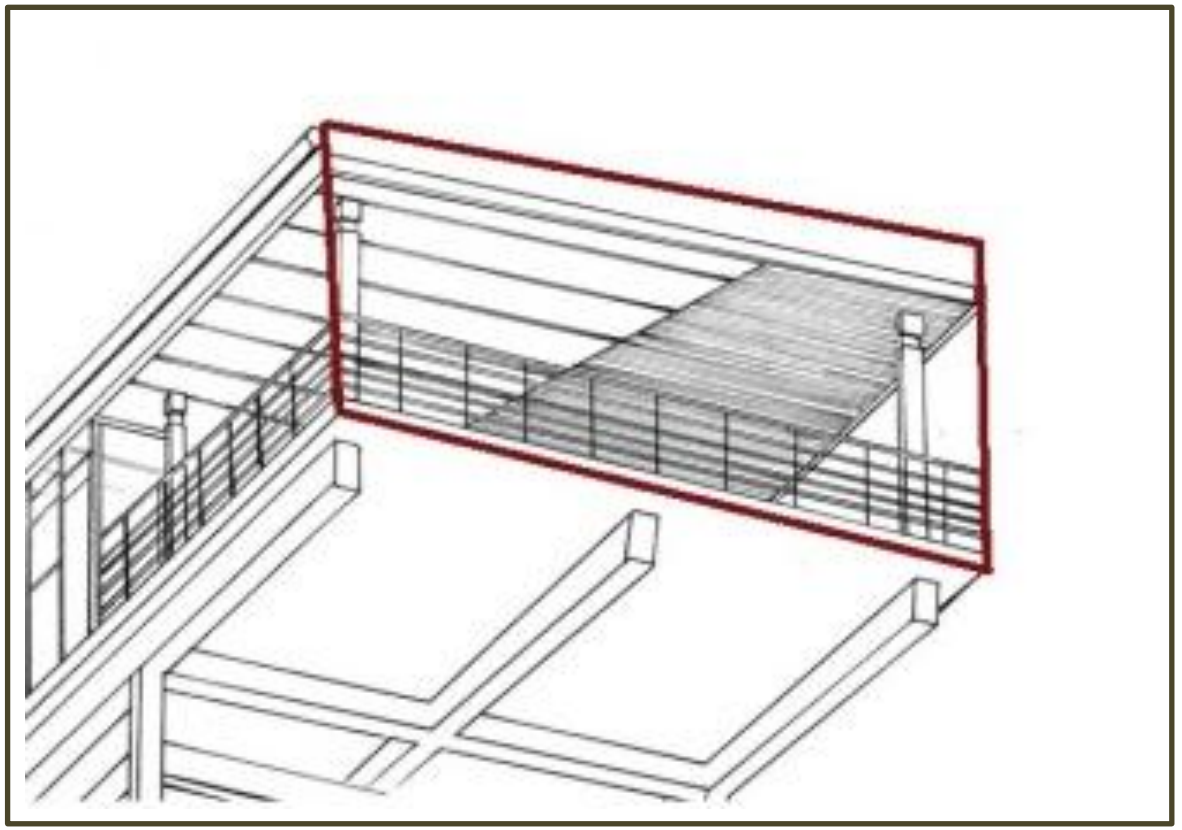


VENTILATION

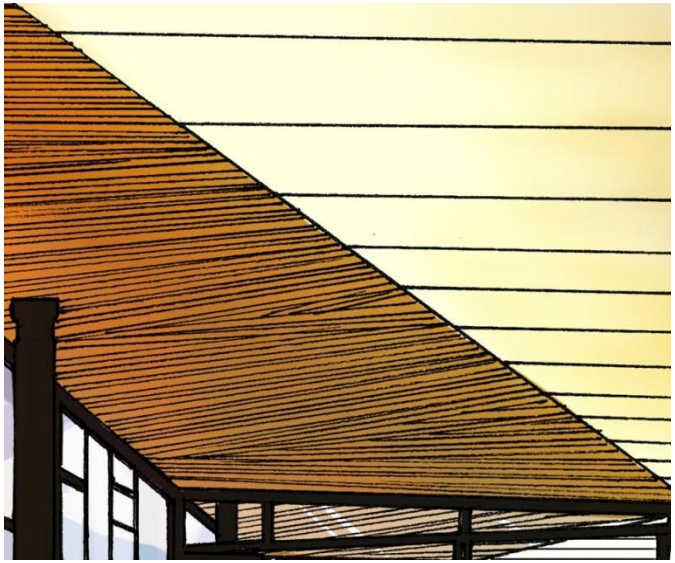
BOH TEA CENTRE



