stba Contemporary City

DIRTY SUSTAINABILITY

Contemporary City

Dirty Sustainability

I Dirty and Wicked Problems
problems – contradictions - potentials

II Volume 18: After Zero

III Wired 16.06: Attention Environmentalists

IV Lectures

V 10 Shades of Green
DGNB Stadtquartier
Certificates - *inhibit / provoke* – Design

VI new Climate Pragmatism: new Outlook

I Dirty Sustainability and Wicked Problems

Dirty
No single route to sustainability
A war on many fronts, with many tactics (weak) and strategies (strong)
Coalition of practices
A combination of short term (mitigation) and long term (adaptation) measures
□

Wicked Problems (1973, Rittel, H. and Webber, M.)
purely scientific-rational approach not applicable because:
problem definition and differing perspectives of the stakeholders
Solutions to wicked problems are not right or wrong, only better or worse.

Super wicked problems (2007, Levin, Cashore, Bernstein and Auld)
Time is running out
No central authority
Those seeking to solve the problem are also causing it
□
Global warming is considered a super wicked problem

II Contradiction = Potential

Volume 18: After Zero

What is sustainability? – an environmental urgency, a political issue, a technical problem, a historic destiny, a new world order? And what are the consequences of this acceptance?

The sustainability consensus is dangerous since the concept has no political content and can be used for any cause. Carbon neutrality and zero emissions are like magic formulas, cover-ups for complicated ethical questions about the inequalities in our societies.

Volume proposes an understanding of our society beyond zero. To kick off we discuss two perspectives: sustainability in a post-capitalist city and the potential of urban agriculture.

III Contradiction = Potential

III Contradiction = Potential

Wired Magazine (16.06): Attention Enviromentalists

Inconvenient Truths: Get Ready to Rethink What it Means to Be Green
Cut Carbon: 10 tenets of the new enviromental apostasy

- Live in Cities
- A/C Is OK
- Organics Are Not The Answer
- Farm the Forests
- China Is the Solution
- Accept Genetic Engineering
- Carbon Trading Doesn't Work
- Embrace Nuclear Power
- Used Cars - Not Hybrids
- Prepare for the Worst

Wired Magazine - „Attention Enviromentalists“

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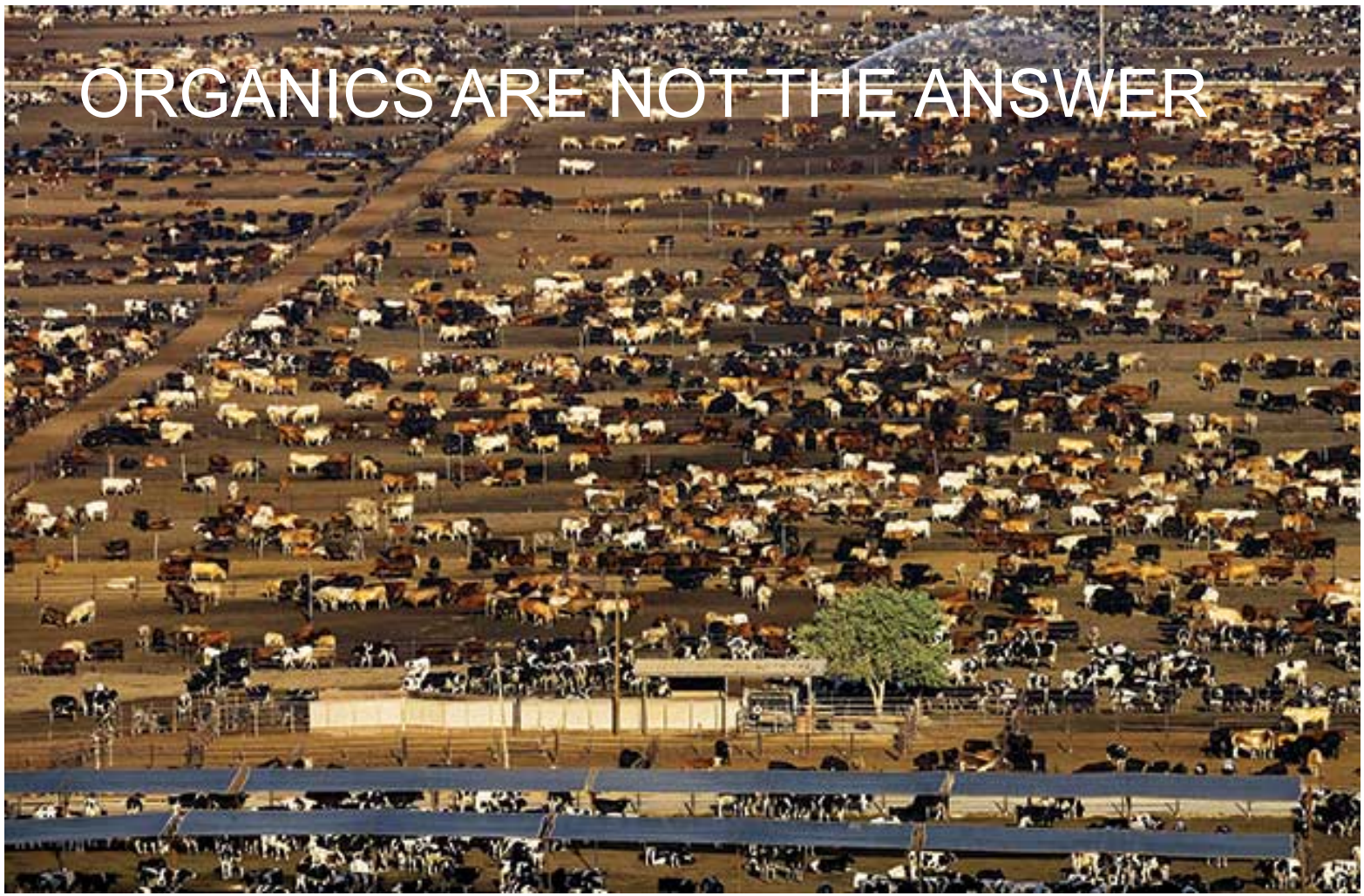
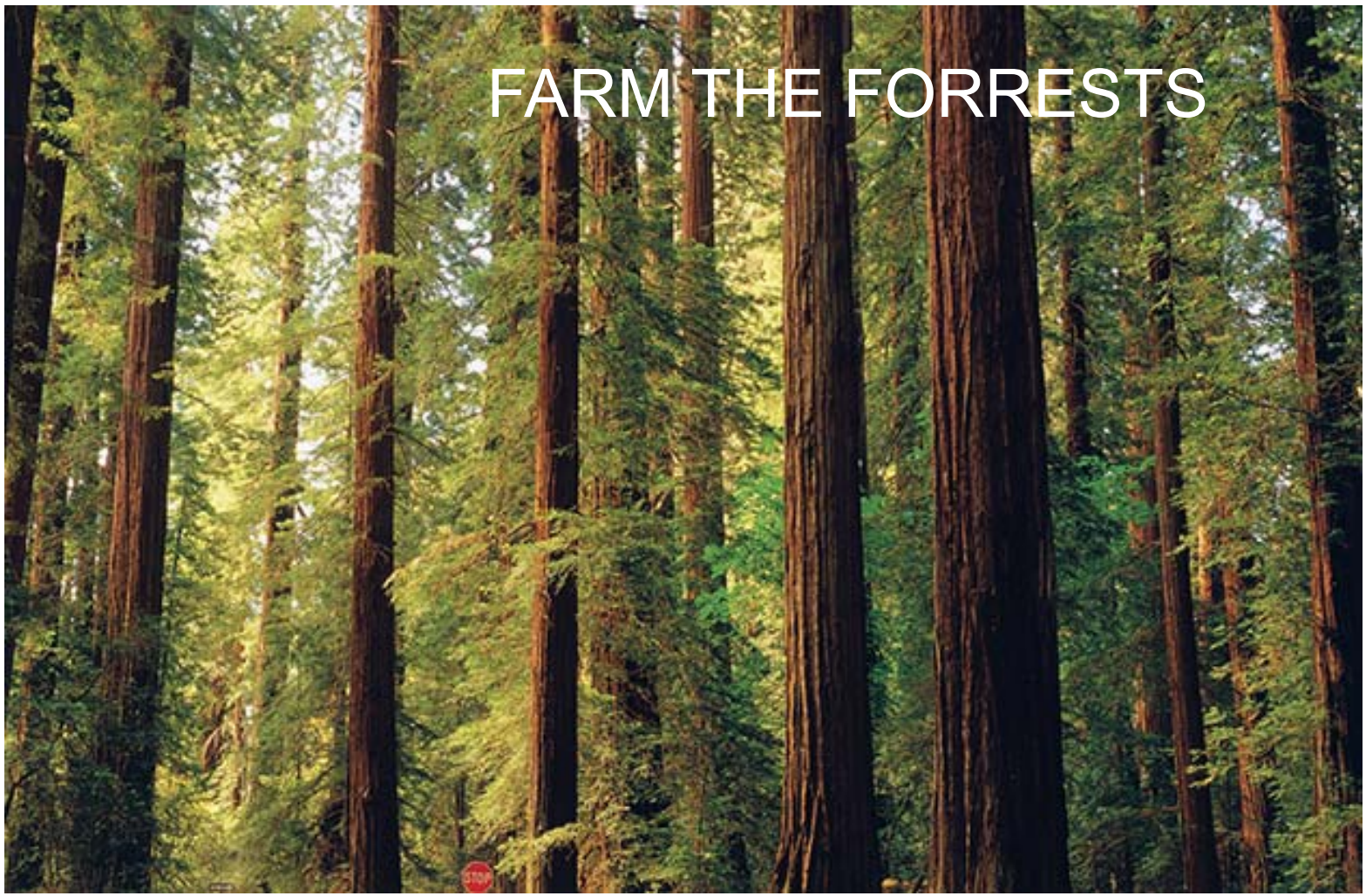


