

Urbi & Orbi

Faut-il (se) préparer (à) un exode urbain ?

Sébastien Marot

ICEB Café
20/5/2026



Sébastien Marot

PRENDRE LA CLEF DES CHAMPS

Agriculture et architecture

W

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Paris-Est







“L’architecture est,
après l’agriculture,
le premier et le plus utile des arts.”

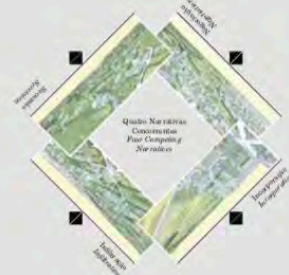
Claude Jacques Toussaint, *Traité de géométrie et d’architecture*, Paris 1811.



Timeline



F
E
D
C
B
A



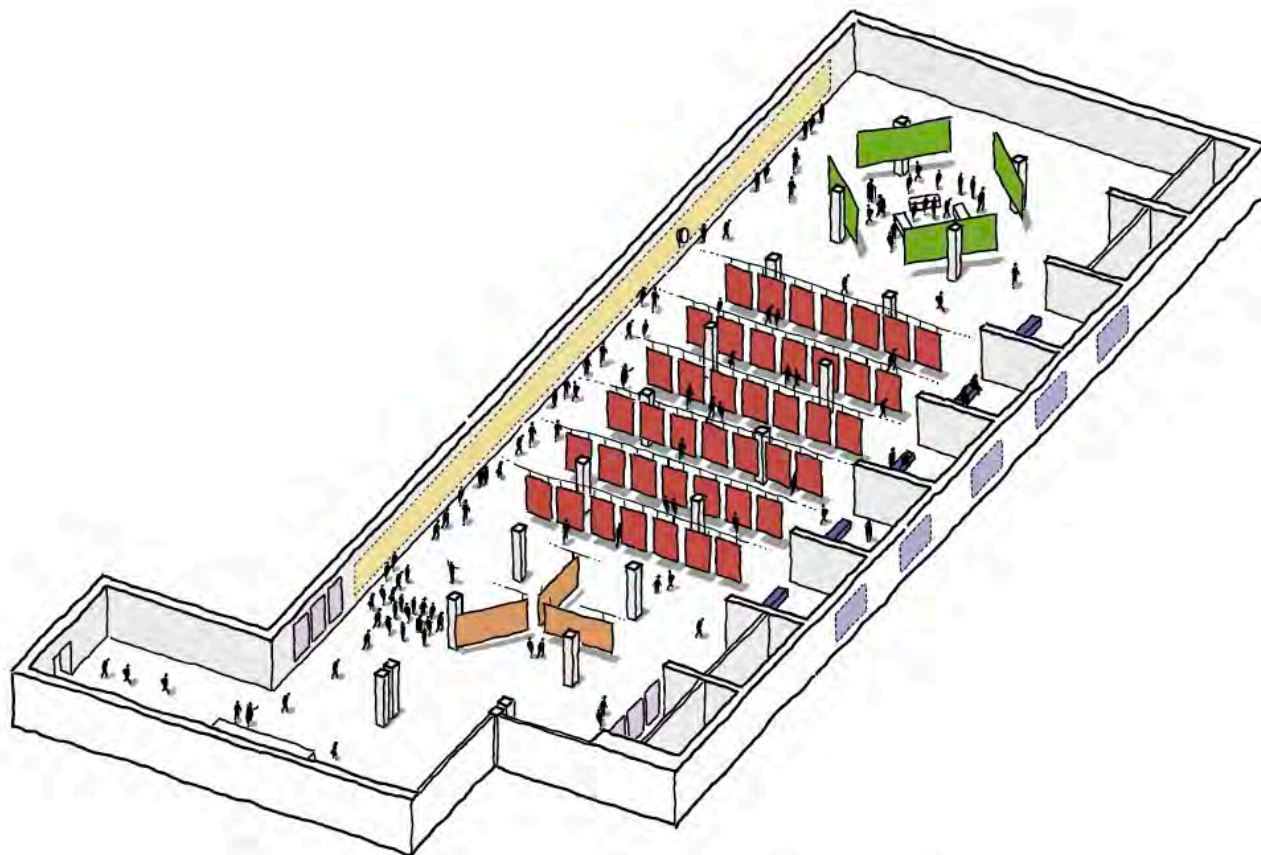
Salas de video
Video room
5
Experiencias
en la arquitectura
Experiencias
Experiencias

