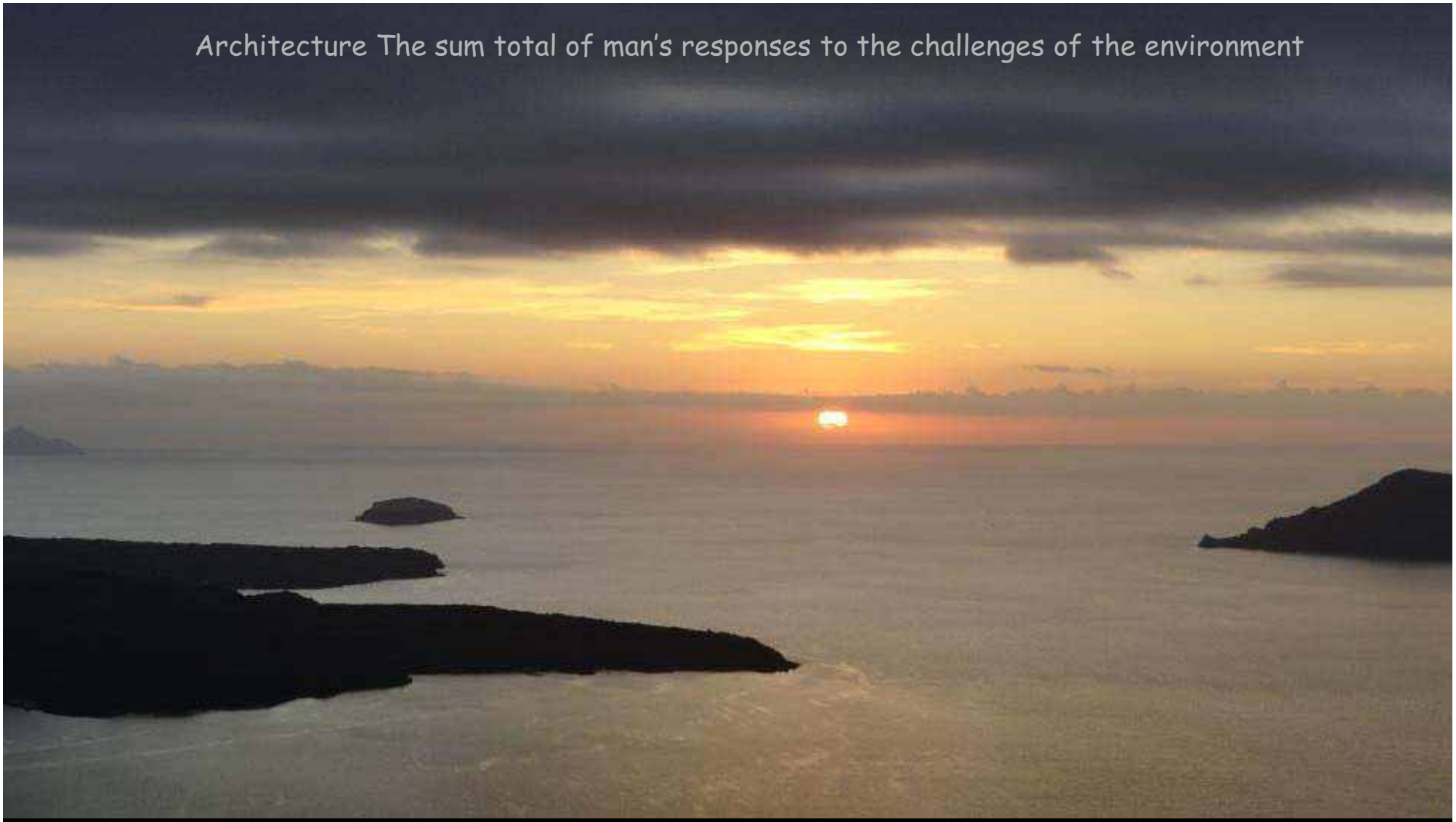
Adaptation

From the sunflower …

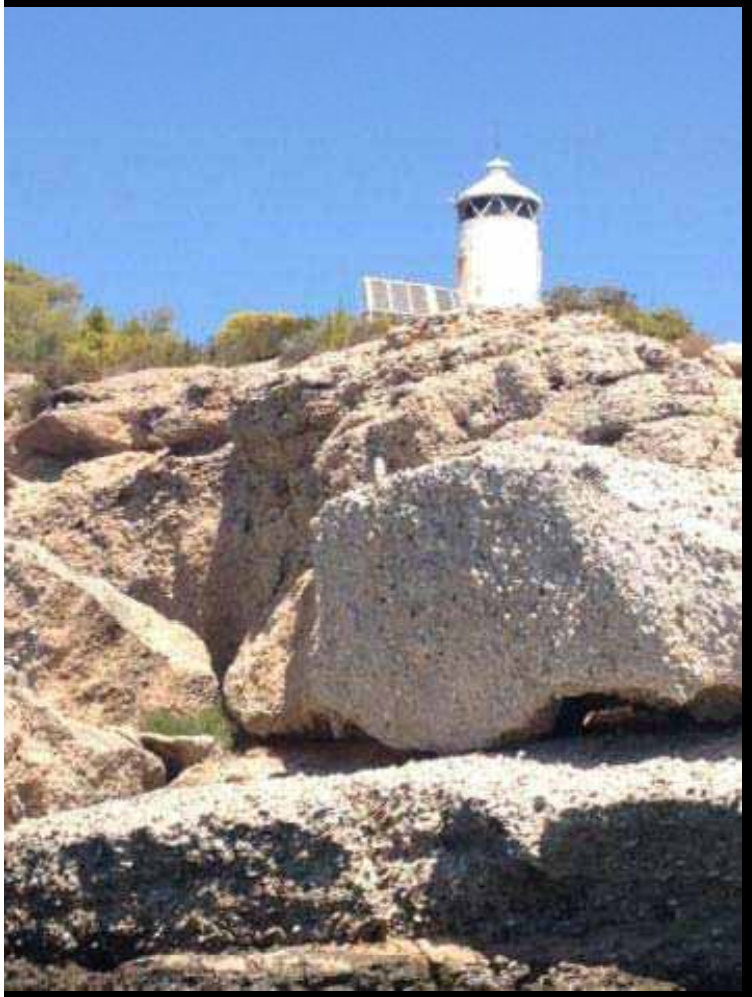
to PV technology



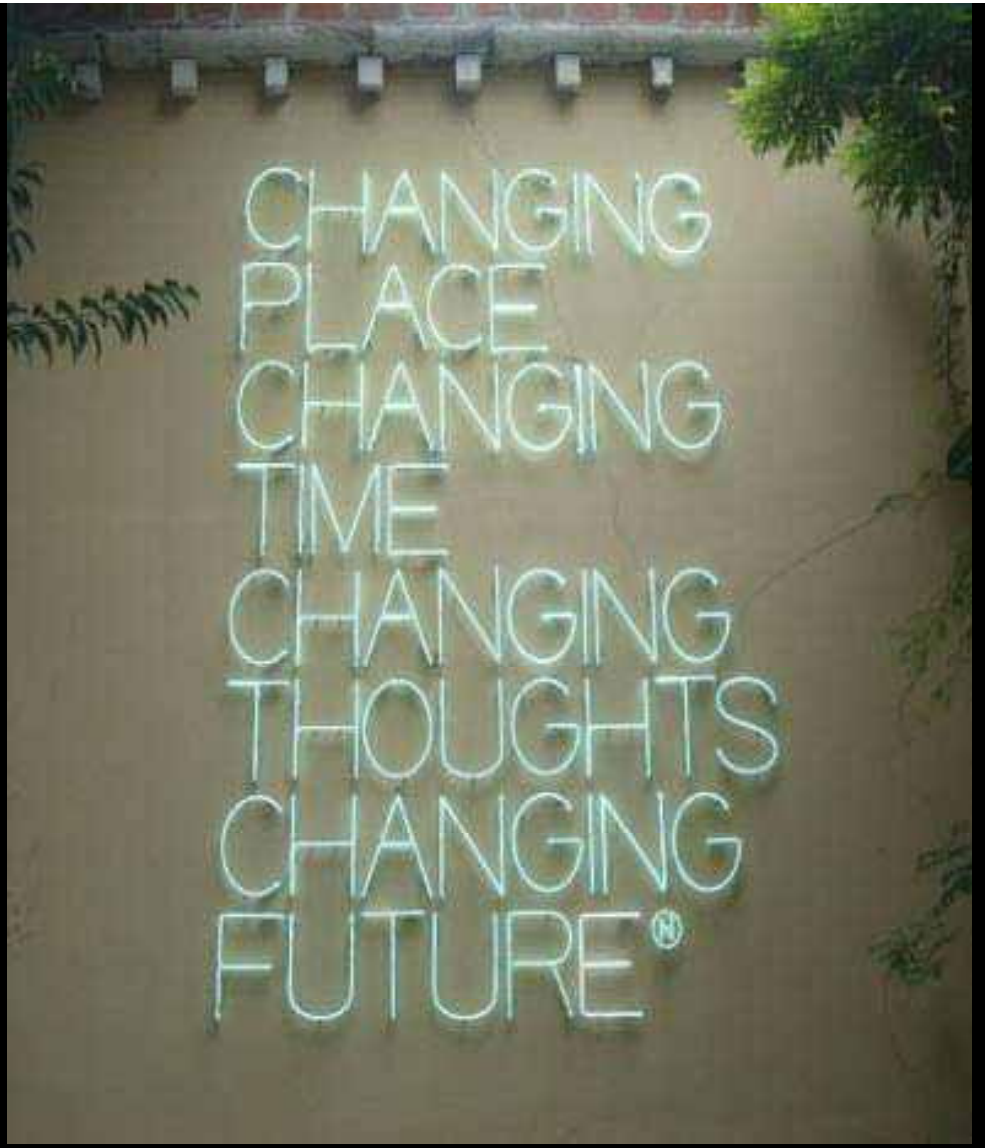
ήάλιος, ήέλιος and ήήλιος are the names of the sun used in ancient Greek

- haloid (having a composition like that of common salt),

Rising from the sea, the sun in the Aegean has been named ήάλιος αστήρ, the sea star



GLOBAL SOLAR BUILDING LANDMARKS



M.Nannucci
Guggenheim
2003 Venice

Nikos Fintikakis Architect
UIA WP ARES Director
UIA COUNCIL MEMBER

www.uia-ares.org

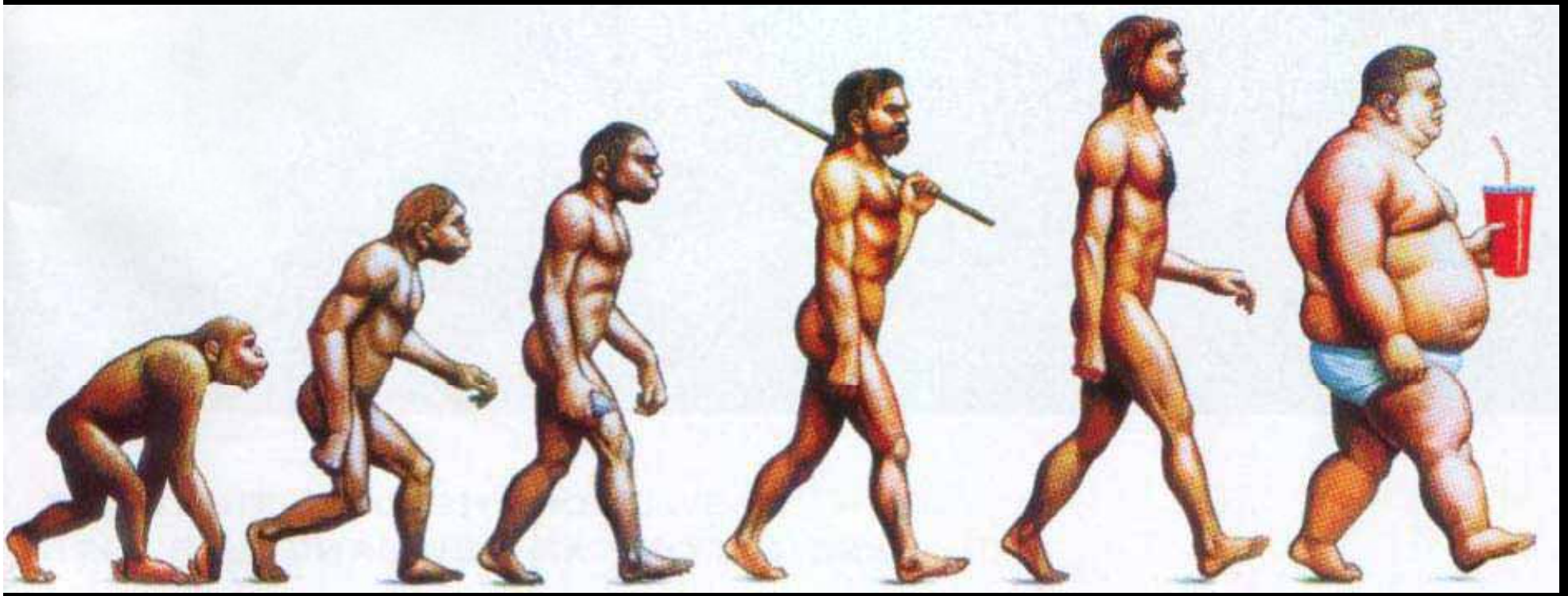
CITIES-THE RESULT OF CLIMATE CHANGE-10.000 BC

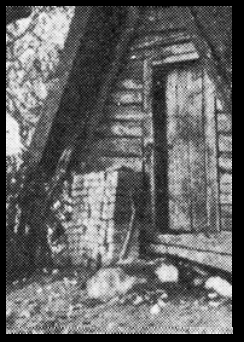
ice age glaciers retreat

Africa deserts appear

THE RESULT OF CLIMATE CHANGE-2.000 AD

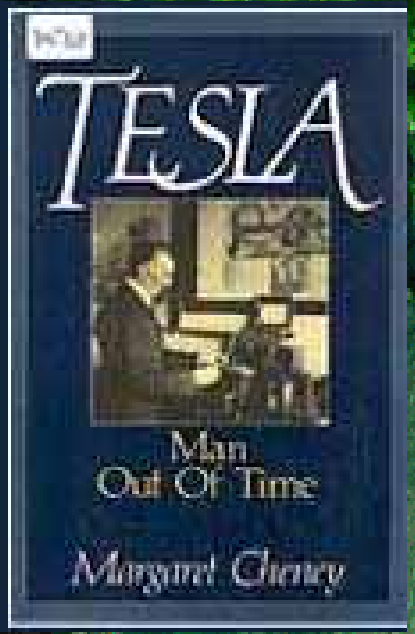
EVOLUTION ???

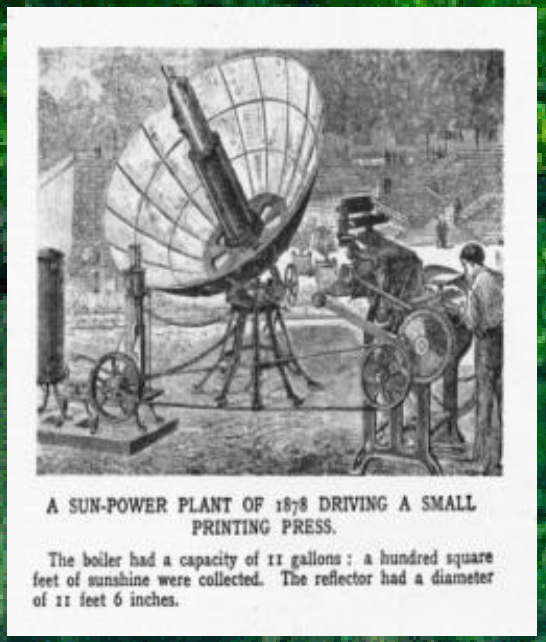




BIPV Design Strategy aims to significantly reduce carbon imprints,hazardous materials and technologies and all other adverse human effects of the built environment on the natural environment

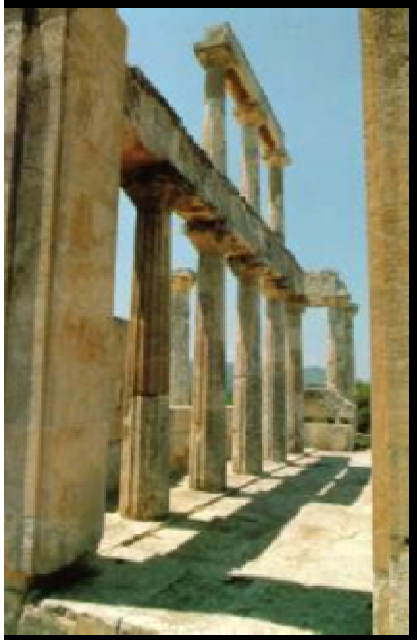
Evolution





A SUN-POWER PLANT OF 1878 DRIVING A SMALL PRINTING PRESS.

