AN INDIAN JOURNAL OF ARCHITECTURE VOL XXV NO 12 DECEMBER 2008 RS 125

ARCHITECTURE + DESIGN

focus

MARINE architecture

aqua structuring

Giancarlo Zema

Photo: Fabrizio Gandini

>> Giancarlo Zema

I firmly believe that one day the everlasting changes of our mutable planet will take us to live in close contact with water. So from the beginning, my research has been always focused on this theme, till I finally created a new habitat typology. Each of my project aims to let man live in a world that seems to be unexplored, thanks to a clever use of all its known resources.

My projects, in fact, are not just simple buildings lying on water, but they have been conceived to live like real 'marine creatures': they come to life taking their form from organic and sinuous shapes; they live taking advantage of innovative technologies and they reproduce thanks to the use of ecological materials.

The sea is my endless source of inspiration. All projects represent an aspect of this magic world making man's dream of living on the sea come true. They reproduce the sea creature's behaviour to avoid human errors, so they exist naturally in these environments.

Suggestive creatures from past and present are the line guides of all my drawings. Their gorgeous forms are really fascinating but also strictly functional. So the link of form and function is easily obtained, trying inspiration by

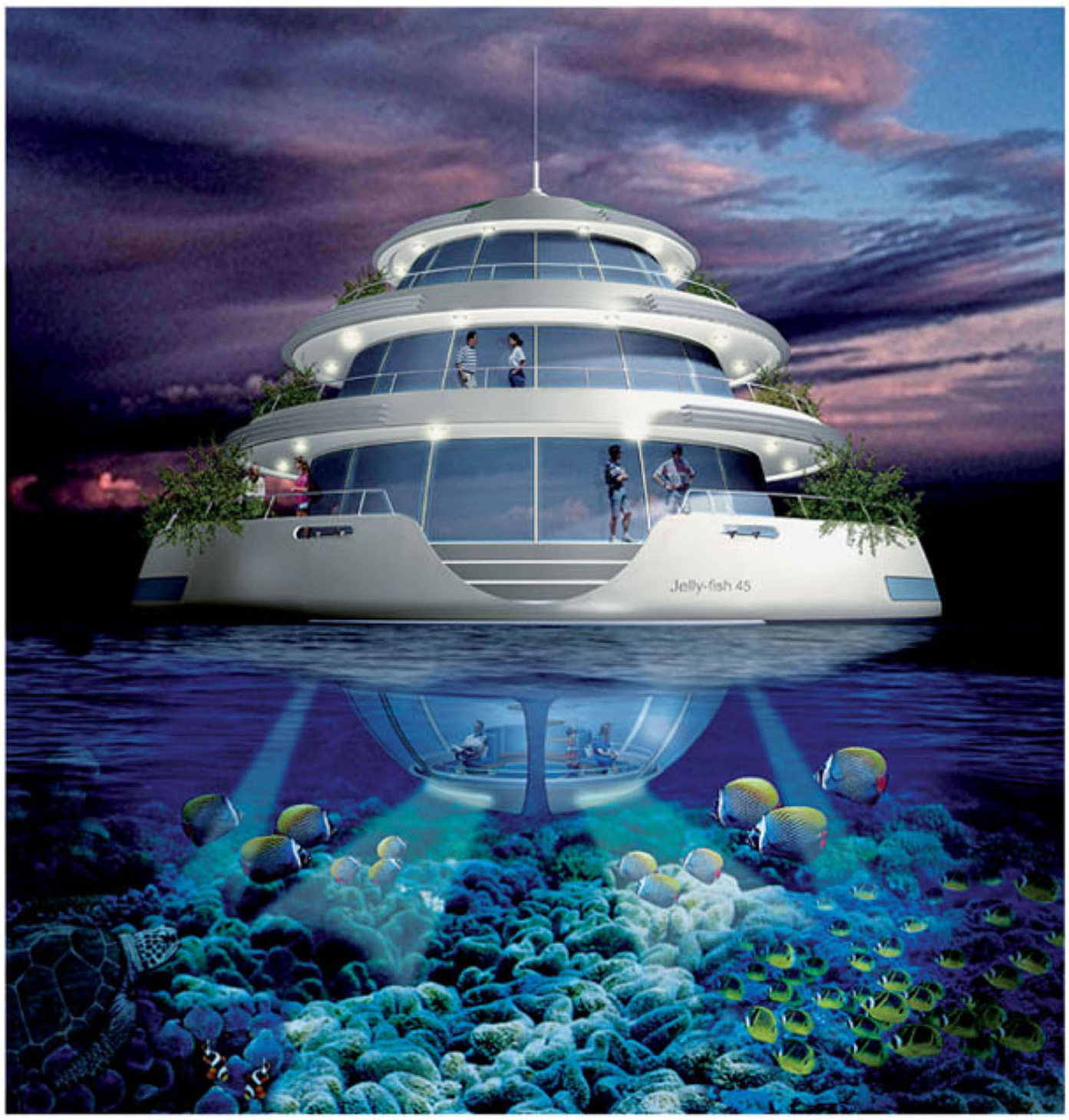
natural examples that are the apotheosis of the harmony between beauty and utility.

The great architecture on water anticipates the future, living on the sea as a self-sufficient organism, and the design plays with the present, reconstructing aquatic sets even in everyday contexts. There is no hierarchical distinction: architecture and design are joined in an indivisible whole. They answer to different needs with the same philosophy: each project is complete in itself like a real creature, but is also part of a world made of other different creatures that cooperating together, create a new fascinating life.

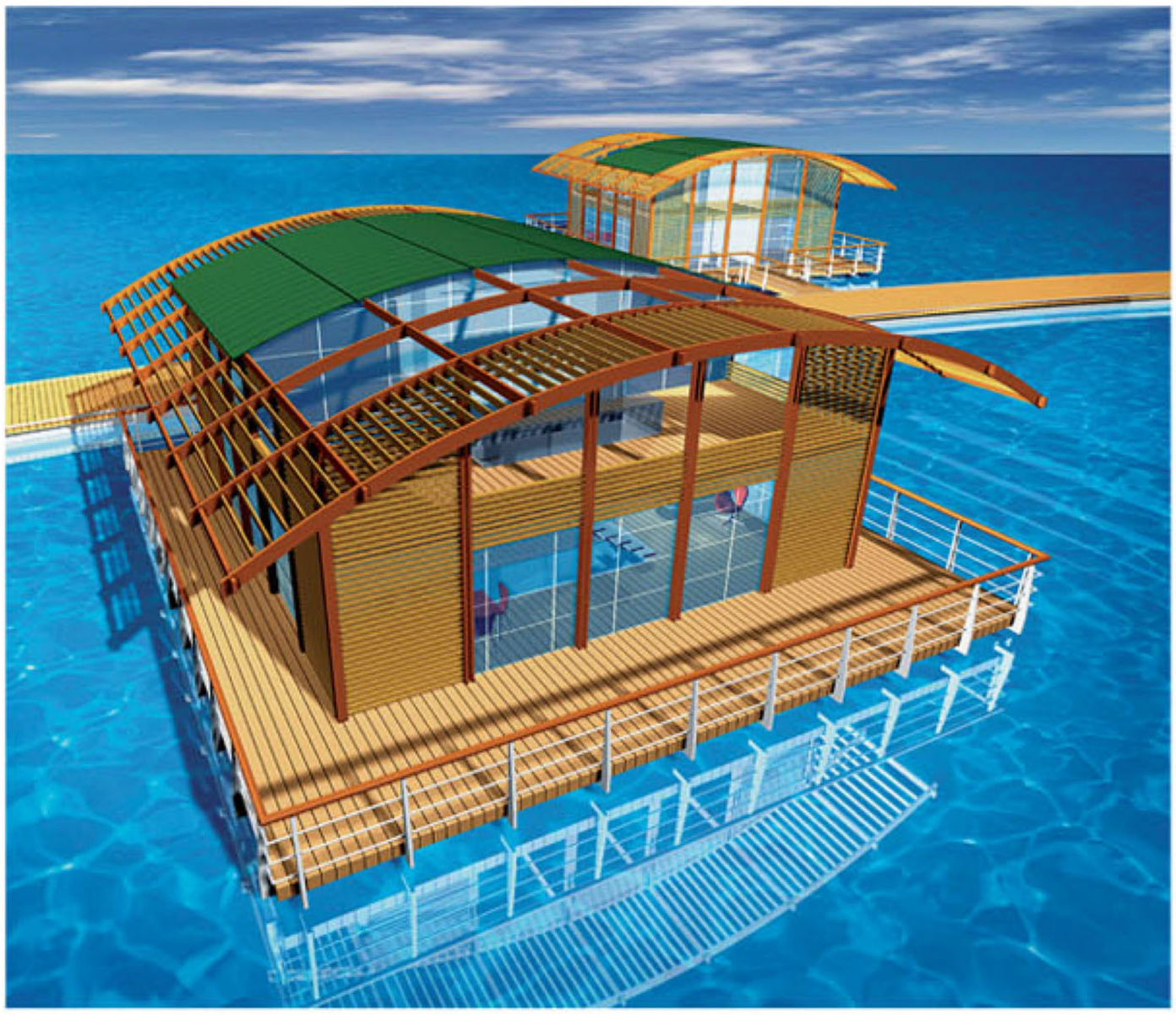
A unique style joins together all projects in a way that is at the same time futuristic and so intrinsic in nature to result as unconsciously attractive. Their organic forms reminds one of the amazing shapes of little creatures that populate our seas, using a design which is really attractive, that is able to join the ancient natural lines of nature to the most innovative technologies.