Wired Magazine - „Attention Enviromentalists“



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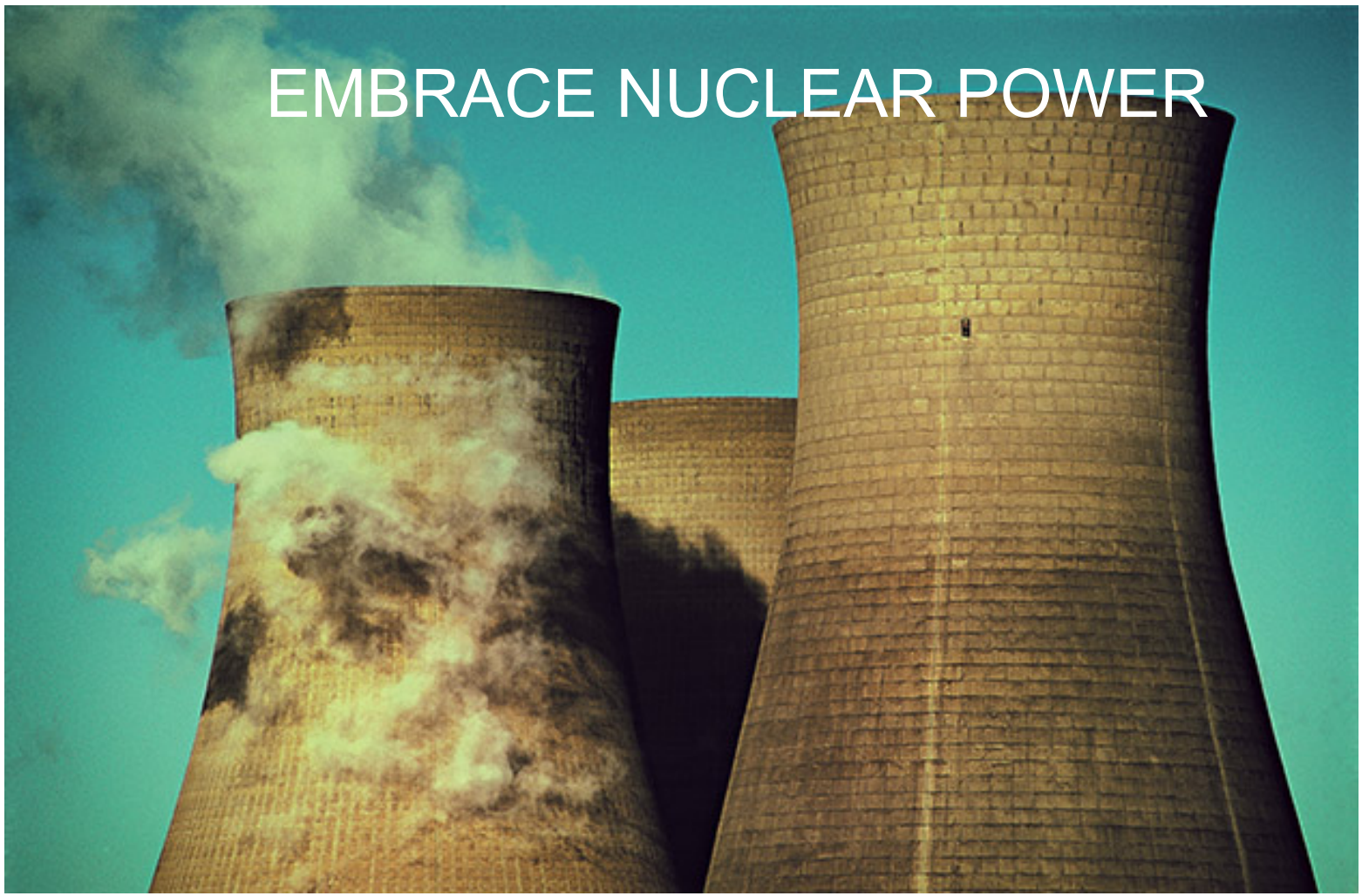

