

# RESORT BENOA<sup>©</sup>



A mutual project of the  
**European Asian Federation**  
and the  
German - Indonesian Federation to promote economy, science, tourism and cultural exchange e.V.

## PROJECT NR. 3

### „RESORT BENOA“

(An underwater hotel with submarine and dive basis on Bali)



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## THE IDEA

Indonesia has an underwater world, which is not only scientifically interesting, but also one of the most beautiful on earth for divers and tourists. Watching sea biologists and scientific research teams during their work is impossible almost everywhere on this planet.

Since marine-biological research is connected with high and expensive technology resources needed, it is obvious to connect the interests of both groups. Therefore tourists' money finances scientific research and at the same time people with a number of interests can look over scientists' shoulders.

There is no better place on world than in Bali to realize this project.

An underwater hotel in the middle of the magnificent marine flora and fauna at five meters depth.

So far only one hotel of this kind was already realized in this world, at the coast of Key Largo, Florida and it is always booked up.

Jule`s underwaterlodge in Key Largo



A hotel of this kind can be used simultaneously as underwater basis for scientists.

Two submarines, a smaller for one-day-trips and a larger for cruises lasting several days.

## THE BACKGROUND

Tanah Air "Land under Water" Indonesians call their mother country.

Indonesia is - according to European standards - a complete continent. If you put a European map and an Indonesian map over each other, with a length of 5,400 km from West to East, it would reach from Spain up to the Urals. Each of its twenty seven provinces has the size of a small or middle state in a European scale.

The islands of Indonesia are distributed in the sea with a surface of 8 millions square kilometres.

Due to the variety of this country it is a eldorado for tourists and scientists and thus the ideal location for our project.



A huge variety of sea inhabitants and very different plants can be discovered by the visitors.

## INDONESIA

The independent Republic of Indonesia consists of approximately 17,508 islands.

Approximately 6,000 islands are inhabited and everyone is unique in cultural, historical, economic, botanic and geographical respect.

The most important and most well-known islands are:

Java, Sumatra, Bali, Lombok, Sulawesi, the Sunda islands, Irian Jaya, Kalimantan, Molukken, Komodo, Flores and more.

### Map of Indonesia



More than two thirds of the land of one of the largest islands of the earth, Borneo, belongs to Indonesia.

The capital of Indonesia, Jakarta, with more than seven 7 million inhabitants is located on the island of Java.

## BALI

The Hindu island of Bali has the highest tourist figures in Indonesia and surrounded by outstanding diving areas. These diving areas are on highest international standard (CMAS, PADI) and are ideal for the location of this resort.

At the same time Bali with its cultural surrounding represents inestimable recreational and leisure-time opportunities.



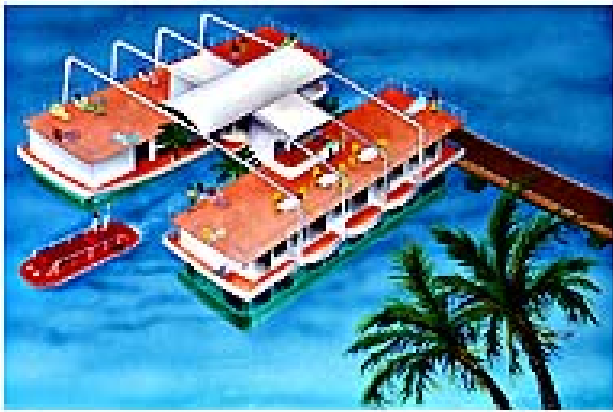
## THE PROJECT

Historically it has only been possible to spend some time under water, you had to use old fashioned laboratory equipment, which has not been very comfortable.

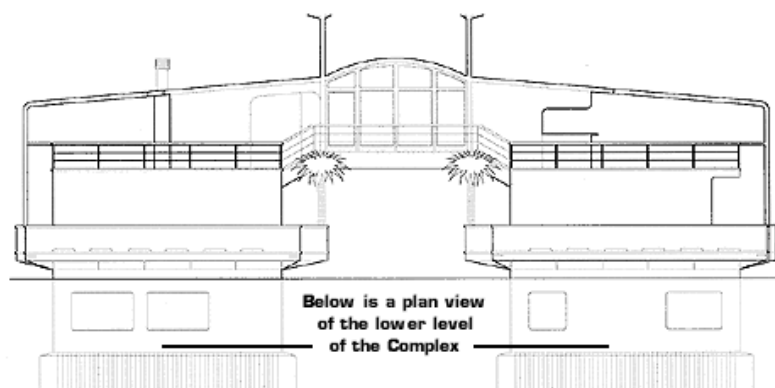
With more advanced technology it became possible to develop and build underwater houses, not only for scientists with supply from the outside. This system is called a lower able ship.

We are planning such a hotel for twenty tourists and five scientists simultaneously on Bali.

Top view



Shape view



## PROJECTDETAILS – UNDERWATER HOTEL

The hotel one will be built with three levels. From top to bottom these are:

Level 1 – above water

On this level is the lobby, Snack bar and a sun terrace for guests and visitors.