All my projects are thought for man but especially for nature. The use of technologies helps man to live in a more comfortable way. At the same time, it is planned to have no impact on the environment, by making use of natural resources in an ecological way. Hence, innovation so means not only the use of newer technologies, but also the awareness of its utility vis-à-vis both humans and nature. For ages, man has been indulging in architecture, forgetting ecological matters or thinking of ecological systems as something that can help nature from outside. My architecture so wants to be 'inside' nature, to live in complete harmony with it.

Giancarlo Zema is the founder of Giancarlo Zema Design Group, an architecture studio in Rome, which specialises in semi submerged architectural structures.



Facing page: Frond Village - semisubmerged resort; Above: Jelly-fish - floating house with underwater view; **Below:** Wood Village - innovative floating resort



Marine Architecture

Facing page: View of the eco-yacht in the sea; **Above:** Night rendering of the eco-yacht in waters

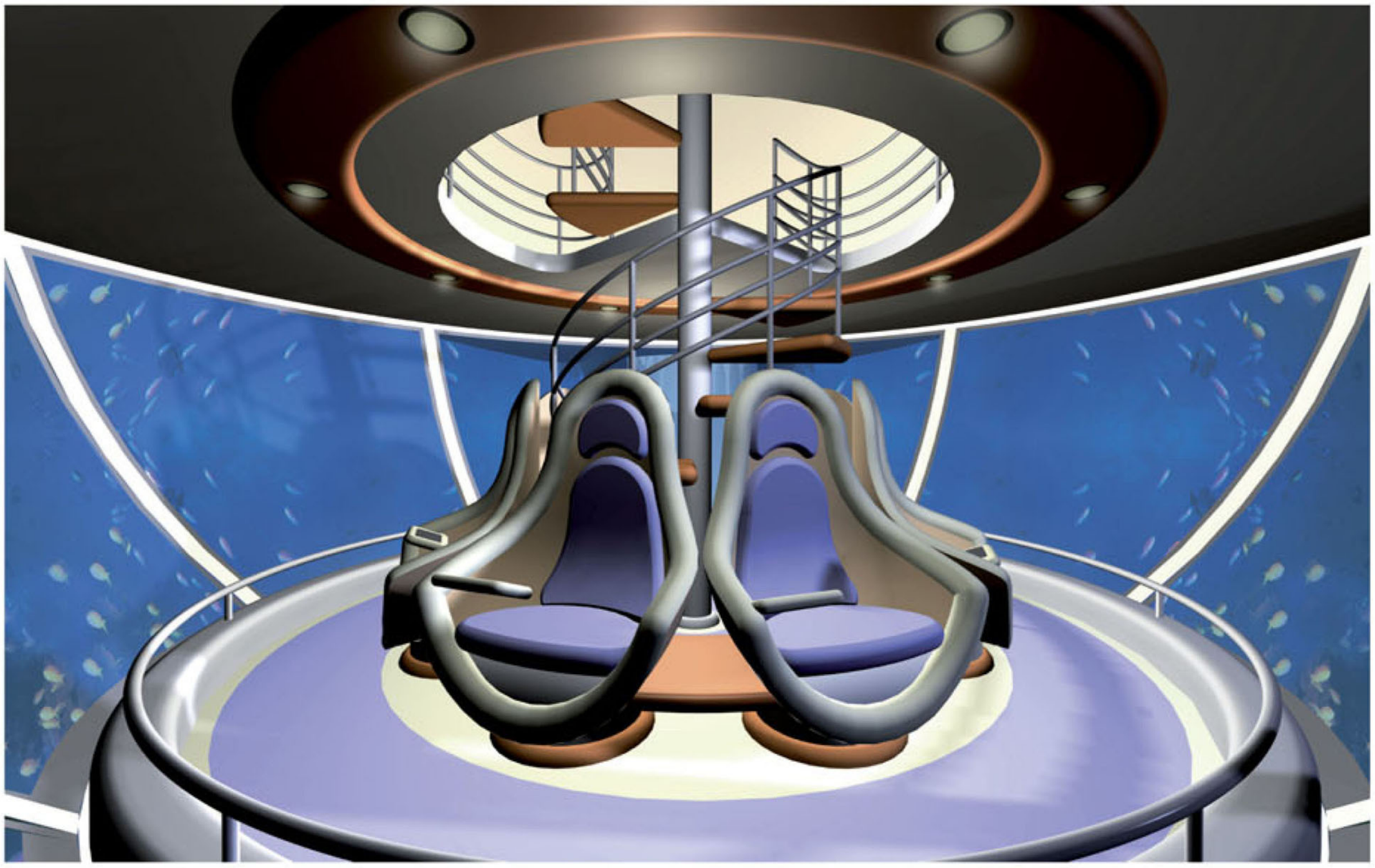
semi submerged **dwelling**

Project: Trilobis 65
Vancouver, Canada

Architects
Giancarlo Zema Design Group
Rome

The Trilobis 65 is a 20m long semi submerged dwelling unit for six people, ideal for bays, atolls and sea parks. The main aim of this project is to allow one and all to live in a fantastic, unusual environment in a self-sufficient non-polluting habitat.

The project consists of four levels connected by a spiral staircase. The top level (where the controls are) is 3.5m above sea level. From here, the Trilobis can be piloted by a joystick that allows it to rotate 360 degrees on its own axel. The level at 1.4m above sea level is for the daytime area with all services and possibility to go outside. The one at 0.8m below sea level, semi-submerged, is for the night-time area. It has bathrooms and the engines room. At 3m below sea level, completely submerged, is the underwater observation globe. Designed in high resistant acrylic, it houses six seating places, connected with computers and special software which allow the



▲ Underwater globe

inhabitants to personalise the outside lighting and in real time to get information on the sea-bed and the fish below

The hull of the Trilobis is made of steel and the superstructure is in aluminium, which means it is 80 per cent recyclable. This is very important from an environmental point of view. The glass windows are electrochemical, in other words, they change their opacity thanks to a sophisticated electrochemical system. This can be done manually or automatically according to the exterior light. The photovoltaic panels on the top catch and store the solar energy necessary for the instruments on the inside.

The electric engines are driven by hydrogen fuel cells that only produce drinking water as waste material, through an electrochemical process. All these factors, make it a non-polluting project. Due to the shape of Trilobis 65, it is possible to assemble more modular units in a ring thus creating floating colonies. The project was named Trilobis after *Trilobiti*– little creatures that lived in the sea 500 million years ago.

