



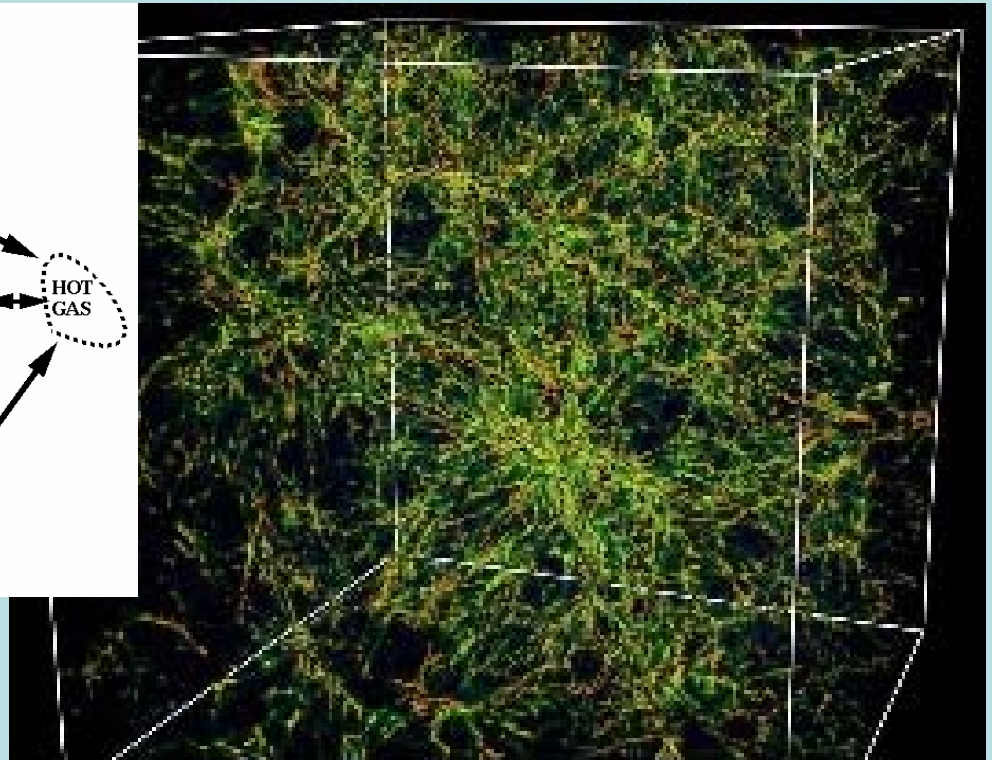
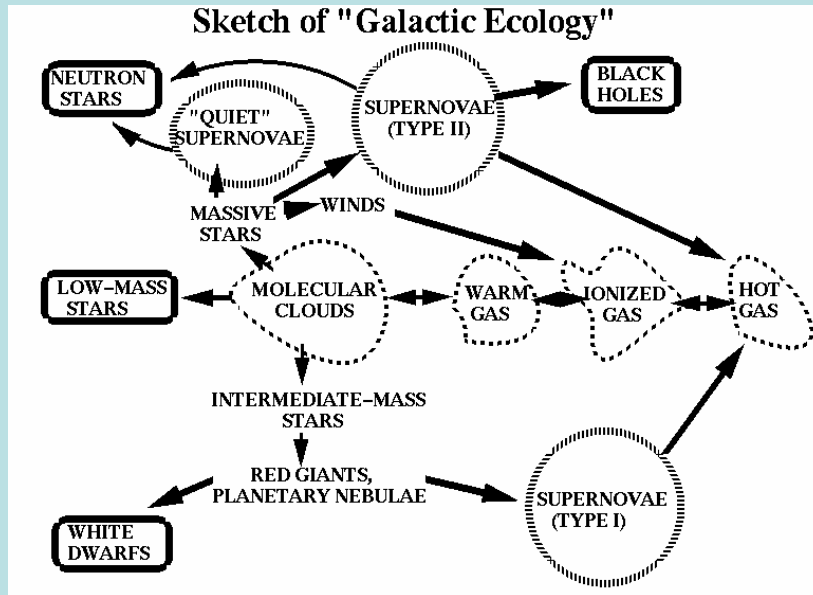
What is Meant by Sustainability?

Sustainable Systems in Nature

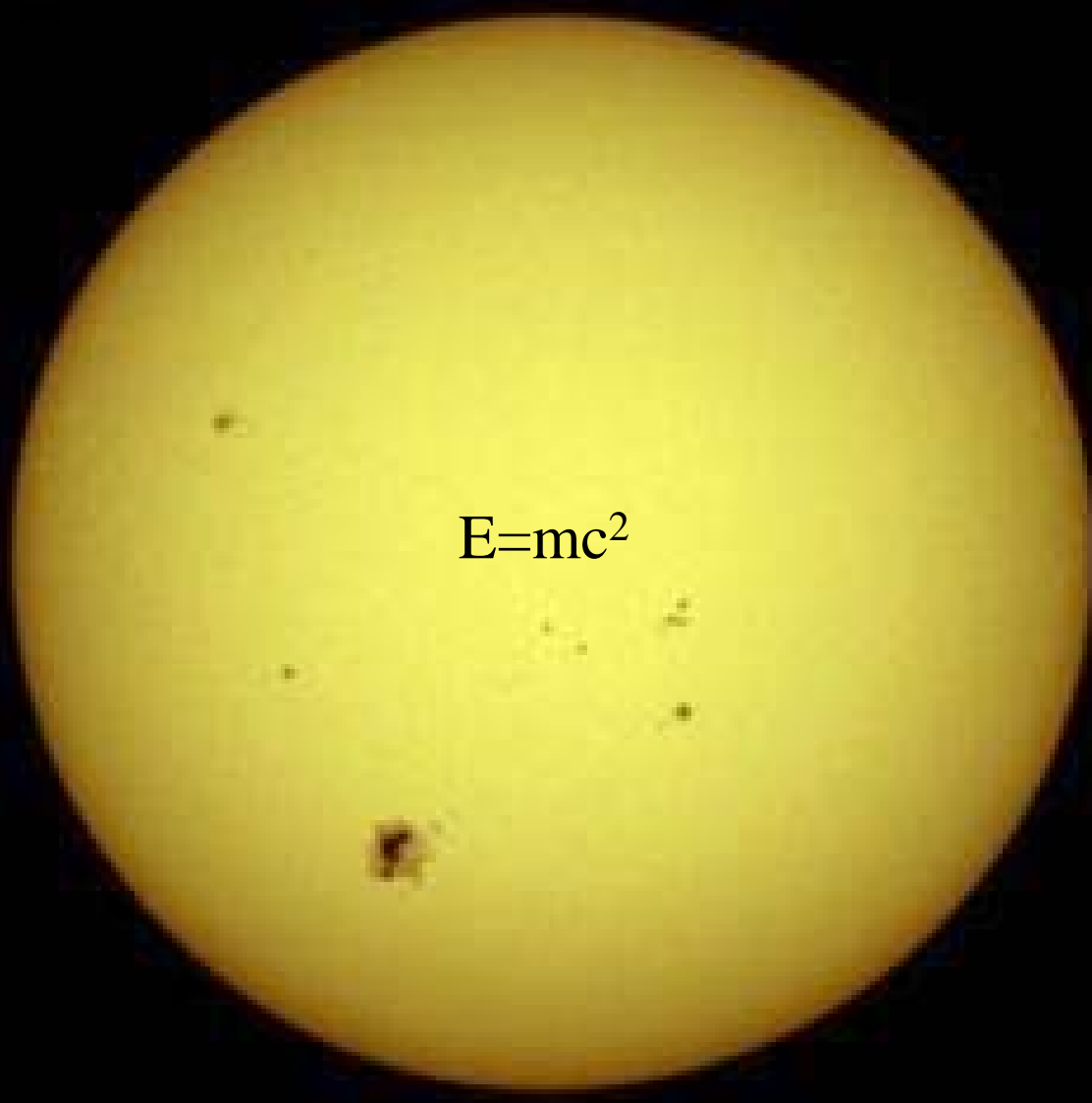
Re-cycling “Star stuff”