The boiler had a capacity of 11 gallons : a hundred square feet of sunshine were collected. The reflector had a diameter of 11 feet 6 inches.



Towards zero emission building envelopes

EVOLUTION ???

The result

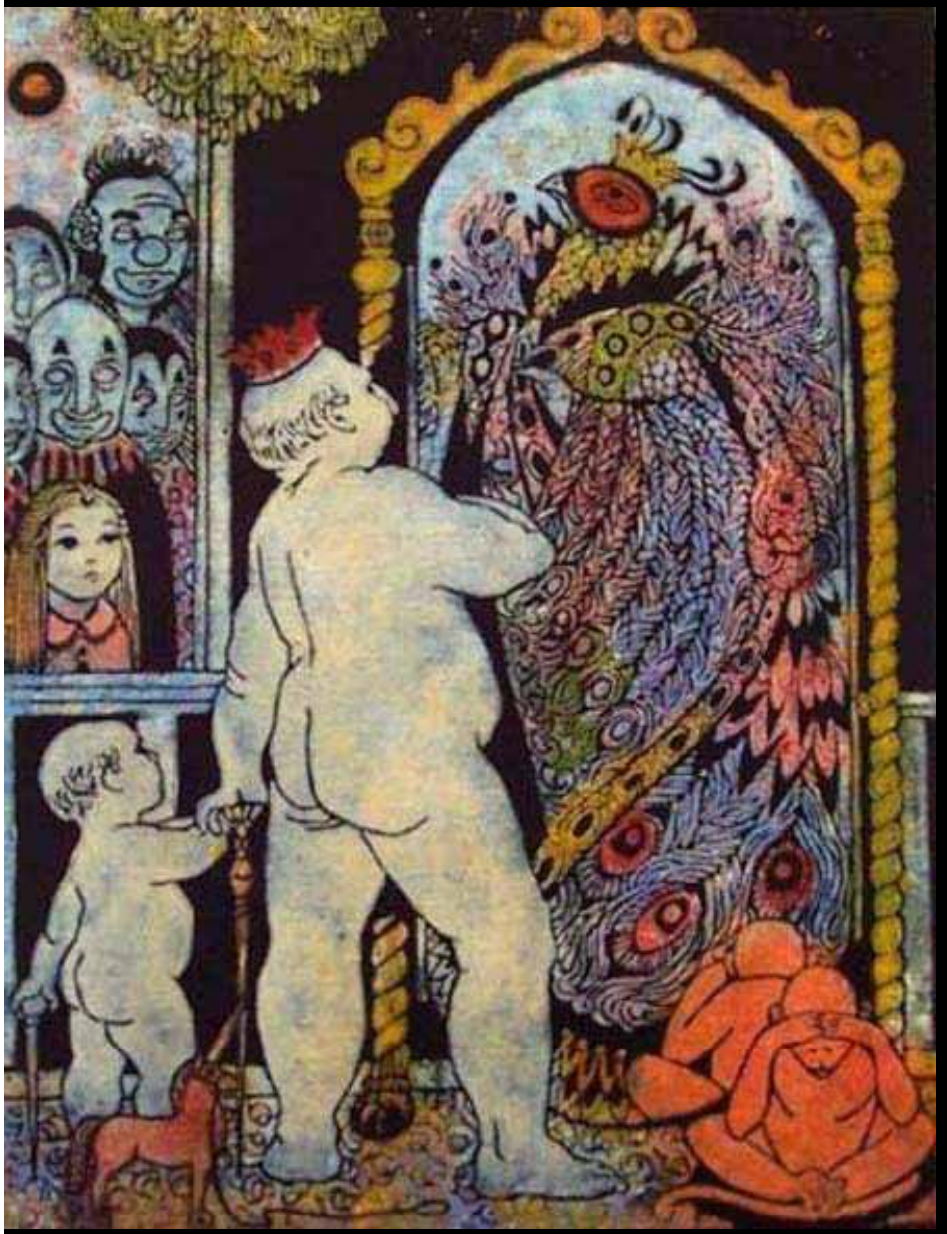
Moody's

Fitch

Standard-Poors

Photovoltaic?

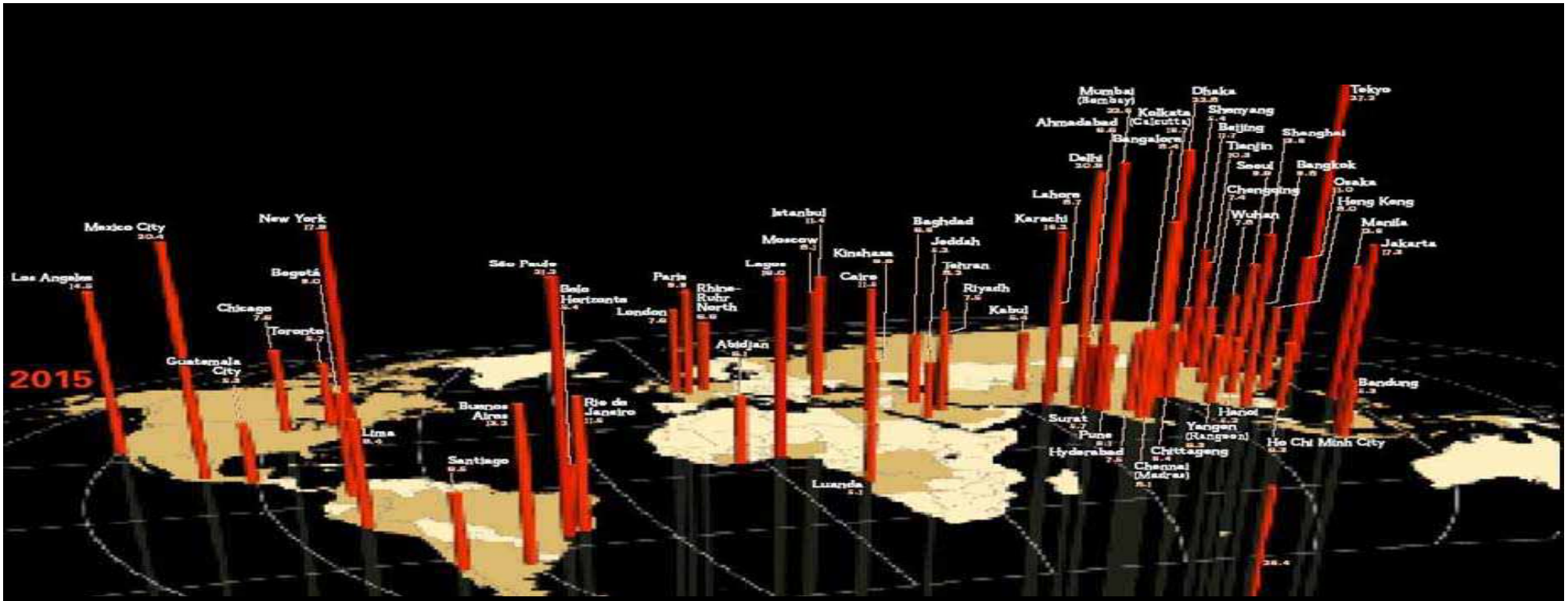
The myth of the emperor's new clothes



Social resilience

Society

Measures, Plans and Projects to ensure social cohesion for communities affected by the effects of climate change



The planet's population is increasing rapidly. More than 80 millions are added every year, and while the world population was in 1987 5 billion, it has pass six billion in 2000 and will continue to grow until the middle of the next century.

Most of the population growth is in cities. Urban population is growing much faster than the rural one; almost 80 per cent of the world's population growth between 1990-2010 will be in urban areas and most probably will be in Africa, Asia and Latin America. This means simply, that there is a current addition of 60 million of urban citizens a year, and as mentioned in, 'is the equivalent of adding another Paris, Beijing or Cairo every other month'.

11/11/2011

We face an important change of the climate. Ambient temperatures increase.
Heat waves are more frequent.Hot spells have a longer duration.
Poor design and uncontrolled development of urban areas increase the heat island intensity.
Human beings are more vulnerable and have to respond.

The Challenge:
Landscape that varies for reasons linked to global warming ,
to pollution and to the new needs of renewable energy production
for protecting the Human and Natural Biodeversity

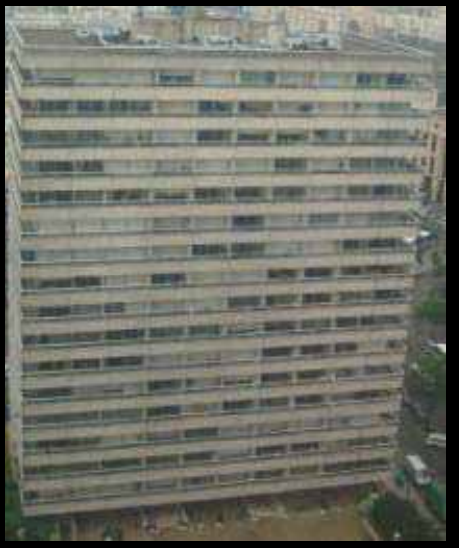
Japan nuclear Pollution

Mexican Gulf Petrol Pollution

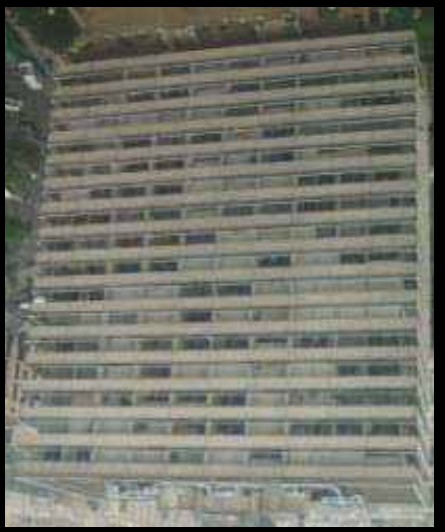
The Objective:

Increase the environmental, social and economic resilience of the built and natural environment threatened by the unsustainable urban sprawl.

Loss of orientation



Same image upside-down



The new challenges of the contemporary Architecture must find answer to global problems
Conscious use of resources - Containment of emissions - Demographic Growth

New York

New Dheli

Should we move ?

Archigram's movement

EACH WALKING UNIT HOUSES NOT ONLY A KEY ELEMENT OF THE CAPITAL , BUT ALSO A LARGE POPULATION OF WORLD TRAVELLER-WORKERS.

The contribution of the Architects to the challenge of climate change

UIA ARES INTERNATIONAL ARCHITECTURAL COMPETITION

INTERNATIONAL COMPETITION FOR ARCHITECTS

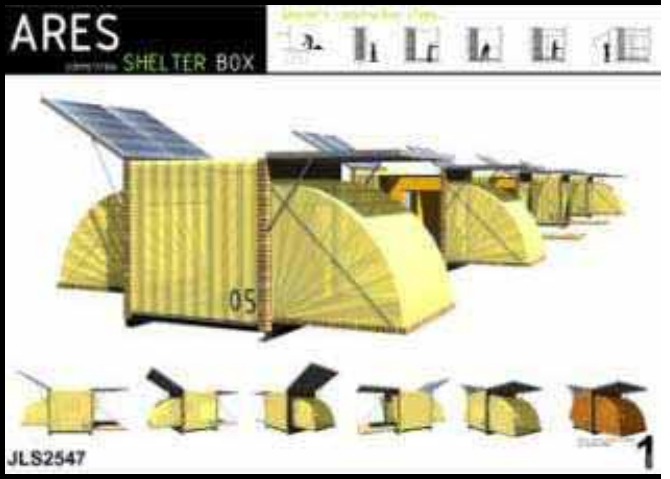
Renewable energy sources and bioclimatic architecture
for shells, to shelter people affected by natural disasters
2006 - 2008

TEE uia

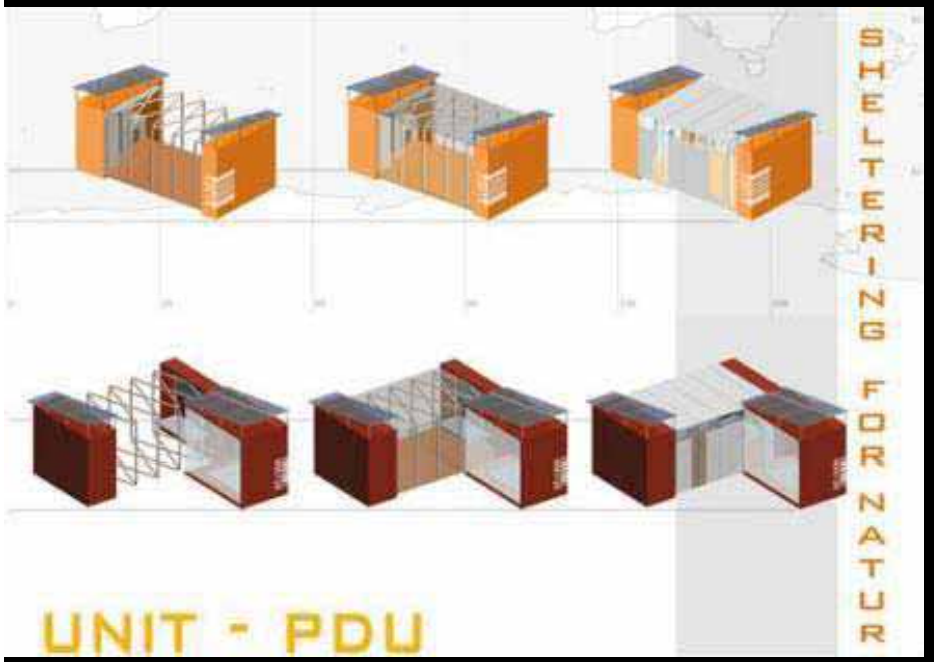
www.arescompetition.com

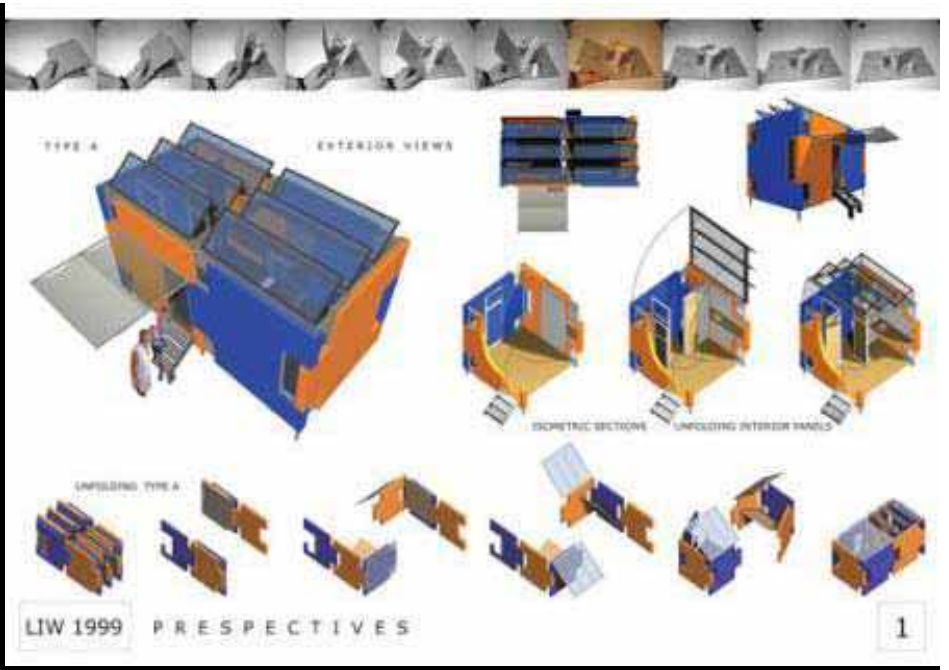
- Technical Chamber of Greece
- UIA Work Program ARES
- Theme: *Renewable energy Sources and Bioclimatic Architecture for shells to shelter people affected by natural disasters*
- Architects from around the world are invited
- 70 000 Euro will be awarded to the various winners.
- International Jury of 11 members
- http://www.arescompetition.com

