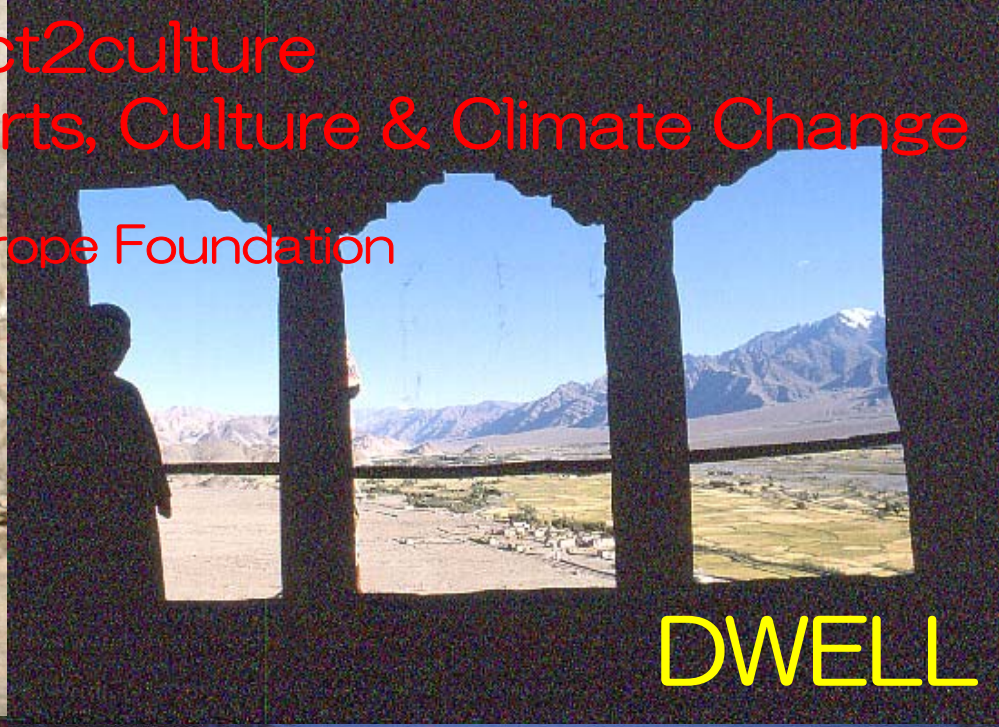
Connect2culture
Asia-Europe Dialogue on Arts, Culture & Climate Change

The Asia-Europe Foundation



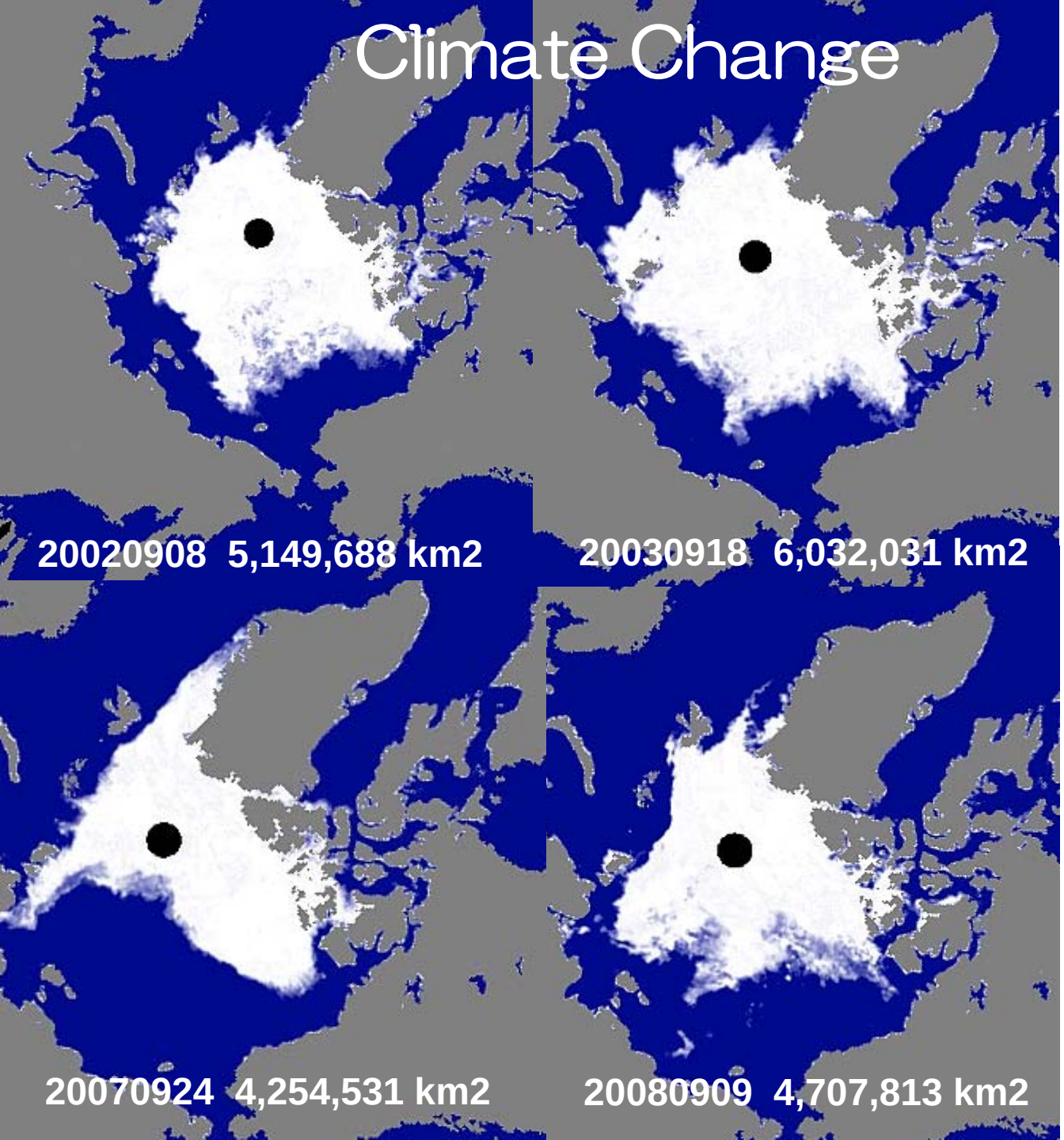
DWELL

Eco-Design is Design Itself

Progress & Legacy, Culture & Aesthetics

Toshiroh IKEGAMI　PROFESSOR ARCHITECT / KYOTO CITY UNIVERSITY of ARTS / ikegami@kcua.ac.jp

Climate Change



Arctic Report

Arctic Ocean

Sea-ice Conditions

2002 －2008

20020908 5149688 km2

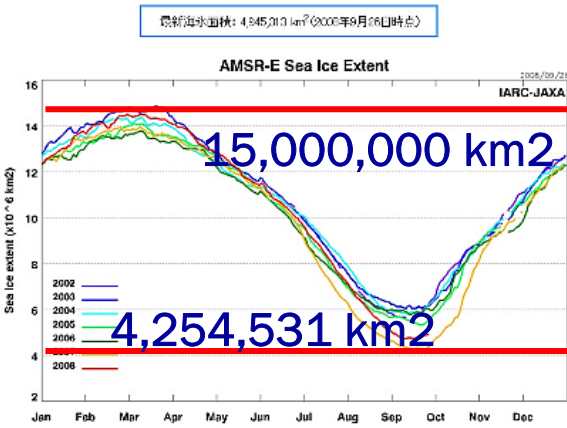
20030918 6032031 km2

20050922 5315156 km2

20060920 5846875 km2

20070924 4254531 km2

20080909 4707813 km2



sea squirt : origin of human kind / vertebrate animals


CITY · REGION
ARCHITECTURE
LAND SCAPE
ARCHITECTURE
FLYING BEGGAR
MIRRORED FLIGHT
INNER SPACE
PRODUCT DESIGN
DESIGNER must be an ECODESIGNER
ECO DESIGN NETWORK
NPO
CITY · REGION
DIGITAL ARCHIVE
INNER SPACE
MEMORY OF THE SUN
PRODUCT DESIGN
WORKS 1981-2008 ACT as a SPACE DESIGNER designing 1/1-1/200,000

SIMULATING “the DWELLING SPACE” from PAST to FUTURE for HOW WE LIVE NOW

MY RESEARCH PROJECTS 2000-2006

from **PAST**: RESEARCH PROJECT 1:2000-2004

LEARNING & ARCHIVES of SPACE HERITAGE 1200 YEARS

Exhibition :Tōji Temple Kyoto–ANATOMY in CYBER SPACE　JAPAN2003 CHINA2004

works of graduate school / Kyoto City University of Arts

to the **FUTURE**: RESEARCH PROJECT 2: 2001-2003

HOW to DWELL in INTERNATIONAL SPACE STATION

ARTISTIC APPROACH TO SPACE/ Kyoto City University of Arts

NOW :RESEARCH PROJECT 3:2003-2006

HOW WE ACT for ECODESIGN SOCIETY

Osaka model of circulation oriented society through case study of existing city & neighborhood nature /TEAM AXIS4 NPO　ECODESIGN　NETWORK

RESEARCH PROJECT 1:2000-2004

from PAST:

LEARNING SPACE HERITAGE 1200 YEARS

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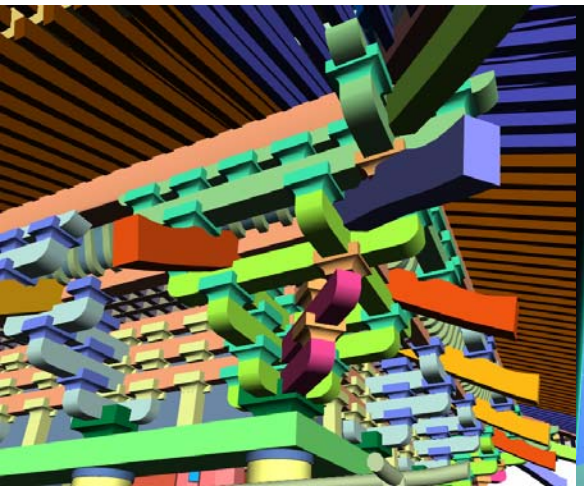
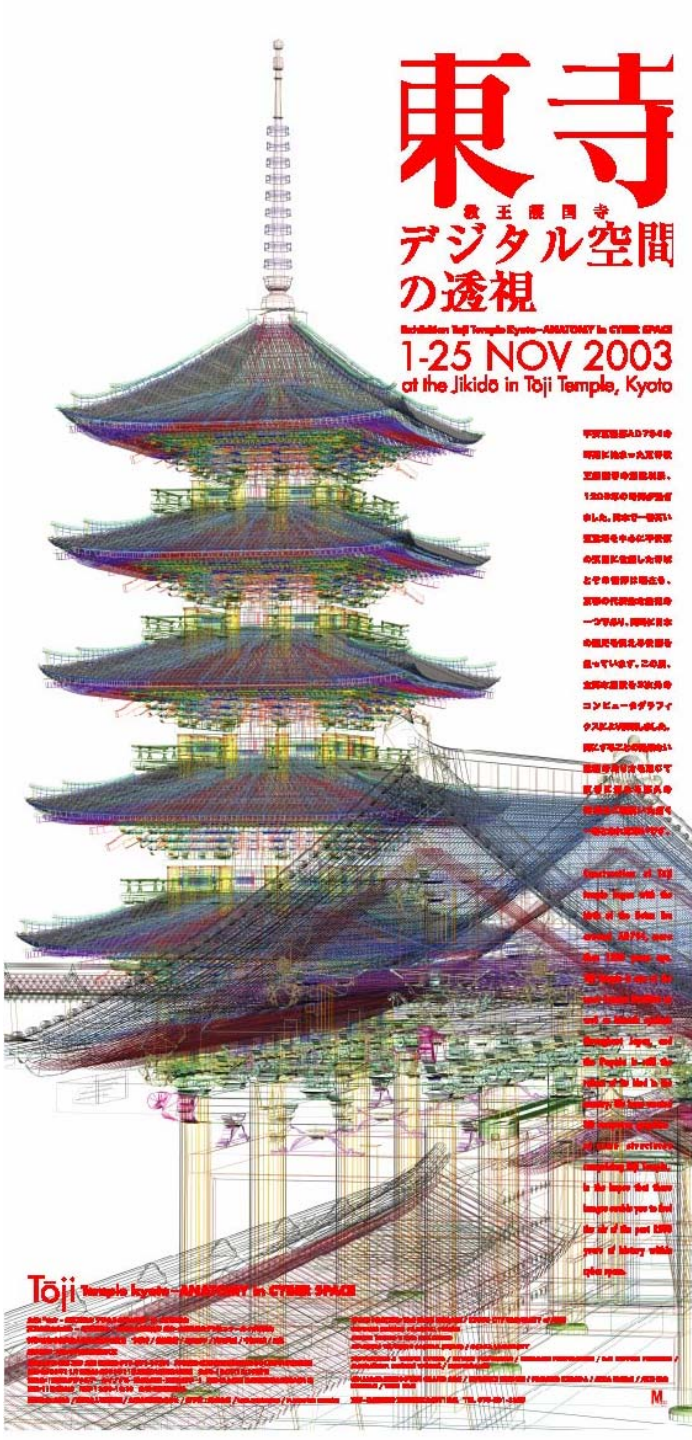
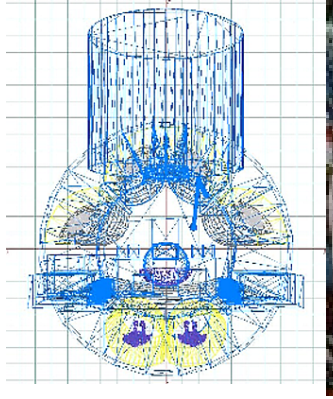
JAPAN 2003 CHINA2004

