The Fact-Architect creator

N.Fintikakis architect dir. UIA - ARES -Synthesis Research ltd www.syntres.gr www.uia-ares.tee.gr INTERNATIONAL UNION OF ARCHITECTS
PLATO’S POLITEIA-POLIS CROSSROADS BETWEEN ARCHITECTURE, URBANISM-RENEWABLE ENERGY SOURCES

Nikos Fintikakis Architect manager SYNTHESIS & RESEARCH ltd www.syntres.gr

M. Nannucci
Guggenheim
2003 Venice

ARIES INTERNATIONAL WORK PROGRAMME

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CITIES - THE RESULT OF CLIMATE CHANGE - 10,000 BC

Ice age glaciers retreat

Africa deserts appear
Cities creation - River valleys and sea water roads - mobility

Indus Valley 4500 BC
City of Harappa

Mesopotamian civilisation 3200 BC
City of Hamoukar

Bronze Age 1500 BC
City of Akrotiri Santorini
THE RESULT OF CLIMATE CHANGE-2.000 AD

GREEN OASIS IN DESERT-GREEN OASIS IN CEMENT
“The countries most vulnerable are least able to protect themselves. They also contribute least to the global emissions of greenhouse gases. Without action they will pay a high price for the actions of others.”

(Kofi Annan)
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.

The result
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’.
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.

To create a friendly microclimate
EUROSOLAR

As Solar Architecture Promotor

From the European Solar Charta to the World Solar Charta

Berlin 1996 - European Solar Charta

Presented at the European 5° Conference on “Solar Energy in architecture and Urban Planning”
Initial dissemination of the fundamental concepts of the “Ecological Change”

30 World architects signatories

<table>
<thead>
<tr>
<th>Signatories</th>
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<tr>
<td>Unterzeichner</td>
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<tr>
<td>Alberto Campo Baeza, Madrid E</td>
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<td>Victor López Cotelo, Madrid E</td>
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<td>Ralph Erskine, Stockholm S</td>
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<td>Nicos Fintikakis, Athen</td>
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<td>Norman Foster, London GB</td>
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<td>Nicholas Grimshaw, London GB</td>
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<tr>
<td>Herman Hertzberger, Amsterdam NL</td>
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<td>Thomas Herzog, München</td>
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<tr>
<td>Knud Holscher, Copenhagen</td>
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<tr>
<td>Michael Hopkins, London GB</td>
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<td>Francoise Jourda, Lyon F</td>
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<td>Uwe Kiessler, München</td>
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<td>Henning Larsen, Copenhagen</td>
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<td>Bengt Lundsten, Helsinki FI</td>
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<td>David Mackay, Barcelona E</td>
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<td>Angelo Mangiarotti, Mailand</td>
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<td>Manfredi Nicoletti, Rom</td>
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<td>Frei Otto, Leonberg D</td>
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<td>Juhani Pallasmaa, Helsinki FI</td>
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<td>Gustav Peichl, Wien</td>
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<td>Renzo Piano, Genua</td>
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<td>José M. de Prada Poole, Madrid E</td>
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<td>Richard Rogers, London GB</td>
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<td>Francesca Sartogo, Rom</td>
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<td>Hermann Schröder, München</td>
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<td>Roland Schweitzer, Paris F</td>
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<td>Peter C. von Seidlern, Stuttgart D</td>
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<td>Thomas Sieverts, Berlin D</td>
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<td>Otto Steidle, München</td>
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<td>Alexandros N. Tombazis, Athen</td>
</tr>
</tbody>
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Focuses the Crucial Role of the Architects in a successful implementation of environment and climatic polices.