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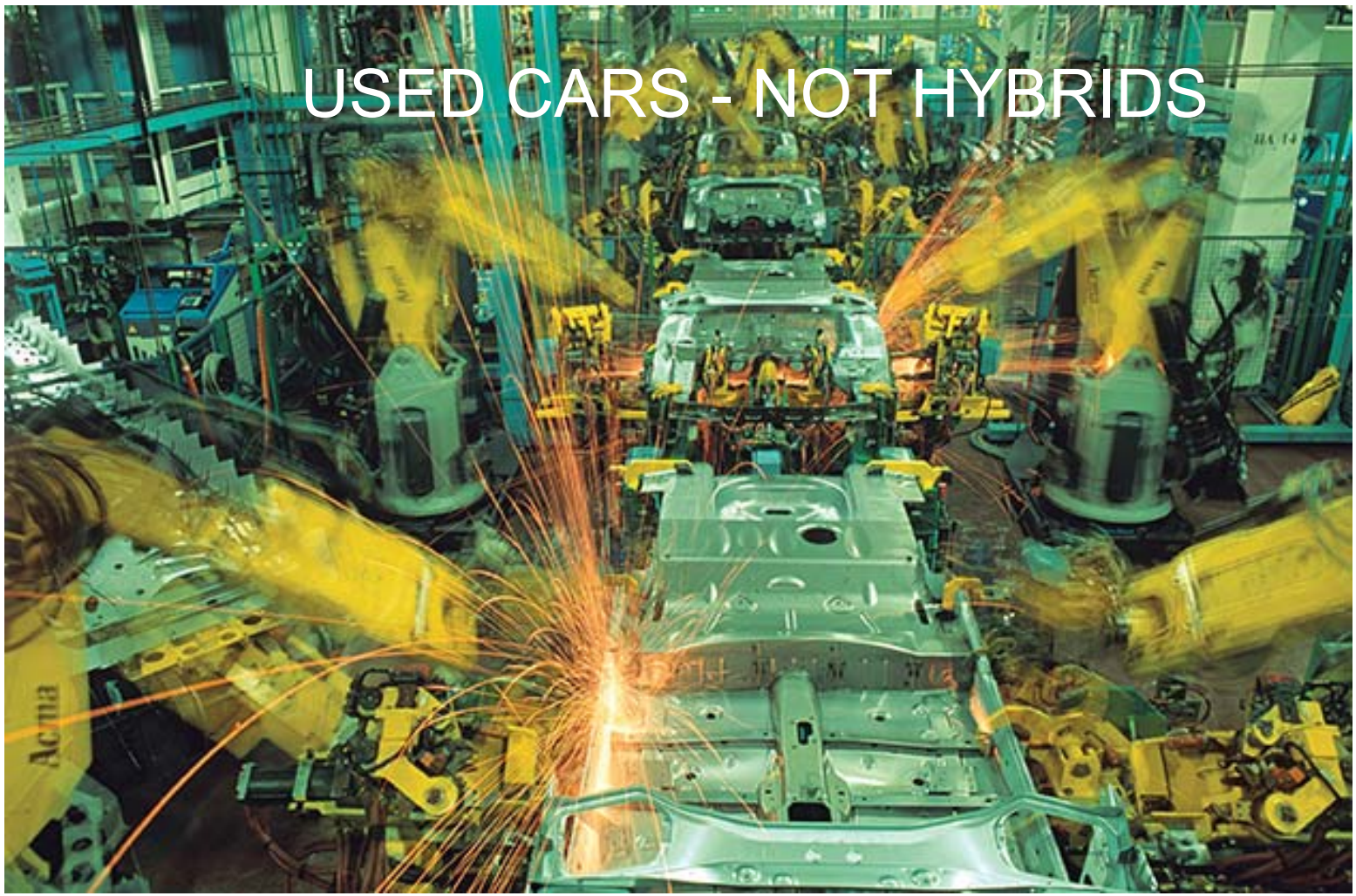
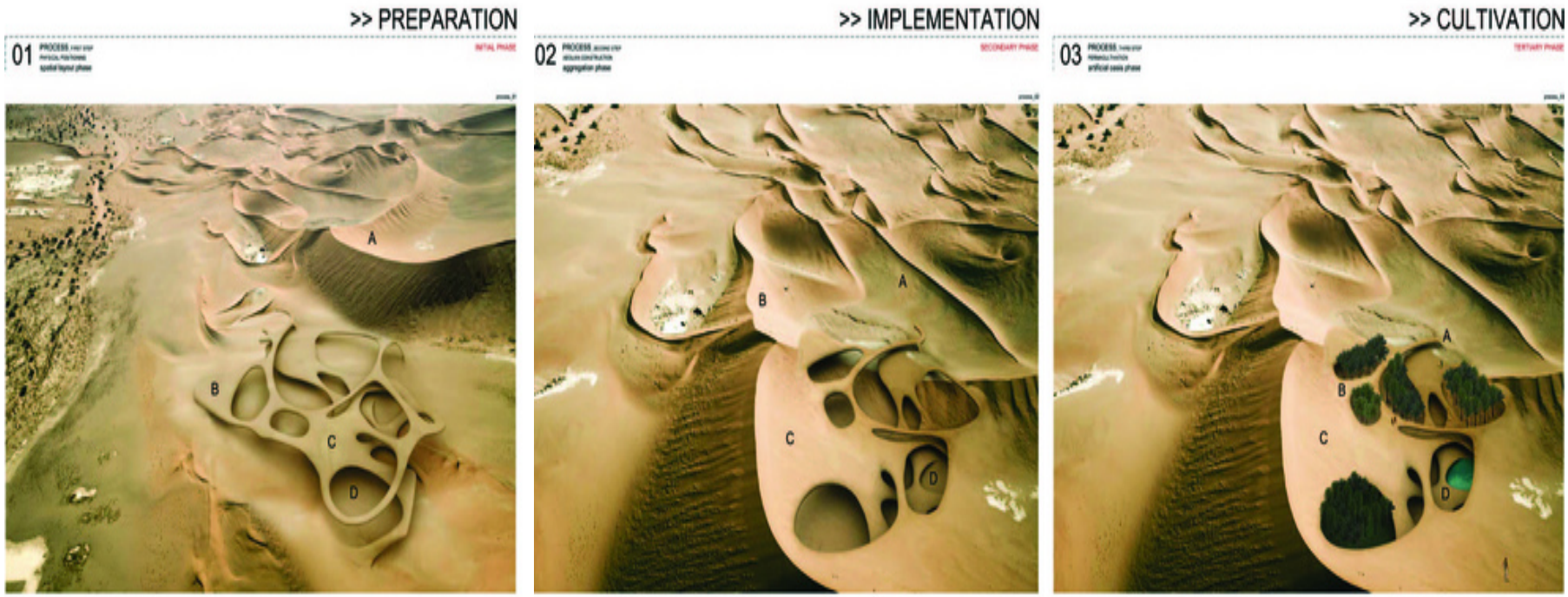


Wired Magazine - „Attention Enviromentalists“

IV Lectures

Intro: Urbanisms for the Anthropocene

// Adaptation, DUNE, Magnus Larsson



Intro: Urbanisms for the Anthropocene

Science: Definitions and concepts: urbanization, climate change

Urbanisms: The city is a laboratory; old and new urbanisms

Design: Introduction graphic representation project "Making complexity simple"

Climate Change and Cities

Using climate science and socio-economic research to map a city's vulnerability

Risk Framework
Climate hazards intensity of heatwaves, rainstorms, flooding
Vulnerabilities attributes of poverty, density, topography
Adaptive capacity resources for mitigation and adaptation