Galactic Ecosystems



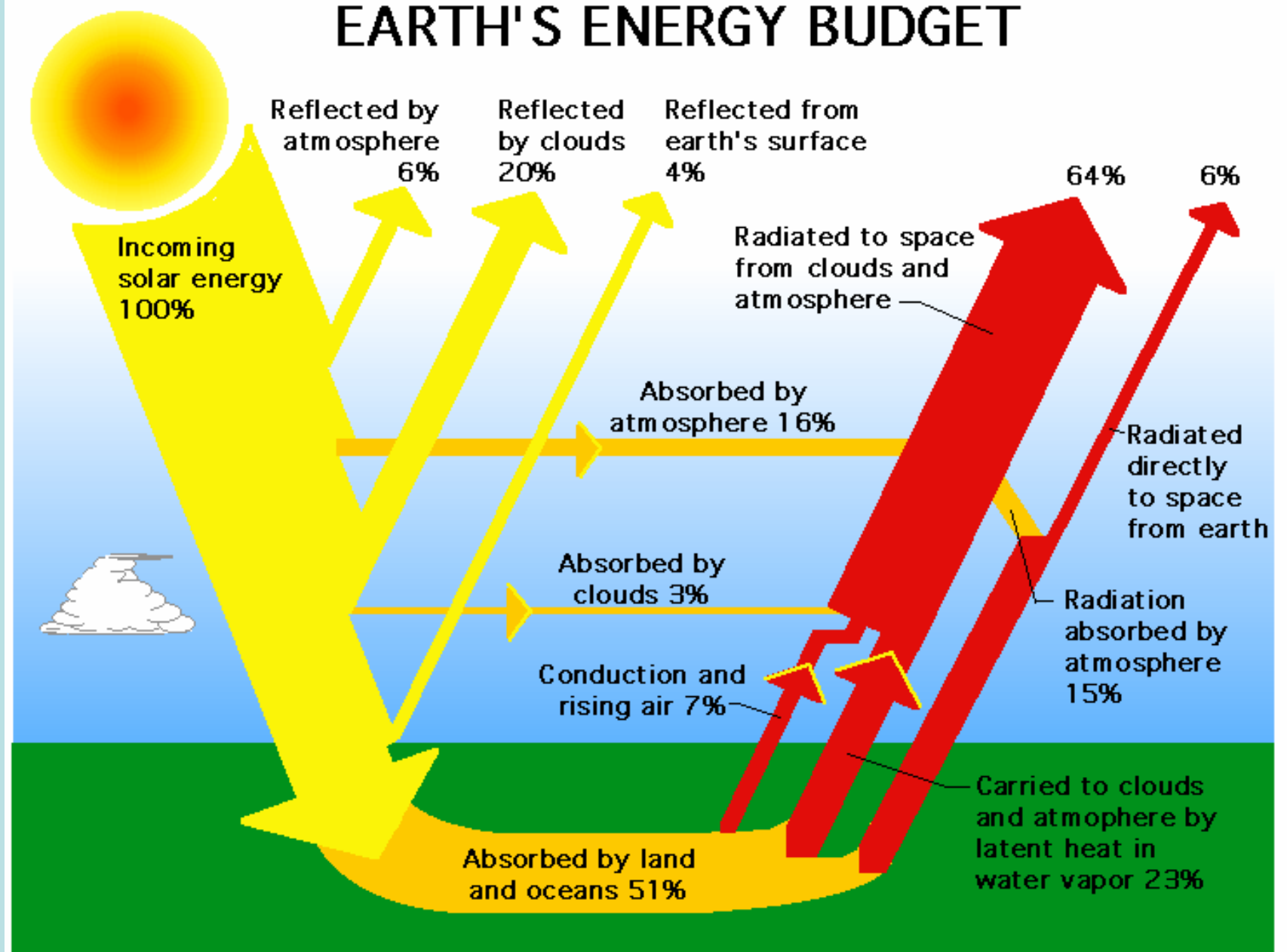
The Universe as we know it

A large, bright yellow sphere is centered in the frame against a solid black background. The sphere has a slightly textured appearance with some subtle variations in brightness. Several small, dark, irregular spots are scattered across the surface of the sphere. The most prominent spot is located near the bottom center, while others are smaller and more faintly visible in the upper and middle sections.
$$E=mc^2$$



The solar constant = 2 calories/cm²/min

EARTH'S ENERGY BUDGET



A photograph of Earth from space, showing the Americas and surrounding oceans. The text "Gaia Hypothesis" is overlaid in green. The image shows the Earth's curvature, with the Americas visible in the upper half and the surrounding oceans and clouds in the lower half. The text "Gaia Hypothesis" is centered in the middle of the image, written in a green, sans-serif font.