K. Topfer, Ministry of the German Parliament for Building Environment, June 2007
Contribution of the buildings sector to energy consumption

**World**
- Other sectors: 75%
- Residential + commercial: 25%

**Uganda**
- Residential + commercial: 83%
- Other sectors: 17%

**Kenya**
- Other sectors: 35%
- Residential + commercial: 65%

**EU-27**
- Other sectors: 43%
- Residential + commercial: 57%

**Tanzania**
- Other sectors: 26%
- Residential + commercial: 74%

Federico M. Butera, Politecnico di Milano
Ouagadougou Burkina Faso 2011
Centre pour le bien etre des femmes

Architect Ric.Vannucci
Barbara Cappochin Award
Eco Density versus Urban Sprawl - the ignore challenge

Mexico
Teothiuacan

San Giminiano Italy

Dubai

Shen Zhen China
Archigram's movement

A WALKING CITY

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

The butterfly effect towards survivable Climate Change [the chaos theory]
Architecture-Society

Climate

Environment

Culture

in time
in space
in mobility
in technology
Reversibility

The spider’s dematerialised shell

Recycling
Olympic model diverse cities- SMART GREEN OLYMPIC CITIES
OLYMPIA GREECE  776 BC
Sydney Olympics 2000 - Recycling hill
Athens Olympics 2004 - Green unification of Archaeological sites

Kerameikos Urban renovation
Solar and Wind Streets
Faliron bay, Athens, 2004
Ecological Project

The semeiological references of sea and sky

Green Bioclimatic Management
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
2004 Athens Olympic Metro Station

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www.uia-ares.org  INTERNATIONAL UNION OF ARCHITECTS
Urban Solar Bus Stations
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Innovative Rehabilitation of the
Central Market of Athens

Commission of the European Communities
Directorate-General XII
Science, Research and Development,
Non-Nuclear Energy

Rennovation of Central Market of Athens 2001

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Horizontal Mirror of the Sunrise and the Sunset Center for Renewable Energy Sources
A Silver Curve on the Ground
Natural lightning and wind flow
The Bridge of the future JAPAN
3rd prize 1988 Arch.Competition
Aquatic Center - New Caledonia

1st prize EU 1997 Arch. Competition
Trinidad

UWI 1st prize EU 2000 Arch. Competition
ARISTOTLES LYCEUM PROJECT
Research Project Baloon & PV roof
Athens, 2002
ARISTOTLES LYCEUM

Athens, 2002

Natural Ventilation

Summer

Winter
Archaeological Museum Thessaloniki, Greece
Nikos Fintikakis, 2005
ATRIUM - Archaeological Museum
Thessaloniki, 2002
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CENET LAVRIO
NTUA

south part of the roof
used for heating and cooling

north part of the roof
used for the daylighting and cross ventilation

direct light

glazed roof light

crystal lights

light from fiber optics

optical light

central sun collectors

central air chillers

central air conditioning

central refrigeration

central heating

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2. GENERAL VIEW OF THE GRAND
CENTRAL MARKET - SALONICA
Bioclimatic Project for the Olympic Village, Athens, Greece, 2002

Channels of wind, sun, water and green in cities

Solar and wind streets

Green building envelopes
General plan of green distribution

KEY
- PUBLIC VEGETATION
- HIGH VEGETATION
- MIDDLE HEIGHT VEGETATION
- LOW VEGETATION
- LINEAR PERGOLAS OF VARIOUS HEIGHTS

STREETS & PEDESTRIAN WALLS
- Cube stones for street surfaces
- Pavement slabs for pedestrian walks
- Cube stones with spacing for water absorption
- Paving for private walks combined with pebbles
- Paving bricks with spacing

MIXED SURFACES
- Vegetation combined with pebbles
- Paving combined with bricks and pebbles
- Paving with spacing for vegetation
- Stones jammed with mud
- Stone slabs for parking spaces

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VIRTUAL REALITY CITIES
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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

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The specific strategy to improve the microclimate in the area involved actions like

- Increase of the green spaces
- Use of Cool Materials
- Reduction of the anthropogenic heat
- Proper Shading of Open spaces
- Use of earth to air heat exchangers.
Sustainable and Integrated Development of Cultural and Historical Heritage

TIRANA historical City centre

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
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Natural North day-lighting  Natural cross night-ventilation
Hieronymus Bosch
The Garden of Earthly Delights,

1510 a.c

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?