Housing Malasya

artdepartment

Malaysia, located near the equator, is a country that consists of 13 states and 3 federal territories in Southeast Asia. The country is separated into 2 regions – Peninsular Malaysia and Malaysian Borneo– by the South China Seas, and has a total landmass of 329,847km2. and over 28 million inhabitants with a density of 83hab/km2.

Malaysia as a unified state did not exist until the mid 20th century. The capital city, Kuala Lumpur remains the commercial and financial capital of Malaysia, whereas Putrajaya is the newly created administrative capital for the federal government of Malaysia.

Peninsular Malaysia is most populous, particularly the Klang Valley and around Kuala Lumpur. The metropolitan area of Kuala Lumpur (Klang Valley) has a population approximately 6 million inhabitants, although the City of Kuala Lumpur only has 1.6 million registered.

Malaysia is a multi-religious society characterized by multi-ethnicity of its population. The largest group consisting of Malays are called "Bumiputra"(in Malay)= Sons of the earth (predominant ethnic group in Peninsular Malaysia, Muslims by birth) and indigenous groups in Sabah and Sarawak. They are around the 60% of the population. About a quarter of the population is of Chinese ethnicity . This group represents a important role in the economy, and form a large part of the Malay business .The Malaysian Indians make up 10 % of the total population and includes Muslims , Hindus, Sikhs , Christians and Buddhists.

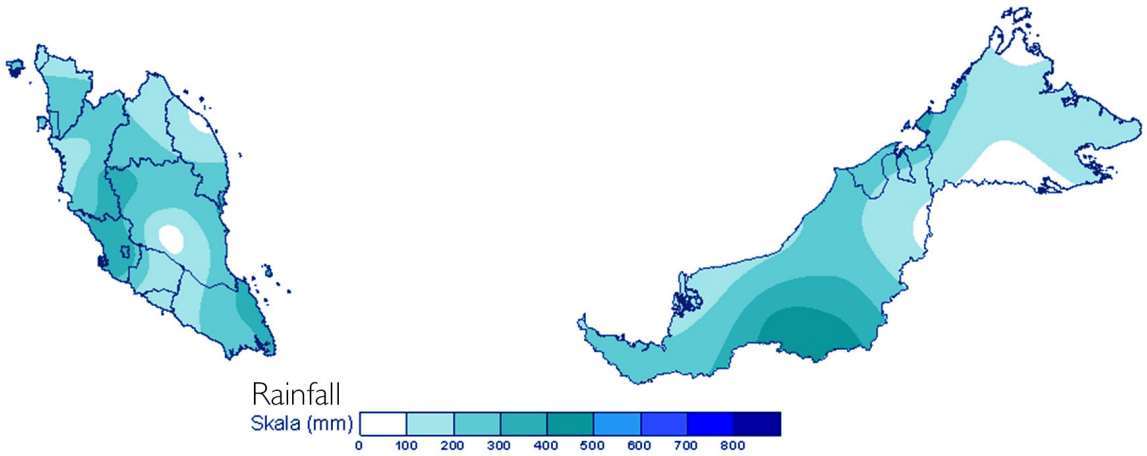
Geography: The 2 distinct parts of Malaysia ,Peninsular Malaysia and Malaysian Borneo, separated by the South China Seas, share a largely similar landscape. Both East and West Malaysia feature coastal plains rising to densely forested hills and mountains. The local climate is equatorial and is characterized by annual southwest (April to October) and northeast (October to February) monsoons.

Climate: Malaysia has a tropical, humid climate with temperatures averaging 30°C. The major change in seasons is marked by the arrival of the monsoons that bring heavy downpours on the east coast of Peninsula Malaysia, the Northeastern part of Sabah and the western end of Sarawak (from November to February).

Malaysia's Climate:

Geographically, two separated land areas form Malaysia, which are Peninsula Malaysia in the west, and the northern part of Borneo comprising Sabah and Sarawak in the east. This country lies between latitude 10 to 70 North and longitude 1000 to 1200 East. It can be said that Malaysia is located in the equatorial doldrums, with the characters of uniform temperature, high humidity and copious rainfall all year round (Malaysian Meteorological Department, 2012).

As a tropical country, Malaysia experiences high temperatures, with an annual mean minimum temperature of 22°C and an annual mean maximum temperature of 34°C . Figure 11 shows the average monthly rainfall and temperature for Malaysia from 1990 to 2009. It suggests that the average temperature in a year ranges from 25.5 0C to 26.5 0C, while the average rainfall is between 100mm to 300mm (University of East Anglia, 2012).



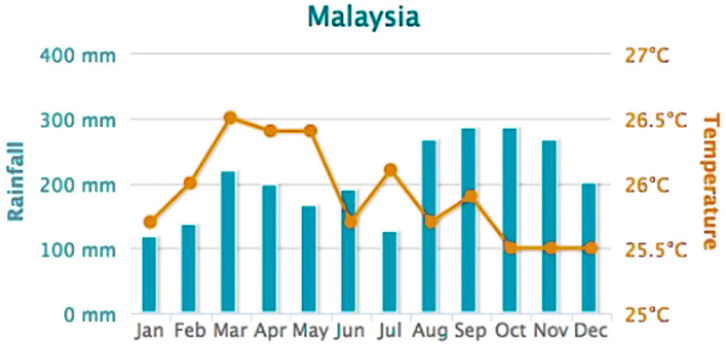
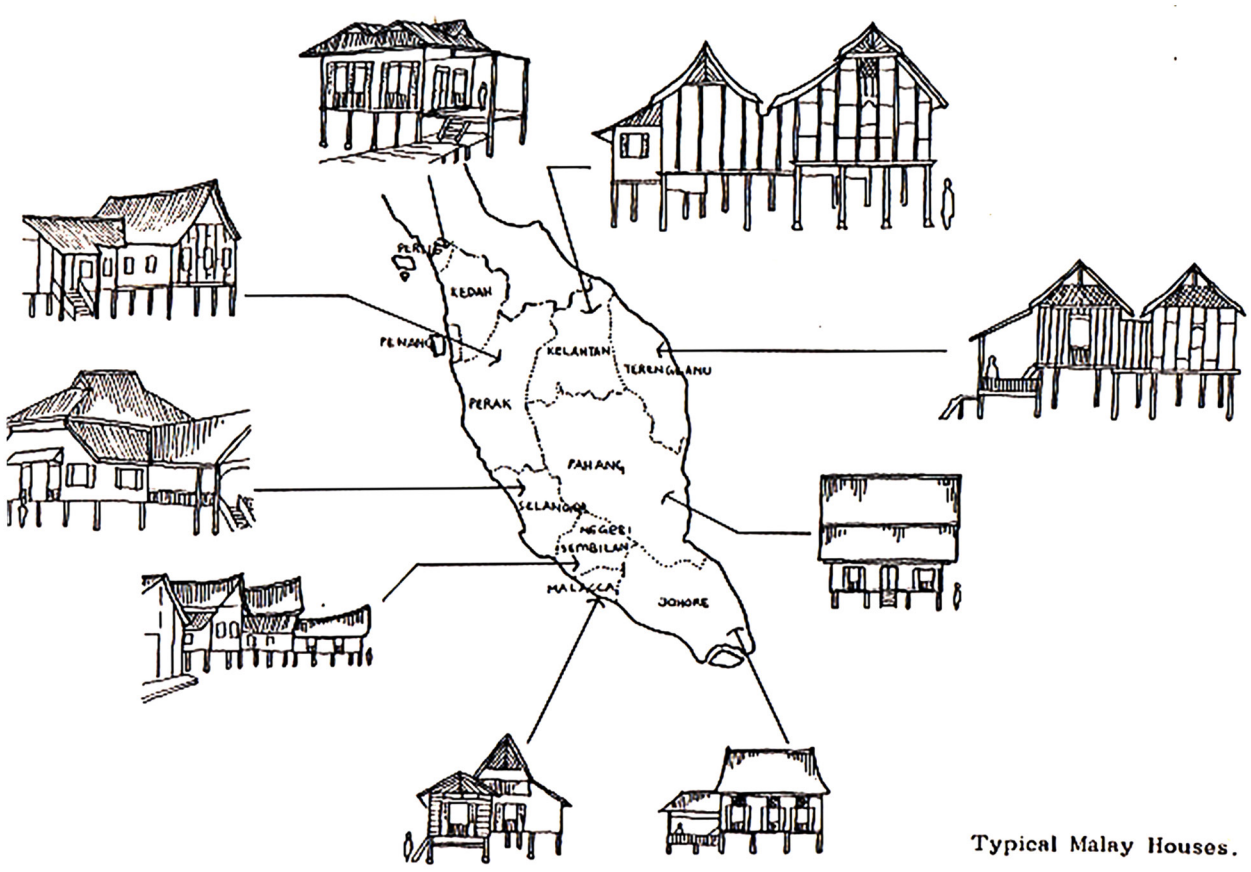


Figure 11: Average Monthly Temperature and Rainfall for Malaysia from 1990-2009 (CRU, University of East Anglia, 2012).

Malay houses (Malay: Rumah Melayu) are traditional dwellings, before the arrival of foreign or modern influences, constructed by the indigenous ethnic Malay of the Malay Peninsula, Sumatra and Borneo.



Typical Malay Houses.

Traditional architectural forms, such as tropically-suited roofs and harmonious proportions with decorative elements are considered by traditionalists to still have relevance. However traditional buildings require significant maintenance compared to modern construction; how to preserve wooden materials from the decaying effect of tropical weather as well as termite problems. These traditional skills are gradually being lost as Malaysia continues its process of industrialisation, while in Indonesia traditional houses have still survived in rural areas.

They are constructed using renewable natural materials including timber and bamboo, the dwellings are often built without the use of metal including nails. Instead pre-cut holes and grooves are used to fit the timber elements into one another, effectively making it a 'prefabricated house'.
Although nails had been invented and in later houses used minimally for non-structural elements (for example, windows or panels), structural flexibility was a benefit which nailing inhibited. Without nails, a timber house could be dismantled and reconstructed in a new location. Most of the ancient Malay peoples of South-East Asia maintained a form of self-regenerating environmental culture.

The essential facts of traditional timber houses is included in contemporary architecture such as shading and ventilation, qualities present in the basic house features.
Although Malay houses have diversity of styles according to each states, provinces, and sub-ethnics, there are common style and similarities shared among them; built on stils, stairs, partitioned rooms, vernacular roof and decoration.

