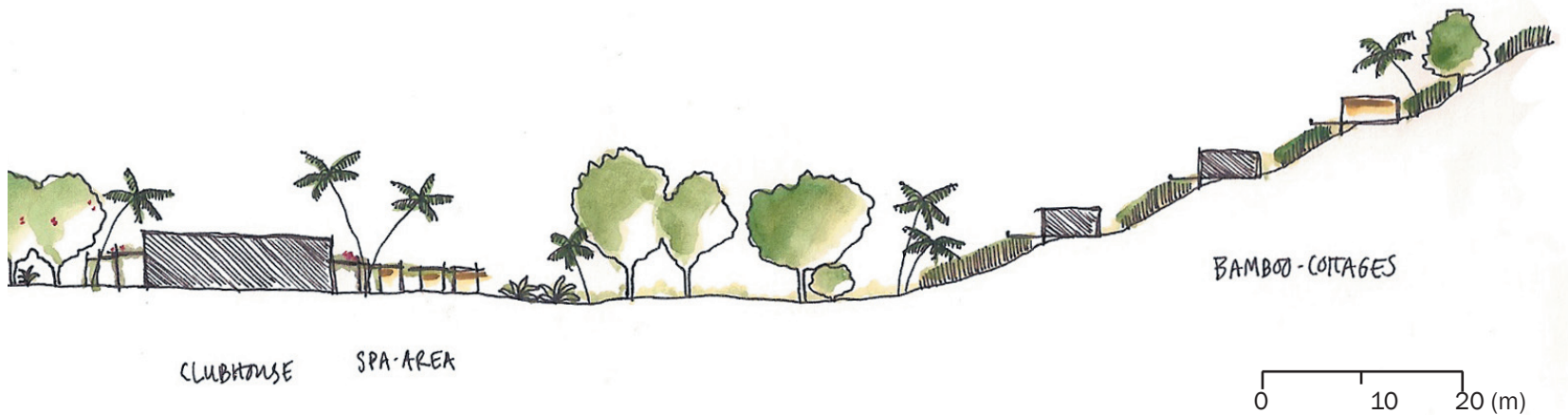


SUSTAINABLE TOURISM IN THE PHILIPPINES

- A Design Proposal For Watercolors Resort _____

A Minor Field Study 2007 by:
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Examensarbeten inom Landskapsarkitektprogrammet 2008:64



PREFACE

This, is a project about designing a sustainable tourist environment-on the small island of Lusong in the northern Palawan region of the Philippines.

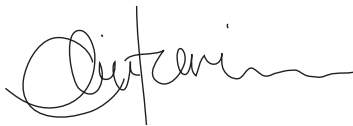
By carrying out a detailed field study, discussing our ideas with local people and industry representatives-we believe that we have created a model that will be strong enough to with stand the comissioning board of the Municipality of Coron.

The project was sponsored by the Swedish International Developing Association (SIDA), through the Minor Field Study scholarship 2007. The result will be a written report to SIDA and a bachelor thesis in Landscape Planning at the Swedish University of Agriculture and Sciences (SLU).

Our supervisors in the Philippines were Fredrik Agerhem, Swedish Embassy in Manila, and the entrepreneurs of the future resort Mr.. and Mrs. Tornberg, Manila. Our supervisors in Sweden are Kenneth Olwig and Carola Wingren both professors at the Department of Landscape Architecture, SLU.

THANKS TO...

SIDA and Bjäre Bokhandel, our sponsors that contributed to make this study possible. Thanks to the future resort owners Martin Tornberg and Ethel Echevarria-Tornberg for all help during our time of the field study. Thanks to Sara and Fredrik Agerhem (Swedish Embassy, Manila) , Björn Wahlstedt (Connexor, ADB), Mats Elerud (ADB), Alexander G. Co, Edgar Reformado, Brenda Ermita, Mr. King, Barangay Captain Juri Palanca, Kenneth Olwig and Carola Wingren.



Elin Henricson



Martina Andersson



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BACKGROUND



Manila's everyday traffic



The tourist paradise Boracay



Coron, area famous for diving.

SUSTAINABLE DEVELOPMENT AND TOURISM _____

Reaching sustainable development is one of the major policy debates of our generation. There is a concern about the extended use of the Earth's natural resources and its relationship to economic growth. Significant questions are raised about the likelihood of natural resource management through mechanisms such as tourism. (Sustainable Tourism - A geographical perspective (1998) p 1 - 14) The concept of sustainable development within the tourism sector is the key to seeking a more productive and harmonious relationship between the three elements: Visitor, host community and environment'. (Sustainable Tourism - A geographical perspective (1998) p 75)

When tourism is at its best, it's an enriching experience for the tourist as well as it's providing the host community employment, income, preservation of heritage and other benefits. But if the site is badly planned or managed it can be a disaster for both the visitor, the place and the local community. (Tourism Planning: Basics, Concepts, Cases, (1994))

THE PHILIPPINES

The Philippines is a country of 7000 islands with 79 million habitants, located in the South East Asia. The country suffers from poverty and severe environmental problems like air- and water pollution caused by natural disasters, pesticides and deforestation. ('Filippinerna', (2006)) Many of the hazards that the country is affected by are natural in origin and there are fears that these will be intensified through climate change. The Philippines has experienced tropical cyclones, earthquakes, droughts and floodings, volcanic eruptions, tsunamis, El Niño and La Niña episodes. There has been loss of human lives, homes and livelihoods, which has resulted in great economic disaster. (Climate Change Research (ERDB-DENR) (2007)).

The economic situation of the country is very poor, 10% of the habitants own 65% of the assets while 1/3 live under the poverty line. Poverty and religious oppositions have led to conflicts that stopped the country from developing the tourism that started to bloom in the 70th. The economic benefit from tourism is therefore not as high as in nearby countries even though the potential of tourism is just as big. ('Filippinerna', 2006) Apart from the Filipinos the most frequent visitors are from Korea, Japan and the United States. The most famous destination is the approximately seven kilometers long island of Boracay with its beautiful beaches, interesting marine life and more than 300 hotels. Unfortunately, the impact of the industry on the island has resulted in environmental problems. This is due to the many visitors, the lack of planning measures and the lack of a sustainable design. (Interview with Mr. F. Agerhem, Swedish Embassy, Manila; 2007-06-04).



Construction workers in Tagatay



Transportation by boat is necessary



Infrastructure on land must be developed

The government is now working to expand the tourism industry and has therefore made large investments (with help of international interests) in the country's infrastructure. There are many critics that warn for the environmental issues of an expansion and request a more sustainable way of constructing new paradises. Fortunately, the awareness is greater than in the 70th, when Boracay became reality but the tourism expansion has to be better controlled and planned to be successful in the future. (Interview with Mr. F. Agerhem, Swedish Embassy, Manila; 2007-06-04).

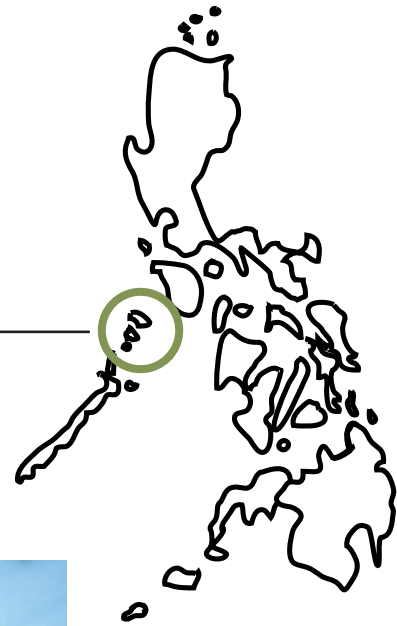
SMALL ISLANDS

Small islands are especially vulnerable to the climate changes because of sea level rise. The islands are also often surrounded by mangroves, beaches or corals that are important to protect to not destroy important and vulnerable ecosystems. Islands are delicate in themselves since they are secluded areas that can either depend on the mainland (causing a lot of unnecessary transports of energy or goods), or be independent and self providing. This, and the fact that the Philippines is a poor country, highly exposed to environmental disasters are the main reasons to why we chose to apply for the Minor Field Studies Scholarship. We wanted to investigate how we, as landscape architects can contribute to protect an island through planning for a sustainable tourism environment.

WATERCOLORS RESORT

After being accepted for the Minor Field Studies Scholarship, we went to the Philippines to cooperate with the landowners Ethel Echevarria-Tornberg and Martin Tornberg to create a sustainable diving resort on the island Lusong. The Filipino-Swedish couple run a diving resort called Watercolors, on Boracay and are because of the over-exploitation on that island concerned about giving better prerequisites for their new resort. With our thoughts about sustainable design together with the future resort-owners desires we tried to create an environment not exceeding the property's carrying capacity. The carrying capacity includes social, economic and environmental goals. The concept of sustainable development within the tourism sector is the key to seeking a more productive and harmonious relationship between the three elements: Visitor, host community and environment'. (Sustainable Tourism - A geographical perspective (1998) p 76) Since we didn't have any information about the actual carrying capacity of the island, we focused on cutting down the need of resources. This, we managed by planning the resort with capacity to grow it's own food and produce it's own energy.

Northern Palawan





CORON MUNICIPALITY

The Coron Municipality is a district in Northern Palawan. Thanks to its beautiful nature combined with popular diving spots, a lot of development is going on in the area. Many lots have been bought and are planned for resorts. To be allowed to build any construction within the municipality the owner must apply for a permit, with a number of forms and a detailed account of the project, to OIC-CENRO in Coron town. The ecological concerns as well as the visual impact are parts of the application form. Furthermore, the area is classified by the government as a protected area, which means that nothing that may harm the area is allowed to be built.

Since Coron Municipality is underdeveloped it's hard for them to provide new resorts with electricity, therefore it's important that the new resorts build up their own system for self provided electricity. Concerning waste products, it's a minimum of 40 meters from the outlet of waste water to the seawater to prevent pollution, and garbage should be taken care of locally. The visual impact of the construction and activity should be as low as possible to protect the landscape picture. The flora and fauna must be preserved by not cutting down vegetation and only adding local plants. It is prohibited to cut down bigger trees, and if one has to be cut down a new one must be planted. In addition, mangroves are protected from any deforestation. Another strategy of preserving ecological systems is the restricted size of exploitation. In every case the OIC-CENRO takes a decision of what is allowed. Luckily ecological solutions are popular both in the municipality and also among tourists. (Brenda Ermita, OIC-CENRO, Coron, interview 2007-05-18)

Northern Palawan is known as "The Last Frontier of the Philippines" because of the high diversity of flora and fauna. The area is underdeveloped with a small population, which is the major reason to the intact environment. The condition started to change in the late 70's with an immigration pressure on the country and logging activities became an important income. The forest coverage has reduced from 90 % of the area to 50 %. (Brenda Ermita, OIC-CENRO, Coron, interview 2007-05-18)

The flora and fauna is very similar to Borneo Archipelago. Its coastline consists of sand beaches, rocky shores, mangrove forests and coral reef. Sand beaches are dominant although mostly narrow. There is still virgin forest in patches to be found but the area has been reduced to 24 % of the origin in Northern Palawan. Most of the coral reef areas have been damaged by sedimentation and illegal fishing, especially destructive fishing as cyanide and bombing. Never the less, the district is still well preserved compared to other parts of the country. The government is aware of these problems and has today a strict constitution of laws when it comes to development, fishing and cultivation. (Brenda Ermita, OIC-CENRO, Coron, interview 2007-05-18)

The area has two seasons, dry and rain season. From January to April the wind blows northeast and from June to August there are southwest winds. The rain season starts in May and continues until December. The heaviest rainfalls usually occur during the month of July. (Brenda Ermita, OIC-CENRO, Coron, interview 2007-05-18)



On the boat from Coron Town to Lusong island.



