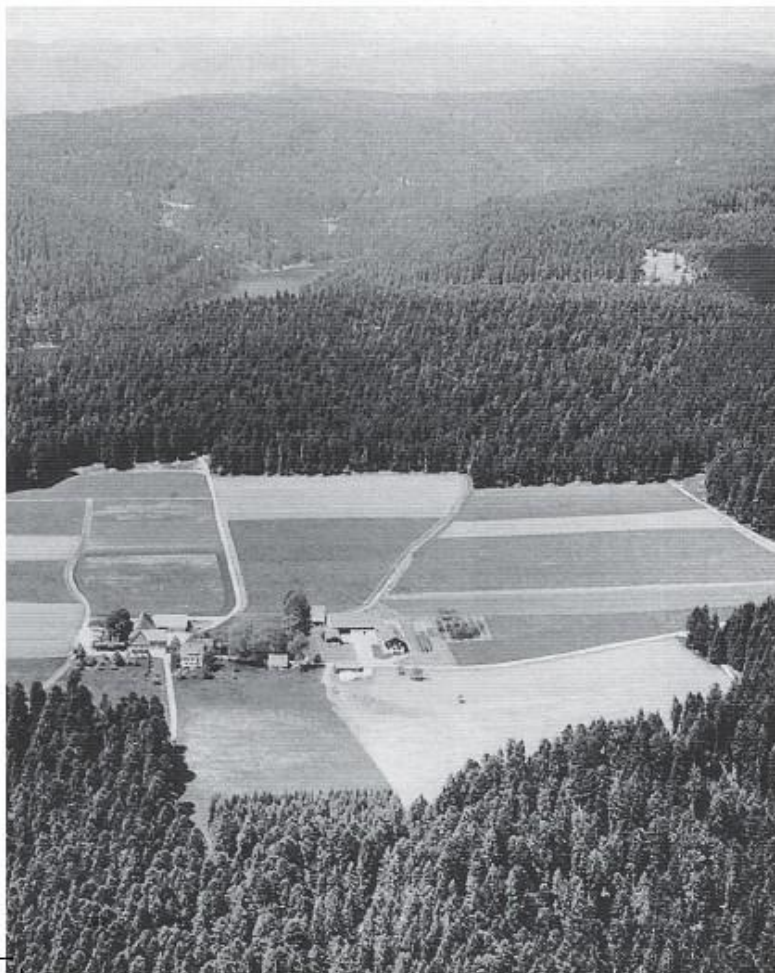


Climate Change Changement de décor

Sébastien Marot

Forum Bâtir et Planifier
Lausanne, 9 Octobre 2019

LECTURE THREE
SEBASTIEN MAROT



**ECOLOGY AND URBANISM: ABOUT THE
DEEPENING OF TERRITORIES**

Good afternoon. First let me thank the organizers of this conference for inviting me. It is a pleasure to be here with you, even though I wonder whether I'll be able to answer in any way the question that I've been dealt. « Reading the site through its natural environment », that's how the expected theme of my talk was phrased in the initial program which I received. Wondering what that exactly meant, I gathered that it probably corresponded to the third question mentioned in the program: « How do careful readings of the natural environment cater for an urbanism that connects to the locality and the site specifics? ». Mark that this question is about the *how*, and not about the *whether or not* those careful readings of the natural environment do cater for a local and site specific form of urbanism? And hey! Why wouldn't they? Isn't the answer contained in the question? Shouldn't we take for granted that a careful reading of the natural environment naturally leads to more site specificity? And even that it would be the necessary precondition for a site specific urbanism?

Site

What the question points at, just by being asked, is that there is nevertheless a difference between what is here called the environment, and more specifically the natural environment, and what we call the site, or the local. In order to provisionally sum up the issue, we might say that the natural environment is the non human dimension of the environment, the whole substrate of natural processes (Airs, Waters and Places, to speak like Hippocrates), the ecosystems onto which men and societies have developed and geared their anthroposystems, and that they have turned into anthropic milieux which have themselves evolved throughout history [Fig 1].

fireplace

sebastien marot

rem koolhaas

amo

harvard graduate school of design

irma boom

Marsilio

de
dependance



Countryside Explorations

An evening with
Rem Koolhaas
AMO and
Harvard GSD

26.04.2016

POLITICAL reDESIGN

*in the
Countryside*

GSD-OMA Abroad Studio
Fall 2017





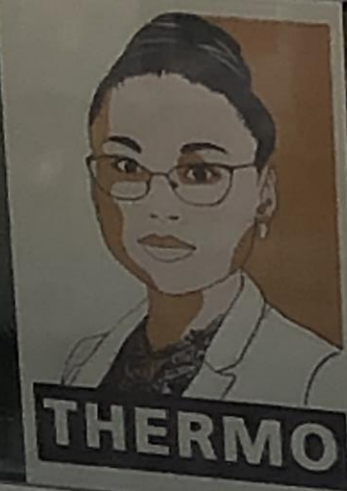
Schizophrenia

Any reflexive and seriously informed person is today confronted to a highly perplexing situation:

When looking back at the past it all seems as if the urbanization of the world has been steadily growing for centuries, is inevitable, and is the sense of history

but,

when probing the future and looking at the environmental issues looming there, this same global urbanization looks rather improbable, impossible, and like the end of history



EPFL MICROTECHNIC
S'inspirer
de la nature
pour mieux
développer
des robots





Permaculture

—

Principles & Pathways Beyond Sustainability

—

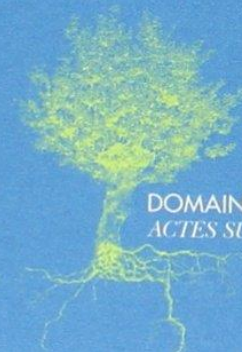
David Holmgren

Revised Edition

PERRINE ET CHARLES
HERVÉ-GRUYER

PERMACULTURE

GUÉRIR LA TERRE,
NOURRIR LES HOMMES



DOMAINE DU POSSIBLE
ACTES SUD



DO LADO
DO CAMPO
AGRICULTURA
E ARQUITECTURA

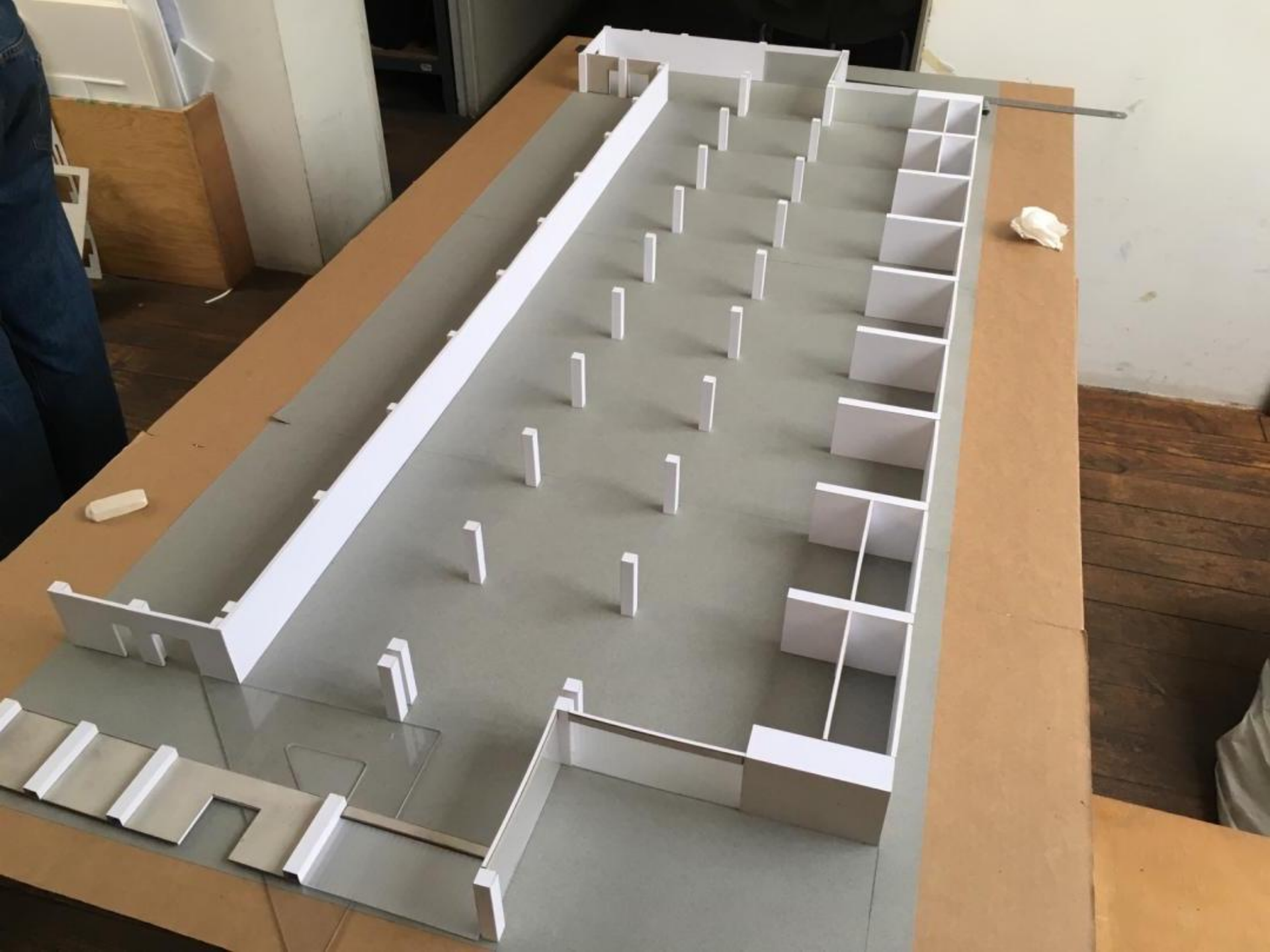
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GARAGEM
UL PO

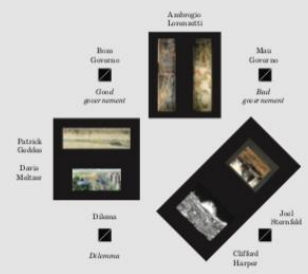
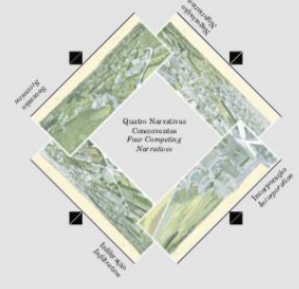
A C A
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MCLEAN FARM MARKET SWEET CIDER

AMBULANCE





Sala de video
Video room
5
Experiencia
en Permacultura
Permaculture
Experience

Sala de video
Video room
4
Concepciones
Concepciones

Sala de video
Video room
3
Problemas
Ambiental
Entorno del
Permaculture

Sala de video
Video room
2
Permacultura
Permaculture

Sala de video
Video room
1
Reflexiones
Agricolas
Agricultural
Montage



Jack Nelson, A Bird's-Eye View, The National Geographic Magazine, February 1970



Charles Sheeler, "Chicago in the First Year of Flight" as Seen Through the Window of a Moving Aeronautic Technology, 1920, Harper's, March 1921



SUBLIMATION



COINCIDENCIA



VILLA



ARQUITECTURA



ESTRUCTURA



Clifford Har
de / from Un



A7 INTEGRACIÓN?

A8 INTEGRACIÓN?

A9 INTEGRACIÓN?

A10 INTEGRACIÓN?

B1 ¿CIBERISMO URBANO?

¿CIBERISMO URBANO?

¿CIBERISMO URBANO?

B0 ¿CIBERISMO URBANO?

B2 ¿CIBERISMO URBANO?

C1 ¿CIBERISMO URBANO?

¿CIBERISMO URBANO?



AUTO-SUFICIÊNCIA / SELF-SUFFICIENCY

A6

Architectural drawings and diagrams illustrating self-sufficiency, including a site plan and a cross-section of a building.

INTEGRAÇÃO? / INTEGRATION?

A7

Architectural drawings and diagrams illustrating integration, including a site plan and a cross-section of a building.

ACHARHANY / URBANISM?

D1

Architectural drawings and diagrams illustrating urbanism, including a site plan and a cross-section of a building.

ARQUITECTURA / ARCHITECTURE

A10

Architectural drawings and diagrams illustrating architecture, including a site plan and a cross-section of a building.

ARQUITECTURA / ARCHITECTURE

A11

Architectural drawings and diagrams illustrating architecture, including a site plan and a cross-section of a building.





HORTICULTURA DO AMBIENTE BEM AFINADO / A HORTICULTURE OF THE WELL FORTIFIED ENVIRONMENT
De Martini de Pompadour and Blouin, published in Paris, journal des sciences, month XII, French style in Montreal, Paris school, Pointe-Claire, 20th century.



ATIVIDADE NA PRODUÇÃO - THE AGRICULTURAL AFFAIRS
From the Journal des Sciences, Paris, France, 18th century.



PLANO MUSEOLÓGICO DA UNIVERSIDADE DE SÃO PAULO
Universidade de São Paulo, Instituto de Física, São Carlos, 1960.



