A SUSTAINABLE HOTEL IN BUDAPEST

INTERDISCIPLINARY, PROJECT BASED DESIGN 1

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THE SITE
LOGODI UTCA 56, BUDAPEST

- 1st district of Budapest
- Buda side
- Behind the castle and the Fisherman’s bastion
- Connection with the tunnel which goes under the Gellert hill
LOGODI UTCA 56, BUDAPEST
VIEW PERSPECTIVE

The main facing problems:

- Very angular and narrow view
- Obstructed by surrounding buildings
- Close by habitational building
HOURS OF SUNSHINE
DESIGN PROJECT
SITE PLAN
ELEVATIONS

WEST FAÇADE

EAST FAÇADE
ELEVATIONS

NORTH FAÇADE

SOUTH FAÇADE
MATERIALS

Façades

- Concrete (hidden solar panels)
- Mobile vertical slats in the east and west façades
THE ATRIUM

- Ventilate the inside (cross ventilation)
- Glazed rooftop, to bring natural sunlight
- Air conditioning supplied by a system of geothermal heat pump
- Need to protect the west façade from the sunset exposition
- Think ahead of the closing system
CEILING SURFACE HEATING

HEATING
- Radiation: 100%
- Temperature: 26°C
- Temperature: 21°C

COOLING
- Convection: 30-40%
- Radiation: 60-70%
- Temperature: 18°C
- Temperature: 24°C
CEILING SURFACE HEATING

WET PROCESS - FLOOR HEATING/COOLING SYSTEM
- ceramic tile
- pipes (hot or cold water) in cement water
- fabric
- insulation (thermal & acoustic)
- slab (concrete)

DRY PROCESS - CEILING HEATING/COOLING SYSTEM
- slab (concrete)
- insulation (thermal & acoustic)
- metallic hangers
- pipes (hot or cold water) in aluminium
GEOTHERMAL HEAT-PUMP

- System that transfers heat to or from the ground
- Using of the topography to have rooms with more stable temperatures
- A heat source (in the winter) or a heat sink (in the summer)

COOLING

Heat exchange and absorption

HEATING

Heat exchange and use
SHADING SYSTEM

- Vertical louvered shutter (made of wood)
- Wood strip revolving around a line
- Protect the west façade from the sunset
INVISIBLE SOLAR CELLS

Operating of Invisible Solar modules is based on the low molecular density. Each module is composed of a non-toxic and recyclable polymeric compound we properly developed to encourage the photon absorption.

Inside the module there are incorporated standard monocrystalline silicon cells. The surface, that is opaque at the sight but translucent to sun rays, allows the light to enter and feed the cells.

**Integrated**
Invisible Solar blends perfectly in the environment where it's installed.

**Photocatalytic**
A natural process activated by light to purify air and clean the module surface.

**Strength**
Resistance to high static load, chemical solvents and atmospheric agents.

**Eco-friendly**
Non-toxic recyclable materials, from natural origins or reuse too.

**RENEWABLE ENERGY FOR LISTED BUILDINGS**
Invisible Solar integrates itself with heritage buildings and landscapes, with no damages for cultural values.

**HELP TO MAKE THE WORLD HEALTHIER**
Invisible Solar produces clean energy, uses sustainable materials and purifies air from smog.

**ENERGETIC INDEPENDENCE**
Everyone is free to generate his own energy everywhere, independently from major suppliers.

**REUSE AGAINST URBAN SPRAWL**
Invisible Solar promotes reuse of abandoned buildings, discouraging from urban sprawl.