Salas de video
Video room
4
Concepciones
Concepciones

Salas de video
Video room
3
Problemas
Ambiental
Experiencias
Problemas

Salas de video
Video room
2
Problemas
Problemas

Salas de video
Video room
1
Reflexiones
Aplicaciones
Aplicaciones
Montaje



Scénographie présentée au Garagem Sul, Lisbonne
octobre 2019 - février 2020 © Gaëtan AMOSSÉ

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A AGRICULTURE ET ARCHITECTURE

Homo domesticus
Sublimation
Coincidence
Villa suburbana
Agritecture
Autosuffisance
Intégration ?

B AGRICULTURE ET URBANISME

La révolution urbaine
Mundus
Imago mundi
Modèle d'occupation des sols
La nature au marché
Urbanisme
Urbanisme agricole ?

C DE L'AGRONOMIE À L'AGROÉCOLOGIE

Un hobby pour les élites urbaines
Plantations et enclosures
De l'alchimie à la chimie
De la guerre au champ de bataille de l'industrialisation
Get big or get out
Agriculture permanente et biologique
Au-delà de l'agriculture industrielle

D EXIT URBS

Zomia
Monastères
Anarchisme et localisme
Ruralisme
Think little
« Travailleurs de tous les pays, dispersez-vous »
Devenir indigène

E AFFRONTER L'IMPASSE ÉCOLOGIQUE

A Blueprint for Survival
Descente énergétique
1972 : *Les Limites à la croissance*
Au-delà de la technologie industrielle
Small is Beautiful
1978 : *Permaculture One*
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F RECADRER LA PRATIQUE ET LA THÉORIE DU PROJET

Grands précédents
Principes éthiques et principes de conception
Un situationnisme radical
Une reformulation des principes de l'aménagement des sites
Approfondir les territoires
Repenser l'urbanisme
Suburbanisme ?

G CONTRE-EXODE ?

Karl Marx et l'accumulation primitive du capital
Rosa Luxemburg
Ivan Illich
Maria Mies
Sorciers ?
Vandana Shiva
« Reprendre la terre aux machines »

H BIORÉGIONS

Iroquoia
Regional survey
Quatrième migration
Le chant du monde
Réhabilitation
Vers des biorégions urbaines polycentriques ?
Un mundo donde quepan muchos mundos



A10

AUTO-SUFICIÊNCIA / SELF-SUFFICIENCY

Diagram illustrating a self-sufficient urban layout, showing a grid of blocks with internal circulation and local facilities. The diagram includes a central green space and a network of pedestrian paths.

A10

A17

INTEGRAÇÃO? / INTEGRATION?

Diagram illustrating a complex urban layout, showing a mix of residential and commercial blocks. The diagram includes a central green space and a network of pedestrian paths.

A17

B1

AGRICULTURAL URBANISM

Diagram illustrating a layout that integrates agricultural spaces with urban development. The diagram shows a central green space with surrounding residential blocks and a network of pedestrian paths.

B1





IO DOMESTICUS

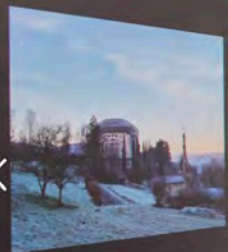
SUBLIMATION

COINCIDENCE

VILLA SUBURBANA

AGRITECTURE

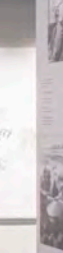
SELF-SUFFI



BRICKLARK INDUSTRIAL
Gas holder, Brixley House, 1912



BRICKLARK INDUSTRIAL
Gas holder, Brixley House, 1912



PERMANENT AND ORGANIC AGRICULTURE



ALBERT HENRIKSEN
AGRICULTURAL TESTAMENT

AN AGRICULTURAL TESTAMENT

THE SOIL and HEALTH

Qu'est-ce qu'un monde ?

Introduction

Le monde est un concept complexe et multiforme. Il peut désigner l'ensemble de la création, l'humanité, un territoire géographique, ou encore un univers imaginaire. Cette notion a évolué au fil du temps, influencée par les découvertes scientifiques, les transformations sociales et les représentations artistiques. Dans ce document, nous explorons les différentes facettes du monde, de sa définition philosophique à ses représentations picturales, en passant par son rôle dans la culture et la littérature.