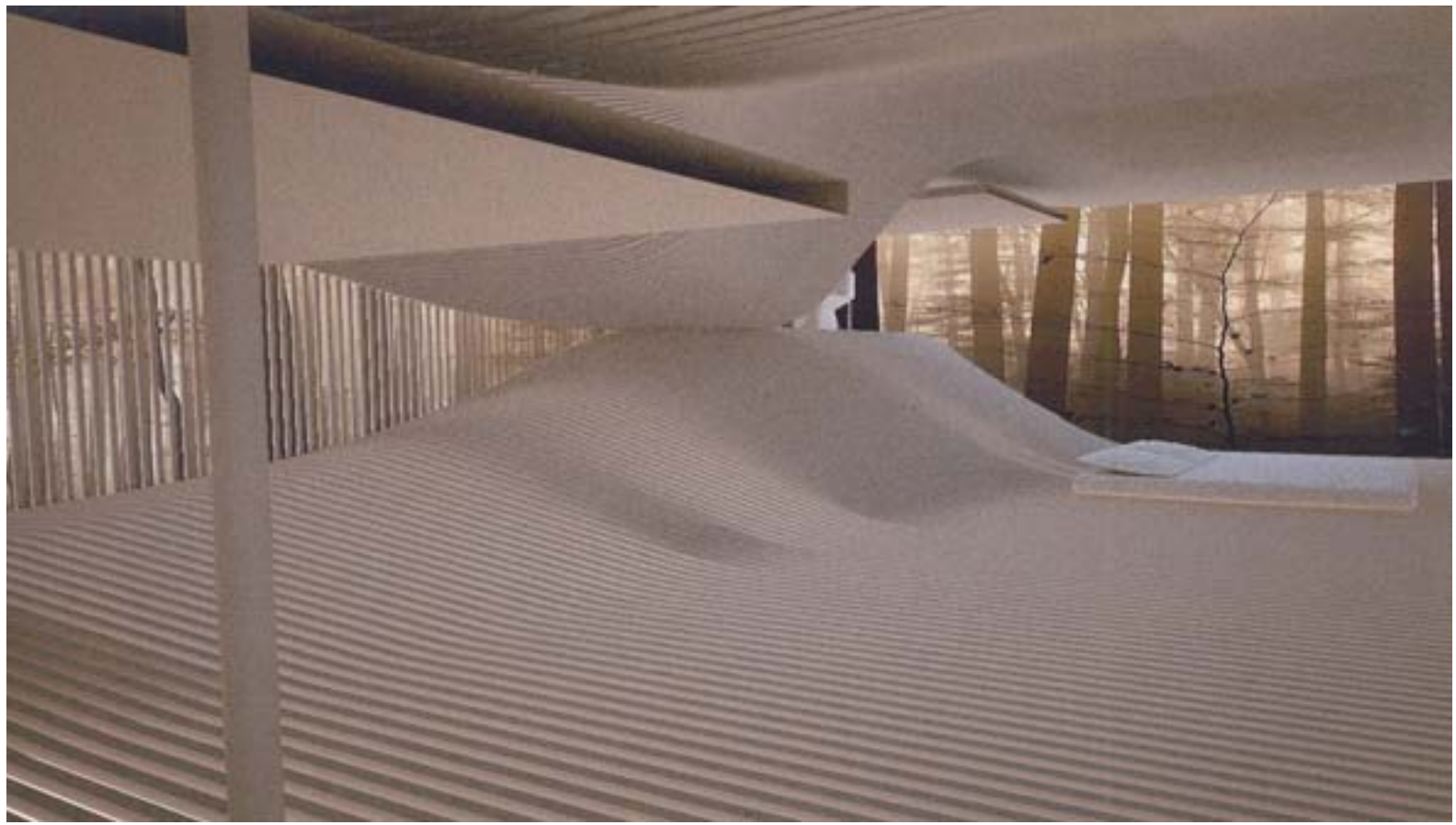
Energy systems, Water and Wastewater, Transportation and Health

Role of Urban Land
Challenges of governance

Cynthia Rosenzweig et al, Climate Change and Cities – First Assessment Report of the Urban Climate Change Research Network. New York: Cambridge, 2011

Weather: Climate and Urban Place Form

// Research House for D. G-F, 2008, Philippe Rahm



Weather: Climate and Urban Place Form

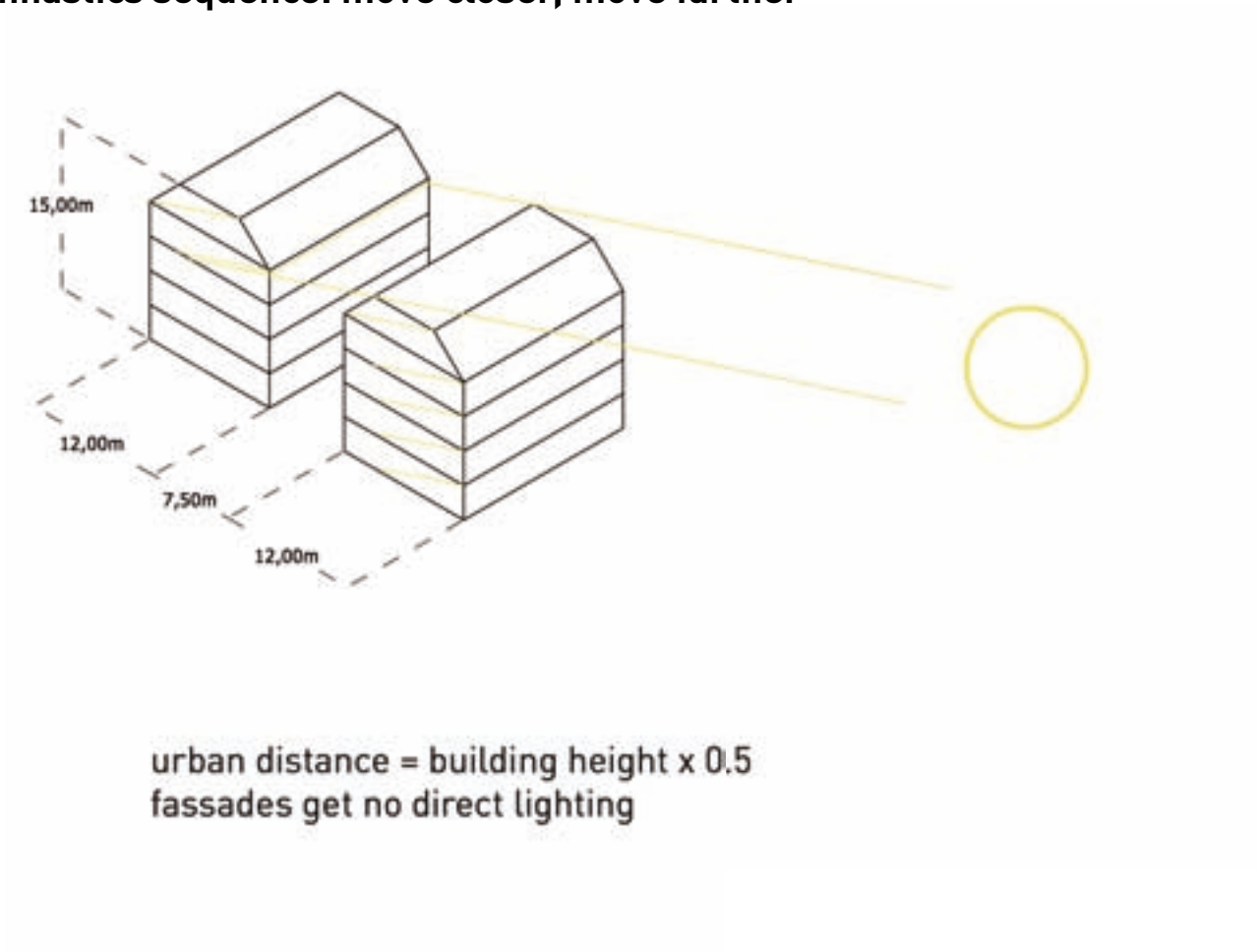
Science: Urban climate basics; Thermodynamics and the Carbon cycle

