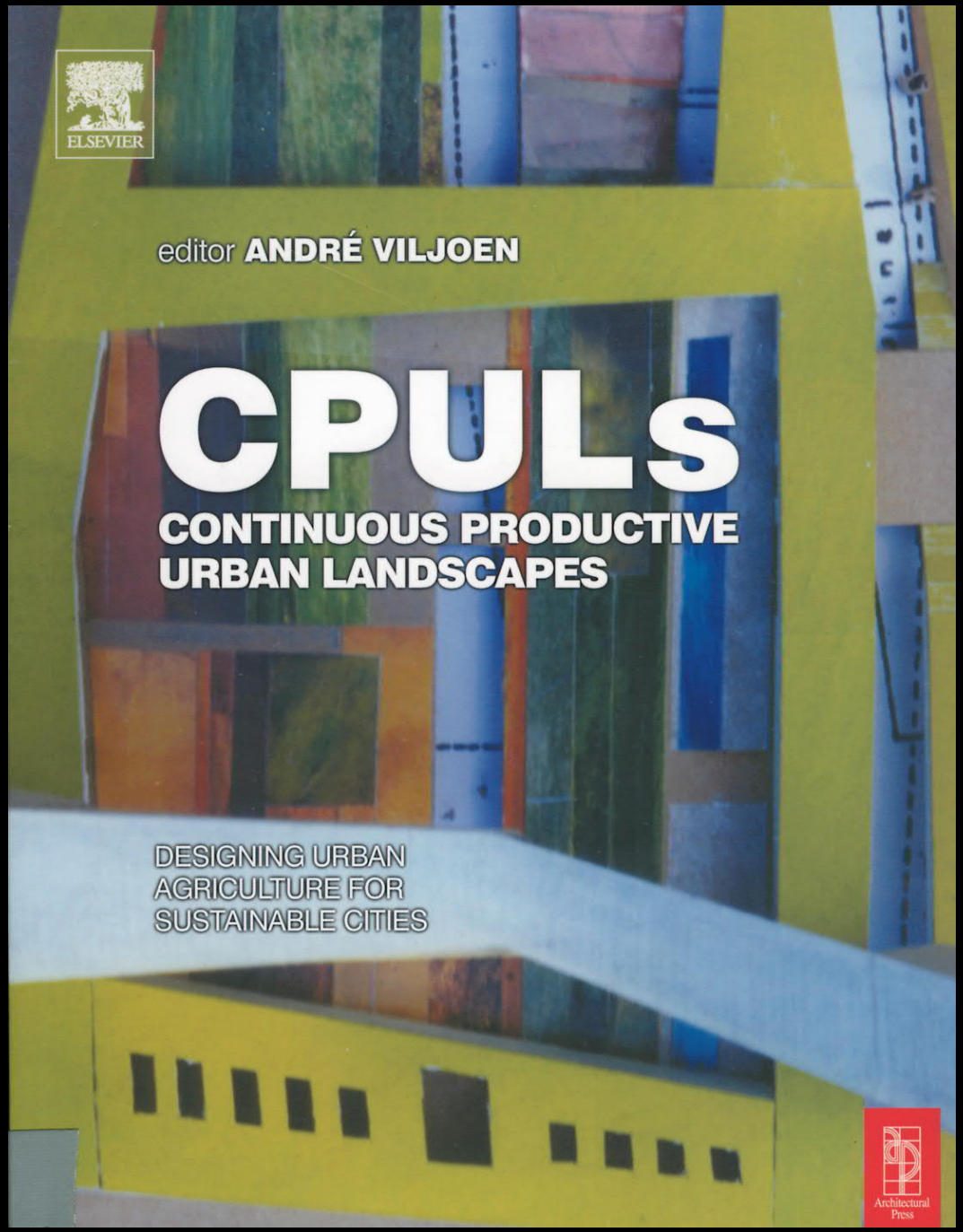
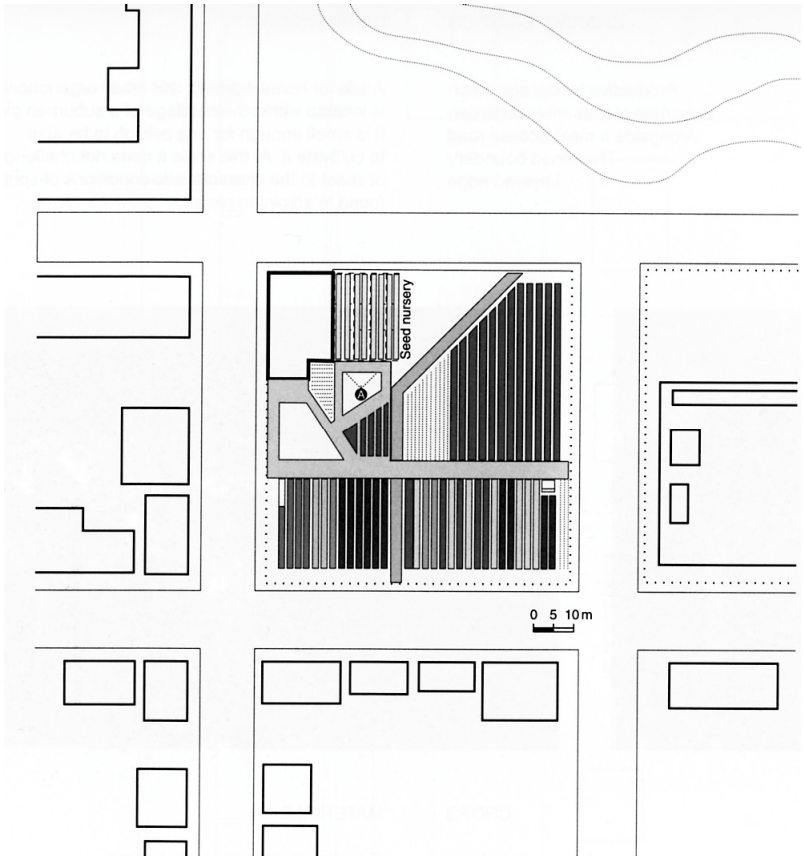

Pasilann ratapiha, Helsinki

Prinzessinnengarten, Moritzplatz Berlin

Brooklyn Grange rooftop farm


ELSEVIER
editor ANDRÉ VILJOEN
CPULs
CONTINUOUS PRODUCTIVE URBAN LANDSCAPES
DESIGNING URBAN AGRICULTURE FOR SUSTAINABLE CITIES
Architectural Press