MAPA DA CIDADE DE SÃO PAULO
São Paulo, 19th century.



ILUSTRAÇÃO DA CIDADE DE SÃO PAULO
São Paulo, 19th century.





REVOLUÇÃO INDUSTRIAL I

Entre 1750 e 1850, a Inglaterra tornou-se o primeiro país industrializado do mundo. Este período é conhecido como a Primeira Revolução Industrial.

INDUSTRIAL REVOLUTION I

Entre 1750 and 1850, England became the first industrialized country in the world. This period is known as the First Industrial Revolution.

REVOLUÇÃO INDUSTRIAL II

Entre 1850 e 1914, a Europa tornou-se o primeiro país industrializado do mundo. Este período é conhecido como a Segunda Revolução Industrial.

INDUSTRIAL REVOLUTION II

Entre 1850 and 1914, Europe became the first industrialized country in the world. This period is known as the Second Industrial Revolution.



1850-1914
1850-1914
1850-1914

CRONOLOGIA ILUSTRADA DA HISTÓRIA AMBIENTAL

WORLD IN PICTURES

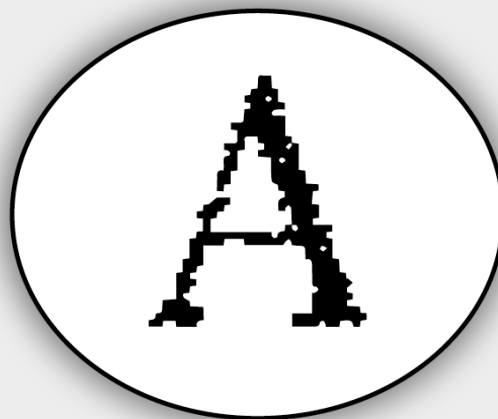
At the end of the 19th century, when the scientific revolution was in full swing, the first attempts were made to reconstruct the history of the environment. This was done by studying the fossil record and the distribution of plants and animals in different parts of the world. The study of the environment in the past is now a well-established branch of science. It is a branch of science that has become increasingly important in the 20th century. This is because of the growing concern about the environment and the impact of human activities on it. The study of the environment in the past can help us to understand the changes that have taken place and to predict the future. It can also help us to find ways to protect the environment and to improve our quality of life.

AN ILLUSTRATED TIMELINE OF ENVIRONMENTAL HISTORY

WORLD IN PICTURES

The study of the environment in the past is a branch of science that has become increasingly important in the 20th century. This is because of the growing concern about the environment and the impact of human activities on it. The study of the environment in the past can help us to understand the changes that have taken place and to predict the future. It can also help us to find ways to protect the environment and to improve our quality of life.



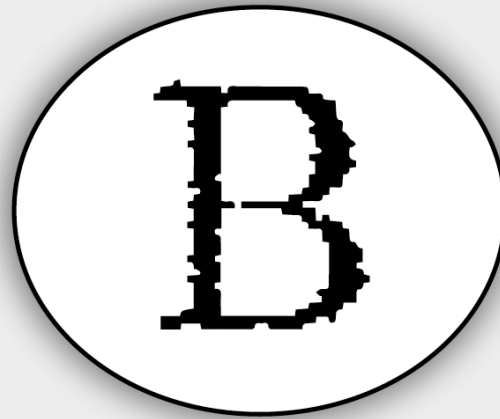


AGRICULTURA E ARQUITECTURA

Onde o visitante confuso descobre que estas duas práticas evoluíram em paralelo desde o seu berço comum no Neolítico; que havia fortes ligações e correspondências simbólicas entre elas (que foram progressivamente negligenciadas, reprimidas e esquecidas); e que a sua reconexão pode muito bem ser uma das tarefas mais urgentes à nossa frente.

AGRICULTURE AND ARCHITECTURE

Where the bemused visitor discovers that those two practices evolved in parallel since their common cradle in the Neolithic; that there were strong links and symbolic correspondences between them (which were progressively overlooked, repressed and forgotten); and that their reconnection might well be one of the most urgent tasks ahead.

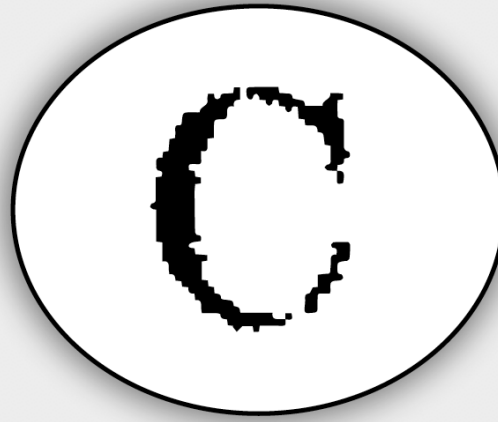


AGRICULTURA E URBANISMO

Onde o visitante intrigado vê como as próprias cidades procederam da agricultura e da sua intensificação, como a hierarquia das colheitas mais necessárias para a alimentação, fibras e energia moldou as suas paisagens circundantes até à Revolução Industrial e como o urbanismo então prosperou, muito devido à evacuação do campo e à questão rural.

AGRICULTURE AND URBANISM

Where the intrigued visitor sees how cities themselves proceeded from agriculture and its intensification, how the hierarchy of the most needed crops for food, fibers and energy shaped their surrounding landscapes until the Industrial Revolution, and how urbanism then largely prospered on an evacuation of the countryside and the rural question.

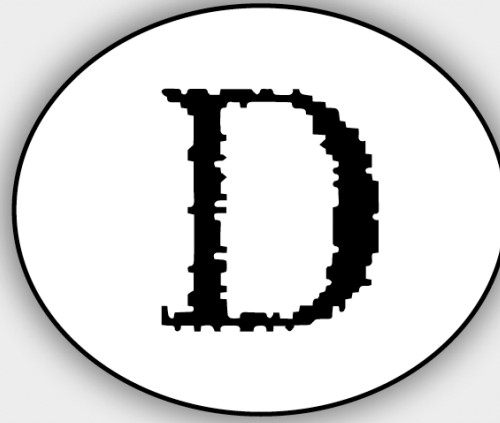


DA AGRONOMIA À AGRO-ECOLOGIA

Onde se oferece aos visitantes, primeiro, uma rápida pesquisa sobre a ascensão e concessão da agronomia ao longo dos últimos quatro ou cinco séculos e, depois, uma visão geral das consequências nefastas da industrialização da agricultura e da sua exportação mundial (a chamada “Revolução Verde”) e, finalmente, um pequeno compêndio de lições muito mais sábias.

FROM AGRONOMY TO AGROECOLOGY

Where visitors are treated first to a quick survey of the rise and devolution of agronomy over the past four or five centuries, then to an overview of the dire consequences of the industrialization of agriculture and its worldwide export (the so-called “Green Revolution”), and finally to a little compendium of much wiser lessons.

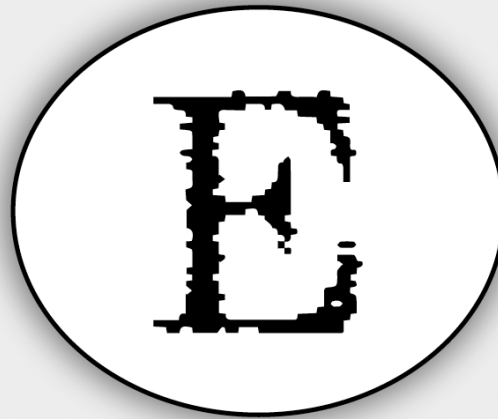


SAIR DA URBE

Onde o arquitecto intrigado se apercebe de que talvez as cidades e as metrópoles não sejam o destino manifesto da humanidade que parecem ser, que uma longa tradição de contra-profetas tomou efectivamente o lado do campo (em nome do agrarianismo, do ruralismo ou do "Back-to-the-Land") e que os seus herdeiros poderão ter boas ideias para partilhar sobre a questão premente: "para onde vamos a partir daqui?"

EXIT URBS

Where the puzzled architect realizes that maybe cities and metropolises aren't the manifest destiny of humankind they pretend to be, that a long tradition of counter-prophets did indeed embrace the country's side (in the name of agrarianism, ruralism or Back-to-the-Land), and that their heirs might have good insights to share as to the burning question: "where do we go from here?"



O CONFRONTO COM O ACTUAL PROBLEMA AMBIENTAL

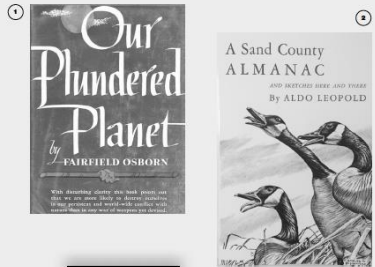
Onde percebemos, perplexos, toda a dimensão de como a actual confusão ambiental tinha sido documentada e prevista há quase 50 anos e de como essas advertências inspiraram, fora da esfera dos especialistas e dos profissionais, um conjunto de reflexões profundas e práticas sobre os papéis da tecnologia e do design

FACING THE PRESENT ENVIRONMENTAL PREDICAMENT

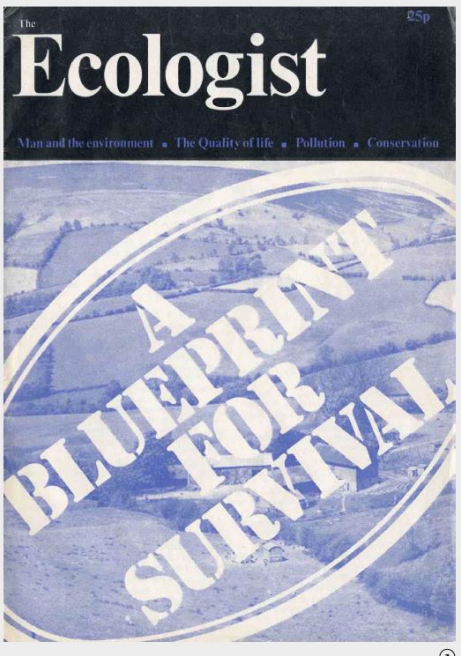
Where one realizes, in bewilderment, the whole extent to which the environmental mess we are currently into was documented and predicted almost 50 years ago, and how these warnings inspired, but outside the sphere of experts and professionals, a trove of deep and practical reflection on the stakes of technology and design

A BLUEPRINT FOR SURVIVAL

A BLUEPRINT FOR SURVIVAL



- ① Proprietors of capitalism & those who exploit the program (1902, 1949, 1961, 1987) (Reproduction of part of an advertisement and cartoon, 1914, 1914)
- ② Manifestations of the attitude of industrial & agricultural development (1914, 1961) (Reproduction of part of an advertisement and agriculture, 1961, 1961)
- ③ The environmental movement (1914, 1961) (Reproduction of part of an advertisement and agriculture, 1961, 1961)
- ④ Manifestations of the attitude of industrial & agricultural development (1914, 1961) (Reproduction of part of an advertisement and agriculture, 1961, 1961)



O ALARME CRESCENTE DO AMBIENTALISMO

THE MOUNTING ALARM OF ENVIRONMENTALISM

George Bataille, 1899, production of the magazine 'Le Dialecte', reproduction of an advertisement, La Découverte, 1914.

As preocupações ambientais não apareceram de repente na década de 1960. Ao longo da era industrial, vários vozes denunciaram os brotos sem saída do desenvolvimento industrial e da devastação de regiões inteiras ou "silenciosas". Mas essas vozes foram sumariamente silenciadas pelo culto do produtivismo, aderido tanto pelas defesas de livre mercado como pelas suas adversárias marxistas. No século XX, à medida que este digno modernista se torna cada vez mais dominante, crises marcantes, como a Grande Depressão, aterrorizam uma primeira ordem de crítica, com uma poderosa expressão na obra de Lewis Mumford. No seguimento da Segunda Guerra Mundial e do seu término nuclear, enquanto alguns focavam-se em críticas ao "sistema tecnológico", outros começaram a formular uma "Ética da Terra". Mas a febre da Reconstrução e a "adaptação ao crescimento" do pós-guerra abafaram essa mensagem.

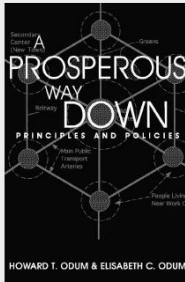
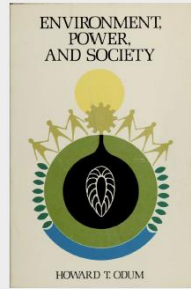
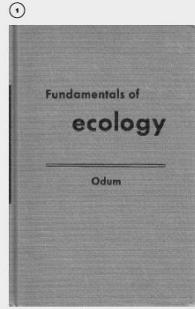
Environmental concerns did not suddenly appear in the 1960s. Throughout the industrial era, several voices denounced the dead ends of industrial development, and the devastation of entire regions and colonies. But these were basically silenced by the pervasive dogmas of productivism, worshipped by both the champions of the free market and their Marxist opponents. In the 20th century, as this modernist cult became more and more dominant, major crises, such as the Great Depression, opened the first critiques, which found a powerful expression in the work of Lewis Mumford. In the wake of WWII and its nuclear ending, while some fostered this critique of the technological system, others started to formulate a "Land Ethic". But the reconstruction fever and the post-war "addiction to growth" covered up the message.