LUSONG ISLAND

Lusong island is situated between Coron and El Nido (south of Coron Municipality), which gives the island a perfect accommodation for island-cruisers travelling between the tourist attracting areas. The site is also marvellous for diving, surrounded by seven Japanese shipwrecks from the World War II, which has become unique water attractions, known to be one of the best areas for diving in the world. It takes about one hour from Coron town to Lusong by boat. (Brenda Ermita, OIC-CENRO, Coron, interview 2007-05-18)

The island has today no infrastructure at all. There is no electricity and no sewage system and the municipality of Coron has no possibility to provide the island with such. A Pearl farm in the area with high security protects its vulnerable corals from being destroyed by dynamite or cyanide fishing, which has been illegally taking place in many sites around the Philippines. The water is therefore clean and aquatic wildlife is protected. The tidal difference is about four meters. The mangroves around the island are beautiful and enriched with an unique fauna. They are protected by the government and it's prohibited to cut down any trees in those areas. (Brenda Ermita, OIC-CENRO, Coron, interview 2007-05-18)

INITIAL FIELD STUDY



Lusong island, view from South.



Cashew plants



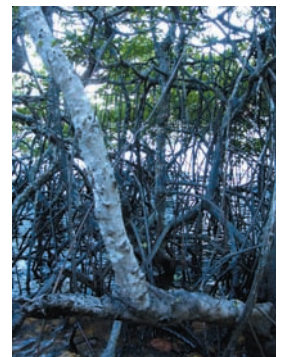
Banana plants



Bamboo forest



Stones



Mangroves



The dwell with fresh water



Pebble beach



Rocks

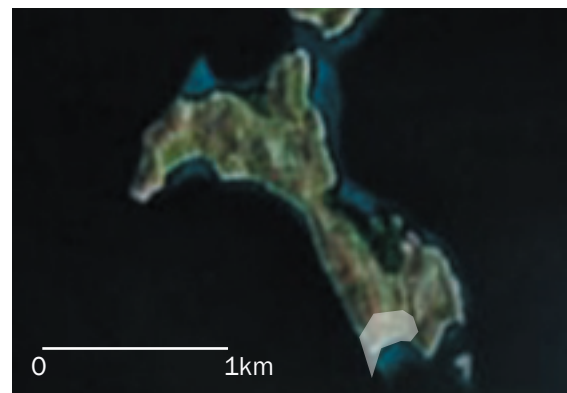
THE PROPERTY

The property is beachfront, facing south towards the sea. The beautiful pebble beach in the colours white - sand - brown and red connects the land to the ocean. Here one may enjoy beautiful diving and snorkeling spots with corals and a shipwreck in the resort's bay-area. The lot is an old property used for light agriculture, which has left traces in form of banana - and cashew trees on its flat area. The hills are covered with green, mainly of bamboo and several bigger trees such as Acacia, Mahogany, Taliseye, Rara, Bintang Tree and palm trees. The hill starts in the east, continues north and makes a turn towards west where the height increases. The hillside to the west beach is steep, and the view from the top here goes 360 degrees around the island. The hills are surrounding a flat area and gives it a sense of room, which suits perfectly for a centre-area of the resort with the pebble beach facing south. During rainy seasons, water fills a pond in this area a few hours a day. Another beach is located on the south west side of the hill with a sunset view. A great resource is a fresh water source that can provide the resort with the water it needs for watering and drinking. Like the rest of the island the lot has no access to electricity nor sewage or waste management which will be taken care of within the property.

The size of the lot is 6, 7 ha, out of what 5 ha are planned to make the resort. The property is the most southern area of the small island, approximately it covers 1/8 of the entire island.

The development plan we received from the owners of the property and the future resort Watercolors includes:

- Mainbuilding: with restaurant, lounge and reception
- 15 - 20 cottages designed for 2-4 persons
- 1 diveshop
- 1 spa area
- 1 staffhouse
- 4 -5 developed lots with houses for sale/rent
- 1 private villa



Lusong Island, the property marked with white.
picture: Google Earth

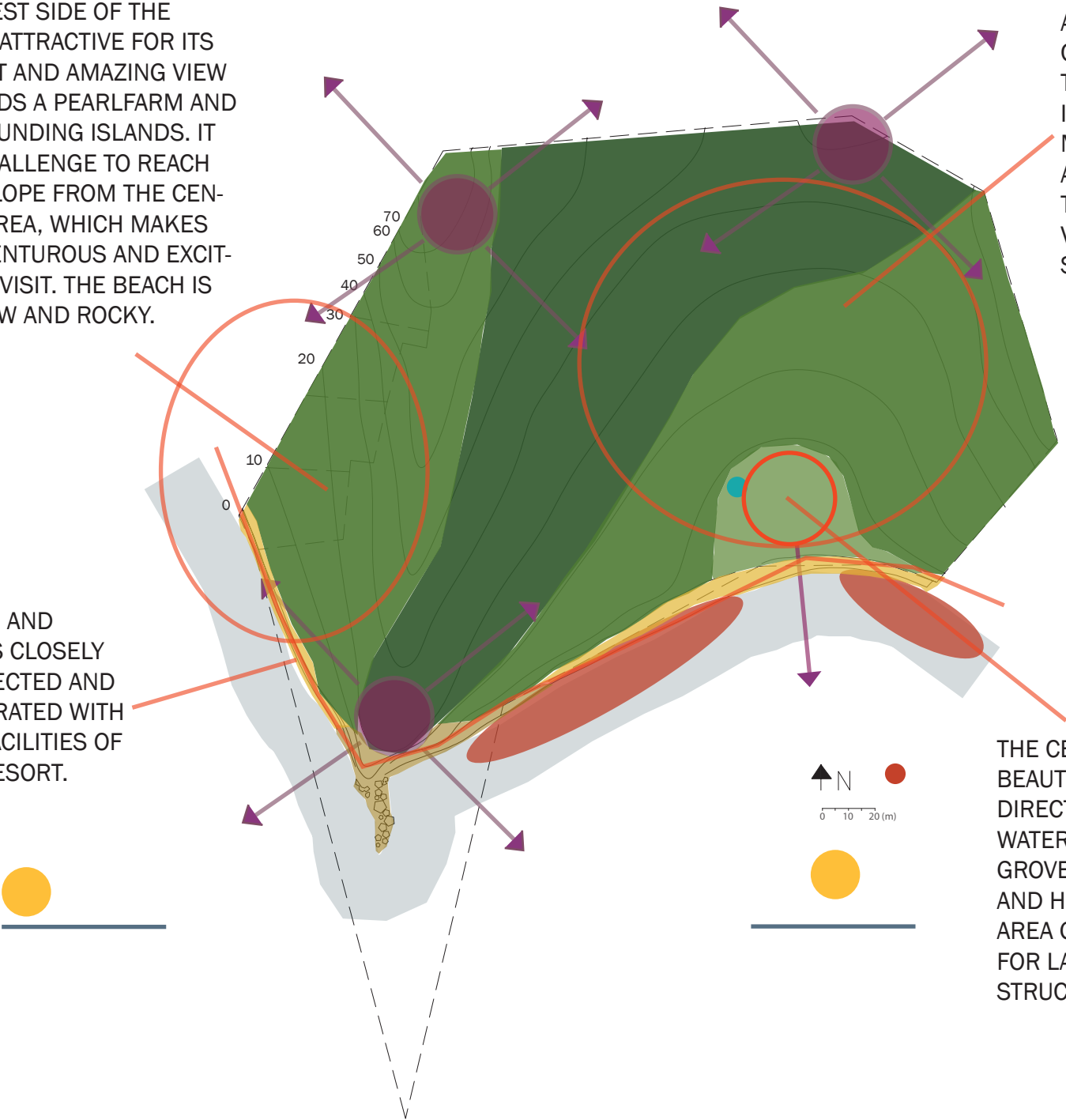
ASSETS

THE WEST SIDE OF THE LOT IS ATTRACTIVE FOR ITS SUNSET AND AMAZING VIEW TOWARDS A PEARLFARM AND SURROUNDING ISLANDS. IT IS A CHALLENGE TO REACH THIS SLOPE FROM THE CENTRAL AREA, WHICH MAKES IT ADVENTUROUS AND EXCITING TO VISIT. THE BEACH IS NARROW AND ROCKY.

BEACH AND ROCKS CLOSELY CONNECTED AND INTEGRATED WITH THE FACILITIES OF THE RESORT.

AREA SUITABLE FOR COTTAGES, CLOSE TO THE MAINBUILD-ING. COTTAGES MAY BE WELL SITU-ATED ON THE HILL TO MINIMIZE THE VISUAL IMPACT OF STRUCTURES.

THE CENTRAL AREA. BEAUTIFUL AREA WITH DIRECT ACCESS TO WATER, BEACH, MAN-GROVES, SHIPWRECK AND HILLS. A FLAT AREA GIVES SPACE FOR LARGER BUILDING STRUCTURES.



	Flat area that was used for light agriculture by the previous owner. To-day there's only a few cashew bushes and banana plants left. Thanks to surrounding hills the area naturally gets borders and a strong sense of room. This site has direct connection to the beach which makes it suitable as a central area.
	Higher vegetation with bigger trees of Acacia, Mahogany, Taliseye, Rara Tree and Bintang Tree mixed with Bamboo.
	Lower vegetation with Bamboo.
	Sensitive area with mangroves and a rich flora and fauna, protected from any deforestation.
	Waterfront
	Pebble beach
	Rocks
	Viewpoints on the high elevations of the property.
	Views
	Sunset
	Sunny most hours of the day.
	Ship wreck that is an attraction for diving and snorkeling
	Water source that provides the property with fresh water.
	Border of the property.
	Elevation (meters above sea level)



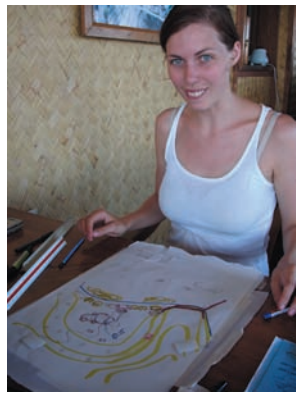
The Miniloc Resort close to El Nido, a high end resort with an environmental awareness situated on a small island.