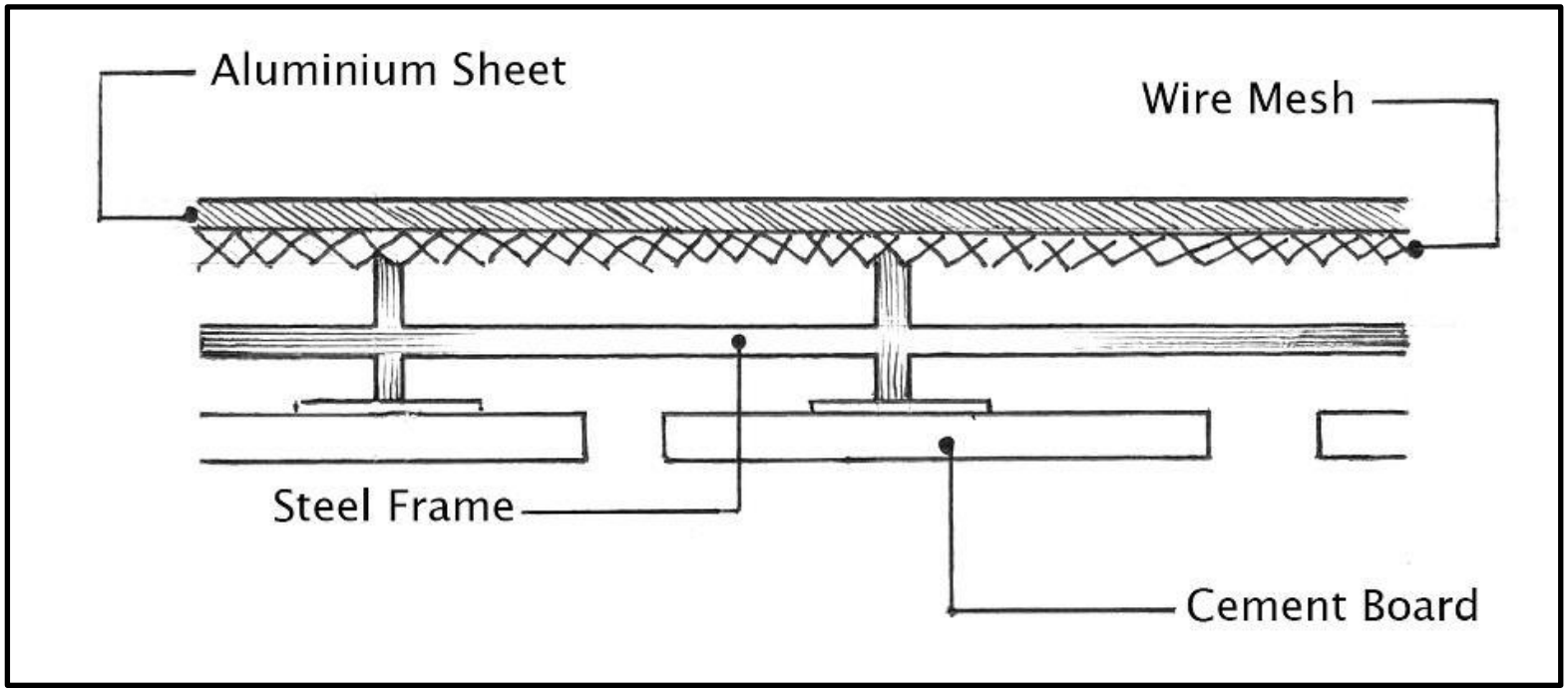
- A slight backward tilt helps drain the rainwater on the roof to one side of the roof.