Urbanisms: Urban place forms: dry and hot, wet and hot, temperate

Design: Well tempered environment and moulding micro-climates

Spatious Density: From Reconstruction to New Concepts

// Solar gymnastics sequence: move closer, move farther



Spatious Density: From Reconstruction to New Concepts

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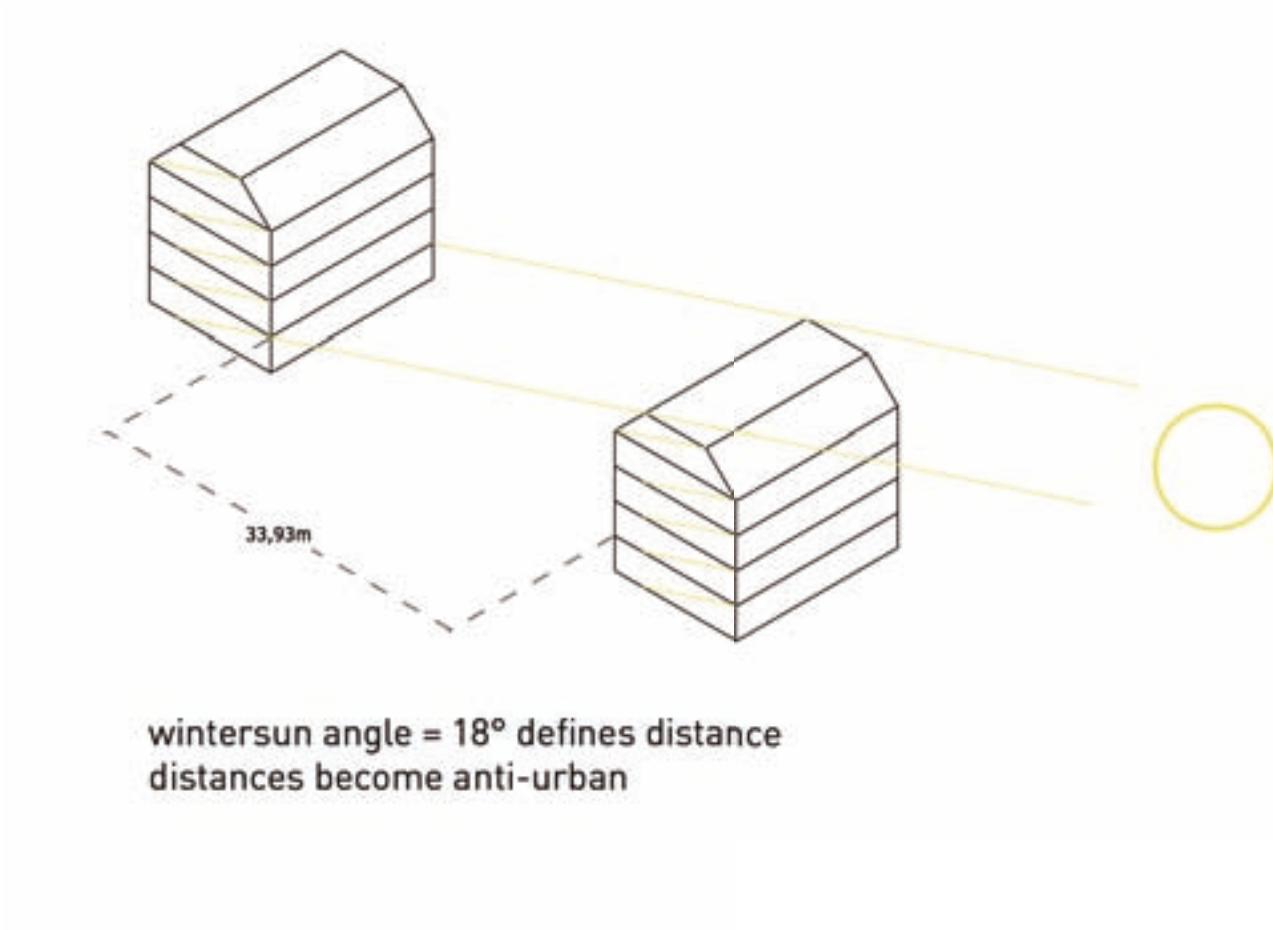

Spatious Density: From Reconstruction to New Concepts

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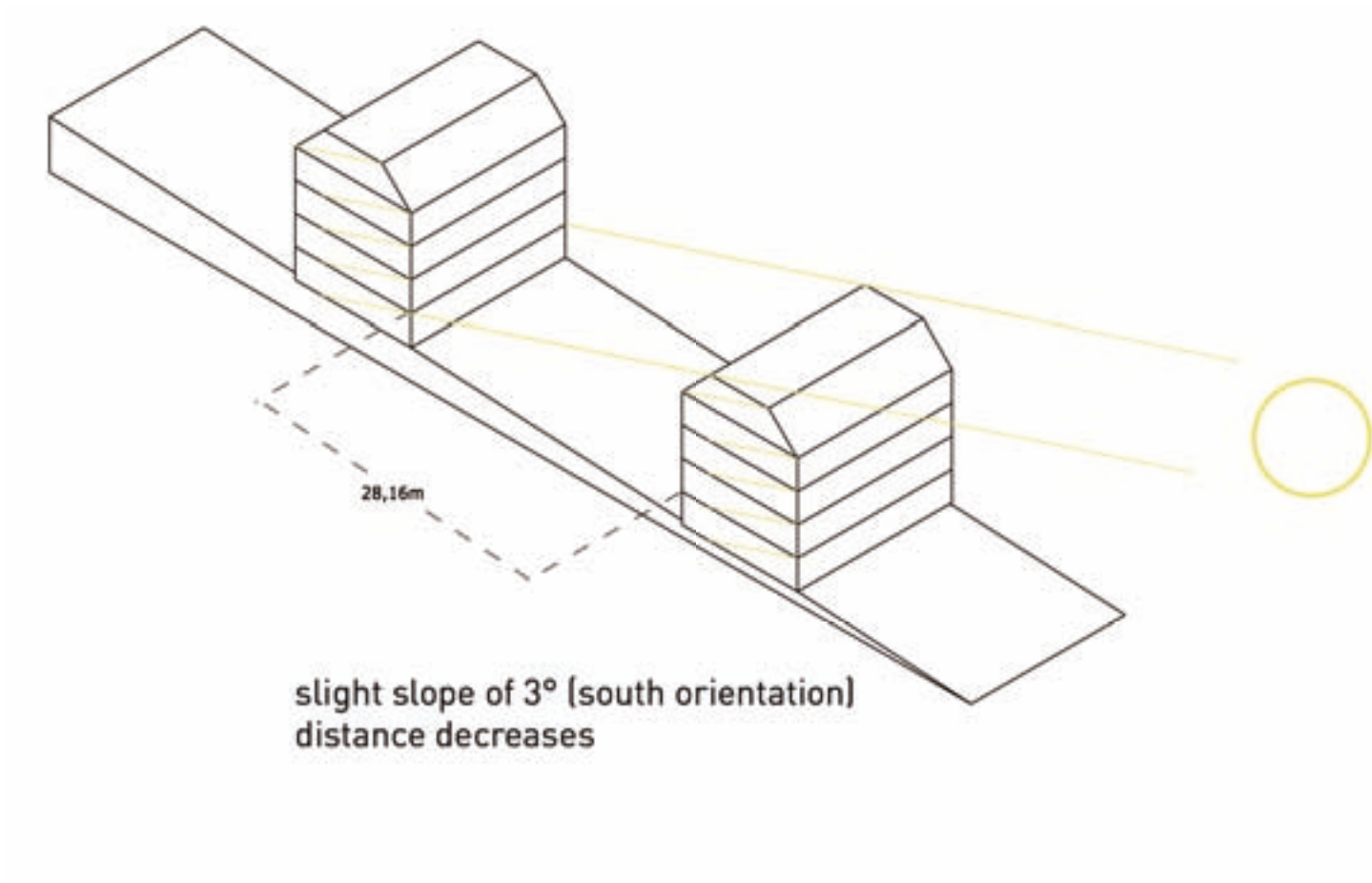