OBJECTIVES

Our general objective in this study was to design a sustainable tourist resort, with a proposal that gives space for, and actively encourages to an environmental behaviour among guests and employees.

Specific Objectives and Principles for the Resort:

- a concept for a relaxing, attractive and self-providing environment with a design that contributes to environmental behavior
- The design will have a nature oriented approach.
- The existing terrain will be an essential part of the design with viewpoints to improve the experience and recreation on the island.
- Specific examples of sustainable, designed landscape elements.
- Site-specific architecture.
- Good access to the water visually and physically.
- Use of local materials.
- Design for activity as well as relaxation and recreation in balance with nature.
- Self providing with energy and food.
- Grey water for green environment.



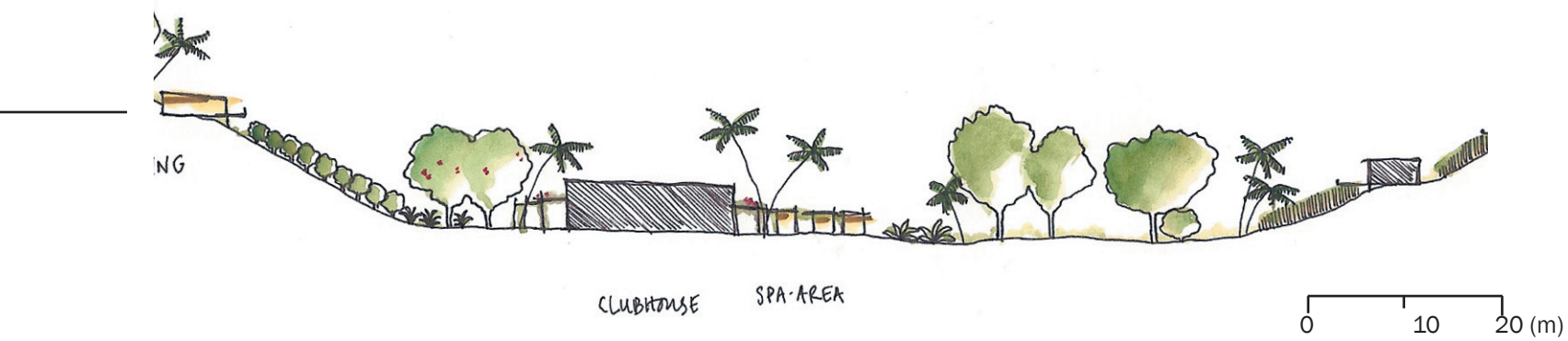
METHODS

In our study we have used the designing of a tourist resort in the Philippines as a method to investigate if it's possible to protect an area through developing tourism. The resort will be situated on an island with little geotechnical information. We have therefore been to the site several times with local experts to tell us about the flora and fauna and we have used GPS instruments to investigate the topography of the property. To get an impression of how well designed resorts may look like in the Philippines, we visited several famous resorts within the country.

We worked towards a design proposal through:

- Sketching and drawing by hand
- Photographing and studying the site
- Studying geotechnical reports of surrounding areas
- Studying plans of the area
- Studying the local flora and fauna
- Meetings with local architects and authorities
- Field studies on other resorts

DESIGN PROPOSAL_____

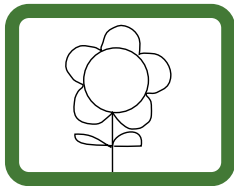


CONCEPT _____



The overall atmosphere of the resort will be elegant, comfortable and nature oriented with an environmental awareness. We want to create a resort in balance with nature and the design will actively contribute to an environmental and healthy behavior among the guests.

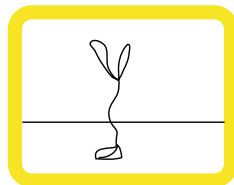
To create a successful design to fulfil both the needs of the resort and maintain sustainability we will focus on the aspects of recreation, activity and nature.



NATURE
The symbol for environmental awareness

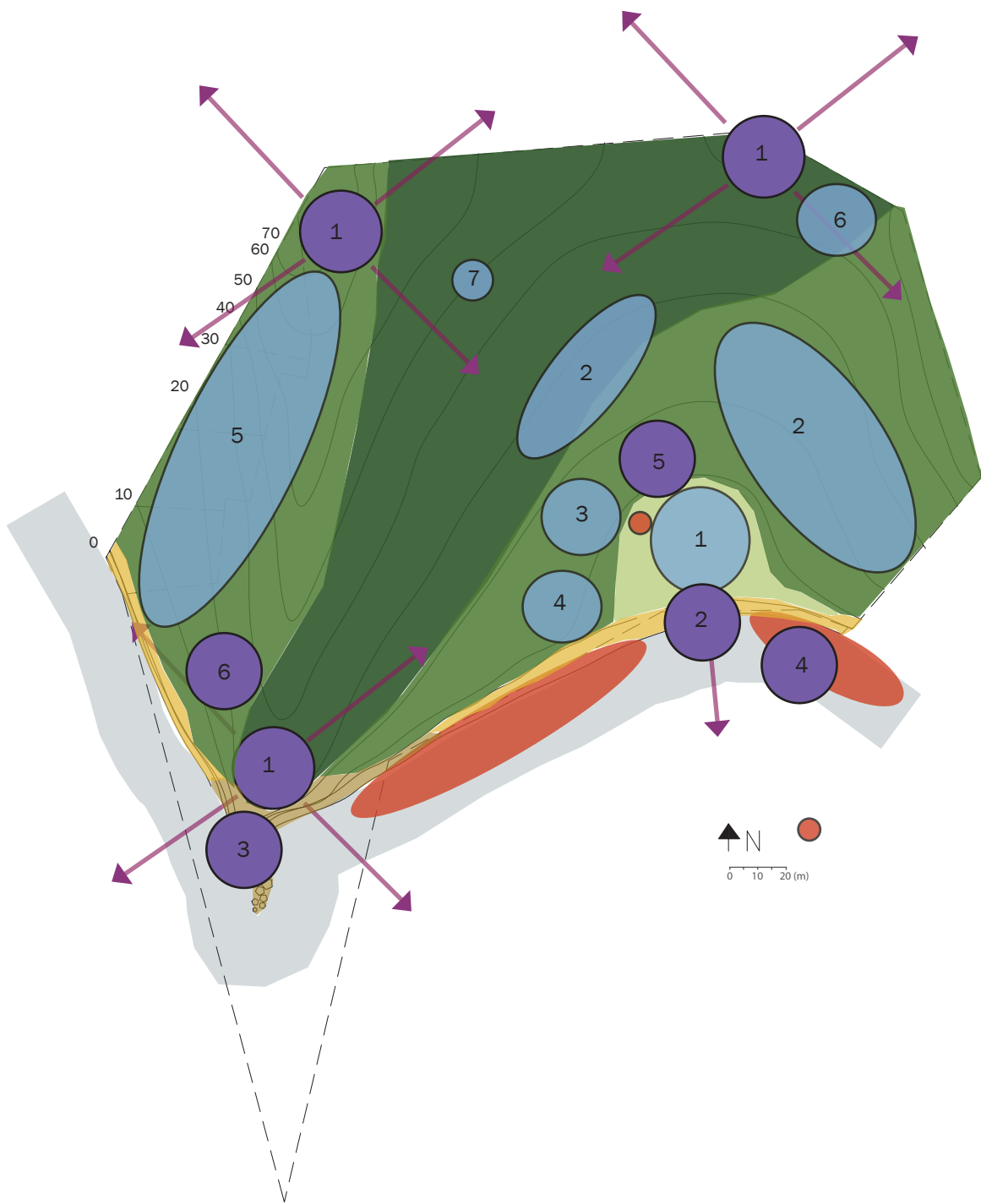


ACTIVITY
The symbol for the activities that makes your heart beat



RECREATION
The symbol for the new energy that relaxation provides

DEVELOPMENT PLAN



According to the initial study of the property and the goals of the developers, new structures will be developed as describes in this plan.



VEGETATION:

Bamboo thicket, that will be made accessible by new paths.



Mixed forest with trees and bushes of various height, 0-20m. All healthy vegetation will be preserved, and dead or weak plants will be removed and replaced by new ones.



BUILDING STRUCTURES:

1. Central area with restaurant, reception, library, spa and lounge.
2. 15-20 Cottages well integrated with existing vegetation and terrain.
3. Staffhouses close to the central area
4. Dive shop with connection to the boat jetty and the central area.
5. House lots for sale or rent, with access to a separate beach.
6. Private villa
7. Watertank for natural heating.



PROTECTED AREAS:

Important and vulnerable areas will be protected and preserved. The red fields include the mangroves, the fresh watersource and the old shipwreck.



NEW LANDSCAPE ELEMENTS:

1. Viewpoints with lounges for recreation and shade.
2. The south beach with connection to the central area.
3. Main jetty and access by boat to the island. Here, the water is deep and the rocks create a natural bridge.
4. Swimming jetty that will give the visitors better access to the water and the shipwreck during low tide. The bottom of the sea is rocky which makes a jetty desirable.
5. Garden with flowering trees, shrubs, vegetables and herbs.
6. Lounge for the sunset view.



MASTER PLAN

Watercolors resort. The green colors show the elevation by 10 meters of the topography.

WATERCOLORS RESORT

The Watercolors Resort will consist of 17 cottages, five villas, one dive shop, two staff houses, one spa-area and a clubhouse with pool and other facilities. There will be two developed viewpoints, a water tank, a boat storage, two jetties, a boardwalk and a sunset deck with a bar.

Thirteen “Bamboo-cottages” are placed on the east slope which faces the beach and clubhouse. Plants will be moved during the construction and replanted after. Further more, new plants will be planted if needed to achieve green walls to separate the cottages. There will be four “Forest-suites” on the north slope on a higher level. The Forest-suites are for the more daring guests that are interested in hiking high for a spectacular view. The environment differs from the bamboo cottages because of more forest-like vegetation with trees and ground covers. The clubhouse is placed very central by the beach with a sun deck and a swimming pool. The building will fit restaurant, reception, library and lounge. The sun deck has a pergola on each side that provides shade and a beautiful green room. In the back of the clubhouse we’ve chosen to create an area for cultivating vegetables, herbs and fruit. In this area is also the kitchen and laundry room located. The area on the east of the clubhouse is the park with flowering trees and shrubs. Close to the beach a barbecue and a beach volleyball court are placed. The clubhouse, park and spa-area are all connected by the green, shady pergola. The houses for the staff are placed in the back with separate entrances to the main building. Finally, the dive shop is situated as close as possible to the main jetty. Because of the heavy weights of the tanks there is also a small storage right next to the jetty.

On the west slope, that faces the other side of the island, four villas are placed. These can be sold or rented out. Their properties are not available for the regular guests at the resort. There is a sunset deck and bar at this side of the island as well. The deck can be reached from different paths from across the island. The access will be by foot and no cars or tricycles are allowed on the property.

The resort’s target group is mostly divers that like sports, care about the environment, wildlife and can afford a high standard. Therefore the resort is actively designed to cover the needs of this target group.