BOH TEA CENTRE



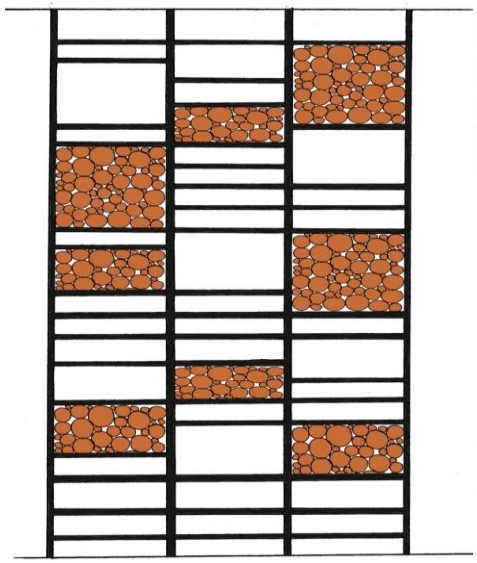
- The bamboo and cement boards are designed to be externally exposed to the elements, and are also organized to provide concealed lighting.

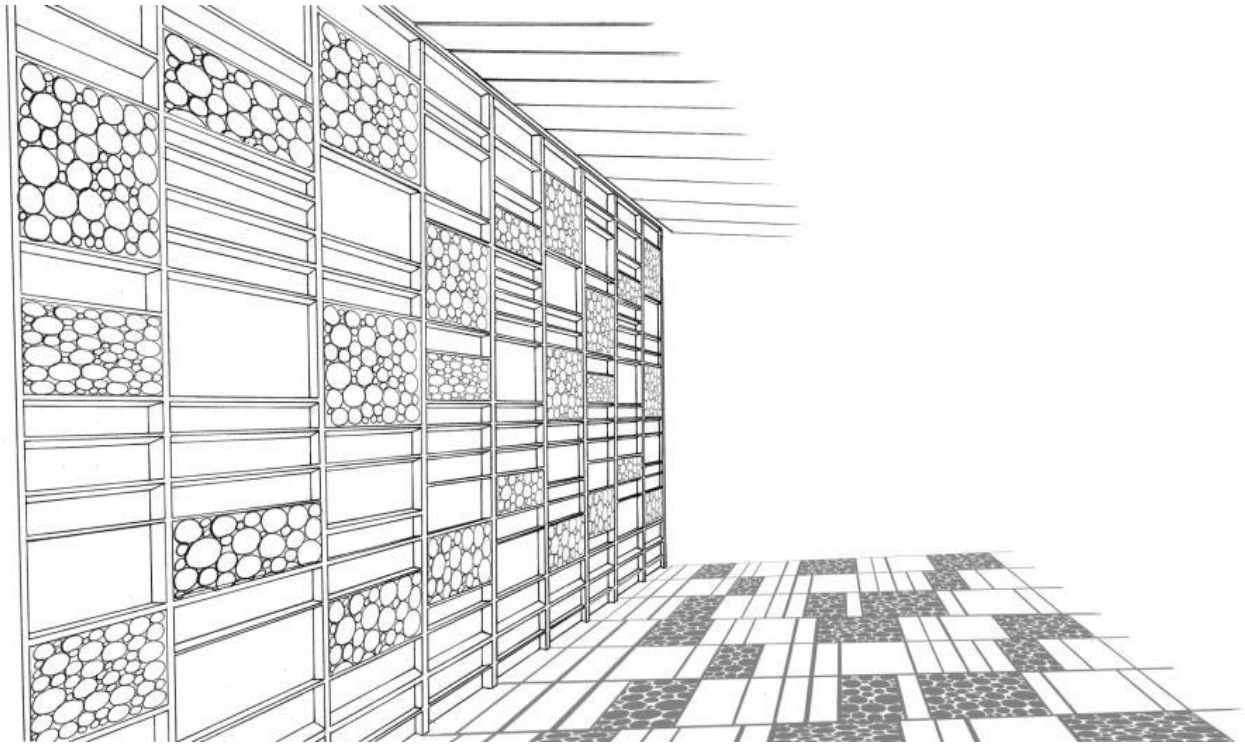


BOH TEA CENTRE

- The café partially sealed with windows that can be opened, in case of strong wind from interrupting cafe activities, users can also choose to enjoy the cool breeze while running their cafe activities at the outdoor terrace area.