Lontoo 1940-luku



Havana 1990-luku

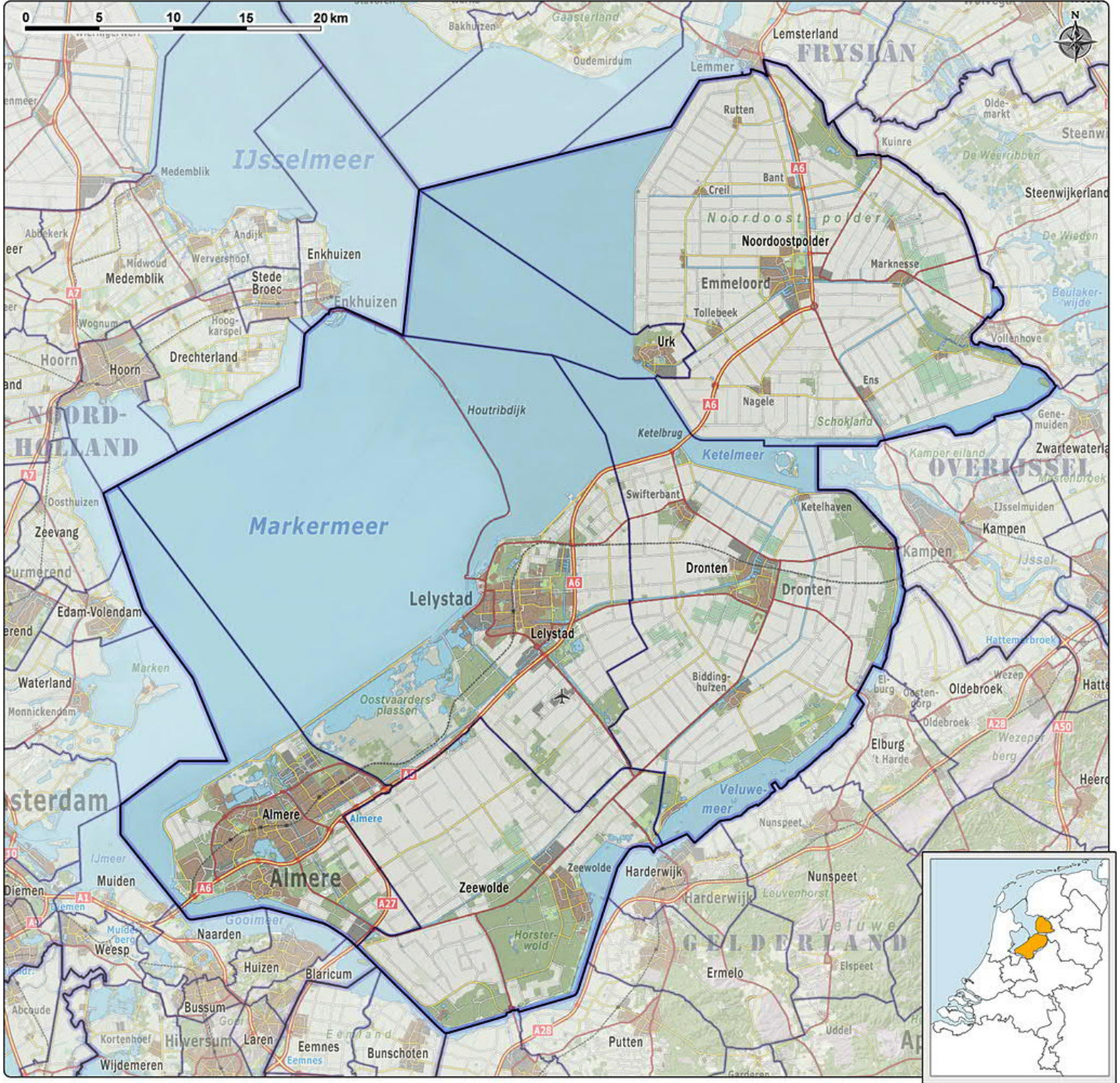

Westland

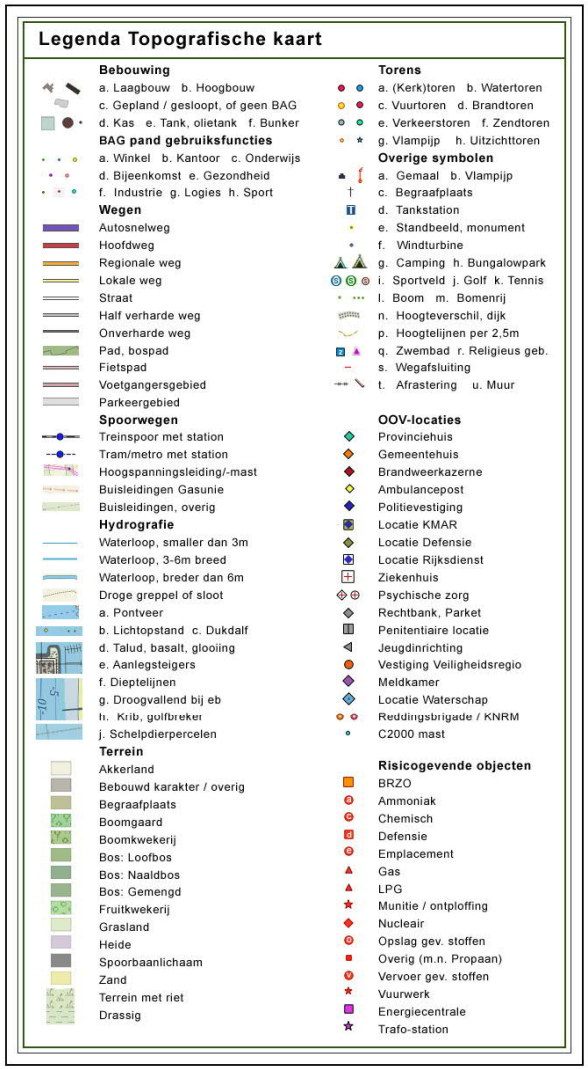

Westland


Westland


Flevoland

Horsterwold, Flevoland


0 5 10 15 20 km
N
IJsselmeer
Markermeer
Houtribdijk
Ketelmeer
Oostvaardersplassen
Veluwemeer
Lemsterland
FRYSLÂN
Oudemirdum
Lemmer
Rutten
Bant
Creil
Noordoostpolder
Emmeloord
Marknesse
Tollebeek
Urk
Nagele
Ens
Schokland
Vollenhove
Steenwijkerland
Medemblik
Enkhuizen
Stede Broec
Midwoud
Wognum
Hoorn
Drechterland
NOORD-HOLLAND
Zeevang
Edam-Volendam
Waterland
Monnickendam
Oosthuizen
Purmerend
Lelystad
Swifterbant
Ketelhaven
Dronten
Kampen
OVERIJSSEL
IJsselmuiden
Zwartewaterland
Bidding-huizen
Oldebroek
Elburg
Harderwijk
Nunspeet
Zeewolde
Almere
Amsterdam
IJmeer
Muiden
Diemen
Naarden
Gooimeer
Weesp
Huizen
Blaricum
Bussum
Hilversum
Laren
Eemnes
Bunschoten
Wijdemeren
Ermelo
GELDERLAND
Putten
Uddel
Elspeet
Leuvenhorst
Horsterwold

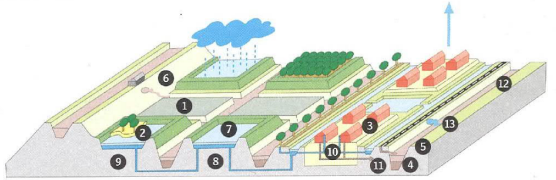


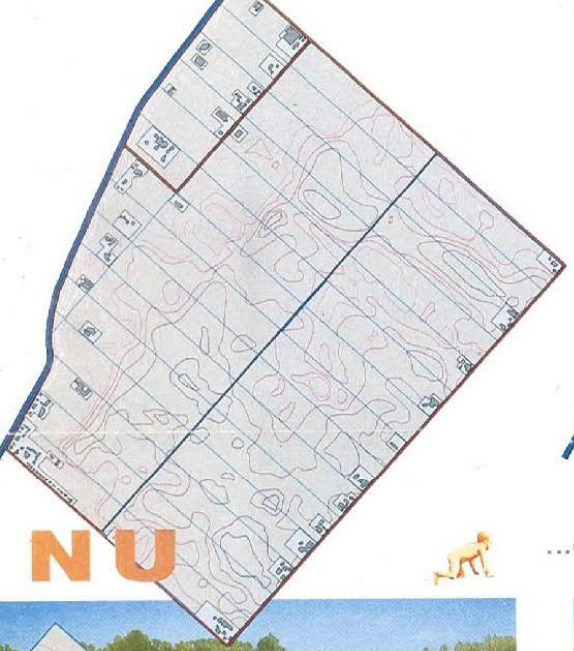
Oostvardersplassen, Flevoland

Uit de klei getrokken (Drawn from the Clay)
Location: Nature development area of Haarlemmermeer
Planners: VISTA office for environmental planning, landscape architecture and ecology, Amsterdam

In Haarlemmermeer sollen fünf Pflegekonzepte und das Regulieren der Wasserpegel maximale Biodiversität schaffen. Das Schema (oben) zeigt die Entwicklung im Laufe von 80 Jahren hin zu Wald, Parklandschaft, Torfmarschen, Schilfmarschen, Wasserlandschaft. Nebenstehende Grafik verdeutlicht das Wassermanagement: 1 Ackerland, 2 natürliches Land, 3 Wohngebiet, 4 Wasserstand im Winter, 5 Wasserstand im Sommer, 6 Wasserzufluß für Ackerland, 7 Wasserstand im Sammelbecken (Winter), 8 Wasserstand im Sammelbecken (Sommer), 9 verschließbare Leitung zwischen Sammelbecken, 10 Ausfluß für sauberes Wasser, 11 Abwasserröhre zur Kläranlage, 12 Drainagekanal zu Wasserbecken, 13 Pumpe zu Wasserbecken

In Haarlemmermeer, five management concepts and regulation of water levels are to enable maximum biodiversity. The diagram (above) shows how forest, parklike landscape, peat-marsh, reed-marsh, water-containing landscape are to develop over the next 80 years.
1 Agricultural area, 2 Nature area, 3 Residential area, 4 Level of water in winter, 5 Level of water in summer, 6 Water intake for agricultural area, 7 Level of water in water-container (winter), 8 Level of water in water-container (summer), 9 Lockable culvert between water-containers, 10 Outlet for clean water, 11 Sewer to water treatment facility, 12 Canal for draining the water to the water-containing facilities, 13 Pumping