VENTILATION
RAINWATER AND SOLAR PROFIT
Bioclimat Systems...
Because of the tent concept, the shelter can work as a stove, providing heating to interior space.
On the other hand, because of the accordion concept, the shelter also as the capacity of a fast opening system, that provides a great ventilation and cooling.
Wind Circulation
JLS2547
6


ARES
SHELTER BOX
05
JLS2547
1

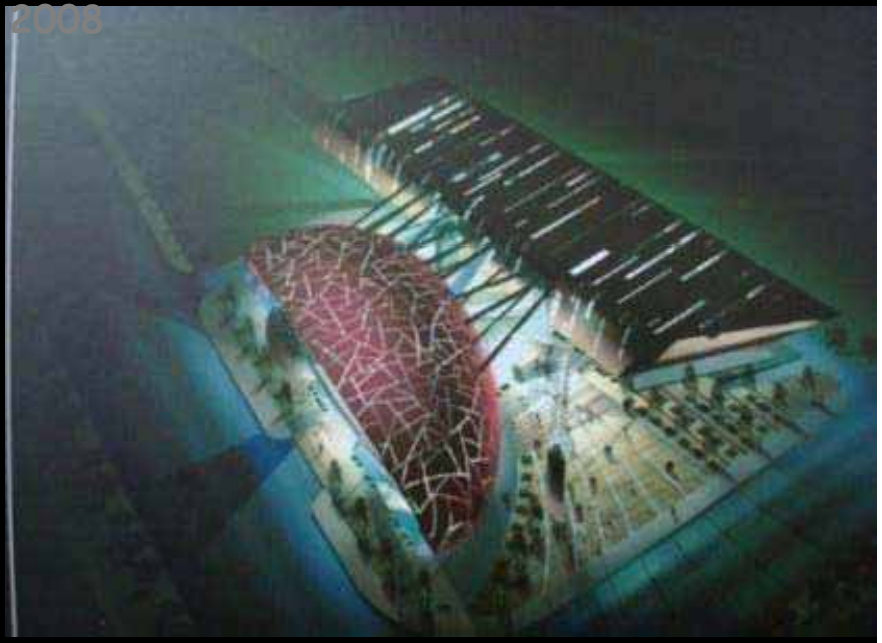
JLS2547
4


SHELTERING FOR NATUR
UNIT - PDU


TYPE A
EXTERIOR VIEWS
ISOMETRIC SECTIONS
UNFOLDING INTERIOR PANELS
UNFOLDING TYPE A
LIW 1999
PRESPECTIVES
1

...with AN INSULATED, VENTILATED METAL ROOF
CAT0819
4

BIPV in Shenzen, China
2008



IBR Offices

Shenzen, China 2011

search...

9-12 June 2012 - Building Solar China - Exhibition and Conference - China Import and Export Fair Complex, Guangzhou, China

Composed of a professional conference and an international exhibition, Building Solar China (Guangzhou) is the event to showcase integrated solar and smart technology solutions for buildings.

Building Solar China
Conference and Exhibition
China Import and Export Fair Complex
Guangzhou, China

Read more...

12 May 2012 – Conference LandmARCH, Rhodes Greece

The Small European Students of Architecture Meeting SESAM-2012 will be held in Rhodes, Greece specifically at the Nestorion Melathron on Saturday 12/05/2012.

In this conference, the Director of UIA-ARES Int. WP and member of the UIA Council Nikos Fintikakis will participate as a speaker with a presentation titled: "Critics and Criticism on Architectural landmarks – Bioclimatic and Social Synergies".

Read more...

24 February 2012 – International Student's Competition "Blue Award 2012", Vienna, Austria

UIA-ARES WP Director Nikos Fintikakis participated as member in the jury panel for the "Blue Award 2012" in Vienna on Feb.24, 2012. The results will be announced on the UIA website.

Read more...

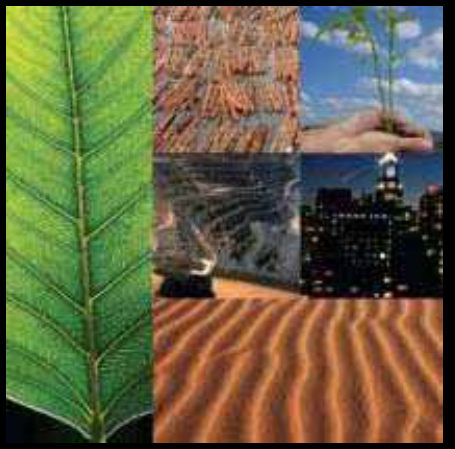
23 February 2012 - Conference "Educate Sustainability" - Rome , Italy

EDUCATE SUSTAINABILITY ROME 2012

The conference - sponsored by the EDUCATE Action, a European Partnership for Research, and organized in collaboration with the Department DATA of "La Sapienza" Faculty of Architecture and the Chamber of Architects, Heritage Conservators, Landscape Architects and Planners of Rome and its Province - aims to outline the State of the Art of Environmental Design education and professional practice by presenting innovative pedagogical experiences and investigating the

Architecture-Society

Climate



Environment

Culture

in time

in space

in mobility

in technology

Microcosm of Bio-climatic Environmental Landmarks

1350 BC

Fire fly

Night flower

Snails shell

Environmental resilience,Measures, Plans and Projects to achieve ecological networks for the survival of species

Human biodiversity

Natural biodiversity

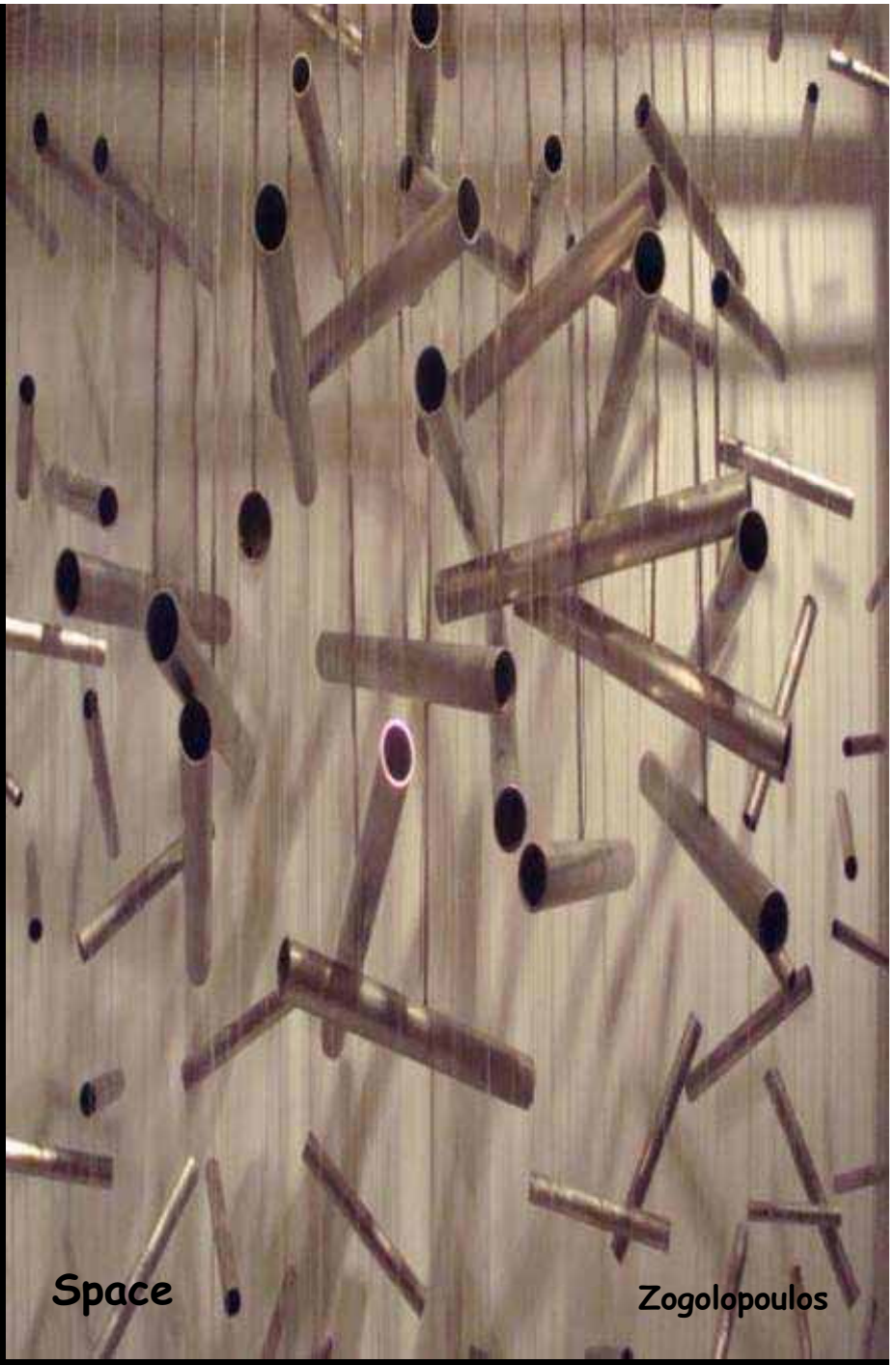
The Tree... and its PV Idol

Recycling

The spider's dematerialised shell

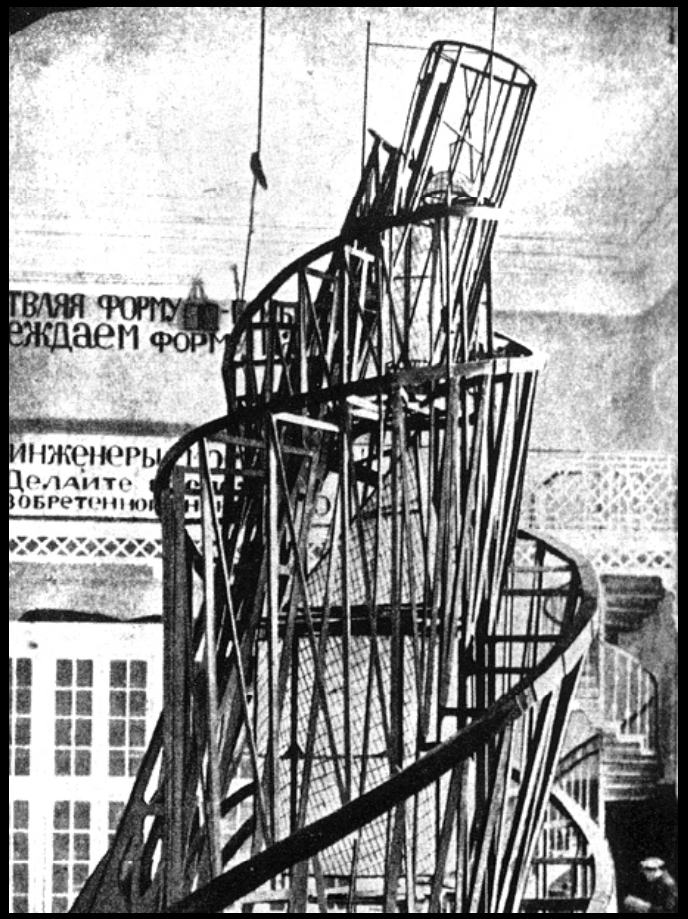
Reversibility

Time


Space
Zogolopoulos

1957 Le Corbusier Ronchamp

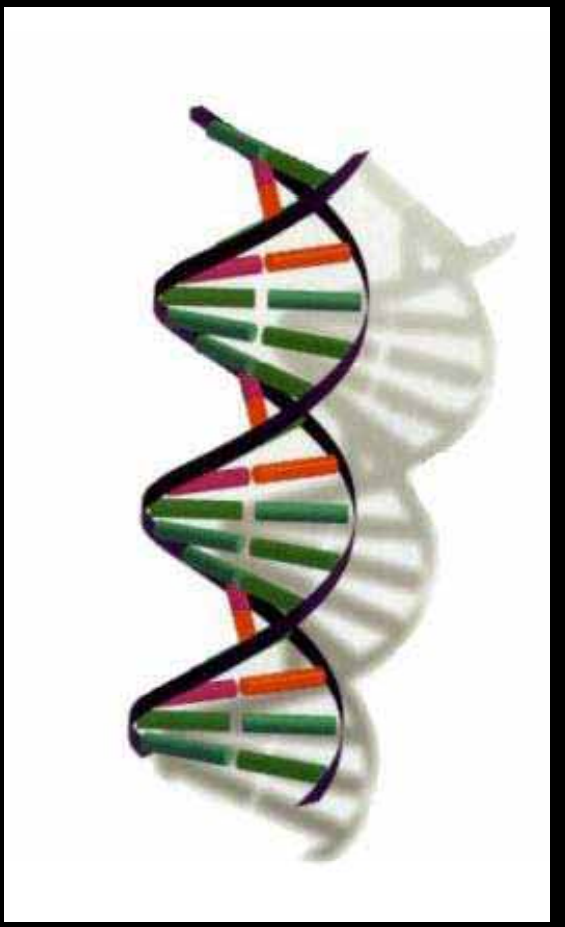
PLATO-The Perceptible World is under a Constant Flow Technology



Structuralism – Tatlin, 1920

Monument of the 2nd International

Dancing house F.Gerhy 1992



The Structure of DNA, 2000

2004 N.Foster Berlin Reichstag

Solar city Linz Austria 1995-Thomas Herzog-Norman Foster-Richard Rogers

VIRTUAL REALLITY LANDMARKS

MASDAR

DUBAI LANDMARKS

Eco Density versus Urban Sprawl-the ignore challenge

Mexico
Teothiuacan

Dubai

San Giminiano
Italy

Shen Zher
China

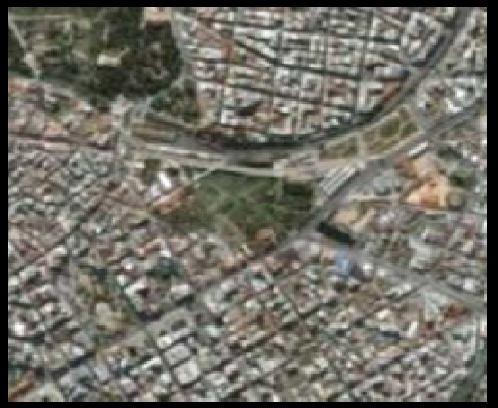
Needed energy surface for a Zero Energy Athens

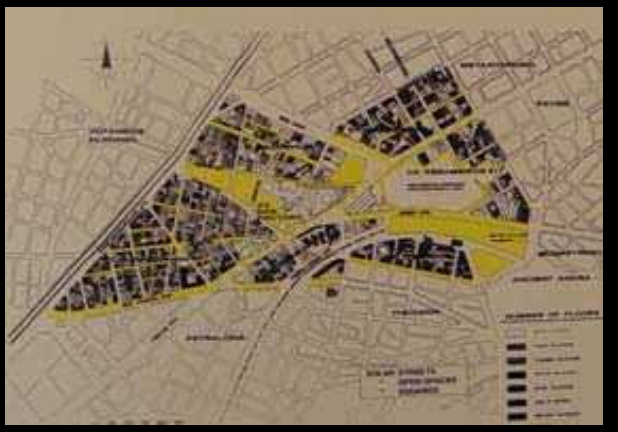
Olympic model diverse cities and Landmarks