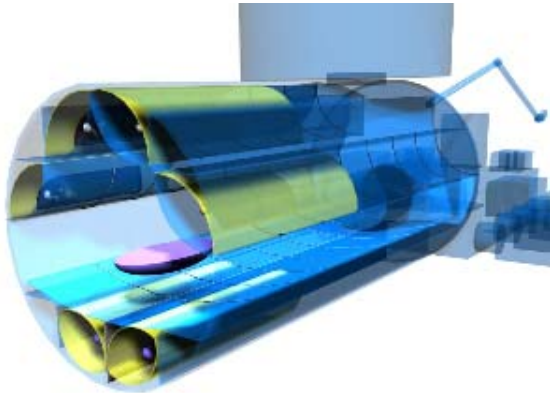






HOW to DWELL on the PLANET

THINKING & SIMULATING INTERNATIONAL SPACE STATION



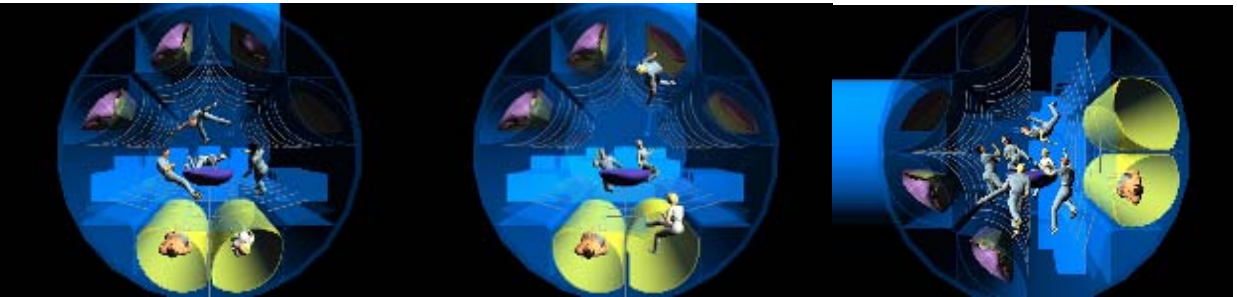
RESEARCH PROJECT 2: 2001-2003

To the FUTURE:

ARTISTIC APPROACHES TO SPACE

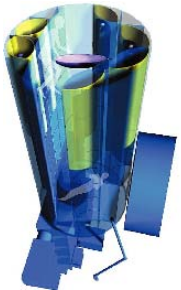
Kyoto City University of Arts

HOW to DWELL in SPACE
NO AIR/NO GRAVITY
NO WATER/NO ENERGY/NO FOOD
without PLANTS & ANIMALS
only SOLAR SYSTEM



designed by TOSHIROH IKEGAMI

ARTISTIC APPROACHES TO SPACE



TEAM AXIS4 NPO ECODESIGN NETWORK

Osaka model of circulation oriented society through case study of existing city & neighborhood nature

2003–2006
Based on results from
Japan Science and Technology Agency / RISTEX

RESEARCH PROJECT 3:2003-2006
NOW , HOW WE ACT

COOL HABIT・GREEN WORK

By DESIGN

Progress & Legacy, Culture & Aesthetics

Creating a Circulation-oriented Society
through Lifestyle Aesthetics of Eco-Design

Establishing the Asian model of sustainable society

KEY WORD 1

CSR

CORPORATED SOCIAL RESPONSIBILITY

COMMUNITY SOCIAL RESPONSIBILITY

CITIZEN SOCIAL RESPONSIBILITY

CHILDREN SOCIAL RESPONSIBILITY

CeDM

CLEAN ECODESIGN MECHANISM

ECODESIGN

生活美学

LIVING AESTHETICS

社会美学

SOCIAL AESTHETICS

環境美学

ENVIRONMENTAL CONCIOUS AESTHETICS

COOLHABIT GREENWORK

spiral life-cycle thinking

DUAL LCA=LIFE CYCLE ASSESSMENT

PRODUCT DESIGN

SPACE DESIGN

商品・機器製作におけるライフサイクルアセスメント

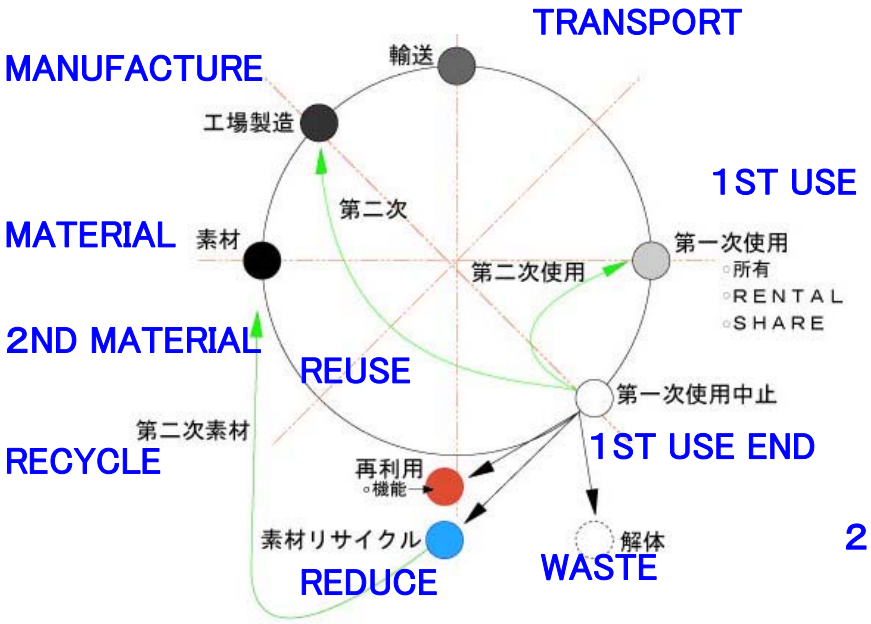
構築物製作おけるライフサイクルアセスメント——建築・都市・地域

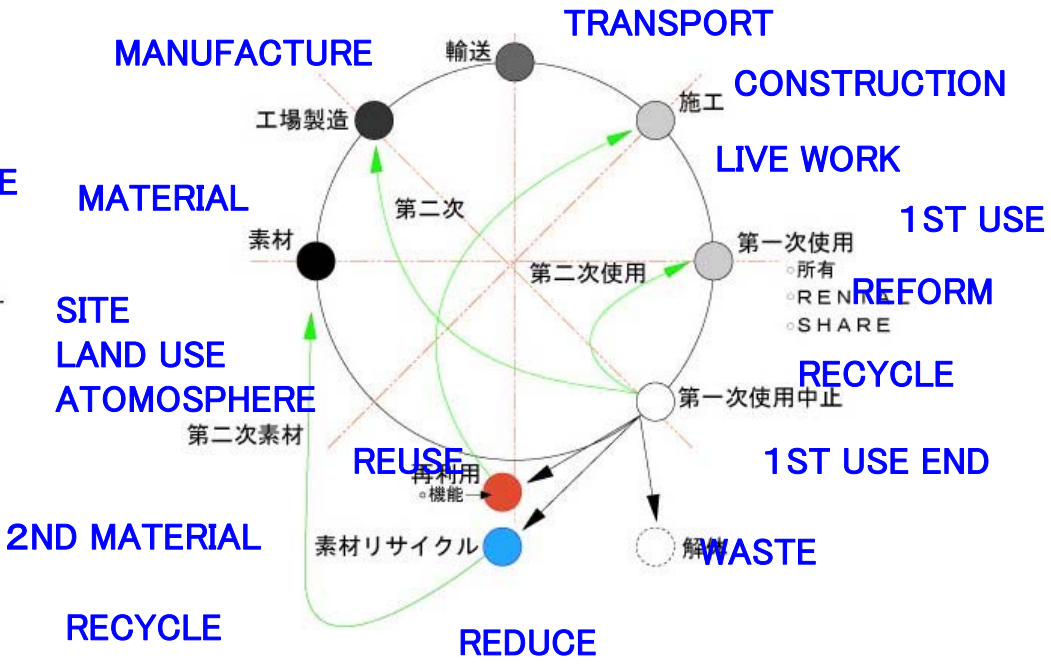
CLOSED SYSTEM

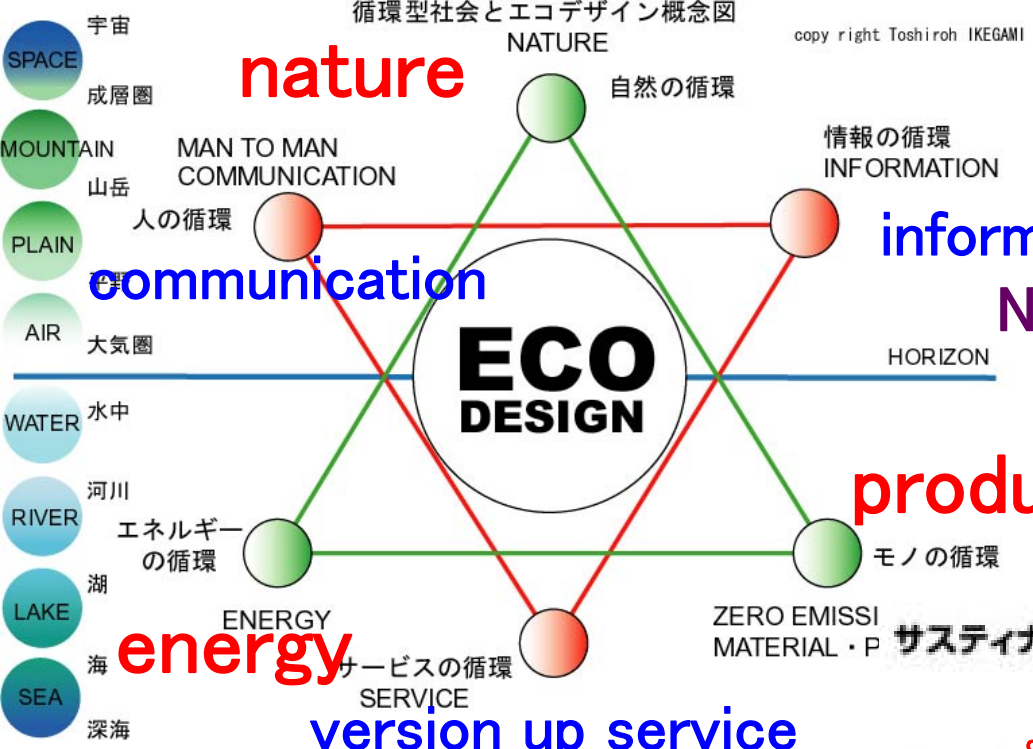
OPEN SYSTEM

ENVIRONMENTAL CONSIOUS DESIGN

ECOLOGICAL DESIGN







nature

communication

information

energy

product

version up service

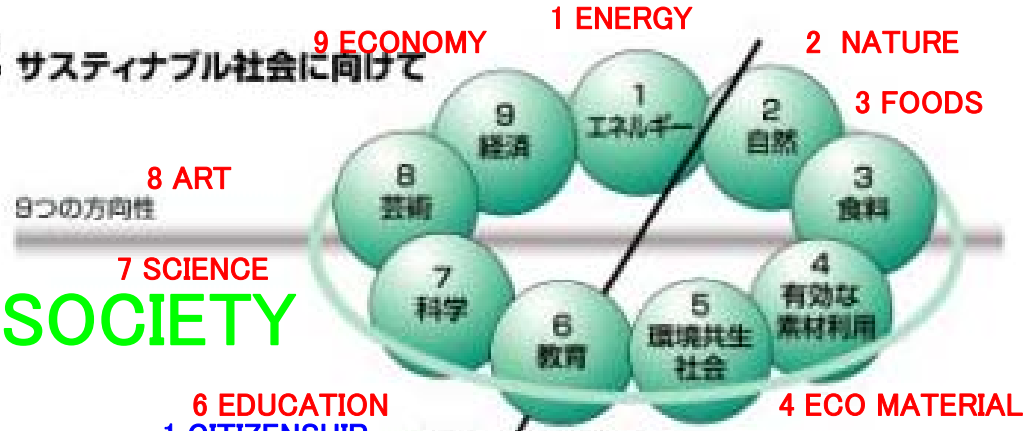
NATURE BY A SOLAR SYSTEM

MAN MADE SOCIETY

2 TRIANGLES

TOWARDS SUSTAINABLE SOCIETY

9 DIRECTIONS



1 ENERGY
2 NATURE
3 FOODS
4 ECO MATERIAL
5 ECO CITY
6 EDUCATION
1 CITIZENSHIP
7 INFORMATION CONTROL
8 FINANCE CONTROL
2 CULTURE
3 WELFARE
4 REGIONAL ENBIRONMENT
5 GLOBAL ENVRONMENT
6 CRISIS CONTROL
7 SCIENCE
8 ART
9 ECONOMY

8 IDEALS

VERSION UP SOLUTION

NATURAL WORKS
SOLAR SYSTEM

Circulation of
NATURE

Circulation of
ENERGY

Circulation of
PRODUCT

ARTIFICIAL WORKS

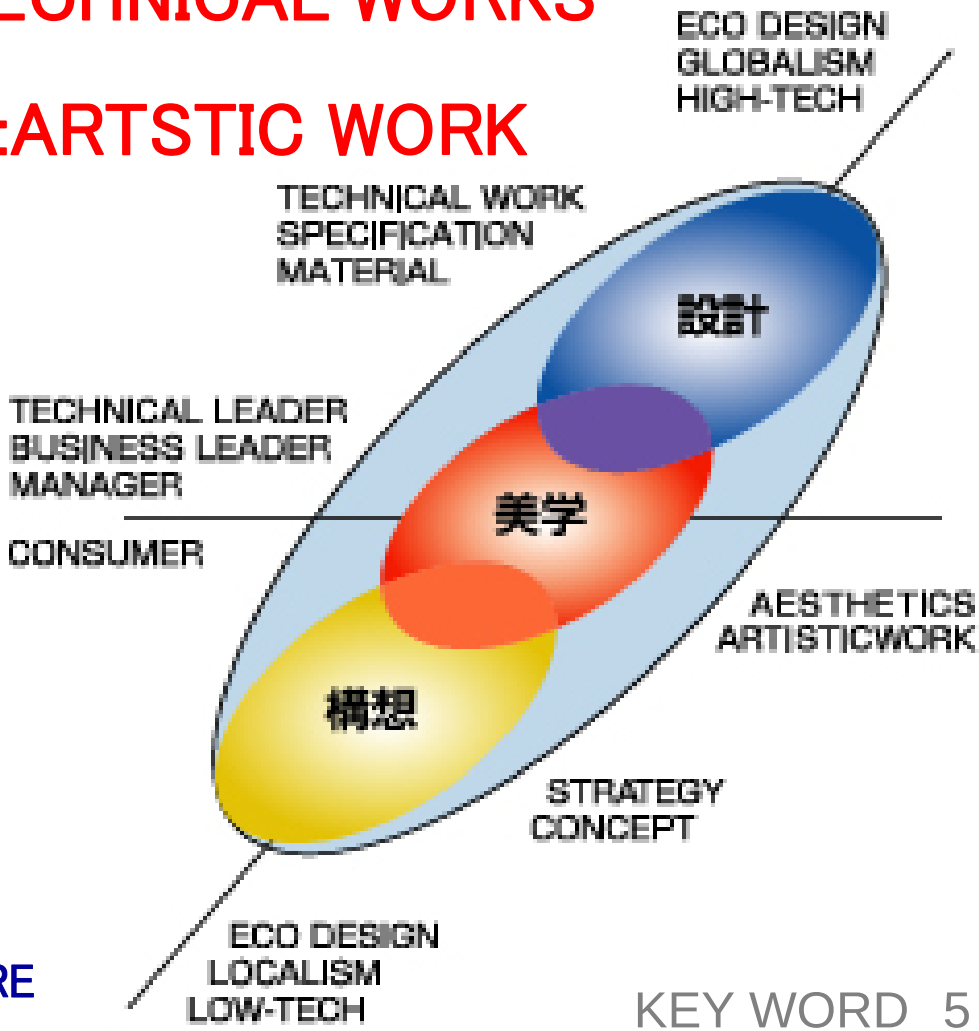
LCCO2 30% EMMISSION
through HEATISLAND SOLUTION
for SUSTAINABLE SOCIETY
through LIFESTYLE AESTHETICS
by REVITALIZATION of
EXISTING CITY & NEIGHBORHOOD NATURE