Spatious Density: From Reconstruction to New Concepts

Science: Principles of energy efficient city building, solar gymnastics,

Urbanisms: Compact urban forms; towards a spatious density

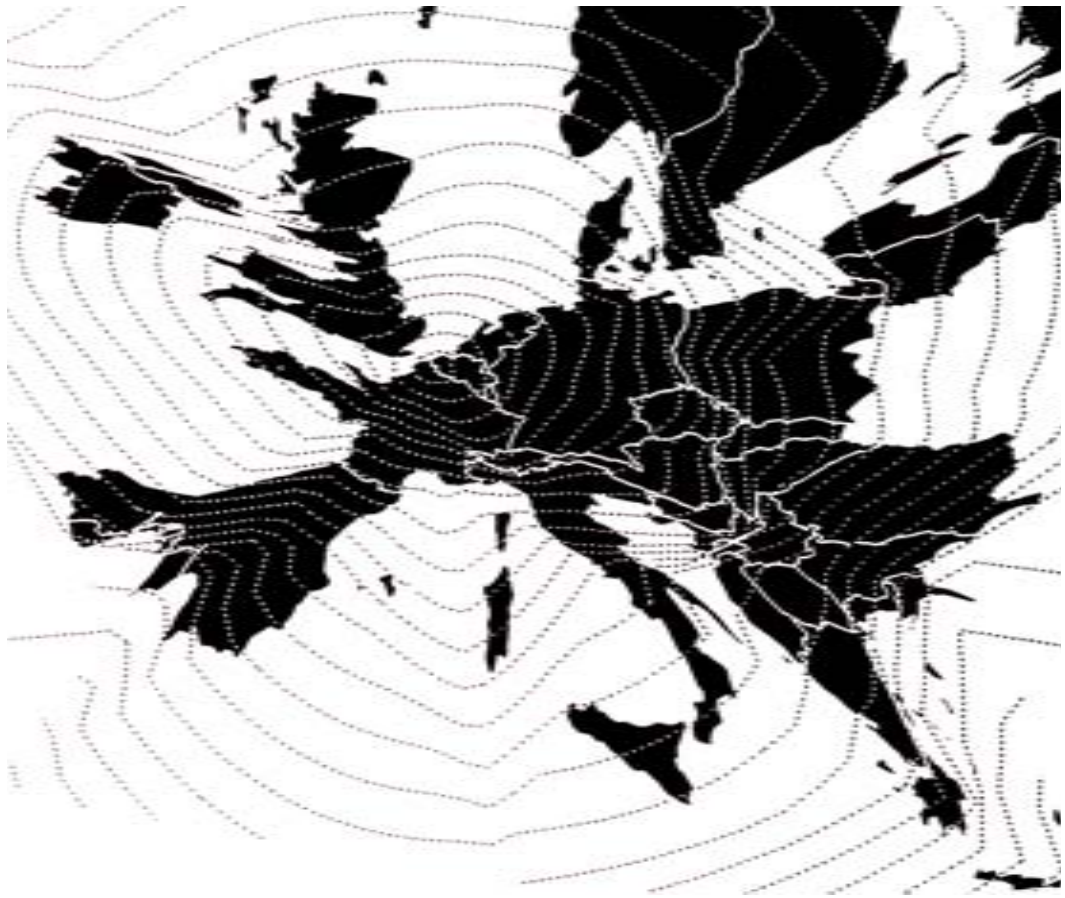
Design: Low to no carbon

Spatious Density: From Reconstruction to New Concepts

// big YARD, Berlin, Zanderroth

Networks: From Regionalism to Network Intelligence

// Europe transformed, Euralille, OMA



Networks: From Regionalism to Network Intelligence

Science: Energy networks and renewables

Urbanisms: Cityregion as overlapping networks

Design: Energy: Enropa and Desertec; Transmillenio; soft and fun Copenhagen

Networks: From Regionalism to Network Intelligence

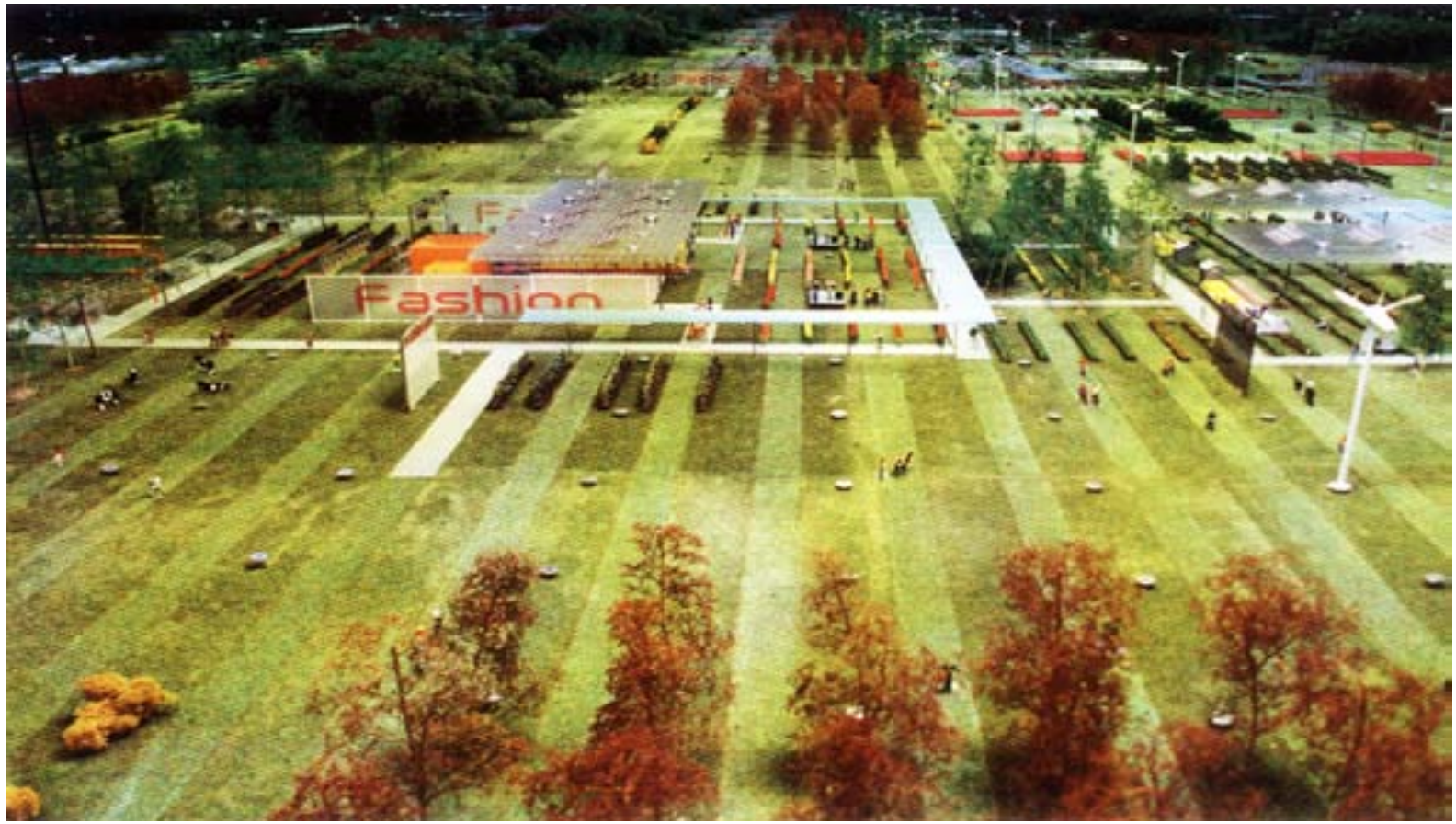
// DESERTEC

Performance of Green: Cool City Regions to Landscape as Performative Space

// Ritual

Performance of Green: Cool City Regions to Landscape as Performative Space

// Porta Nuova Gardens, Milano, A. Branzi, 2004



Performance of Green: Cool City Regions to Landscape as Performative Space

// suburban wildlife, Berlin

Performance of Green: Cool City Regions to Landscape as Performative Space

Science: Performance of vegetation, biodiversity

Urbanisms: from low density urban form to Agropolis

Design: From Guerilla Gardiners to Metrobosco and La Grande Paris

Cycles: Landscape ecology and Cyclical Metabolisms

// Coastal Fog Tower, Atacama

Cycles: Landscape ecology and Cyclical Metabolisms

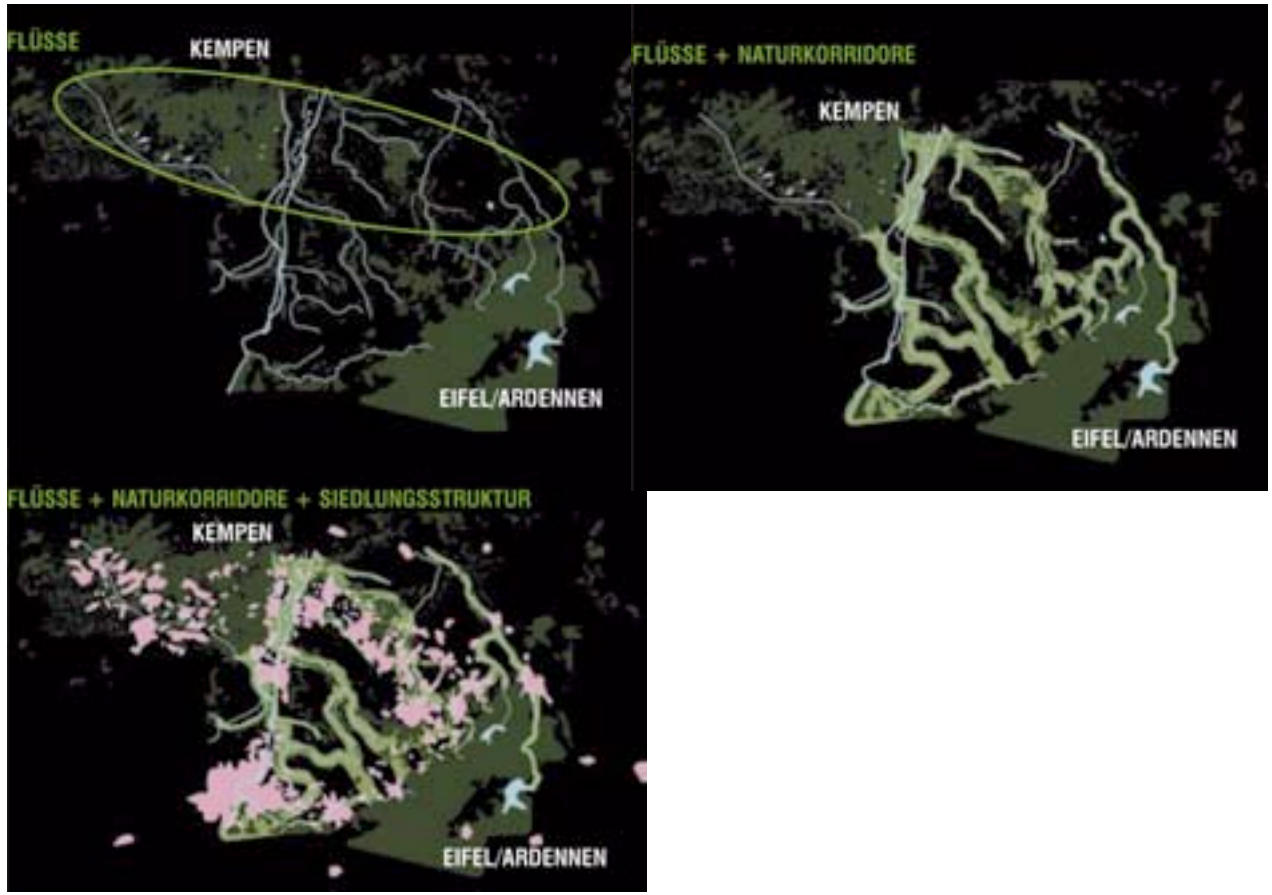