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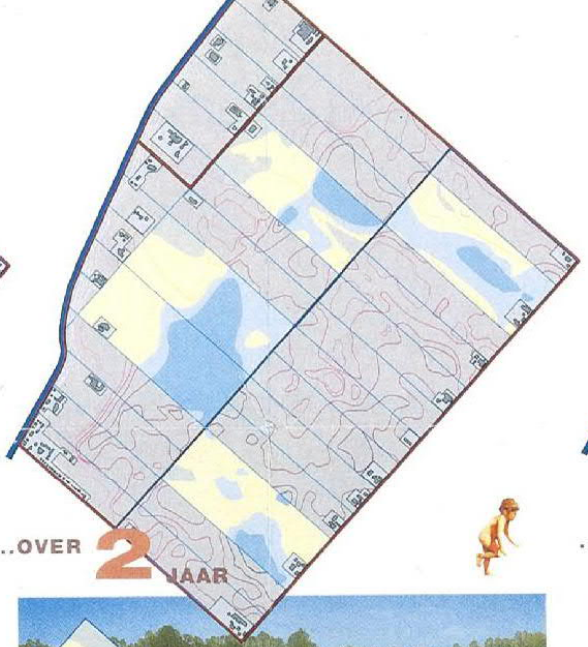
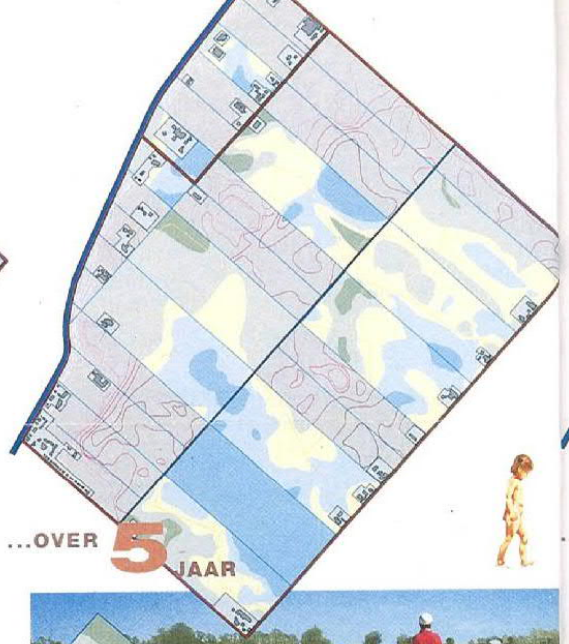
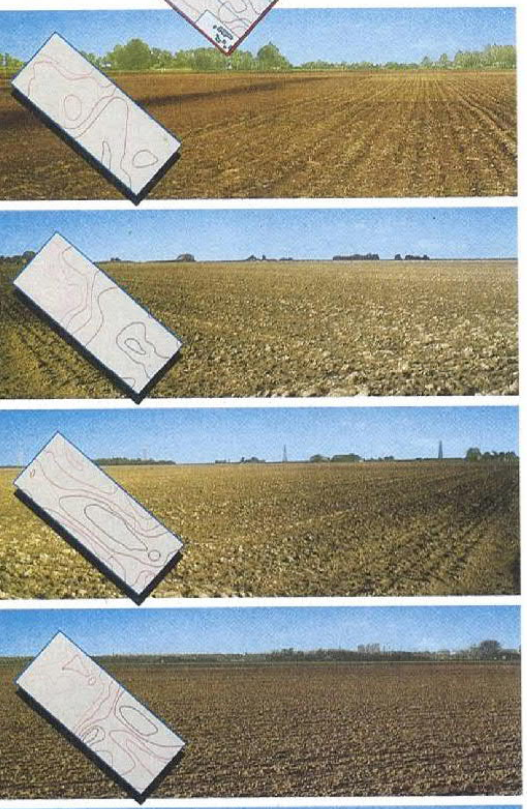


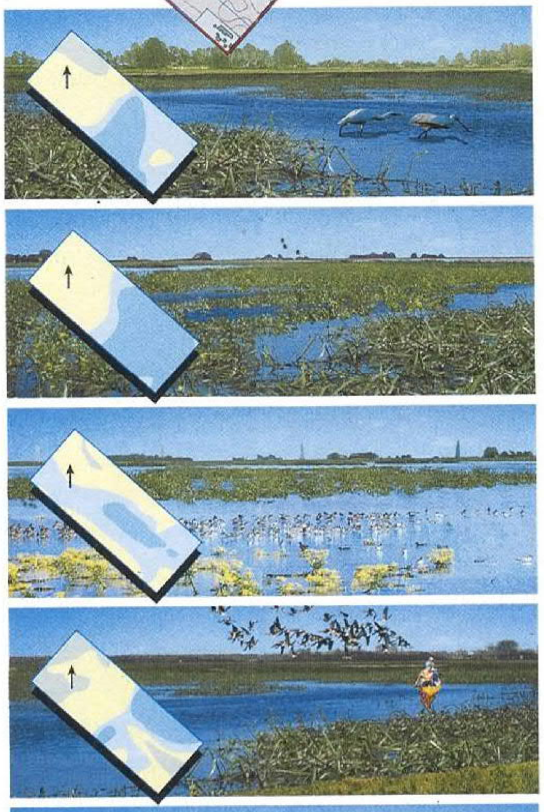
...OVER 2 JAAR



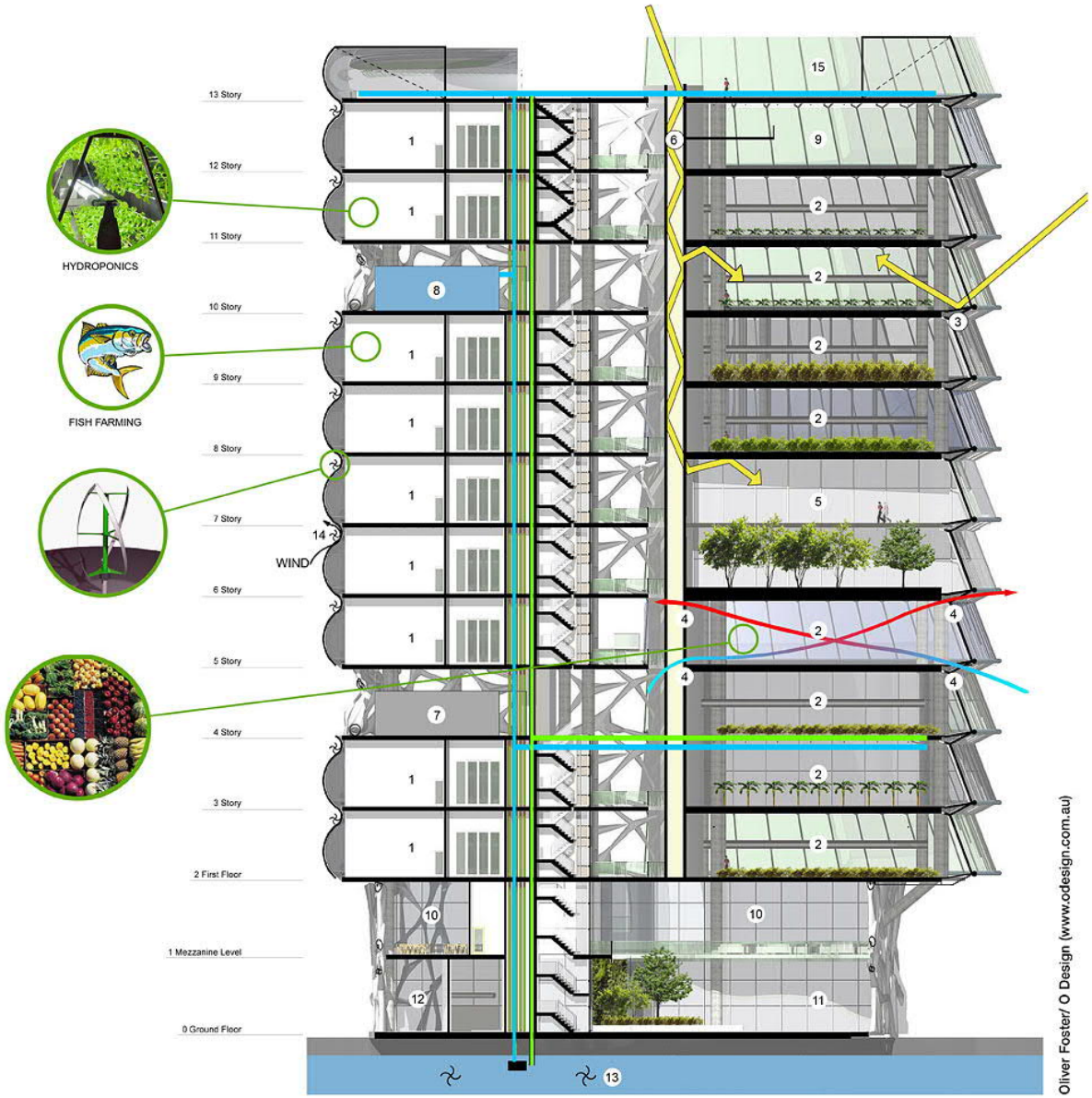
...OVER 5 JAAR

...OVER 10





Diagramming a vertical farm



1. HYDROPONICS, AQUAPONICS, PROCESSING OR ACCOMMODATION (MIXTURE)
2. CROP SECTIONS (LARGER CROP TYPE FARMING)
3. REFLECTIVE EDGE OR LIGHT SHELF.
4. STRATEGICALLY PLACED VENTS PROVIDE MULTIPLE VENTILATION SCENARIOS (TO FURTHER CATER FOR EACH PLANTING VARIETY)
5. ORCHARD SECTION (MORE INTENSIVE FARMING)
6. LIGHT TUBE - MAXIMIZING THE NATURAL LIGHT.
7. PLANT LEVEL - LOCATION IS FLEXIBLE
8. WATER STORAGE LEVEL
9. RESTAURANT
10. CAFE/ RESTAURANT
11. ENTRY
12. STORAGE
13. WATER TURBINES (DEPENDANT UPON LOCATION)
14. WIND TURBINES
15. ROOF TOP FARMING

WATER - NATURAL STATE
WATER - FILTERED CLEAN

www.verticalfarm.com

Dickson Despommier

VERTICAL GARDEN
MUR VÉGÉTAL

Patrick Blanc (1953-)

www.verticalgardenpatrickblanc.com

On a load-bearing wall or structure is placed a metal frame that supports a PVC plate 10 millimetres (0.39 in) thick, on which are stapled two layers of polyamide felt each 3 millimetres (0.12 in) thick. These layers mimic cliff-growing mosses and are support the roots of many plants.

A network of pipes controlled by valves provides a nutrient solution containing dissolved minerals needed for plant growth. The felt is soaked by capillary action with this nutrient solution, which flows down the wall by gravity. The roots of the plants take up the nutrients they need, and excess water is collected at the bottom of the wall by a gutter before being re-injected into the network of pipes: the system works in a closed circuit.