3 aspects of DESIGN

1:CONCEPT

2:TECHNICAL WORKS

3:ARTSTIC WORK



CREATING INTERNATIONAL MODEL of ECODESIGN from EACH COUNTRY, EACH REGION , EACH CITIES

for Carrying out the Role for Global Climate Change

Starting from Different Settings

-Nature,Culture-

Urbanization-Industry,Waste,Transportation,Water

Land-Agriculture,Forestry,Fishery

Creating a Circulation-oriented Society

through Lifestyle Aesthetics of Eco-Design

for Carrying out the Role for Global Climate Change Starting from Different Settings

transportation

landscape design

green + artificial work

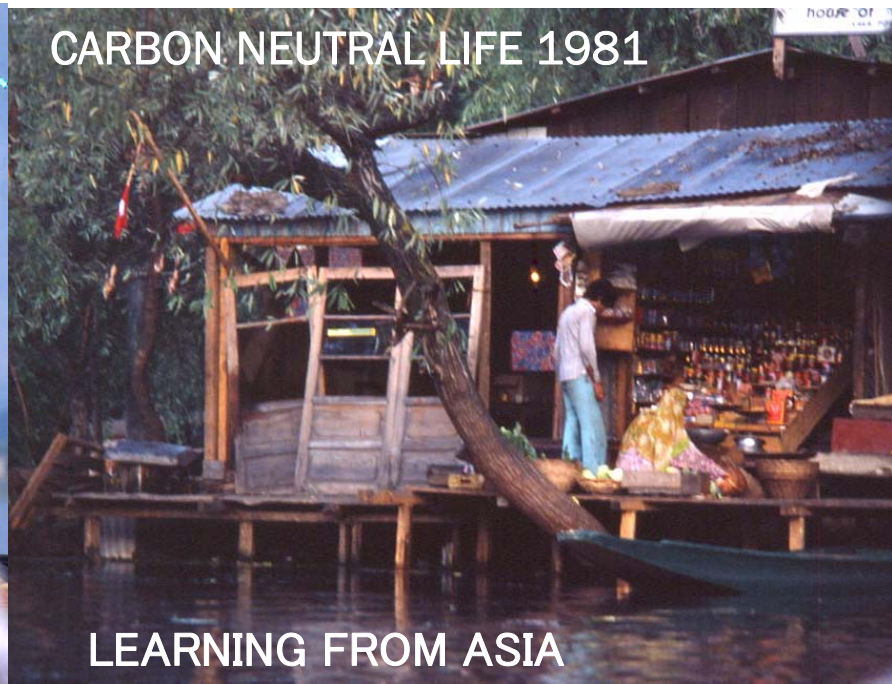
design

city dwell work

DIFFERENT SETTINGS in JAPAN TOKYO / OSAKA/ KYOTO/ MODERN & TRADITION

HOW TO SOLVE CONTRAST

1981 Local Material Dwell /Shelter upper Ladakh with Indus riv. below Srinagar of water life



GREENHOUSE
PALMENHAUS 1883

DESIGNING

OUR AGE

LIVING WITH

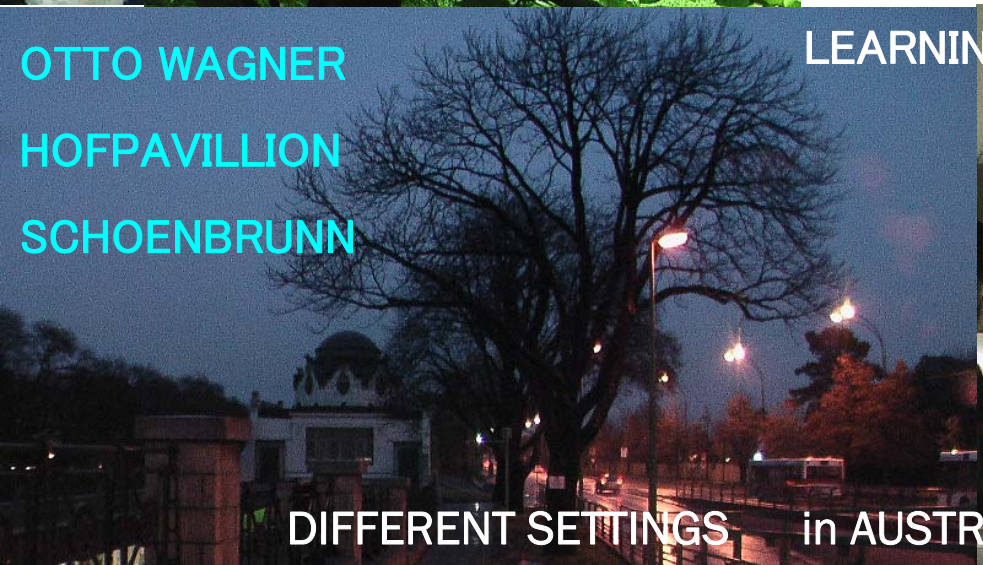
19C/20C/21C

CREATING

ARTIFICIAL SCAPE

LEARNING FROM EUROPE

OTTO WAGNER
HOFPAVILLION
SCHOENBRUNN



DIFFERENT SETTINGS in AUSTRIA LIVING WITH 19C/20C/21C

Research Project
Osaka Model of Circulation-Oriented Society through Case Study of Existing City & Neighborhood Nature

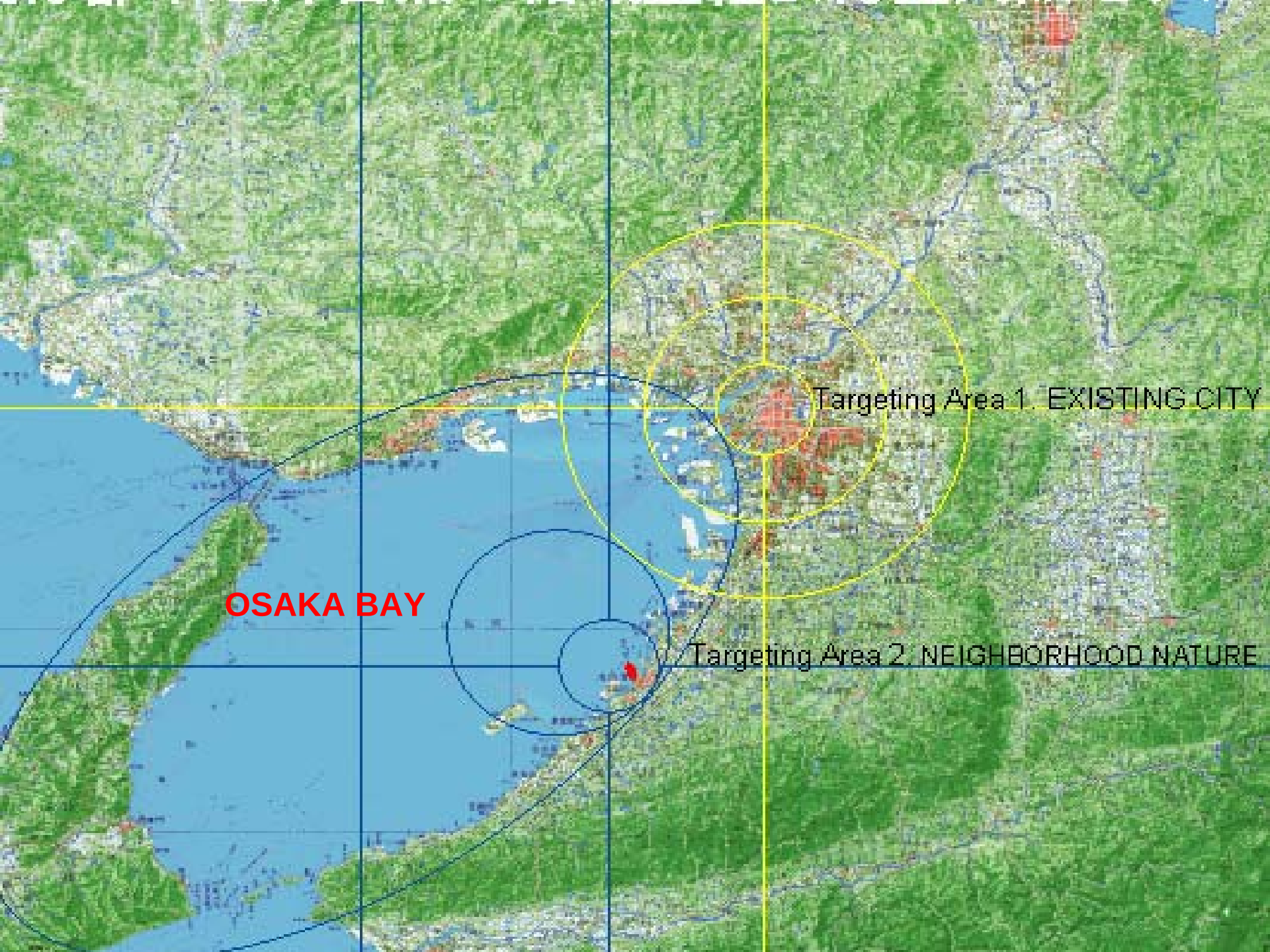
This model integrates
culture, history, technology, and society
in a self-sustaining structure

that allows man-made cities and self-recovering nature

to exist together.

Works by NPO Eco Design Network Team AXIS4

Results from Japan Science and Technology Agency (JST) /
RISTEX 2003-2006 -Research Institute of Science and Technology for Society


Targeting Area 1. EXISTING CITY
OSAKA BAY
Targeting Area 2. NEIGHBORHOOD NATURE

This is a joint research project
for developing a circulation-oriented model of an existing city,
targeting the densely populated urban area of Osaka
and unused land in the Osaka Bay coastal area.

The circulation-oriented Osaka model aims at exploring and developing both
1: Osaka's densely populated downtown area and
2: Osaka Bay's unused land.

Strategy:
to construct a sustainable society using lifestyle aesthetics
and sensitivity developed through eco design.

Target Level:
prevention of global warming
by reducing LCCO2 emissions by 30% of current level.

Plan of Action:
Build a flat-type industrial structure. Migrate from over-use of technology
to application of natural life forms (from primary to tertiary industry aspects).

Target Area:
create an environmentally advanced city - Osaka.

End Result:
realize an Asian model of a circulation-oriented city with universal applications.

Plan of Action

BUILD

a flat-type industrial structure

(from primary to tertiary industry aspects)