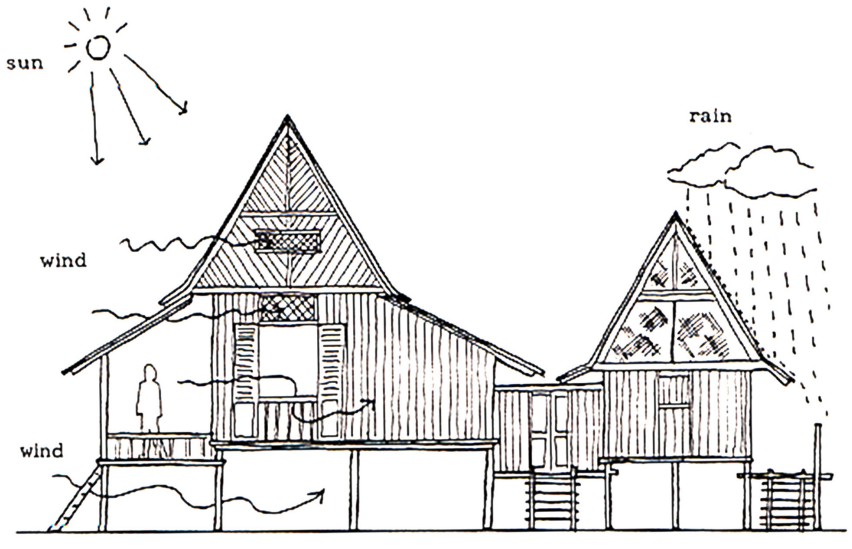
1. Built on stilts:
Most of Malay houses are built as Rumah Panggung (lit: "stage house") houses built on stilts. The main characteristic of a typical Malay kampung house is its on stilts or piles. This was to avoid wild animals and floods, to deter thieves, and for added ventilation. In Sumatra, traditionally stilted houses are designed to avoid dangerous wild animals, such a snakes and tiger. While in areas located close to big rivers of Sumatra and Borneo, the stilts help to elevated house above flood surface. In parts of Sabah, the number of dowry buffaloes could even depend on the number of stilts there are in the bridal family's home.

2. Have stairs:
The traditional Malay house has stairs to reach the elevated interior. Usually the stairs connected the land front of the house to the serambi (porch or verandah). Additional stairs might be found on back of the house. The stairs can be made of wood or brick structure covered with tiles.

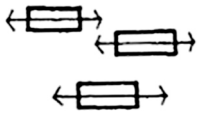
3. Partitioned rooms:
The interior are partitioned to create rooms such as serambi (verandah), living room, and bedrooms. A traditional Malay timber house usually in two parts: the main house called Rumah Ibu in honour of the mother (ibu) and the simpler Rumah Dapur or kitchen annexe, which was separated from the main house for fire protection. Proportion was important to give the house a human scale. The Rumah Ibu was named after the spacings between stilts which are said to typically follow the arms-spread width of the wife and mother in the family of the house when being built. At least one raised veranda (serambi) is attached to the house for seated work or relaxation, or where non-familiar visitors would be entertained, thus preserving the privacy of the interior.

4. Vernacular roof:
The roof of traditional Malay houses are designed to provides shades and protection from heat and rain, as well as to provides ventilation. The basic design of Malay roof is gabled roof, with somehow extended roof frame forming ornaments on the edge of the roof.
The vernacular Malay roof is best suited for hot and humid tropical climate. The gabled roof can be found in the design of Rumah Lipat Kajang. However a pyramidal pitched roof also can be found, such as Palembang Rumah Limas. In Riau and Jambi there are several different styles, especially of the roof design. The Rumah Lancang or Rumah Lontik have curved roof with boat-like structure on stilts.

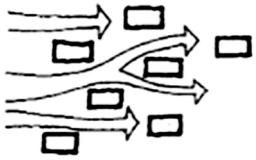
5. Decoration:
Each Malay region, state or sub-ethnic groups has its own regional or group style of house with preferred details. However most of Malay houses have a typical roof ornament, a crossed roof edge structure forming "x"-like pinnacle ornament on the edge of the roof. This kind of ornament can be found in Lontik, Lipat Kajang and Limas styles.



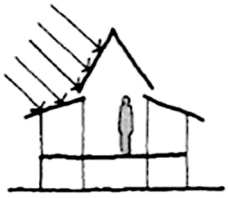
Climatic Responds in Traditional Malay House.



Orientation,
Traditional Malay houses are often orientated to face Mecca (i.e.,in east-west direction) for religious reasons.The east-west orientation minimizes areas exposed to solar radiation.

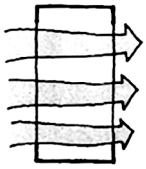


Layout,
Traditional Malay houses are randomly arranged.This ensures that wind velocity in the houses in the later path of the wind will not be substantially reduced.



Building materials,
Traditional Malay houses use lightweight construction of wood and other natural materials.
The lightweight construction of low thermal capacity holds little heat and cools adequately at night.The attap roof is an excellent thermal insulator. Glazed areas are seldom found in the traditional Malay house.

Ventilation of Roof Spaces,
Roof spaces in the traditional Malay house are properly ventilated by the provision of ventilation joints and panels in the roof construction.

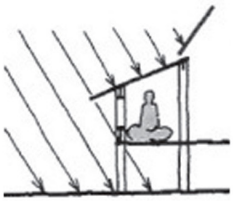


Cross ventilation,
the elongated open plans of the traditional malay house allow easy passage of air and good cross ventilation.There are minimal interior partitions in the malay-house which restrict air movement in the house.

Vegetation,
The use of coconut trees and other tall trees in the kampong not only procides good shade but also does not block the passage of winds at the house level.

Wind velocity gradient,
The speed of wind increases with altitude.
The traditional malayhouses on stils capture winds of higher speed at a higher level. Thos is specially vital in areas where there are plants covering the ground wich restrict the air movement.

Ventilation at body level,
The body level is the most vital area for ventilation for comfort. The traditional Malay houses allow ventilation at the body level by having many full-length fully openable windows and doors at body level.



Overhangs and exposed vertical areas,
Large overhangs and the low exposed vertical areas (windows and walls) in the traditional Malay house provide good protection against driving rain, provide good shading, and allow the windows to be left open most of the time for ventilation.

Glare,
Glare in traditional Malay house is controlled by large roof overhangs and low windows wich exclude the open skies from the visual field.
Glare is also lessened by the less reflective natural ground covers and wooden walls of neigbouring houses.

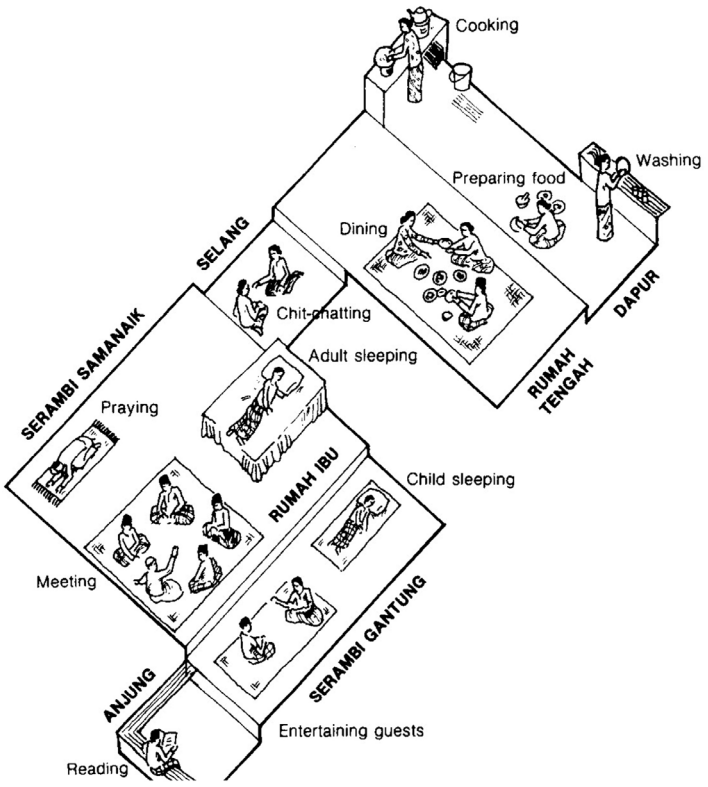
Lighting level,
The traditional Malay house tends to be underlighted. This gives the psychological effect of coolness. The underlightning, however, can be remedied by artificial lightning.

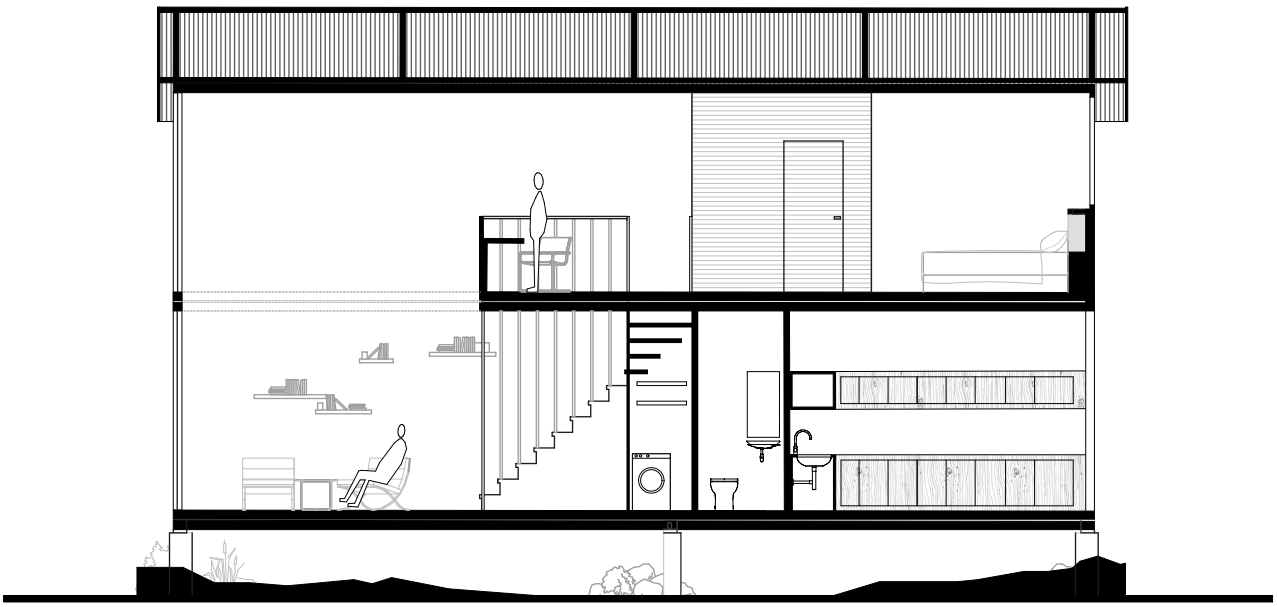
Basically, the traditional Malay house can be divided into the front and back portions which are centred around the rumah ibu (the core house) and the dapur (kitchen) respectively.
At the entrances of most traditional Malay houses, stairs lead up to a covered porch called the anjung. The porch acts as a good transition space between the public and the private domains. The anjung also acts as an important focal point for the entrance.
Unfamiliar visitors and guests are entertained here. It is also a favourite place for the house occupants to rest, chat and watch the goings-on and passers-by in the village.
From the entrance porch, one enters into the serambi gantung (hanging verandah). This is the place where most guests are entertained. The low windows in the serumbi guntung allow for good ventilation and good views to the exterior.