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Page 1 sur 1





Homo domesticus

Le projet de la maison de la ville de Paris, 1920-1930.

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Sublimation

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Le projet de la maison de la ville de Paris, 1920-1930.

Coincidence

Le projet de la maison de la ville de Paris, 1920-1930.

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Villa suburbana

Le projet de la maison de la ville de Paris, 1920-1930.

Le projet de la maison de la ville de Paris, 1920-1930.

Le projet de la maison de la ville de Paris, 1920-1930.

Agriculture

Le projet de la maison de la ville de Paris, 1920-1930.

Le projet de la maison de la ville de Paris, 1920-1930.

Le projet de la maison de la ville de Paris, 1920-1930.

Auto-suffisance

Le projet de la maison de la ville de Paris, 1920-1930.

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Agriculture
&
architecture

Où le visiteur
découvre
que ces deux pratiques

ont évolué de conserve

depuis les premiers
commencements de l'agriculture

jusqu'à nos jours
entre elles, l'architecture
reste la reine

et que la ville
est le lieu de leur rencontre





PALEOLITHIQUE

PALEOLITHIQUE

SHELLSTRIPIES TORRENSIS, NORD

ANTHROPUS ANATOLICUS

ANTHROPUS ANATOLICUS

ANTHROPUS ANATOLICUS

ANTHROPUS ANATOLICUS

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ANTHROPUS ANATOLICUS

ANTHROPUS ANATOLICUS









UNE FRISE CHRONOLOGIQUE ILLUSTRÉE DE L'HISTOIRE ENVIRONNEMENTALE

-WORK IN PROGRESS-

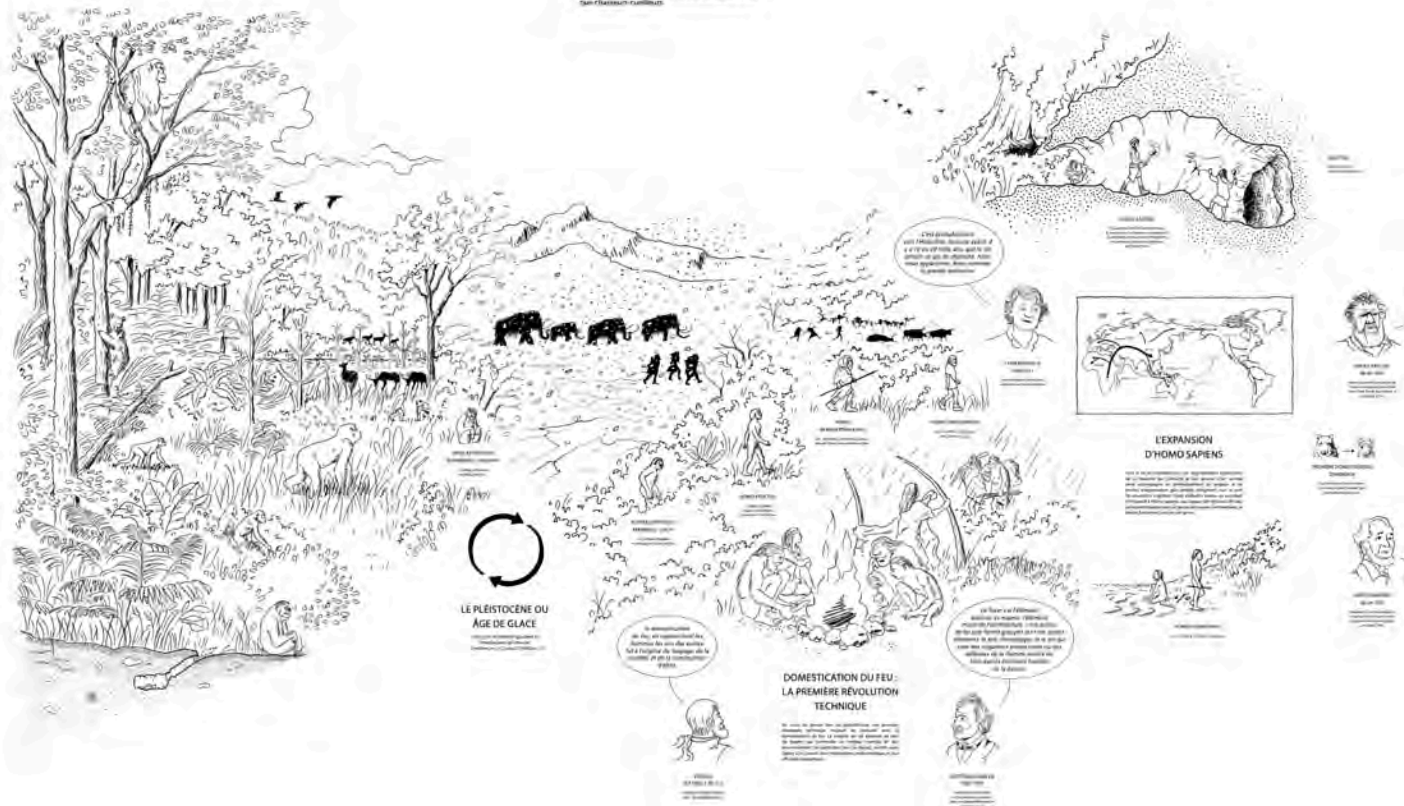
La fresque de trente mètres ici présentée s'efforce de synthétiser les événements marquants et les principales révolutions techniques qui se sont produits depuis la fin de la période paléolithique, et à travers lesquels les sociétés humaines ont progressivement aggravé leurs pressions sur la biosphère. Son intention est de fournir aux visiteurs une sorte d'arrière-plan ou de canevas général qui leur permette de situer dans l'histoire les sujets plus spécifiques qui sont traités dans les différents panneaux de l'exposition.