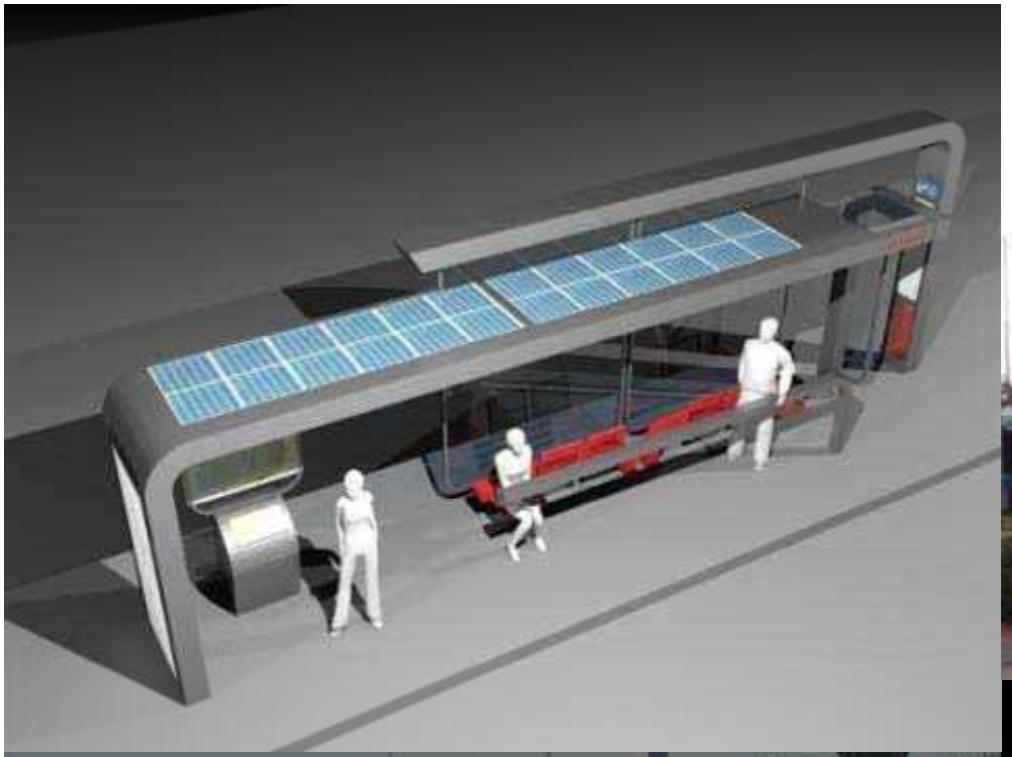
Athens Olympics 2004-Green unification of Archaeological sites

Kerameikos Urban renovation

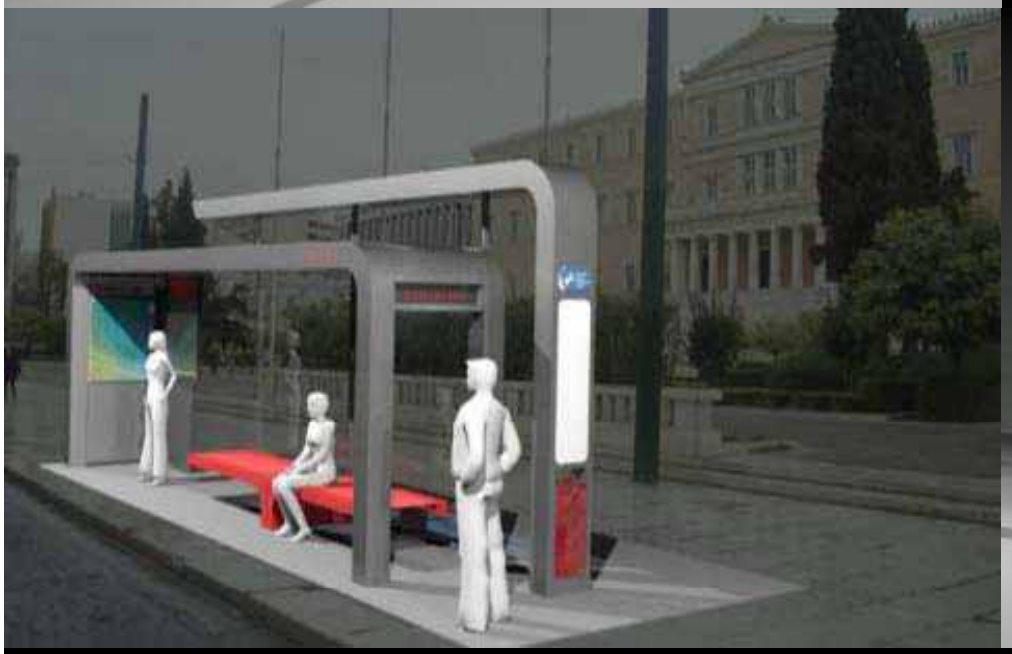
Solar and Wind Streets



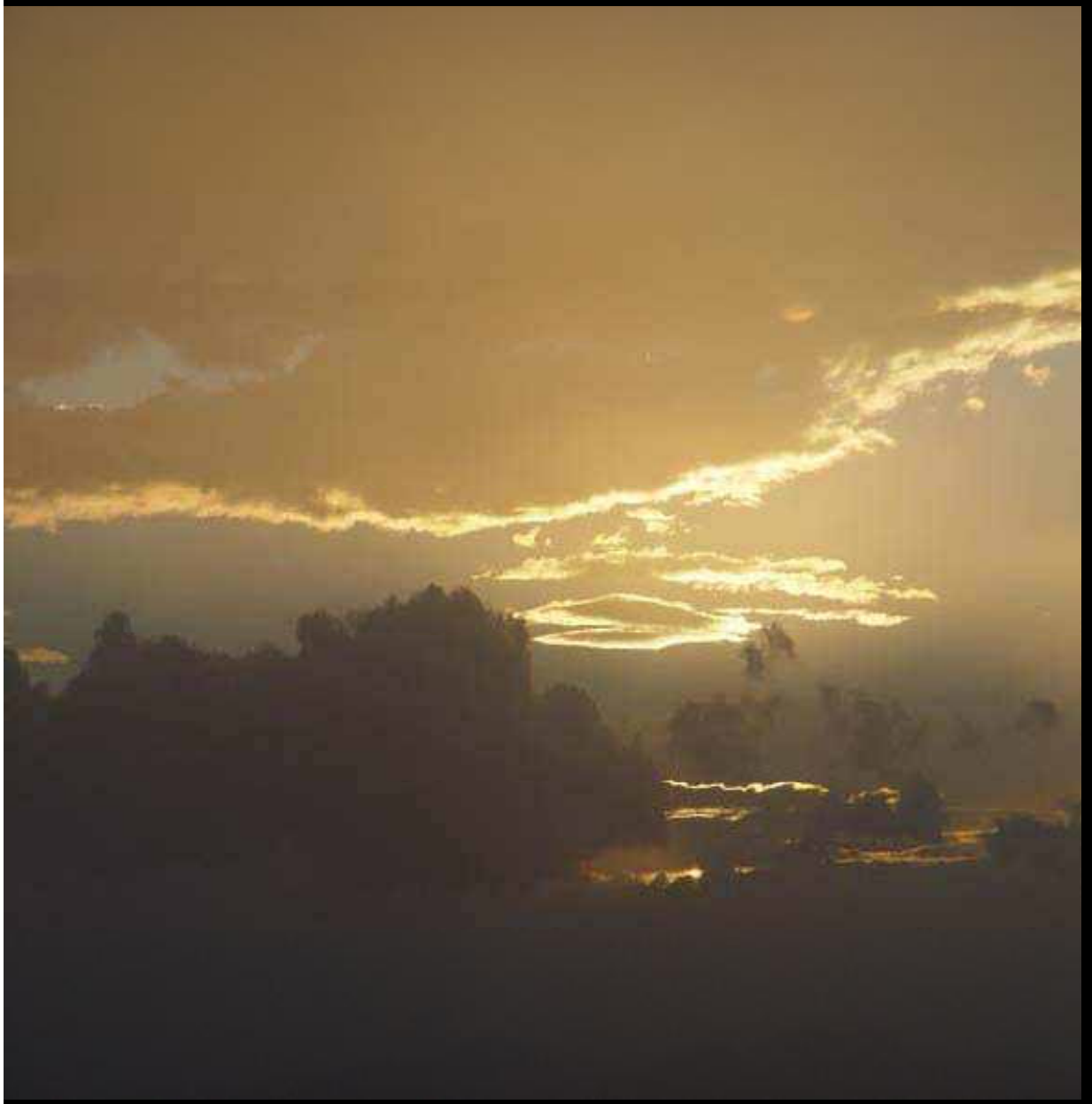




Urban Solar Bus Stations 1st prize Arch.competition

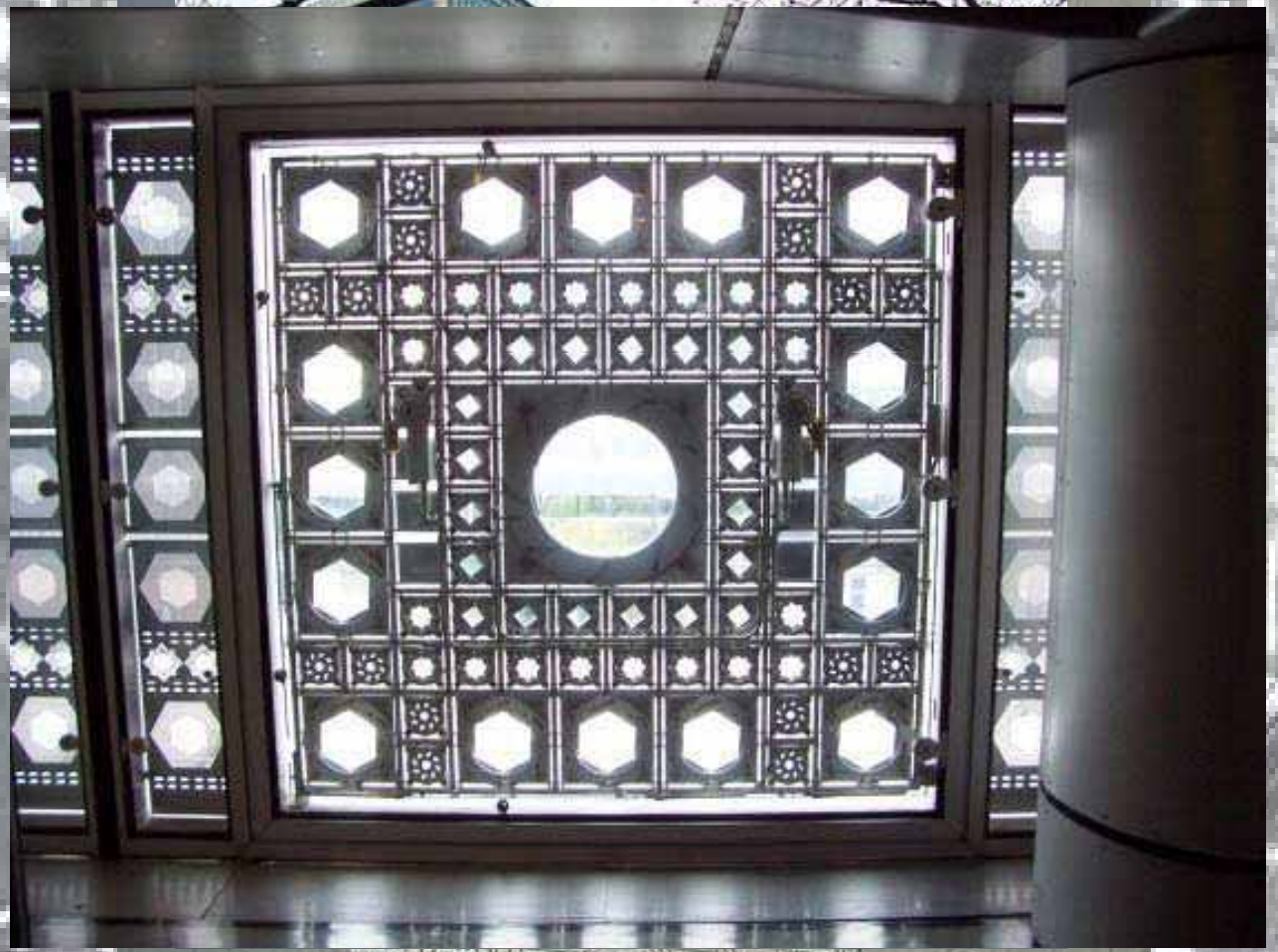


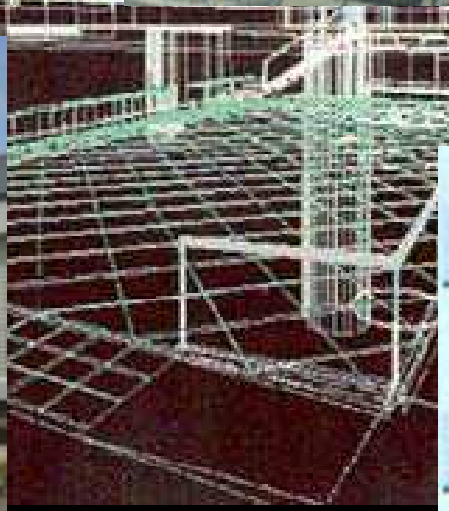
The Environment... and it's False Image

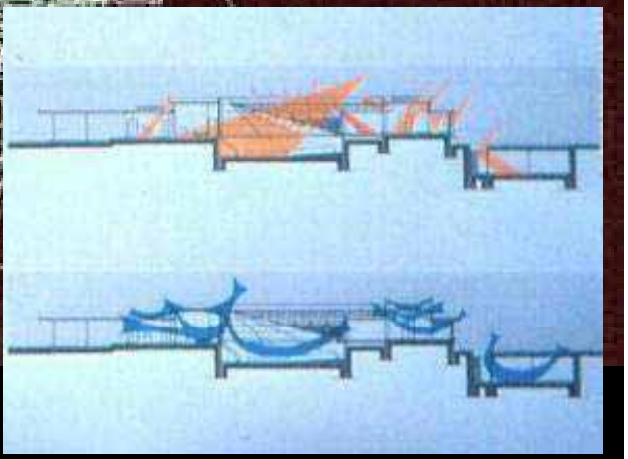


Institut du Monde Arabe

Paris, 1987 **Jean Nouvel**







2005 Archaeological Museum Thessaloniki,

Architecture must exprime the sum total of man's responses to the 4 environmental qualities