SUSTAINABLE DESIGN



Bamboo-cottage.



Pool and Clubhouse.



Spa-area with a pond in the back of the park.



Jetty for swimming in the south bay.



Boat jetty and Welcome lounge



Green, flowering pergola providing shade.




Shade on the top of the north hill.

The Watercolor Resort is designed in a way that provides simple solutions in heating/cooling, electricity and hot water thanks to the organization of the constructions on the property. The cooling comes basically from shades of roofs and vegetation. There will be a back-up system of air condition run from the solar panels on the roofs of the different buildings. The solar panels will be enough to provide electricity to lamps, air condition and for simple devices like computers and electric razors. The kitchen will use gas for cooking and there will be time restriction on electricity use to save the energy. This, is expected to get well response and contribute to an environmental awareness among the guests. Never the less, a generator will be situated by the staff houses and can be taken in use if it is needed. Further more, a watertank is placed on high elevation to get enough pressure to the showers and tabs in all cottages. As the Philippines has a high amount of sun-hours the water will be naturally heated.

The transportation of food and water to the island will be well cut down thanks to the big kitchen garden with traditionally used herbs, fruits and vegetables. The cultivation will take place in a site, earlier used for light agriculture which justifies its situation and the flora wont change radically.

The resort's facilities consist of natural, light and local materials. Hard ground materials are of minimal use to prevent flooding during the tropical rain period. The property's character will be kept and the visitors will be close to the wild nature of the island.

The resort is planned for aproximately 50 guests. The staff (divemasters, kitchenstaff, gardeners, waiters, spa-staff etc.) is estimated to 30 persons. The private lots are planned for one-family houses with about 4 persons. The capacity of the island and the economic request is estimated by the resort's owners.



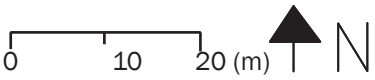


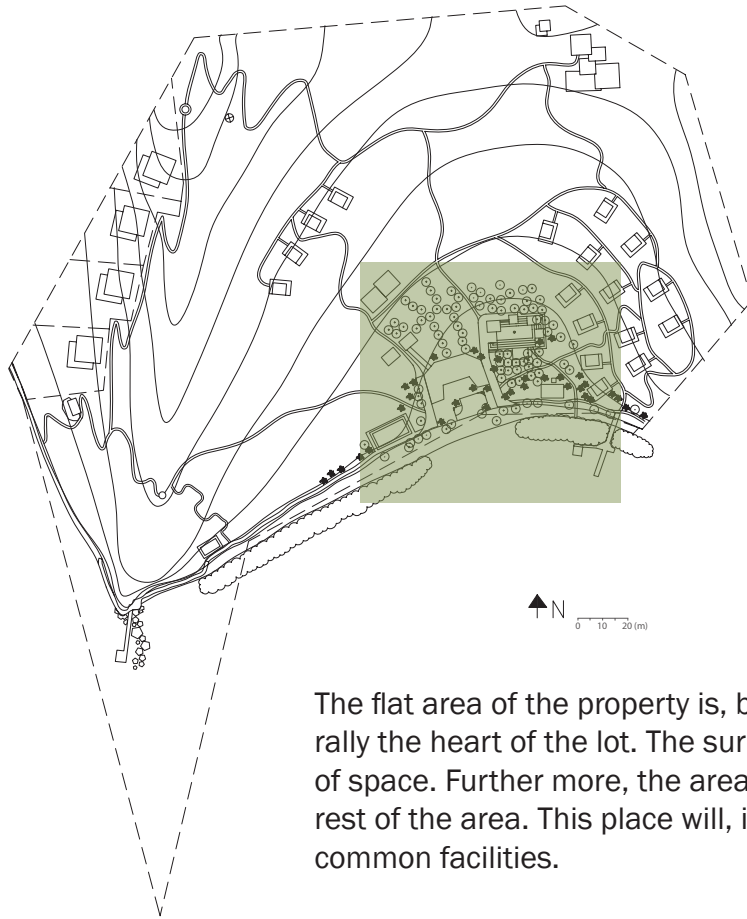
COLOR PALETTE

The colors of Watercolors Resort are chosen to emphasize and blend in with the nature of the island.



CENTRAL AREA





The flat area of the property is, because of its elevation and landscape, naturally the heart of the lot. The surrounding hills and woods give it a strong sense of space. Furthermore, the area connects and gives access to the sea from the rest of the area. This place will, in other words, be the obvious meeting point for common facilities.

One can find the clubhouse, the Spa-area, the dive shop and swimming jetty here. The clubhouse has a superior seaview towards south. A pergola is leading from the clubhouse towards the north hill and connects to the Spa-area where the vegetation is lush. Here, the spot is more quiet and separated from other parts of the resort. The dive shop is placed on the beach walk towards the main jetty next to the clubhouse. The mangroves are a part of the experience and give a nice and wild nature environment to the swimming jetty and mangrove lounge.







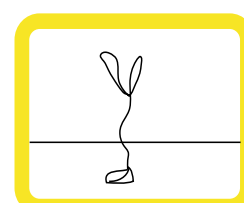
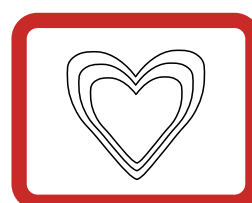
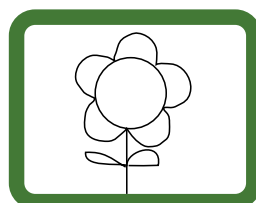
CLUBHOUSE _____

The clubhouse is placed in the centre of the resort with good access to all the cottages and the boat jetty. The building is two stories high with an open structured restaurant on the first floor, serving specialties produced on the island. The bar is situated next to the restaurant, with a lounge area facing the pool. There will also be room for a reception. The second floor will fit library and study rooms

The pool has an infinity edge and corners with hang-outs in the shade. The interior of the pool will be tiled with dark clinker. The wooden deck will be constructed with local wood of high quality and finish. There are plenty of lounge areas around the clubhouse, in the pool, under the pergola and in the bar. The house has a traditional nipa roof and will naturally blend in with the colours of the island.

DIVE SHOP _____

The dive shop is placed next to the beach walk with easy access to the boat jetty and the water. It's a one story building, also with a nipa roof and made of natural, local materials.



THE POND / SPA-AREA



Nipa roof at the resort
Patrick s on the beach

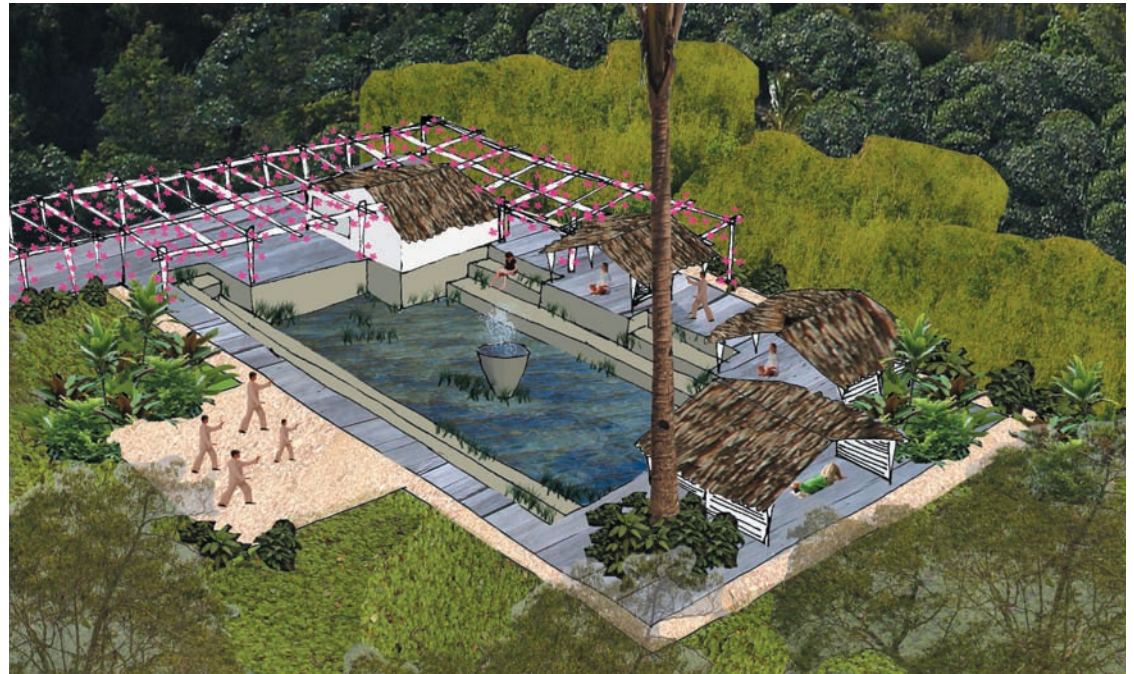


Curtains at Pansuki-
an Resort in Siargao



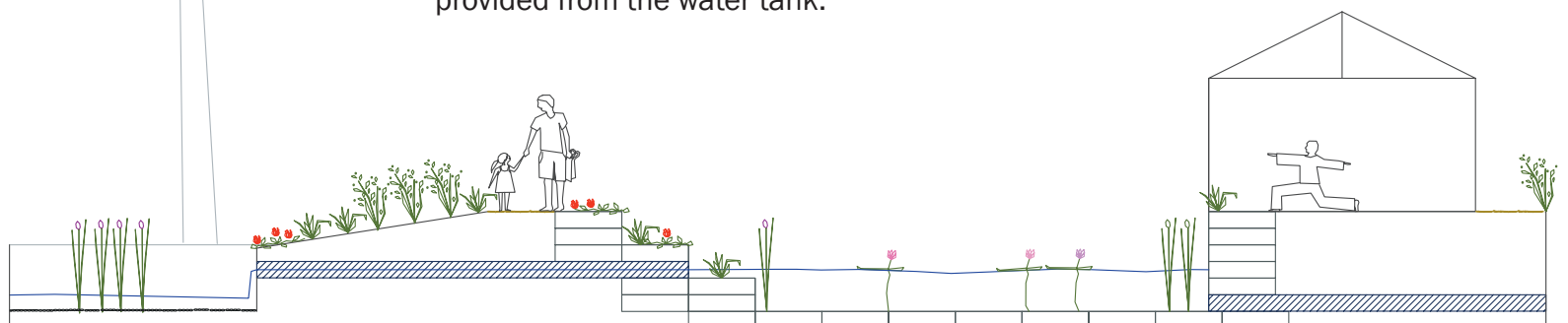
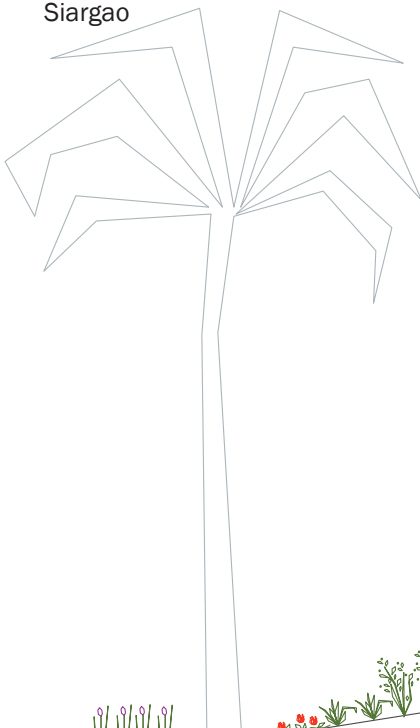
Silvery wood at
Pansukian Resort in
Siargao