Une telle synthèse est bien entendu un exercice risqué, nécessairement biaisé par la myopie de ceux qui l'entreprennent. Nous avons cependant jugé que le jeu en valait la chandelle, ne serait-ce que pour rendre notre cadre de référence culturel aussi explicite que possible.

Soucieux de développer et d'améliorer cette fresque, nous invitons les visiteurs à nous faire part de leurs remarques, réactions, critiques ou suggestions. Et nous remercions par avance ceux qui prendront la peine de nous les écrire dans le cahier ci-dessous. Elles seront toutes lues avec beaucoup d'attention.

PALÉOLITHIQUE

Une période longue de près de 3 millions d'années, qui débute à peu près avec le Pléistocène (ou l'âge de glace) et s'achève à la fin du Paléolithique, avec le début d'œuvres d'art rupestres. Elle est caractérisée par l'apparition progressive de l'homme moderne, qui augmentent progressivement leur efficacité en tant que chasseurs-cueilleurs.



[RÉVOLUTION] NÉOLITHIQUE

Vers - 9000 des groupes d'humains du Croissant fertile commencent à sélectionner et élever consciemment des convertisseurs énergétiques végétaux et animaux, et à se sédentariser de façon permanente. En quelques millénaires seulement, d'autres foyers de pratiques agricoles apparaissent, indépendamment les uns des autres, dans différentes régions du monde.

GROTTES
Premiers sites neolithiques connus



PLAN CIRCULAIRE
Les installations sont construites autour d'un puits central, souvent en pierre, qui sert de point de rassemblement et de stockage.



ANGLES DROITS
Les villages sont construits autour d'un puits central, souvent en pierre, qui sert de point de rassemblement et de stockage.

Les sociétés humaines préagricoles ne se résument pas à de petits clans égaux. Elles étaient un camp de formes politiques. L'agriculture, elle, n'a pas marqué une étape irréversible dans la marche vers l'indépendance. Quant aux toutes premières villes, elles étaient étonnamment nombreuses à fonctionner sur des principes résolument égalitaires.



DAVID GRAEBER
1961-2020
Anthropologue et historien américain, spécialiste des sociétés préhistoriques.

Plutôt que celle des origines de l'indépendance, la grande question à poser à l'histoire de l'humanité devrait être : comment avons-nous pu nous laisser enfermer dans une réalité sociale monolithique qui a normalisé les rapports fondés sur la violence et la domination ?



VERE GORDON CHILDE
1892-1957
Archéologue britannique et historien, spécialiste des sociétés préhistoriques.

Des groupes d'humains développent des pratiques de culture qui modifient profondément leur régime énergétique et leur façon de vivre. Ce phénomène encourage la sédentarisation et la croissance démographique.