Gaia Hypothesis

**Natural Systems Create and
Maintain Conditions
That Support Life On Earth**



Photosynthesis



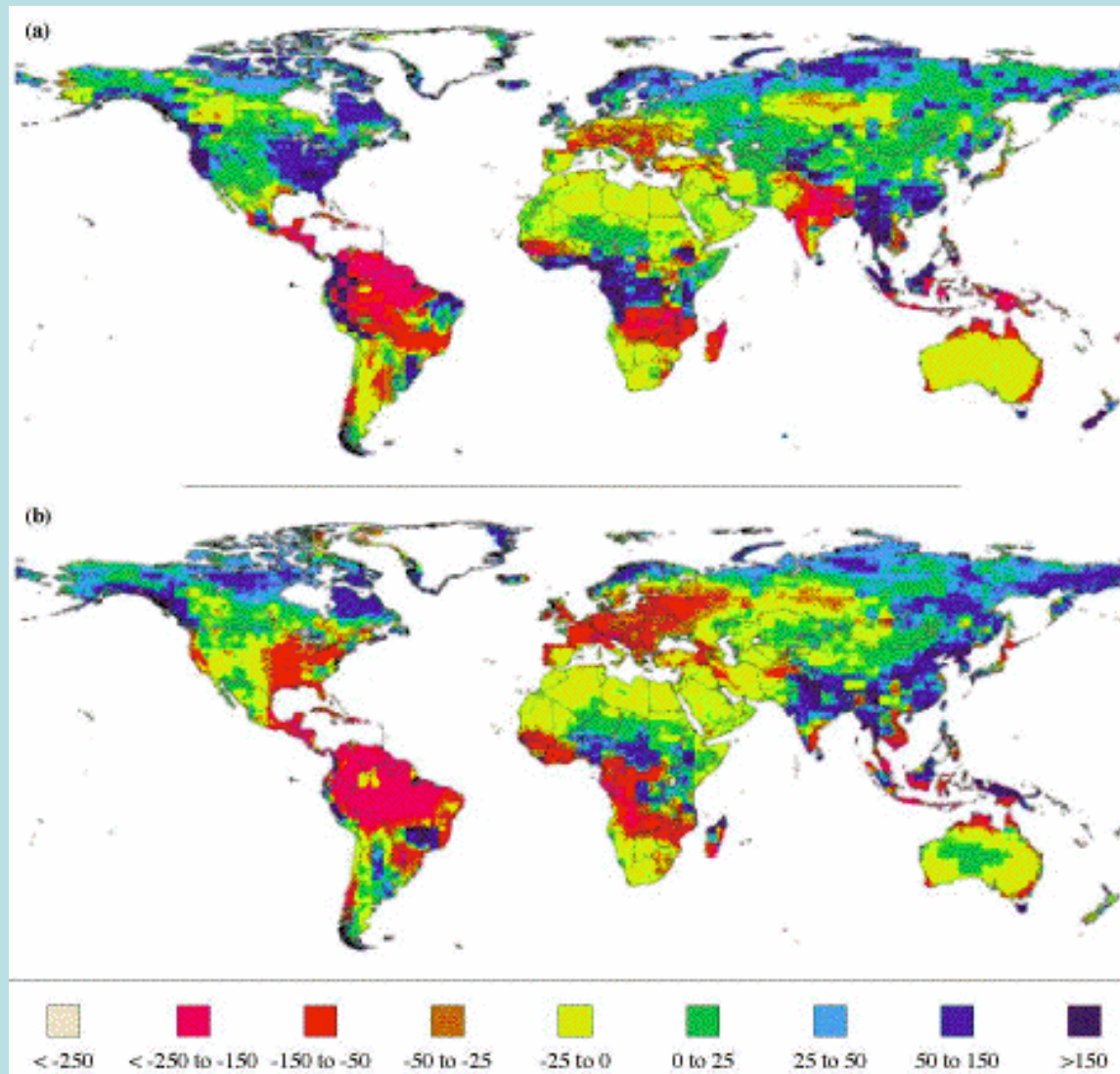
ie. algae

Carbohydrates + Oxygen as products

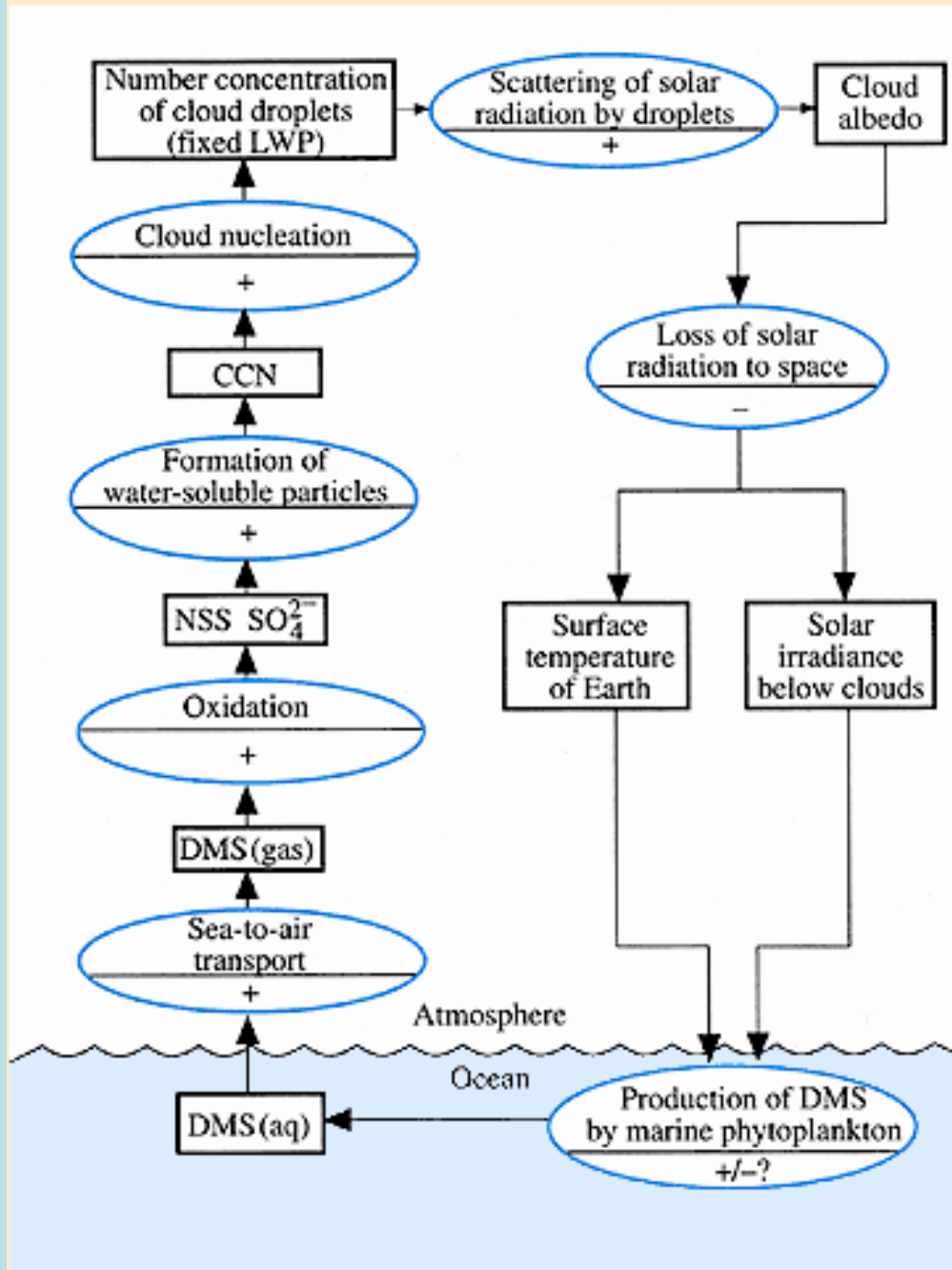
1 mole of CO_2 consumed
as 1 mole of O_2 produced

→ Controls surface water ocean chemistry of inorganic carbon and nutrients and, when combined with respiration, controls atmospheric CO_2 concentration.