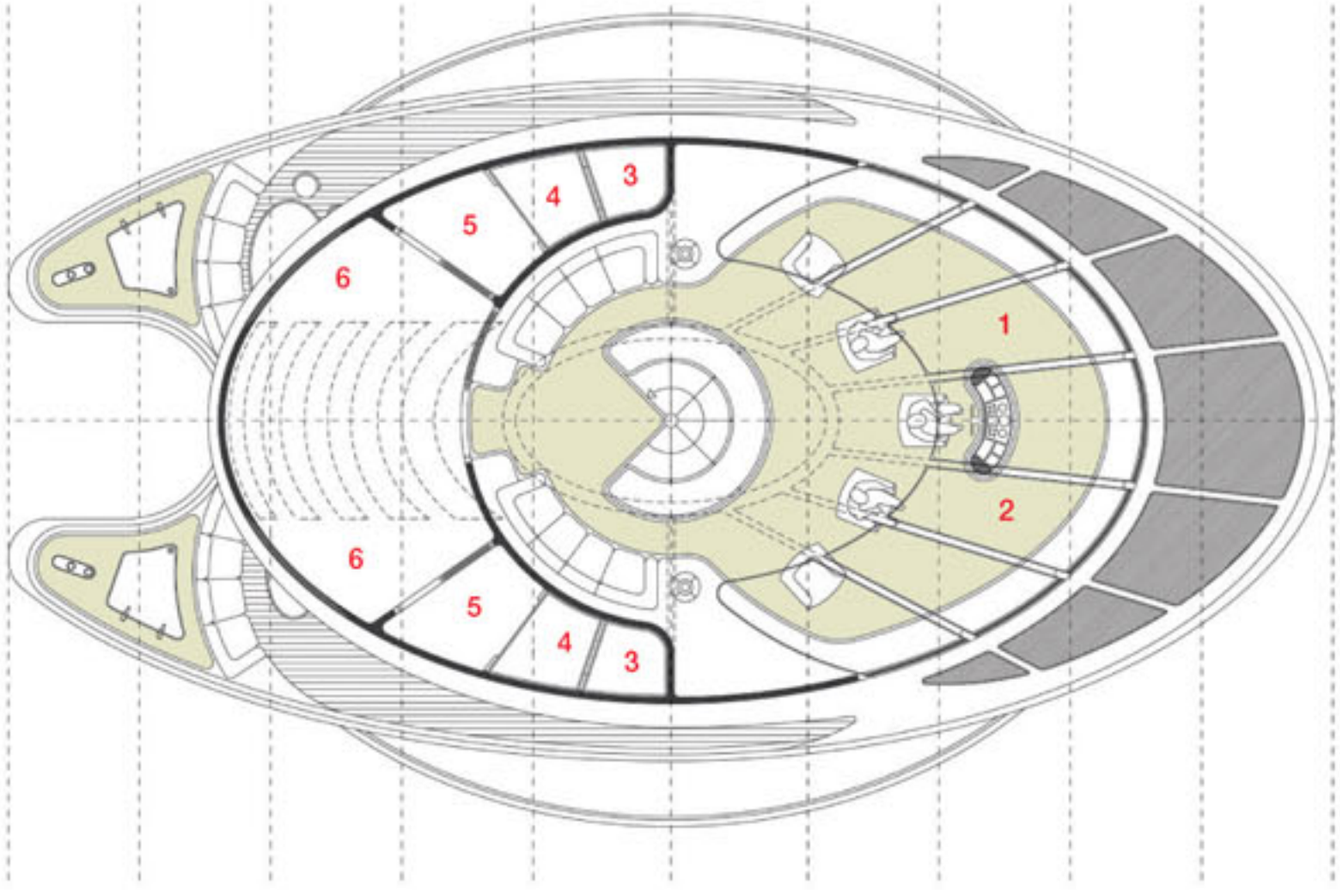
Products

Welcome Venus

Venus Home Appliances, a water heater manufacturing company in India, has come out with its latest products, 'Splash' and 'Wave' heaters in elegant new designs with cutting edge features. The Splash is compact and sleek in style. Equipped with double ceramic elements, with a sturdy copper tank, the Splash is long lasting and corrosion-free. It comes in three colours, and has a capacity of 6, 10,15 and 25 litres.

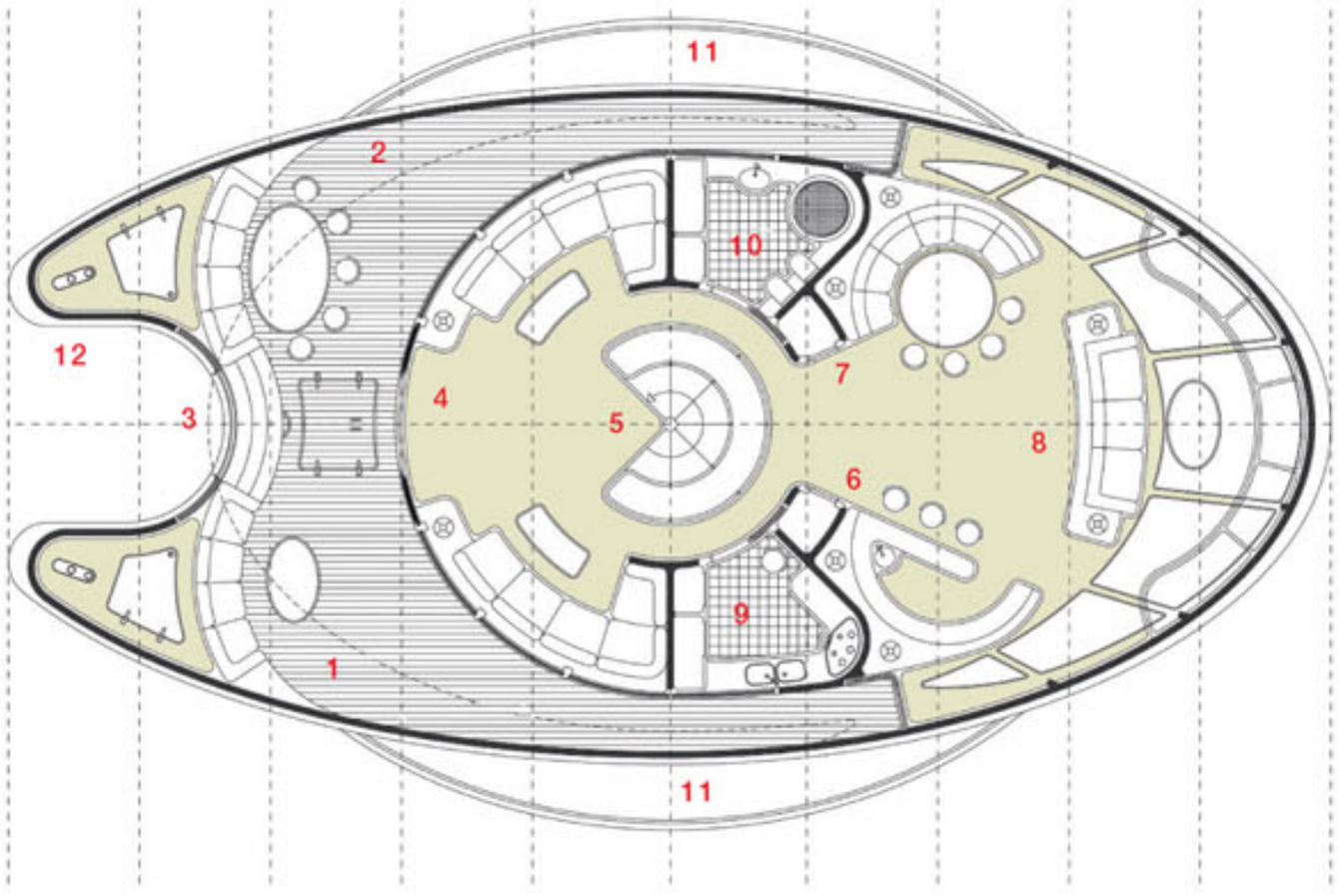
The Wave, has power-packed features and comes in a range of vertical, horizontal and floor-standing models. It has adjustable thermostat, shock resistant and rust-proof body with digital control panel. The Wave series is available in 10 to 150 litres capacity in both vertical and horizontal models.

For details, log on to www.venushomeappliances.com



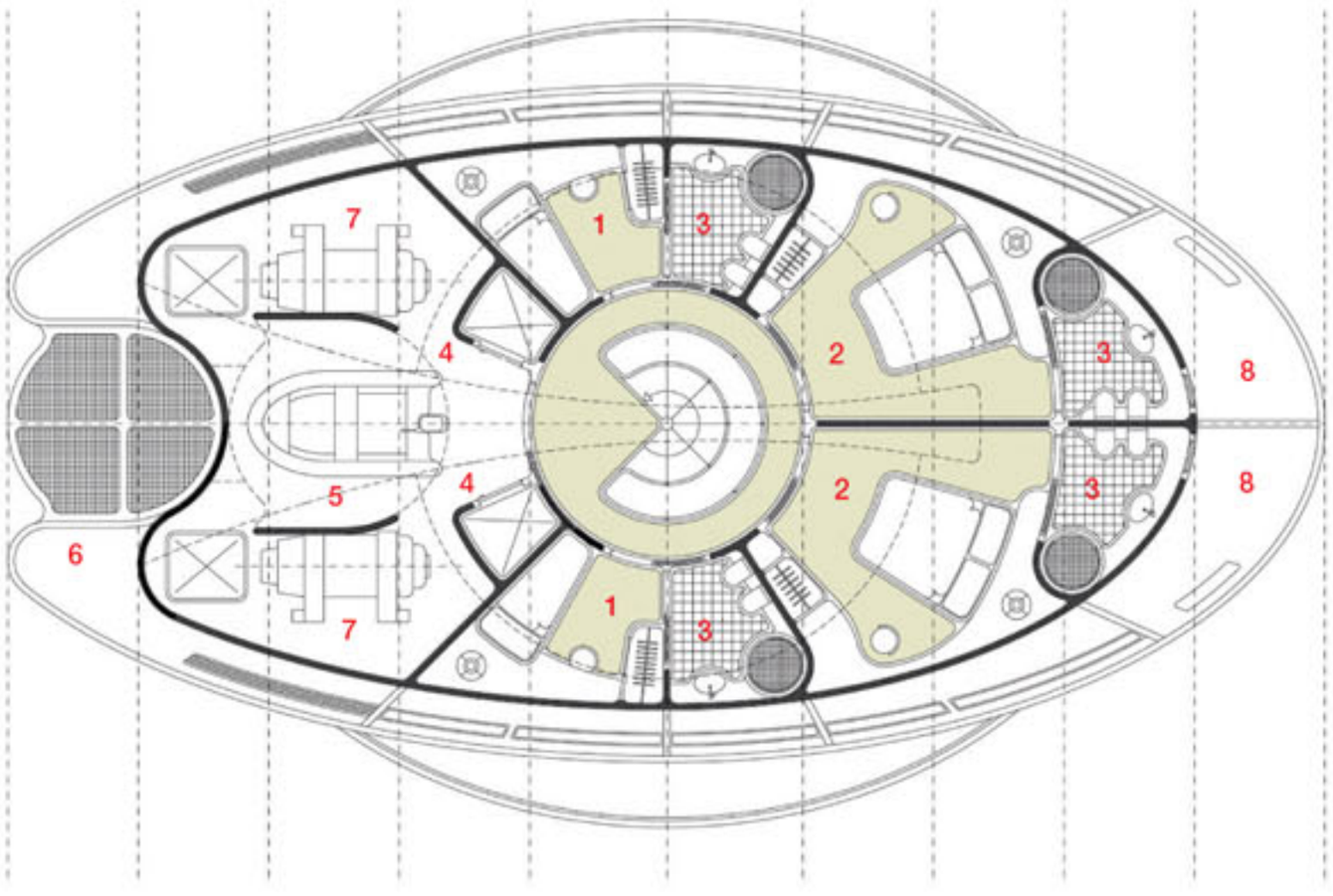
1. DRIVING DECK
2. COMMAND AREA (SHORT NAVIGATIONS)
3. ELECTRIC REGULATOR WITH INVERTER
4. ENERGY ACCUMULATOR
5. ELECTRIC ACCUMULATOR
6. SPACE FOR PHOTOVOLTAIC PANELS