George Bataille, 1899, production of the magazine 'Le Dialecte', reproduction of an advertisement, La Découverte, 1914.

Essas linhas de crítica só se uniram na década de 1960 num movimento ambiental consciente. Dois livros de duas autoras, respectivamente dedicados ao urbanismo e à agricultura, desempenharam um papel crucial nesse despertar: *The Death and Life of Great American Cities* (1961), de Jane Jacobs, e *Silent Spring* (1962), de Rachel Carson, sem dúvida o livro mais influente de todos os tempos sobre este campo. Nos anos seguintes, muitos cientistas documentaram os aspectos interrelacionados do problema ambiental, enquanto outros questionaram os próprios programas das instituições e investigação científicas. Se bem que a maioria dessas denúncias previu as crises da vida, alguns delas argumentaram os seus argumentos a partir do campo da economia: Nicholas Georgescu-Roegen, particularmente veraz em questões agrárias, demonstrou que nenhum raciocínio económico consciente poderia ignorar a segunda Lei da Termodinâmica.

Only in the 1960s did these threads of critique coalesce into a conscious environmental movement. Two books by women authors, respectively devoted to urbanism and agriculture, played a crucial role in this awakening: Jane Jacobs's *The Death and Life of Great American Cities* (1961) and Rachel Carson's *Silent Spring* (1962), arguably the most influential book ever written in the field. In the following years, many scientists documented the interrelated aspects of the environmental predicament, while others questioned the very programs of scientific research and institutions. If most of these whistleblowers came from life sciences, some launched their arguments from within the field of economics: Nicholas Georgescu-Roegen, who was particularly well-versed in agrarian issues, demonstrated that no sound economic reasoning could ignore the second law of Thermodynamics.





- 1 **Fundamentals of Ecology**,
Howard T. Odum, 1983.
Prentice-Hall, Englewood Cliffs, NJ, 1977 (4th ed., 1983).
- 2 **Environment, Power, and Society**,
Howard T. Odum, 1983.
Prentice-Hall, Englewood Cliffs, NJ, 1977 (4th ed., 1983).
- 3 **A Prosperous Way Down**,
Howard T. Odum & Elisabeth C. Odum, 2002.
- 4 **Modelo de princípios gerais de ecologia, fundamentos da ecologia**
em português brasileiro. *Model of the general principles of ecology*
in Portuguese. Englewood Cliffs, NJ, 1977 (4th ed., 1983).
- 5 **Modelo de princípios gerais de ecologia, fundamentos da ecologia**
em português brasileiro. *Model of the general principles of ecology*
in Portuguese. Englewood Cliffs, NJ, 1977 (4th ed., 1983).

A ECOLOGIA E OS SISTEMAS ENERGÉTICOS

Figura 1. Howard Odum,
Fundamentals of Ecology,
Baltimore, 1983.

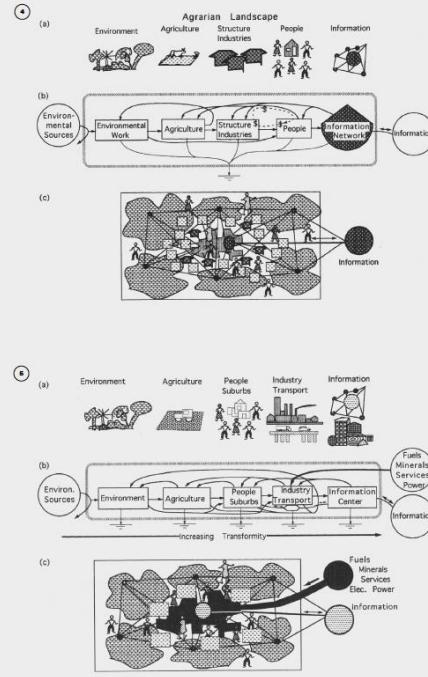
Howard T. Odum, *Environment,
Power and Society*, Wiley & Sons,
1977 (4th ed., 1983).

Howard T. Odum & Elisabeth C. Odum,
*A Prosperous Way Down: Principles
and Policies*, John Wiley & Sons,
2002.

Nas últimas décadas do século XIX, a ecologia emergiu lentamente, para além da fisiologia e da morfologia, como uma importante subárea da biologia, e foi enquadrada como a "filosofia da natureza viva". Mas tarde, ao desenvolver-se a própria ecologia, ecossistemas, modelos e hierarquias (ecofora, biomas, ecossistemas, etc.) e ao incorporar elementos da química mineral, energética e dinâmica de sistemas, a ecologia estabeleceu-se finalmente como uma disciplina científica por si própria. Depois do trabalho pioneiro do botânico Arthur Tansley ou dos biólogos George Evelyn Hutchinson e Raymond Lindeman, foram cruciais as contribuições de Eugene e Howard Odum.

Enquanto Eugene Odum se fez notar rapidamente como uma grande autoridade no campo, Howard Odum, seguindo uma abordagem "macroscópica" baseada na teoria dos sistemas, desenvolveu toda uma nova ecologia dos ecossistemas. Em *Environment, Power and Society* (1971), ele modelou os fluxos, faixas e hierarquias de energia em toda a biosfera, chamando a atenção para a termodinâmica em ação na natureza e na sua concentração humana, na agricultura, comércio, indústria, urbanismo e informação.

Assim, durante três décadas, enquanto aperfeiçoava a sua linguagem de sistemas energéticos (*emerges*) e abria terreno para vários campos de pesquisa, como a economia e a engenharia ecológica, Odum mostrou que a era industrial enfrentaria, mais cedo ou mais tarde, o problema da redução energética, e que garantir "a prosperous way down", um declínio progressivo, exigiria uma reavaliação e reorganização drásticas das sociedades, economias e territórios.



ECOLOGY AND SYSTEM'S ENERGETICS

In the last decades of the 19th century, ecology slowly emerged, alongside physiology and morphology, as one of the major subbranches of biology and was framed as the "philosophy of living nature". Still later, as it developed its own concepts, scales and hierarchies (ecofore, biomes, ecosystems, etc.) and incorporated elements from mineral chemistry, energetics and system's dynamics, ecology was finally established as a genuine science and discipline. After the pioneering work of botanist Arthur Tansley and limnologists George Evelyn Hutchinson and Raymond Lindeman, crucial were the contributions of Eugene and Howard Odum.

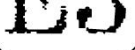
Whereas Eugene Odum soon emerged as a major authority in the field, Howard Odum, pursuing a macroscopic approach based on systems theory, famously developing a whole energetics of ecosystems. In *Environment, Power and Society* (1971), he thus modelled the flows, phases and hierarchies of energy throughout the biosphere, drawing attention to the thermodynamics at work in nature and in its human concentration in agriculture, commerce, industry urbanism and information.

Thus, and for three decades, while refining his energy systems language (*emerges*) and laying the ground for several research fields such as ecological economics and engineering, Odum demonstrated that the industrial era would sooner or later face the predicament of energy descent, and that securing a "prosperous way down" required a rather drastic rethinking and reorganization of societies, economies and territories.

Figura 2. Howard Odum,
Fundamentals of Ecology,
Baltimore, 1983.

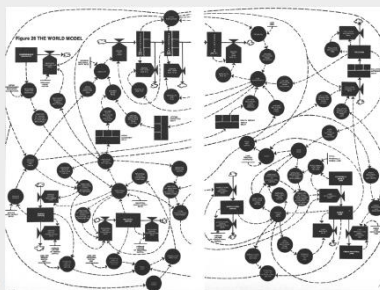
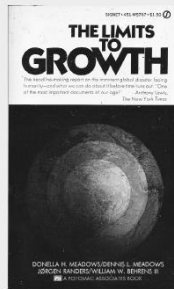
Howard T. Odum, *Environment,
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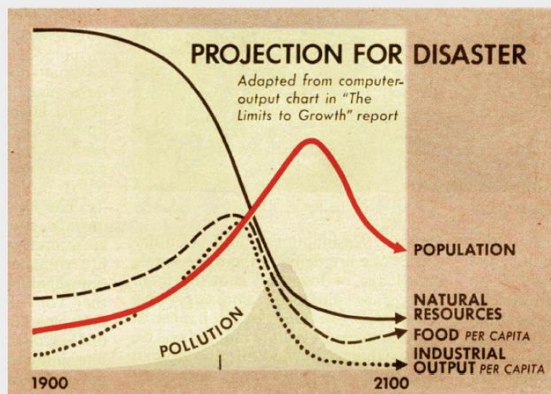


1972: THE LIMITS TO GROWTH

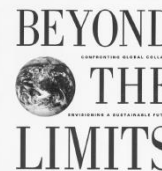
1972: THE LIMITS TO GROWTH



- 1 The Limits to Growth, Dennis L. Meadows, J. Randers, & William W. Behrens II, Harper & Row, New York, NY, 1972
- 2 Modeling the economy, a world, by J. Foray, The Club of Rome, 1975
- 3 A study on the impact of the world population / and how far we are approaching the limits, by Dennis L. Meadows, J. Randers, & William W. Behrens II, The Club of Rome, 1975
- 4 A report for the Club of Rome, by Dennis L. Meadows, J. Randers, & William W. Behrens II, The Club of Rome, 1975
- 5 A study on the impact of the world population / and how far we are approaching the limits, by Dennis L. Meadows, J. Randers, & William W. Behrens II, The Club of Rome, 1975



"Beyond the Limits is a book of stunning intelligence"
—BARRY LYONS



Special anniversary edition: THE LIMITS TO GROWTH
DENNIS L. MEADOWS, J. RANDERS, J. BEHRENS II

A DINÂMICA DE SISTEMAS VS. A DOXA ECONOMISTA

SYSTEMS DYNAMICS VERSUS ECONOMIST DOXA

Dennis L. Meadows, J. Randers, & William W. Behrens II, The Limits to Growth: A Report for the Club of Rome of the Limits to Global Growth, 1972.

D.L. Meadows, J. Randers, & W.W. Behrens II, The Limits to Growth: A Report for the Club of Rome, 1972.

D.L. Meadows, J. Randers, & W.W. Behrens II, The Limits to Growth: A Report for the Club of Rome, 1972.

No final dos anos 1960, o Clube de Roma, um grupo de administradores industriais, cientistas e altos funcionários que partilhavam preocupações com o envolvimento do mundo, encomendou um relatório sobre a "problemática mundial" ao Laboratório de Dinâmica de Sistemas do MIT. A equipa de investigação, liderada por Dennis Meadows, revelou dados mundiais sobre população, demografia, economia, recursos naturais, alimentos per capita, produção industrial, poluição e degradação do meio ambiente e introduziu um modelo que, ao manter as suas interações desde 1900, poderia prever as tendências globais ao longo do século XXI e esboçar um resultado de diferentes cenários.

Em 1972, quando foram tornadas públicas no livro intitulado *The Limits to Growth*, os resultados consistiram num choque: o cenário "standard" anunciava um desrêgo a um colapso global que ocorreria na primeira metade do século XXI e os outros cenários mostravam que nenhuma política baseada em garantir apenas um dos parâmetros poderia evitar o colapso no período. Mesmo o cenário mais optimista (que dispunha as reservas estimadas de recursos-chave do como planeta) apenas atrasava o colapso em uma ou duas décadas (e por vezes). Por outras palavras, as principais lições do modelo foram: 1. que havia de facto "limites para o crescimento", que em breve se afirmariam globalmente; 2. que impedir esse colapso exigiria uma transição activa e holística (e não uma mera inovação tecnológica); e 3. que a stress no desenvolver dessa mudança comprometeria (e não anulava completamente) a capacidade da humanidade para lidar com esse problema.

Enquanto os economistas tradicionais imediatamente desmontaram a pesquisa como científica, irrelevante e irreverente, os seus autores sobram por produzir duas actualizações (em 1992 e 2004) que refinaram o modelo, confirmaram as suas conclusões e mostraram que, de acordo com as suas previsões iniciais, a economia global tinha, até à data, crescido muito "para além dos limites".

In the late 1960s, the Club of Rome, a group of industrial managers, scientists and senior officials who all shared concerns about the state of the world, commissioned a report on the "world problematic" to the MIT Lab of Systems Dynamics. The research team, led by Dennis Meadows, collected world data on essential parameters (demographics, consumption of natural resources, food per capita, industrial output, pollution and degradation of the environment) and fed them into a model which, mapping their interactions since 1900, could predict their global tendencies throughout the 21st century and scrutinise the outcome of different scenarios.

In 1972, when they were published in a book called *The Limits to Growth*, the public was shocked: the "standard run" scenario was heading towards a global collapse sometime in the first half of the 21st century, and the other scenarios showed that no policy focused on obeying just one parameter could stop society from hitting the wall. Even the most optimistic one, which doubled our planet's estimated reserves of natural resources, only delayed the collapse by one or two decades (and made it worse!). In other words, the main lessons of the model were: 1. that there were indeed "limits to growth" which would soon assert themselves globally; 2. that preventing this collapse required an active and holistic transition (not a mere technological fix); and 3. that delay in engaging this shift would compromise, if not prevent altogether, the ability of mankind to cope with this phenomenon.