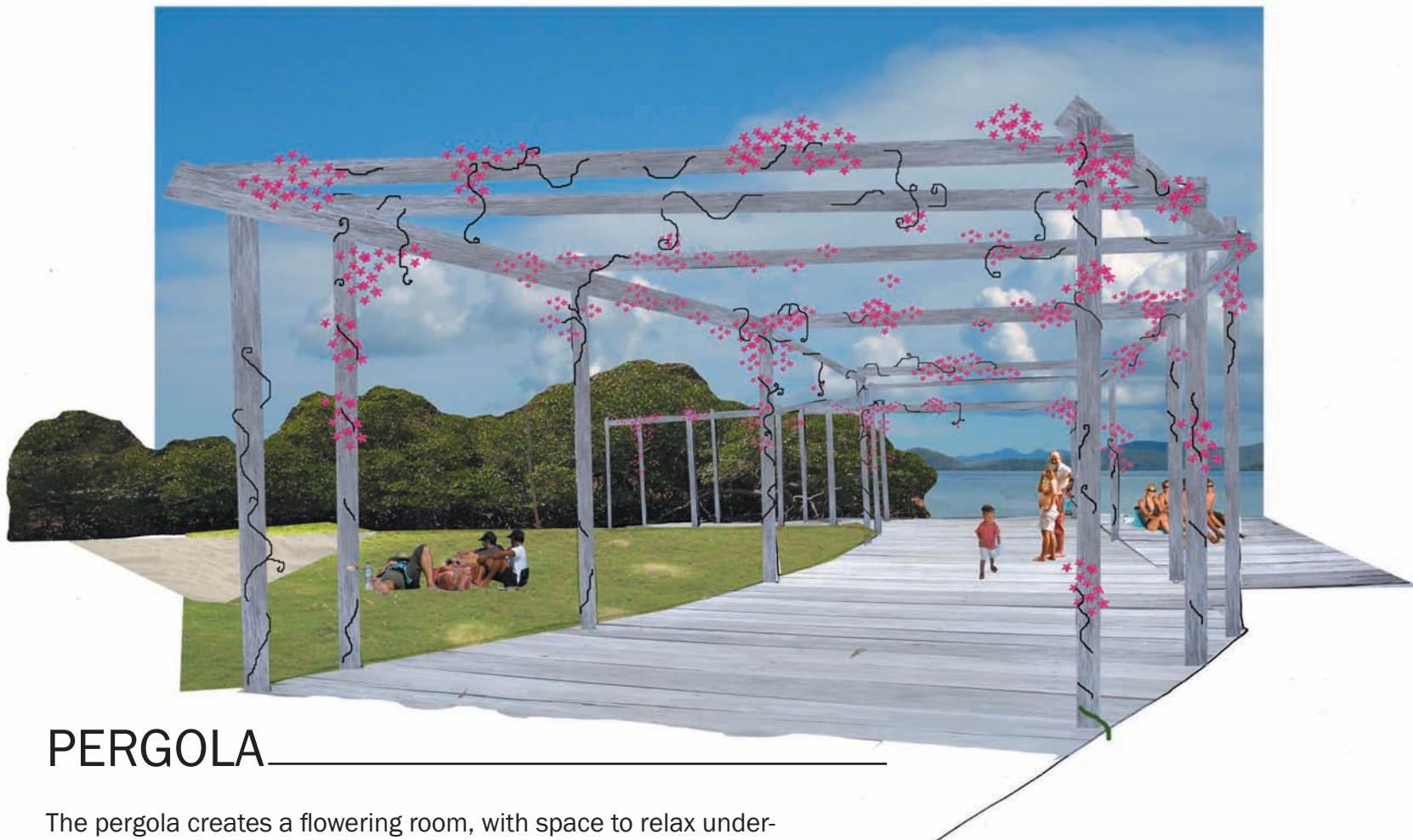
The pond with its Spa-area is a quiet spot. Here is room for a spa-reception and small rooms for massage and meditation. They all have nipa roofs to shade and fit into the environment, and curtains to give optional privacy. The reception is connected to the pergola with a small terrace next to it facing the pond. Welcoming stone steps will be built up around the pond, to integrate the pond with the spa.



The water level in the pond will rise when the tropic rain falls during the wet season. The flowers that grow in the pond can sustain both dry and wet periods. This is a way of using the rain water to create a beautiful environment. It will also stop flooding and heavy rain from destroying the surrounding garden area. In the pond the rain water will have time to sink and filtrate in to the ground.

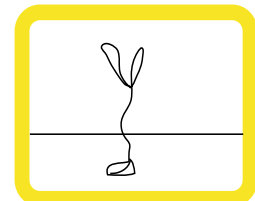
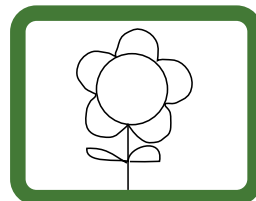
The rooms have all natural cooling by open structures and shade. If needed electricity will be provided from solar panels and warm water will be provided from the water tank.

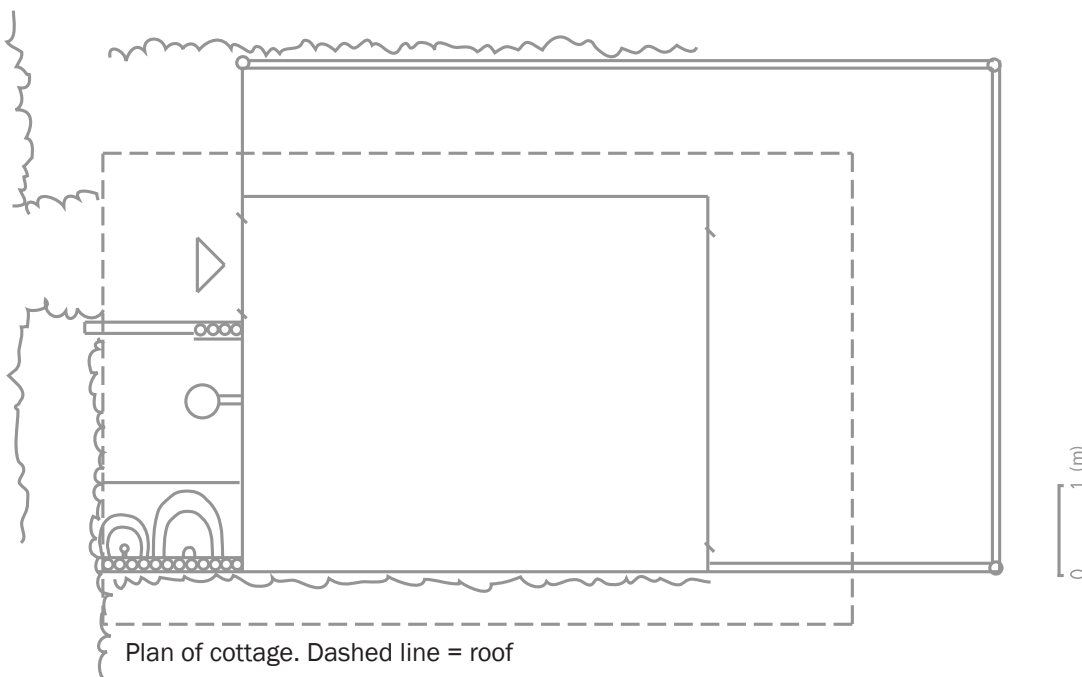
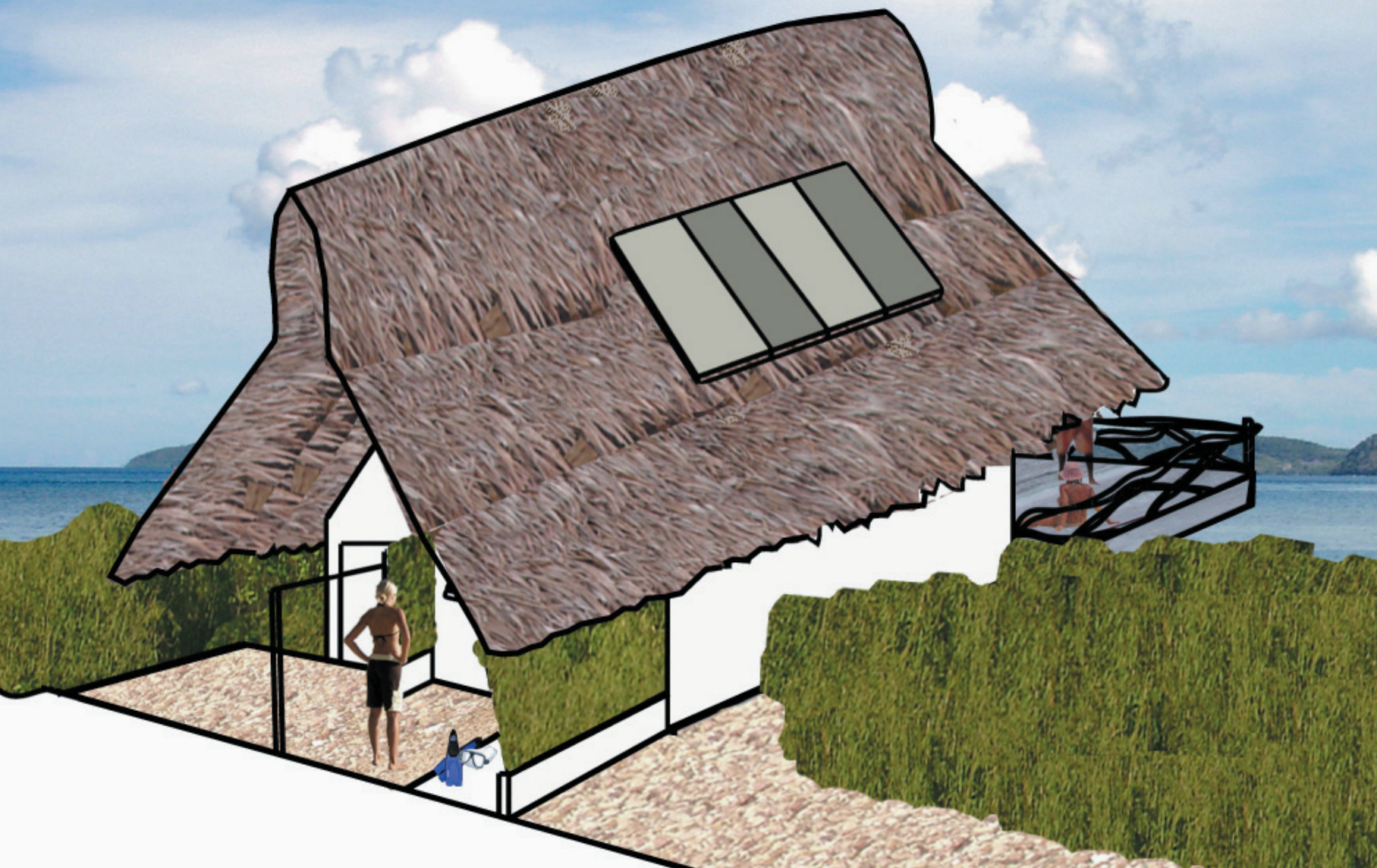




PERGOLA

The pergola creates a flowering room, with space to relax underneath or just use it as a pathway. The pergola connects clubhouse with garden and pond. Climbing plants like Bougainvillea will fill the pergola with flowers and green. It is made of local wood of what the color will turn more into silver the older it gets.