PLAN (Command Area)



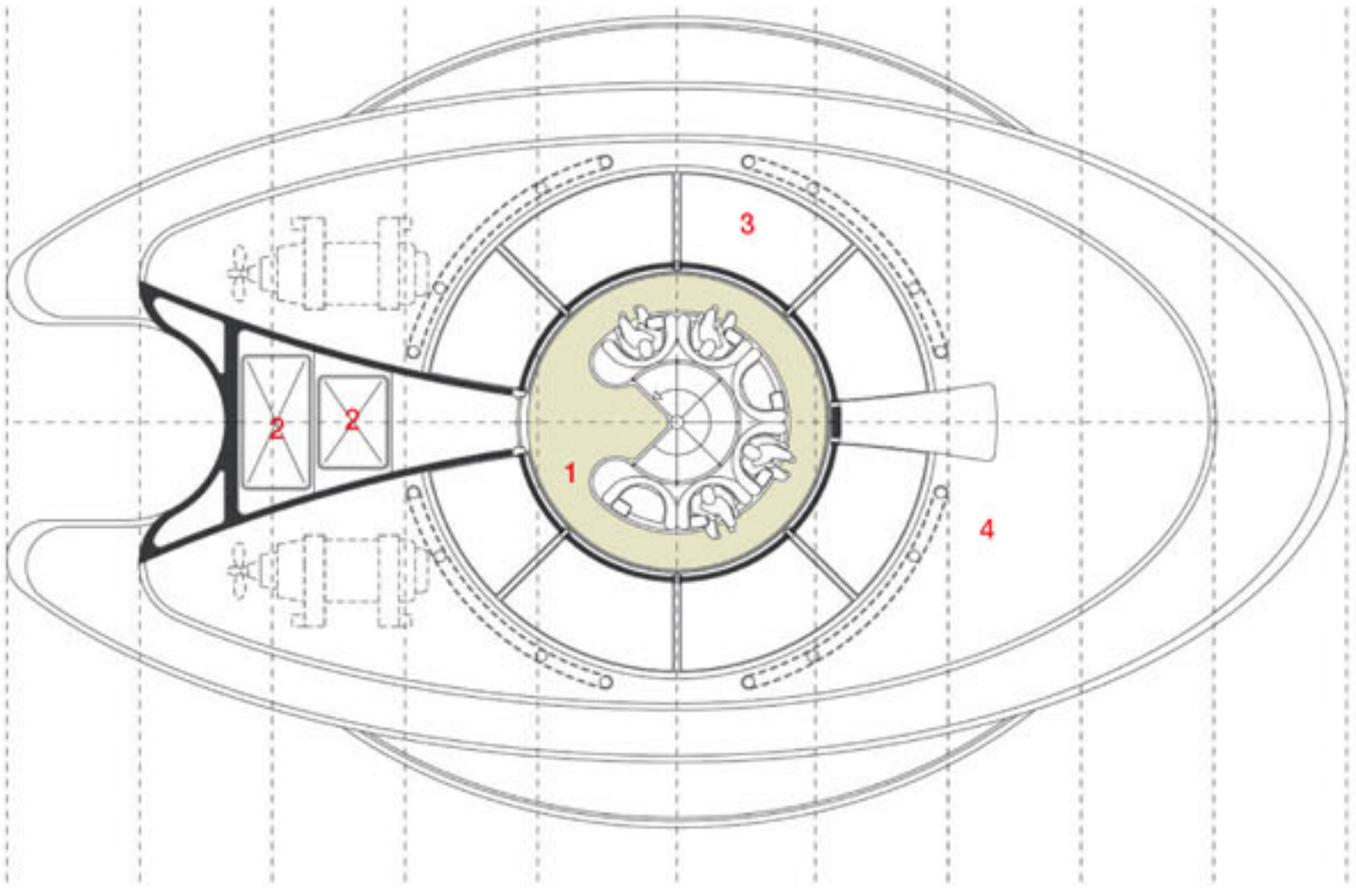
1. DECK (IN TEAK)
2. OUTSIDE DINING AREA
3. HIDING ENTRY DOORS
4. STEM SITTING AREA
5. WINDING STAIRCASE
6. DRINKING AREA
7. DINING ROOM
8. PROW SITTING AREA
9. KITCHEN
10. BATHROOM
11. STABILIZER WING (FIBREGLASS)
12. CAVITY FOR DOCKING SYSTEM

PLAN (Living Area)



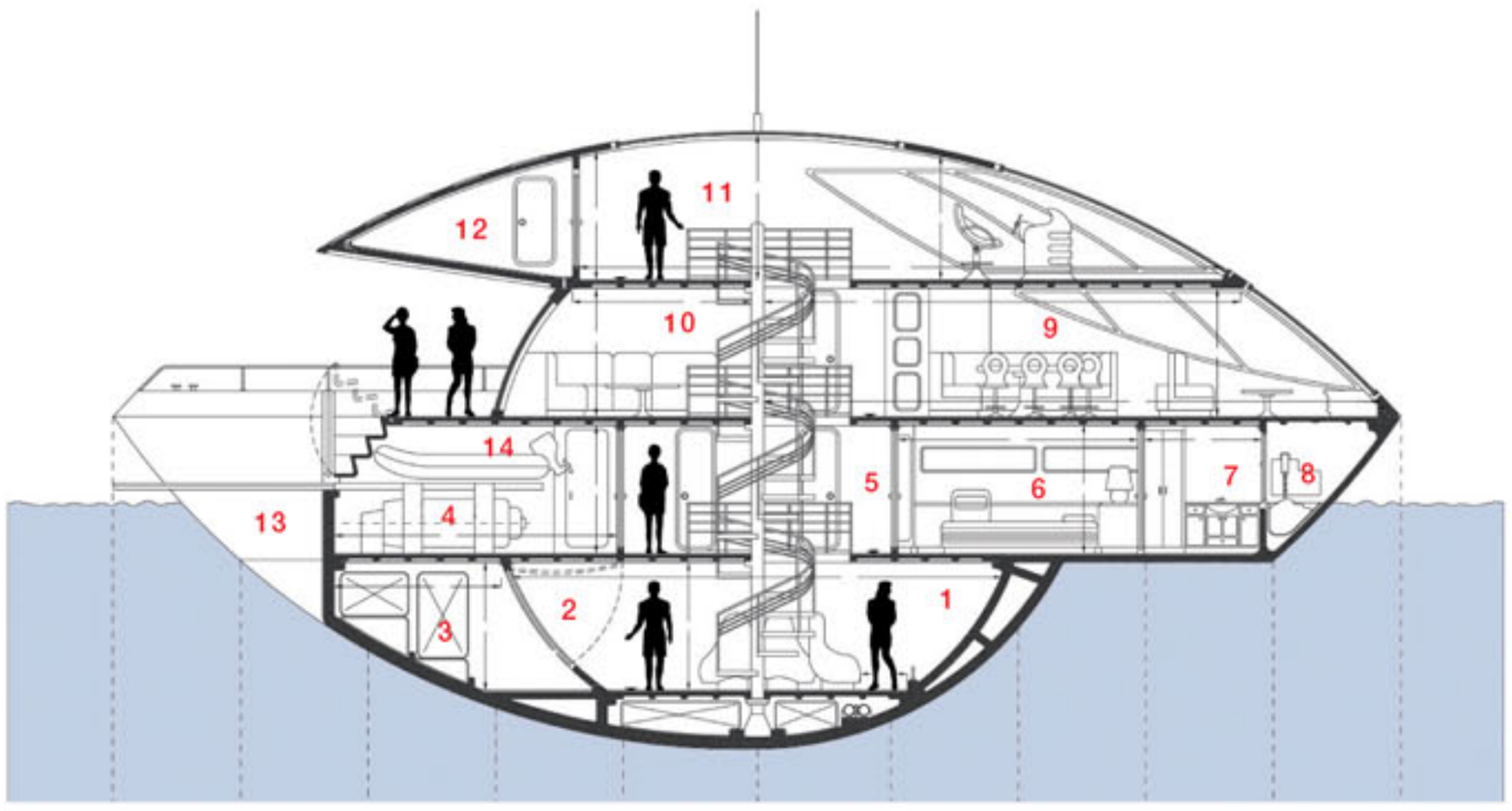
1. SINGLE-BED ROOM
2. DOUBLE-BED ROOM
3. BATHROOM
4. HYDROGEN TANK
5. RUBBER BOAT
6. ELECTRIC RETRACTABLE BOARD
7. HYDROGEN ENGINE
8. ENGINE SPACE INCLUDING ANCHOR