BOH TEA CENTRE





- Part of the façade has many frames randomly embedded with local tree logs which create an interesting plays of shadow and light.
- The pattern of frames were repeated every three columns.

BOH TEA CENTRE

Colour Scheme of BOH Visitor Center

Colour Scheme of the Surroundings

- Color scheme is different with the surroundings to attract people.

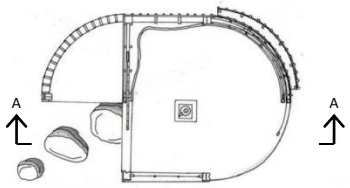
DOME TEA HOUSE

PRAGUE, CZECH REPUBLIC

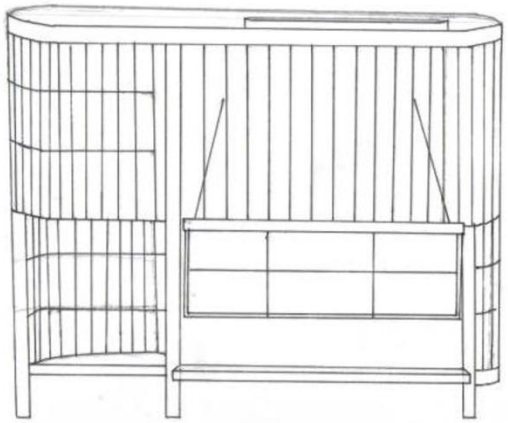
CASE STUDIES

DOME TEA HOUSE

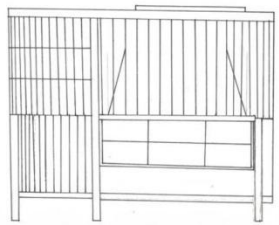
Dome Tea House
Prague,Czech Republic
Davis Mastalka
2008