Aristotle

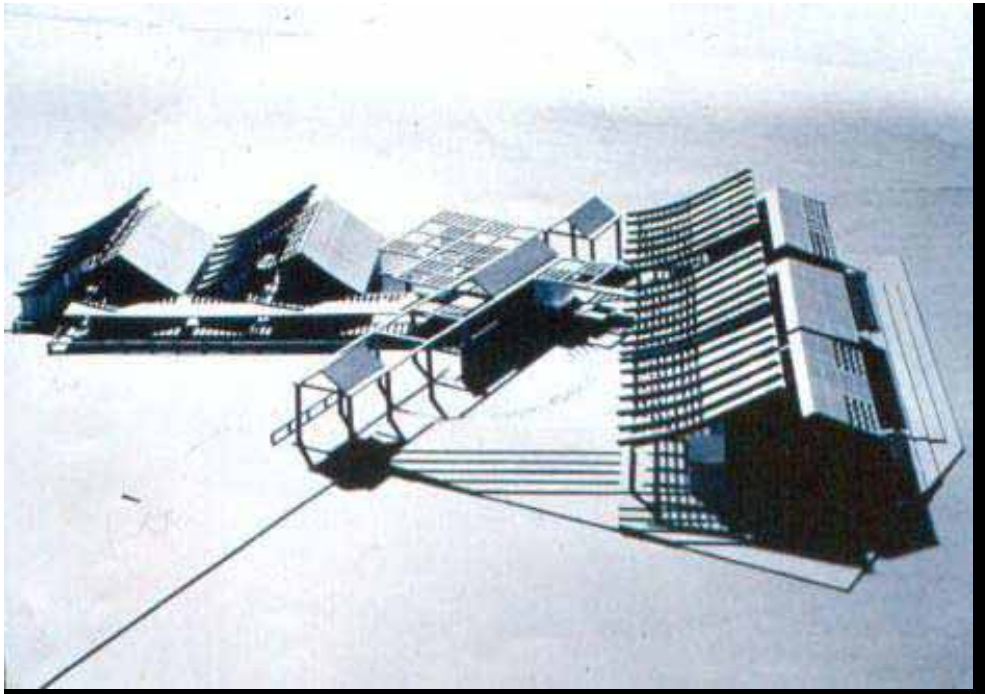
Cool
Hot
Dry
Humid

Pole

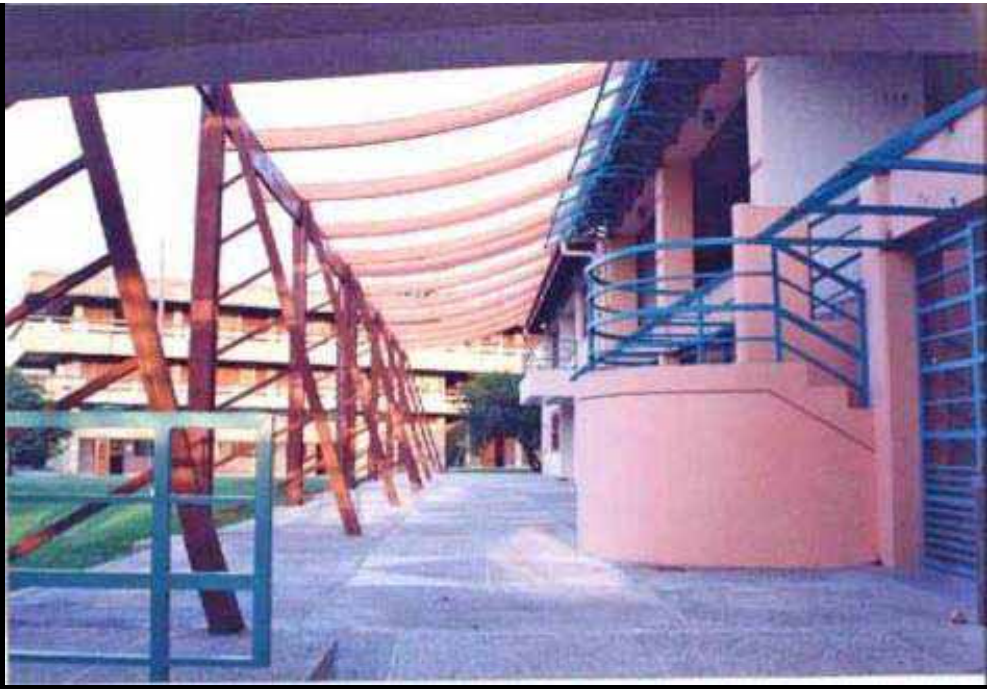
Paros

India

caribbean university west indies

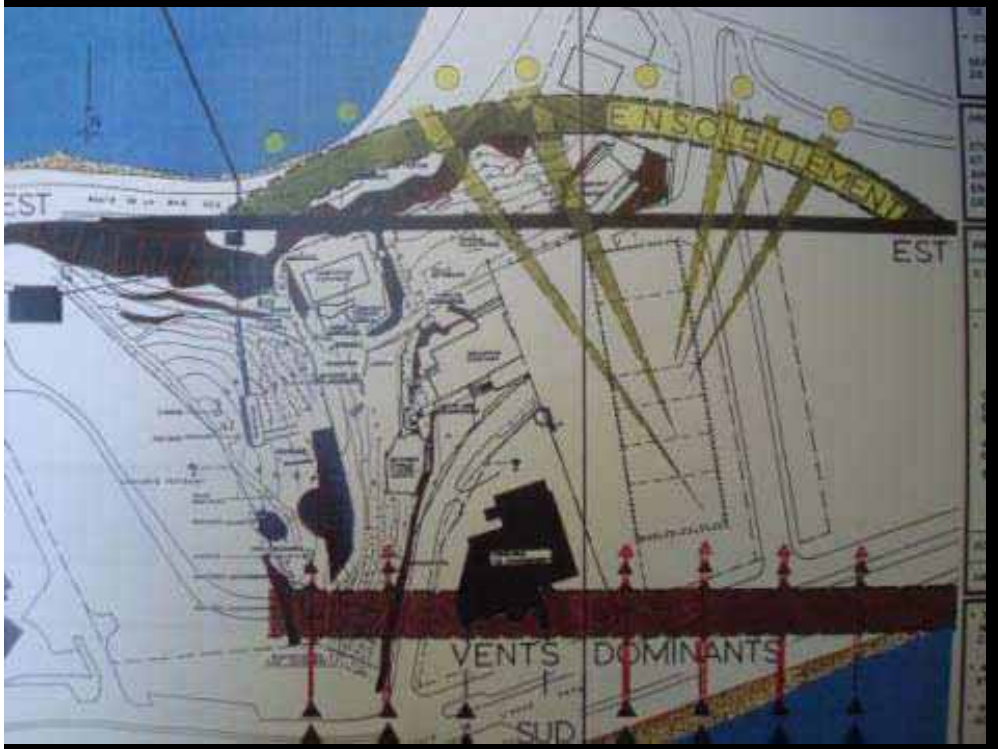


Trinidad



UWI 1st prize EU 2000 Arch.Competition

Aquatic Center – New Caledonia



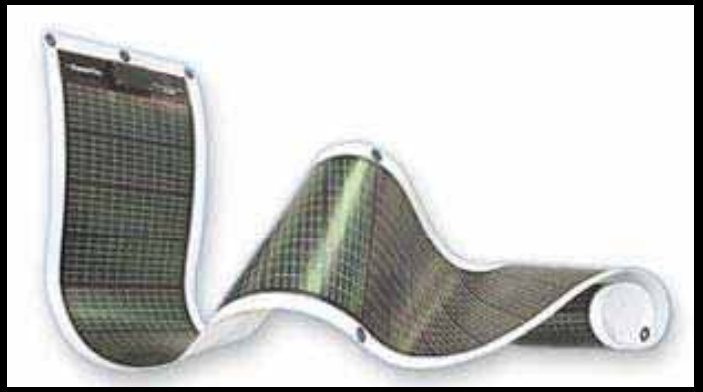
1st prize EU 1997 Arch.Competition

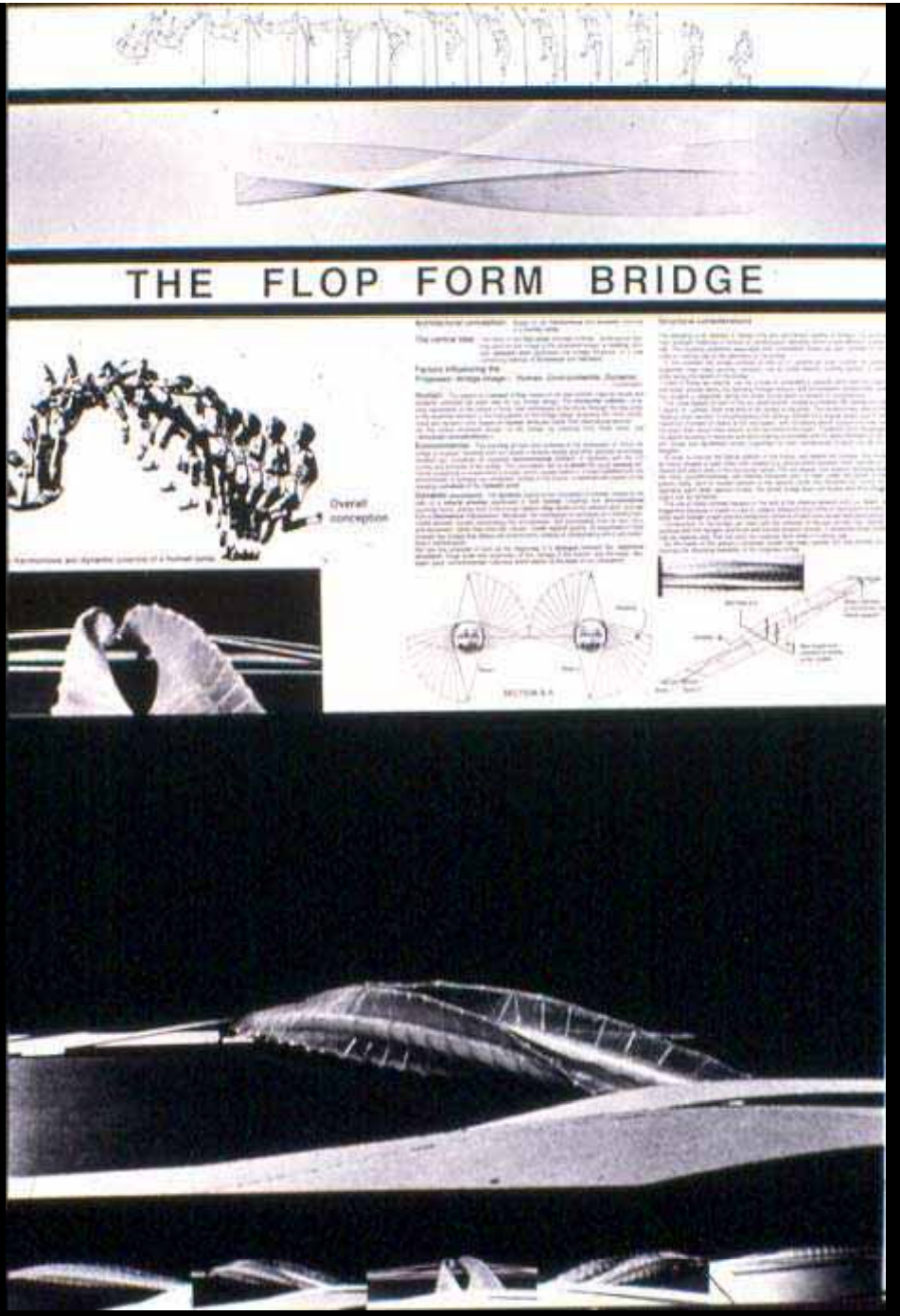
CITIES, TERRITORIES AND LANDSCAPES IN A CHANGING CLIMATE

The need of adaptation

As Architects, Planners, Designers we can help to build adequate adaptations strategies for Territories, Landscapes, Cities and their citizens

The Bridge of the future JAPAN
3rd prize 1988 Arch.Competition





Horizontal Mirror of the Sunrise and the Sunset Center for Renewable Energy Sources

1st prize 1994 Arch.Competition

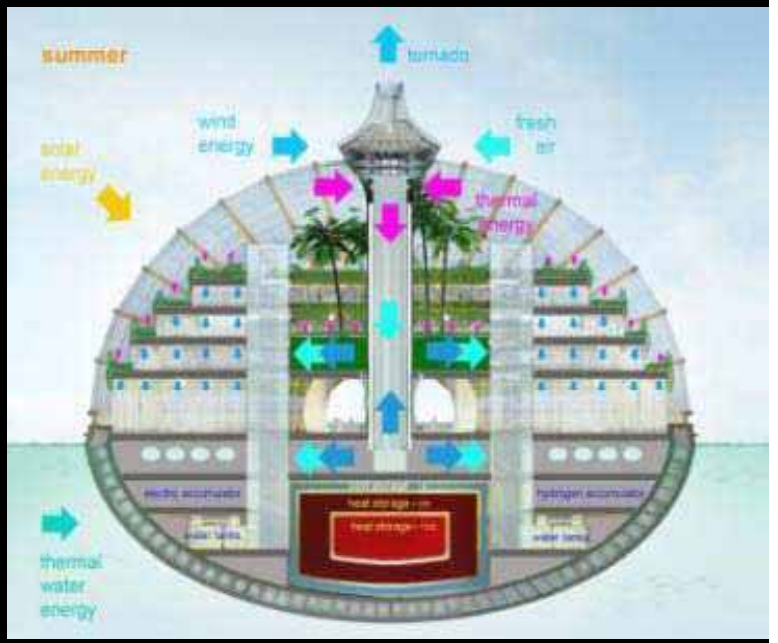
A Silver Curve on the Ground

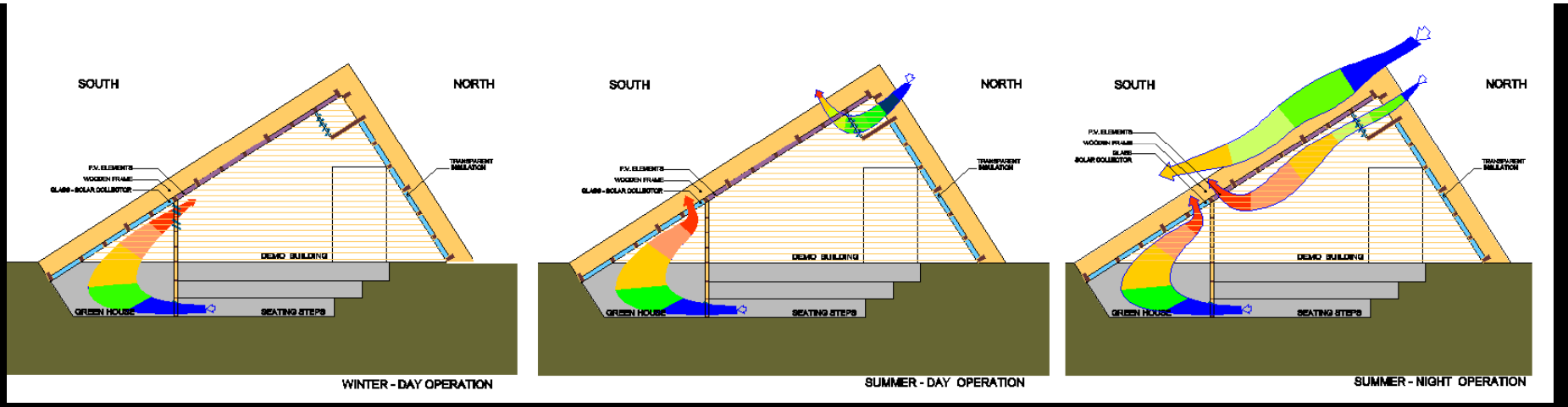
Horizontal Mirror of the Sunrise and the Sunset