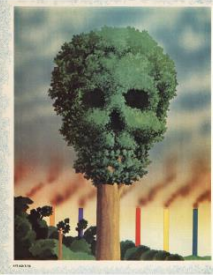
Whereas mainstream economists immediately dismissed the research as scientific, interventionist and irrelevant, the authors eventually produced two updates (in 1992, and 2004) which refined their model, confirmed their conclusions, and showed that, in line with their initial predictions, global economy had now grown well "beyond the limits".



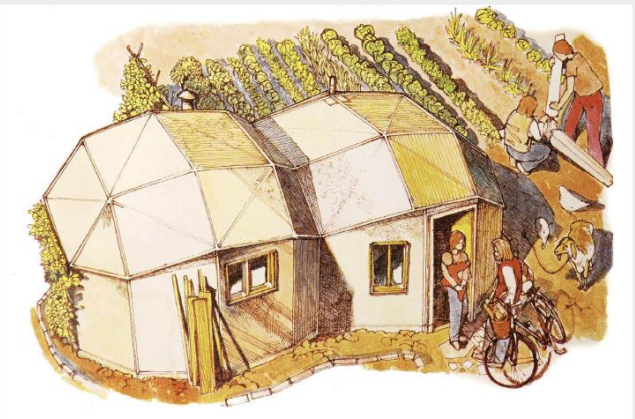
"BEYOND INDUSTRIAL TECHNOLOGY"

"BEYOND INDUSTRIAL TECHNOLOGY"

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Published by Architectural Design, Volume 39, Number 1, July 1973. © Architectural Design, London 1973.
 Published by Architectural Design, Volume 39, Number 1, July 1973. © Architectural Design, London 1973.



PARA UMA AGENDA ALTER-FUNCIONALISTA

Os textos apresentados aqui são de autoria de Oscar Niemeyer e foram publicados no livro 'Obras Completas de Oscar Niemeyer', Rio de Janeiro, 1973.

Em julho de 1973, a *Architectural Design* dedicou uma edição inteira ao tema: "Designing for Survival". O editor convidado era o jovem arquiteto Colin Moosercraft (n. 1947), cujo ensaio "beyond industrial technology" constituiu uma avaliação muito substancial dos efeitos nocivos da "Revolução Verde". A concepção de Moosercraft dirige-se contra a "simplificação". "Até ao surgimento da tecnologia industrial, os sistemas de superfície desta planície evoluíram continuamente a evoluir para uma forma mais complexa e natural. Nos invertemos essa tendência e desfazemos o trabalho de milhões. A simplificação e a estabilidade da atmosfera, hidrosfera e biosfera foram todos afetados negativamente". Na sua opinião, os factos high tech, mesmo o sonho de um futuro livre de trabalho graças aos robôs, ou a ecologia de colônias em sistemas fechados (à la Bucky Fuller) eram apenas becos sem saída. Era necessário pensar "muito além da tecnologia industrial" e minimizar a entropia, repondo a complexidade dos ecossistemas.

Moosercraft apresentou três princípios básicos: 1. Cooperação: "Cada elemento deve, sempre que possível, ser capaz de executar mais de uma função e, em contrapartida, cada função deve ser executável de mais de uma maneira." 2. Integridade: estas tecnologias devem reduzir e retirar o máximo dos seus inputs e "externalidades", em vez de usar uma "definição" abstrata. 3. Flexibilidade: estas técnicas devem ser leves, compreensíveis e adaptáveis, para que possam "responder a uma variedade extrema de situações sociais". Por outras palavras, estes sistemas tinham muito a ver (e muito a aprender) com os saberes e práticas vernáculos que a revolução industrial e a Revolução Verde tinham erradicado.

Este poderoso ensaio apelou a uma espécie de alter-funcionalismo que, modelado em sistemas naturais e não industriais, contrastava fortemente com a ideia funcionalista. Dizer que os pontos de vista de Moosercraft não tiveram muita influência no meio arquitetónico, seria subestimar os de forma grosseira. Felizmente, eles não se perderam numa outra geração de designers...

TOWARDS AN ALTERFUNCTIONALIST AGENDA

Os textos apresentados aqui são de autoria de Oscar Niemeyer e foram publicados no livro 'Obras Completas de Oscar Niemeyer', Rio de Janeiro, 1973.

In July 1973, *Architectural Design* devoted an entire issue to the theme: "Designing for Survival". The guest editor was young architect Colin Moosercraft (b. 1947), whose title essay was a very substantial assessment of the deleterious effects the "Green Revolution". Moosercraft's charge was against "simplification". "Until the rise of industrial technology the surface systems of this planet were continuously evolving into more complex and more stable forms. We have reversed that trend and in a few decades have undone the work of millennia. The complexity and stability of the atmosphere, hydrosphere and biosphere have all been adversely affected". In his view, high tech factories such as the dream of a future freed from labour by robots, or the cabin ecology of closed systems (à la Bucky Fuller), were just dead ends. What was needed was to think "beyond industrial technology" and minimise entropy by emulating the complexity of ecosystems.

Moosercraft advanced three basic principles: 1. Cooperation: "Each element should, wherever possible, be capable of performing more than one function and conversely by each function should be performable in more than one way"; 2. Integrity: those technologies should track and cycle the maximum of their inputs and "externalities", instead of aiming at some abstract "efficiency"; and 3. Flexibility: those techniques were to be light, understandable and adaptable so that they could "respond to an extreme variety of social situations". In other words, those systems had a lot to do with (and a lot to learn from) the vernacular knowledges and practices that the Industrial and the Green revolutions had eradicated.

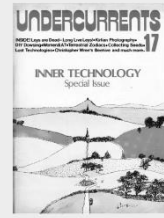
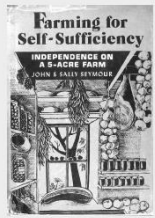
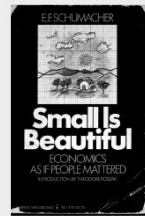
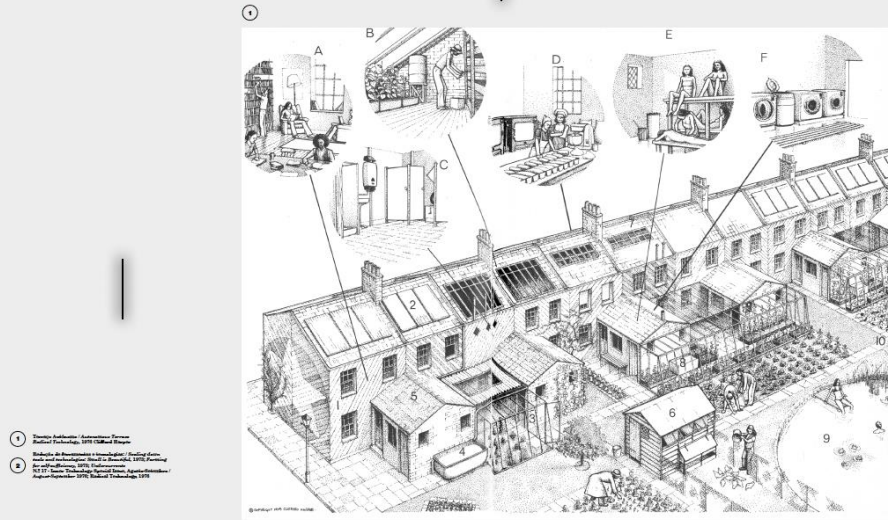
What this powerful essay pleaded for was a kind of alter-functionalism which, modelled on natural rather than industrial systems, stood in sharp contrast to the functionalist dream. To say that Moosercraft's views did not have much influence on the architectural milieu would be a gross understatement. Fortunately, they were not lost on another breed of designers...

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SMALL IS
BEAUTIFUL

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SMALL IS
BEAUTIFUL



TECNOLOGIAS INTERMÉDIAS,
ALTERNATIVAS OU RADICAIS

Walter Duggon, *Designer for the Real World: Human Ecology and Social Change*, Boston Books, 1971.

Nas décadas de 1960 e 1970, as evidências das crises ambiental e energética levaram a questionar os objetivos, sonhos e dilemas da tecnologia moderna (bem como as suas consequências sociais e políticas). A mais influente neste campo foi o famoso *Small Is Beautiful* (1973), de Ernst Friedrich Schumacher. Contra os sistemas de produção em massa, que privilegiavam "o homem produtor" sobre "o homem consumidor" e minavam as estruturas sociais locais, "descomprometendo" as pessoas, Schumacher aplica a tecnologia "apropriada" ou "intermédia": métodos e equipamentos mais modestos, que conduzem à auto-suficiência e a uma "economia de permanência", por serem "1. suficientemente baratos para serem adotados e produzidos localmente; 2. adequados a uma aplicação em pequena escala; e 3. compatíveis com as necessidades criativas do homem."

Se esta crítica à tecnologia e reavaliação das culturas vernáculas já abocavaram fortes ecos na esfera do design, o início da década de 1970 viu florescer os esforços coletivos, mais politicamente envolvidos na busca da auto-suficiência e da autonomia. A mais exemplar é a publicação de autores que contribuíam para *Undercurrents*, a "revista de ciência e tecnologia alternativa", lançada em 1972 pelos astrônomos galácticos Geoffrey Boyle e Peter Harper, e mais tarde para o impressionante volume editado pelos mesmos: *Radical Technology* (1976), que cobre todos os campos, desde o Alimento: Higiênis e Ferramentas-Materiais, Cerveja-Comunidade e Autonomia-Comunidade. "Até que ponto a autonomia econômica e de recursos pode ser assumida em pequena escala...? A autonomia beneficia apenas aqueles que a conservam ou poderá beneficiar a sociedade como um todo? E se toda gente é financeira?"

INTERMEDIATE, ALTERNATIVE
OR RADICAL TECHNOLOGIES

In the 1960s and 1970s, evidence of the environmental and energy crises led to a questioning of the goals, needs and dynamics of modern technology, as well as its social and political consequences. Most influential in this respect was Ernst Friedrich Schumacher's famous *Small Is Beautiful* (1973). Against mass production systems which privileged "man the producer" over "man the consumer", and undermined local social structures, making people "dislocated", he pleaded for "appropriate" or "intermediate" technologies: wiser methods and equipment, conducive to self-reliance and an "economy of permanence" by being "1. Cheap enough so that they are accessible to virtually everyone; 2. Suitable for small-scale application; and 3. Compatible with man's need for creativity."

If this critique of technology and re-evaluation of vernacular cultures, had already strong echoes in the sphere of design, the early 1970s saw a blossoming of collective endeavors, more politically engaged in the quest for self-sufficiency and autonomy. Most exemplary is the nucleus of authors who contributed to *Undercurrents*, the "magazine of alternative science and technology" launched in 1972 by Welsh astronomer Geoffrey Boyle and Peter Harper, and eventually in the impressive compilation edited by the same: *Radical Technology* (1976), covering all the fields from "Food-Shelter" to "Tools-Materials and Autonomy-Community". "How far can economic and resource autonomy practically be taken on a small scale...? Does autonomy benefit only those who undertake it, or could it benefit society as a whole? What if everybody did it?"

Walter Duggon, *Designer for the Real World: Human Ecology and Social Change*, Boston Books, 1971.

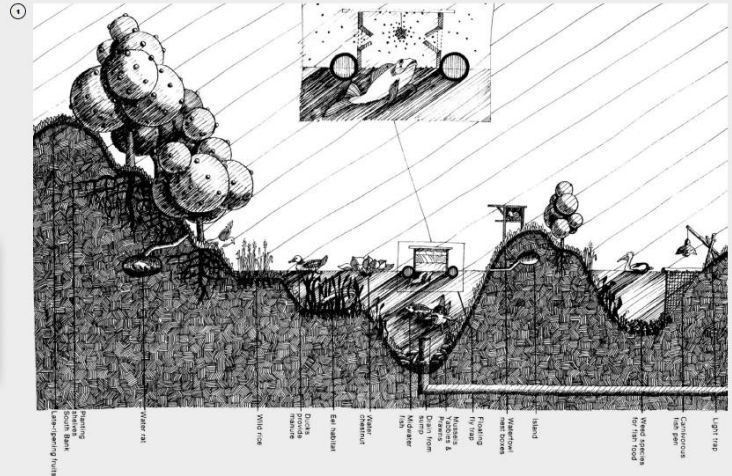
Ernst Friedrich Schumacher, *Small Is Beautiful: Economics as if People Mattered*, Boston Books, 1973.

Peter Harper and Geoffrey Boyle, *Radical Technology: The Design of Everyday Things*, Boston Books, 1976.