Plants are chosen for their ability to grow on this type of environment and depending on available light.

WIKIPEDIA

Musée Quai Branly 2006

Jean Nouvel (1945 -)
Gilles Clément (1943 -)
Patrick Blanc (1953 -)
Yann Kersalé (1955 -)


e du quai Branly

Association
pour
Haute Qualité Environnementale

HQE

La 15ème cible

Les objectifs de la 15e cible pourraient cependant être plus largement regroupés derrière le thème du *« remboursement de la dette écologique »*. De la même manière qu'on fait maintenant des maisons « *à énergie positive* » (qui produisent plus d'énergie qu'elles n'en consomment), l'idée est ici de faire un bâti dont l'enveloppe au moins pourrait offrir autant de place pour la biodiversité naturelle qu'en l'absence de construction, voire plus.

Previous spread: The Flower Tower in Asnières, Paris, completed in June 2004. Overlooking a park, this nine-floor residential building was conceived as a vertical garden. Photography by Paul Raftery/View. This spread: The Flower Tower takes its name from the rows of flowerpots lining its open-access walkways. Featured are two species of green bamboo: François's initial choice was white bamboo, as shown on the model (top). Handrails double as pipes for watering and fertilizing plants. Grey and white floors and walls made of cast-in-place concrete (above right) have a random colour scheme. Bright letterboxes enhance the façade (above left). Photography by Paul Raftery/View.

Édouard les pouces verts

CURIEUSE DES REALISATIONS VÉGÉTALES DE L'ARCHITECTE ÉDOUARD FRANÇOIS, JALOUSE EST ALLÉE VISITER SON AGENCE PAS COMME LES AUTRES. CONCLUSION : VAUT LE DÉTOUR.

Par Daphné Hézard

www.edouardfrancois.com

Edouard Francois
Hôtel Fouquet's Barrière
Paris


Ile de France
olive & balsamic
olive
balsamic


Édouard François® _architecture
Édouard François® _photographie

Ecole maternelle Buffon
Thiais, 1995

Châteaux-le-Lex, Montpellier, 2000

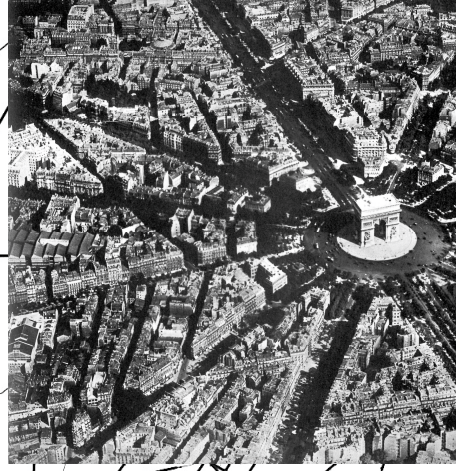
”L’Immeuble qui pousse”