Level 2 – above water

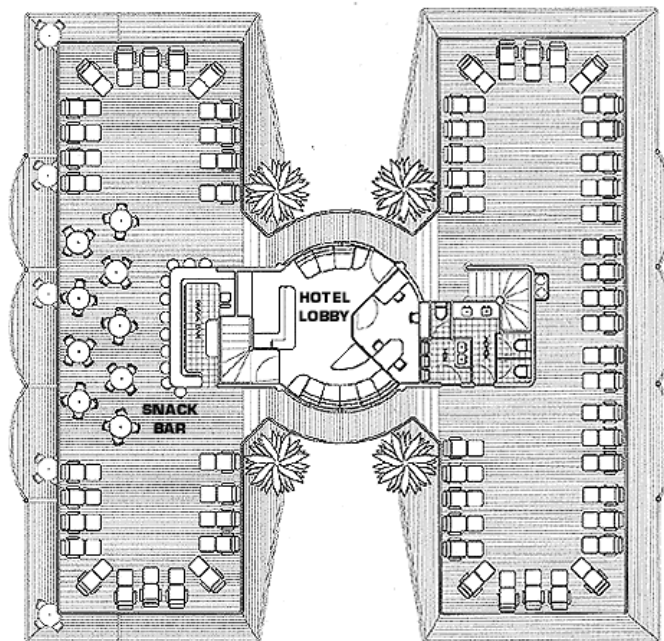
On this level are laboratories for the scientists, operating areas such as kitchen and administrative office, machinery and technical equipment and additionally all equipment for day-to-day live of guests and gift items can be found there.

Level 3 – under water

The third level accommodates an underwater restaurant and a bar. The shatterproof glasses on this level offer an opportunity for guests to observe the underwater world thoroughly and watch the scientists working under sea level during their work.

Besides levels 2 and 3 accommodates overnight stay possibilities and laboratories for the scientists and guests.

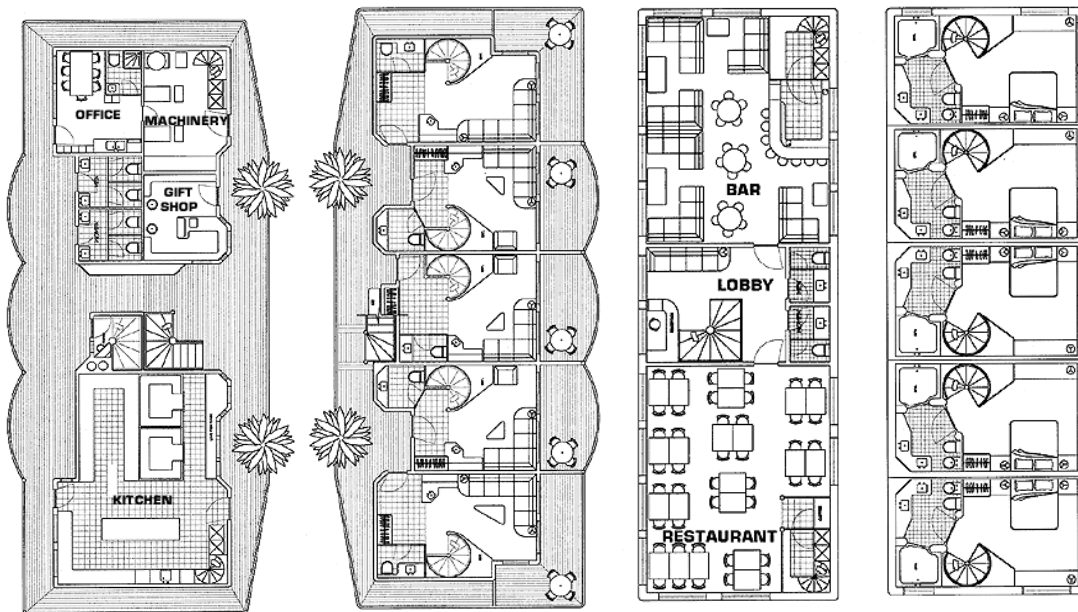
Level 1 – above water



## PROJECTDETAILS – UNDERWATER HOTEL

Level 2 – above water

Level 3 – under water



The underwater hotel has most modern, technical equipment.

In the laboratories are all necessary research machinery and pieces of equipment.

Beside telephone and TV the hotel offers a modern multimedia solution, which makes it possible for all guests, to use various video, DVD - and music offers at any time. Also world-wide live transmissions of concerts and sporting events are possible through a large picture screen.

Plus communication with picture and sound as well as internet conferences and information research via internet are at your disposal. The underwater hotel offers also comprehensive possibilities to divers. Led night diving and training courses are offered according to all relevant international standards (CMAS, PADI).