Earth's Ecosystems

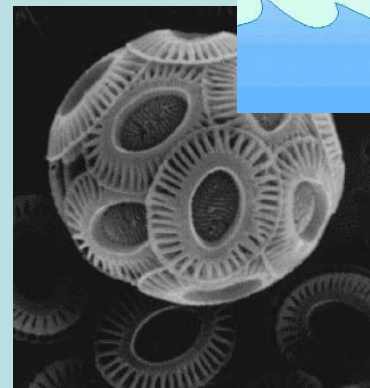
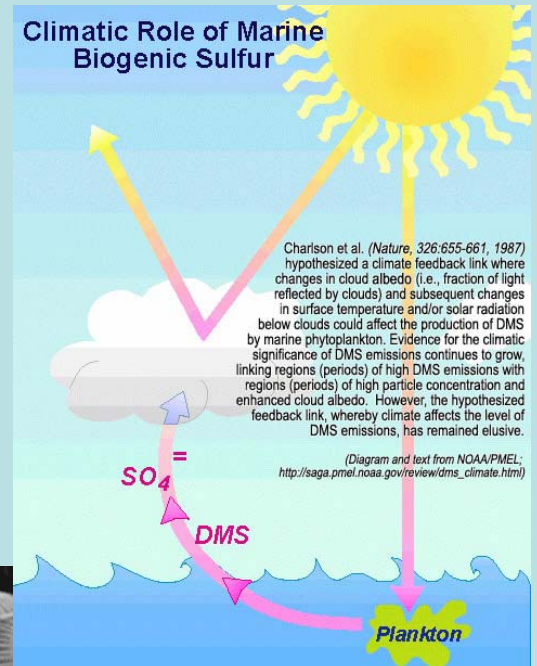