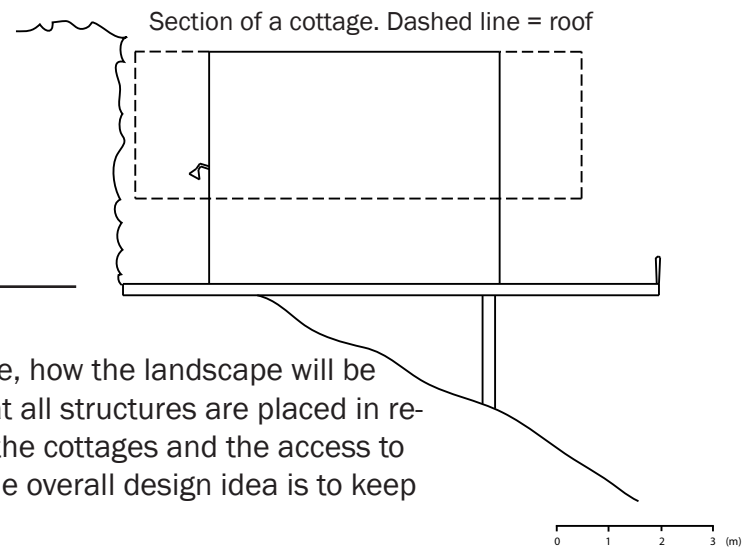




Plan of cottage. Dashed line = roof

COTTAGES

The structures on the island are important for the landscape, how the landscape will be experienced both from land and from sea. It is essential that all structures are placed in respect to the island's terrain and formations. The view from the cottages and the access to them are considered while placing them on the property. The overall design idea is to keep the impression of the existing landscape.



All cottages are designed to consume as little energy as possible, they will have natural cooling by open structures. There will also be air conditioners run by the solar panels that are placed on the roof. All electricity will be provided by these solar panels. Hot water to the shower will come from the water tank, heated by the sun. The sewage will follow the terrain, hidden by vegetation to a three chamber cleaning process. This process will take place at least 40 m from the sea. Where the terrain is steep and rocky this process might be prevented and the water cleaning may be replaced by waterless composting toilets.

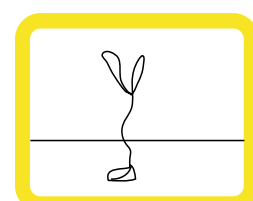
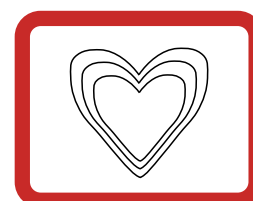
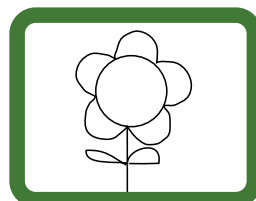
The architecture of the structures will be solved by local architect / constructor.

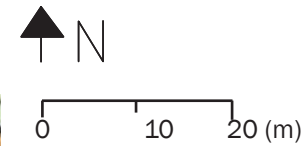
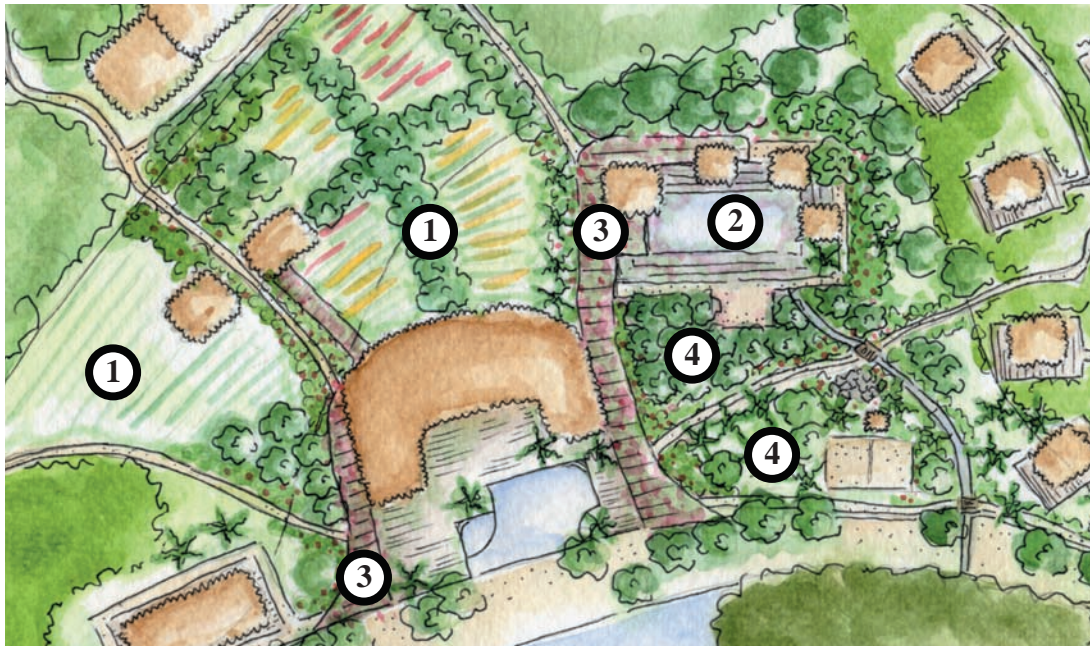
BAMBOO COTTAGES

The Bamboo-cottages are placed on the west side slope facing the ocean, clubhouse and garden. The units are separated by natural bamboo walls for privacy, interacted with its surrounding bamboo forest. Each cottage has an outdoor bathroom with shower, toilet and sink, this to decrease indoor space which will decrease the need of air condition. The structures will be built on poles in the slope and have a sundeck. The nipa roof of the cottage will partly shade the sun deck and make it usable during rains. The two lowest ones are placed close to the beautiful mangroves. Here you can find rare kinds of birds, fish and other animals.

FOREST SUITES

Four cottages are situated on an elevation of 33 meter above sea level. These suites require some effort to get to, but it's worth while when you get to enjoy the stunning view and you will never want to leave this place. These cottages also get total privacy from other guests. The forest around the suites is filled with blooming trees and green ground covers. These cottages are meant for the ones that like to hike and want another experience. The cottages are built in the same way as the bamboo cottages and have the same facilities.





THE KITCHEN GARDEN ①

The kitchen garden will contain various fruit trees, vegetables, and herbs, all to serve the menu of the restaurant with various local dishes. The bigger trees and shrubs will split the plantation in to fields and provide the smaller plants with shadow.

Trees:

- Mango tree
- Spanish Guava tree
- Litchi tree
- Fig tree
- Jackfruit tree
- Avocado tree
- Cashew / Kasoy tree
- Banana tree
- Calamansi tree
- Lemon tree
- Lime Tree
- Orange tree
- Dorian tree
- Breadfruit tree
- Platain Tree

Herbs:

- Aloe vera
- Chili
- Lemongrass
- Mentha
- Basil
- Garlic
- Oregano
- Thyme

Vegetables and fruit:

- Coffee plant
- Pineapple
- Papaya
- Sweet potato
- Eggplant
- Corn
- Cucumber
- Squash
- Stringbeans
- Tomatoes
- Cacao Plant
- Peppers

THE POND ②

The stairs of the pond will carry flowering plants and grasses that can sustain the part time wet and dry biotop. In the water floating herbs will grow such as water-lettuce and lotus flower.

Aquatic plants:

- Victoria amazonica*
- Giant water-lily
- Nymphacea capensis*
- Cape blue water-lily
- Pistia stratiotes*
- Water-lettuce
- Nelumbo nucifera*
- Sacred lotus
- Zingiber zerumbet*
- Wild ginger
- Neodypsis decaryi*
- (palmtree)
- Cassia 'Palawan Cherry'
- Juncus ensifolius*
- Carex acutiformis*

GARDEN

The garden is a lush place with many smaller rooms where everyone can find ones own spot.

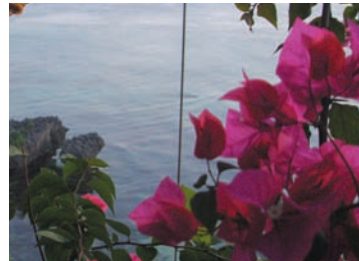
The vegetation is flowering and organized in a nature oriented way. Most of the trees and plants are from the island and its surroundings, and will therefore grow nicely in its own habitat. The flowers are mostly white, pink and red.

THE PERGOLA ③

Climbing, flowering plants will cover the pergola and create a shaded walk between the different gardens

Climbing plants:

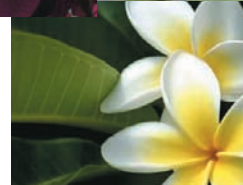
- Petrea volubilis*
- Bougainvillea* - various colors
- Hibiscus* - various colors



Bougainvilleae



Private garden, Manila



Frangipani Tree

PARK ④

The park will be filled with blooming trees, fruit trees, exotic shrubs and flowers. This to decorate, shade and organize the garden around the clubhouse and the beach.