From the serumbi guntung, one enters into the rumuh ibu, which is the core area. This is the largest area in the house where most activities are conducted. Sleeping, sewing, praying, ironing, studying and even feasting (kenduri) which is held during marriages and other festivals, all occur here. The importance of the rumuh ibu is expressed by its floor level being the highest in the house.

The selung is a closed walkway used to link the kitchen and the rumuhibu together. The side entrance to the kitchen is also located here. Besides being a circulation space, the selang is often used by the womenfolk as a space to chat and socialise. The selang is a very effective linking device which leaves an open space between the two portions, allowing good ventilation and lighting for the house.

The dupur (kitchen) is always situated at the back of the house, and is on the lowest floor level. Modern kitchens in new Malay houses are often dropped to the ground level where floors are cemented. Preparation of food, cooking, eating and washing are all done here. The womenfolk also often group here to chat.





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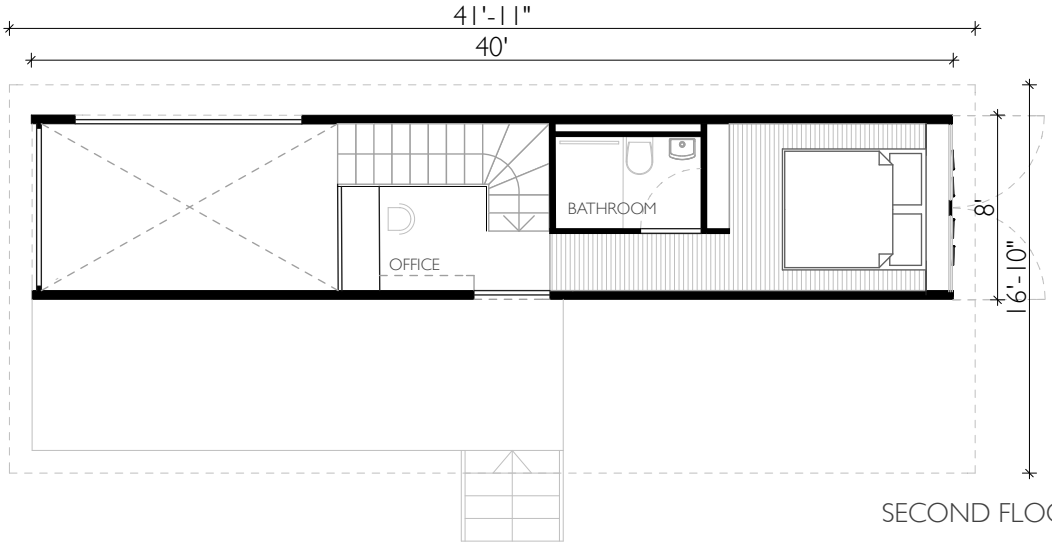

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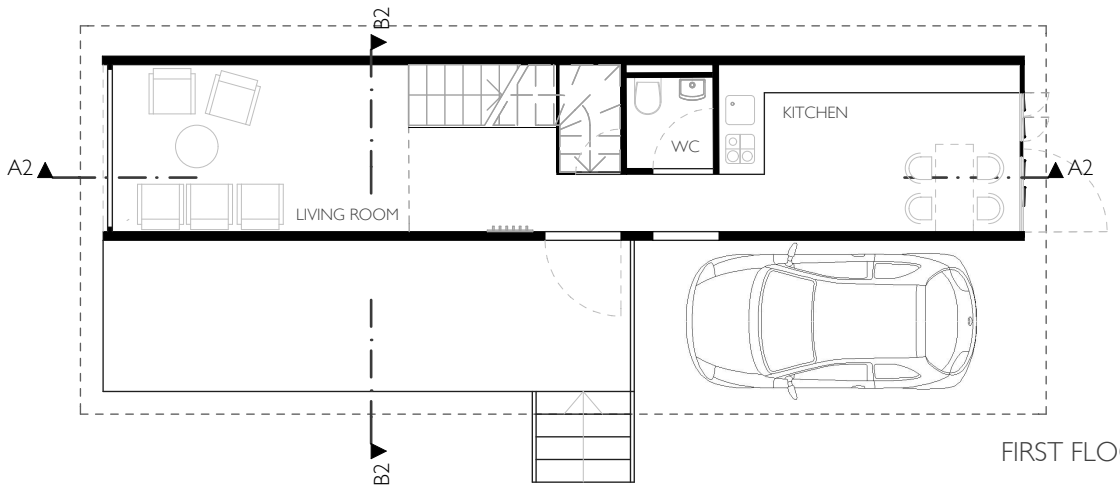

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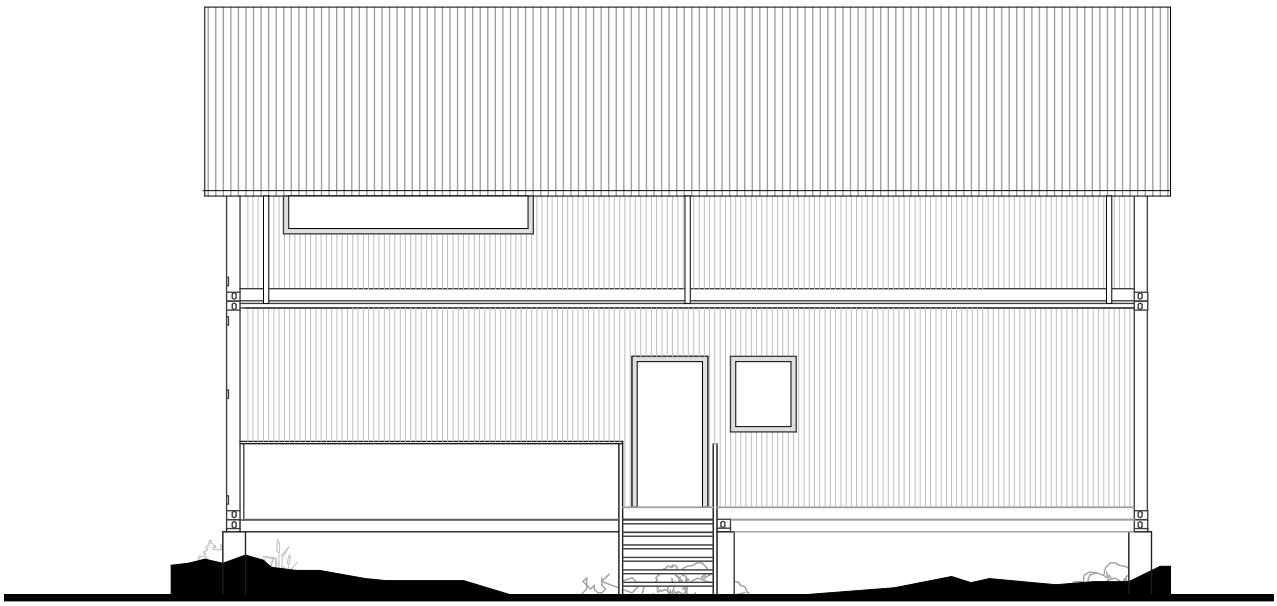

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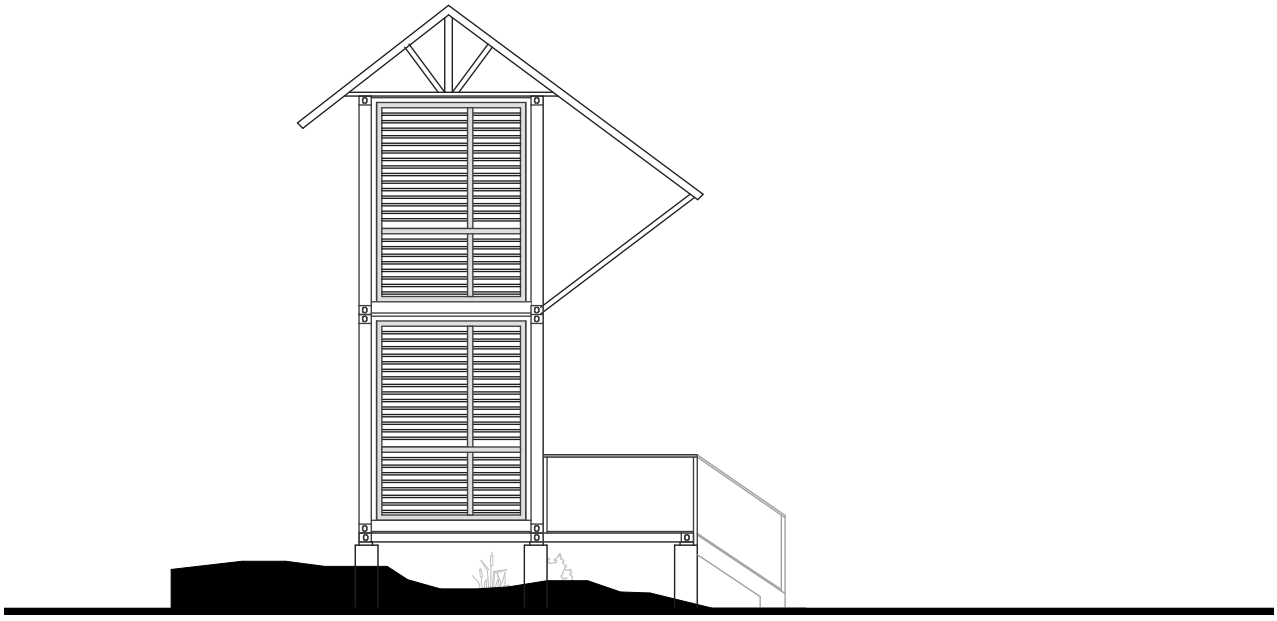
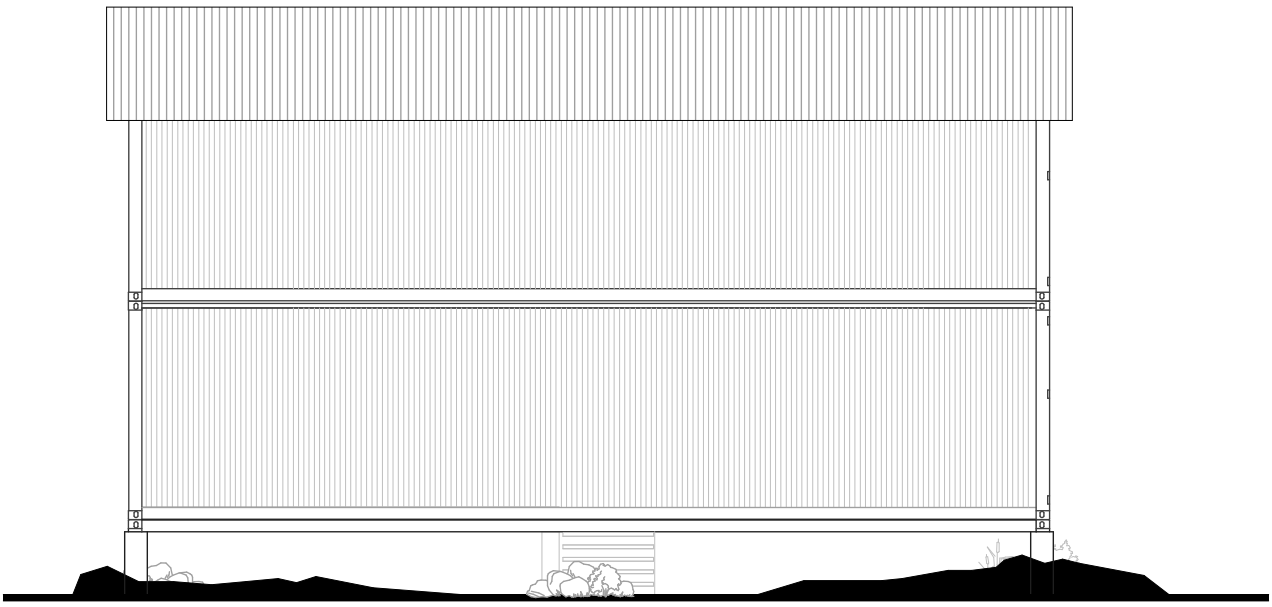