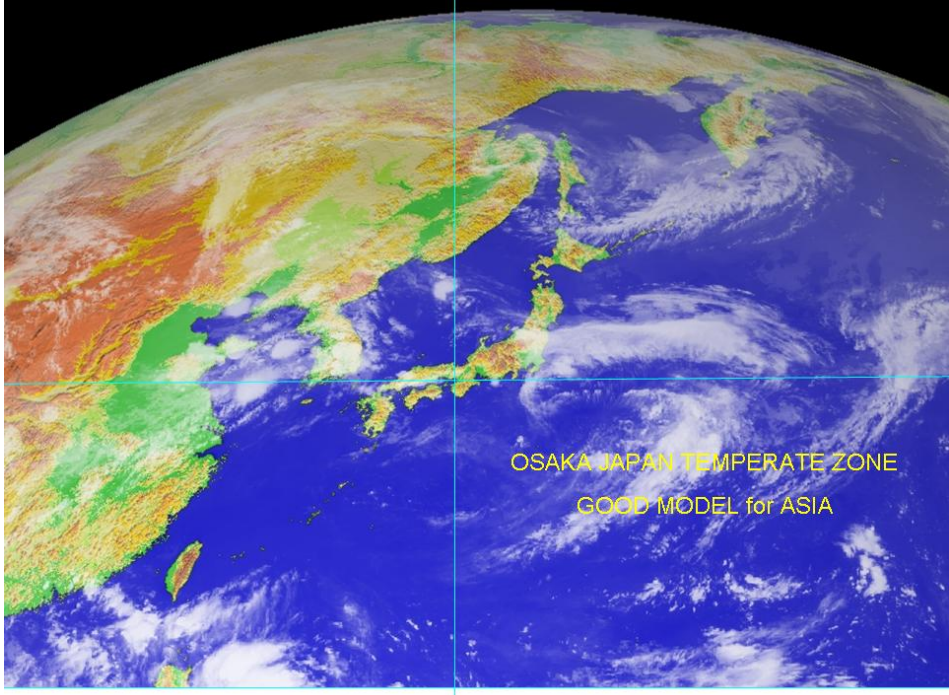
MIGRATE

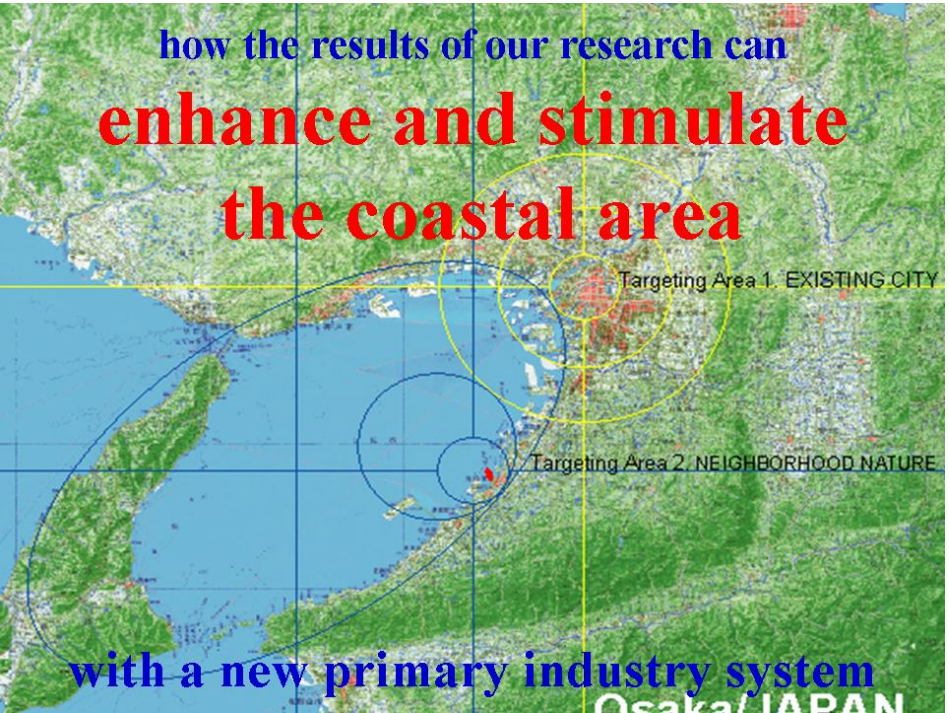
from

over-use of technology

to

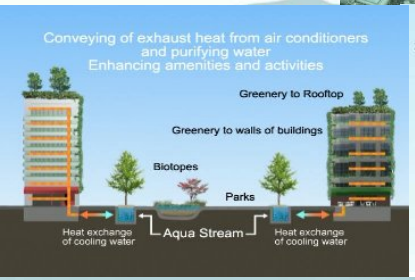
application of natural life forms

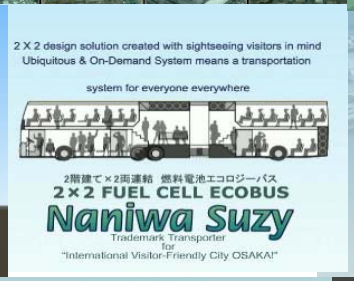


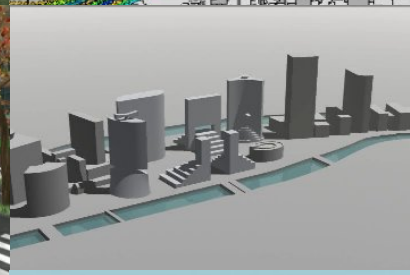


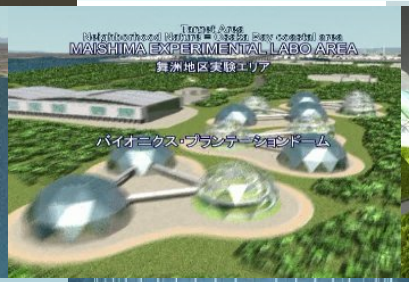
We are currently working on a joint research project

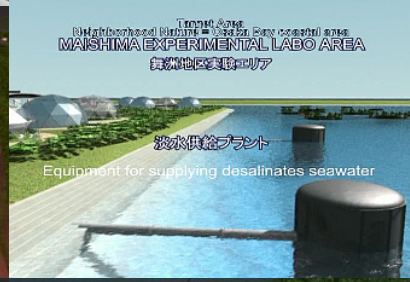
targeting
the densely populated
downtown area of Osaka
and
unused land
in the Osaka Bay coastal area
under
the concept of creating
a BIOMASS society.

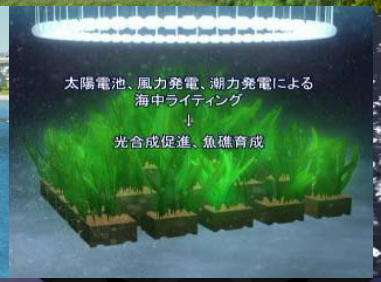


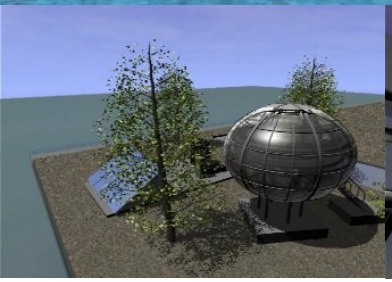


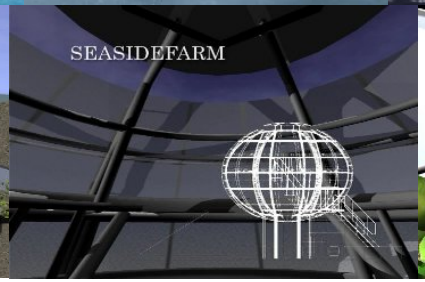


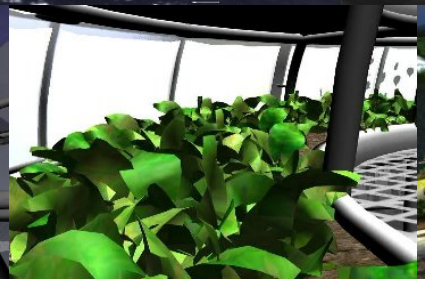


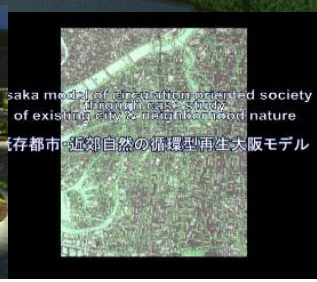






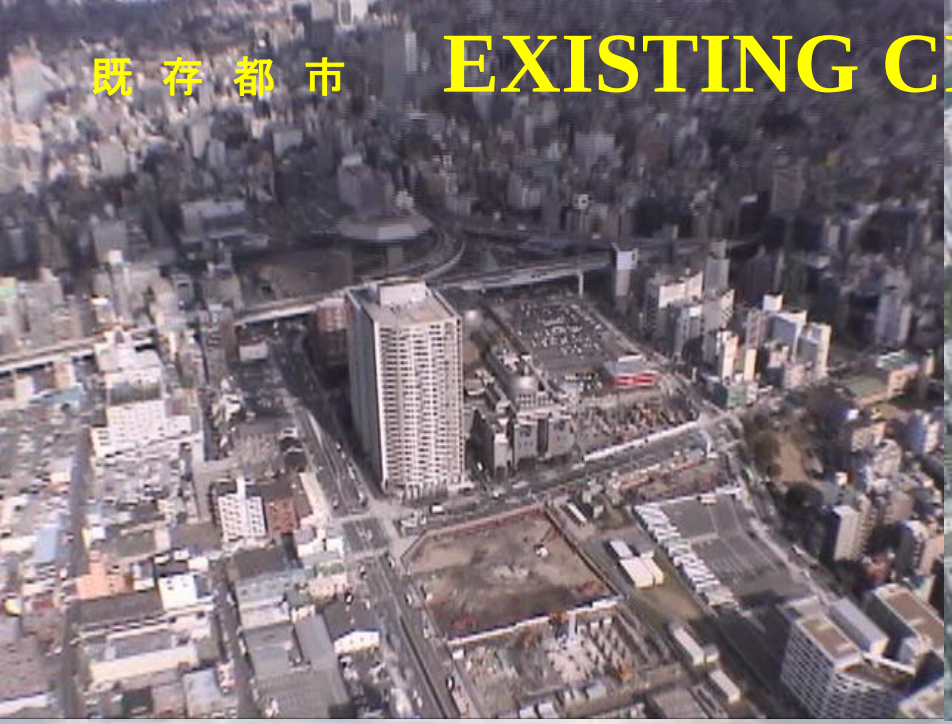






ANIMATION 2006 VER.3 /BY DESIGN / CO2 EMISSION 30% / NEW INDUSTRY by LIFE FORMS POWER /ESCAPE from HEAISTILAND
TRANSPORTATION /CIRCULATION /LIFECYCLE AESTHETICS & SENSITIVITY

既 存 都 市 EXISTING CITY OSAKA AIR VIEW 2004



OSAKA HI-TEC 2005

Osaka Heat Island Consortium with Technical Measures 2005

Technical methods

Utilize concrete

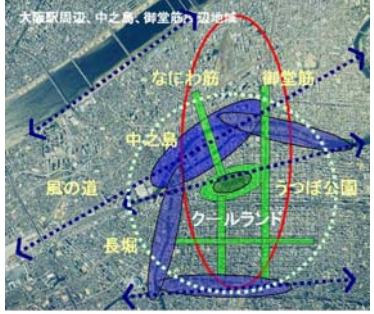
Research proposals evaluation

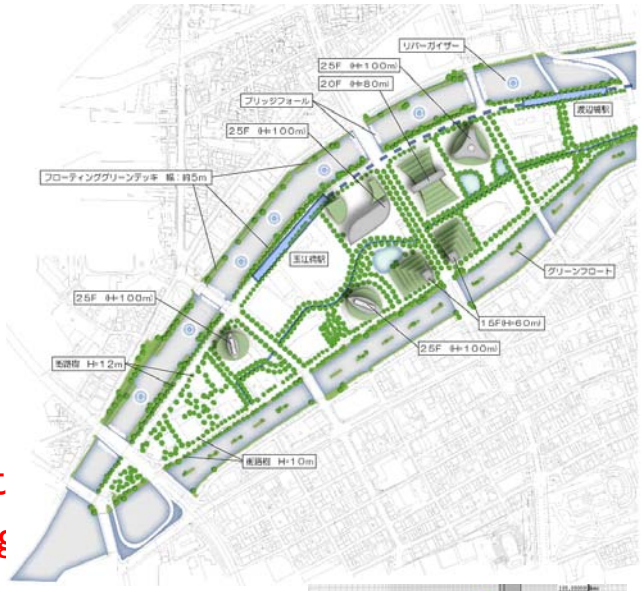
WG1 : Related materials : reflection heat block /insulation

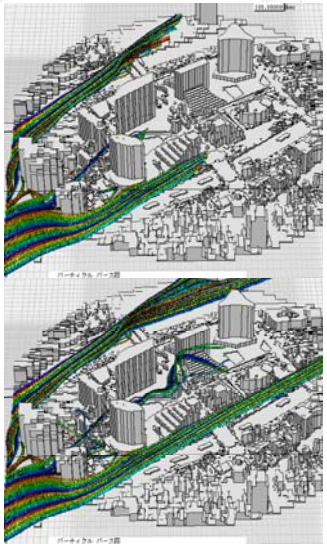
WG2 : Effective thermal use : latent heat / exhaust heat / energy saving technology

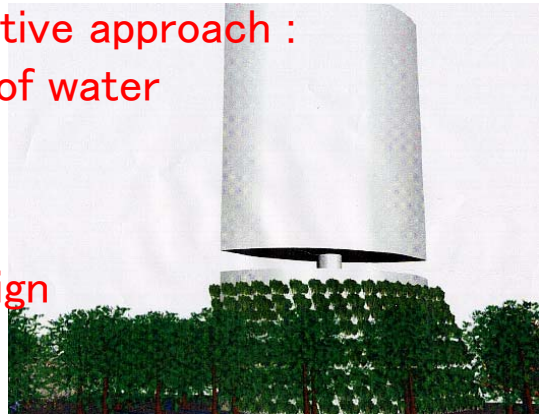
WG3 : Cool Spot creative approach : greening / utilization of water
– spray , sprinkle r–

WG4 :Ideal Urban design

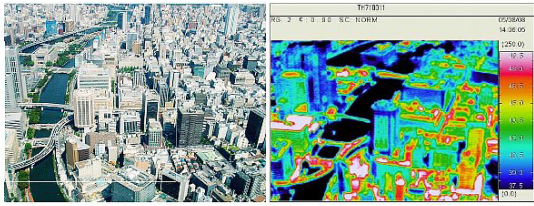




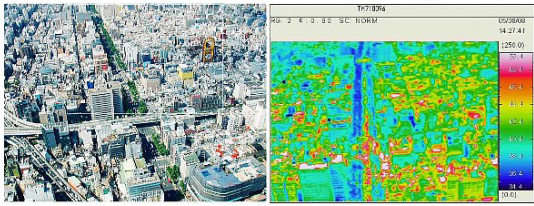




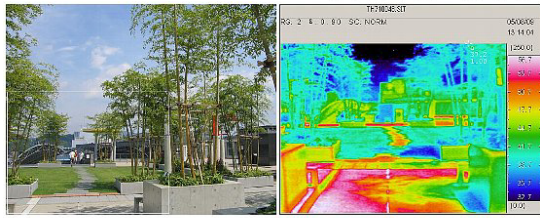
中之島附近



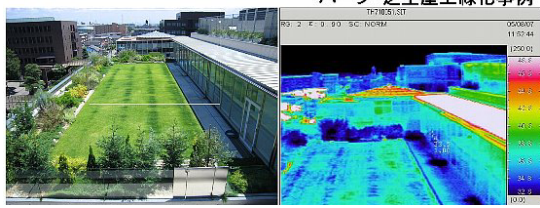
御堂筋・難波附近



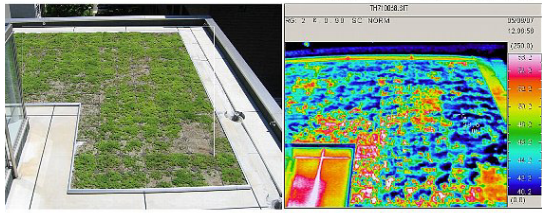
竹・笹・芝生屋上緑化事例



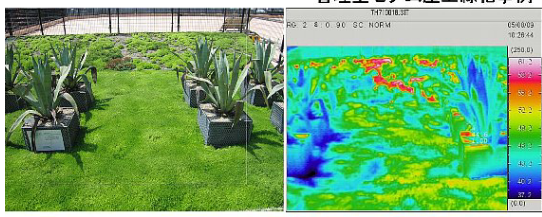
ハーブ・芝生屋上緑化事例

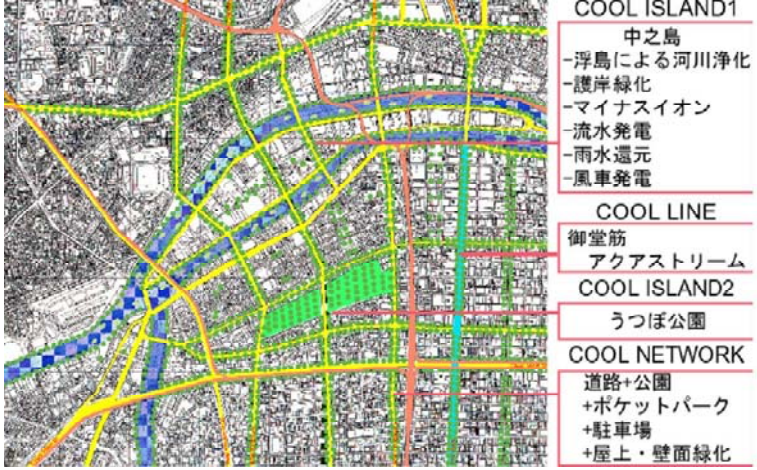


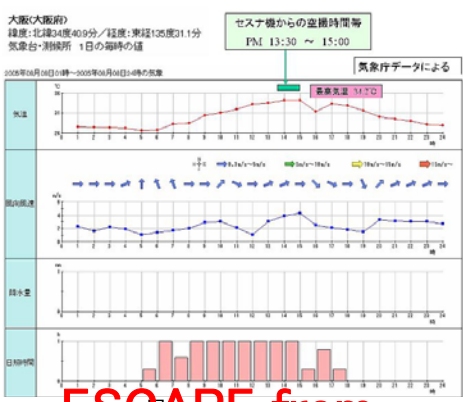
粗放型セダム屋上緑化事例



管理型セダム屋上緑化事例







ESCAPE from HEATISLAND

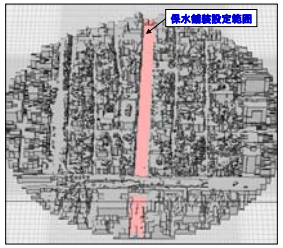
Osaka city centre,
environmental thermal eased effects assessment :
by the application of thermal simulation technology
for HEAT ISLAND.

