“an interactive and intelligent hotel,

using the water as an adaptable constructive element”
“a living installation in which you create your own experience”
“climate change? don’t fight it, live in **harmony** with it.

**Go with the flow** of nature.”
"2/3 of the earth's surface is covered with water

34% of the world population live along the coast
(increasing to 66% in 2025)

solve spatial problems by using the water"
F.I.S.H.

Fully Immerseable Swarming Hotel
Msc3 HoTool project
from swarming hotel to 3d spatial design tool

“The most boring parts of a hotel are it’s hallways and elevators”

“when a hotel is built, it is outdated since the management may already have numerous other wishes”
Hyperbody projects
Technopolis, Flotel
Sci-Fi movies

*Star Wars, episode 1, Gungan underwater city*
Inspiring projects

**Jules undersea lodge (USA)**

**Hydropolis (UAE)**

**Capsule hotel (NL)**

**Poseidon (Fiji)**
Criteria

**Primary** criteria:
- Water volume: 1) water *depth*
  2) water *surface area*
- Water quality: 3) water *clarity*
  4) water *life*

**Secondary** criteria:
- Climate (average and extremes):
  5) *weather* type
  6) *air* temperatures
  7) *water* temperatures
- Surroundings: 8) *touristic* qualities
  9) *accessibility*
Lago di Bracciano

Criteria evaluation:

Dimensions
1) average/maximum depth of 86m/165m
2) 57km2 of water surface, circular shaped

Quality
3) one of the cleanest lakes in Europe
4) preserved lake (a lot of living organisms)
   and a sunken city from 200 BC

Climate
5) Mediterranean sea climate, Mostly sunny
6) ??
7) Warm (volcanic) crater lake, average: 20°C

Surroundings
8) 25 km northwest of Rome, medieval cities, wild
   nature, water sport lake
9) Through Rome’s airport a good connection
to all over the world. Water plane
   connection between airport and hotel
Swarming behavior

Flocks,

Herds..
Swarming behavior

..Shoals,

Crowds.
Swarming Concept

**FLOCKING** together

**TOP DOWN**

**SWARMING** movement

**BOTTOM UP**

**moving** **TOGETHER**

**INDIVIDUALLY**

**CHOREOGRAPHY**

**FUNCTIONALITY**

**PRO-ACTIVE**

**RESPONSIVE**

**INTELLIGENT**
Virtools

“F.I.S.H. interactive”, an application to research parameters, rules, behavior and interaction
Basic rules

three main swarming rules, bottom up -> safety & functionality
Special rules

Temperature

06.00 - 09.00
wake up

09.00 - 12.00
morning

12.00 - 15.00
lunch

15.00 - 18.00
afternoon

18.00 - 21.00
dinner

21.00 - 06.00
sleeping
Special rules

*Lightness*

06.00 - 09.00  
wake up

09.00 - 12.00  
morning

12.00 - 15.00  
lunch

15.00 - 18.00  
afternoon

18.00 - 21.00  
dinner

21.00 - 06.00  
sleeping
Special rules

Privacy
FLOATING in WATER are BUBBLES creating COCOONS of AIR supporting a BEAUTIFUL EXPERIENCE.
Base shape

Base shape inspired by bubbles in the water

- Water pressure homogenous: round shape optimal
- Fluid dynamics: round shape has least resistance and drag
- Homogenous environment: round shape is universal
Shape difference

Shape optimized for unit movement

rooms:
$h = 1/2 \ b$

units general direction = horizontal
$\Rightarrow$ decrease horizontal section

supportive units:
$h = b$

units general direction = universal
$\Rightarrow$ keep optimal shape

public units:
$h = 3/2 \ b$

units general direction = vertical
$\Rightarrow$ decrease vertical section
Your room

*To boldly go where no man has gone before*
Supportive units
The spheres are there to help you
Lobby / Main unit

A gateway to an unforgettable experience

1. technical + housekeeping: focus on inside 10-20% facade openings
2. lobby + management: focus on in- and outside 60% facade openings
3. bar + restaurant: focus on outside 75-90% facade openings
Sportfacility

Go for the pool, fitness or diving club
Impressions

The hotel occupying the lake
Impressions

Near the surface and other rooms
Impressions

Underwater, looking at artifacts and fishes
Impressions

World above and under the water
Impressions

When the sun goes down
Skin

dual and pixelated
Technical installations

the counterweight balances the unit for changes in the dynamic forces

ballast tank allows to change the buoyancy -> vertical position

surplus air stored in tanks in upper construction beams

1 = plants: + O₂ and - CO₂
2 = +/- H₂O: oxidizer
   - electrolysis seawater
3 = batteries: energy
4 = clean/waste water tank
5 = cooling/heating/dehumidifier
Technical

Materialisation
Interaction

Connection possibilities in section

Public units

Rooms

Supportive units

Fireflies

docking halfway public units
5-10 docks

whale unit: drydock in middle

connectors for fireflies

docking rooms
3 docks

connectors for fireflies

docking support units
1-2 docks

connectors for fireflies

criminator fly
1 connector

Examples

Description - Inspiration - Research - Location - Concept - Design - Technique - Interaction - Experience
Interaction

*Connection possibilities in plan*

- Red indicator = options
- Fireflies give light and energy
Interface
Your digital assistant

Pocketsize
Take it with you easily

Multipurpose
The only thing you need

Intelligent
It responds and suggests

- news
- information
- control
- navigation
- setup

Description - Inspiration - Research - Location - Concept - Design - Technique - Interaction - Experience
The experience

*Take a tour to the world of F.I.S.H.*
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