KITCHEN
ELEVATION



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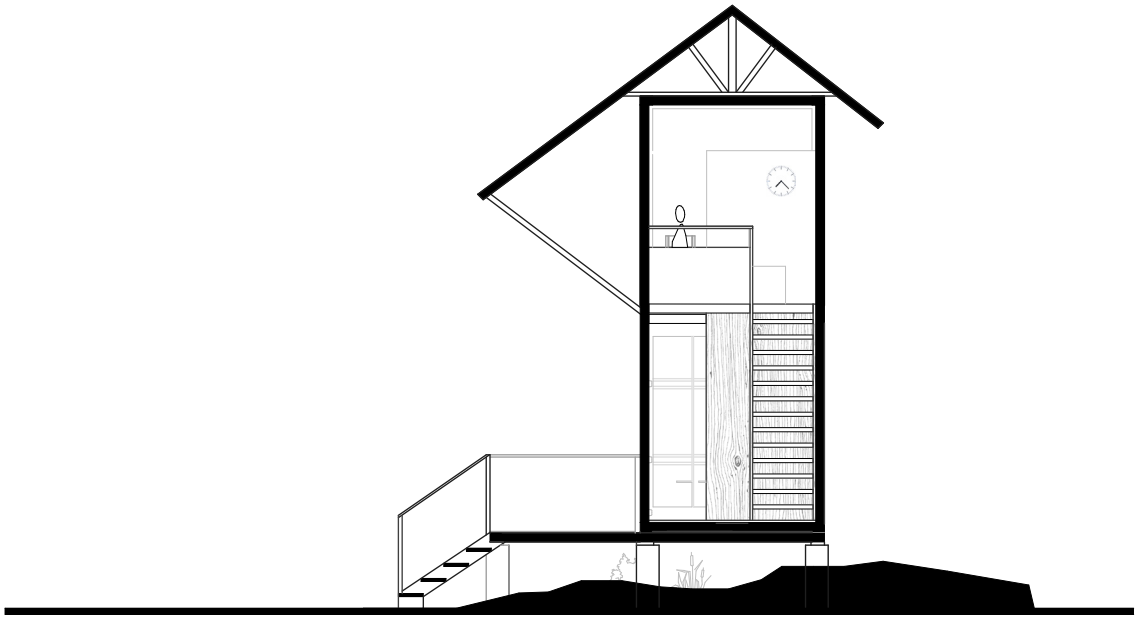

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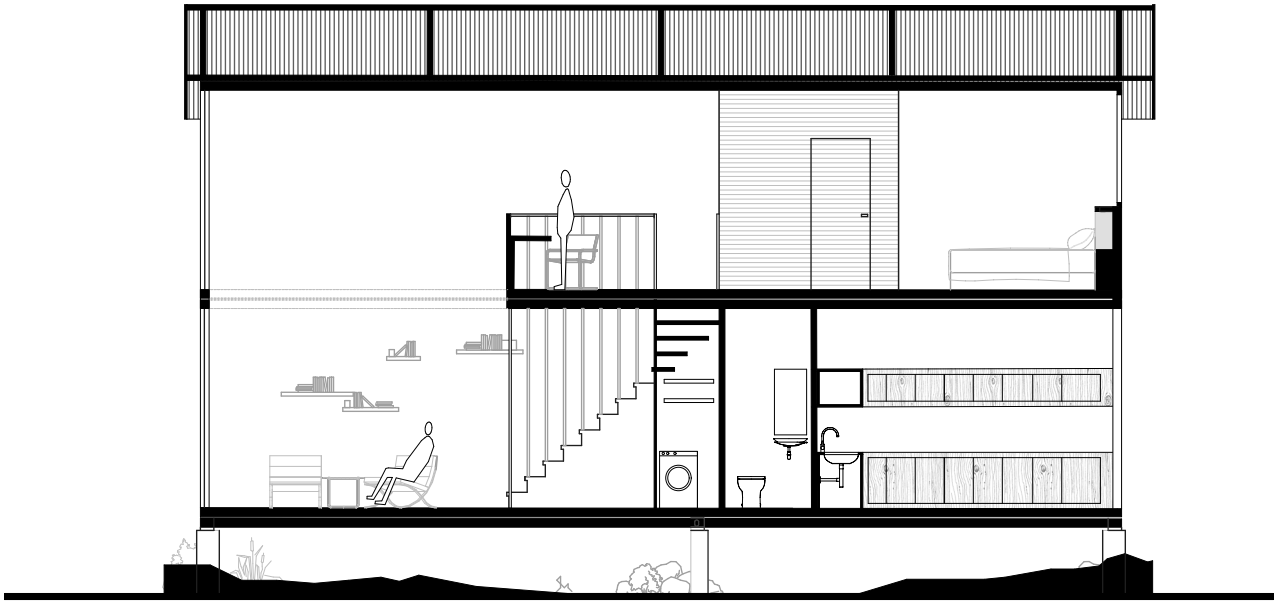

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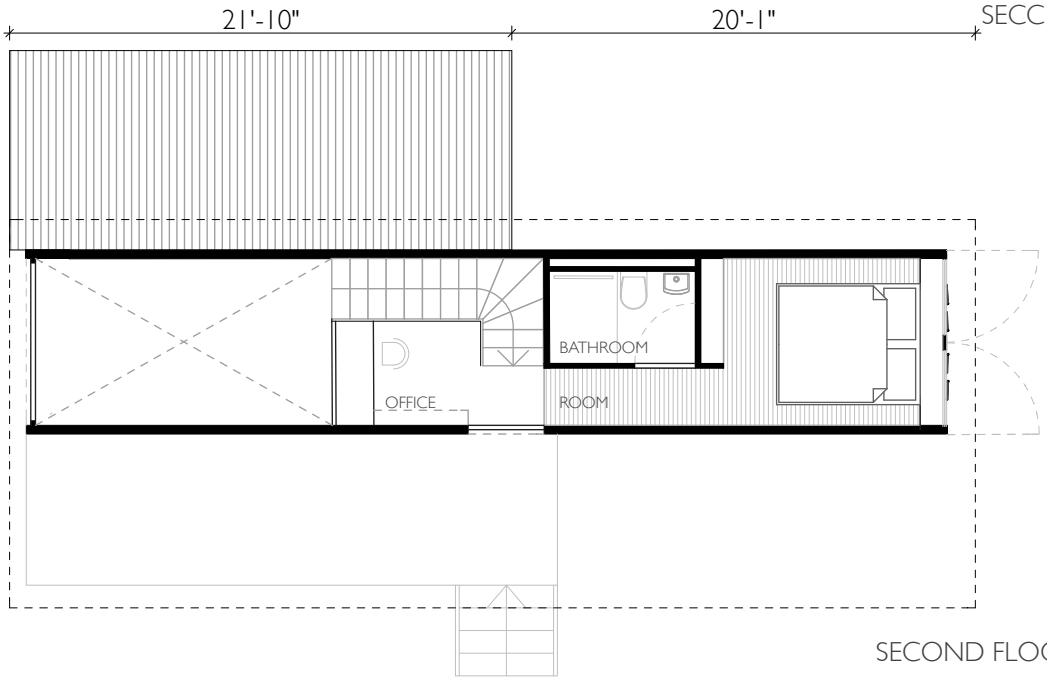

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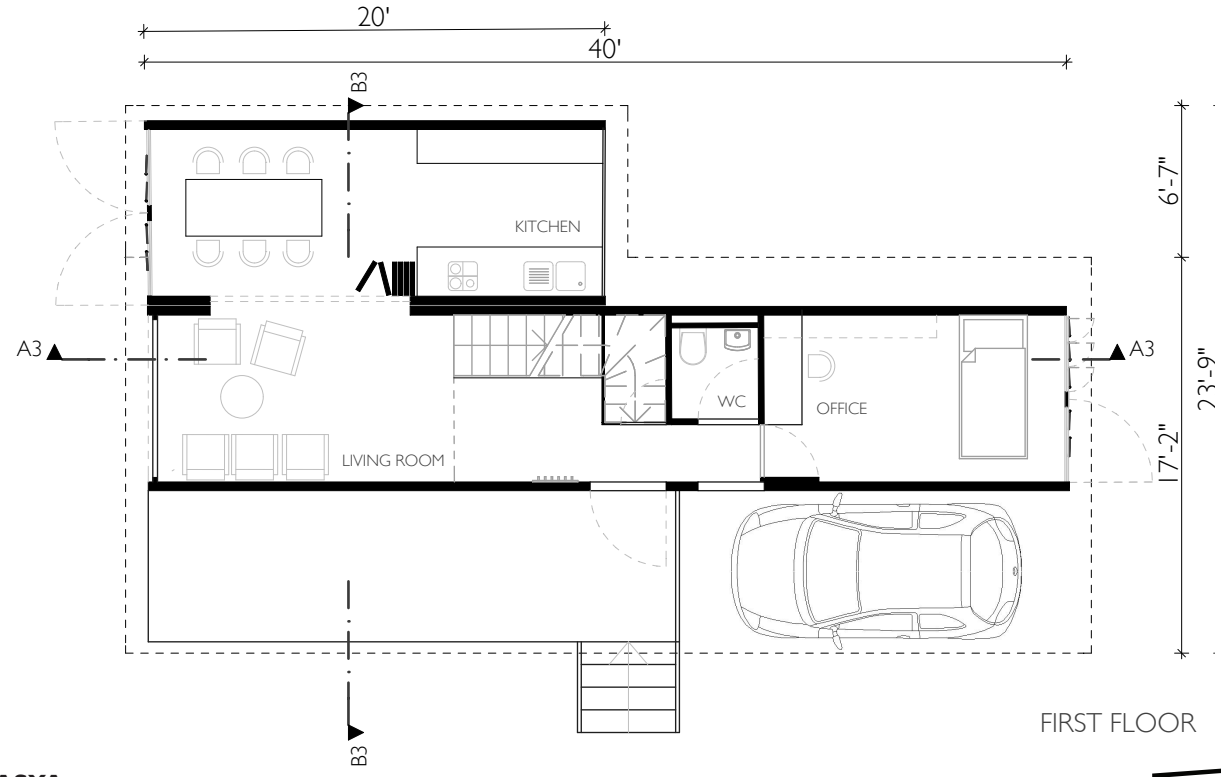