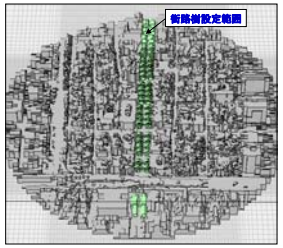
1:Midou-suji/ City center subject analysis results :
by the capacity of pavement retained water, shade effect by the roadside tree, the average is about 2 ℃, some place up to 8 to 10 ℃ temperature drop confirmed.

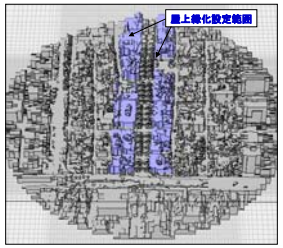
2: Nakanoshima/ between two river subject analysis results:
Comparison between redevelopment model and present model measures heat island mitigation.
5 ℃ average temperature drop,
some place 10 ℃ above can be reduced.

Measures to promote the Heat Island approach
by analysis results
it is important to consider the proposed measures after recognize Characteristics of the target area (prevailing wind, the direction of the street, the current land use, etc.)

A. Midou-suji/ City center B. Nakanoshima/ between two river Three-dimensional fluid analysis



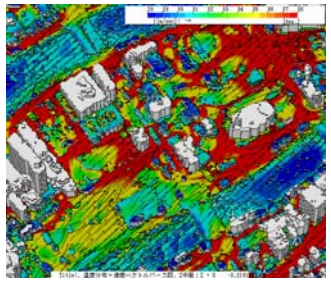


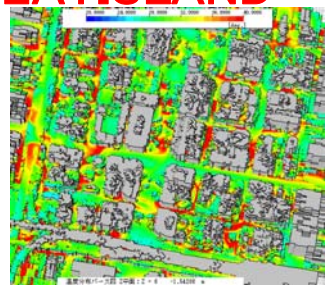


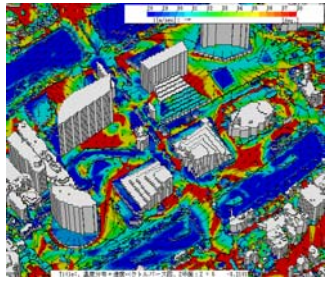
Pavement

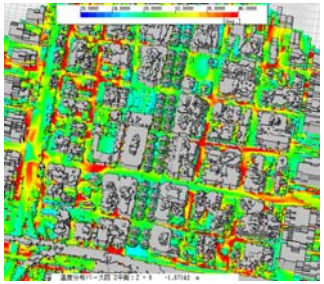
Retained Water

Big Tree /Green Roof



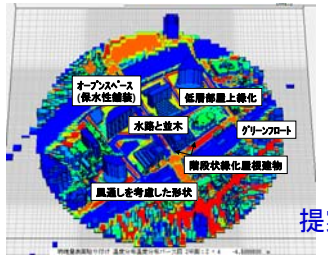


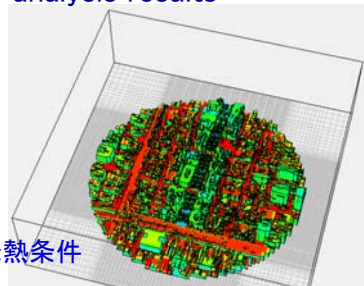




2: Nakanoshima/ between two river analysis results:

1:Midou-suji/City center analysis results

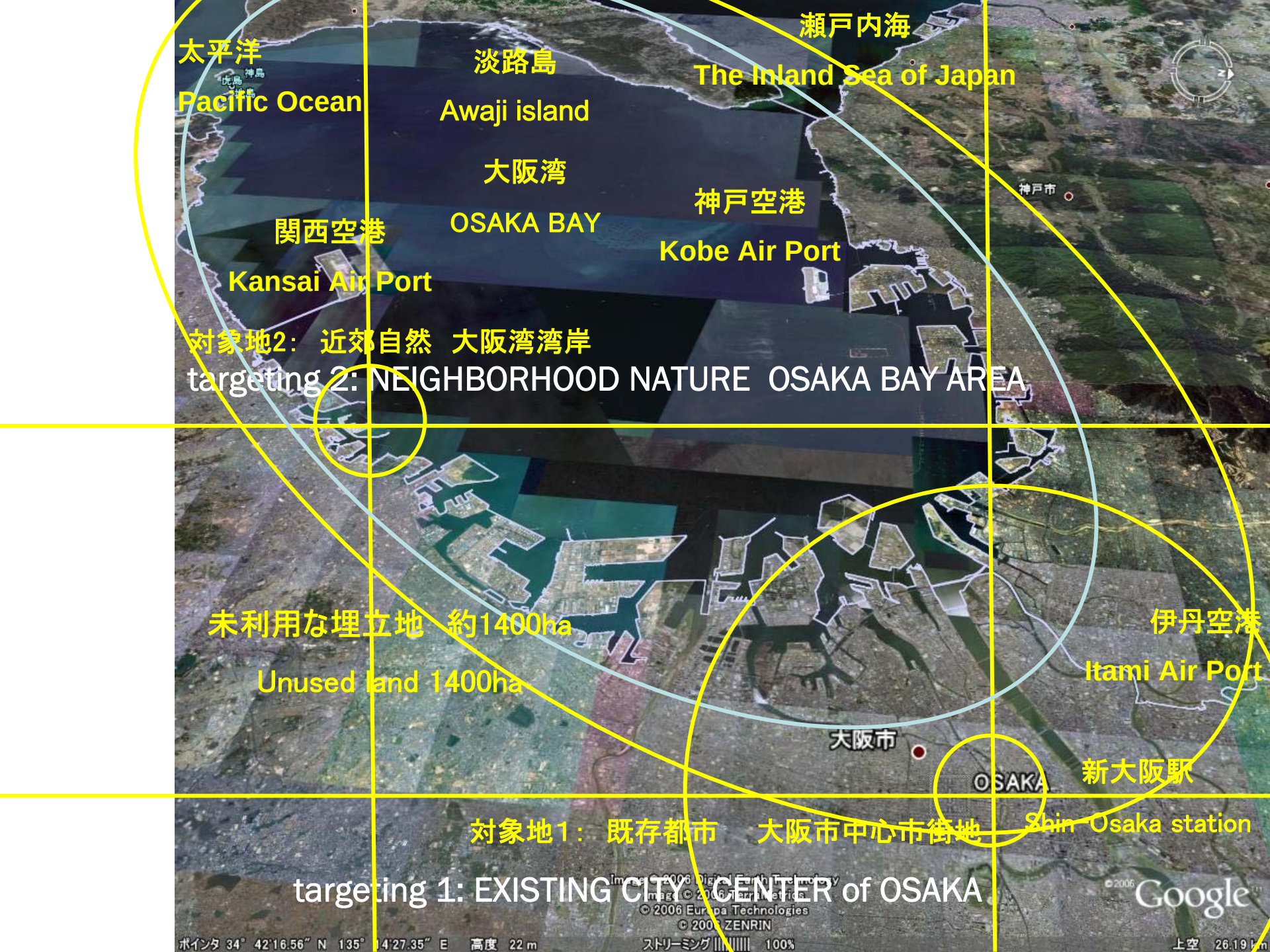


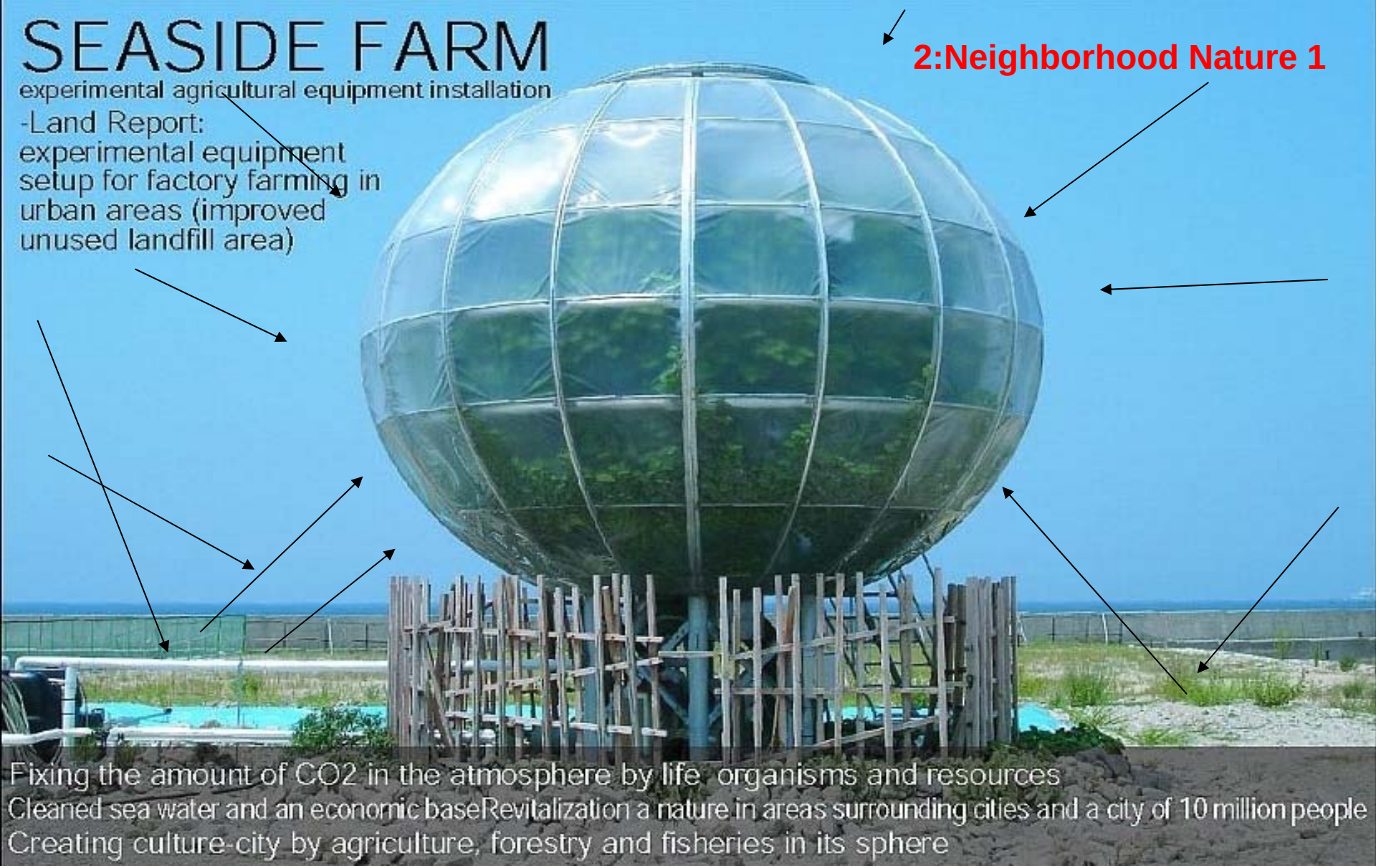


提案発熱条件

COOL HABIT GREEN WORK


COOL HABIT GREEN WORK
CSR
CORPORATED SOCIAL RESPONSIBILITY
COMMUNITY SOCIAL RESPONSIBILITY
CITIZEN SOCIAL RESPONSIBILITY
CHILDREN SOCIAL RESPONSIBAILITYA
CeDM CLEAN ECODESIGN MECHANISM


太平洋
Pacific Ocean
淡路島
Awaji island
瀬戸内海
The Inland Sea of Japan
大阪湾
OSAKA BAY
神戸空港
Kobe Air Port
関西空港
Kansai Air Port
神戸市
対象地2: 近郊自然 大阪湾湾岸
targeting 2: NEIGHBORHOOD NATURE OSAKA BAY AREA
未利用な埋立地 約1400ha
Unused land 1400ha
伊丹空港
Itami Air Port
大阪市
OSAKA
新大阪駅
Shin-Osaka station
対象地1: 既存都市 大阪市中心市街地
targeting 1: EXISTING CITY CENTER of OSAKA
© 2006 Europa Technologies
© 2006 ZENRIN
Google



Increase amount of sunlight reception, promote photosynthesis,
stabilize and recirculate CO2/O2
Low-energy production of BIO ENERGY crops (sweet potato, etc.)

Increase amount of sunlight reception, promote photosynthesis, stabilize and recirculate CO2/O2

Low-energy production of BIO ENERGY crops (sweet potato, etc.)

GOALS

Discover industrial expansion possibilities of factory-style agriculture on unused land of Osaka Bay coastal area.