Châteaux-le-Lex, Montpellier, 2000

Gîtes rureaux
Jupilles-Sarthre 1996

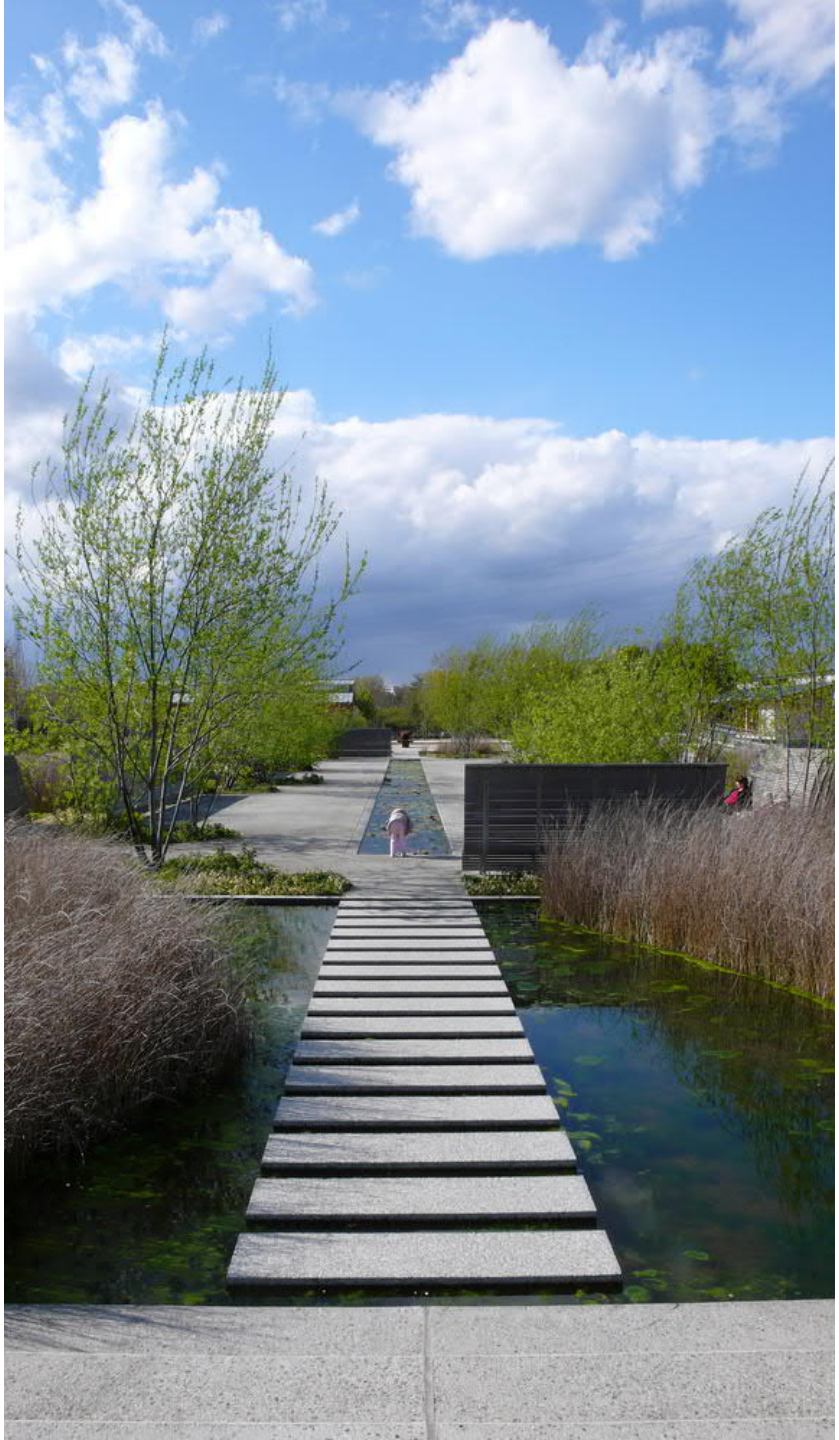
Gîtes rureaux
Jupilles-Sarthre 1996

Pariisin ympäristö 1700-luvulla

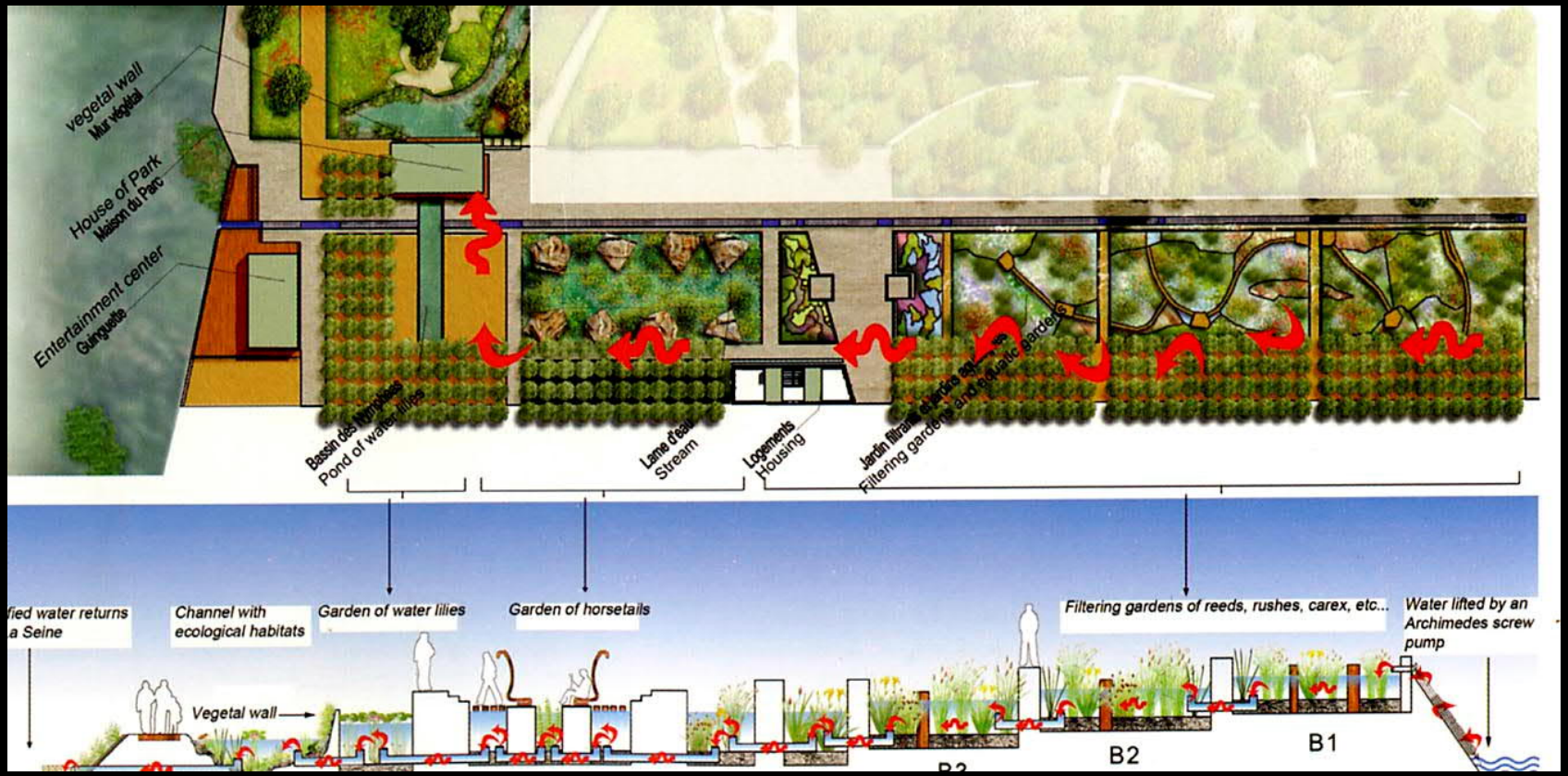


Parc du Chemin de l’Ile
Nanterre 2006

Acanthe-Mutabilis, Gilles Clément,
Chemetov & Huidobro, Cépage, Mizrahi




Seine
A14
Jardins familiaux
RATP 157
rue Kleber
rue des Prés
avenue Hoche
Nids cabanes
Le mail
Aire de service
A14
Nids cabanes
rue André Doucet
RER A
NANTERRE VILLE
rue Gutenberg
Vous êtes ici
Entrée piétons
Entrée accessible aux personnes à mobilité réduite
Place de parking réservée aux personnes à mobilité réduite
accessibilité PMR
accessible en fauteuil roulant
Restaurant
Point information
Toilettes
Entrée accessible aux chiens non tenus en laisse
Aire de jeux
Eolienne
Promenade bleue
NORD
0
100
200
mètres



14

Résultats du traitement des jardins filtrants:
Results of treatment of filtering gardens:

Paramètre Parameter	Flux entrants Entering water	Sortie Jardins Filtrants® Water treated by Filtering Gardens®
(mg /l) **DCO** COD (mg /l)	>100	<=20
(5mg /l) **DBO** BOD (5mg /l)	>50	<=3
Oxygène (mg /l) **dissous** Dissolved Oxygen (mg /l)	<1.5	>=7
Oxygène (mg /l) **sauté** Saturated Oxygen (mg /l)	<=50	>=90
(mg /l) **NH4+** NH4+ (mg /l)	>10	<1.5
(mg /l) **Na Cl** Na Cl (mg /l)	>200	<30
(mg /l) **SS** SS (mg /l)	>40	<10
Turbidité Turbidity	>100	<10
Température Temperature	>23	22/23

Site et Concept – Phytorestore
Thierry Jacquet

www.faqs.org/patents/app/20080197073

www.phytorestore.com

JARDINS FILTRANTS ©

Parc du Chemin de l’Ile
Nanterre 2006

Acanthe-Mutabilis, Gilles Clément,
Chemetov & Huidobro, Cépage, Mizrahi

R&Sie(n)
Francois Roche (1961-)

The age of flower towers

Architects are tackling the problems of the concrete jungle with ambitious schemes using green technology to grow forests in the sky. By Christopher Woodward

The most exciting new tower in the world is under construction in Milan. At 27 storeys high, Bosco Verticale is a splinter beside the Shard, the 87-storey skyscraper under construction in London. What sets the Milan tower apart is that it will be the world's first vertical forest, with each apartment having a balcony planted with trees. In summer, oaks and amelanchiers will shade the windows and filter the city's dust; in winter, sunlight will shine through the bare branches.

Bosco Verticale is the vision of Stefano Boeri, architect, academic and former editor of design and architecture magazine Domus: he begins his presentation with Ovid's fantasy of the nymph Daphne being turned into a tree. But, he adds, such a metamorphosis adds only 5 per cent to construction costs. And, he argues, it is a necessary response to the sprawl of the modern city. If the units were individual houses, it would require 50,000 sq m of land, and 10,000 sq m of woodland. Bosco Verticale is the first element in his proposed BioMilano, in which a green belt is created around the city and 60 abandoned farms on the outskirts are restored to community use.

A hundred years ago, the world's most radical response to the expansion of the modern city was the construction of Letchworth, the world's first "Garden City", in Hertfordshire, north of London. To the social reformer Ebenezer Howard, London was polluted, crowded, and inhuman. He imagined a community that enjoyed the best of town and country: a garden for every house and a walk through fields for workers heading to factory jobs. The Garden City was imitated at Woodbourne in Boston and Chatham in Pittsburgh and was so influential that in 1907 Lenin stayed in Letchworth.

Ebenezer Howard's first 'Garden City' in Letchworth was so influential that in 1907 Lenin stayed there

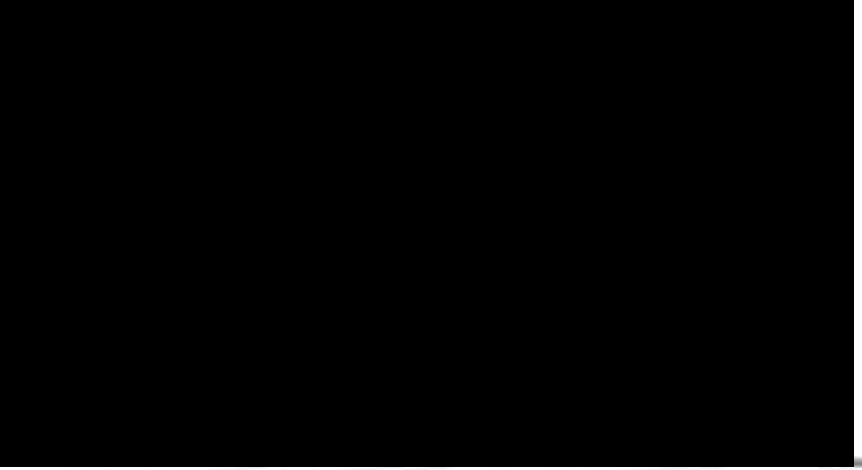
In the past decade, Howard's idea has been reinvented as the Eco-City. Kate Henderson, chief executive of the UK's Town and Country Planning Association, has Howard's manifesto pinned above her desk. In a new exhibition at the London Garden Museum where I work, we explore rival visions for greener cities. More and more people believe that access to a garden, and to gardening, is a basic human need. But is the answer a traditional house and garden or should we be looking at gardens in the sky?

For Rotterdam architects MVRDV, Howard's Garden City can no longer

by small plots on which families grew fruit and vegetables but these *huertas* are vanishing as the city expands into the countryside. Why not transplant these "condemned" plots into a vertical patchwork and pick oranges and lemons from the sky?

These towers in Milan and Valencia are possible because of a new collaboration between architects, engineers, and botanists. Boeri has had to explain many times the engineering and horticultural solutions required for an oak tree to grow up to 9m high on the 20th floor of a busy modern city. At the same time, this new movement is a visionary reclamation of the nature that has vanished from our cities. I can never forget the public reaction to a cornfield planted outside the Garden Museum as an installation. In the busy centre of the city, commuters put down their briefcases and sat, silent. These projects unlock a primeval connection with the soil.

Above: the 27-storey Bosco Verticale in Milan, designed by Stefano Boeri as the world's first 'vertical forest'



biomilano

STEFANO BOERI, Abitare

One Central Park, Sydney, 2013
Foster and Partners, Ateliers Jean Nouvel and PTW Architects, Patric Blanc

One Central Park, Sydney 2013
Foster and Partners, Ateliers Jean Nouvel and PTW Architects, Patric Blanc

https://www.flickr.com/photos/bobarc/13160592113/

bioniikka, biomimiikka, bioinspiraatio, biognosis

(bionics, biomimicry, bio-inspiration, biognosism, bionical creativity engineering)

Bionics (Jack E. Steele 1958)
Biomimetics (Otto Schmidt 1950-luku)

”The study of the formation, structure, or function of biologically produces substances and materials (enzymes or silk) and biological mechanisms and processes (as protein synthesis or photosynthesis) especially for purpose of synthesizing similar products by artificial mechanisms which mimic natural ones”