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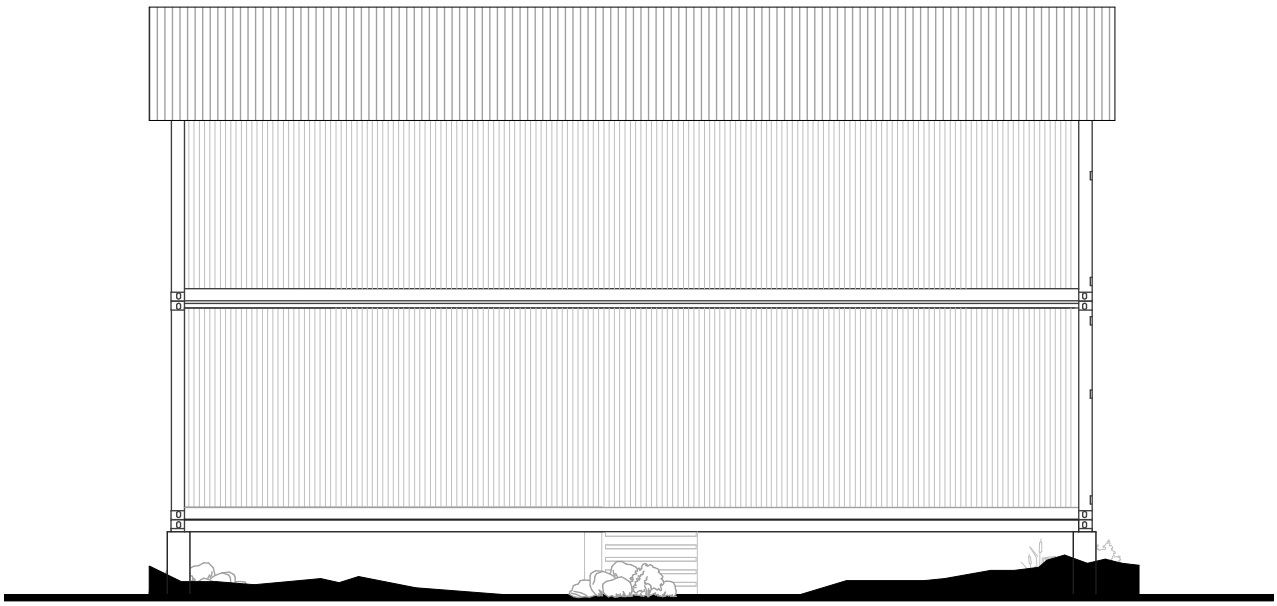

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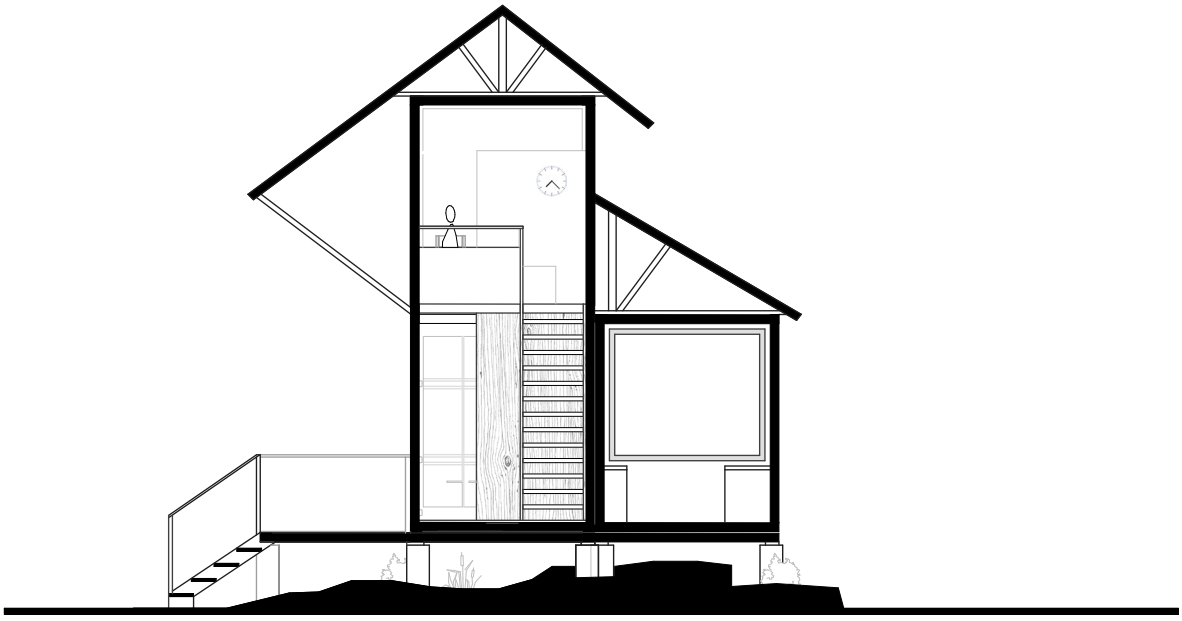

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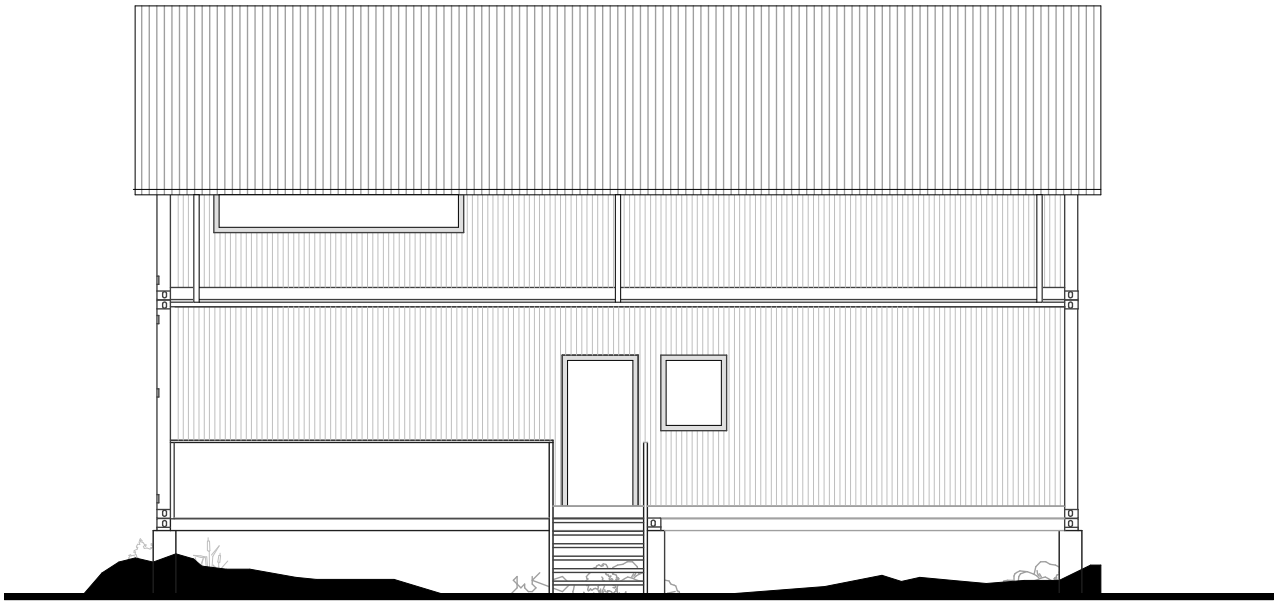

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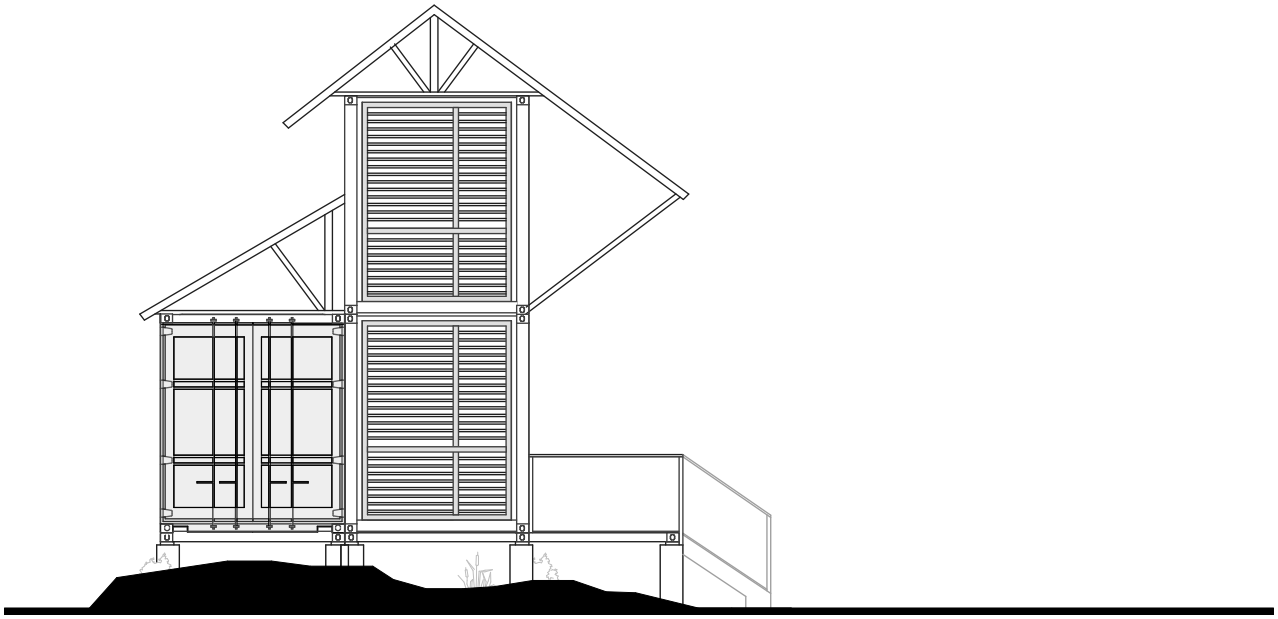