Investigate the application possibilities of bio technology in primary industries

Explore industrial development in areas lacking energy supply through operations using locally procured energy

Land-less Factory-type Vegetation Agriculture Equipment, Efficient Omni-directional Solar Energy, Hybrid Energy

OUTLINE

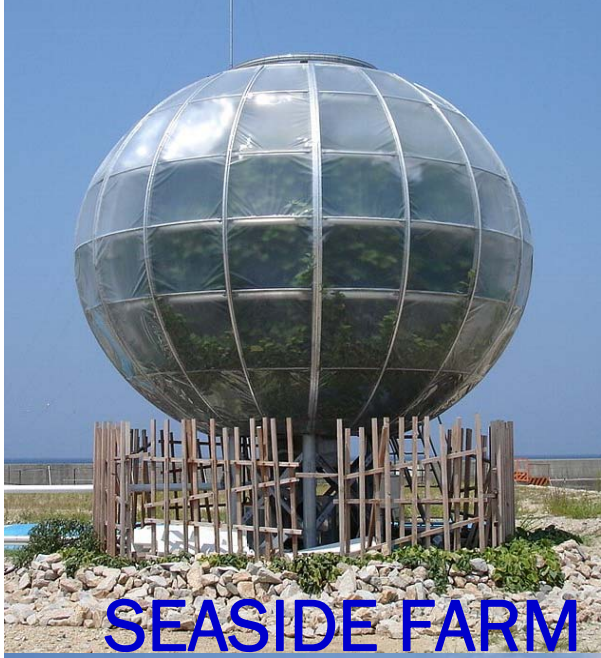
Dimensions: Φ6m, H = 5m ellipsoidal floating device, steel frame.Dome height: sits 1.7m above ground, omni-directional daylight reception, effective use of solar energy.Dome Outer Membrane: ETFE film (penetration efficiency exceeding 90%, diffusion type, 100% recycled materials)

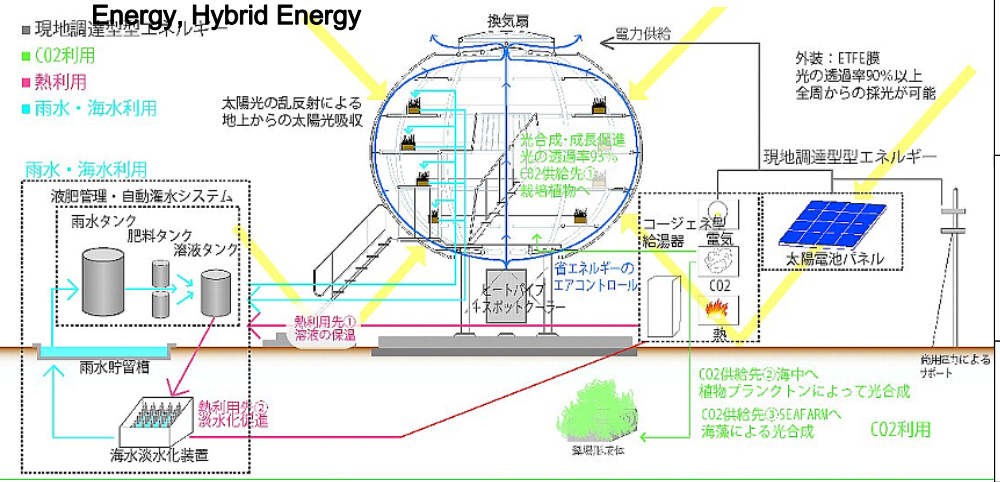
Power: Solar energy + small gas water heater + commercial energy Air conditioning: spot cooler + heat pipe Ventilation: thermo ventilation fan

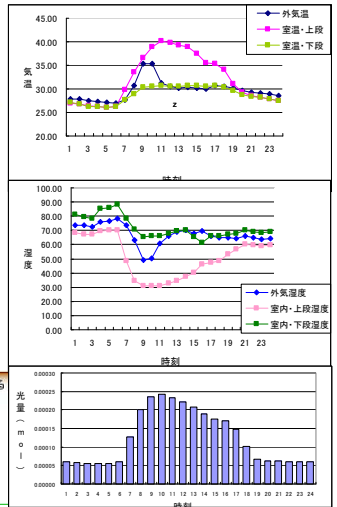
Water usage/supply: rain water + desalinated seawater (partial) CO2 for vegetation: small gas water heater

Agricultural equipment:

4 shelves for edible vegetation, Cultivation method: liquid soil supplied to plants through drip





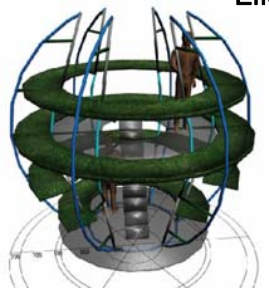


SEASIDE FARM success rate for projected installation area

Shelf agriculture success rate = 1.75 Spherical surface acre = 3.50

2005/10/29 Harvest: total weight incl. leaves and stems = 110 kg

Effect of CO2 Supply: 1.3 – 4.0 increase



SEASIDE FARM2005

2:Neighborhood Nature 2

SEAFARM

GOALS

Use the power of life forms themselves to revitalize the rich nature of Osaka Bay and recover marine life

Utilize the current fisheries, etc. in Osaka Bay as momentum to turn the bay into major center of marine industry.

Realize the Grand Design of turning the Osaka region into an URBAN SEA RESORT.

Facilitate habitation of various living organisms in tidal flats, shallow areas, fishing grounds, and seaweed beds.

Use the food chain to stabilize carbons (reduce global-warming factors such as gas emissions).

Use recycled materials with high adhesive features to enhance incrustation of living organisms (ph8.5, carbon stabilization due to re-generation).

Sanitize marine area through living organisms and plants.

OUTLINE

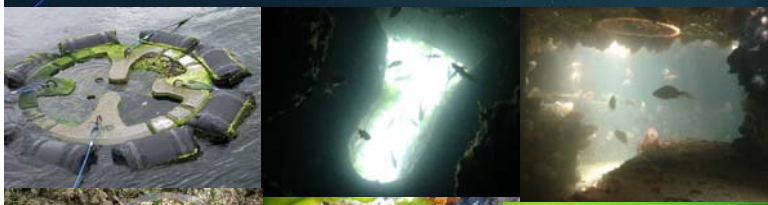
Dimensions (upper section):Φ3m, H = 1.7m conical body

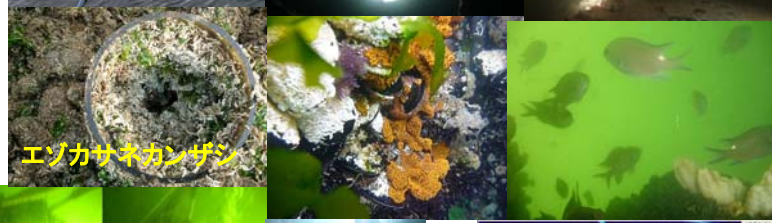
Materials: solid steel structure of hydration slag. Place granulated blast furnace slag encasing material and steel slag clusters → create tidal lands and shallow water areas

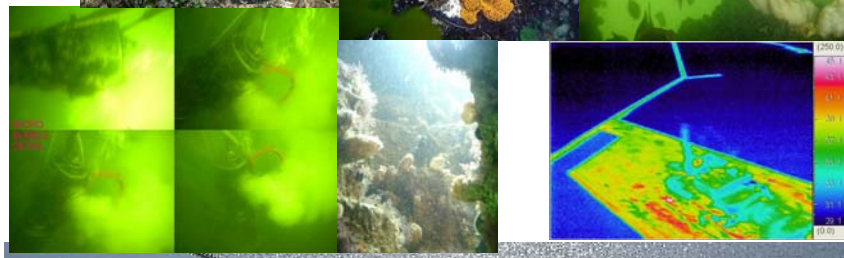
Seaweed Bed Structure (substratum): W 1m x D 1m x H 0.5m

Materials: Steel slag of carbonated solid

The combination of the three recycled materials - steel hydration slag structure, granulated blast furnace slag encasing, and steel slag of carbonated solid – is aimed at promoting marine life attachment and recovery and the revitalization of marine nature. At the same time, CO2 emissions during production of structural materials is reduced, and CO2 levels are stabilized through generation of seaweed beds.





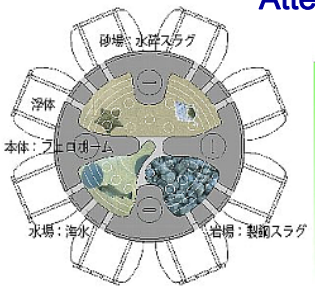


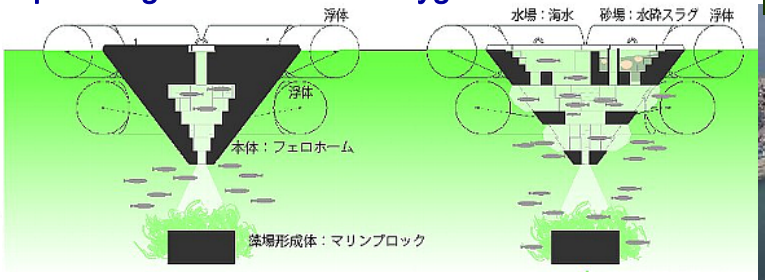
SEA FARM Marine Life Recovery Equipment

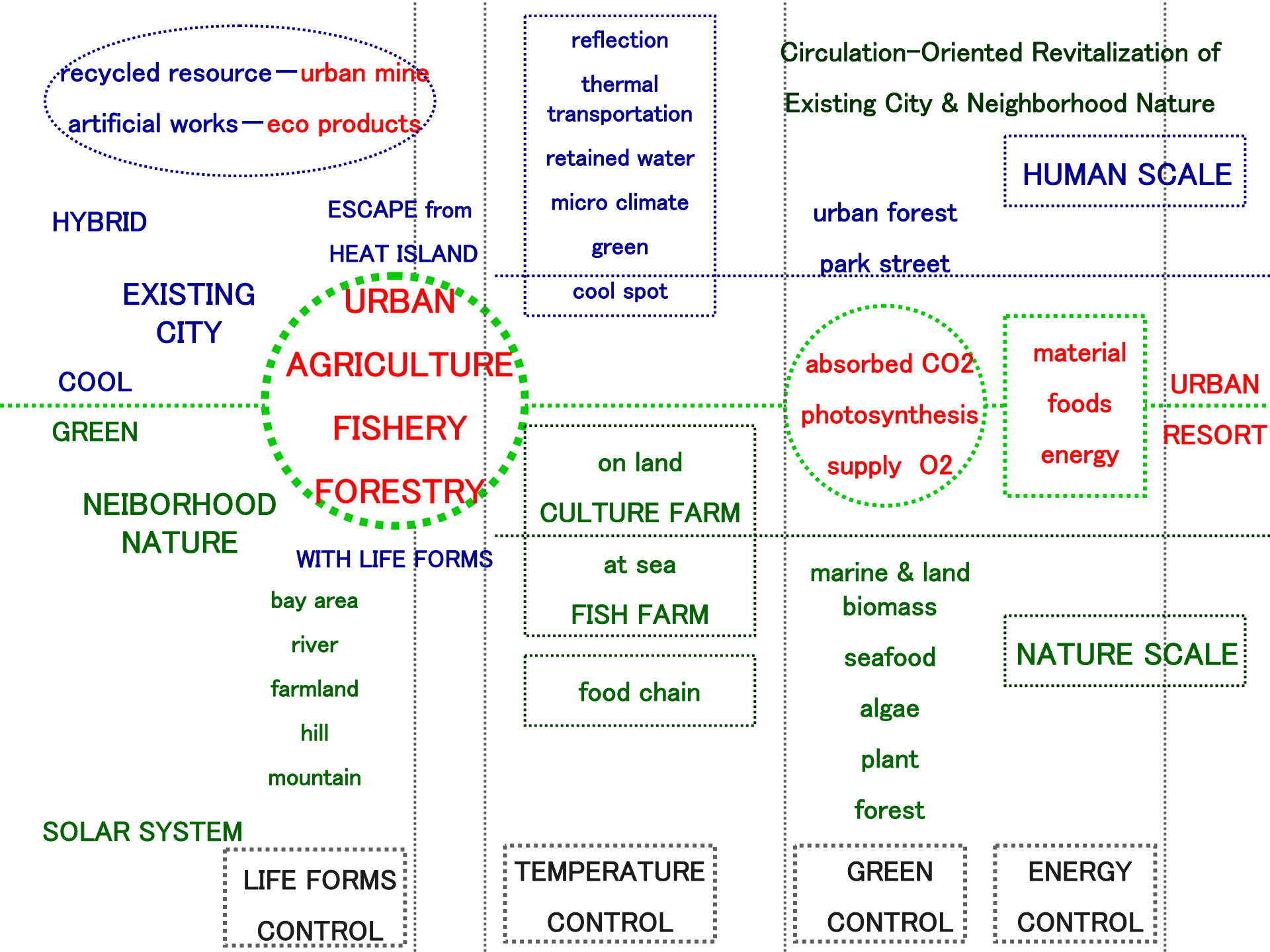
Rapid organism habitat development through eco-material predisposed to living organism incrustation.

Stabilize CO2 emissions through algae breeding, etc.