Science: Cyclical metabolisms: Water; flows and cycles, rain, rivers,

Urbanisms: Learning from Field Ecology, Watershed Urbanism

Design: From the Paulini Code, Venice to Rising Currents, NYC

Cycles: Landscape ecology and Cyclical Metabolisms

// Euregio 2008, Team Bava + Agence Ter, 2005



Re-wilding the World – continental scale nature corridors

Conservation Ecology
Connecting wildlife sanctuaries between different countries
(restoration of animal habitats and establishment of migration corridors)

Cores, Corridors and Carnivors

Why?
Fragmentation of wilderness erodes biodiversity
Large carnivores regulate other animal and plant ecosystems

North America: Y2Y (Yukon to Yosemite – wolves)

Europe: Iron Curtain (Finland to Balkan states on the Mediterranean)

(Fraser, C. Rewilding the World. Metropolitan, 2010)

Re-use: Building in the already built city, and Waste: recycle, re-use, repair

// Waste - resources at the wrong place

Re-use: Building in the already built city, and Waste: recycle, re-use, repair

Science: Ecologies of waste, externalities and rucksacks

Urbanisms: From Drosscape to Agrarianism

Design: Creative re-use and Retrofitting social housing

Transients: Tourism – Migration: A World on the Move

// Enculturation

Transients: Tourism – Migration: A World on the Move

Science: Industrial Flows of Tourists; Political and Natural Disasters

Urbanisms: Tourist cities; Refugees: From Camps to Cities

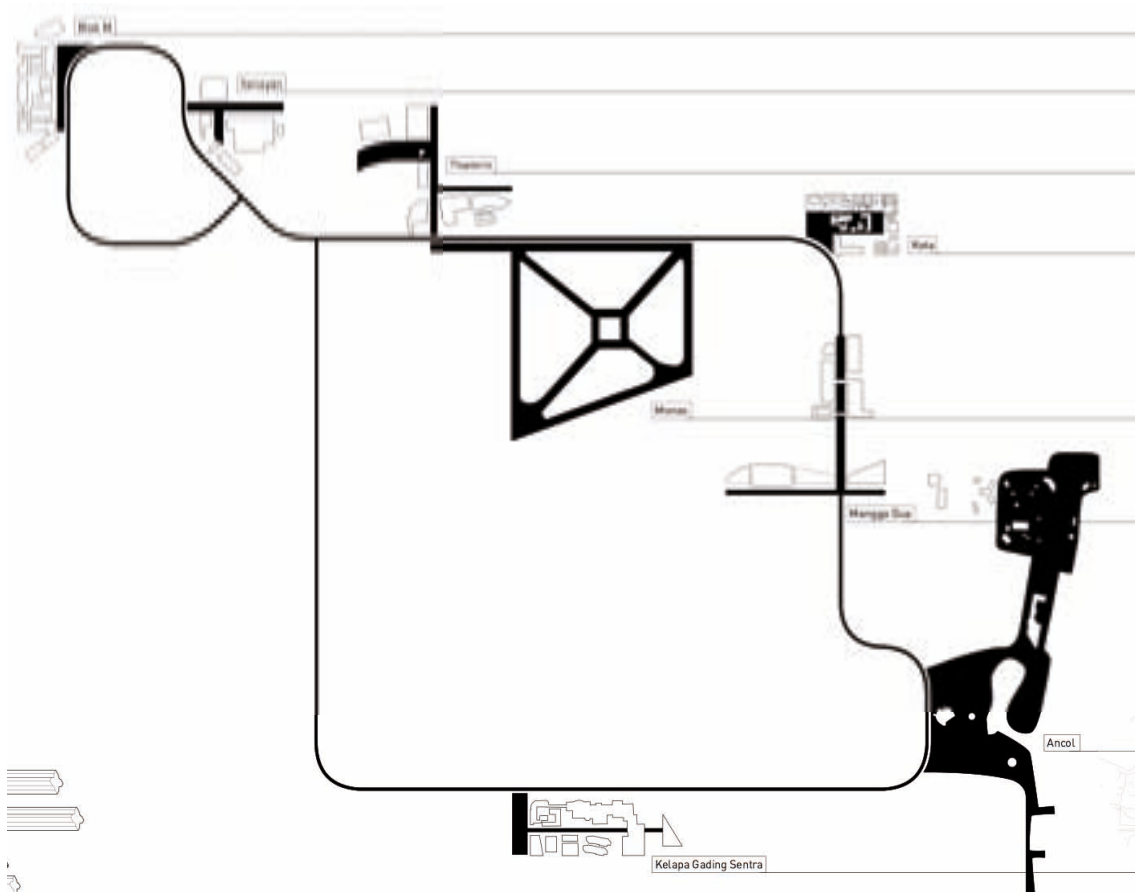
Design: Link Tourists with the Context; Can Architect's Design a Camp?