KITCHEN
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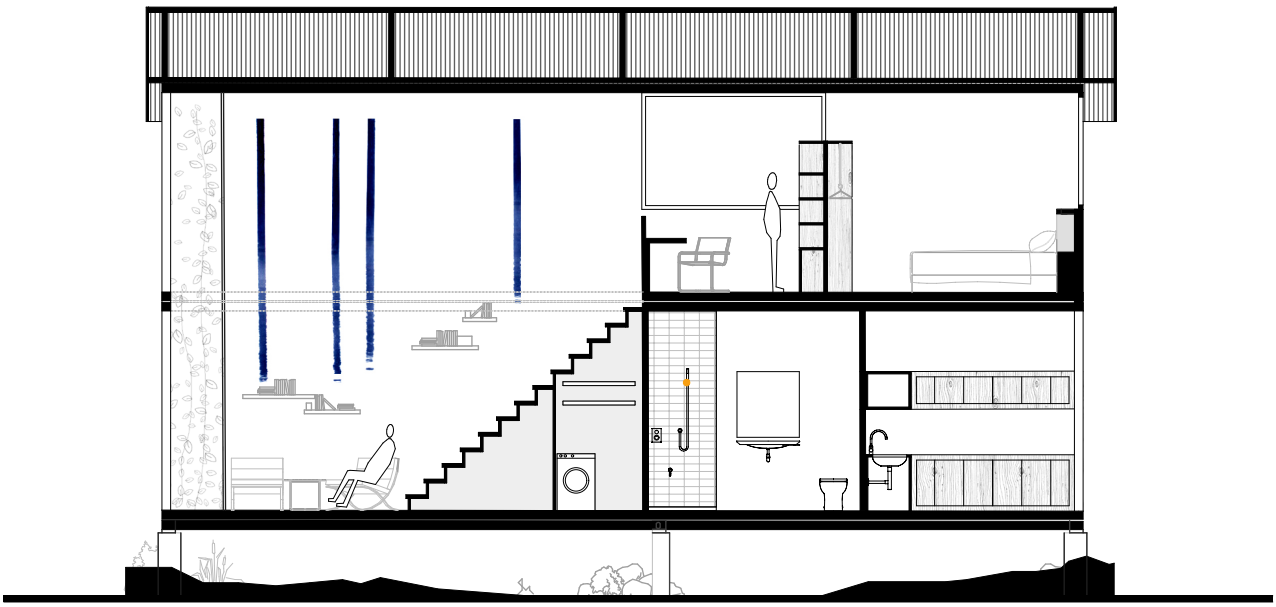

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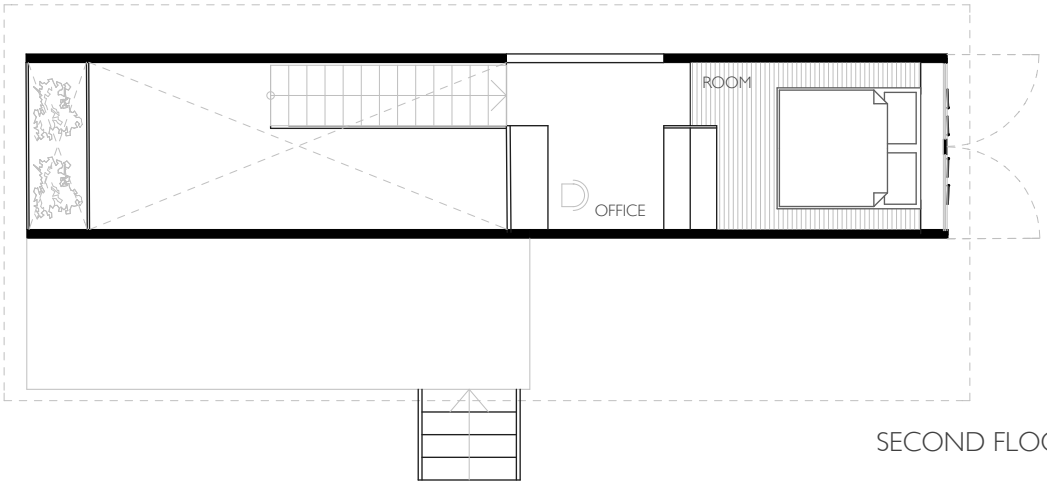

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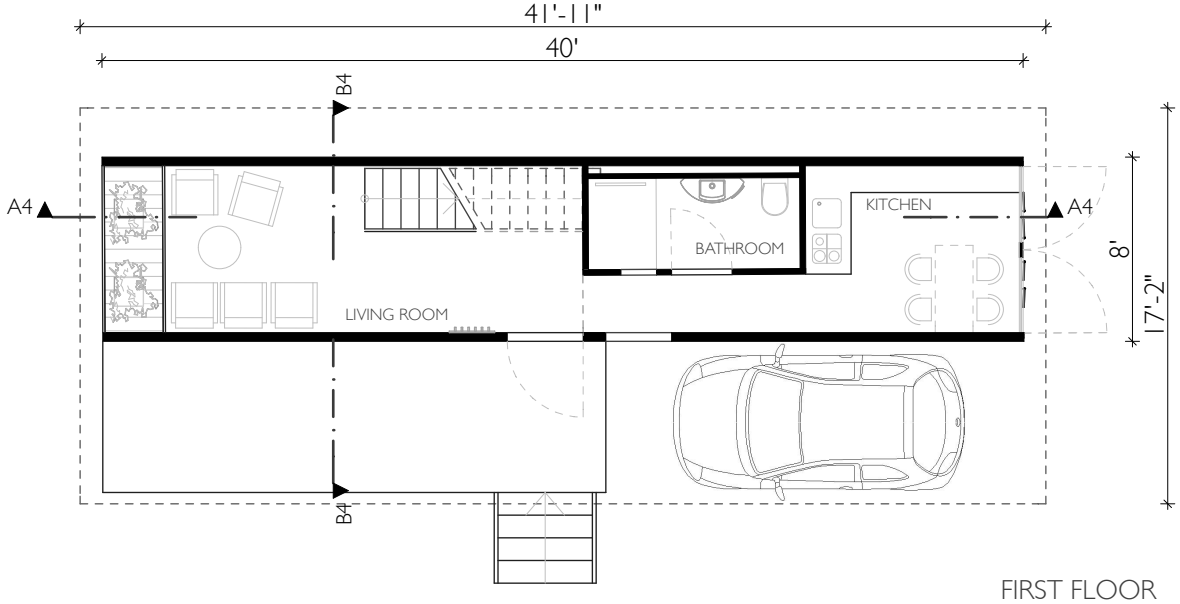

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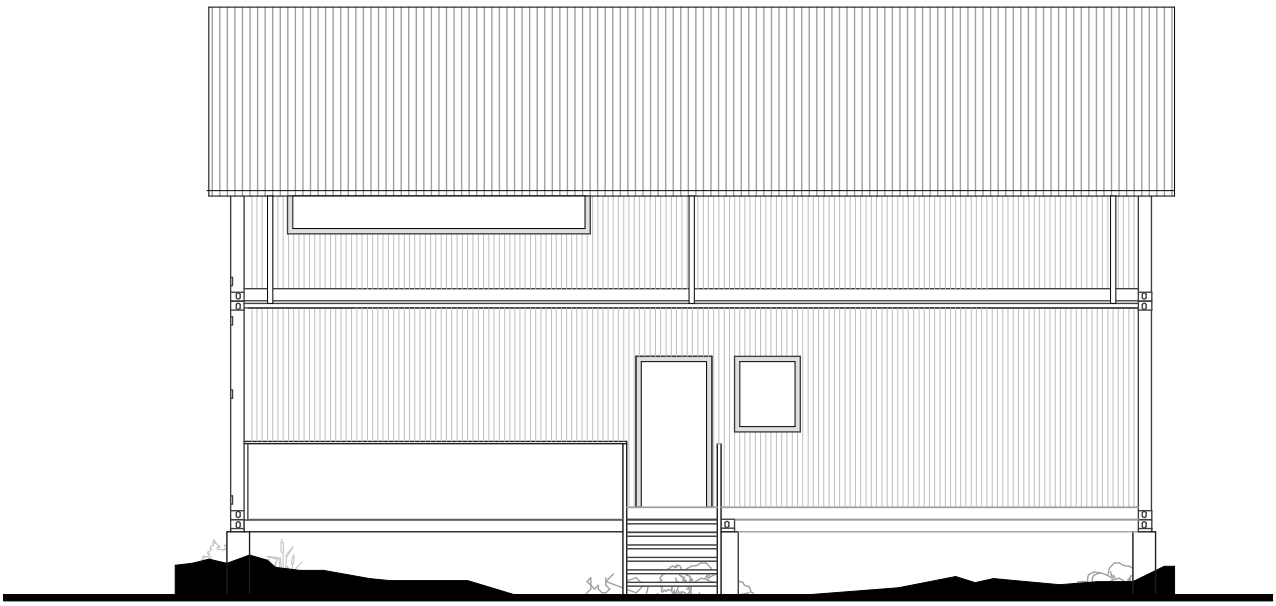

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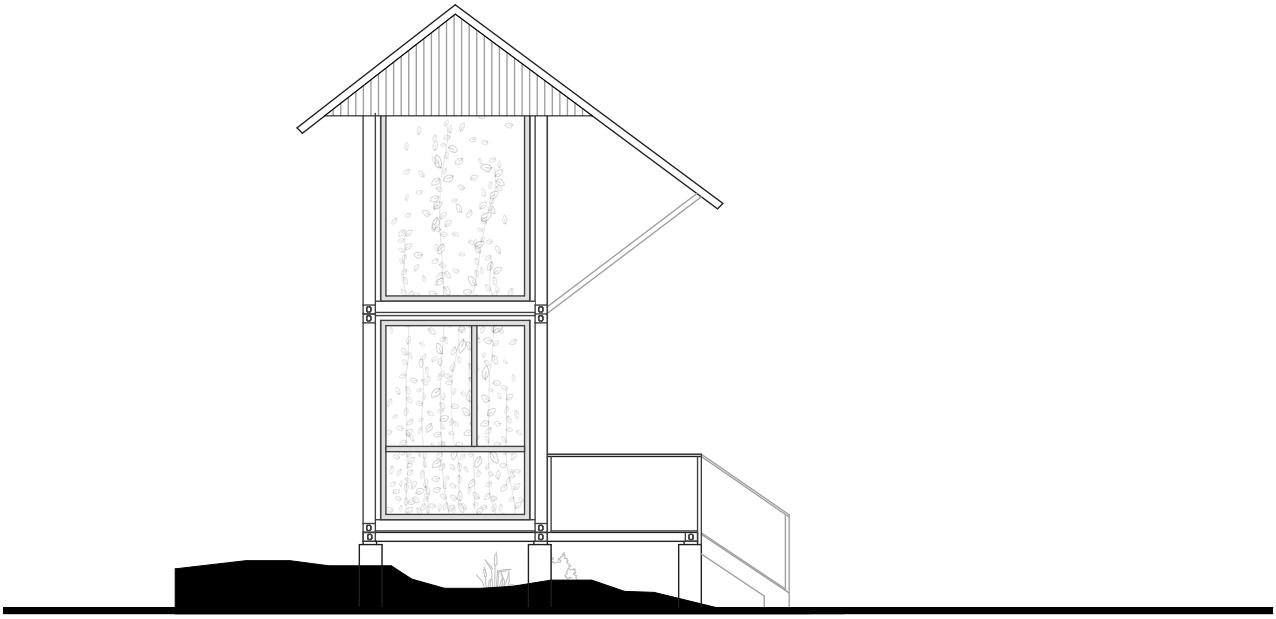