PLAN (Sleeping Area)



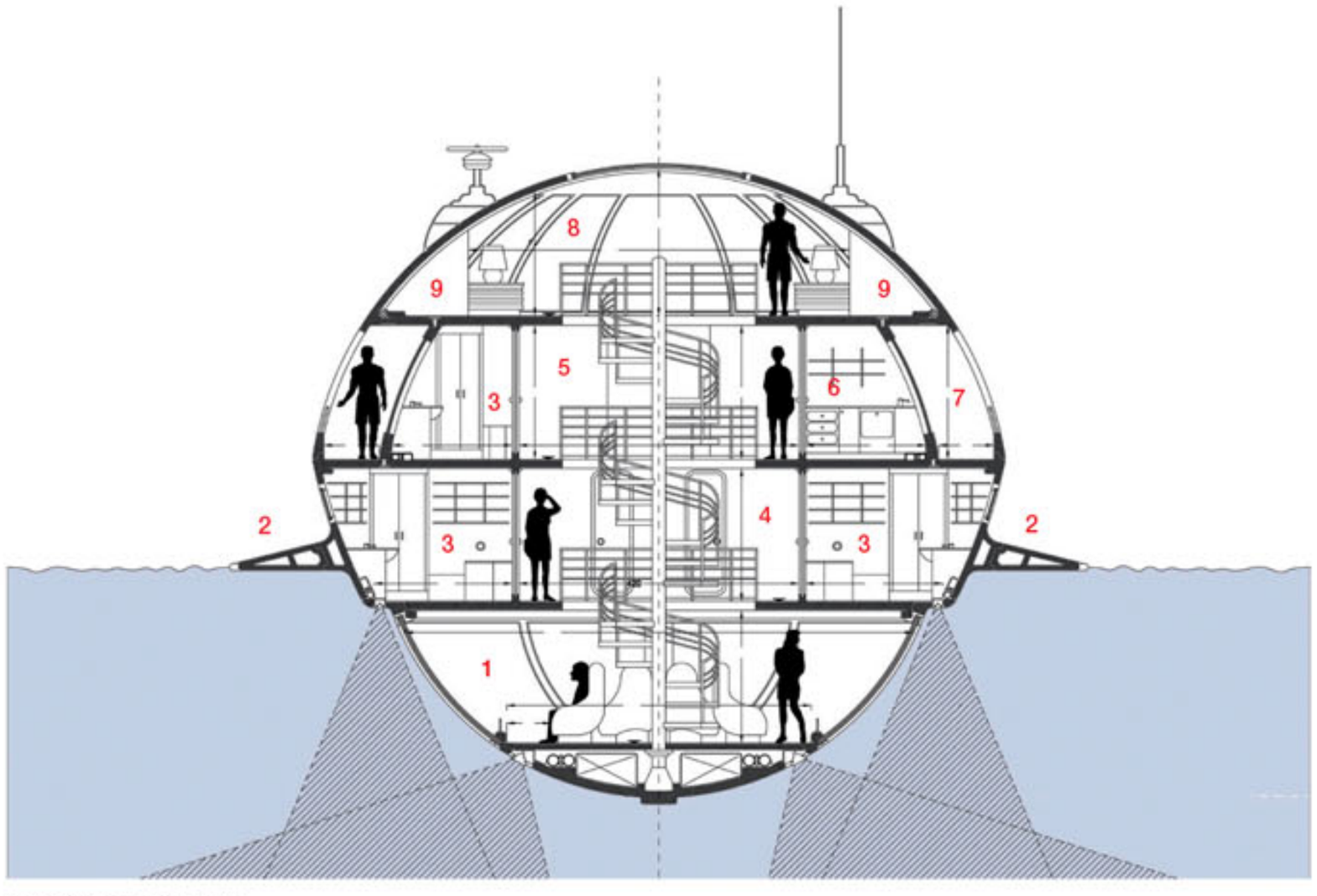
1. OBSERVATION ZONE
2. WATER TANK
3. OBSERVATION BULB
4. UNDERWATER LIGHT

PLAN (Underwater Globe)



1. OBSERVATION BULB
2. HATCH FOR TECHNICAL STORAGE
3. WATER TANKS
4. HYDROGEN ENGINE
5. NIGHT-TIME ZONE
6. DOUBLE-BED ROOM
7. BATHROOM
8. ENGINE SPACE INCLUDING ANCHOR
9. DINING ROOM
10. DAYLIGHT ZONE
11. DRIVING DECK
12. SPACE FOR PHOTOVOLTAIC PANELS
13. ELECTRIC RETRACTABLE BOARD
14. RUBBER BOAT

LONGITUDINAL SECTION



1. OBSERVATION BULB
2. STABILISER WING
3. BATHROOM
4. NIGHT-TIME ZONE
5. DAYLIGHT ZONE
6. KITCHEN
7. LATERAL PASSAGE
8. DRIVING ZONE
9. SPACE FOR PHOTOVOLTAIC PANELS