Webster

CASA DEL RETIRO ESPIRITUAL
Sevilla 1975

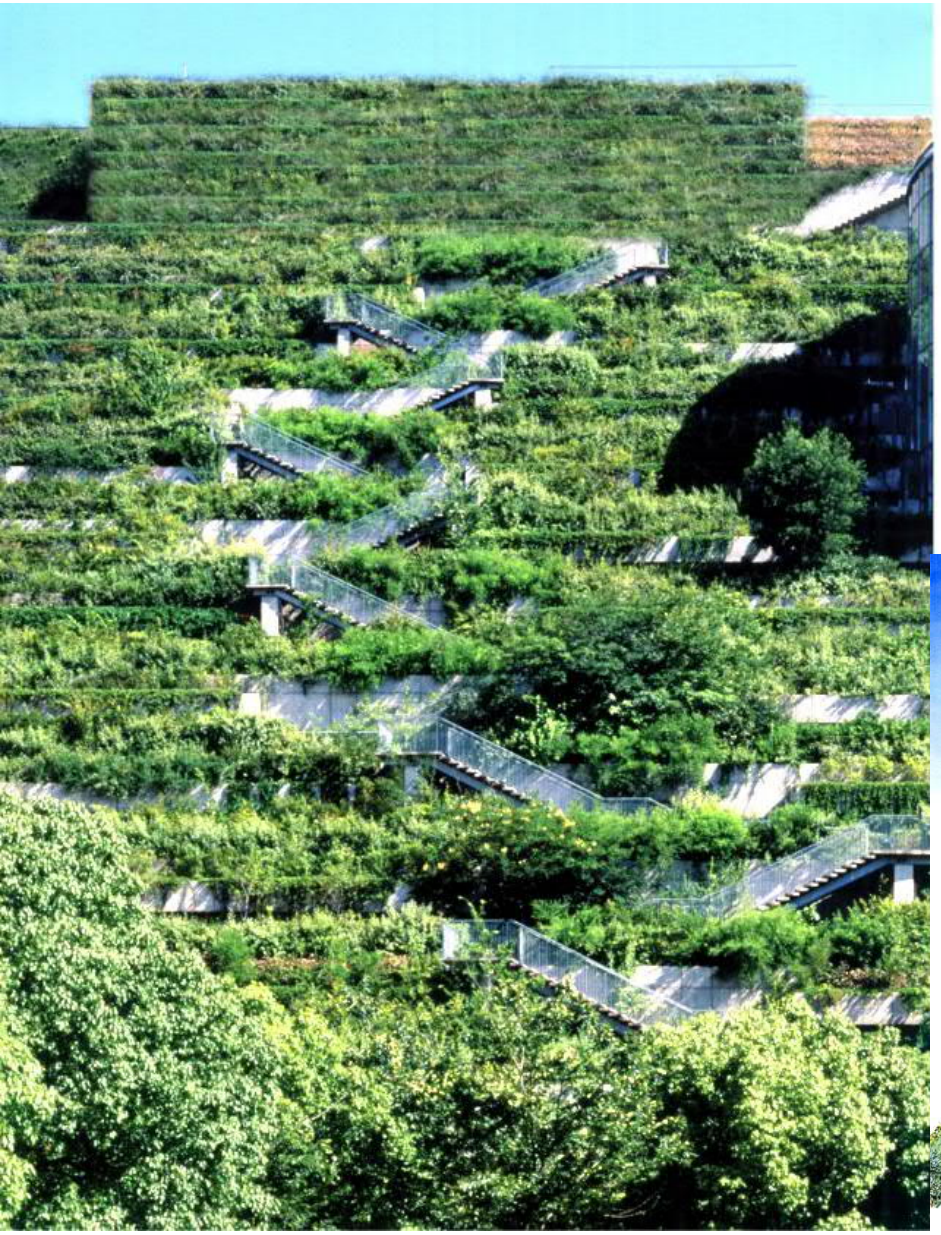
Emilio Ambasz (1943 -)

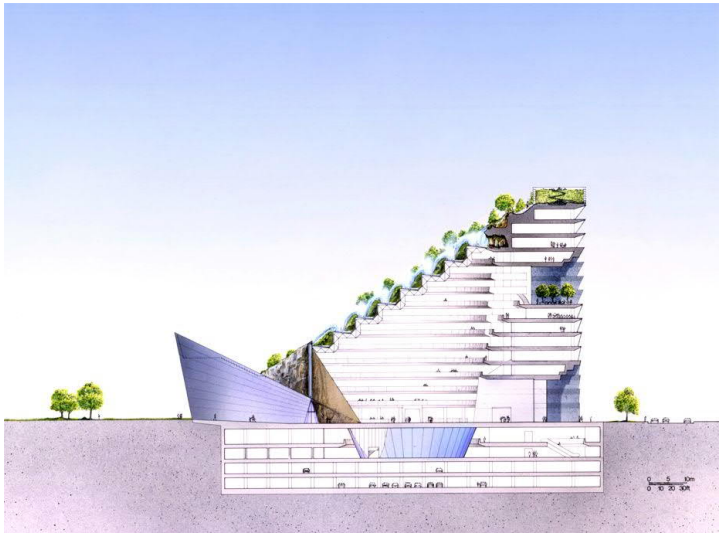
There is philosophic question here: we have to redefine what is nature and what is man-made nature. In a situation such as the global one, certainly exacerbated in Japan, where a tree exists either because someone planted it or because someone decided to leave it there, it is imperative that we create a new definition of what is meant by man-made nature. Such a definition would have to incorporate and expand not only the creation of gardens and public spaces but also the creation of architecture which must be seen as one specialized aspect of the making of man-made nature.

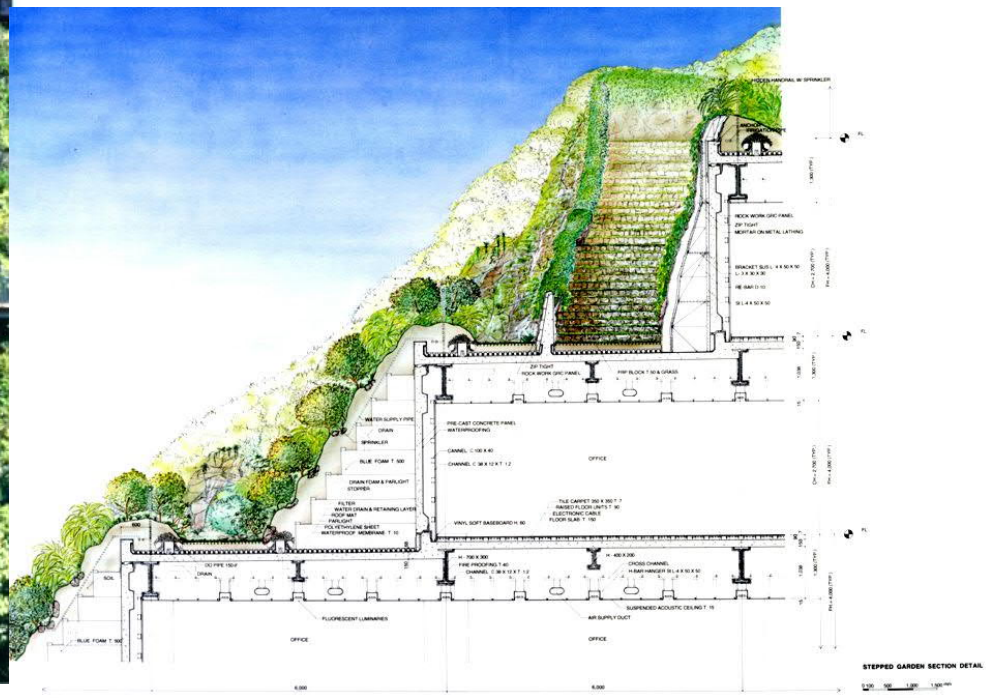
Emilio Ambasz 2000

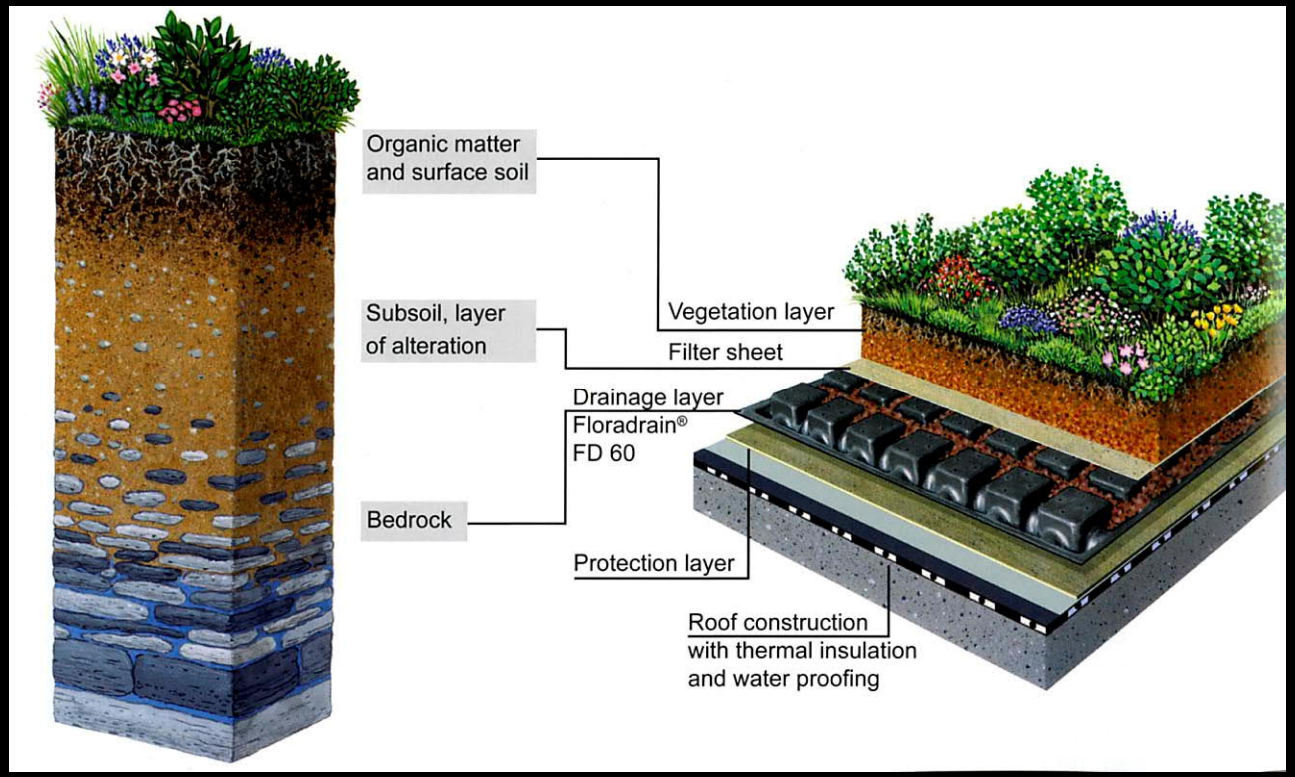
ACROS,
Fukuoka 1995

Emilio Ambasz (1943 -)