Flower:

- Ravenala madagascariensis*
Travelers' tree
- Strelitzia nicolai*
Bird-of-paradise (white)
- Strelitzia reginae*
Bird-of-paradise (orange)
- Etlingera elatior*
Torch ginger/Porcelain flower
- Hymenocallis caribaea*
Spider-lily
- Justicia candicans*

Trees:

- Wodyetia bifurcata*
Foxtail palm
- Sesbania grandiflora*
Hummingbird tree
- Dracaena draco*
Dragon tree
- Butea monosperma*/ "Fire tree"
- Flame-of-the-Forest
- Acacia
- Bauhinia blakeana*
HongKong orchhid tree
- Buri Corypha elata*
Buri palm
- Plumeria obtusa*
calachuche
- Palm tree
- Frangipani tree

Green:

- Codiaeum variegatum*
Cruton
- Licuala peltata subsp. sumawongii*
- Dypsis lutescens*
Bamboo palm
- Chamaedorea metallica*
- Xanthosoma mattafa*
Malanga
- Philodendron 'Autumn'*
- Dieffenbachia 'Tropica Marianne'*
- Alocasia plumbea*
- Aglaonema costatum*
Fox's Aglaonema
- Hypoestes phyllostachya*
Freckle face
- Philodendron x Burgundy*

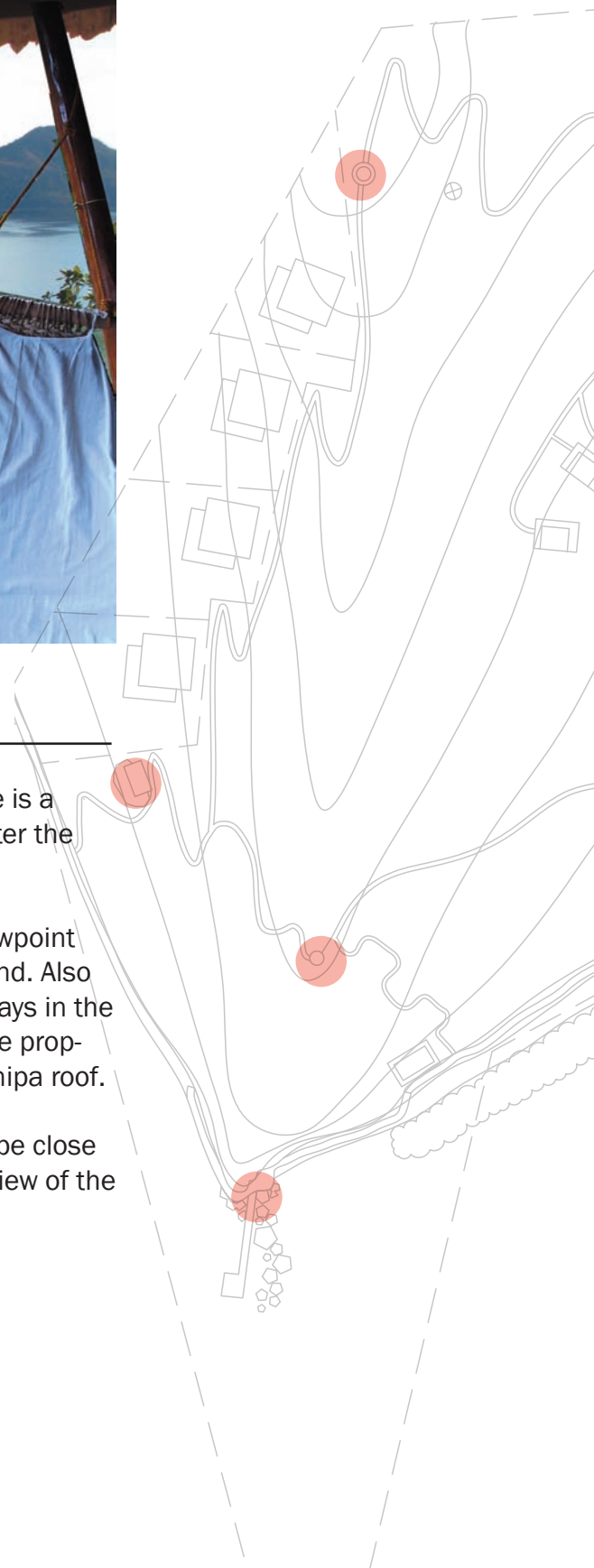
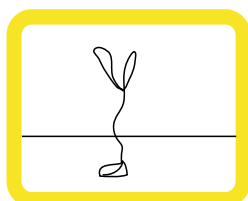


VIEWPOINTS / LOUNGES

On the very top of the property you almost have a 360 degree view. There is a viewpoint with a sitting area and a nipa roof to provide shade and rest after the hike up the slope.

On the rocks in the south part close to the main jetty there is another viewpoint and sitting area, where one can see the boats come and go from the island. Also here is a stunning view of the archipelago. To be able to rest during hot days in the shades or for romantic privacy there are cosy, relaxing lounges around the property. There are some under the green roof of the pergola and some with nipa roof.

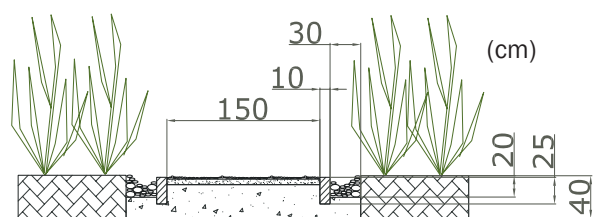
A sunset deck with a bar for refreshments is located on the west side slope close to the west beach. The sunset deck is a relaxing spot with a marvellous view of the sunset.



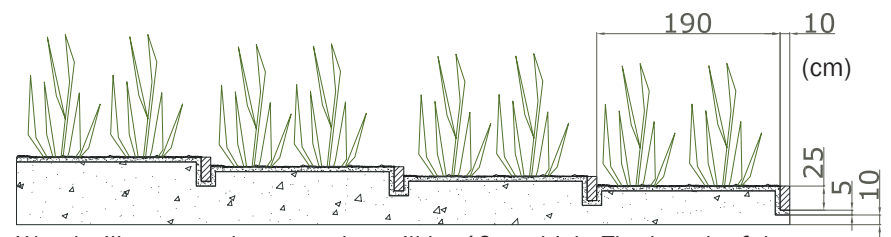


PATHS

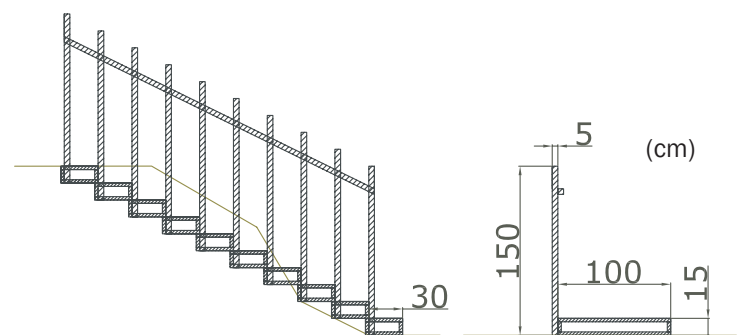
The resort's different facilities will be accessed by foot and connected by paths and steps. The paths cover consists of pebbles, shells and gravel that are found on the property and replaced by foundations where the buildings will be. The colors are white, sand, brown and red.



As the section shows, wood will found a frame for the steps. On both sides of the path waterchannels will transport the rainwater, down towards the pond.



Wood will support the steps that will be 10 cm high. The length of the steps varies with the hill's steepness.

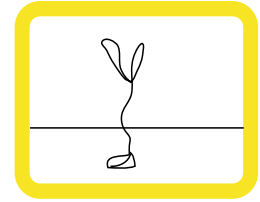
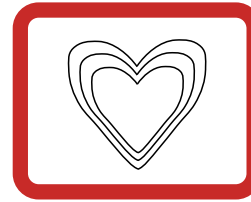


On the steepest parts where the fall is 1:2 or more the stairs will be 1 m wide with 1,5m high railings.

BOARDWALK



Boat jetty, boardwalk and welcome lounge.



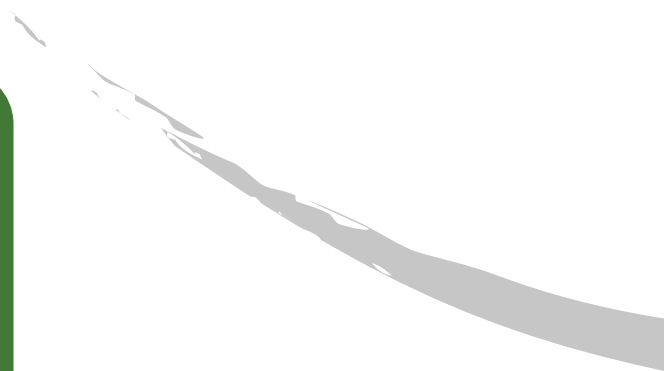
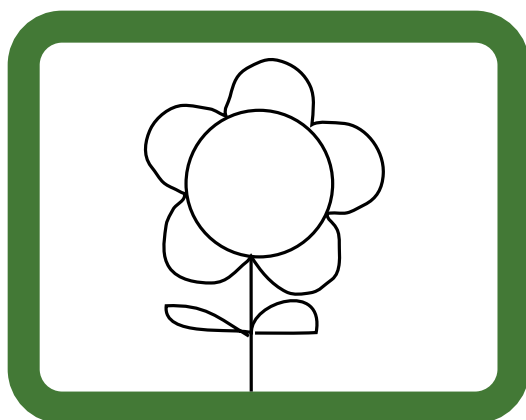
The wooden boardwalk will lead around the cliffs from the east to the west beach, connecting to the boat jetty. Where the jetty meets the cliffs on the beach, a bigger deck is built. This, with a roof to serve as a welcome lounge or where to sit comfortable and wait for the boat or the diving session. **The rocks form two spaces at this spot where benches will be built.**

A swimming jetty will be built integrated carefully with the mangroves. The boardwalk will give access and an ability to enter the mangroves without stepping on the vulnerable roots. The forest has created an interesting transition between beach and ocean with plants growing both on land and in the water.



Swimming jetty and Mangrove Lounge

SUMMARY_____



ENVIRONMENTAL ASPECTS

The existing flora is a cornerstone in the design and the ecological diversity will be protected and developed. All added plant material is of local origin to maintain the balance on the island. Healthy trees will be kept and more **will be planted** to provide shade and prevent erosion during tropical storms.

Natural cooling is provided by **shade** from vegetation and construction.

All garbage that can be taken care of on the island will stay. The rest will be collected and recycled at the mainland, e.g. bottles, cans and plastic.

Warm water will come from a black water tank, placed on high elevation which will make the water pressure sufficient for all showers and tabs. The water in the black tank will be **heated by the sun** in a natural way.

Most daily **food** products will be **cultivated within the resort** to avoid unnecessary transports to the mainland. All cultivation will be organic.

Energy will come from **solar panels** placed on roofs to provide the resort with the electricity that is needed.

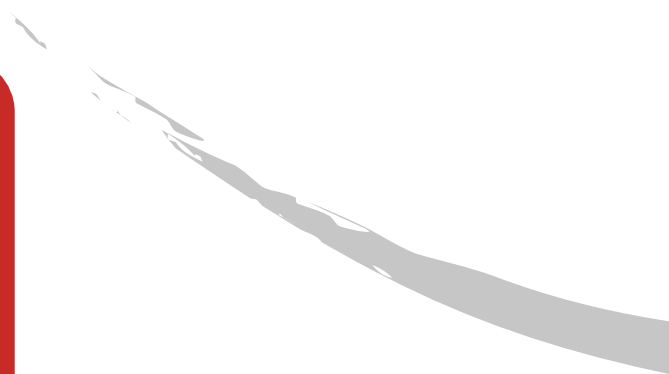
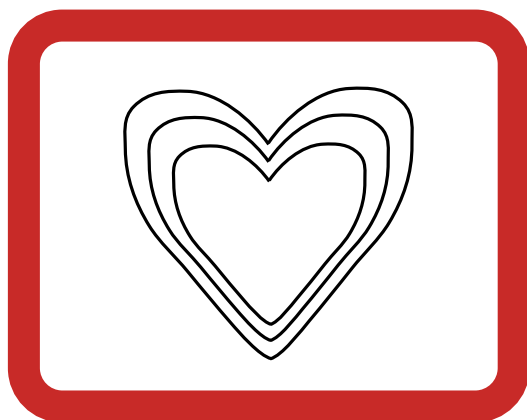
Grey water, such as rain water, will be used for **watering** and creating **aesthetical environments**.