Cloud Formation

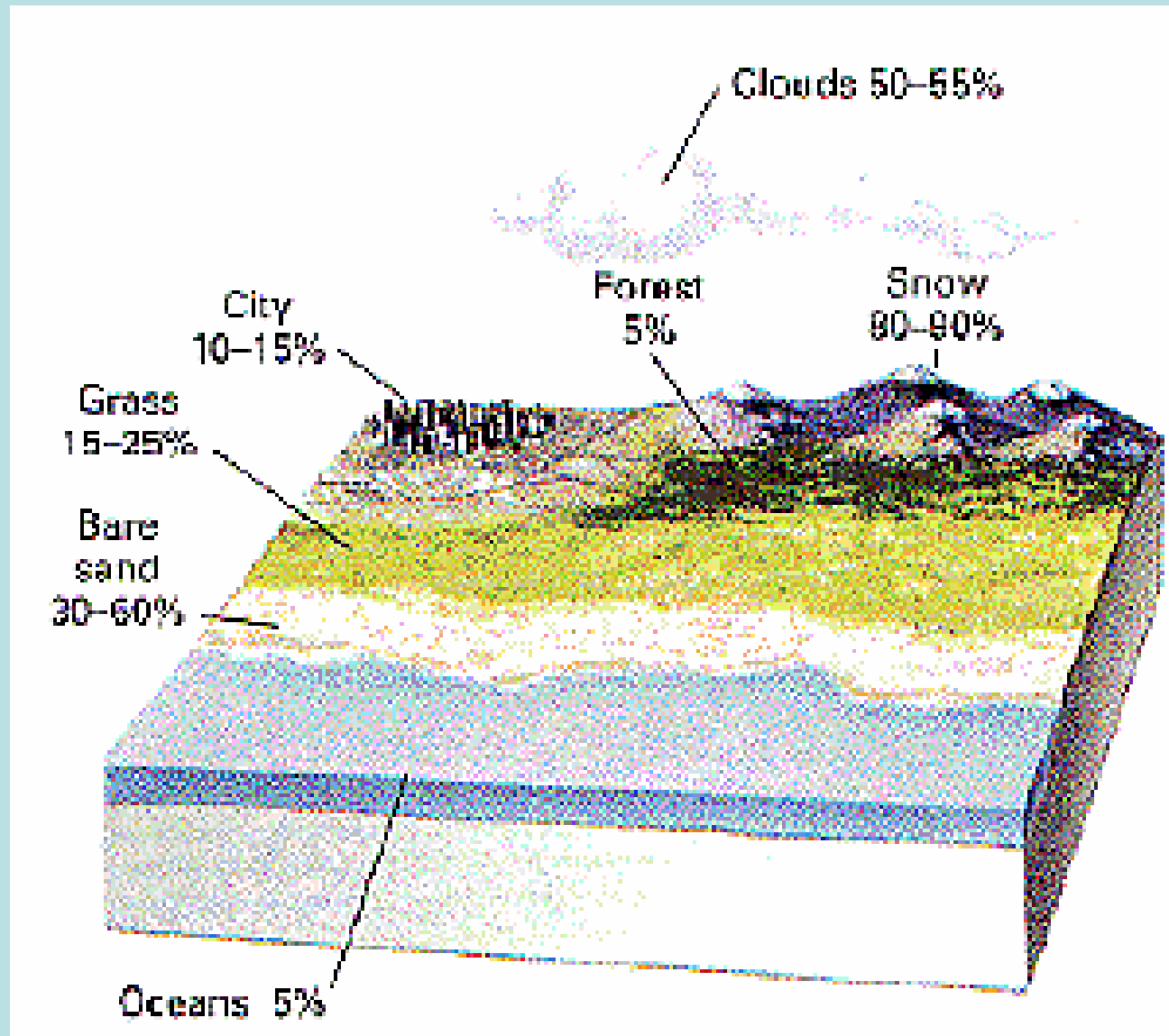


Charlson et al in: Oceanography (Summerhaze & Thorpe eds.)1996

Climatic Role of Marine Biogenic Sulfur



Result: 20° C Average Earth Temperature





Teaching Cities to