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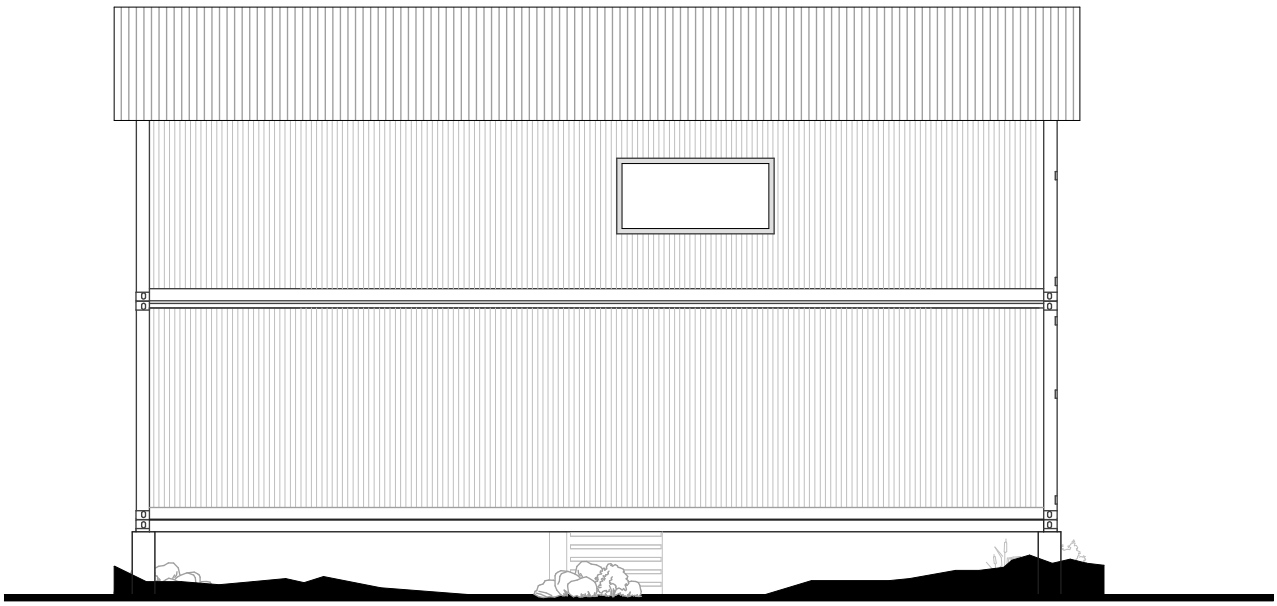

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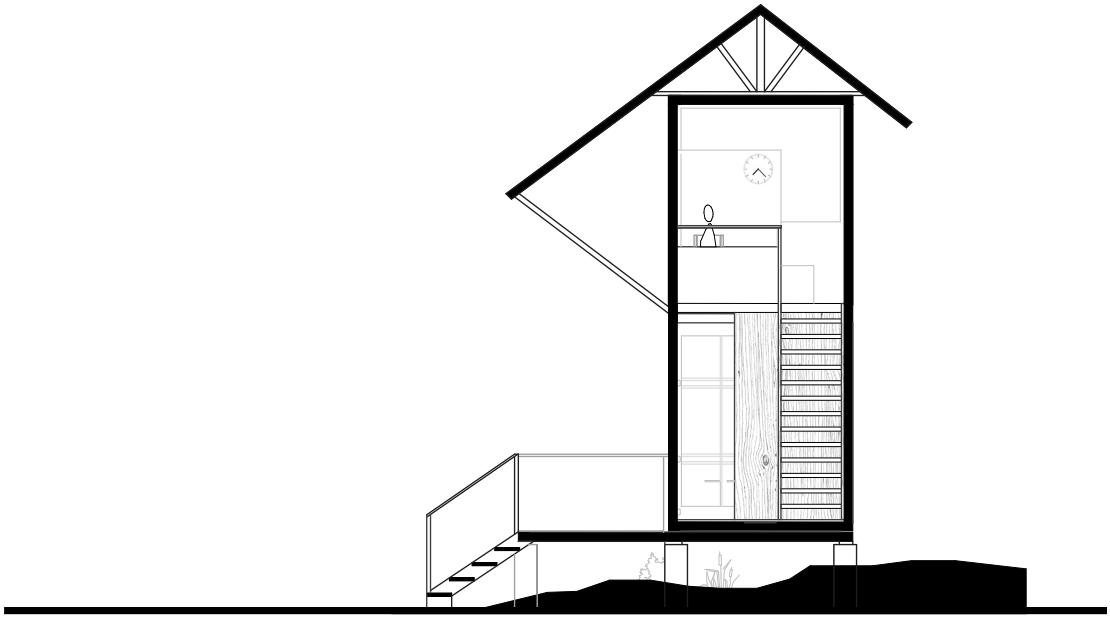

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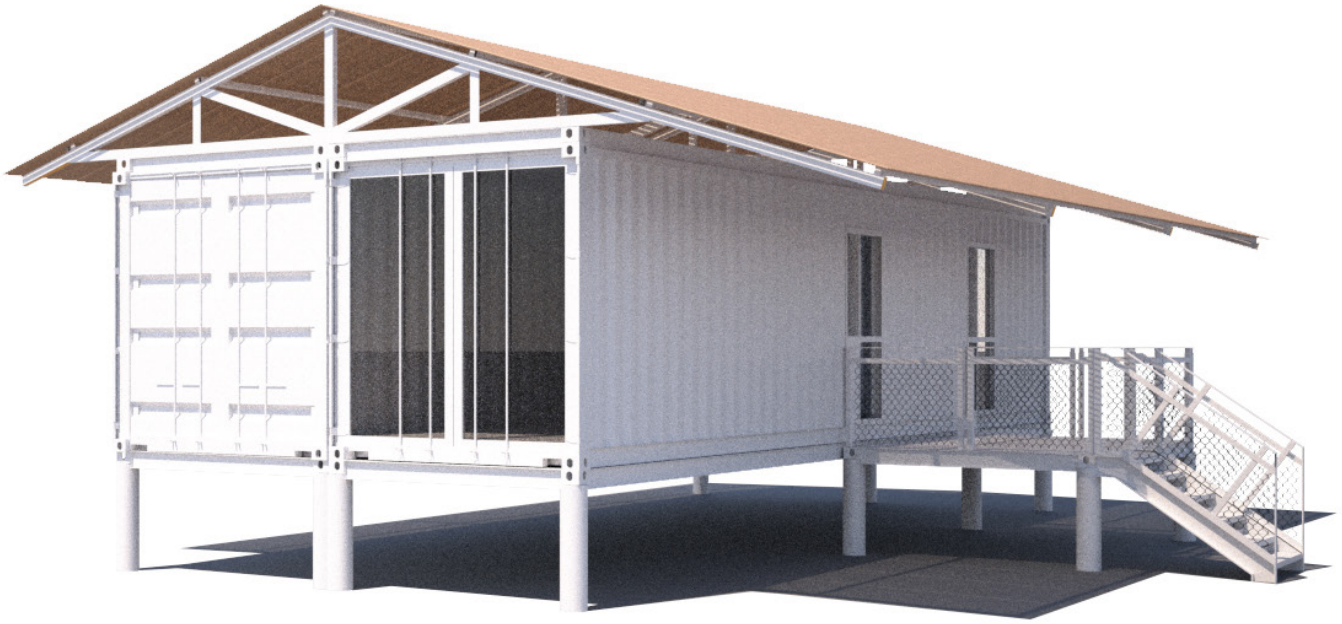

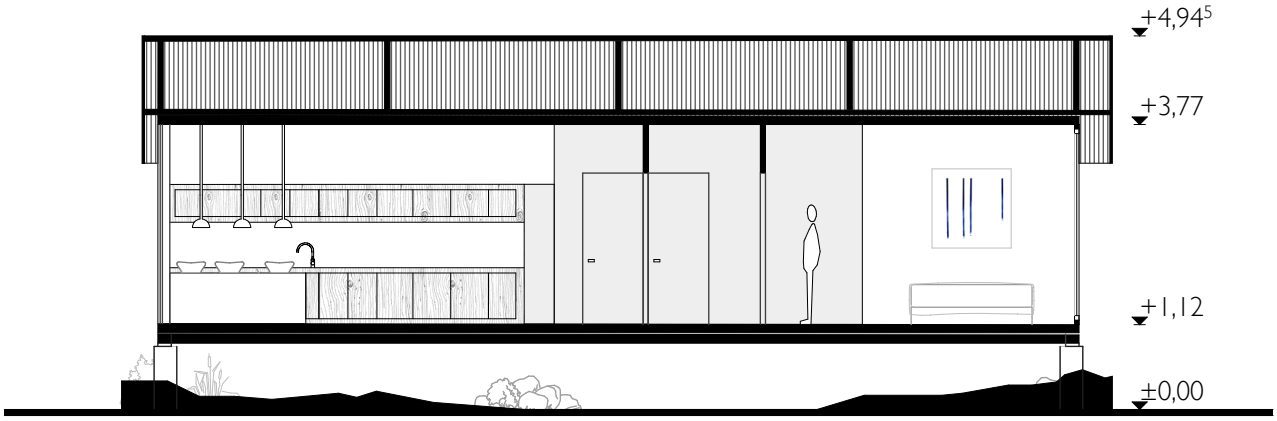

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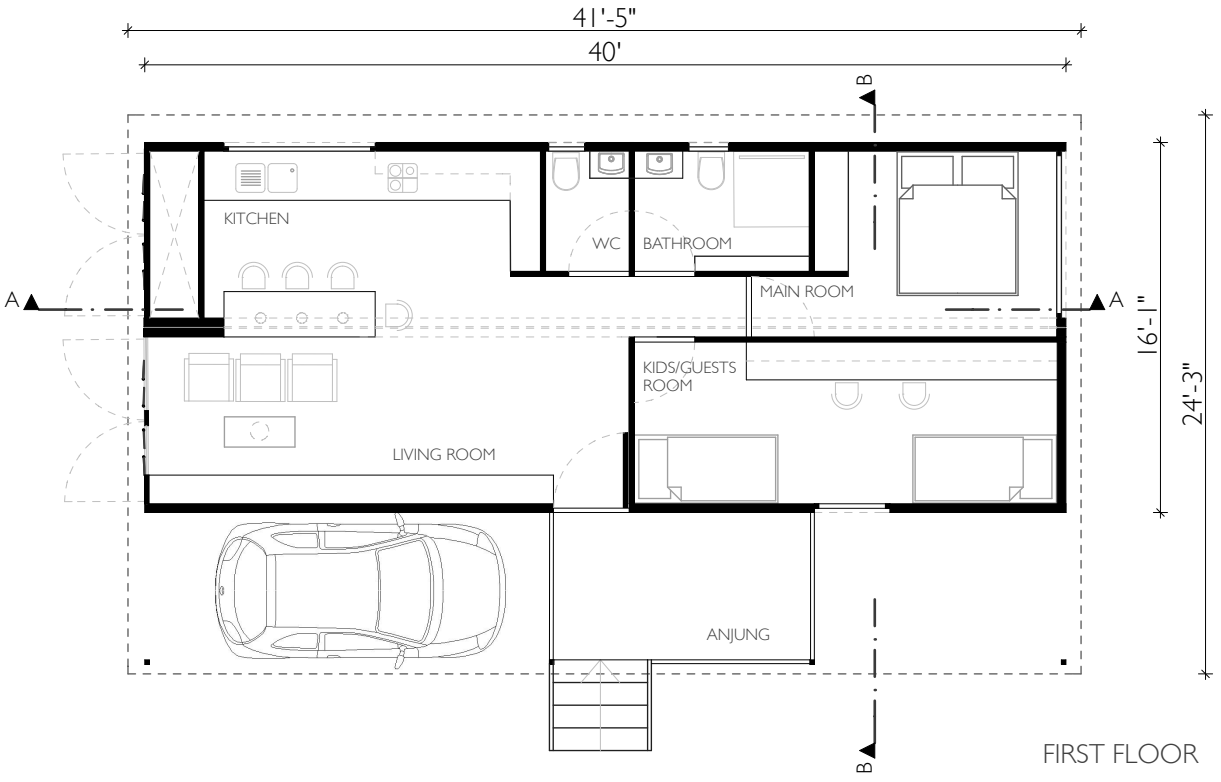