The pond serves as a rain water basin that fills up during heavy rains. At a certain level the water will flow out in a small stream to the ocean.

Activities on the resort are **educating** and do **not require energy**; diving, hiking, snorkeling, kayaking and swimming, even though short boat rides to dive spots will be needed.

The **design** will actively encourage **environmental behavior**. By integrating cultivation, use of local materials and solar panels, the **awareness** will increase.

Paths around the area encourage the guest to **explore** the nature of the island. The viewpoint lounges invite and access to sit down and enjoy the most beautiful views. Hiking and diving are an essential part of the resort which is a way to explore but also to **understand** and **respect** the nature.



ACTIVITIES

The activities on Watercolors Resort are planned to be **stimulating** and **challenging** as well as in balance with the nature. The activities will **educate** the guests and give them a better understanding of the environment on the island. Living here will give an opportunity to actively take part of a sustainable environment.

Diving is one of the biggest parts of the activities on the resort. There will be dives with dive masters everyday.

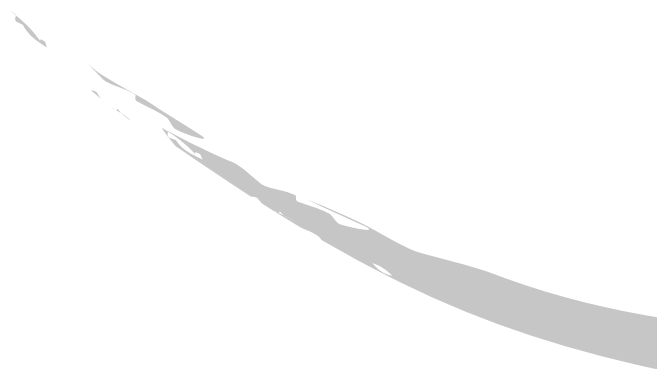
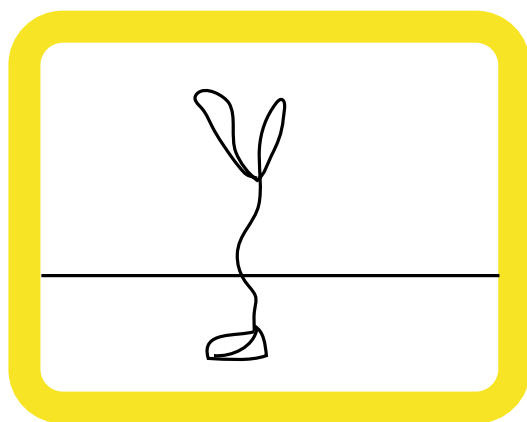
Swimming and **water games** will be popular in the clubhouse pool and the two jetties will give good access to swimming, **kayaking** and **snorkeling** in the ocean.

The clubhouse will have a **library** where Open Water Certificate students or more advanced diving students can gather information and study.

The resort's approach to the island is to **explore** and **care** about its fantastic sites. There are different **tracks** to **hike** to reach marvellous views with inviting lounges, either round the cliffs or over the hill. These will encourage the guest to walk and explore different parts of the island. The property's elevation varies which contributes to a challenging trek around the lot.

In front of the Clubhouse is the pool and nearby is the **beach volley** court.

The Spa-area is a centre for **Yoga** and **meditation**.



RECREATION

During a stay at Watercolors Resort, the guest will be refilled with new energy and get **rest** from different forms of pollution, stress and noise. The resort proposes recreating activities in combination with **soft lounge areas** with **stunning views** to make the relaxation total.

The **Spa-area** is a beautiful site in the park with opportunities to take care of the body with **massage, Yoga** and **meditation**. With the pond and pergola an exterior room is emphasized and established.

A good opportunity for **activities in water** is an important asset for recreation.

The possibility for guests to pick their own vegetables and fruit in the **garden** increases well-being and **creativity**. The resort offers both recreation in terms of activities and in terms of the environment and design. The colors of the resort are all in **balance** with the island and the atmosphere is in **harmony**.

The area is spacious which gives room for curiosity and creativity. Everyone can find their **own spot** for recreation here.



Balinghai Resort, Boracay



Balinghai Resort, Boracay



Fridays, Boracay



Miniloc Resort, El Nido



Hot Spring, Coron



Pansukan Resort, Siargao



Private garden, Manila



Pansukian Resort, Siargao

INSPIRATION

Throughout our journey in the Philippines we have seen a lot of examples of well designed resorts.

The resorts that we visited are all small scale projects with simple solutions to reach sustainability.

We find that the resorts use similar materials, as in nipa roofs, wood constructions, and vegetation. The structures melt nicely into their surrounding environment, this thanks to the materials and use of the properties. The access to different facilities is by paths or boardwalks. No cars or other vehicles are allowed in the area. Furthermore, due to the hot climate structures can be more or less open and vegetation quickly become extremely lush and big.



Private garden, Manila



Pansukan resort, Siargao



Private garden, Manila



Summer house under construction, Architect Alexander Co, in Tagaytay.



Meeting with Martin and Ethel Tornberg, Manila.



Private garden, Manila.



El Nido by boat.



Hotels on the beach, Boracay.



Temporary office, Banwa Lodge, Puerto Princessa.



Pansukan Resort, Siargao.



Mangoves in Siargao.



First Masterplan of the Watercolor Re-



Sketch, central area.



Sketches, details around the central area.

DISCUSSION

In this Minor Field Study project we expected to, through a small scale project, learn how landscape design can be a tool in the process towards local goals and international policies. We wanted to experience working in a less developed country and get a better insight in the tourism industry and its positive and negative effects on people and nature. We expected and wanted to learn about how a small secluded area can be independent from its surrounding through self providing energy and food. This is what we have strived for when giving an initial design proposal for the planned resort Watercolors on Lusong Island.

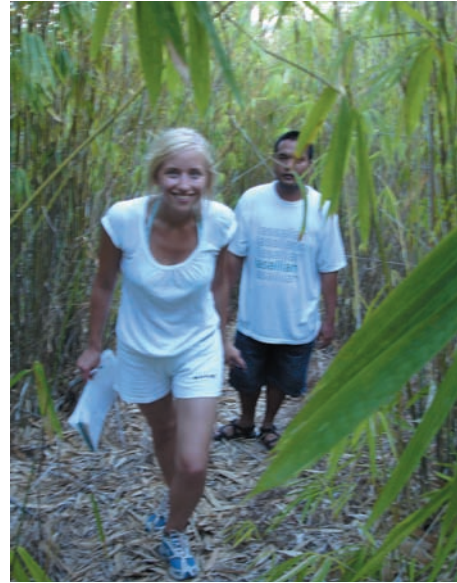
A lot of the ideas that we have come up with are of simple character and focused on cutting down on the need for energy and recycle nutrients, rather than on technical solutions that may not be sustainable in the long run. This is done by providing the area with a lot of shade as well as constructing traditionally for natural cooling. The energy dependence is cut down by giving the guests activities not requiring any energy. A lot of those activities are also educating in a way that the experience let you study the environment on the island when for example hiking or diving which will make the guests interested and caretaking. The majority of the resort's food supply is produced within the area, cutting down need for unnecessary transports to and from the mainland. These measures are examples of small things that can be done within the tourism sector to cut down energy use and make the tourists more aware, which would make a big difference to the industry in a bigger perspective.

To work in a developing country like The Philippines has been a very good experience. The work may not be done as effective as it is when you have access to technical equipment in terms of computer programs or an office where to collect sketches, books and other material. The hot climate sometimes makes it hard to focus and think when all you really want is to go to the beach and have a refreshing swim. The research is also more difficult to do because of the overall lack of knowledge. A lot of time gets wasted interviewing people in whose position we are used to expect some answers. But after some time we found a way of working, what questions to ask and so on, and thanks to helpful supervisors and authorities we have obtained results of which we are very content.

Of course, it's not obvious that the area that we have worked with will be better sustained with our resort compared to with no resort at all. There is always a risk that the resort will somehow stress its environment. Never the less the regulated plans will protect the area from other less sustainable tourism or activities. In this case, people with an environmental awareness have an economic interest in protecting this area, which might be enough to preserve it and its surroundings. The activities that the guests are coming for depend on a healthy water environment and a healthy island.



Sleepless nights on wood.



Hikes and field-excursions.



Long travels on dirt-roads



Happy people all along the way



It was difficult for us to estimate how many people the resort could keep to still be able to produce its own energy and food, especially since we don't know how much water can be fetched from the well. At the same time the amount of visitors must be big enough to support the resort. These numbers were figured out from the resort-owners before we came so what we did was trying to design the resort to fit all tourists with sustainable solutions for this amount. However, if the design and planning is good enough the amount of people will not be a problem. Most environmental damage is caused by a lack of plans, policies, and action to prepare for economic growth more than the erosion and pollution of resource caused by the number of visitors. (Tourism Planning: Basics, Concepts, Cases)

In a developing country, work for a better environment for people and nature may seem worthless when knowing that the moral of common responsibility may be very low in some cases. We visited the most exploited island in the Philippines, Boracay where foreign interests establish new resorts with total ignorance of the environment. However, the area we worked in seemed to have quite a strong municipality, with an awareness of its environment which made our work feel worth while. The authorities that we were in contact with, especially Mrs. Brenda Ermita at the 'Department for Environment and Natural Resources Office' was very helpful and provided us with our own assistant, Mr. King, to facilitate our work during our stay. The local chief "Barangay Captain Yuri" guided us around the area and made us feel very welcome.

It was also a very nice experience to work with a real resort that is going to be built within a few years. A fictive project would probably not give our research as good results, since a lot of the material was found thanks to help from local interests, who want to preserve the area. Hopefully a lot of what we have done can be used when building the resort, even though plans may not be exact because of the lack of geotechnical information. We did some inventories of the area on our own but because of limited time and Gps-results with a 10 m margin of error, more research has to be done before constructing the resort. And the different areas must of course be detailed, something that we couldn't do because of the limits of this field study.

It is not only a great opportunity to work with a project abroad, it is a fantastic experience as a student to get professional contacts and feedback to one's work. The time in the Philippines didn't just give us knowledge about tropical resorts but also an insight of the future field for landscape architects. Due to the great development and increased awareness in this country, the Philippines as a part of South East Asia will have even more to teach us and be an interesting spot to work at.



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