Behave like Natural
Systems

Urban Pollution

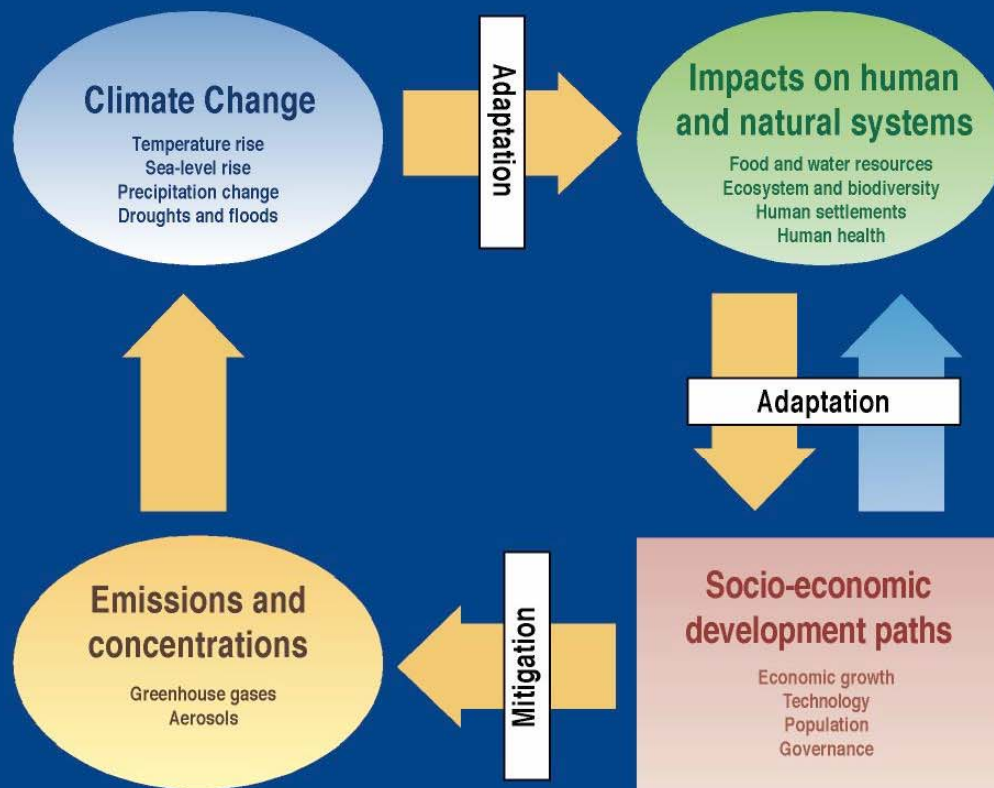




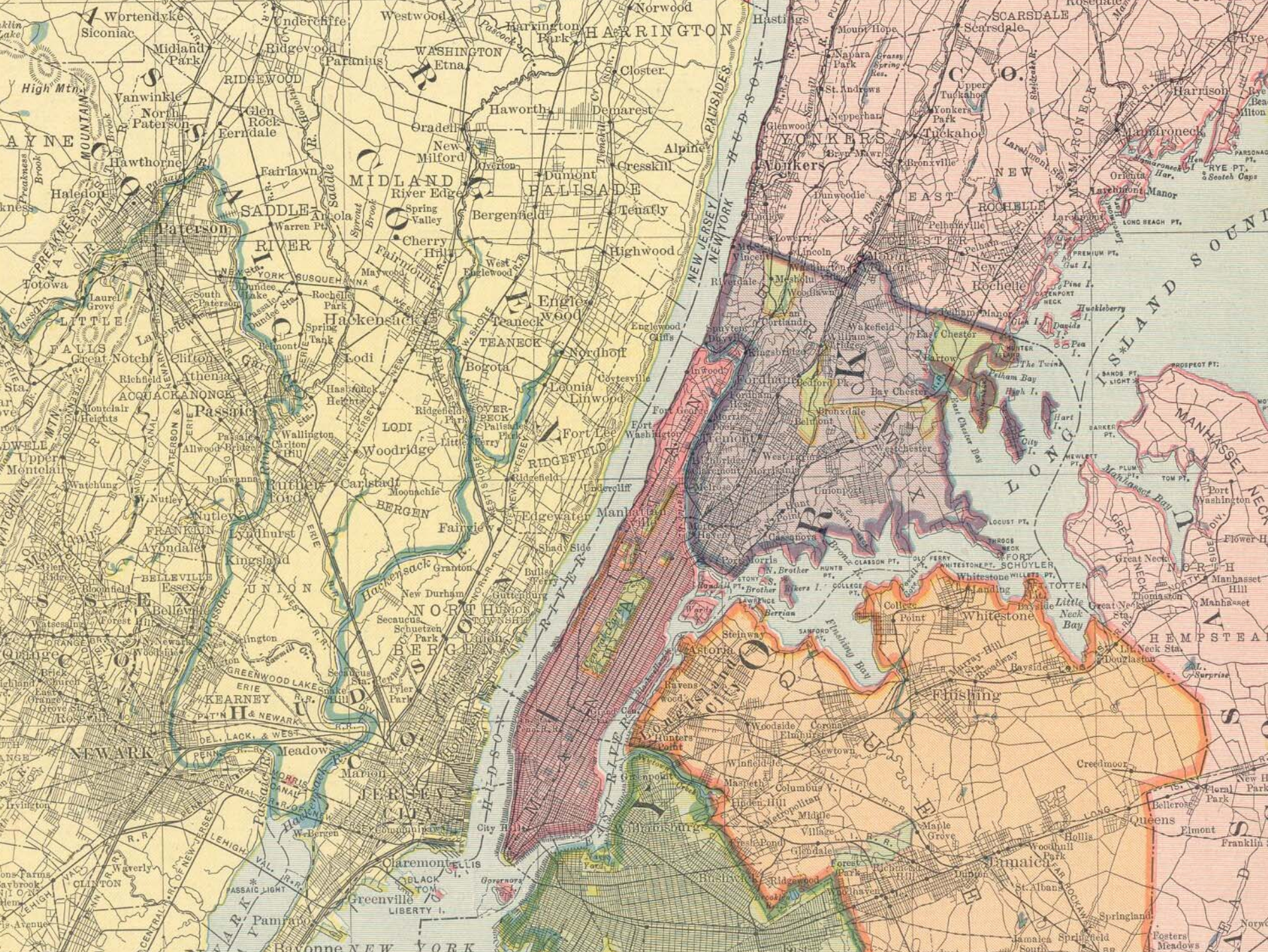
DOSSIER

Urban pollution

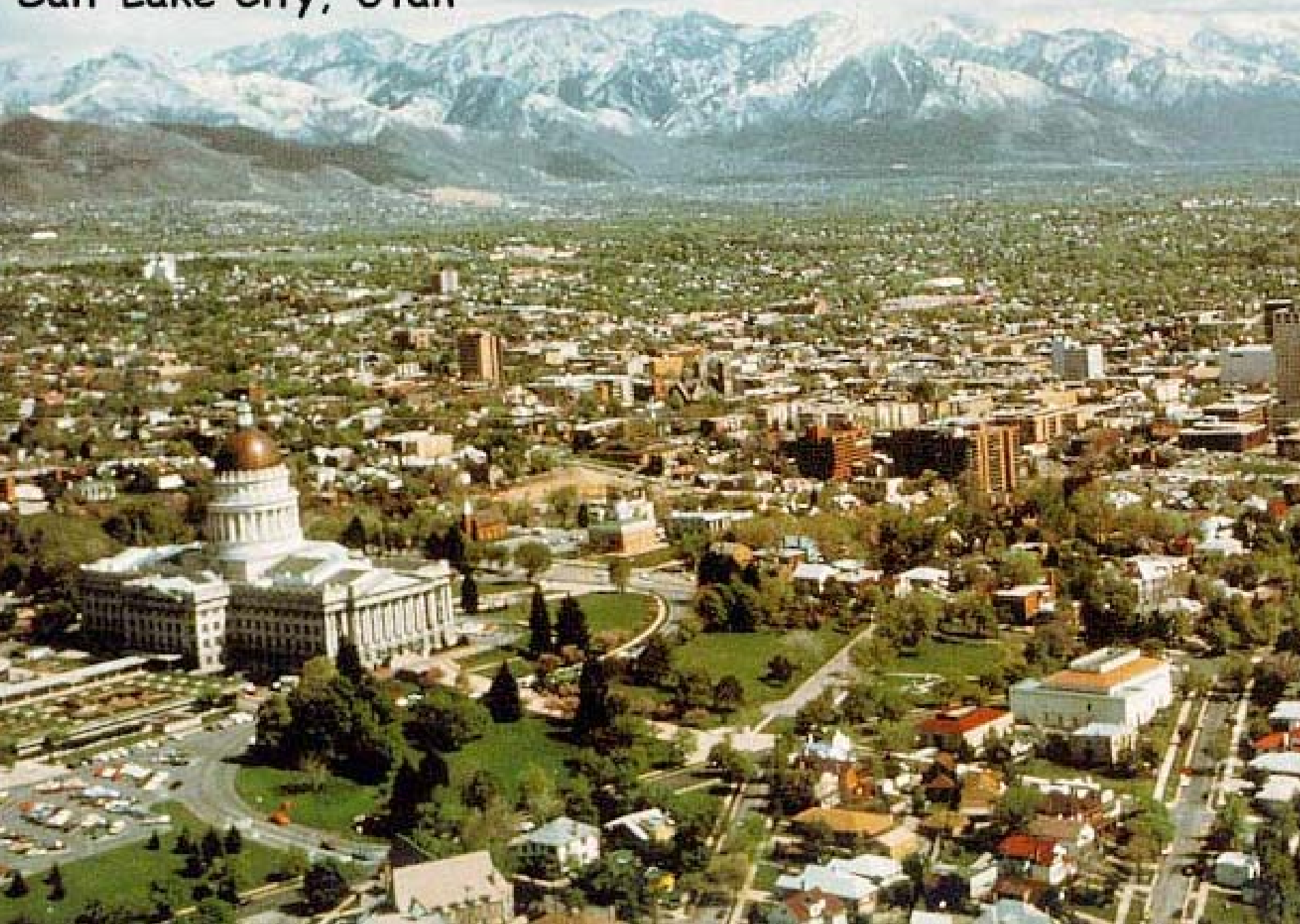
Climate Change - an integrated framework