CROSS SECTION

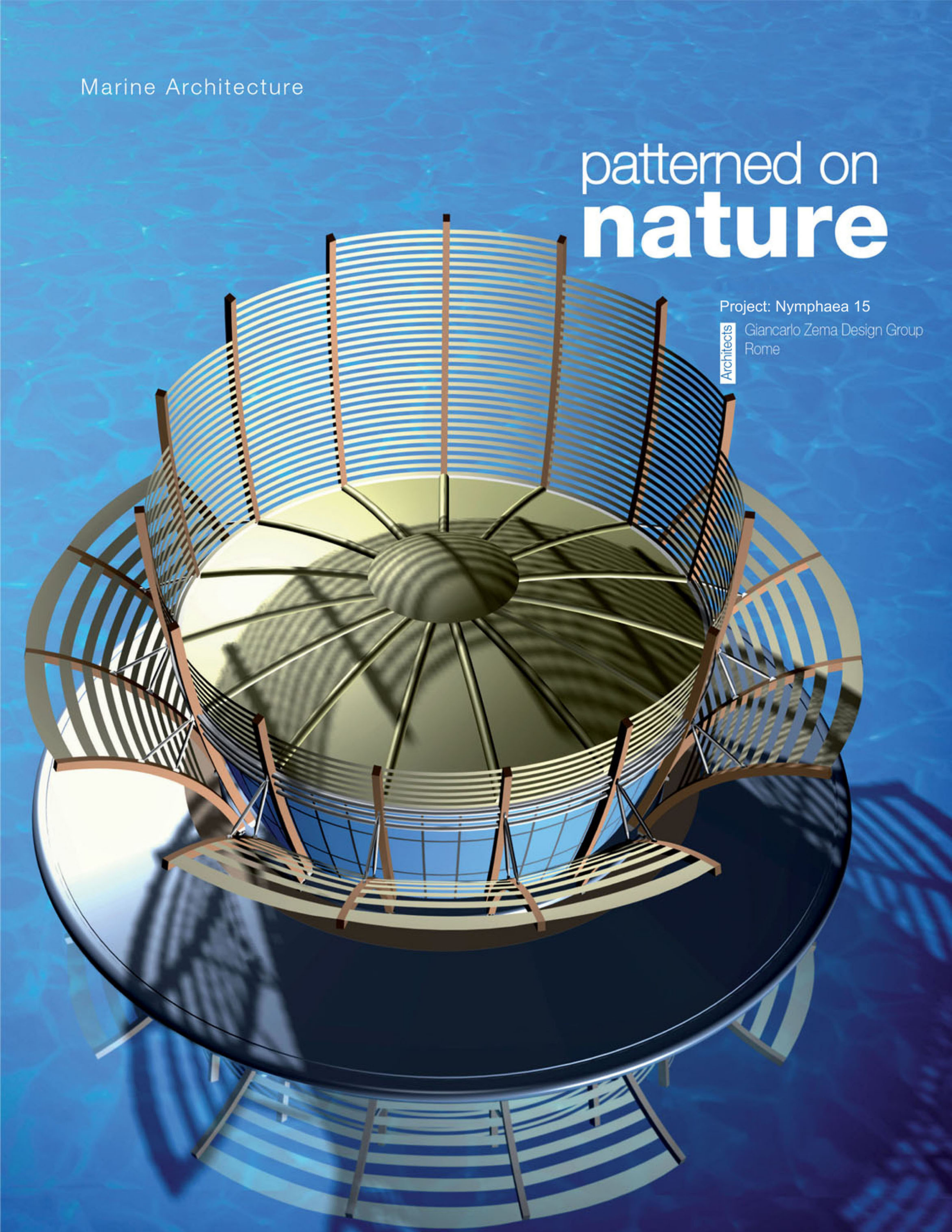
Marine Architecture

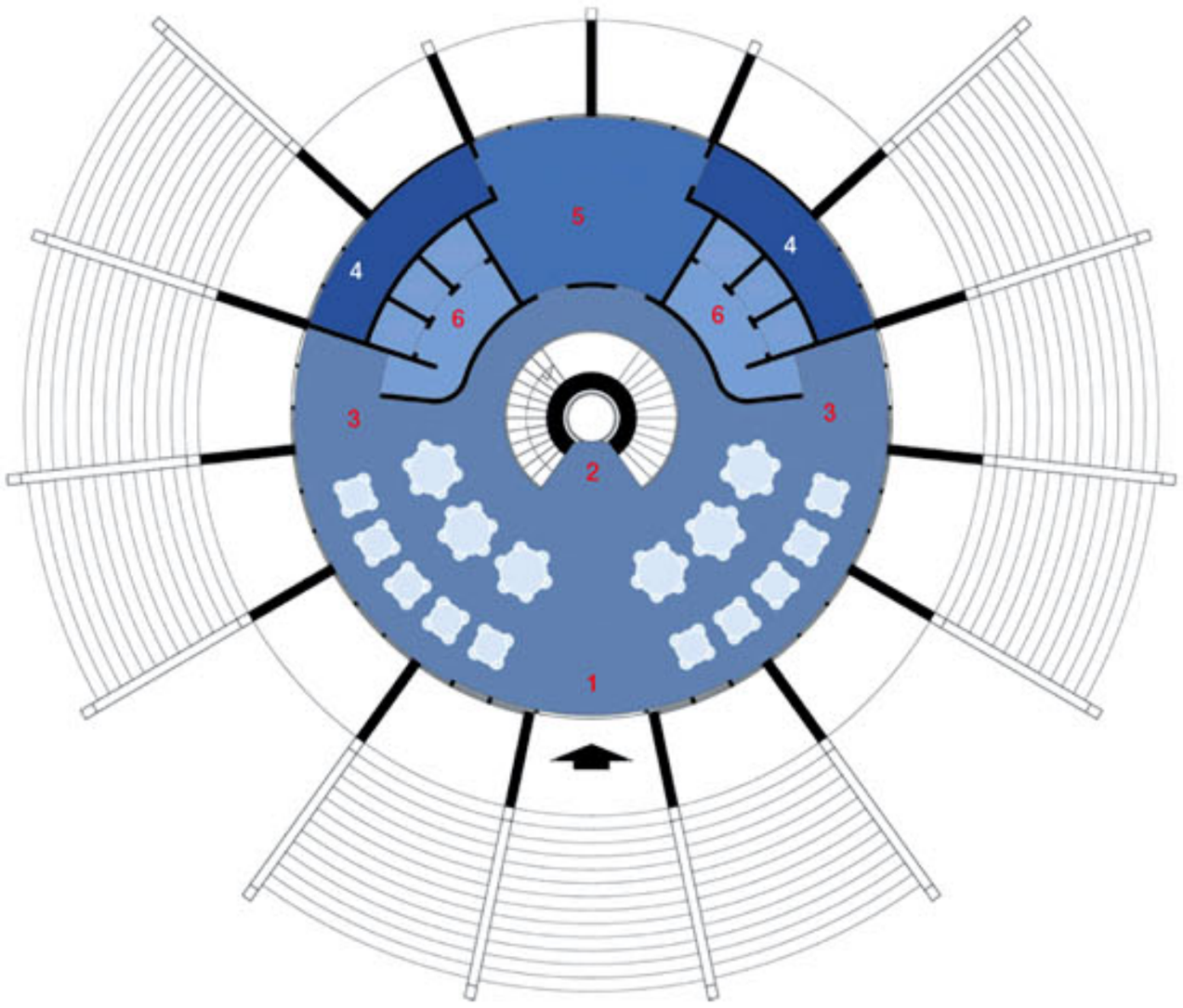
patterned on nature

Project: Nymphaea 15

Architects

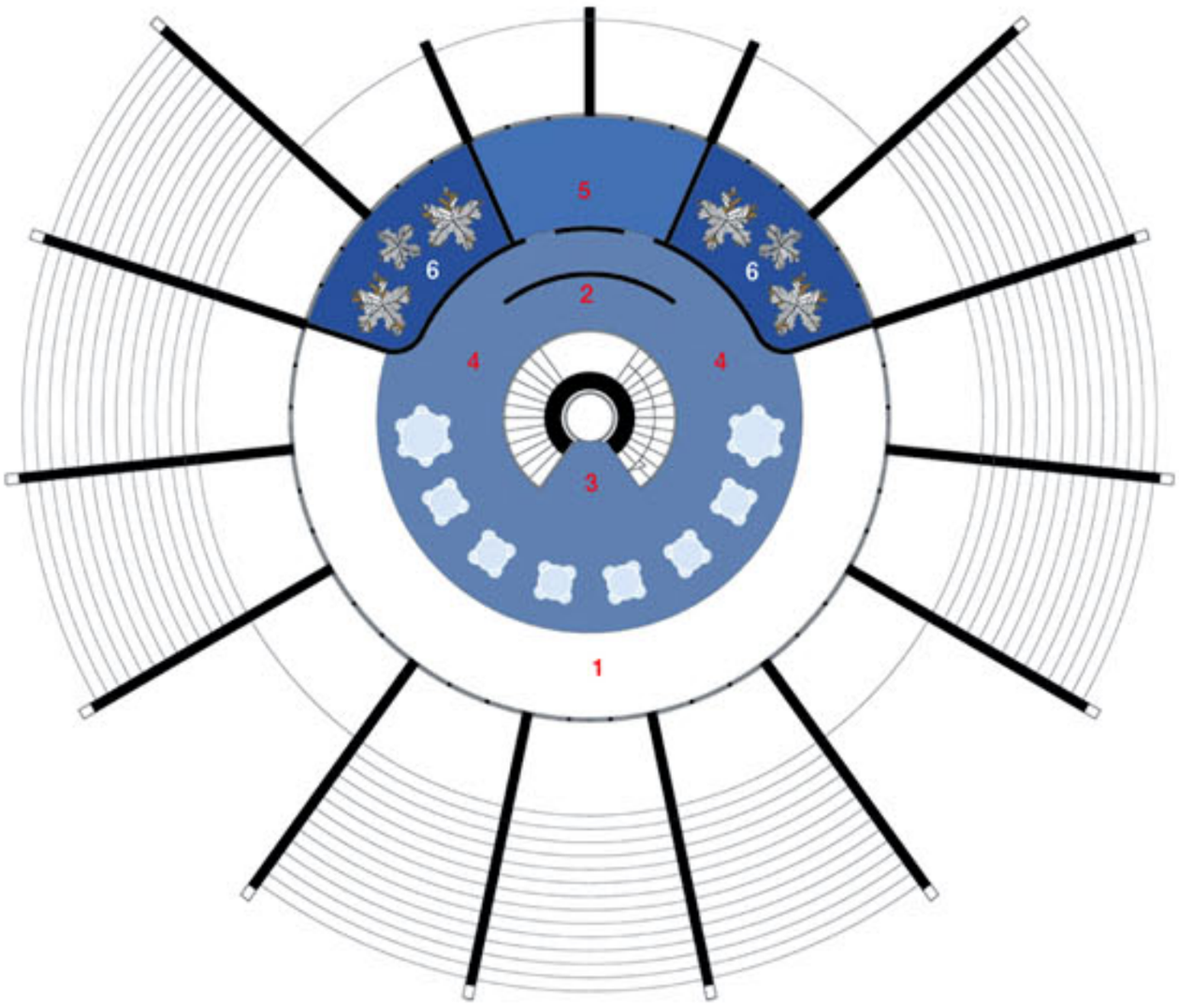
Giancarlo Zema Design Group
Rome





1. RESTAURANT ENTRANCE
2. SPIRAL STAIRS
3. RESTAURANT AREA
4. STORAGE AREA
5. KITCHEN AREA
6. TOILET

ENTRY LEVEL PLAN



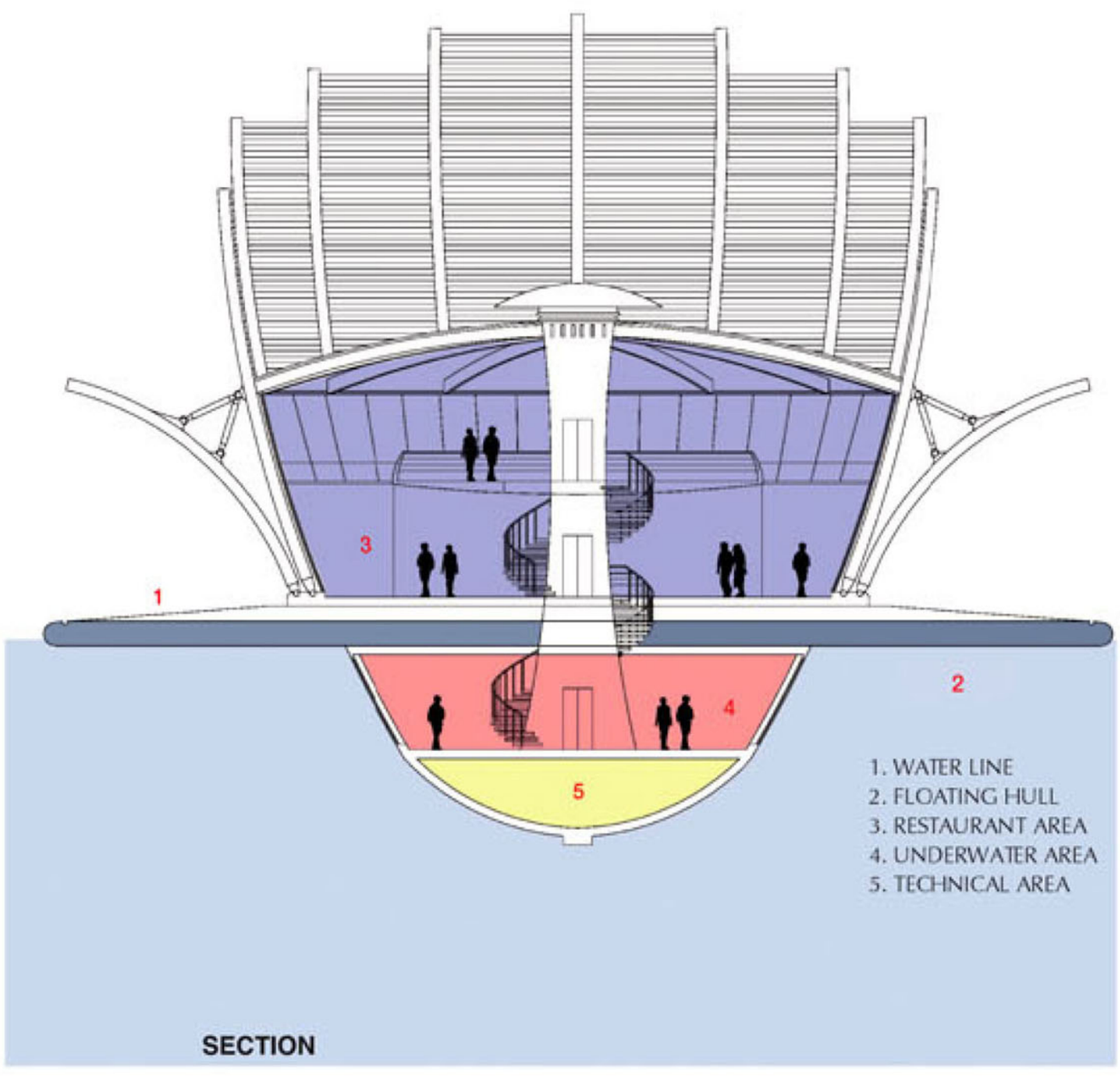
1. GROUND FLOOR
2. RESTAURANT AREA
3. CIRCULAR STAIRS
4. FIRST FLOOR
5. KITCHEN AREA
6. TERRACE

UPPER LEVEL PLAN

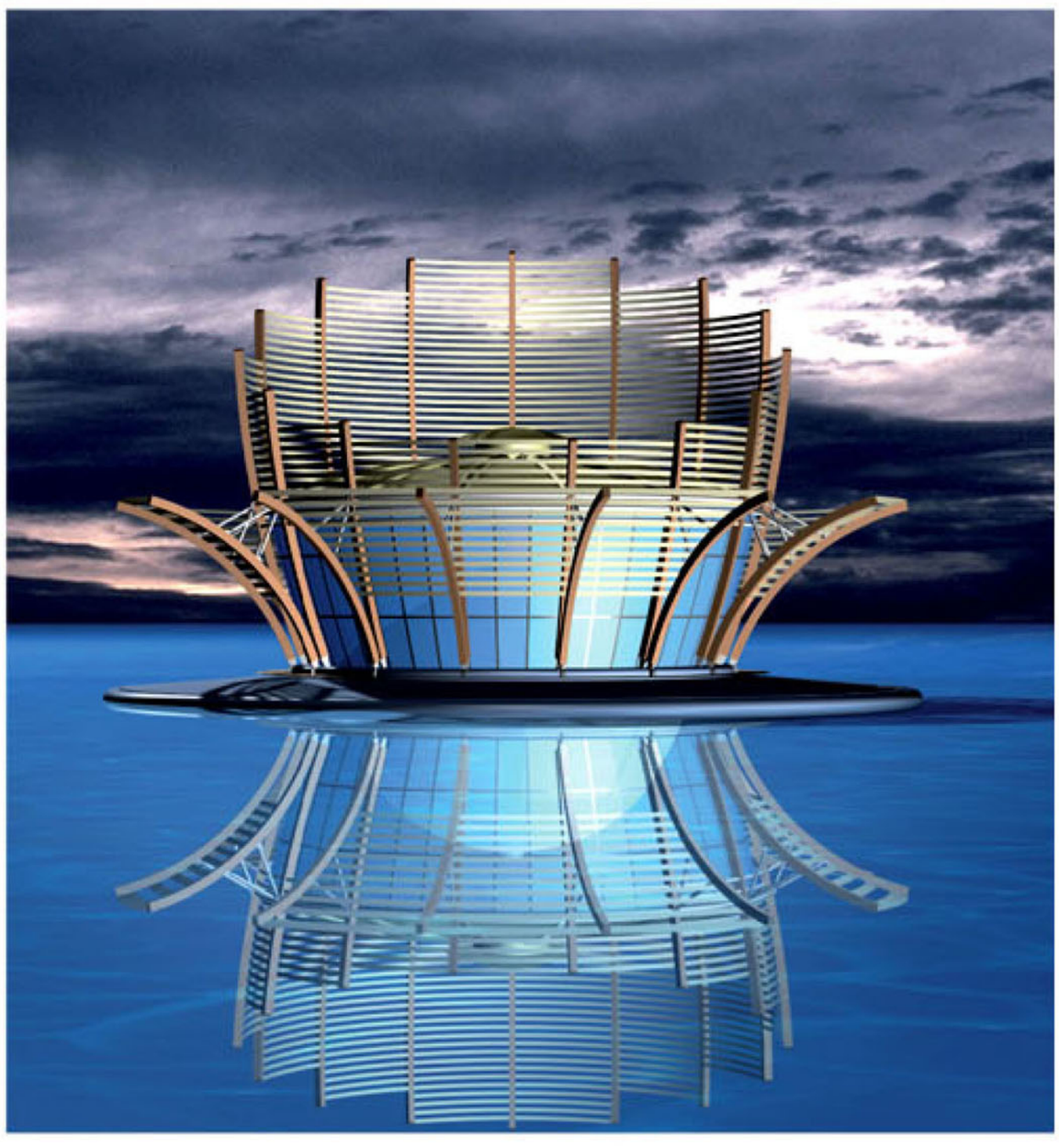
The floating restaurant draws its inspiration from floating water plants with beautiful flowers. The circular structure (flower) of 18 metres diameter is interrupted by a distribution of 15 circular elements (petals) in laminated wood. The restaurant is articulated on three levels connected by a staircase, which goes up a cylindrical structure (pistil) that includes the lift and the air duct. The restaurant's ground floor is composed of a floating space of

260 square metres with a kitchen, storehouses and services. It has a holding capacity of 100 people.

The first floor is characterised by a more private space composed of a small kitchen with a storehouse for the preparation of simple dishes and by an internal garden. This level can hold 50 people. The *brise-soleil* system enables to use the external area also in condition of strong insolation. The underwater floor at 4m below sea level can hold 25 people.