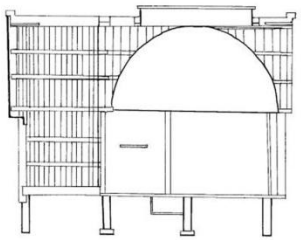
Floor Plan



Perspective

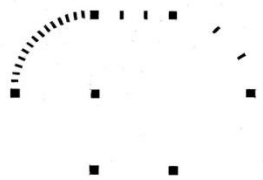


Elevation

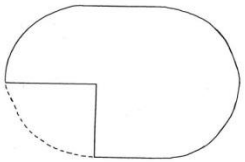


Section A-A

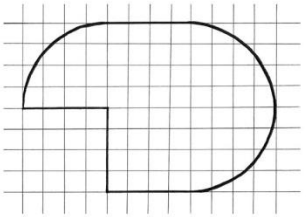
DOME TEA HOUSE



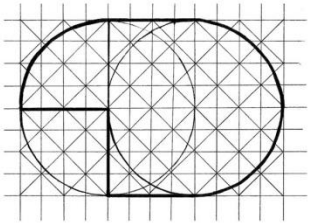
Structure



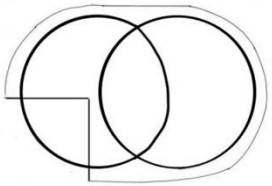
Substractive



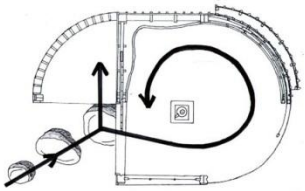
Grid



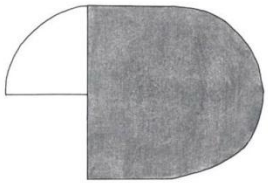
Geometry



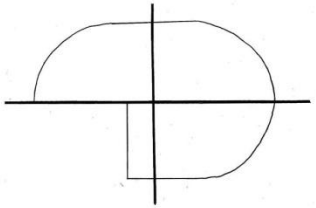
Clustered form



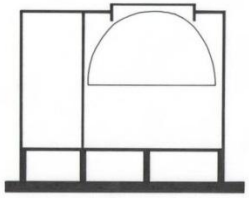
Circulation to Use



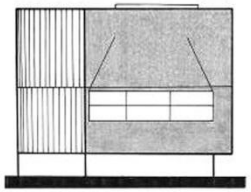
Hierachy



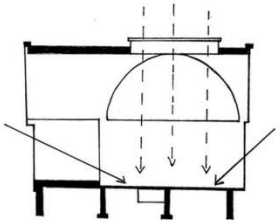
Symmetry & Balance



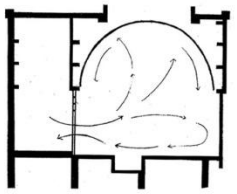
Elevated Structure



Transparency



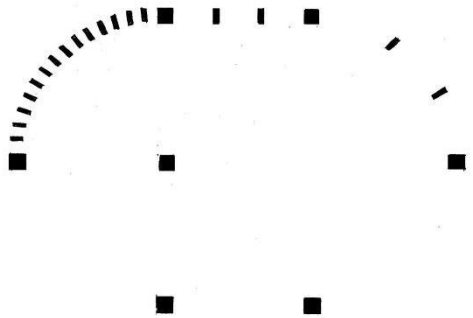
Natural Light



Ventilation

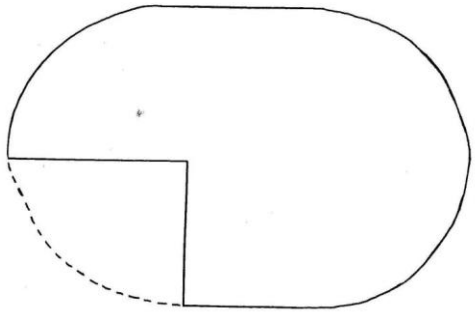
DOME TEA HOUSE

- The columns are all constructed from natural wood.



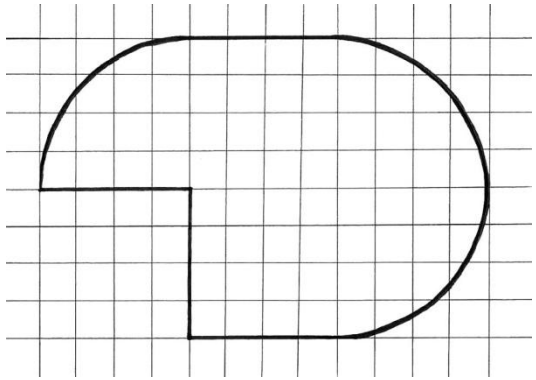
STRUCTURE

- The subtracted part function as an entrance.



SUBTRACTIVE

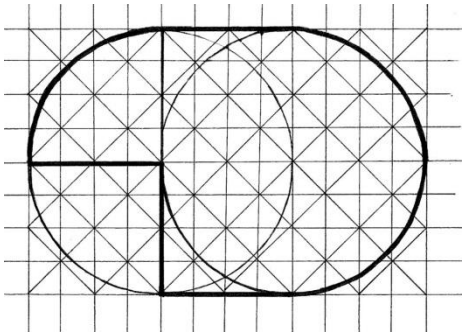
- The design based on a grid of 1.2m.



GRID

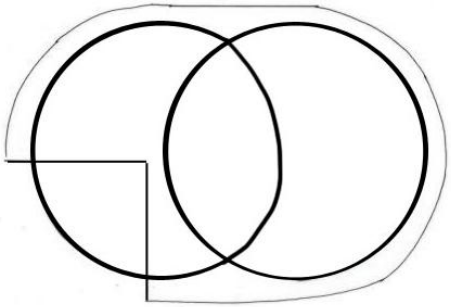
DOME TEA HOUSE

- The form derived from combining two equal circles.



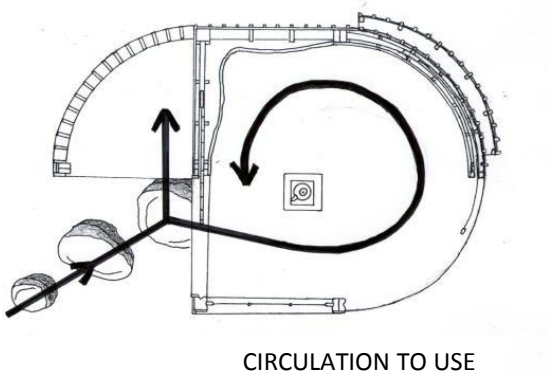
GEOMETRY

- Two circles were clustered to form the shape of building.