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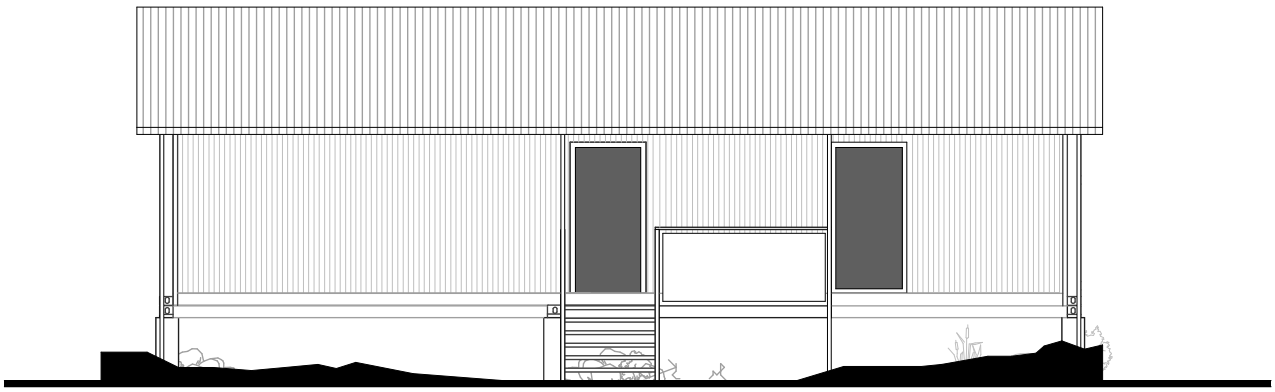

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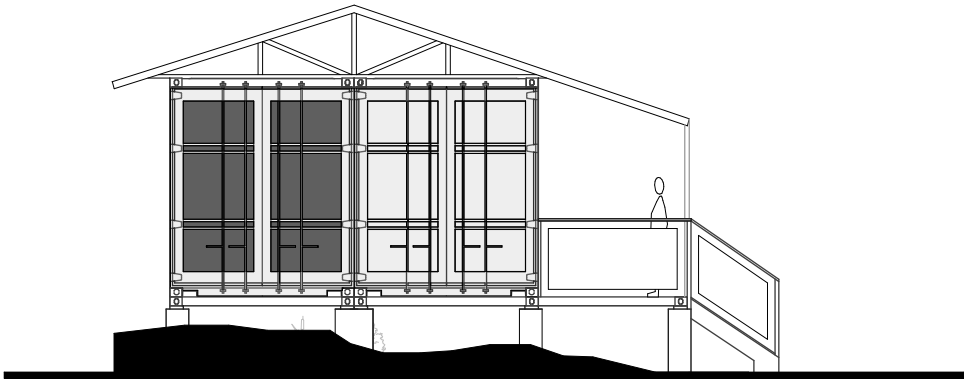

KITCHEN
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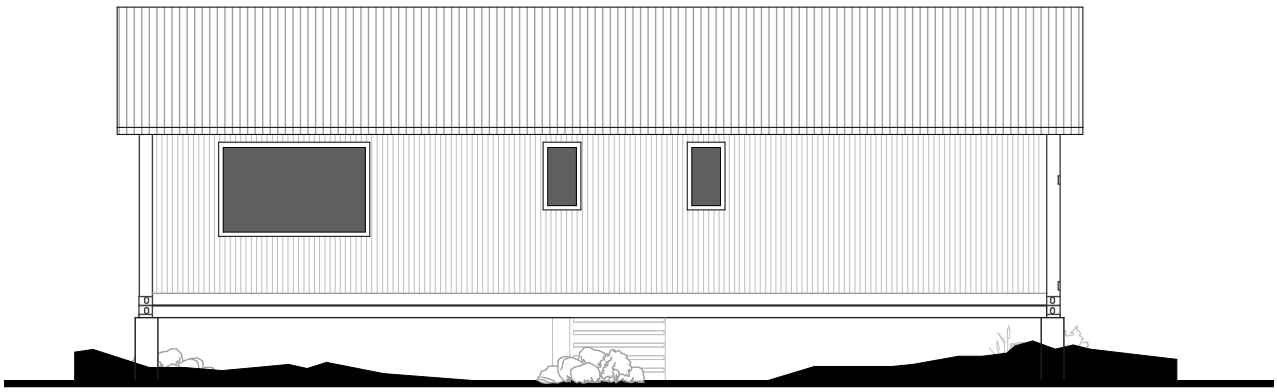

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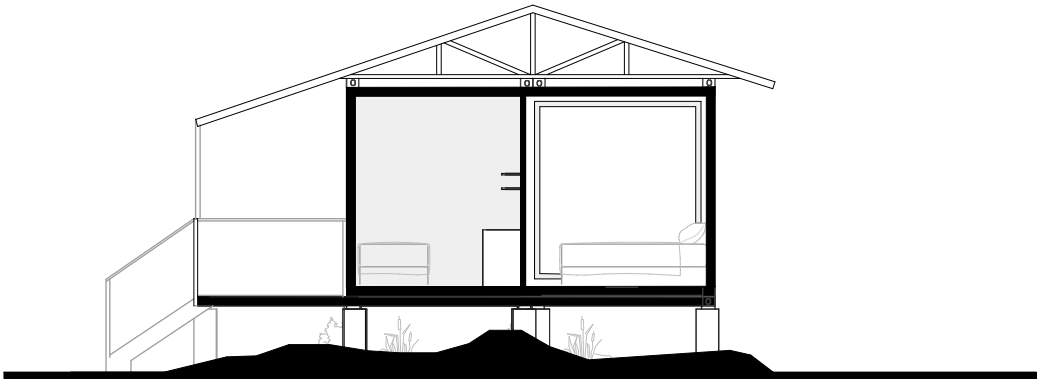

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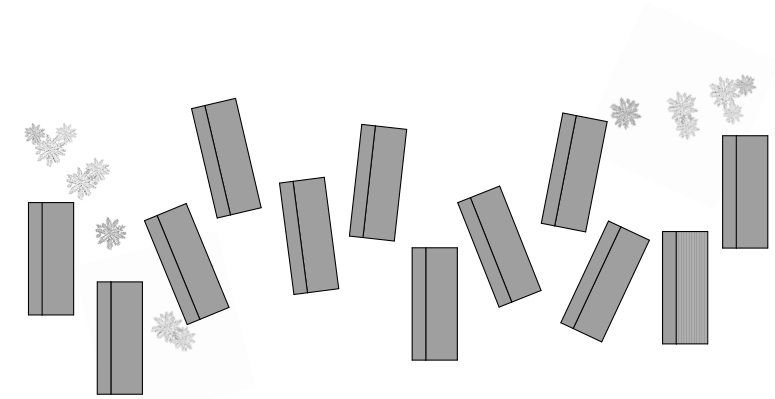
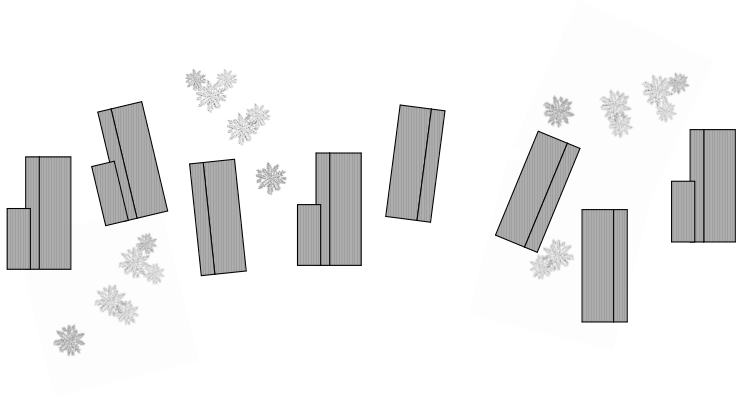
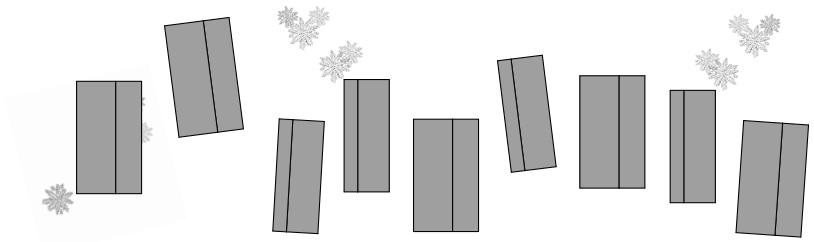
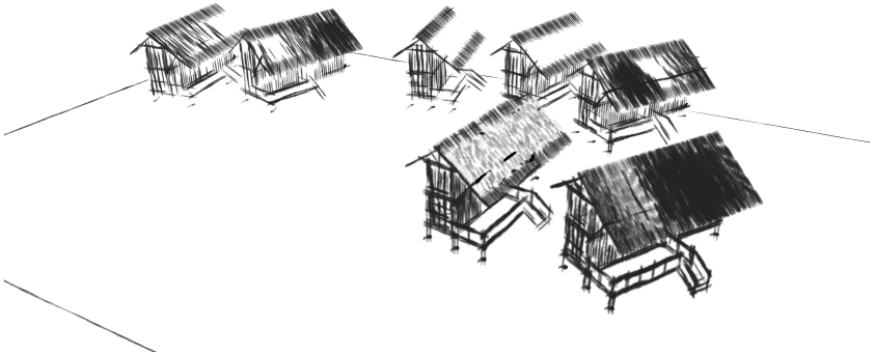






SITE PLAN POSSIBILITIES



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Artdepartment-Berlin GmbH
fraenkelufer 46,
10999 berlin

telefon +49 30 61789220
mail@artdepartment-berlin.com
www.artdepartment-berlin.com