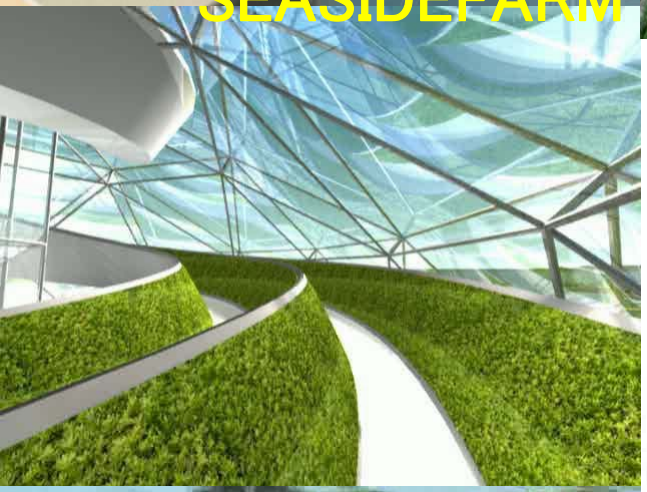
Attempt to augment dissolved oxygen.






recycled resource — urban mine
artificial works — eco products
reflection
thermal
transportation
retained water
micro climate
green
cool spot
Circulation-Oriented Revitalization of
Existing City & Neighborhood Nature
HUMAN SCALE
HYBRID
ESCAPE from
HEAT ISLAND
urban forest
park street
EXISTING
CITY
URBAN
AGRICULTURE
FISHERY
FORESTRY
absorbed CO2
photosynthesis
supply O2
material
foods
energy
COOL
GREEN
URBAN
RESORT
NEIBORHOOD
NATURE
on land
CULTURE FARM
WITH LIFE FORMS
at sea
FISH FARM
marine & land
biomass
seafood
algae
plant
forest
bay area
river
farmland
hill
mountain
food chain
NATURE SCALE
SOLAR SYSTEM
LIFE FORMS
CONTROL
TEMPERATURE
CONTROL
GREEN
CONTROL
ENERGY
CONTROL

SEASIDEFARM



2階建て×2両連結　燃料電池エコロジーバス

2×2 FUEL CELL ECOBUS

Naniwa Suzy

国際集客都市OSAKAのシンボルトランスポーター
観光ビジターの視点を意識した 2×2 デザインソリューション
ユビキタス・オンデマンド・システムによる 誰もが使える交通システムを
そして、地下鉄よりもはるかに低い環境負荷を目指して

everywhere, everything
Ubiquitous Eco Design

FROM CITY CENTER OSAKA & HARBOUR SIDE OSAKA

eco EXISTING CITY
NEIGHBOURFOOD NATURE
OSAKA MODEL

SEA FARM

MARINE PLANTATION SYSTEMS

マリンプランテーションシステム

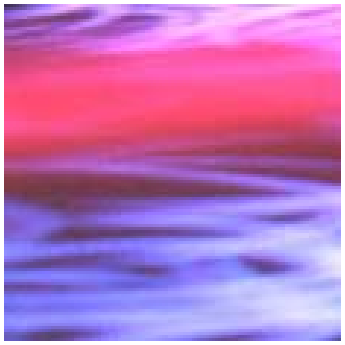
TRANSFER PEOPLE'S ACTIVITY

for

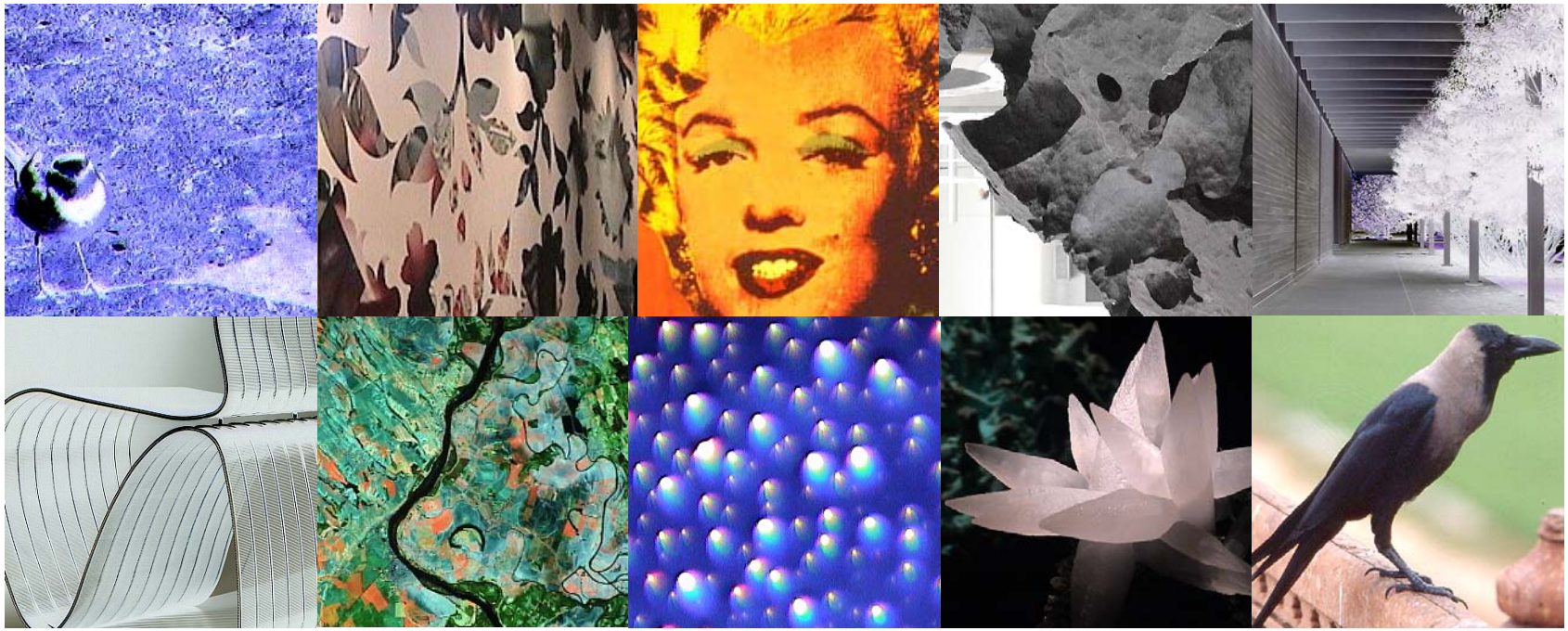
ECOLOGY ,NEW INDUSTRY ,NEW CULTURE,
NEW SHOPPING ,NEW SIGHT SEEING,
NEW BUSINESS

with

GOOD INFORMATION,
CIRCULATION CONCEPT,
GLOCAL LIFE STYLE



NATURE ART DESIGN SCIENCE



CHANGE-TRANSFER

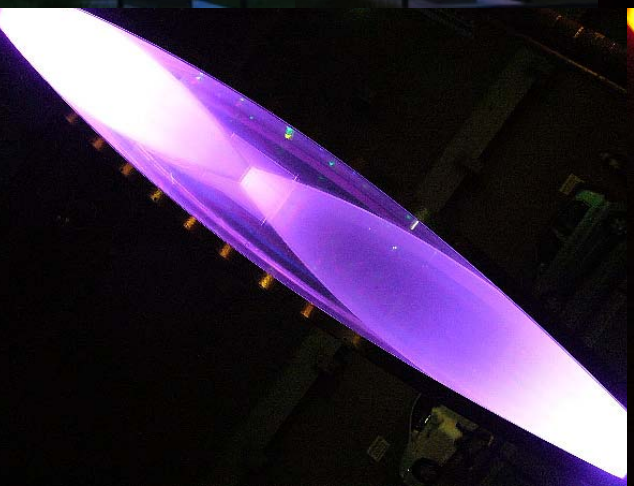
LED LAMP SYSTEM CAN SAVE 80% ENERGY with EMOTION