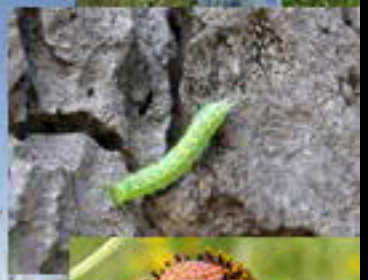


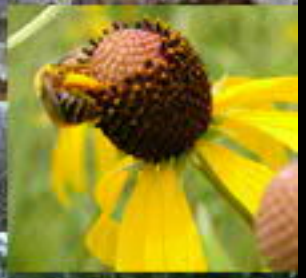

STEPPED GARDEN SECTION DETAIL

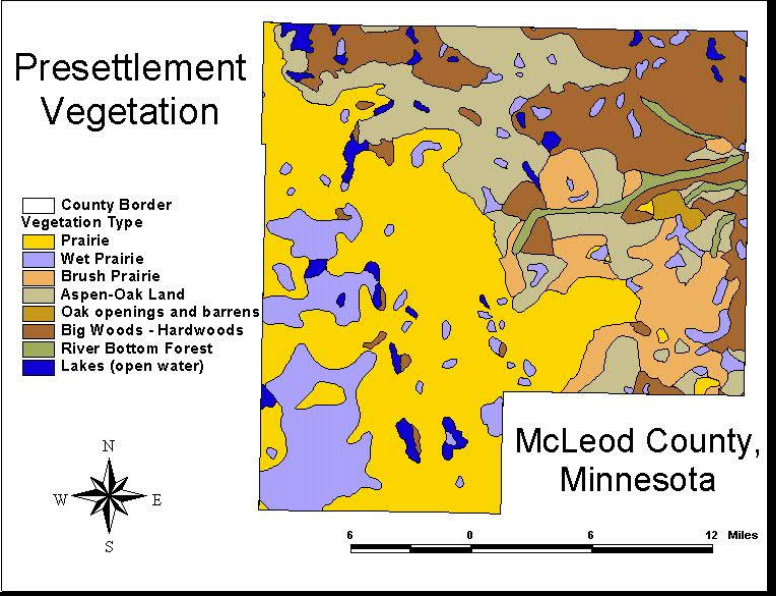


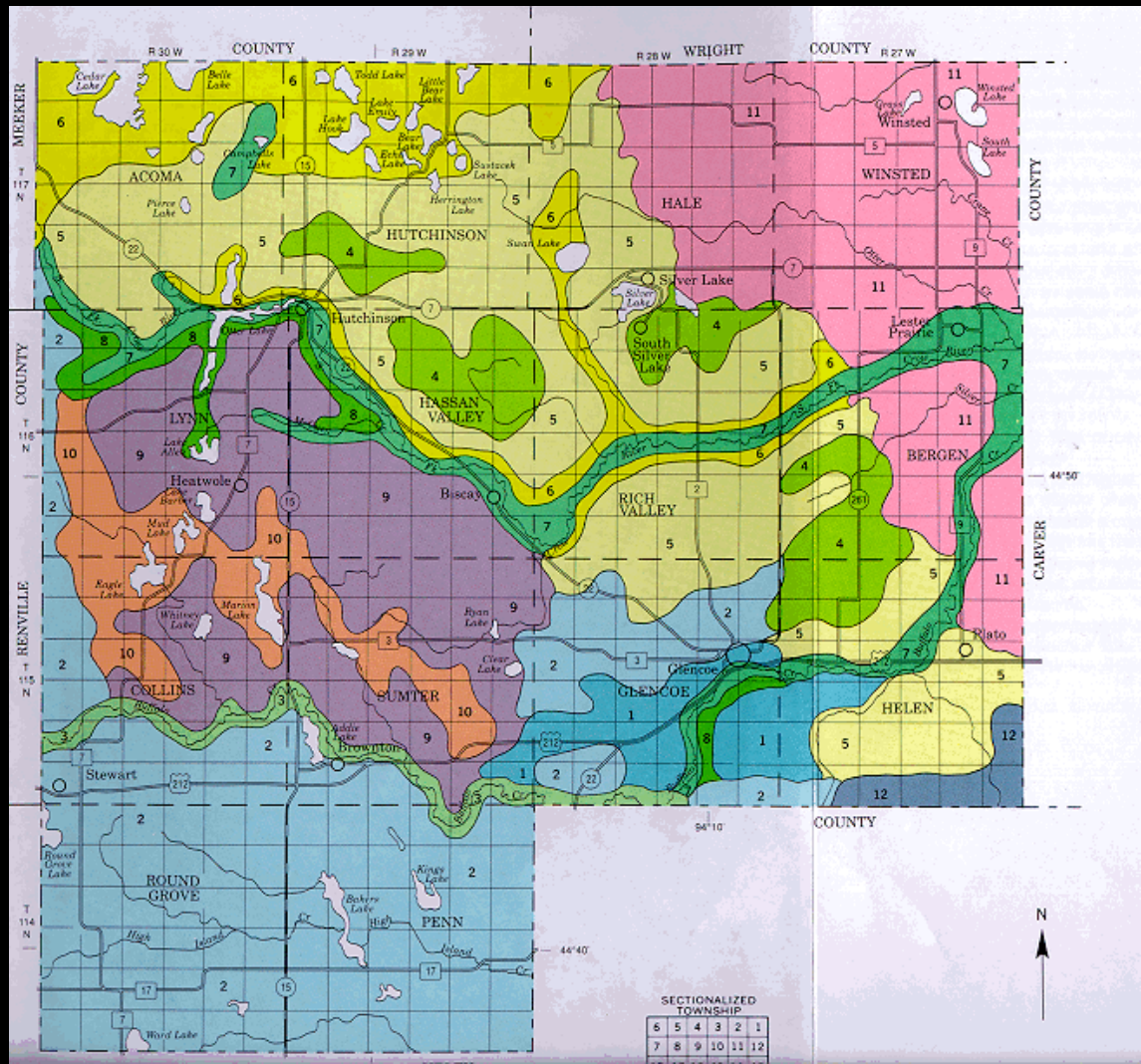
www.livingroofs.org
www.rooftopgardens.ca
www.efb-greenroof.eu
www.igra-world.com
www.worldgreenroof.org