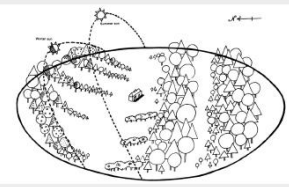
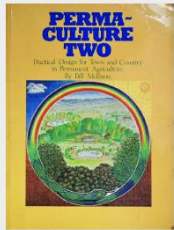
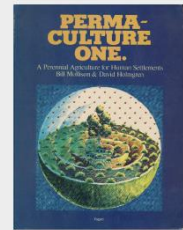
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1978: PERMACULTURE ONE

1978: PERMACULTURE ONE



- 1 Bill Mollison, *Permaculture One: A Handbook of Sustainable Agriculture*, Bantam Books, 1978.
- 2 Bill Mollison, *Permaculture Two: A Handbook of Sustainable Agriculture*, Bantam Books, 1978.
- 3 Bill Mollison, *Permaculture One: A Handbook of Sustainable Agriculture*, Bantam Books, 1978.
- 4 Bill Mollison, *Permaculture Two: A Handbook of Sustainable Agriculture*, Bantam Books, 1978.



UMA AGRICULTURA PERENE PARA O POVOAMENTO HUMANO

Bill Mollison & David Holmgren, *Permaculture One: A Handbook of Sustainable Agriculture*, Bantam Books, 1978.

A ideia da *permacultura* (contração de "agricultura permanente") foi fruto de uma intensa colaboração que teve lugar em Hobart, na Tasmânia, em meados dos anos 70, entre dois homens: Bill Mollison, uma figura original que evoluiu de pescador, caçador de coelhos, botânico, jardineiro, etc. a ecologista da vida selvagem, antes de estudar biogeografia em Hobart, onde ensinou a psicologia ambiental, e David Holmgren, um jovem muito jovem que, mesmo por experimentos, formou relações de articulação a agricultura com a ecologia e a arquitetura paisagista, tendo acabado de se matricular no novo programa de Design Ambiental de Hobart.

Em suma, a *permacultura* foi explicitamente concebida como uma abordagem do design para a jardinagem de subsistência, permitindo que as famílias em as comunidades tratassem localmente o problema ambiental, criando locais auto-sustentáveis que suprissem as suas necessidades básicas. Sendo uma das mais consistentes propostas dos princípios alter-funcionalistas de Mollison, o seu objetivo era empregar as pessoas para se tornarem designers multifunção (arquitetos e jardineiros) de seus ecossistemas multifunção e transferir o seu modo de vida numa arte de resiliência e auto-suficiência relativa, modelada a partir de ecossistemas florestais perenes. O que estava em jogo era o desenvolvimento de "planagens projetadas ecologicamente que imitem os padrões e as relações encontradas na natureza, que forneçam uma abundância de alimentos, fibras e energia para cumprir as necessidades locais".

Efektivamente, ao aplicar o pensamento do design à jardinagem de subsistência e à auto-suficiência local, a *permacultura* estava a questionar radicalmente a racionalidade do planeamento moderno e a reformular os princípios da arquitetura.

A PERENNIAL AGRICULTURE FOR HUMAN SETTLEMENTS

Bill Mollison & David Holmgren, *Permaculture One: A Handbook of Sustainable Agriculture*, Bantam Books, 1978.

The idea of *permaculture* (a contraction of "permanent agriculture") was the fruit of an intense collaboration that took place at Hobart, Tasmania, in the mid 1970s, between two men: Bill Mollison, an original figure who had evolved from fisherman, rabbit-hunter, bushman and lumberjack to wildlife ecologist before studying biogeography at Hobart where he subsequently taught environmental psychology and David Holmgren, a very focused young man who, eager to experiment radical ways of articulating agriculture, ecology and landscape architecture, had just enrolled in Hobart's new program of Environmental Design.

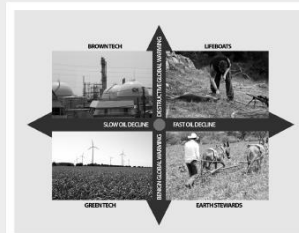
In a nutshell, *permaculture* was explicitly conceived as a design approach to subsistence gardening, enabling households or communities to locally address the environmental predicament locally by stewarding self-sustaining sites providing for their basic needs. A most consistent implementation of Mollison's alter-functional principles, its aim was to empower people to become the conscious and responsible designers (architects and gardeners) of the multipurpose ecosystems, and turn their mode of living into an art of resilience and relative self-sufficiency modelled on perennial forest ecosystems. What was at stake was to evolve "ecologically designed landscapes which mimic the patterns and relationships found in nature, while yielding an abundance of food, fibers and energy for provision of local needs."

Indeed, by applying design thinking to subsistence gardening and local self-sufficiency, *permaculture* was radically questioning the rationality of modern planning and reformulating the principles of architecture.

2008: FUTURE SCENARIOS

2008: FUTURE SCENARIOS

1



2

UMA BÚSSOLA ÚTIL PARA NAVEGAR NO SÉCULO XXI

David Holmgren, Futuro Escenario
para o Século XXI
de David Holmgren e Bruce
Cohen, 2008.

A relevância política da permacultura para além da escala doméstica é frequentemente questionada. Com efeito, os permacultores são mais conhecidos do que "indignados". Mas isso não prevén de nenhum "estilo interno" e as contribuições de Holmgren para se entender o contexto mais amplo são bastante exemplares. O seu *Future Scenarios* (2008) contrasta 4 visões do futuro: *Techno-explosion* (novas fontes de energia densa, conquista de espaço), *Techno-stability* (desenvolvimento sustentável, paz social), *Collapse* (uma deterioração e colapso no sobrevívimento) e *Descent* (uma sucessão de crises e estabilidades, desmoronando progressivamente a era industrial). Como *Inter-persona* de Odum, Holmgren vê *Descent*, o declínio, como a mais plausível, provavelmente amplificada pela interação de dois processos: o Fim do Petróleo e as Alterações Climáticas.

Uma vez que cada um desses processos se pode desenvolver lenta ou rapidamente, isso abre quatro possíveis cenários a médio prazo: 1. *Brown-Tech* (redução energética lenta / alterações climáticas graves), que conduz a um forte intervencionismo estatal; 2. *Green-Tech* (redução energética lenta / alterações climáticas suaves), que permite uma transição planeada rumo ao "desenvolvimento sustentável"; 3. *Earth-Steward* (redução energética grave / alterações climáticas suaves), que conduz ao estado urbano e à realidade local; e 4. *Lifebots* (redução energética rápida e alterações climáticas graves), que causa uma regressão das grandes organizações sociais para uma constelação de tribos, bandos e senhores feudais concorrentes.

Na opinião de Holmgren, estes cenários não são mutuamente exclusivos: podem desenvolver-se próximos uns dos outros ou até mesmo dentro uns dos outros. Também estão dinamicamente ligados: enquanto o *Green-Tech*, mais cedo ou mais tarde, se transforma em *Earth-Steward*, é também provável que o *Brown-Tech* se quebre e dê lugar ao *Lifebots*. Daí o ponto de vista de Holmgren: a permacultura corresponde ao cenário *Earth-Steward*, mas também será relevante ao *Green-Tech* e, provavelmente, a forma mais esperançosa de antecipar uma idade das trevas dos *Lifebots*.

A USEFUL COMPASS FOR NAVIGATING THE XXIST CENTURY

David Holmgren, Future Scenarios
for the XXIst Century
of David Holmgren and Bruce
Cohen, 2008.

Permaculture's political relevance beyond the domestic scale is often questioned. Indeed, permaculturists are more known than "indignants". But this does not prevent from some kind of internal style and Holmgren's contributions to the understanding of the wider context are quite exemplary. His *Future Scenarios* (2008) contrasts four views of the future: *Techno-explosion* (new sources of dense energy space conquest), *Techno-stability* (sustainable development, solar peace), *Collapse* (a degripping into survivalism), and *Descent* (a succession of crises and plateaus progressively unwinding the industrial era). A keen reader of Odum, Holmgren sees *Descent* as the most plausible, and likely to be driven by the interaction of two processes: peak oil and climate change.

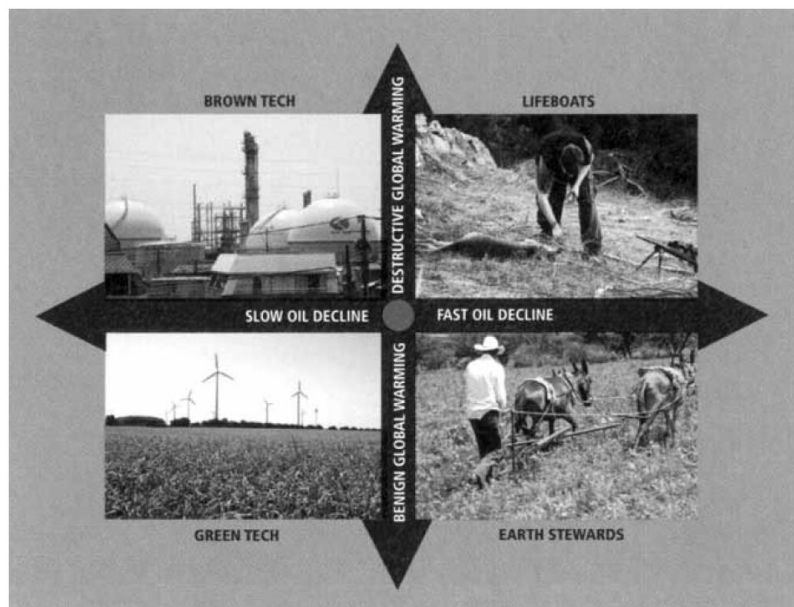
Since each of those two processes may unfold either slowly or rapidly, this opens up four possible mid-term scenarios: 1. *Brown-Tech* - slow energy descent and severe climate change, leading to strong state interventionism; 2. *Green-Tech* - slow energy descent and mild climate change which allows a planned transition towards "sustainable development"; 3. *Earth-Steward* - severe energy descent and mild climate change which is conducive to urban enclaves and local realisms; and 4. *Lifebots* - fast energy descent and severe climate change which is causing a devolution of large social organisations into a constellation of competing tribes, gangs and feudal lords.

In Holmgren's view, these scenarios are not mutually exclusive: they may well develop next to one another or even within one another. They are also dynamically linked: while *Green-Tech* would sooner or later morph into *Earth-Steward*, it is likely that *Brown-Tech* would finally explode into *Lifebots*. Hence Holmgren's point: if permaculture corresponds to the *Earth-Steward* scenario, it is also relevant to the *Green-Tech*, and probably the most hopeful way of anticipating a dark age of *Lifebots*.

- 1. Holmgren, David, Futuro Escenario para o Século XXI, de David Holmgren e Bruce Cohen, 2008.
- 2. Permaculture: Principles and Practice into the 21st Century, David Holmgren, 2002.

Scénarios de descente

DAVID HOLMGREN



Les quatre scénarios mondiaux de changement climatique et de descente énergétique.

La planification par scénarios

L'approche systémique du futur de la descente énergétique peut être poussée plus loin en recourant à un modèle de prévision par scénarios croisant deux variables fondamentales qui, largement indépendantes l'une de l'autre, génèrent quatre scénarios, chacun occupant l'un des quadrants d'un diagramme conceptuel. Ces scénarios sont des récits plausibles et intrinsèquement cohérents sur le futur qui peuvent aider les organisations et les individus à développer, dans un contexte foncièrement imprévisible, une grande faculté d'adaptation.

Dans la planification par scénario qu'adoptent classiquement les entreprises, les deux variables pourraient être le taux de croissance de l'économie en général et le cadre réglementaire qui contraint ou encourage les affaires. Mais c'est le recours que fit la Shell Oil Company à la planification par scénarios qui rendit la méthode fameuse. Avant les crises du pétrole, l'entreprise avait utilisé la planification par scénarios pour repérer tout un éventail de scénarios susceptibles de menacer la compagnie, y compris l'éventualité d'un embargo sur le pétrole. Grâce à l'analyse des indicateurs et des conséquences, l'entreprise fut capable de réagir rapidement et proactivement à la crise, et plus efficacement que les autres compagnies pétrolières.

Le changement climatique et le déclin de la production pétrolière

BROWN TECH



DESTRUCTIVE GLOBAL WARMING

LIFEBOATS



SLOW OIL DECLINE



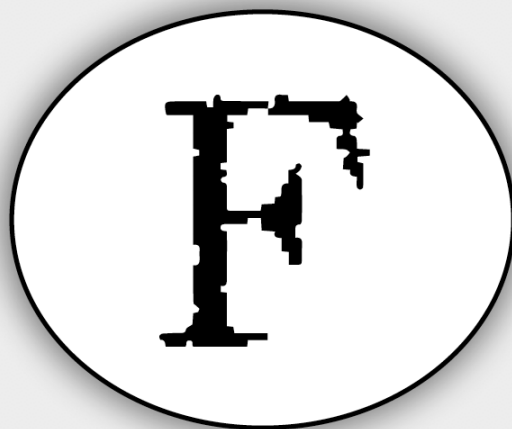
BENIGN GLOBAL WARMING

FAST OIL DECLINE



GREEN TECH

EARTH STEWARDS



REENQUADRAMENTO DA PRÁTICA E TEORIA DO DESIGN

Onde o visitante consciente, ao rever as principais preocupações da permacultura – poupar esforço e energia (*utilitas*), aumentar a resiliência (*firmitas*) e gerir mundos (*venustas*) – é levado a pensar se os seus proponentes não terão desenvolvido a teoria do design mais consistente desde Vitruvius e Alberti e o desafio mais combativo à alegada racionalidade presente nas esferas da agricultura, arquitectura e urbanismo de hoje.