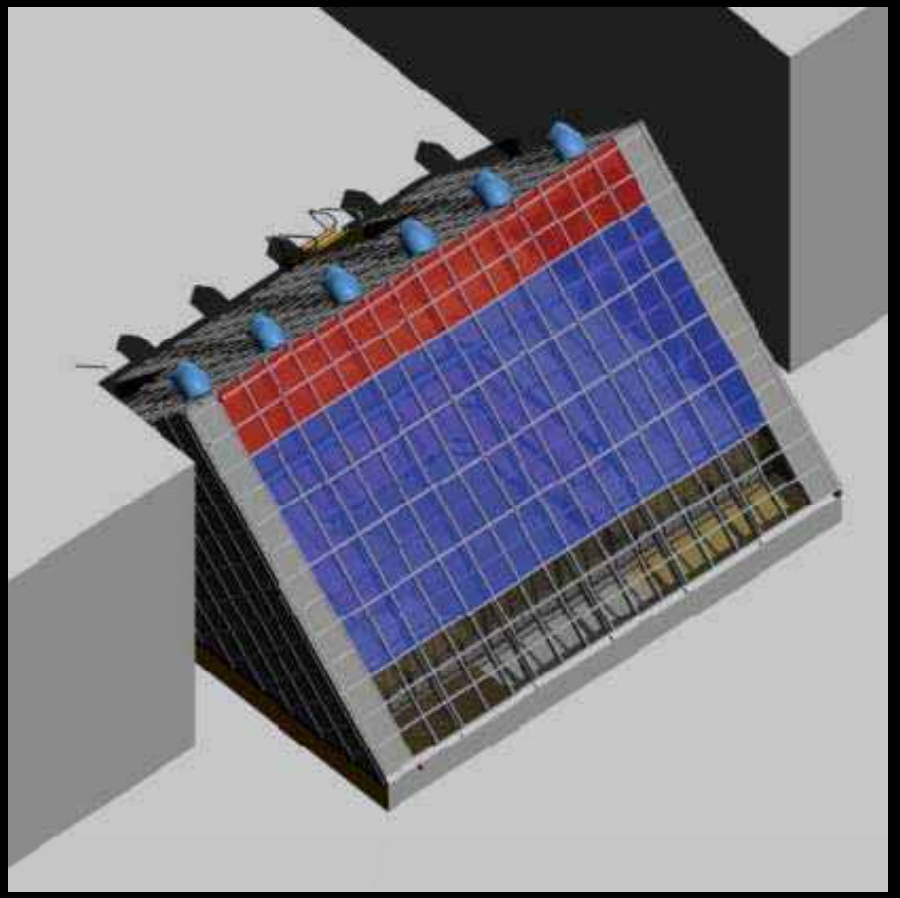
Center for Renewable Energy Sources

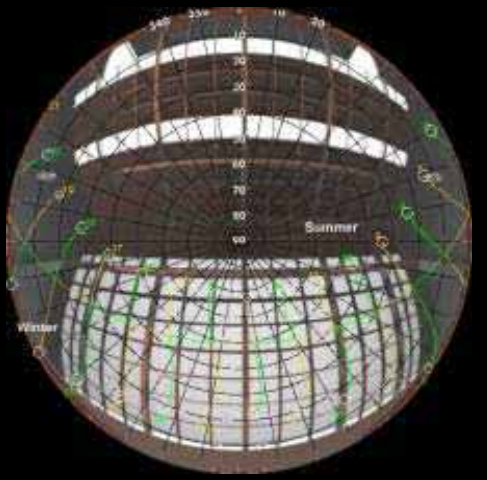
ENERGY HOUSE RUSSIA

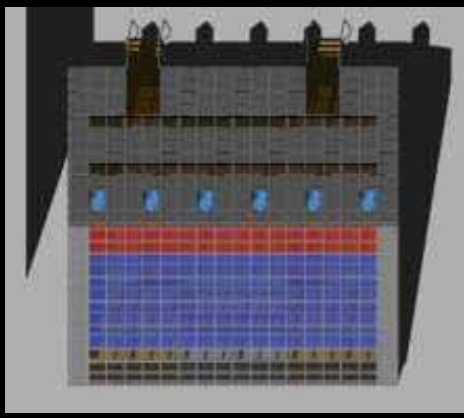
ARK PROJECT RUSSIA 2011

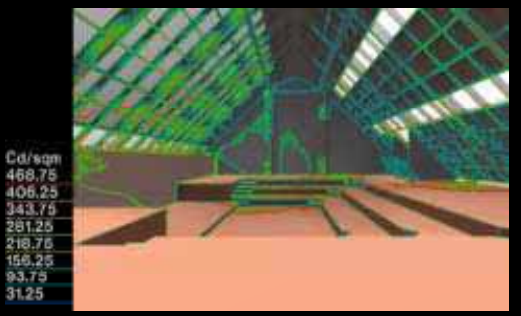


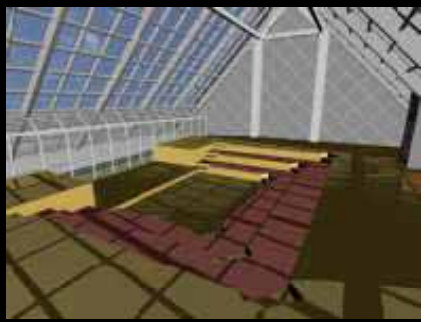

SOUTH
NORTH
P.V. ELEMENTS
WOODEN FRAME
GLASS - SOLAR COLLECTOR
TRANSPARENT INSULATION
DEMO BUILDING
GREEN HOUSE
SEATING STEPS
WINTER - DAY OPERATION
SUMMER - DAY OPERATION
SUMMER - NIGHT OPERATION




Summer
Winter

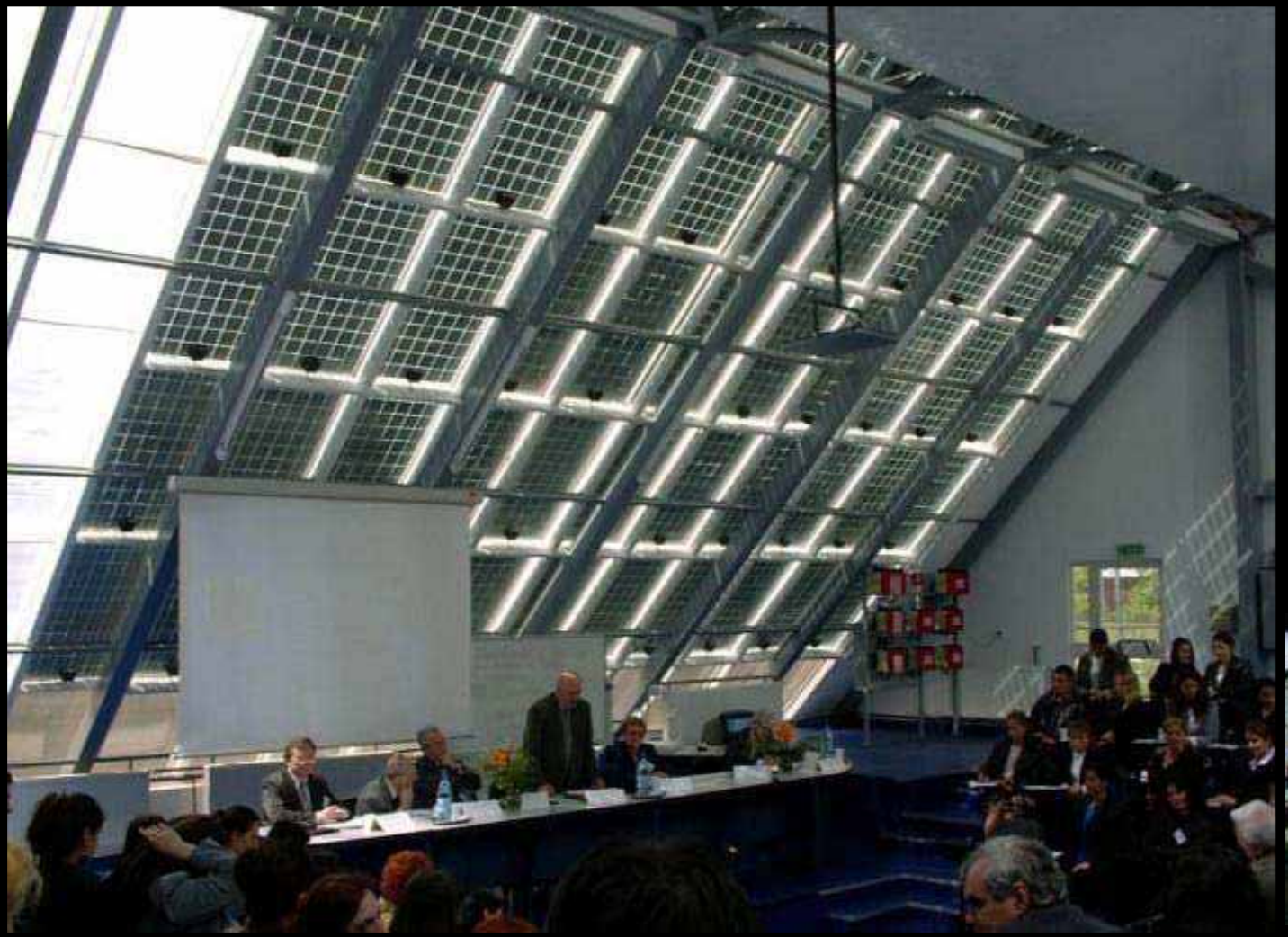



Cd/sqm
468.75
406.25
343.75
281.25
218.75
156.25
93.75
31.25



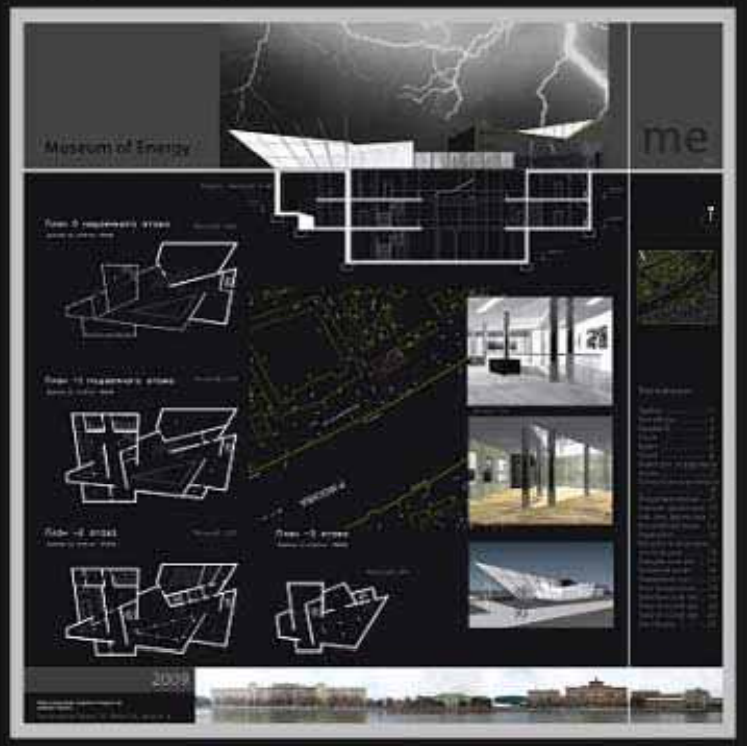
Targoviste University PV Research Center, Romania

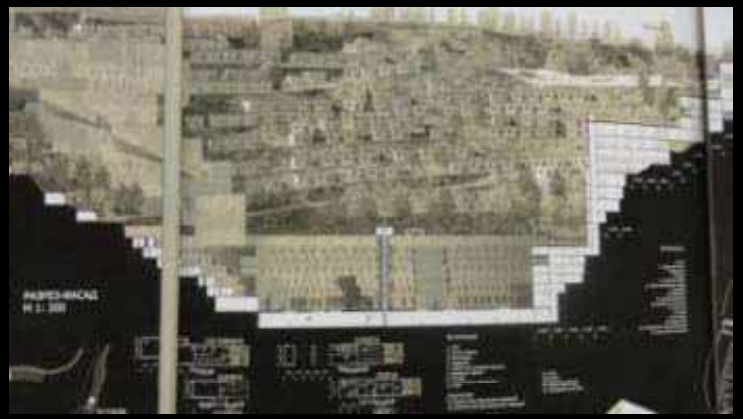
In collaboration with WIP



Museum Project

"Museum of Energy" Project,
MARCHI, Moscow, November 2009.

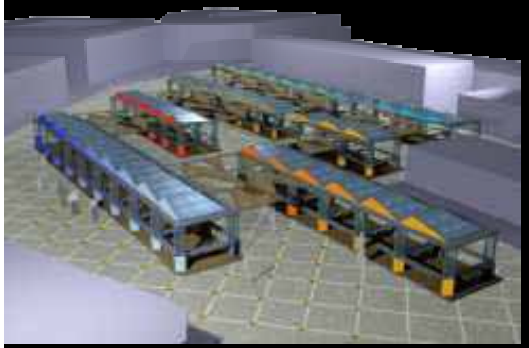




KORÇA

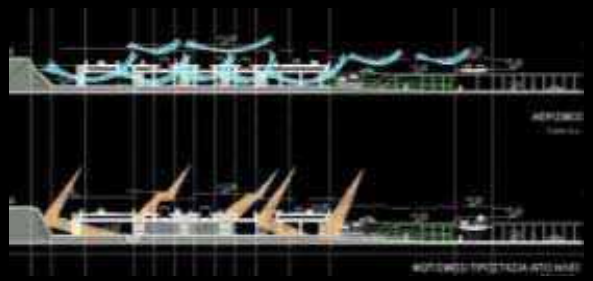
Historical Bazaar at City centre:

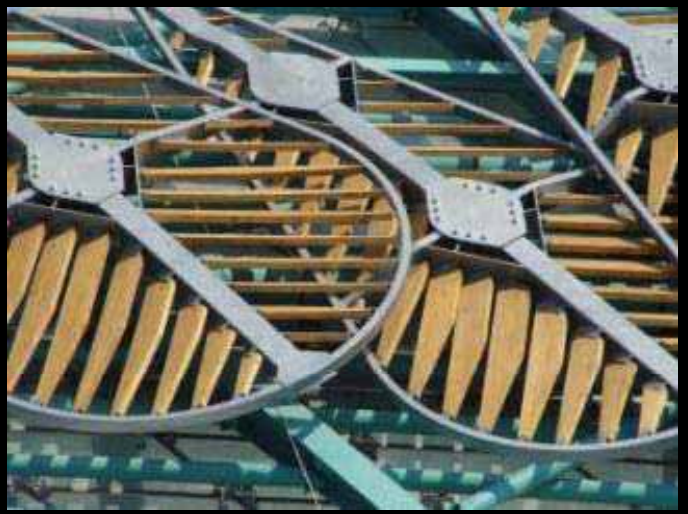
1st Prize European Arch Competition, 2008



night - shot

Sustainable by Design Strategy optimises efficiency through design,Renewable Energies high performance and environmentally benign technologies are integrated to the greatest practical extent in the project conception