CLUSTERED FORM

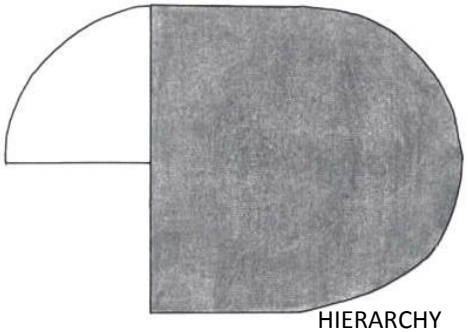
- Circulation within the space is limited to create a close bondage with all who are present in it.



CIRCULATION TO USE

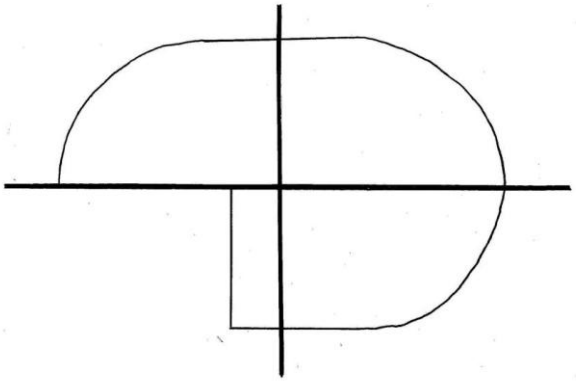
DOME TEA HOUSE

- Public and private space.



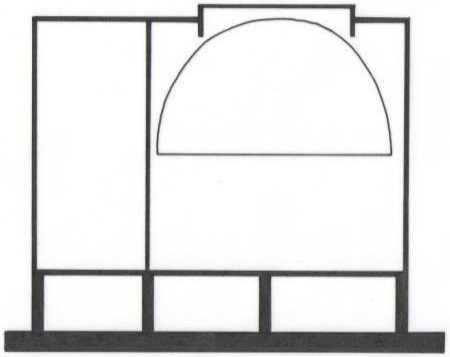
HIERARCHY

- The closed private area is balanced by the open public area.



SYMMETRY AND BALANCE

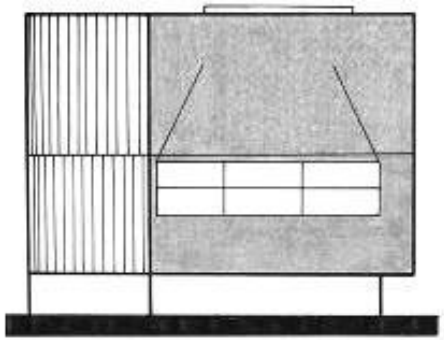
- The platform is elevated because the city may be cover by snow for up to five months.



ELEVATED STRUCTURE

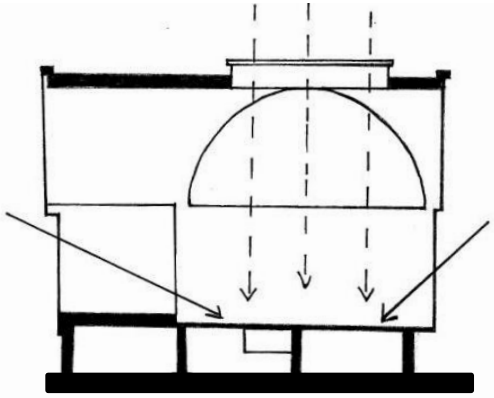
DOME TEA HOUSE

- This small structure has a translucent, domed roof covered with paper.



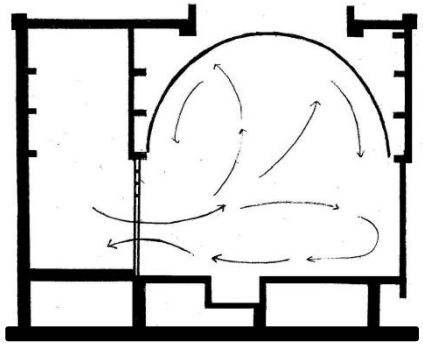
TRANSPERANCY

- The transparent dome roof diffuse daylight and maximum heat into the house.