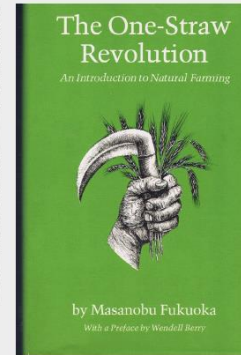
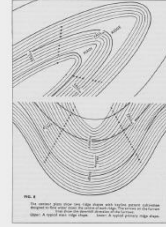
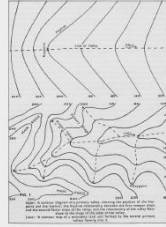
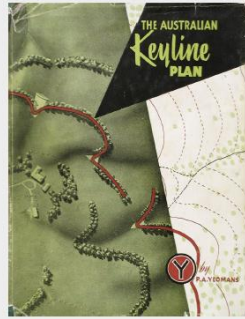
REFRAMING THE PRACTICE AND THEORY OF DESIGN

Where the mindful visitor, reviewing the main concerns of permaculture – sparing efforts and energy (*utilitas*), increasing resilience (*firmitas*) and managing worlds (*venustas*) – is led to wonder whether its proponents might not have evolved the most consistent theory of design since Vitruvius and Alberti, and the fiercest challenge to the alleged rationality at work in the spheres of agriculture, architecture and urbanism today.

OS PRINCIPAIS ANTECEDENTES

1 1

MAJOR PRECEDENTS



2

1 The design of the Keyline Plan (Perennial Design)

2 An outline of the system of Perennial with perennial, with soil profile

3 An outline of the system of Perennial with perennial, with soil profile

4 An outline of the system of Perennial with perennial, with soil profile

5 An outline of the system of Perennial with perennial, with soil profile

6 An outline of the system of Perennial with perennial, with soil profile

3

O DESIGN KEYLINE E A AGRICULTURA NATURAL

Alfred Perennial Systems
The Keyline Plan, White & Dahl, 1954.

Alfred Perennial Systems, The City
Farm, Keyline Publications, 1971.
Masanobu Fukuoka, The One-Straw Revolution, 1978 (1986 second),
Doubleday, Perseus, 1978.

Entre os principais antecedentes da permacultura a existência deia particularmente sig-
nificativos:

O primeiro é o método Keyline, desenvolvido na década de 1950 pelo criador de gado
australiano P. A. Yeomans. Centrado na retenção da água e na observação da erosão do
solo, o Keyline visa ao bom aproveitamento das terras agrícolas através do ajuste de 8 "se-
ções de permeabilidade": 1. clima; 2. configuração do terreno; 3. abastecimento de água;
4. estradas; 5. árvores; 6. edifícios permanentes; 7. cercas subdivisórias; 8. solo.
Aplicando a horticultura resiliente, Mollien e Holmgren melhoraram esta grade-
ção substituindo "sistemas de plantas" por "árvores" e adicionando a noção de "mi-
croclimas". Com efeito, a permacultura é a arte de gerir paisagens de microclimas ao ar
livre: a agricultura de um ambiente bem afiado.

O segundo é a agricultura natural de Masanobu Fukuoka. Enquanto jovem microbió-
logo, Fukuoka investigava doenças de plantas quando a percepção de que a cul-
tura era essencialmente reducionista o levou a retirar-se para uma pequena quinta
(um pomar de tangerinas e mais laranjas de arvore), onde aperfeiçoou uma filosofia de
"sem-ferramenta" baseada em 4 princípios: sem arar, sem usar fertilizantes nem
adubo preparado, sem levante nem herbicidas (mas envolvendo as ervas daninhas
na construção da fertilidade do solo) e sem produtos químicos. Em suma, Fukuoka
desenvolveu um calendário de agrupamento e rotação de plantas (arroz, trevo e ce-
veda), em que cada uma funcionava como húmus para as outras, e formas orgânicas
de aperfeiçoar técnicas tradicionais simples, como a sementeira (envolvendo as
sementes em barro para evitar que fossem diluídas pelo pássaros).

Um rebus para a permacultura: projetar paisagens produtivas... imitando a ergo-
nomia da natureza.

KEYLINE PLAN AND NATURAL AGRICULTURE

Among permaculture's main precedents, two are particularly significant:

The first one is the Keyline method developed in the 1950s by Australian stock breed-
er P. A. Yeomans. Focused on holding water and checking soil erosion, Keyline saw
good farmland as defined by the fitting of eight "scales of permanence": climate,
landform, water supply, roads, trees, permanent buildings, sub-divisional fences,
and soil. Tuning it to resilient horticulture, Mollien and Holmgren improved this
gradient by substituting "plant systems" to "trees", and by adding the notion of "mi-
croclimates". Indeed, permaculture is the art of managing palettes of microclimates
in the open: an agriculture of the well-tempered environment.

The second one is Masanobu Fukuoka's natural agriculture. A young microbiologist,
Fukuoka was doing research on plant diseases when the realization that someone was
essentially reductionist led him to retire on a small farm in mountainous grove and an
acre of rice field, where he perfected a "do-nothing" philosophy based on four prin-
ciples: no ploughing, no fertilizers nor prepared compost, no tillage or herbicides.
Just an orchard of weeds in building soil fertility, and no otherwise. In a nutshell,
Fukuoka evolved a calendar of plant associations and rotations (rice, clover and bar-
ley) where each acted as mulch for the others, and ingenious ways of perfecting sim-
ple traditional techniques such as broadcasting by rolling seeds in clay so as to avoid
them being picked by birds.

A rebus for permaculture: designing productive landscapes by emulating the ergo-
nomics of nature.

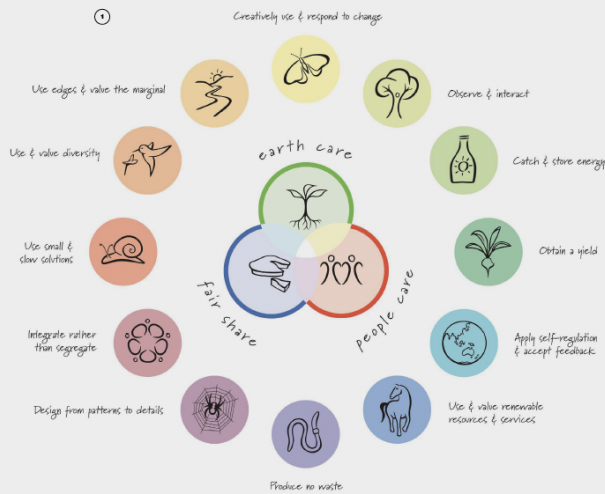
Alfred Perennial Systems
The Keyline Plan, White & Dahl, 1954.

Alfred Perennial Systems, The City
Farm, Keyline Publications, 1971.
Masanobu Fukuoka, The One-
Straw Revolution, 1978 (1986 second),
Doubleday, Perseus, 1978.

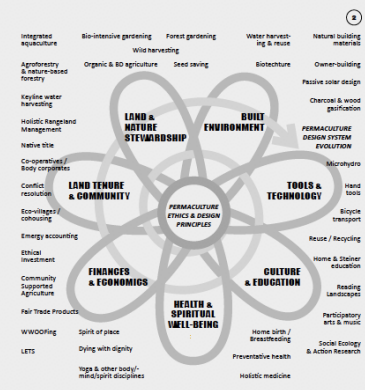
1 1

PRINCÍPIOS DE ÉTICA E DESIGN

ETHIC AND DESIGN PRINCIPLES



1. Permaculture Ethics & Design Principles (David Holmgren, 1985)
2. The Ethical Basis of Permaculture (David Holmgren, 1985)



UMA FILOSOFIA ABRANGENTE DE RESILIÊNCIA LOCAL

A COMPREHENSIVE PHILOSOPHY OF LOCAL RESILIENCE

David Holmgren's Permaculture Ethics and Design Principles (David Holmgren, 1985)

David Holmgren não apenas co-criou o conceito de permacultura. Vinte e cinco anos depois, ao fornecer uma visão geral dos princípios de ética e design subjacentes à sua prática, também equipou a permacultura com uma filosofia abrangente e estruturada "para além da sustentabilidade", como a arte de negociar a relação energética que agora vivemos. Holmgren resume a estrutura e a abrangência dessa filosofia prática em dois diagramas estruturais:

1. Três princípios éticos – Cuidar da Terra, Cuidar das Pessoas e Família Justa – formam o núcleo de uma estrutura de cinco princípios de design que detalham claramente os preceitos básicos de uma sabedoria prática para uma gestão resiliente da terra. O núcleo incomparável dessa figura monumental é, assim, direcionado a sua teoria de design para os desafios de uma ética que incorpora o aproveitamento da terra e seus componentes não-humanos: um desafio que enfrenta e produzirá à teoria arquitetônica sustentada por ela.
2. A flor da permacultura ilustra, de uma forma tipicamente em espiral e holística, a relevância desses princípios em todos os princípios onipotes de aspo: o campo biológico (terra e gestão da natureza), onde o conceito de permacultura nasceu; o campo de construção (edifícios, ferramentas e tecnologia) imediatamente adjacente; e o campo comportamental, que conecta cultura à educação, saúde, economia e posse da terra à governança da comunidade.

Os designers profissionais que usam a complexidade como desculpa para a indefinição estética provavelmente desmontarão estes diagramas como mandalas reducionistas... um sinal seguro, ou a sua essência como barômetros do mínimo comum na arquitetura e urbanismo de hoje.

David Holmgren's Permaculture Ethics and Design Principles (David Holmgren, 1985)

David Holmgren did not just co-originate the concept of permaculture. Twenty-five years later, by providing an overview of the ethics and design principles underlying the practice, he also equipped permaculture with a comprehensive philosophy and framed it, "beyond sustainability", as an art of negotiating the condition of energy descent which is now ours. Holmgren sums up the structure and scope of this practical philosophy in two structural diagrams:

1. Three ethical principles – Care for the Earth, Care for the People and Fair Share – form the core of a root window of twelve design principles clearly distilling the basic precepts of a practical wisdom for a resilient land stewardship. The incomparable core of this monumental figure is thus to great design theory onto the margins of an ethics that explicitly incorporates the land and its non-human components: an ingenious and powerful challenge to so-called architectural theory.
2. The permaculture flower illustrates, in a typically spiralling and holistic way, the overall relevance of those principles in all major fields of action: the biological field (land and nature stewardship) where the concept of permaculture originated, the built field (buildings, tools and technology) immediately adjacent; and the behavioural field comprising culture & education, health, economics, and land tenure & community governance.

Professional designers who brandish complexity as an excuse for aesthetic chairiness will probably dismiss these diagrams as reductionist mandalas... a sure sign of their essentialism as stereoscopes to sound the common opinions of architecture and urbanism today.

UMA ESPECIFICIDADE LOCAL RADICAL

A RADICAL SITE-SPECIFICITY



“TRABALHAR COM O QUE JÁ LÁ ESTÁ”

*Patrick Whitefield, Permaculture
in a Radical, Permaculture Publications,
1978.*

*David Holmgren, Willbrosen, Willbrosen
Permaculture Institute, San Francisco
Publications, 1978.*

*Patrick Whitefield, The Earth Care
Manual of Permaculture Handbook
for Schools and Other Institutions,
Greenleaf, Permaculture Publications,
2004.*

*Patrick Whitefield, How to Read
the Landscapes, Permaculture
Publications, 2010.*

Se o núcleo dos princípios de ética e design de Holmgren sintetiza perfeitamente a filosofia prática da permacultura, pode-se também capturar o seu espírito em quatro propósitos poéticos.

Em consonância com o primeiro princípio de Holmgren (“Observe and Interact”), o primeiro desses propósitos é uma abordagem ao design com uma especificidade local radical. Patrick Whitefield, um permacultor britânico que fez muito para transpor os princípios da permacultura para climas temperados, coloca muita ênfase nessa questão nas linhas iniciais de seu *Earth Care Manual* (2011): “A essência da permacultura é trabalhar com o que já lá está: em primeiro lugar, para preservar o que é melhor; em segundo lugar, para melhorar o que lá está; e, finalmente, para introduzir novas coisas. Esta é uma abordagem de baixa energia, operando minimum changes para um efeito máximo, trabalhando em cooperação tanto com forças naturais quanto com as comunidades humanas. As soluções não serão apenas diferentes da região para região, mas de uma localidade para outra perto dela e até mesmo de uma família para outra. Diferenças sutis de microclima, solo e vegetação são tidas em conta, assim como as diferenças entre as necessidades, preferências e estilos de vida de pessoas diferentes.”