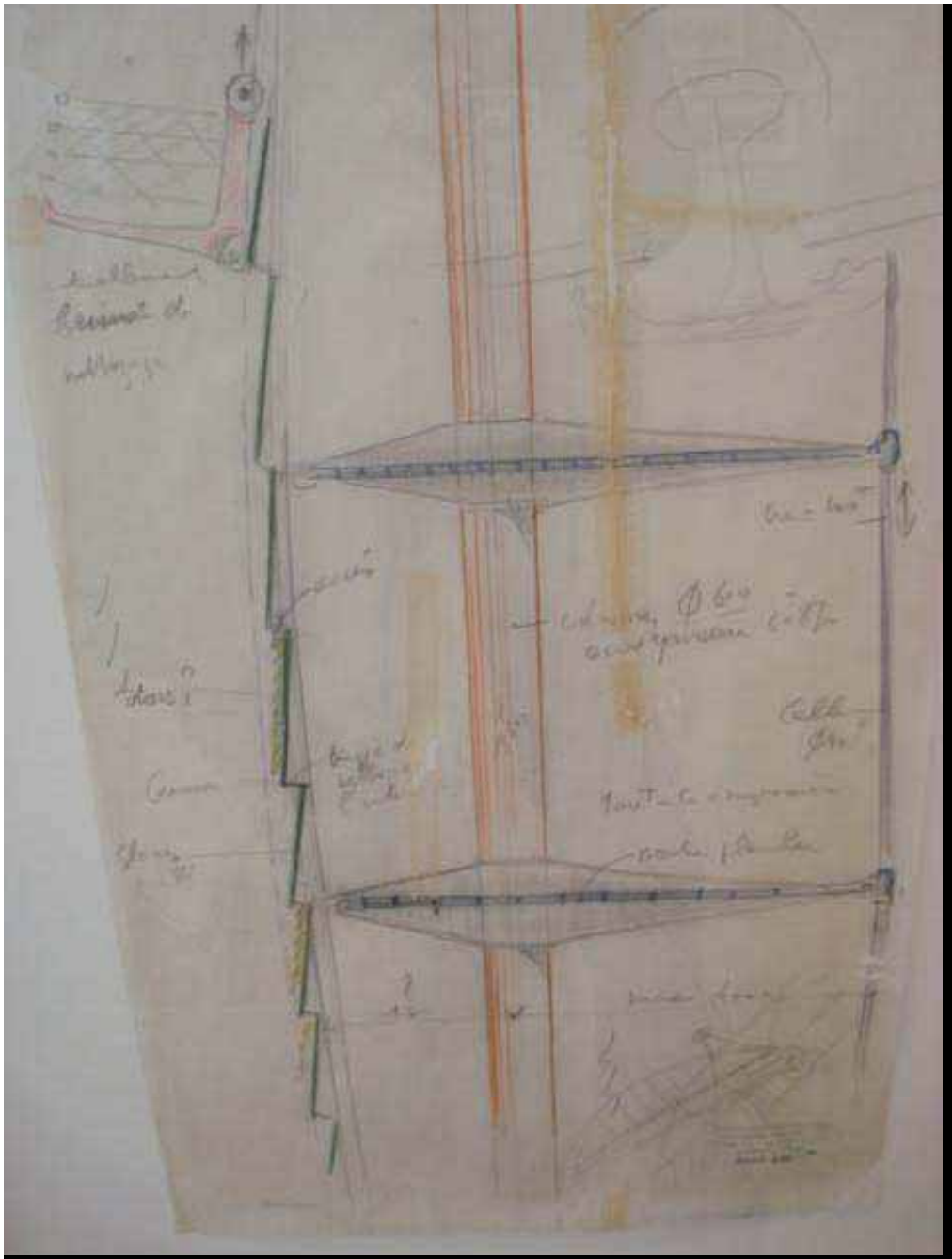


Sino Italian Energy Center

Architect Mario Cucinella

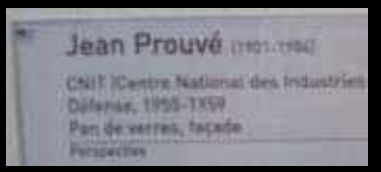
Mont Cenis Herne Sodingen

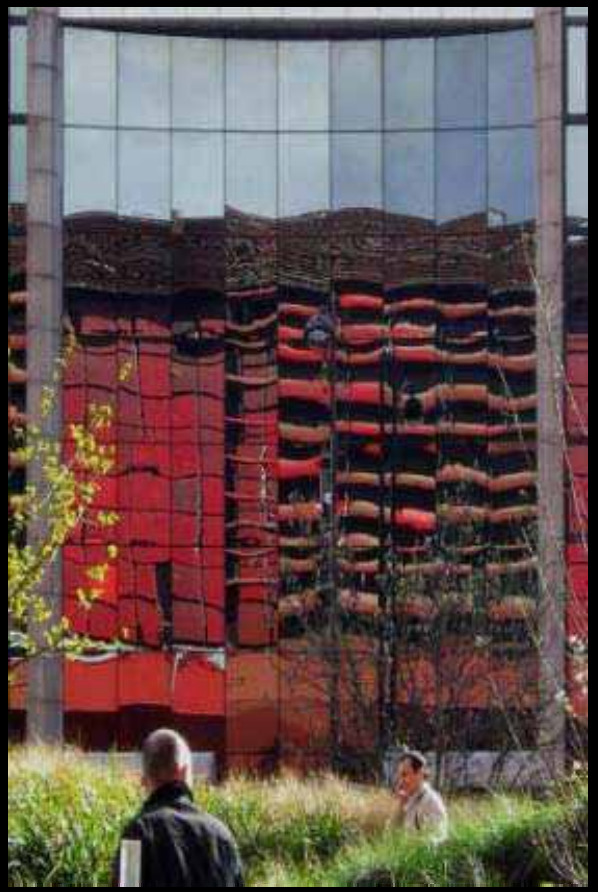
Architect Francoise Helene Jourda



Conference Center

PARIS 1959





Jean Nouvel

Musée du quai Branly

Paris, 2006

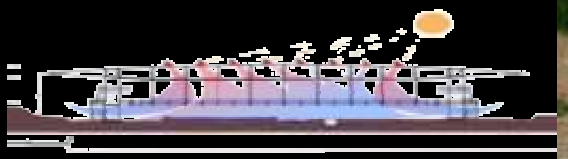
Sustainable by Design Strategy seeks healthy materials for healthy buildings,ecologically and socially respectful land-use and an aesthetic sensitivity that inspires and affirms

Olympic Canoe-Slalom
IOC Bronze Metal 2007

A Green enveloppe of spaces and structures

Aristotle's Lyceum, Athens, 2002

Summer
Natural Ventilation



Winter
Natural Ventilation

ART CITIES TOWARDS HAPPINESS

3 Giant photographs of women cover the walls of homes in Providencia slum in Rio de Janeiro, Friday, Aug. 15, 2008. A French photographer who identifies himself as JR is exhibiting portraits of women whose loved ones were killed by police as part of his project entitled "Women are Heroes." (AP Photo/Ricardo Moraes) #

Rio de Janeiro favellas -JR

Tirana-Albania -E.Rama

TIRANA historical City centre 1st prize EU Architectural Competition 2011

Bioclimatic Development of Cultural and Historical Heritage

A wormhole in a rainbow environment penetrates the historical centre of Tirana

An open-air art gallery and museum

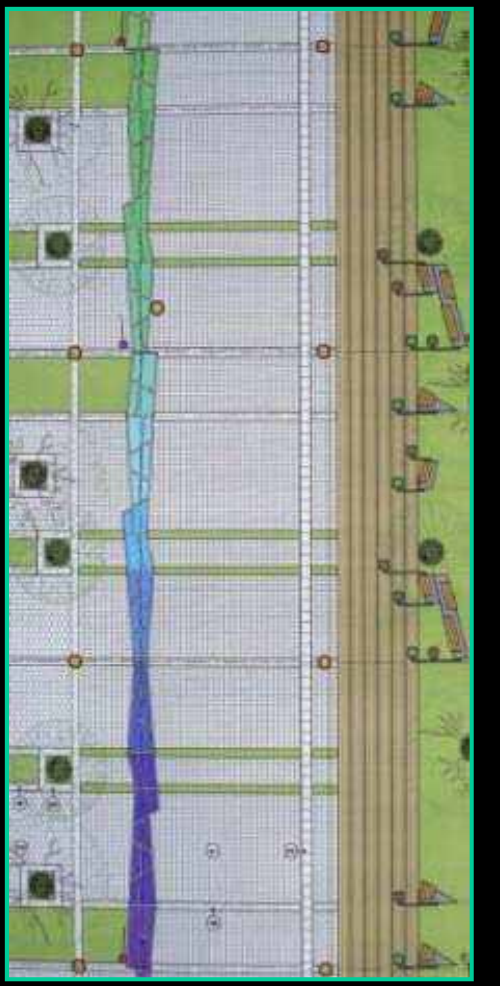
A flyover bridge links the past with the future

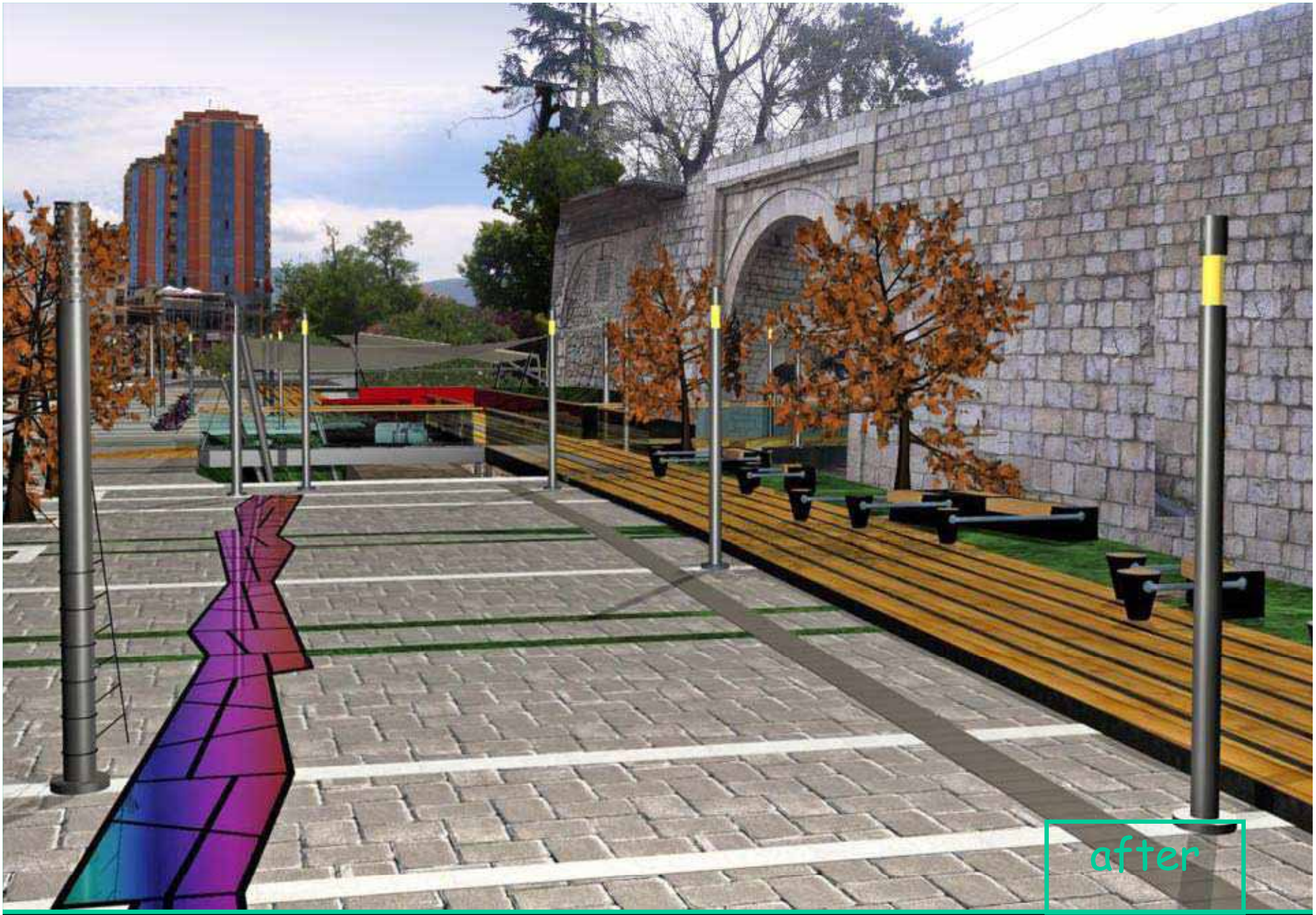
Laser lines unify the points of interest

City enhancement with wind and light

Use of earth to air heat exchangers.

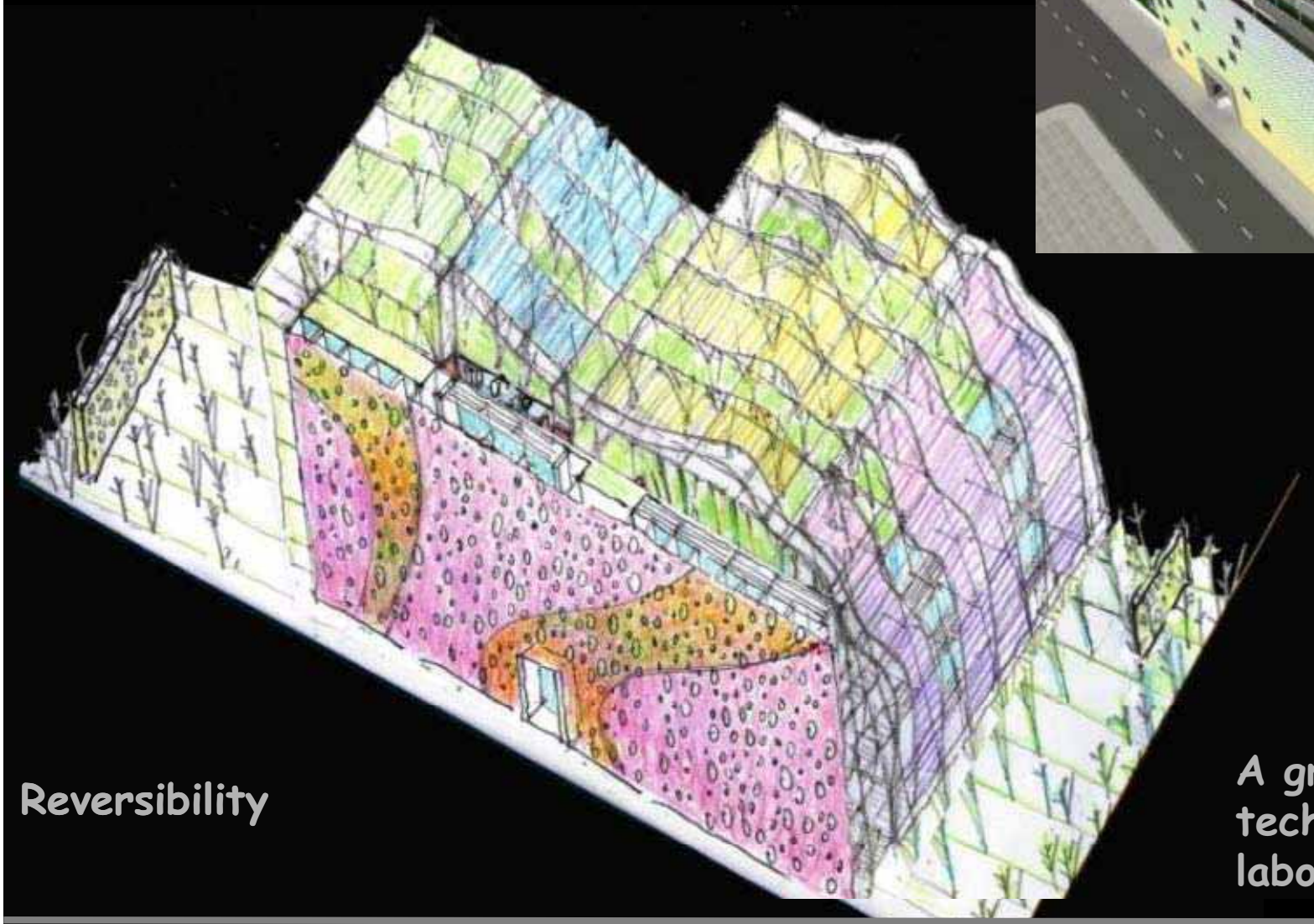
Underground air movement




after

EERWC – LAB BUILDING IN NICOSIA, 2009

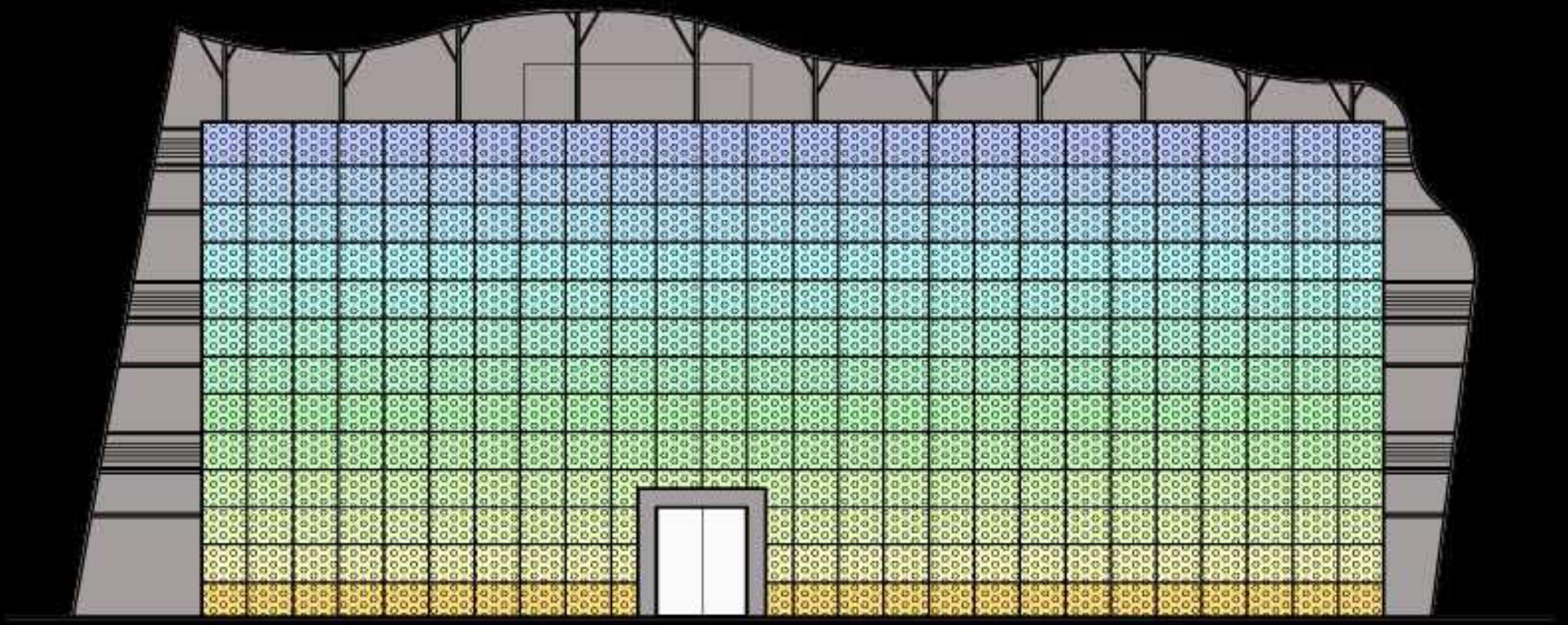
An open-air museum of bioclimatic technologies