NATURAL LIGHT

- It is a naturally ventilated building without any mechanical ventilation.



VENTILATION

DOME TEA HOUSE

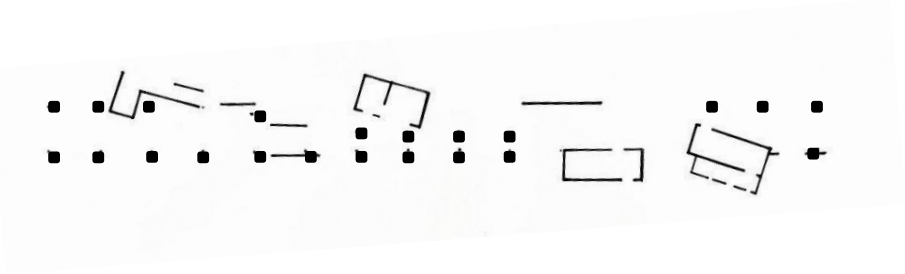
Colour Scheme of the Dome Teahouse

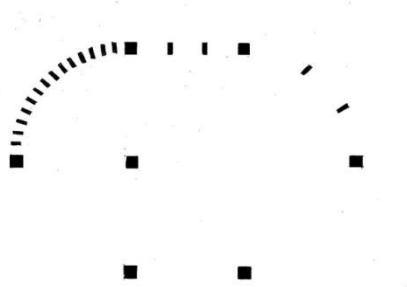
Colour Scheme of the Surroundings

- Due to the climate of Prague, the color scheme of the site Is mostly in a range of cool colour. The colour of the building itself tends to blend with its natural surrounding.