GOTTFRIED SEMPER
1803-1879
Architecte allemand, théoricien de l'architecture.



Les différentes habiletés techniques de l'homme se développent et s'organisent autour de ces éléments : la céramique, et plus tard la métallurgie autour du foyer, les travaux hydrauliques et la maçonnerie autour du sol, la menuiserie et l'art du charpentier autour du toit et de ses accessoires... et l'art des parois, c'est à dire du toitage et de la tapisserie, autour de l'enveloppe.

Mais rien n'indique que la vie citadine à elle seule ait jamais impliqué une quelconque forme particulière d'organisation politique... Les mégasites d'Uster ou de Malsbühl par exemple, plus anciens et plus étendus que les premiers cités mésopotamiennes, et dépourvus de royaumes, témoignent que de vastes sociétés purent s'organiser sans peser sur leurs occupants et sans engendrer de violence despotique.



DAVID GRAEBER
1961-2020
Anthropologue et historien américain, spécialiste des sociétés préhistoriques.



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1961-2020
Anthropologue et historien américain, spécialiste des sociétés préhistoriques.



BRUCE PASCOE
1961-2020
Historien australien, spécialiste de l'histoire des autochtones.

Les aborigènes d'Australie gèrent leurs paysages et leur environnement, notamment au moyen de feux maîtrisés, bien avant que la soi-disant révolution néolithique ne se produise dans le Croissant fertile.



MÉSOLITHIQUE

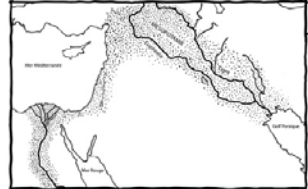
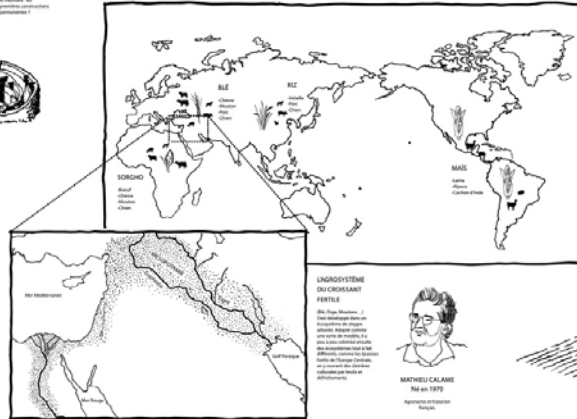
DE - 30 000 A - 10 000 SELON LES RÉGIONS

Période de transition durant laquelle des groupes de chasseurs-cueilleurs commencent à utiliser leurs techniques de cueillette, à gérer leurs occupations, leur territoire et leur territoire, et à développer des installations semi-permanentes.



-12 000 : FIN DU PLÉISTOCÈNE ET DÉBUT DE L'Holocène

Reconstruction climatique - 12 000 ans, montrant la fin du dernier âge glaciaire.



LIÉGÈRE

Le liège est un produit naturel qui sert de matériau de construction et de revêtement.



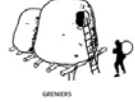
MATHEU CALAIS
1961-2020
Architecte français, spécialiste de l'architecture.



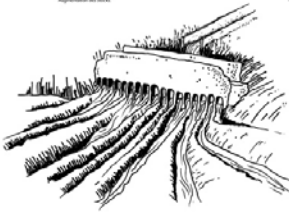
CAPTER LE VENT
Les bateaux à voile sont utilisés pour transporter les marchandises.



MONNAIE
Les monnaies sont utilisées pour échanger les marchandises.



GREENS
Les verts sont utilisés pour la construction et la décoration.



BERGATION / ORANGE
Les oranges sont utilisées pour la construction et la décoration.



KARL A. WITTOGEL
1896-1986
Historien allemand, spécialiste de l'histoire des civilisations.



A1

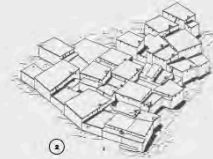
COÉVOLUTION

L'agriculture et l'architecture entrent en synergie comme les deux ailes complémentaires d'un avion. L'agriculture permet de nourrir les sociétés, tandis que l'architecture permet de les organiser.