Reversibility

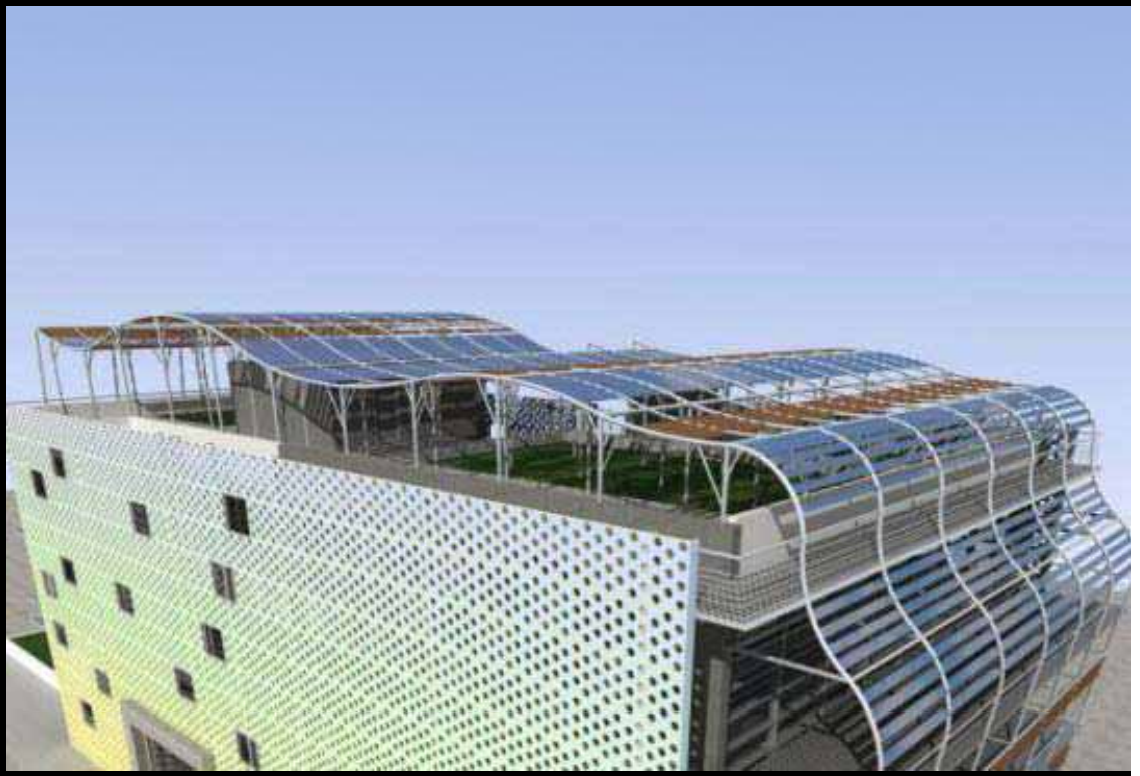
A green and high technology laboratory

EERWC – LAB BUILDING IN NICOSIA, 2009



An open-air museum of new technologies

A green and high technology laboratory



Sun Moon

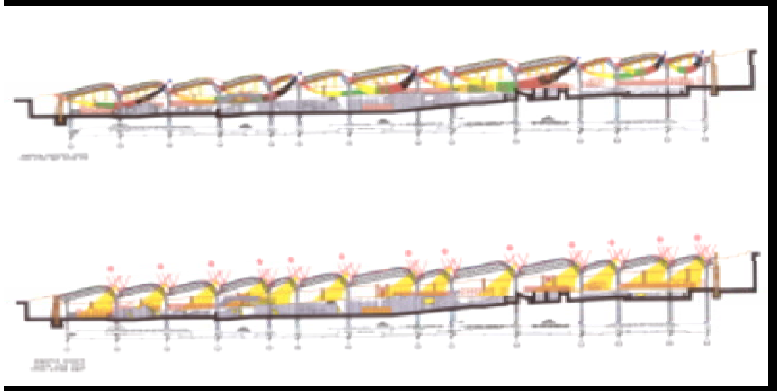
Dematerialised forms

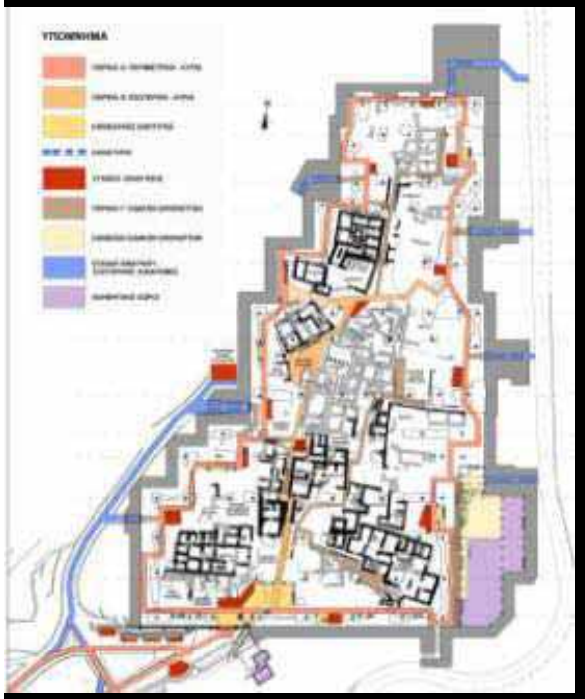
Shades- Reflections

Conservation arrangement and enhancement of the Bronze Age-1500bc- prehistoric City at acrotiri santorini

2012
New bioclimatic shelter

Natural North day-lighting
Natural cross night-ventilation

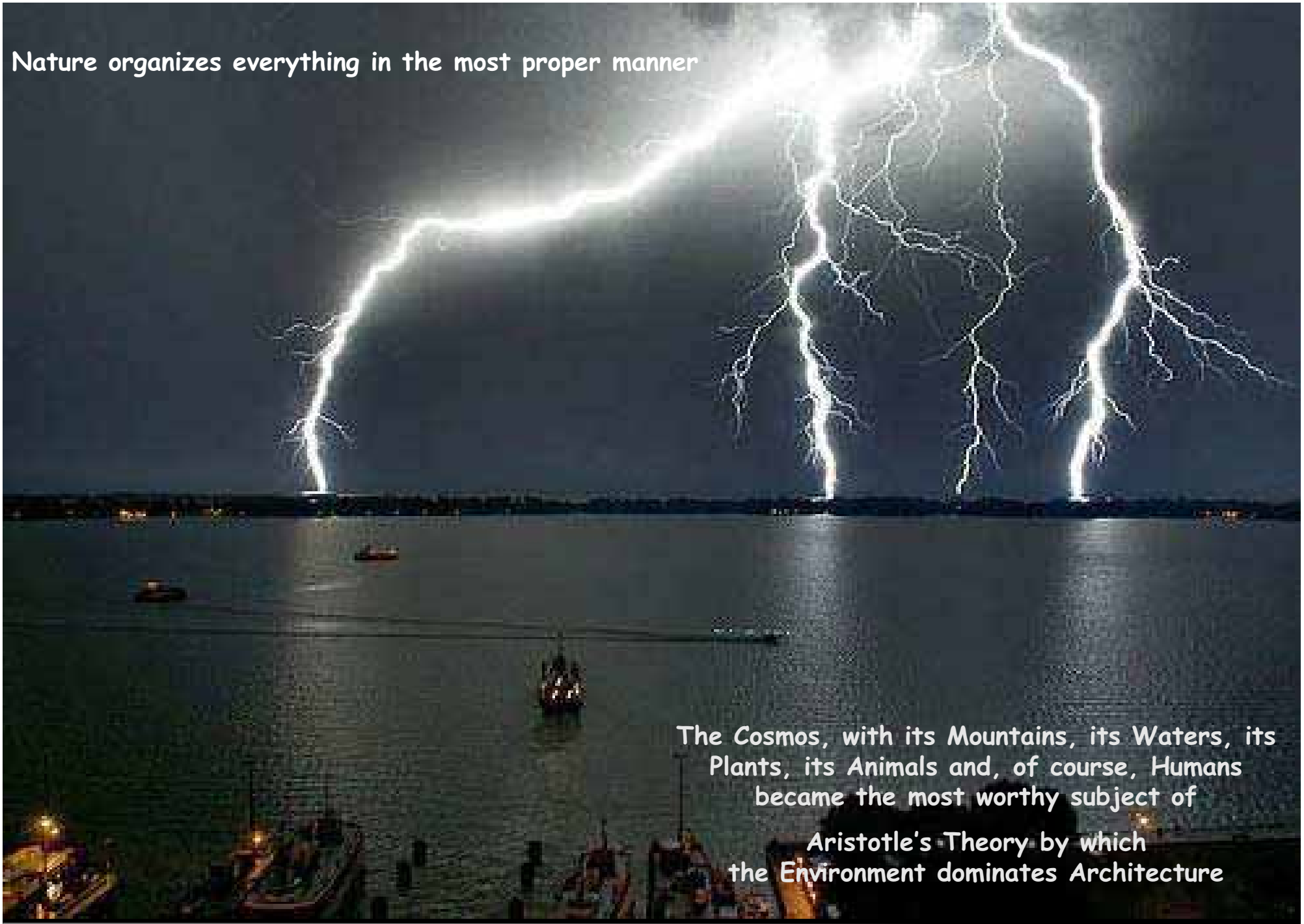




Bird eye view Day and Night

Hybrid Architecture for a Survival Future

Hybrid Electricity

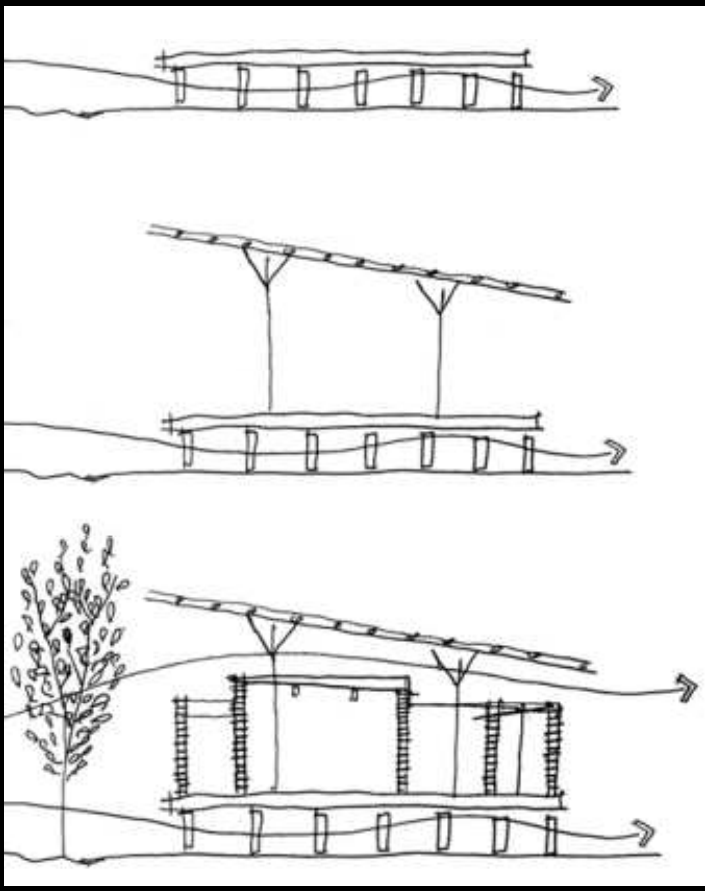

Nature organizes everything in the most proper manner
The Cosmos, with its Mountains, its Waters, its Plants, its Animals and, of course, Humans became the most worthy subject of
Aristotle's Theory by which the Environment dominates Architecture

Ouagadougou Burkina Faso 2011

Centre pour le bien etre des femmes

Architect Ric.Vannucci

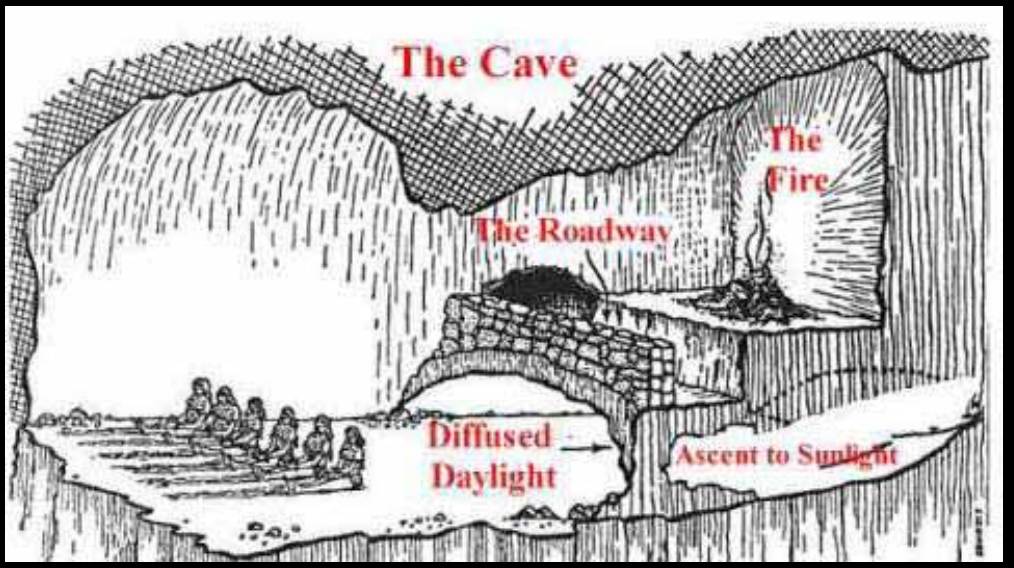
Barbara Cappochin Award



1510 a.c

Hieronymus Bosch

The Garden of Earthly Delights,



400 b.c

POLIS-POLITEIA-PLATO-CITY STATE-REPUBLIC
VITAE-VIOS-BIO-CLIMATIC ENVIRONMENT

Plato's "Allegory of the Cave" from The Republic

Unlike the Apology, which was probably written shortly after Socrates' death, The Republic is a much later work, and the "Socrates" here may or may not accurately represent the historical Socrates; he is certainly the mouthpiece of Plato's own thought. The Republic is a lengthy discussion of the nature of justice (clearly a sore point for Plato, who was present at Socrates' trial); the "Allegory of the Cave" is a discussion of the nature of the kind of knowledge that will bring about a just society.

Do you recognize the kind of thinking Plato is describing? Do you recognize the "cave"? Do you live there? Do your friends? How do you recognize what is real? How can you tell the real from the false? How can you tell? What are you doing at university? How do you connect your education with your future? Does that education imply obligations to others? What might they be? What should you do? Why? How?

The Fact-Architect creator