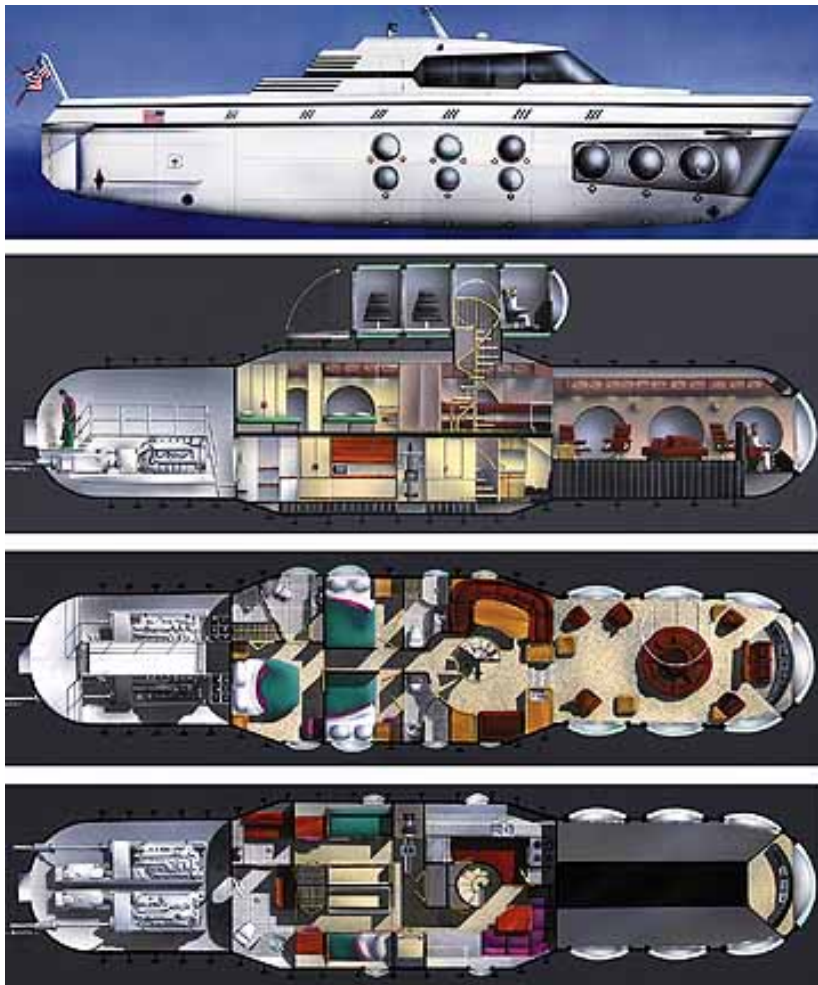
## LONG-DISTANCE – DIVING BOAT

for research and tourism

This type of boat is a ocean going ship developed according to the highest technical standards. It can operate above water level with all comforts of a large yacht and during under water operations as a submarine (diving down till 300 meters below sea level).

With a length of 36 meters, a width of 6.5 meters and a weight of 380 metric tons, the boat has a maximum speed of up to 15 knots.

The boat - used as a submarine - can stay in water up to 20 days, has a operating range of 3,000 nautical miles and has lock basis enabling up to 48 passengers to enter and exist the boat under water.



## SUBMARINE

for underwater excursions

This type of boat is a state-of-the-art submarine with highest technical standards.

It permits a total of 36 passenger's excursion in up to 100 meters of depth.

It will be used for one- to two-hour trips in the underwater world for guests of the hotel to reconnaissance the beautiful underwater world.

The excursion can last up to twenty four hours. A sufficient supply of food and beverages for the guests is ensured. Sanitation facilities are also enclosed.

Hall of submarine



Cockpit



The passenger cabine

## APPENDIX

### technical data long-distance – diving boat

maximum diving depth:	305 meters
crew:	three persons
maximum speed above water:	16 knots
excursions speed above water:	14 knots
maximum speed under water:	8 knots
two diesel engines for above water operations:	2 * 500 kilo watts
underwater engines:	2 * 180 kilo watts
vertical engines:	2 * 40 kilo watts
horizontal engines:	2 * 40 kilo watts
above water range:	3,000 nautical miles
underwater driving duration:	5 hours at eight knots
underwater driving duration:	30 hours at five knots
underwater driving duration:	80 hours at 2.5 knots
oxygen:	30 days
additional (emergency) oxygen:	10 days
weight:	380 metric tons
main batteries:	360 Volts Direct Current
normal batteries:	24 Volts Direct Current
emergency batteries:	24 Volts Direct Current
total capacity of batteries:	1,100 kW hours
recharging time:	twelve hours
electrical charge generators:	2 * 180 kW hours
main ballast capacity:	86,000 kilograms
dropweight:	2,000 kg trim/35,000 kg drop

active sonar:	color imaging
main compass:	Gyro compass
reserve compass:	Fluxgate
spare compass:	digital
depth measuring instrument:	400 meters / analog and digital
radio:	Marine VHF
satellite navigation:	GPS

## technical data submarine

maximum diving depth:	100 meters
crew:	two persons
max speed above water:	3 knots
max speed under water:	0.5 to 1 knot
diving frequency:	twelve times of one hour each
batteries' livetime:	1,500 charge cycles or five years
space for passengers:	36 persons