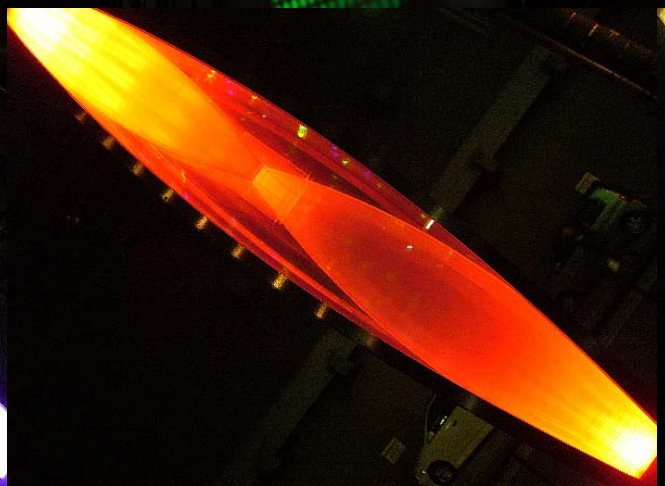
DESIGN as FACTOR TECHNOLOGY 1

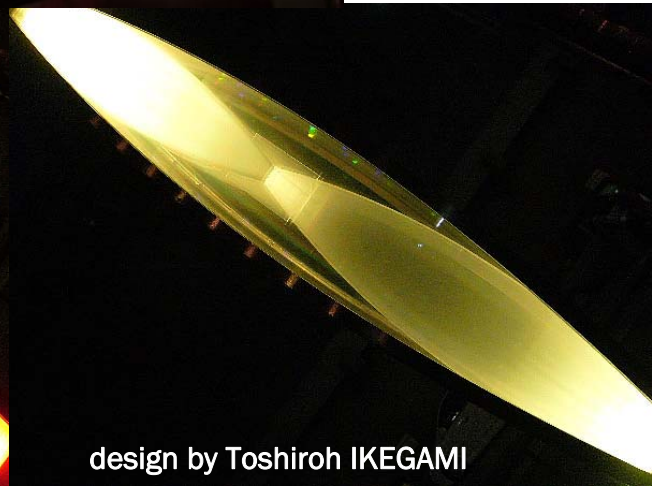
H 3420
W 420
D 360

LED
LAMP

UPPER
R 12W
G 28W
B 18W
total 58W
LOWER
R 2W
G 3W
B 2W
total 7W
TOTAL 65W







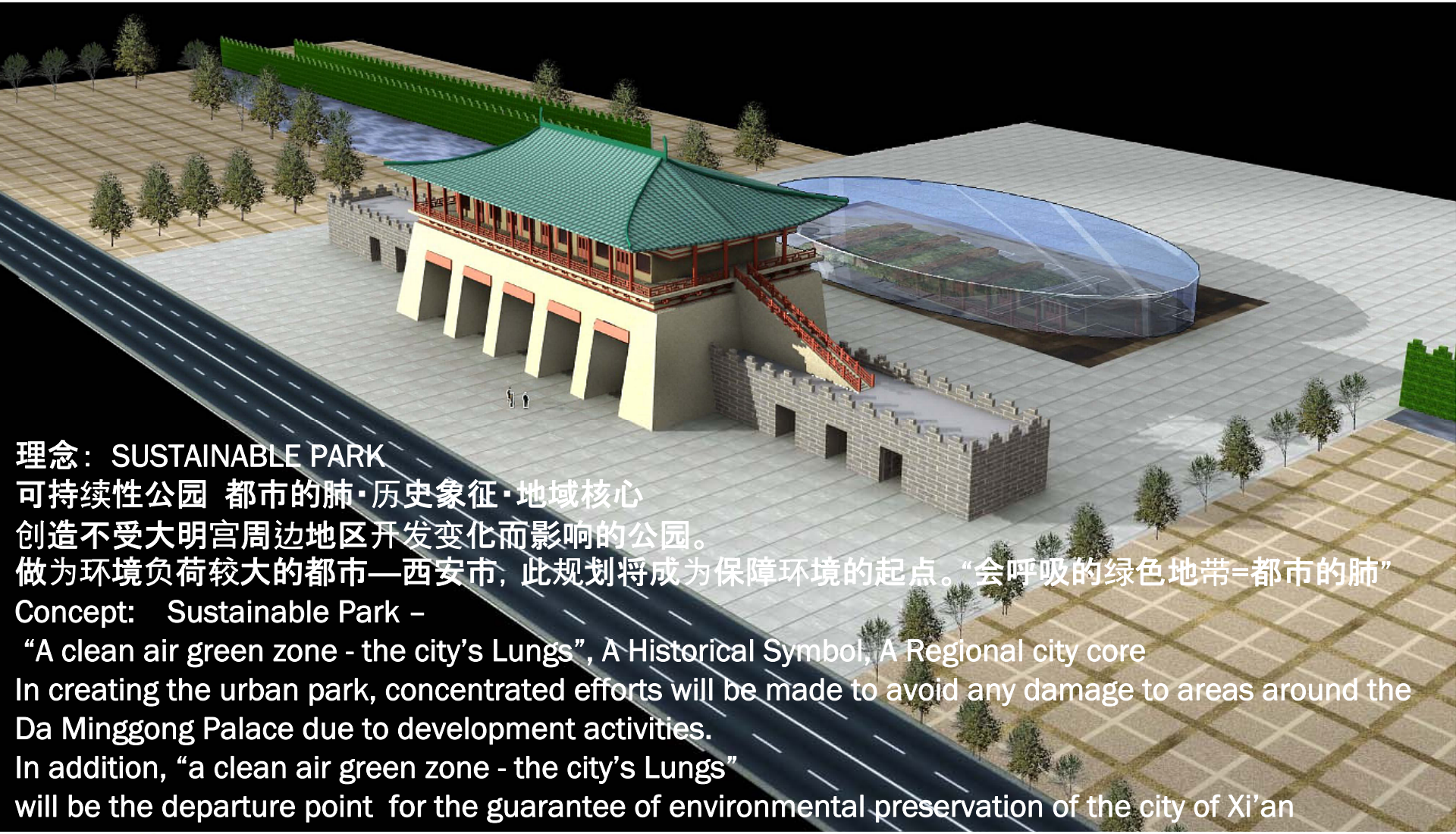
design by Toshiroh IKEGAMI

DESIGN as FACTOR TECHNOLOGY 2

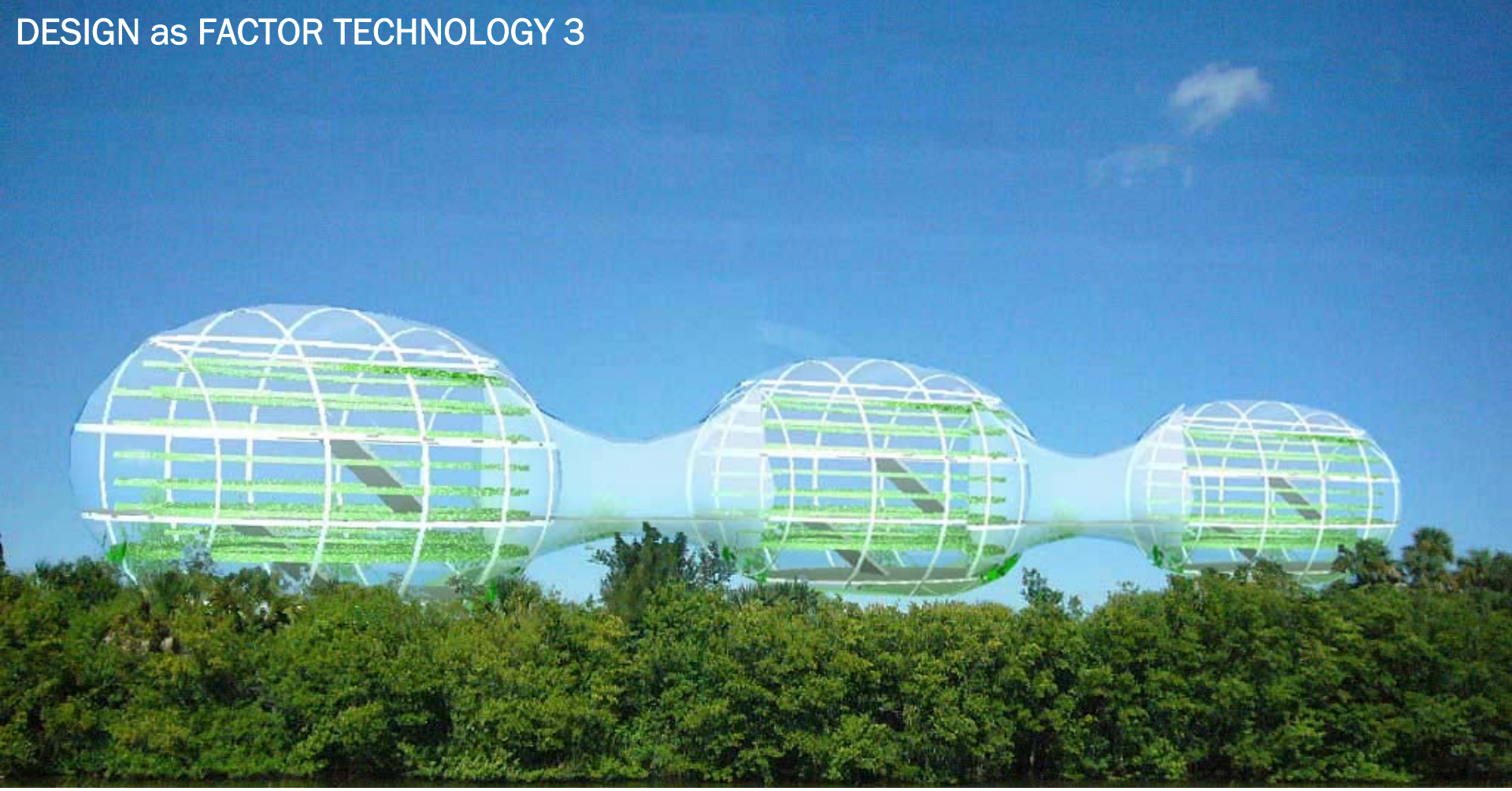
中国 西安 唐大明宫国家遗址公园策划 2007

Pilot Plan of Da Minggong Cultural National Historical Park XI'AN CHINA 2007

未来的历史保存和持续性发展的起点 进化和遗产·文化和美学
The Starting Point for the Historical Preservation and Sustainable Development
Progress & Heritage...Culture & Aesthetics



理念：SUSTAINABLE PARK
可持续性公园 都市的肺·历史象征·地域核心
创造不受大明宫周边地区开发变化而影响的公园。
做为环境负荷较大的都市—西安市，此规划将成为保障环境的起点。“会呼吸的绿色地带=都市的肺”
Concept: Sustainable Park –
“A clean air green zone - the city’s Lungs”, A Historical Symbol, A Regional city core
In creating the urban park, concentrated efforts will be made to avoid any damage to areas around the Da Minggong Palace due to development activities.
In addition, “a clean air green zone - the city’s Lungs”
will be the departure point for the guarantee of environmental preservation of the city of Xi’an



CULTURE FARM 2007

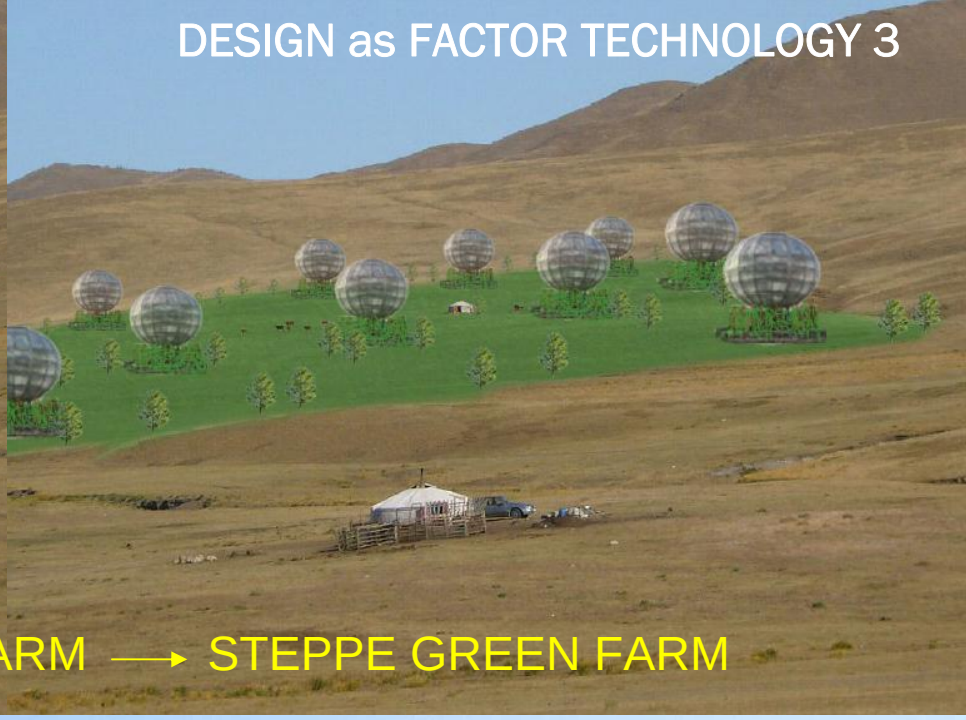
FOODS+MATERIALS+ENERGY
MATERIALS means BIO PLASTIC, MEDICINE, etc
ENERGY means ALCOHOL

MONGOLIA

MOUNTAIN

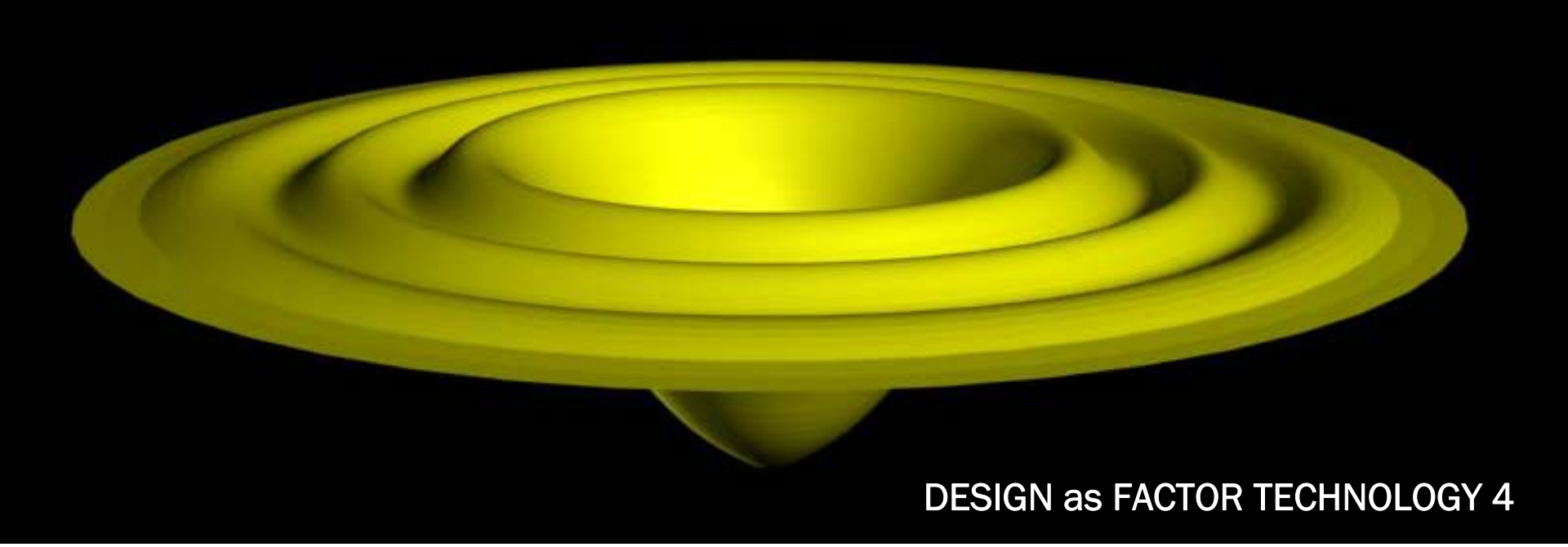
RIVER SIDE

STEPPE

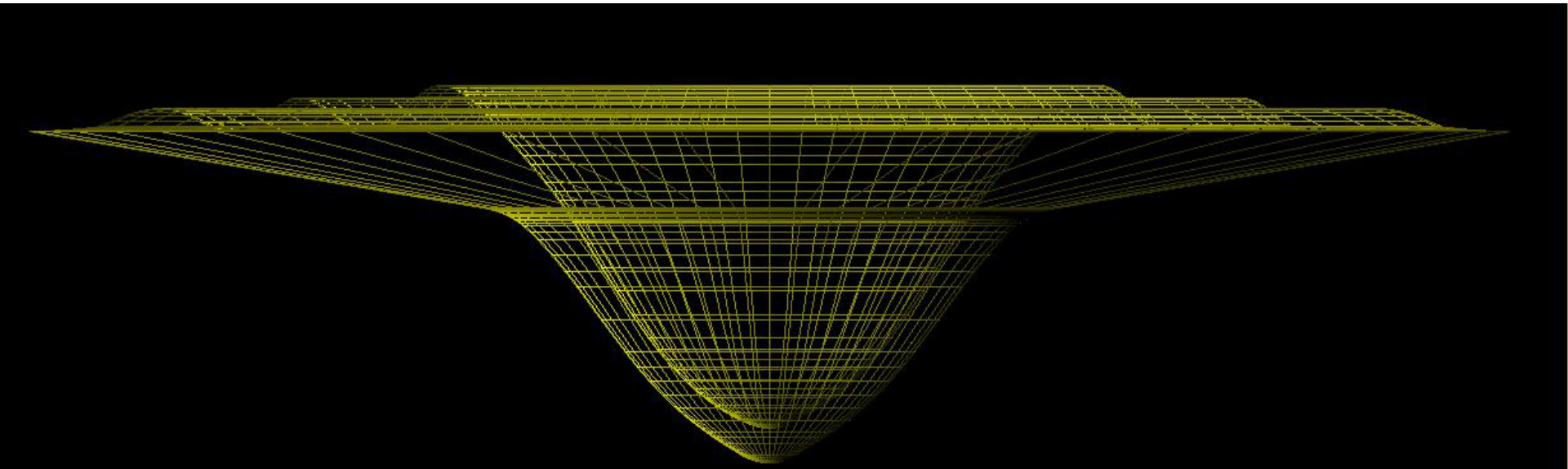


SEASIDE FARM Ⅱ SEASIDEFARM ⟶ STEPPE GREEN FARM

SEASIDEFARM ⟶ RIVERSIDE GREEN FARM



DESIGN as FACTOR TECHNOLOGY 4



TOKYO FISH　LOVE　PROJECT SEAFARM 2 / LIFE FORMS + PURIFY SEA WATER

DESIGN as FACTOR TECHNOLOGY 4

TOKYO FISH LOVE PROJECT SEAFARM 2

LIFE FORMS + PURIFY SEA WATER




SINGAPORE 2006 SUMMER
WITH
GREEN WATER SHADE




DESIGN as FACTOR TECHNOLOGY 5




AGE OF
LAND SCAPE DESIGN

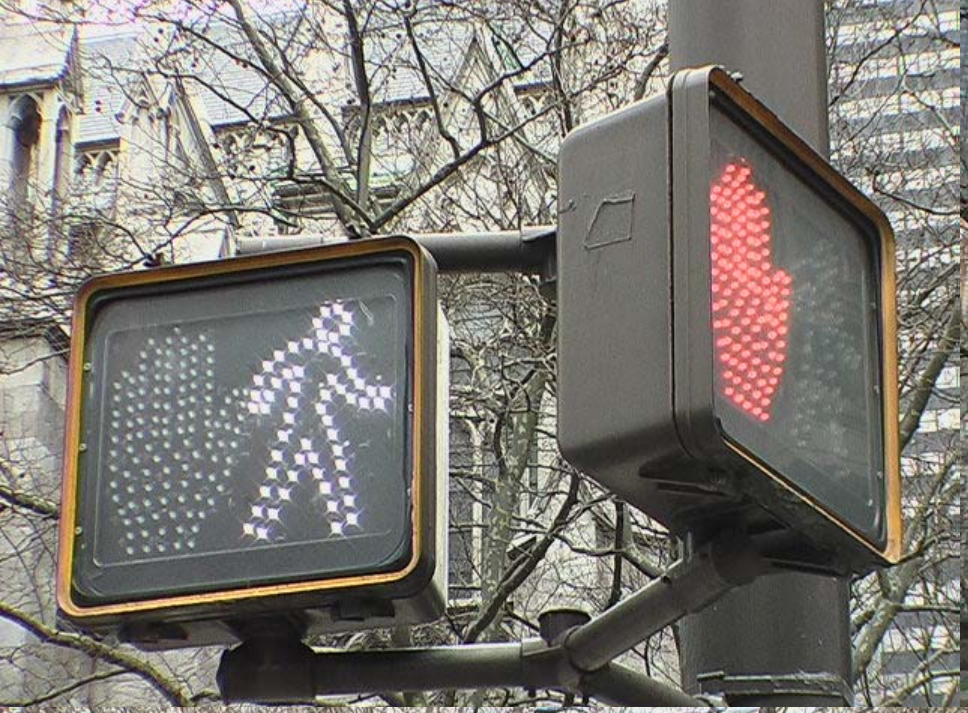
for

SUSTAINABLE REGION & PLANET


2004

PORTLAND


NEWYORK



DESIGN as FACTOR TECHNOLOGY 5

LIVING with NATURE in CITY CENTER

DIFFERENT SETTINGS in USA

NEWYORK CENTRAL PARK 2004


COOL
HABIT
GREEN
WORK
study of existing city & neighborhood nature
生命体とともにある都市のエコロジカルデザイン
デザイナーはデザインの持つ構想力、技術力、感性の統合力を生かし提案する。


with EVERY BEINGS
DWELL
Ecodesign is design itself
How to use LIFE FORMS POWER
with VERSION UP
INTEGRATED DESIGN MANNER from LCA & HUMAN MEDIA
Progress & Legacy; Culture & Aesthetics
THANKS 謝謝