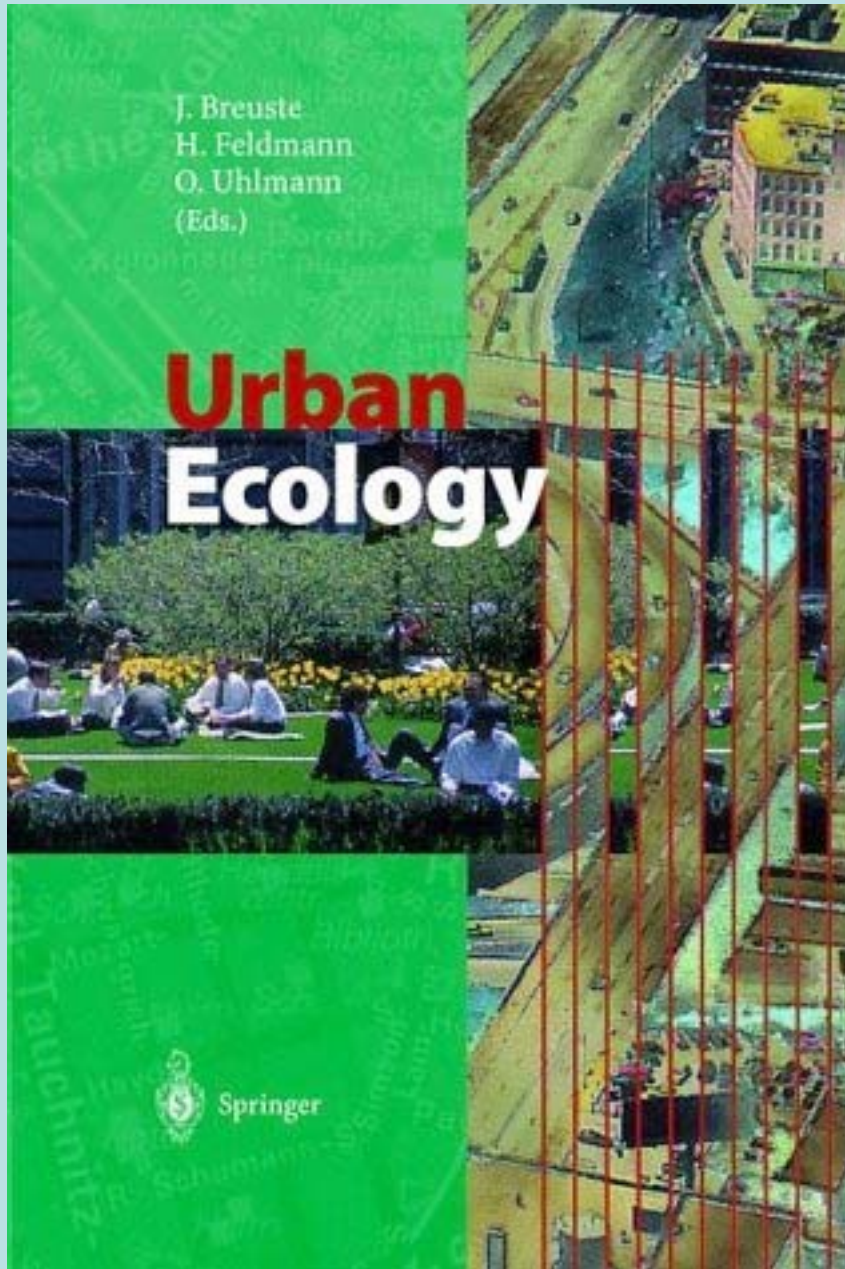


SYR FIGURE 1-1



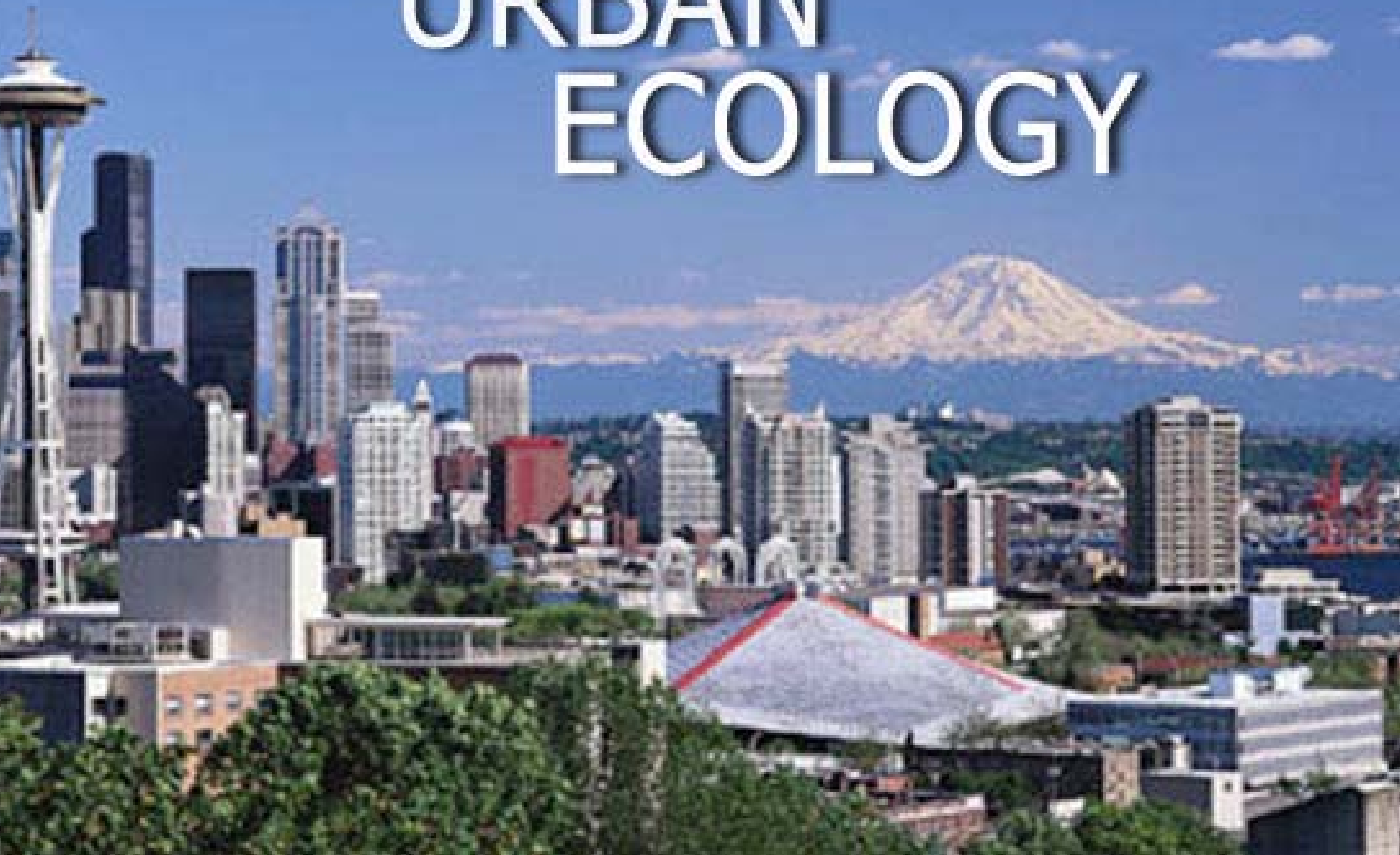
Salt Lake City, Utah





Concepts in Urban Sustainability

Interdisciplinary Education in **URBAN ECOLOGY**





Urban Ecology



Educating for the Management of Cultural Landscapes



A Trans-Atlantic Student Exchange Program with partners in the USA (Oregon, Pennsylvania, Wisconsin) and in Europe (Germany, The Netherlands, Spain)



Issues and the Future of Ecocity Development

Proceedings of the [Internet Conference
on Ecocity Development](#)

Editors :

Jacky E.L. Foo, Dan Hu, Juergen Paulussen,
Rusong Wang & Richard Register. 2003.



Foreword

1. **Abstracts and Papers**
2. **Discussion Messages in Sessions**

- A. [Eco-settlement and eco-building](#)
- B. [Peri-urban Agriculture and Forestry](#)
- C. [Ecocity planning and management - Case Studies](#)
- D. [Integrative urban water management](#)
- E. [Ecocity Planning - Methodology](#)
- F. [Urban waste management](#)
- G. [Urban impacts and the peri-urban environment](#)
- H. [Industrial Ecology](#)
- I. [Human Ecology and Capacity Building for eco-culture](#)
- J. [Issues and Future of Ecocity Development](#)

[Shenzhen Declaration on Ecocity Development](#)

[Photo Gallery: 5th Intl Ecocity Conference, Shenzhen \(Aug 2002\)](#)

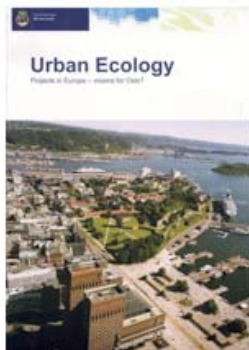
ECOark

arkitektur og stedsutvikling bærekraftig arkitektur og stedsutvikling bærekraftig arkitektur og stedsutvikling

► Hjem ► NAL ► Lokalforeninger ► Akademi ► Bibliotek ► Konkurranser ► Publikasjoner ► Miljø ► Lenker

ECOark litteratur

► Hjem ► Tema ► Publikasjonstyper ► Utgiver ► English ► Alle



Urban Ecology

Projects in Europe - visions for Oslo?

Environment and sustainability are the key to some exciting urban development projects in Europe. Norway is behind, but there is now growing interest and understanding that urban development must be designed with sustainability as a basic requirement.

The European projects encompass large urban areas with thousands of homes, workplaces and services. The most important new development regarding sustainability is the wide range of planning issues that come into play – urban design, transport infrastructures, district heating, recycling of rainwater and waste amongst others. The following four examples include both new build and regeneration projects in 'brownfield' industrial areas, including former docklands.

Utgiver:

Oslo kommune, NAL | NABU

Utgivelsesår:

2003

Relaterte lenker:

► [Oslo Havnevesen](#)

Vedlegg:

► [Last ned](#)

www.arkitektur.no

NAL | NABU

- [NABU nyheter](#)
- [Agenda](#)
- [ECOark prosjekter](#)
- [ECOark litteratur](#)
- [Bibliotek](#)
- [Aktiviteter](#)
- [Lenker](#)
- [Om NABU](#)
- [English](#)
- [Kontakt oss](#)