Isso explica porque a permacultura não deve ser confundida com uma coleção de receitas (cintento elevada, etc.) ou padrões congelados semelhantes a mandalas. Por definição, os seus princípios de design são de alcance geral, mas devem ser transpostos para cada novo contexto. Como Don Palmer sublinha, a chave para “tornar a permacultura mais forte” é justamente observar e tirar partido das qualidades e histórias únicas de cada local.

“WORKING WITH WHAT IS ALREADY THERE”

If Holmgren's core window of ethical and design principles perfectly summarizes the practical philosophy of permaculture, one might also distill within it four poetic intentions.

In line with Holmgren's first principle (“Observe and Interact”), the first of these intentions is a radically site-specific approach to design. Patrick Whitefield, a British permaculturer who did much to transpose the principles of permaculture in temperate climates, puts much emphasis on this in the opening lines of his *Earth Care Manual* (2011): “The essence of permaculture is to work with what is already there: firstly, to preserve what is best, secondly to enhance what is there, and lastly to introduce new things. This is a low-energy approach, making minimum changes for maximum effect, working in cooperation with both natural forces and human communities. Not only will solutions be different from region to region but from one locality to the next and even from one household to the next. Subtle differences of microclimate, soil and vegetation are taken into account, and so are the differences between the needs, preferences and lifestyles of different people.”

This explains why permaculture should not be mistaken for a collection of recipes (raised beds, etc.) or frozen mandala-like patterns. By definition, its design principles are of general scope and must be transposed in each new context. As Don Palmer stresses a key to “making permaculture stronger” lies precisely in taking notice and advantage, of each site's unique qualities and histories.

1 *Patrick Whitefield, Permaculture in a Radical, Permaculture Publications, 1978.*

2 *David Holmgren, Willbrosen, Willbrosen Permaculture Institute, San Francisco Publications, 1978.*

3 *Patrick Whitefield, The Earth Care Manual of Permaculture Handbook for Schools and Other Institutions, Greenleaf, Permaculture Publications, 2004.*

4 *Patrick Whitefield, How to Read the Landscapes, Permaculture Publications, 2010.*

Patrick Whitefield, Permaculture in a Radical, Permaculture Publications, 1978.

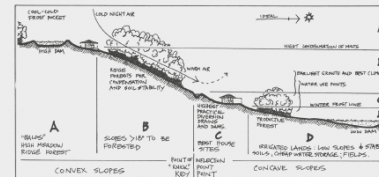
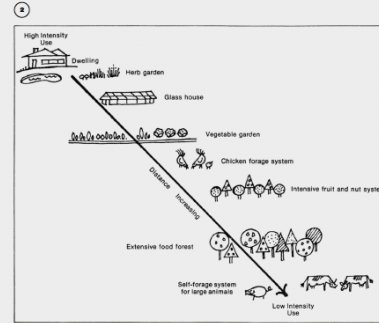
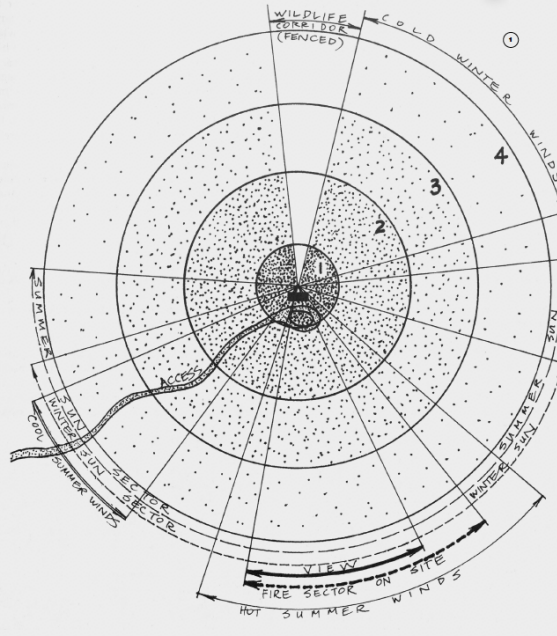
David Holmgren, Willbrosen, Willbrosen Permaculture Institute, San Francisco Publications, 1978.

Patrick Whitefield, The Earth Care Manual of Permaculture Handbook for Schools and Other Institutions, Greenleaf, Permaculture Publications, 2004.

Patrick Whitefield, How to Read the Landscapes, Permaculture Publications, 2010.

UMA REFORMULAÇÃO DO PLANEAMENTO LOCAL

A REFORMULATION OF SITE PLANNING



1. Uma representação simplificada de características de ventos que incluem frequência, intensidade e direção.
 2. Modelo de adaptação de Yon Tüman, 1966.
 3. Modelo de adaptação de Yon Tüman, 1966.
 4. Modelo de adaptação de Yon Tüman, 1966.

FIGURE 2. THE LANDSCAPE PROFILE.
 Slope analysis and site planning in relation to aspect largely decide the placement of access, water supply, forests, and cropland. Here we supply both access to a cool, humid region.

RUMO A UMA ERGONOMIA DO CUIDAR DA TERRA E SUA RESILIÊNCIA

TOWARDS AN ERGONOMICS OF EARTH CARE AND RESILIENCE

Yon Tüman, *Deconstructing Architecture*, Marcel, Tepey Publications, 1966.

Yon Tüman, *Introdução à Permacultura*, Tepey Publicações, 1991.

Uma intenção da permacultura é desenvolver uma abordagem "racional" e ergonômica ao planeamento local, de modo a minimizar tanto a energia quanto o trabalho "a curto e longo prazo". As suas ferramentas-chave de planeamento são as zonas, os setores e os declives.

A basic intention of permaculture is to evolve a rational and ergonomics approach to site planning so as to minimise both energy and labor in the long and short term. Its key planning tools are zones, sectors and slopes.

Yon Tüman, *Deconstructing Architecture*, Marcel, Tepey Publications, 1966.

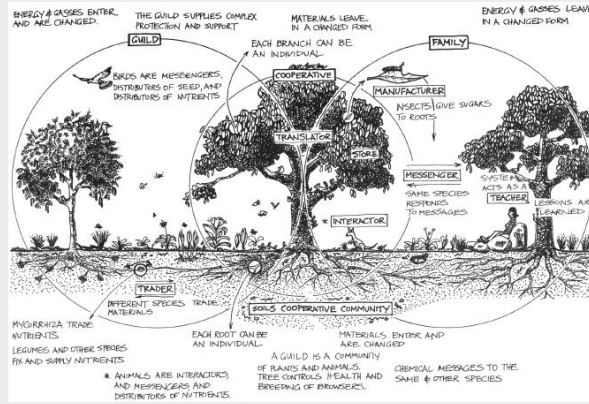
Yon Tüman, *Introdução à Permacultura*, Tepey Publicações, 1991.

- As zonas são uma adaptação do diagrama de Yon Tüman à escala local, o que requer mais atenção e cuidado deve ser colocado mais próximo do centro da atividade humana. A partir da própria casa (Zona 0), obtêm-se normalmente a seguinte gradiente: a horta (Zona 1), pomares, sequeiros de aves, abrigo para outros animais, oficinas e vegetais que requerem mais espaço (Zona 2), campos de cultivo de grande escala e pasto (Zona 3), pasto e floresta onde o valor dos rendimentos para uso humano é relativamente baixo (Zona 4) e finalmente "terra onde o interesse das plantas e dos animais selvagens supera o interesse humano" (Zona 5).
- Os setores registam as relações do local com as influências vindas de fora, como o vento, sol, cursos de água, poluição, vizinhos e vícios. "O princípio da sectorização é colocar as coisas de modo a que tenham a melhor relação com essas influências". Em grande medida, a sectorização ocorre-se em trabalhar com microclimas (e estruturas do solo) e tirar o melhor proveito da sua paleta.
- O planeamento em altura, "a forma de colocar as coisas em relação à configuração do terreno", é crucial para fazer o melhor uso possível da gravidade, num mundo de baixa energia. As encostas, a sua inclinação, formas e curvas, são cuidadosamente feitas em consideração ao declive ou ao local dos elementos e uso da quinta, de modo a evitar a erosão do solo, preparar esdorpes e gerir racionalmente o armazenamento e o curso de água.

- Zones are an adaptation of Yon Tüman's diagram at the local scale: whatever needs most attention and care should be placed nearest to the centre of human activity. Starting from the house itself (Zone 0), one would typically get the following gradient: the home garden (Zone 1), orchards, poultry runs, housing for other animals, workshops and outcrop vegetables which require more space (Zone 2), field-scale crops and pasture (Zone 3), rough grazing and woodland where the value of yields for humans use is relatively low (Zone 4), and finally "land where the interest of wild plants and animals take top priority" (Zone 5).
- Sectors register the relationships of the site with influences coming from outside, such as wind, sunbath, flows of water, pollution, neighbours and views. "The principle of sectoring is to place things so that they have the best relationship with those influences". To a great extent, sectoring occurs in working with microclimates (and soil structures) and taking the best advantage of their palette.
- Elevation planning: "a matter of placing things in relation to the landform", is crucial to make the best use of gravity in a world of low energy. Slopes, their gradient, shapes and curves, must be carefully taken into consideration when locating the elements and uses of the farm so as to avoid soil erosion, spare efforts, and wisely manage water storage and flow.

APROFUNDAR TERRITÓRIOS

DEEPENING TERRITORIES



- 1 *The polyculture system results in an ecological system that is self-sustaining and resilient.* **John Russell Smith, Tree Crops, A Permanent Agriculture Movement, Boston, U.S.A., 1929.**
- 2 *One of the difficulties with layers, however, is that the different species, with plants, animals and insects, are not always in the same plane.* **Patrick Whitefield, How to Make a Farm Garden, Perennials Publications, 1996.**
- 3 *Perennials and shrubs are the most important plants in a healthy garden.* **John Russell Smith, Tree Crops, A Permanent Agriculture Movement, Boston, U.S.A., 1929.**

UMA POLICULTURA MULTIDIMENSIONAL, VOLUMÉTRICA E EM CAMADAS

John Russell Smith, Tree Crops, A Permanent Agriculture Movement, Boston, U.S.A., 1929.
Patrick Whitefield, How to Make a Farm Garden, Perennials Publications, 1996.
Perkins and Charles McCor-Gregor, Perennials: Guide to Trees, Shrubs and Herbs, Arden Book, 1974.
Perkins and Charles McCor-Gregor, How to Grow and Use 100 Common Herbs and Spices, Arden Book, 1974.

A intenção mais profunda da permacultura é perfeitamente apreendida na noção de "design multidimensional" de Patrick Whitefield: "A maior parte da agricultura, ao que se vê, é virtualmente bidimensional, consistindo em campos de culturas de baixo crescimento. O estabelecimento introduz a terceira dimensão, a vertical, e a sucessão funciona com a quarta dimensão, o tempo, enquanto a estruturação acontece a partir de diferentes partes do sistema."

O modelo da permacultura não é o nívelamento bem arrumado das monoculturas, mas a complexidade volumétrica permeia da floresta. Por outra palavra, o planejamento local da permacultura não acontece apenas em dimensão horizontalmente o plano ou a superfície do local. É também, de forma mais importante, uma questão de desenvolver toda a sua complexidade, desde o sistema de raízes no subsolo até à atmosfera acima da copa, de modo a estimular a coexistência mais sinérgica de múltiplas espécies de plantas e animais ao longo de todo o solo das etapas: uma paleta densa e resiliente de nichos ecológicos interdependentes. Nesse sentido, a permacultura não constitui apenas uma semi-arquitetura, ou uma extrapolação do design arquitetônico para o campo alagado da agricultura; é uma coexistência articulada e uma distribuição em camadas de atmosferas frutíferas e microclimas. Inclui também uma superação significativa das limitações do urbanismo e do design urbano, resultando de crescente diálogo (e submissão) das referências dos organismos vivos não humanos.

As projetarem e gerirem os seus locais como policultura volumétrica e por níveis, ao longo de sucessões sucessivas, os permacultores estão claramente na vanguarda de que deveria ser agora a principal obsessão da arte: aprofundar territórios.

A MULTIDIMENSIONAL, VOLUMETRIC AND LAYERED POLY-CULTURE

Permaculture's deepest intention is perfectly captured by Patrick Whitefield's notion of "multi-dimensional design": "Most agriculture", he writes, "is virtually two-dimensional, consisting of low-growing field crops. Stacking introduces the third dimension, the vertical, succession works with the fourth dimension, time, while edge is about boundaries between different parts of the system."

Permaculture's model is not the neat flatness of monocultures, but the volumetric perennial complexity of the forest. In other words, permaculture's site planning does not merely consist in carefully designing the plan or surface of the site. It is also, more importantly, a matter of developing its whole section or depth, from the root system in the subsoil up to the aerial atmosphere of the canopy, so as to stimulate the most synergistic cohabitation of multiple plant and animal species all along the cycle of seasons: a dense and resilient palette of interesting ecological niches. In that sense, permaculture is not just a quasi-architecture, or an extrapolation of architectural design into the extended field of agriculture; no articulated cohabitation and layering of fruitful atmospheres and microclimates, it also entails a significant overcoming of the limitations of urbanism and urban design, which resulted from their growing divorce from (and subjection of) the spheres of non-human living organisms.