Transients: Tourism – Migration: A World on the Move

// Gaza, Palästina

Exchange: The Shopping Center: International Symbol of the Age of Consumption

// Shopping Center, Jakarta



Exchange: The Shopping Center: International Symbol of the Age of Consumption

Science: Globalisation and the Rise of the Real Estate Industry

Urbanisms: A Global Building Type for the Age of Consumption

Design: Can Retail Centers Support Social and Cultural Development?

Exchange: The Shopping Center: International Symbol of the Age of Consumption

// Arizona Market, Brcko

Actors: Right to the City to New Steakholders

// Lesezeichen Salbke – Open-air library, in Magdeburg, KARO*

Actors: Right to the City to New Steakholders

// 23 de Enero, 2003

Actors: Right to the City to New Steakholders

Science: The Phenomenon of Informal Citybuilding

Urbanisms: Models of collective planning, participation and individual action

Design: Activism, Participation, Behaviorology, Entrepreneur

Dirty Sustainability: Wicked Problems, Resilience and Redundance

// Contradiction = Potential

Dirty Sustainability: Wicked Problems, Resilience and Redundance

// Caution Dress, Nancy Judd

Dirty Sustainability: Wicked Problems, Resilience and Redundance

Science: "What's wrong with sustainability?"

Urbanisms: Towards Sustainable Urban Place Form

Design: passive, active, cradle to cradle

A Homeotechnic Future + Climate Pragmatism

A Homeotechnic Future
„Spaceship Earth“ (B. Fuller, 1968)
„Its implications do justice to the real situation“
The biosphere is our „spaceship earth“

What is needed is a new scientific-philosophical practice
Nature supportive technologies combined with biometric standards produce a different (positive) interaction between urbanization and the natural world.

(Sloterdijk, P. „How Big is Big?“ Collegium International, 2010)

A New Climate Pragmatism
Decarbonization will only be achieved when it is combined with other goals which are politically attractive and relentlessly pragmatic.

These measures do not need to be pursued in a centralized manner.

(Atkinson et al, 2011 and LSE 2010. http://bit.ly/HartwellPaper)

V 10 shades of Green, 2000

1 Low energy / high performance	natural light and ventilation in tall volumes multi-layered facades and roofs solar panels, water chilled ceilings,
2 Replenishable sources	harvest the ambient energies of the sun, wind, build with constantly replenished materials,
3 Recycling: eliminate waste + pollution	design systems that recycle water and heat. reusable materials and components
4 Embodied energy (EE)	critical use of low + high EE materials

V 10 shades of Green, 2000

5 Long life, loose fit

can your building be refit for new uses?

6 Total life cycle costing

materials extraction to their eventual recycle
predictive computer modelling,

7 Embedded in place

site and setting, draw on local vernacular,

8 Access and urban context

mobility and access; TOD models

9 Health and happiness

outdoors contact, relevance to communitylife
no off-gas materials (sick building syndrome)

V Certificates Design

ECOLOGICAL QUALITY
CONSEQUENCES FOR THE GLOBAL AND LOCAL ENVIRONMENT

03 Urban Climate Change	identify climate, weather, topography
RESOURCE CONSUMPTION AND WASTE PRODUCTION	
05 Consumption of Land	decentralized concentration experiment with density
06 Energy- and % of Alternative Energy Use	solar energy, layered skin, sunshades
07 Energy Efficient Building	experiment with morphology and density
09 On-site Rainwater Management	rainwater harvest, runoff as formmaker landscape as waste water remediator

ECONOMIC QUALITY
LIFECYCLE COSTING

11 „Strengthening Local Markets“	urban gardens, agriculture and forestry
CREATING VALUE	
13 Efficient Land-use	decentralized concentration

V Certificates Design

SOCIO-CULTURAL FUNCTIONAL QUALITY

SOCIAL QUALITY

14 Social and Functional Diversity	evaluate programatic juxtapositions
15 Socio-cultural Structure	invent alternative living/working scenarios

HEALTH, COMFORT AND USER SATISFACTION

16 Objective / Subjective Security	overlooked public spaces and entries
17 Spatial Quality + Comfort	define interaction betw. buildings+spaces
19 Noise Insultion / Acoustical Quality	new forms and materials

FUNCTIONAL QUALITY + DESIGN QUALITY

20 Quality of the Traffic System	mobility spaces as high quality places
21 Free Space Opportunity/Offer	variety+hierarchy of private-public spaces
22 Barrier-free Quality	folded ground planes, use topography
23 Functional Flexibility	propose programatic juxtapositions
24 Local and Regional Food Production	urban gardens and agriculture
25 Urban Design Connections	network connections is everything
26 Using the Existing Context	identify + manipulate vernacular form winter and summer habitation

V Certificates Design

TECHNOLOGICAL QUALITY

TECHNICAL INFRASTRUCTURE

30 Water circulation systems	water as visible design component
31 Energy technical system	layered skins, sunshades, courts
32 Waste cycle efficiency	waste as food, waste as material

TECHNICAL QUALITY + TRAFFIC / MOBILITY

33 Potential for disassembly, recycling + demounting	prototyping + prefabrication new replenishable materials
35 Quality the public transport infrastructure	transferia: local + regional
38 Quality of the infrastructure for pedestrians	urban space perceived by pedestrian post oil design and spaces

PROCESS QUALITY

PARTICIPATION

39 Participation	identify cultures and tribes

QUALITY OF THE PLANNING + QUALITY OF THE EXECUTION AND SITE MANAGEMENT

40 Concept building by competitve process	staging development as narrative
41 Integrated Planning	integrated multiscale design + planning

VI new Climate Pragmatism

Climate Pragmatism . Innovation, resilience and no regrets

The Hartwell Analysis in an American Context. Atkinson, R., N Chetri, J Freed ed altri. July 2011

Failure of the UN Framework Convention on Climate Change (UNFCCC)
enforce top down standards not realistic
emissions targets are unenforcable
deadlocked international negotiations and failed domestic policy proposals

Thesis: „decarbonization will only be achieved ... contingent upon other goals which are politically attractive and relentlessly pragmatic."

Three goals: near term goals achievable by example rather than by global treaties

1. Ensuring energy access for all (invest in new energy technologies, slow deforestation, ...)
2. Developing clean and scalable energy technologies that are ultimately cost competititve with fossil fuels absent subsidy
3. building resilience to climate change (build disaster resilience)

The Hartwell Paper May 2010 LSE and Säid Business School, University of Oxford
Http://bit.ly/HartwellPaper

Problems and Goals

Problems - please don‘t ...

Z No single route to sustainability
Zz A war on many fronts, with many tactics (weak) and strategies (strong)
Zzz Coalition of practices
Y A combination of short term (mitigation) and long term (adaptation) measures
□

Goals - please do ...

X near term goals achievable by example rather than by global treaties
Xx 1 Ensuring energy access for all (invest in new energy technologies, slow deforesta
Xxx 2 Developing clean and scalable energy technologies that are ultimately cost
Yy competititve with fossil fuels absent subsidy
Yyy 3 building resilience to climate change (build disaster resilience)

Caution Dress, Nancy Judd