Samarbeidspartnere



Statens vegvesen



STATSBYGG

Sosial- og helsedirektoratet



Oslo
Bærekraftig By



MILJØVERNDEPARTEMENTET

Husbanken



FARMING IN THE Z-AXIS: THE VERTICAL FARM

6TH STREET BASIN,
GOWANUS CANAL, BROOKLYN

HEALTHY TRANSPORTATION
ALTERNATIVES

CROPS DISTRIBUTED LOCALLY
AND REGIONALLY

EXISTING BUILDINGS
REACTIVATED

PUBLIC EDUCATION

ELECTRICITY GENERATION

JOB CREATION

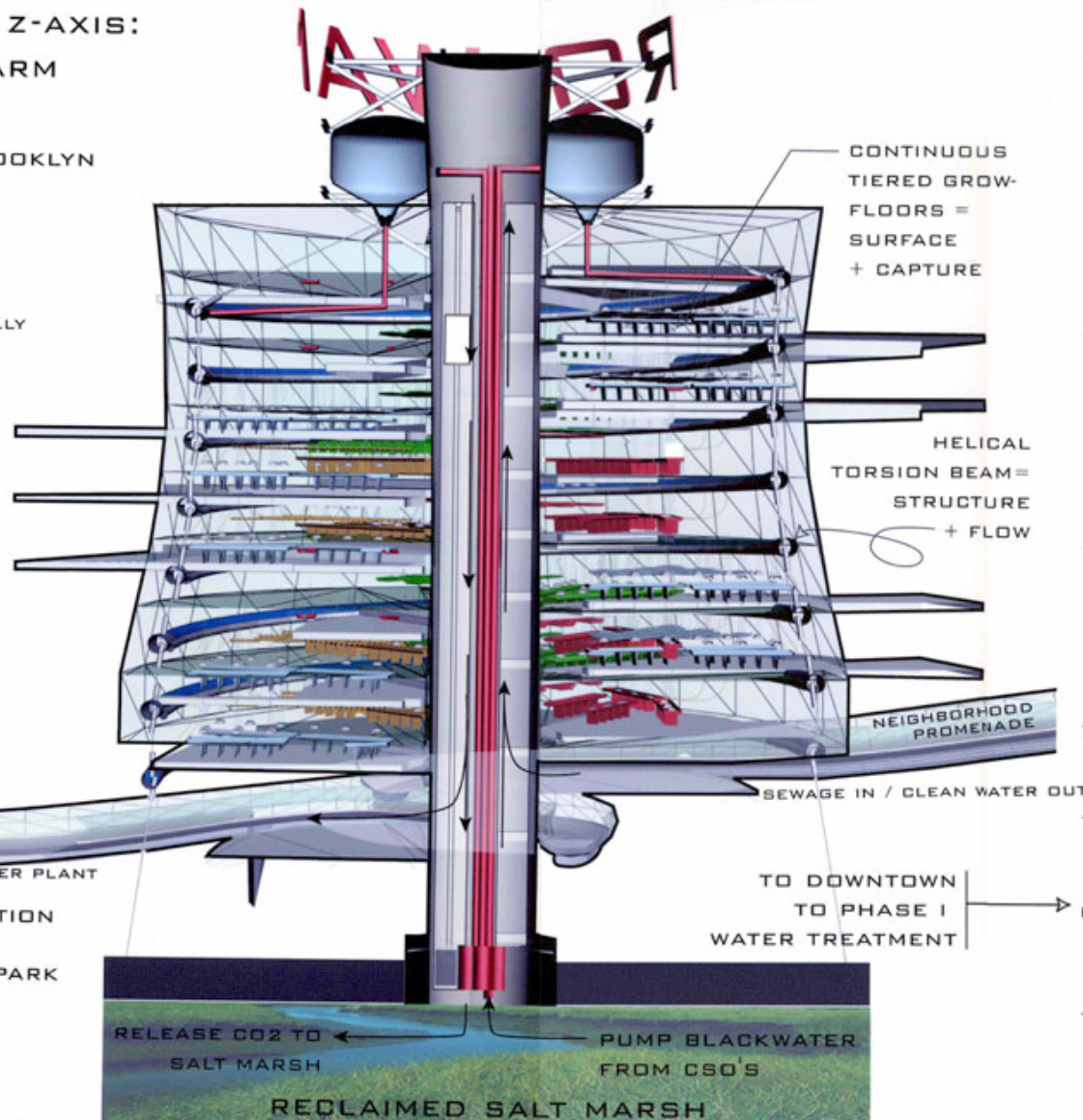
NEIGHBORHOOD
PROMENADE

RELEASE METHANE TO POWER PLANT

TO POWER STATION
TO PARKING
TO PROSPECT PARK

RELEASE CO2 TO
SALT MARSH

RECLAIMED SALT MARSH



CONTINUOUS
TIERED GROW-
FLOORS =
SURFACE
+ CAPTURE

HELICAL
TORSION BEAM =
STRUCTURE
+ FLOW

NEIGHBORHOOD
PROMENADE

SEWAGE IN / CLEAN WATER OUT

TO DOWNTOWN
TO PHASE I
WATER TREATMENT

+ PUBLIC SIGNAGE

+ STRUCTURAL
MAST &
HOLDING TANKS

+ BLACKWATER BIOGAS
REACTOR

+ COMPOSTABLE
PLANT
PRODUCTION

+ EDIBLE CROP
PRODUCTION:
24 HOUR/365 DAY
HYDROPONIC
GROWING

+ DECORATIVE
PLANT PRODUCTION

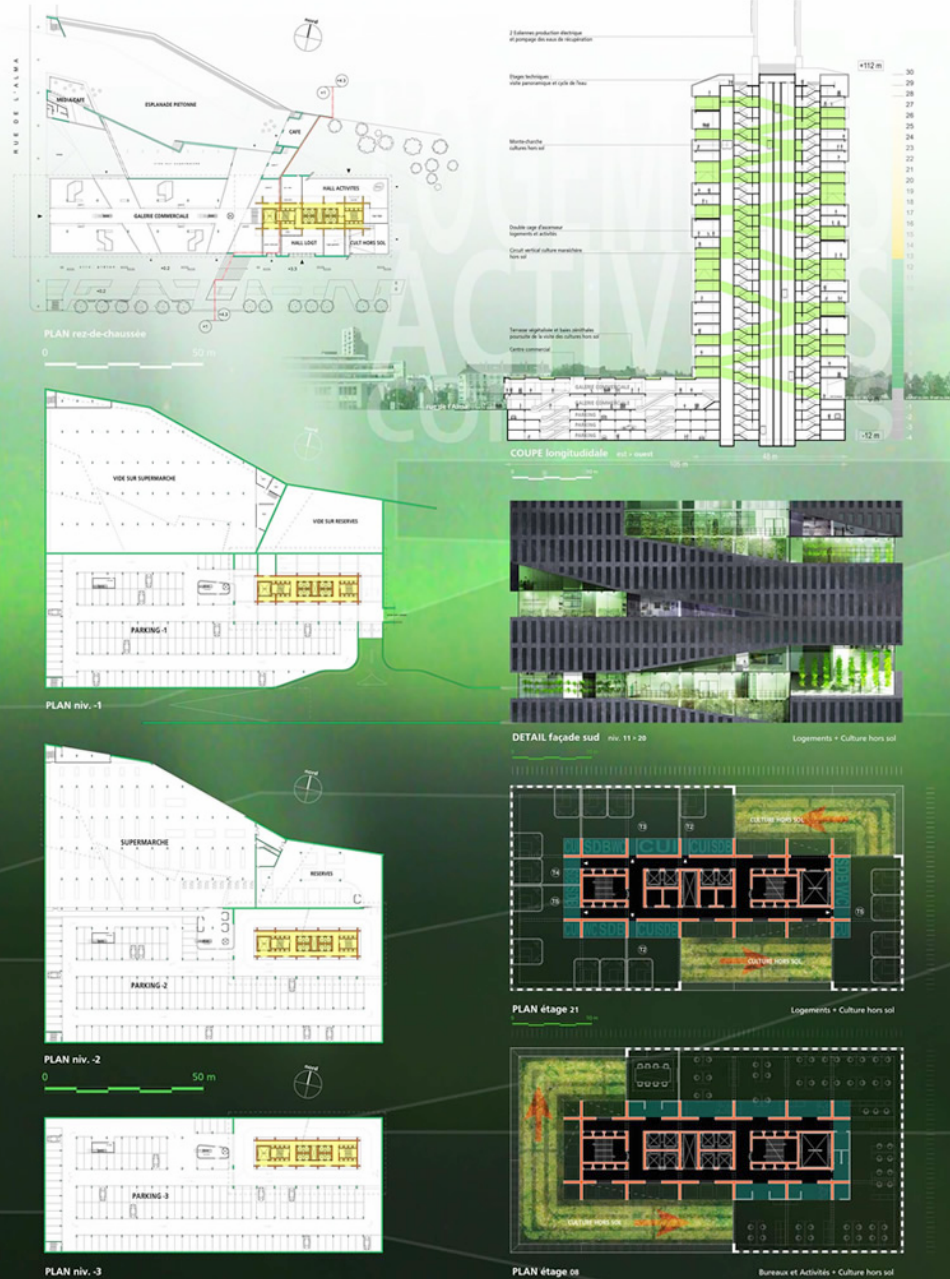
+ PUBLIC
INTERCHANGE
PLATFORM

+ GREENMARKET/
PUBLIC ACCES
TO SALT MARSH

- PUMPING STATION/
UNDERGROUND
PARKING



vue nocturne



"The Living Tower" by Pierre Sartoux

info.soa@wanadoo.fr

[atelier SoA architectes](#), 101 rue damrémont, 75018 Paris

**In the end, sustainability means to be
able to provide for yourself!**



**Urban centers need to behave in this fashion if
we are to survive the next 50 years!**

A composite image featuring a large, realistic human hand cupping the Earth from below. The Earth is shown with detailed cloud patterns and visible landmasses. The background is a deep blue space filled with numerous white stars. The text 'You can help!' is centered over the Earth in a bold, green, sans-serif font.

You can help!