By designing and managing their sites as volumetric and storied polyculture, along courses of seasonal succession, permaculturists are clearly at the forefront of what should now be the major obsession of art: deepening territories.

John Russell Smith, Tree Crops, A Permanent Agriculture Movement, Boston, U.S.A., 1929.
Patrick Whitefield, How to Make a Farm Garden, Perennials Publications, 1996.
Perkins and Charles McCor-Gregor, Perennials: Guide to Trees, Shrubs and Herbs, Arden Book, 1974.
Perkins and Charles McCor-Gregor, How to Grow and Use 100 Common Herbs and Spices, Arden Book, 1974.

RECONSIDERAR O URBANISMO



RECONSIDERING URBANISM

4 MELLIODORA GOAT SYSTEM

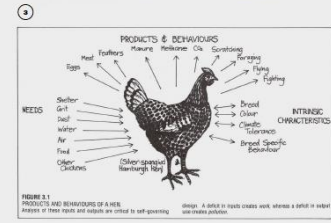
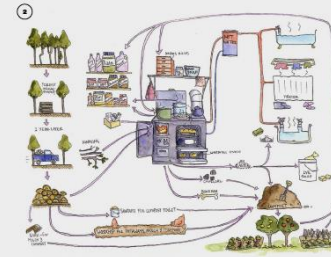
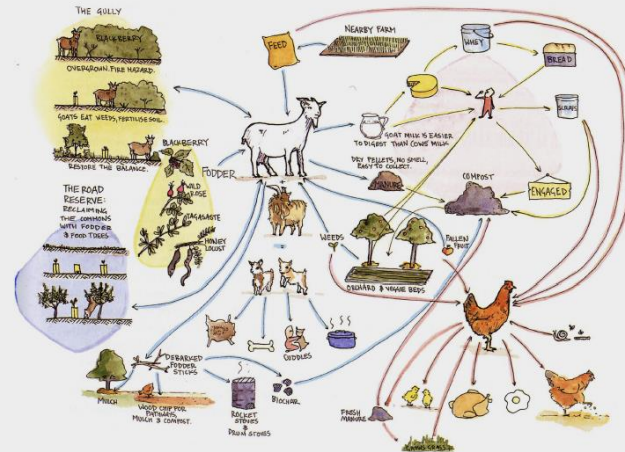


FIGURE 3.1 PRODUCTS AND BEHAVIOURS OF A CHICKEN. DESIGN: A CHICKEN IN HEALTH CHANGES WORK, WHETHER A CHICKEN IS HEALTHY OR NOT, AND HOW IT BEHAVES.

1. O sistema de cidade (The Urban System) by Roberto Burlemburg, 1928, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025.
2. O sistema de cidade (The Urban System) by Roberto Burlemburg, 1928, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025.
3. O sistema de cidade (The Urban System) by Roberto Burlemburg, 1928, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025.

RUMO A UMA PRÁTICA DE DESIGN ALTER-FUNCIONALISTA

Roberto Burlemburg, "O sistema de cidade"
do Acervo Burlemburgiano, 1928, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025.

No década de 1920, o grande mérito do funcionalismo foi afirmar que a racionalidade do design arquitetônico não podia ser inerte e do seu contexto histórico mais amplo. Avaliando as mudanças fundamentalistas promovidas por um século de revolução industrial, ele indicou a racionalidade da arquitetura e do urbanismo (a sua produção, uso e estética) nos símbolos, padrões e processos da indústria moderna.

Se o funcionalismo, na sua versão modernista, deve ser radicalmente questionado, não é por causa de sua celebração da função, mas principalmente por causa do seu modernismo, ou seja, do modelo maquinista, produtivista e industrial que escolheu imitar: um modelo que, por basear-se na sempre crescente disponibilidade de energia barata e densa (combustíveis fósseis), é hoje obviamente insustentável. Infelizmente, os arquitetos e urbanistas, tal como a maioria dos "especialistas" de hoje, ainda não ousam acreditar naquilo que sabem. Assim, eles não retiram as consequências do óbvio investigando outros tipos de racionalidade e sociedade.

Em contraste, a permacultura foi explicitamente desenvolvida como uma resposta racional ao problema ambiental e à situação de recursos energéticos que agora vivemos. Em vez dos princípios em funcionamento nos processos industriais (economia de escala, padronização, divisão de funções, etc.), ele esforça-se por imitar e aprender com os que operam nos ecossistemas naturais (como a cooperação, complementaridade, integração, resiliência, flexibilidade, etc.) e desenvolveu uma abordagem alter-funcionalista no design, ao qual, de fato, "cada elemento costuma várias funções e cada função é executada por vários elementos" (vd. E4).

TOWARDS AN ALTER-FUNCTIONALIST DESIGN PRACTICE

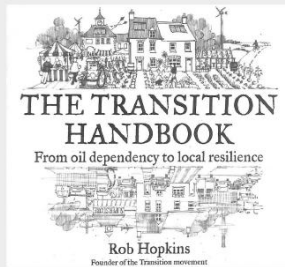
Book in the 1920s, the great merit of functionalism was to claim that the rationality of architectural design cannot be inerte to that of the larger historical context. Taking stock of the fundamental changes brought about by a century of industrial revolution, it indeed the rationality of architecture and urbanism (their production, use and aesthetics) on the symbols, standards and processes of modern industry.

If functionalism, in its Modernist version, must be radically questioned, it is not because of its celebration of function, but first and foremost because of its Modernism, i.e. because of the machine, productivity and industrialist model it chose to emulate: a model which, based as it is on the ever growing availability of cheap and dense energy (fossil fuels), is now obviously unsustainable. Unfortunately, architects and urbanists, like most "experts" nowadays, will do not dare believing in what they know. Hence, they do not draw the consequences of the obvious by actively investigating other kinds of rationality and society.

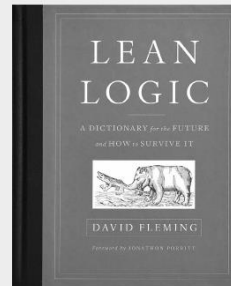
By contrast, permaculture has been explicitly developed as a rational response to the environmental predicament and the condition of energy descent which we now live. Instead of the principles at work in industrial processes (economies of scale, standardization, segregation of functions, etc.), it thus strives to emulate and learn from those which operate in natural ecosystems (such as cooperation, complementarity, integration, resilience, flexibility etc.), and has evolved an alter-functionalist approach to design where indeed each element performs several functions and each function is performed by several elements (see E4).

Roberto Burlemburg, "O sistema de cidade"
do Acervo Burlemburgiano, 1928, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025.

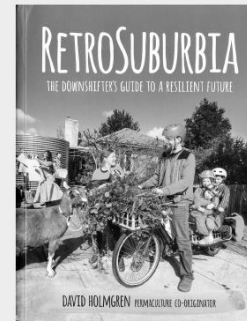




1



2



3



4

ABORDAGEM SENSATA EM VEZ DE RECEITAS SMART

Rob Hopkins, *The Transition Handbook: From Oil Dependency to Local Resilience*, Chelsea Green, 2009.
David Fleming, *Lean Logic, A Dictionary for the Future and How to Survive It*, Chelsea Green, 2012.
David Holmgren, *Retrosuburbia: A Downshifter's Guide to a Resilient Future*, Melbourne Publishing, 2010.

"Então a dizer que a permacultura tem a chave para alimentar os milhares de milhões que hoje se amontoam no nosso planeta e que se continuam a acumular nas cidades ou subúrbios por todo o lado? Sem ser realista! Não acreditamos!" Isto é o que os desmores permaculturas vão objectar: não acreditamos... Realmente, nem poderemos a permacultura não é um produto político, na verdade sem sequer é um plano ou uma estratégia, mas uma disciplina. A sua filosofia prática não pode ser adquirida, mas apenas experimentada por pessoas que preferem cuidar do seu espaço envolvente e das suas comunidades, em vez de comprar soluções globais. Em suma, a permacultura não é smart, um adjectivo que se tornou na marca distintiva de qualquer moda claramente insensata. Mas a permacultura não desconsidera os contextos em que a maioria das pessoas vive hoje. Na realidade, as formas de aumentar a auto-suficiência local das comunidades urbanas são objecto de importantes desenvolvimentos neste campo.

Um deles é o movimento Transition Town que Rob Hopkins (n. 1968) iniciou há quase duas décadas. Combinando os *Principles and Pathways* de Holmgren com as lições de David Fleming em *Lean Logic* para a reconstrução das comunidades locais, este movimento defende uma mudança de base para cima de neo-municipalismo, que está a ser iniciado num número crescente de cidades na Europa e noutros continentes.

Então o subúrbio, onde não se pode confiar num legado de padrões de espaço público e hábitos de vida comunitários? Este é o tópico de Holmgren no seu último livro, *Retrosuburbia*. Ilustrado por uma profusão de exemplos estranhos de experimentos locais por pioneiros da permacultura nos arredores de Melbourne, o livro sugere que os subúrbios típicos, muito mais do que densas metrópoles, podem muito bem ser locais férteis para o desenvolvimento de neo-comunidades incipientes...

WISE APPROACH, NOT SMART RECIPES

"Are you saying that permaculture holds the key to feeding the billions that now swarm on our planet and keep packing in cities or suburbs everywhere? Get real! We don't buy it!" This is what rationalist problem-solvers will object: they don't buy it... They actually can't: permaculture is no political commodity, indeed neither plan nor strategy, but discipline. It is a practical philosophy that cannot be acquired but may be trained by people in the habit of taking care of their surroundings and their communities, rather than buying in global solutions. In other words, permaculture is not smart, a word that has become the distinctive brand of every patently unwise fad. But permaculture does not disregard the contexts in which most people live today. Indeed, ways of increasing the local autonomy of urban communities are the subject of major developments in the field.

One of them is the Transition Town movement that Rob Hopkins (b. 1968) initiated almost two decades ago. Combining Holmgren's *Principles and Pathways* with Fleming's lessons in *Lean Logic* for the rebuilding of local communities, this movement advocates a bottom-up dynamism of neo-municipalism which is now being emulated in a growing number of towns in Europe and other continents.

But what about suburbia, where one can't rely on any legacy of public space patterns and communal living habits? Such is Holmgren's topic in his last book, *Retrosuburbia*. Illustrated by a bounty of examples drawn from local experiments led by permaculture pioneers in the Melbourne Area, the book suggests that typical suburbs, much more than dense metropolises, might well be fertile breeding grounds for incipient neo-communities...

1 The Transition Handbook, Rob Hopkins, 2009

2 Lean Logic of Dictionary for the Future and How to Survive It, David Fleming, 2012

3 Retrosuburbia, David Holmgren, 2010

4 One of the authors' photos of a permaculture site, used with the permission of James Lovelock Publishing, 2012

LEAN LOGIC

A DICTIONARY *for the* FUTURE
and HOW *to* SURVIVE IT



DAVID FLEMING

Foreword by JONATHON PORRITT

CLIMACTERIC



David Fleming
(1940-2010)

British author and environmentalist, in *Lean Logic: A Dictionary of the Future and How to Survive It*, 2018.
British author and environmentalist.

A stage in the life of a system in which it is especially exposed to a profound change in health or fortune... Climacterics for human society could be taken to include the end of the last ice age, and the beginnings of agriculture and of industry...

The climacteric here considered is the convergence of events which can be expected in the period 2010-2040: deep deficits in energy, water and food, along with climate change, a shrinking land area as the seas rise, and heat, drought and storm affecting the land that remains... acidic oceans which neither provide food nor remove carbon, the failure of keystone species such as bees and plankton; and the depletion of minerals, including the phosphates on which we depend for a fertile soil.

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This could be followed by economic and social fracture, taking law and order with it, and the breakdown of education systems able to pass on the essentials of culture and competence...

Lean Logic argues that community holds out at least a possibility of supporting presence, social cohesion, economic realism, shared cultural depth – and survival... The climacteric could be one of those rare historical turning points when society switches into a new mode of production – a radically different way of using its resource; its labour, capital and land – changing its expectations and values.

The shift could be partly voluntary and partly an involuntary reaction to circumstances. Potentially, this could be an opportunity, for it is at such turning points that it is practical to make deep, radical breakthroughs,

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before new conditions settle in which we can do little to change. We do not know, of course: the climacteric may be so severe that opportunity is the last thing on anyone's mind; this hinge of history may turn out to be just dust and grief, but if rational judgement is to be savaged from the depths where it has lain for so long, the coming climacteric could be the moment for it...

The question to consider is not whether the crash will happen, but how to develop the skills, will and resources necessary to recapture the initiative and build the resilient sequel to our present society. It will be the decentralised, low-impact human ecology which has always taken the human story forward from the closing down of civilisations: small-scale community, closed-loop systems, and a strong culture.

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RENOVATION

ANALYSIS OF THE
ENVIRONMENTAL IMPACT
OF URBAN DEVELOPMENT

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SECESSÃO

"O PAÍS CONSTITUÍDO E O PAÍS REAL"

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