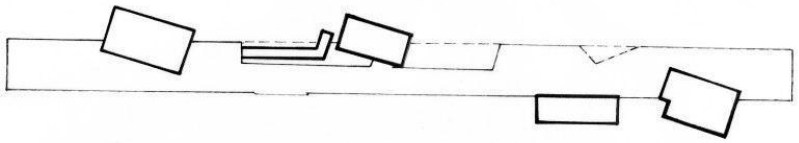
BOH TEA CENTER vs DOME TEA HOUSE

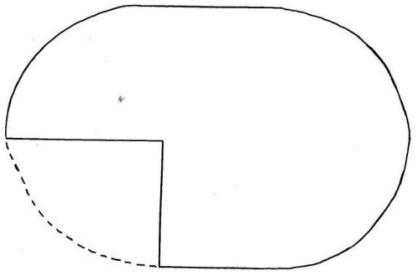
BOH TEA CENTER vs DOME TEA HOUSE



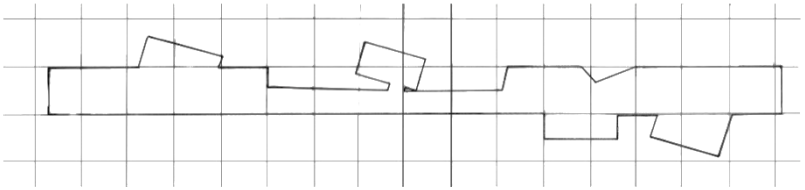


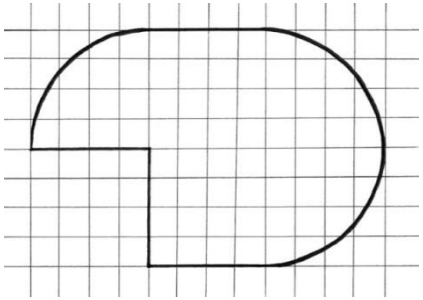
BOH TEA CENTER vs DOME TEA HOUSE



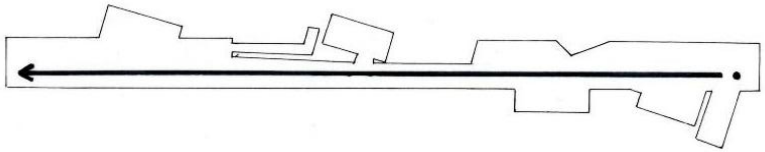


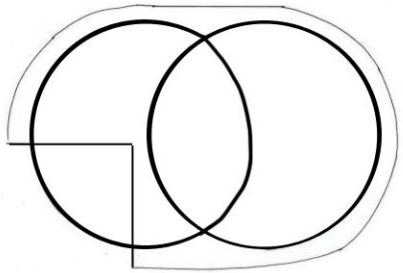
BOH TEA CENTER vs DOME TEA HOUSE

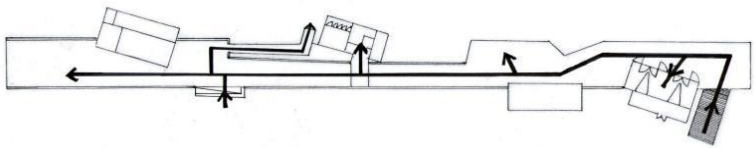


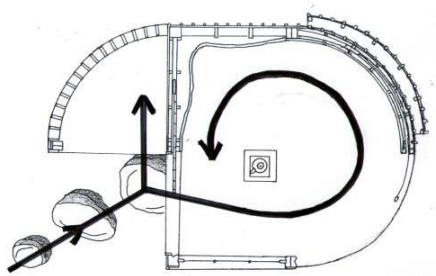


BOH TEA CENTER vs DOME TEA HOUSE

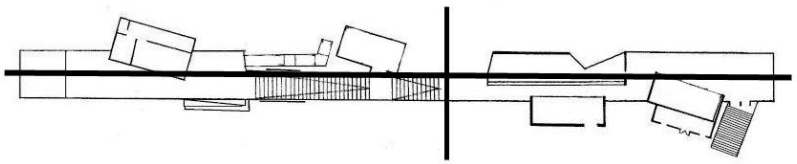


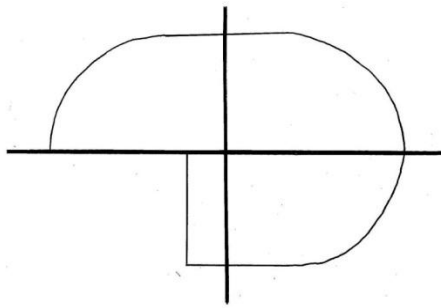




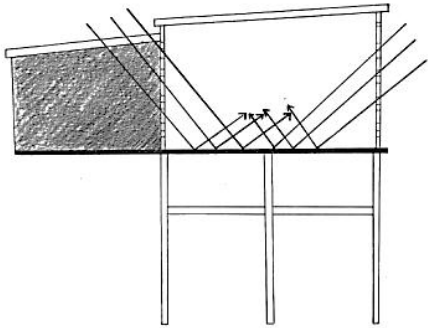


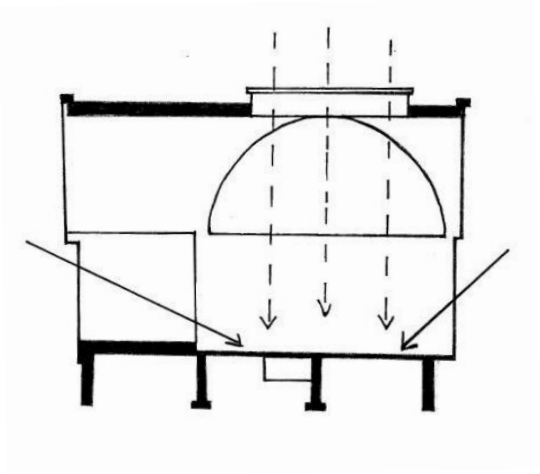
BOH TEA CENTER vs DOME TEA HOUSE





BOH TEA CENTER vs DOME TEA HOUSE





BOH TEA CENTER vs DOME TEA HOUSE

Colour Scheme of BOH Visitor Center

Colour Scheme of the Surroundings

Colour Scheme of the Dome Teahouse

Colour Scheme of the Surroundings

BOH TEA CENTER vs DOME TEA HOUSE

THE END