Elwood Prairie and Savanna Restoration Project

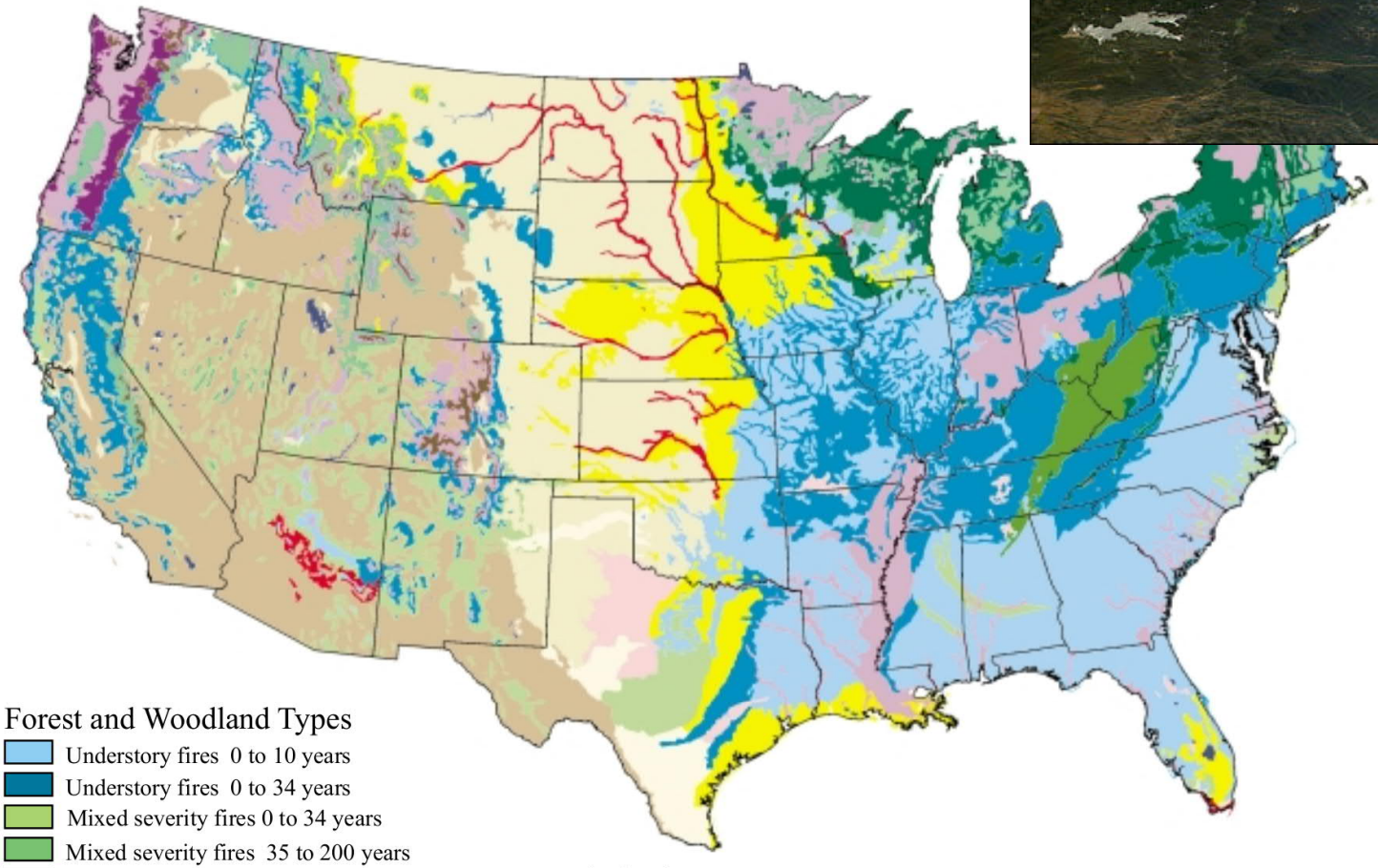





Presettlement Vegetation
County Border
Vegetation Type
Prairie
Wet Prairie
Brush Prairie
Aspen-Oak Land
Oak openings and barrens
Big Woods - Hardwoods
River Bottom Forest
Lakes (open water)
N
W
E
S
McLeod County, Minnesota
6 0 6 12 Miles


MEEKER COUNTY
WRIGHT COUNTY
RENVILLE COUNTY
CARVER COUNTY
R 30 W
R 29 W
R 28 W
R 27 W
ACOMA
HUTCHINSON
HALE
WINSTED
Winsted
Silver Lake
Hutchinson
South Silver Lake
Lester Prairie
HASSAN VALLEY
LYNN
Heatwole
Biscay
RICH VALLEY
BERGEN
Plato
COLLINS
SUMTER
GLENCOE
Glencoe
HELEN
Stewart
Brownton
ROUND GROVE
PENN
SECTIONALIZED TOWNSHIP
N

www.nps.gov/yell/parkmgmt/fireecology.htm



Forest and Woodland Types

- Understory fires 0 to 10 years
- Understory fires 0 to 34 years
- Mixed severity fires 0 to 34 years
- Mixed severity fires 35 to 200 years
- Mixed severity fires 201 to 500 years
- Mixed severity fires 500+ years
- Stand replacement fires 0 to 34 years
- Stand replacement fires 35 to 200 years
- Stand replacement fires 201 to 500 years
- Stand replacement fires 500+ years

Grass and Shrub Types

- Mixed severity fires 0 to 34 years
- Stand replacement fires 0 to 10 years
- Stand replacement fires 0 to 34 years
- Stand replacement fires 35 to 100 years
- Stand replacement fires 101 to 500 years

Other

- Water

Society for Ecological Restoration International
SER
ONLINE

www.ser.org

www.ecologicalrestoration.info

www.globalrestorationnetwork.org

Hargreaves Associates
Crissy Fields, Presidio National Park
San Francisco, USA
1994-2001

Lincoln Park & Lands End,
San Francisco

Lincoln Park & Lands End, San Francisco

Lincoln Park & Lands End,
San Francisco


Lincoln Park & Lands End,
San Francisco

Lincoln Park & Lands End,
San Francisco


Lincoln Park & Lands End,
San Francisco


Lincoln Park & Lands End,
San Francisco


Lincoln Park & Lands End,
San Francisco

Lincoln Park & Lands End, San Francisco

Lincoln Park & Lands End,
San Francisco


Lincoln Park & Lands End,
San Francisco


Lincoln Park & Lands End,
San Francisco

Global Coral Reef Alliance

A non-profit corporation dedicated to growing, protecting and managing the most threatened of all marine ecosystems —**Coral Reefs**

GCRA

Global Coral Reef Alliance

www.globalcoral.org

BIOROCK ™

www.biorock.net

Wolf H. Hilbertz
(1938-2007)

BIOCHAR
AGRICHAR
TERRA PRETA

www.biochar-international.org

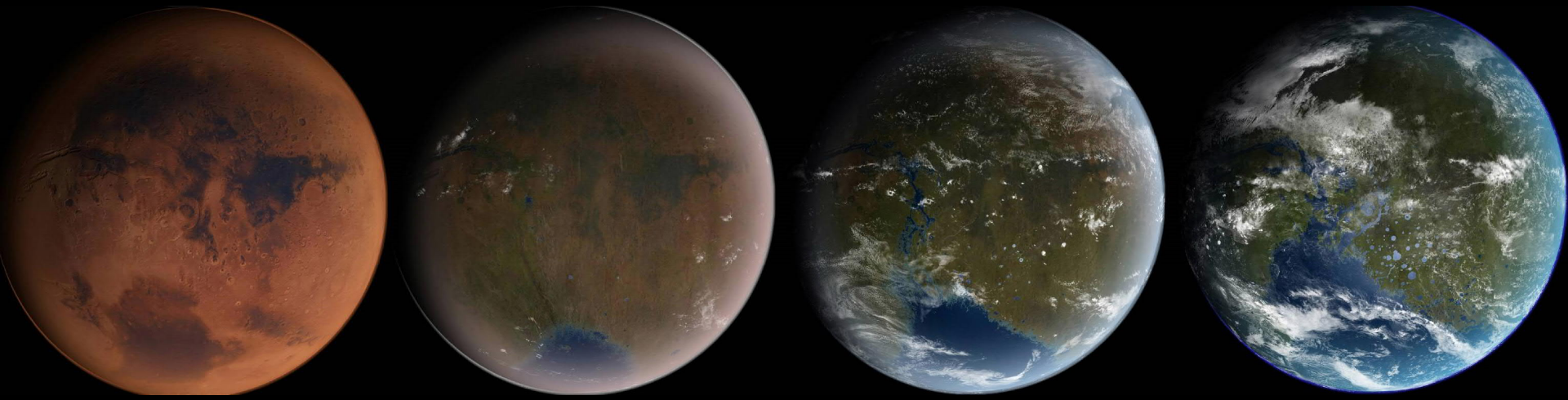
www.youtube.com/watch?v=nzmpWR6JUZQ

SATU HASSI blogi 26.3.2009

Puuhiilestä tai ”biohiilestä” näyttää tulevan ilmastonsuojelun uusi suuri kiistanaihe. Pitkin viime syksyä ja alkuvuotta olen lukenut useita artikkeleita siitä, että ilmakehästä kyettäisiin poistamaan erittäin merkittävät määrät hiilidioksidia, kun erilaista biomassaa, muun muassa maatalousjätettä ja puuta hiillettäisiin kuumentamalla sitä vähähappisessa tilassa. Tässä prosessissa, nimeltään pyrolyysi, muodostuu kaasuja, jotka kelpaavat polttoaineeksi ja kaasu voidaan myös nesteyttää. Jäljelle jäävä hiilletty biomassa voidaan kaivaa maaperään, jossa sen sanotaan parantavan maan viljavuutta. Tästä ovat puhuneet muun muassa YK:n ympäristöohjelman johtaja Achim Steiner ja Worldwatchin Maailman tila 2009-raportti. Olen nähnyt sangen huimia väitteitä siitä, miten paljon hiiltä näin voitaisiin varastoida maaperään.

Nyt noiden hyvin optimististen visioiden rinnalle on tullut kärkevää kritiikkiä. Tiistain Guardianissa George Monbiot nimittää näitä puheita ”vähähiilisen maailman Atkins-ohjelmaksi”.

Biohiili-innostus voi takuulla mennä liiallisuuksiin. Jos sademetsiä aletaan muuttaa nopeasti kasvavan biomassan plantaaseiksi jotta niistä saataisiin tiheästi korjattavissa oleva biohiilisato, mennään varmasti pieleen. Mutta sen sijaan kaupunkien biojätteet, mukaan lukien vessajäte, voisivat hyvinkin olla käyttökelpoisia raaka-aineita maahan haudattavalle biohiilelle, samoin rehevöityneiden merialueiden levät. Tärkeämpää on kuitenkin vähentää fossiilisten polttoaineiden polttoa. Meikäläisestä ei tunnu kovin järkevältä, jos syvältä maan uumenista kaivetaan öljyä ja kivihiiltä ja syydetään sen poltossa syntyvää hiilidioksidia taivaalle, ja samaan aikaan toisaalla hiilletään kasveja, jotka ovat imeneet samaa hiilidioksidia ilmasta, ja kynnetään noista kasveista saatu biohiili peltoon. Mutta pidän tätä asiaa hyvin tutkimisen arvoisena, uskon että sille löytyy hyviä sovelluskohteita.



Terraforming Mars ?