SECTION



Marine Architecture

assimilating the aquatic

Project: Amphibious 1000
Qatar, Saudi Arabia

Architects
Giancarlo Zema Design Group
Rome

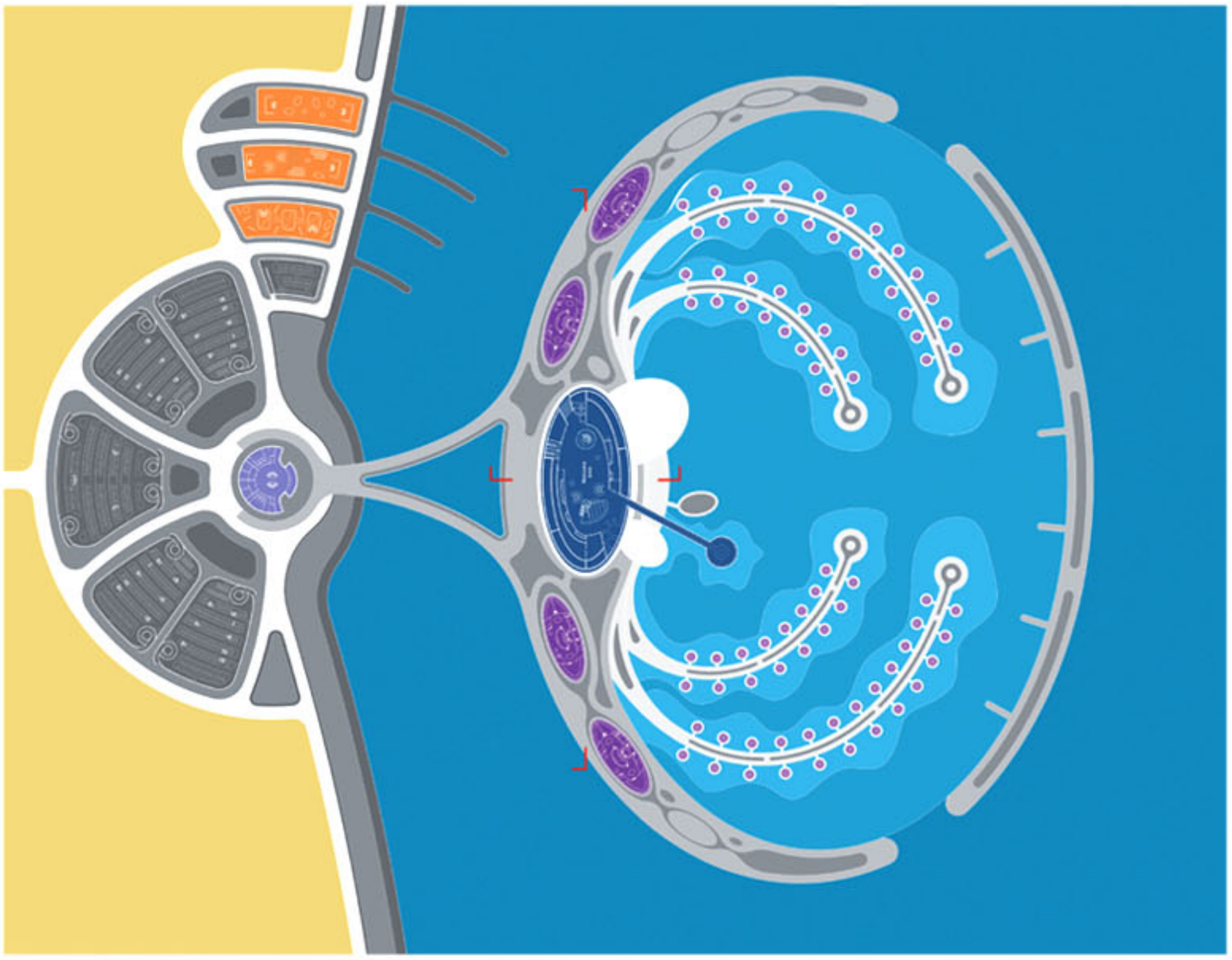
This innovative project has been designed for an Arabian commission; it is the first semi-submerged hotel resort called Amphibious, like a big aquatic animal stretching out from the land into the sea and extends horizontally for 1km through its two long wide arms. The project is composed of a land section and a sea section. Residential and office buildings and a marina with a modern and flexible harbour are facilities situated on the land. All the structures are situated in a semicircle around the tower with the panoramic restaurant.


1

1. The floating suites
2. The hotels shaped like yachts
3. Aerial view from the sea side
4. Night rendering of the hotels

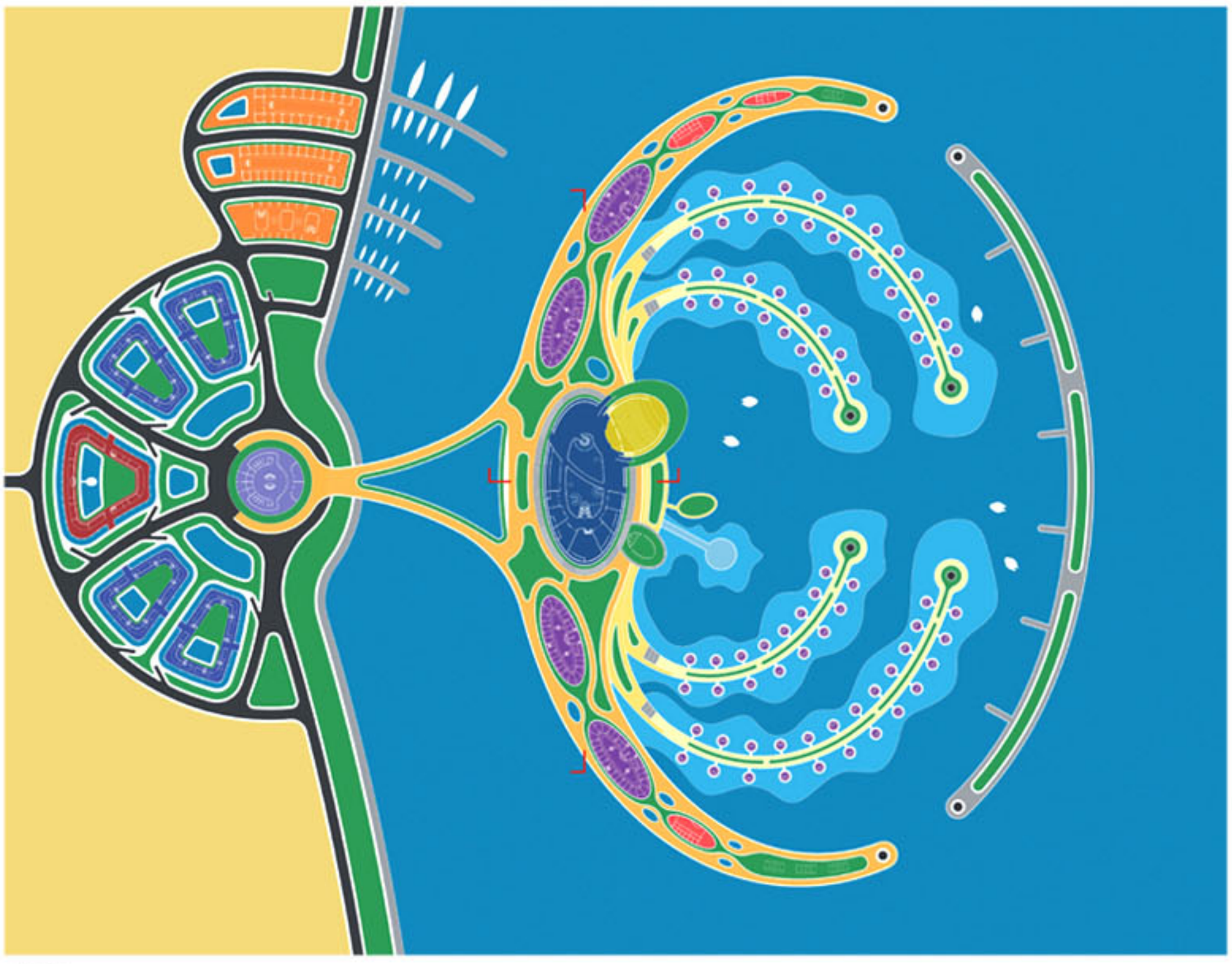

3


4



- Land structures (160,000sq m)
- Observatory (1,500sq m)
- Yachting club (3,500sq m)
- Underwater hotel (20,000sq m)
- Floating suites (80 units)
- Welcome area & observatory (22,000sq m)
- Deep water
- Protected water (400,000sq m)
- Reef area (170,000sq m)

PLAN (Under Water)



- Residences (115,000sq m)
- Offices (55,000sq m)
- Marina's service (55,000sq m)
- Main platform (130,000sq m)
- Floating platform (40,000sq m)
- Protection structure (35,000sq m)
- Green area (60,000sq m)
- Hotels (300 suites)
- Welcome dome (600,000cu m)
- Theatre (60,000cu m)
- Fitness (35,000cu m)
- Floating suite (80 units)

PLAN