HOMO DOMESTICUS

A1

HOMO DOMESTICUS



- 1 Plano e vista de (Wild) Neolithic settlements, illustrating the layout of a Neolithic settlement.
- 2 Plano e vista de (Wild) Neolithic settlements, illustrating the layout of a Neolithic settlement.
- 3 Plano e vista de (Wild) Neolithic settlements, illustrating the layout of a Neolithic settlement.
- 4 Plano e vista de (Wild) Neolithic settlements, illustrating the layout of a Neolithic settlement.
- 5 Plano e vista de (Wild) Neolithic settlements, illustrating the layout of a Neolithic settlement.

AS IRMÃS GÊMEAS DO DOMUS COMPLEX DO NEOLÍTICO

Reverend. Edward. The Church of the Holy Trinity, London, 1800.

James. The Church of the Holy Trinity, London, 1800.

James. The Church of the Holy Trinity, London, 1800.

James. The Church of the Holy Trinity, London, 1800.

A grande da arquitetura e da agricultura remonta à chamada "revolução" neolítica, inicialmente definida como o período em que grupos de caçadores-coletores começaram a cultivar plantas e a criar animais, tornando-se progressivamente sedentários, dando origem a edifícios e aldeias permanentes. Os arqueólogos têm questionado esta sequência, mostrando que a função permanente precedeu o advento das práticas agrícolas, especialmente no Crescente Fértil da Média Oriente, ainda considerando o berço mais antigo da transição neolítica.

Por outras palavras, enquanto alguns consideram que a força motriz foi a agricultura, outros insistem que terá sido a ideologia da construção doméstica. Sem aprofundar esse problema da galinha e do ovo, podemos simplesmente observar que a arquitetura e a agricultura apareceram como duas faces complementares de um processo autotônomo de co-evolução através do qual comunidades humanas cada vez maiores começaram a coexistir e a criar economicamente e socialmente e se aglutinaram em "sistemas de reassentamento multidimensionais".

Como se vê, a Neolítica constituiu uma transição para o domesticado, e uma domesticação de plantas e animais levou de mãos dadas com a domesticação dos seres humanos, dentro de edifícios permanentes e territórios internamente organizados. Se uma função consistente por vezes precedia a agricultura, então as suas estruturas eram sempre circulares (como os campos rotacionais). O que o Neolítico literalmente inventou foi a arquitetura retangular. A partir daí, os seres humanos tenderiam a adoptar estruturas modulares quadradas, muito mais propensas a ser expandidas e interdependentes.

AS IRMÃS GÊMEAS DO DOMUS COMPLEX DO NEOLÍTICO

The genesis of both architecture and agriculture may be traced back to the so-called neolithic "revolution", initially defined as the period when groups of humans started to cultivate plants and breed animals, and were led to progressively less mobile and sedentary, thus giving birth to solid buildings and villages. Archaeologists have since questioned this idea by showing that permanent settlements preceded the advent of agricultural practices, especially in the so-called "Fertile Crescent", still considered the most ancient cradle of the neolithic transition.

In other words, if some have considered agriculture to be the driving force, others insist that the real factor was the ideology of home making. Regardless of what came first, one can note that architecture and agriculture appeared as the two complementary phases of an autocatalytic process of co-evolution, through which larger and larger human communities increasingly designed and modified their surroundings, and evolved in "multidimensional resettlement camps".

The Neolithic was a transition towards domestication, where the taming of plants and animals by humans went hand in hand with the domestication of humans themselves within permanent buildings and internally organized territories. Indeed, if permanent or semi-permanent settlements preceded agriculture, their construction was always circular (similar in plan to that of roundabout camps). What the Neolithic literally invented was rectangular architecture. Thereafter, humans would tend to adopt square modular structures, more conducive to accretion, expansion and interdependency.

Reverend. Edward. The Church of the Holy Trinity, London, 1800.

James. The Church of the Holy Trinity, London, 1800.

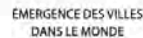
James. The Church of the Holy Trinity, London, 1800.

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A1

Troisième et 5 millions après le début du Néolithique, de nouvelles techniques, comme l'irrigation et le drainage à grande échelle, et le recours aux animaux de trait, donnent naissance à des cités-états, l'étatisme à des sociétés complexes caractérisées par la division du travail, une architecture monumentale, des hiérarchies et stratifications sociales, et une pratique croissante de l'esclavage. Ces premières villes sont les berceaux d'institutions majeures telles que l'écriture, et plus tard le monnaie.

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THE URBAN REVOLUTION

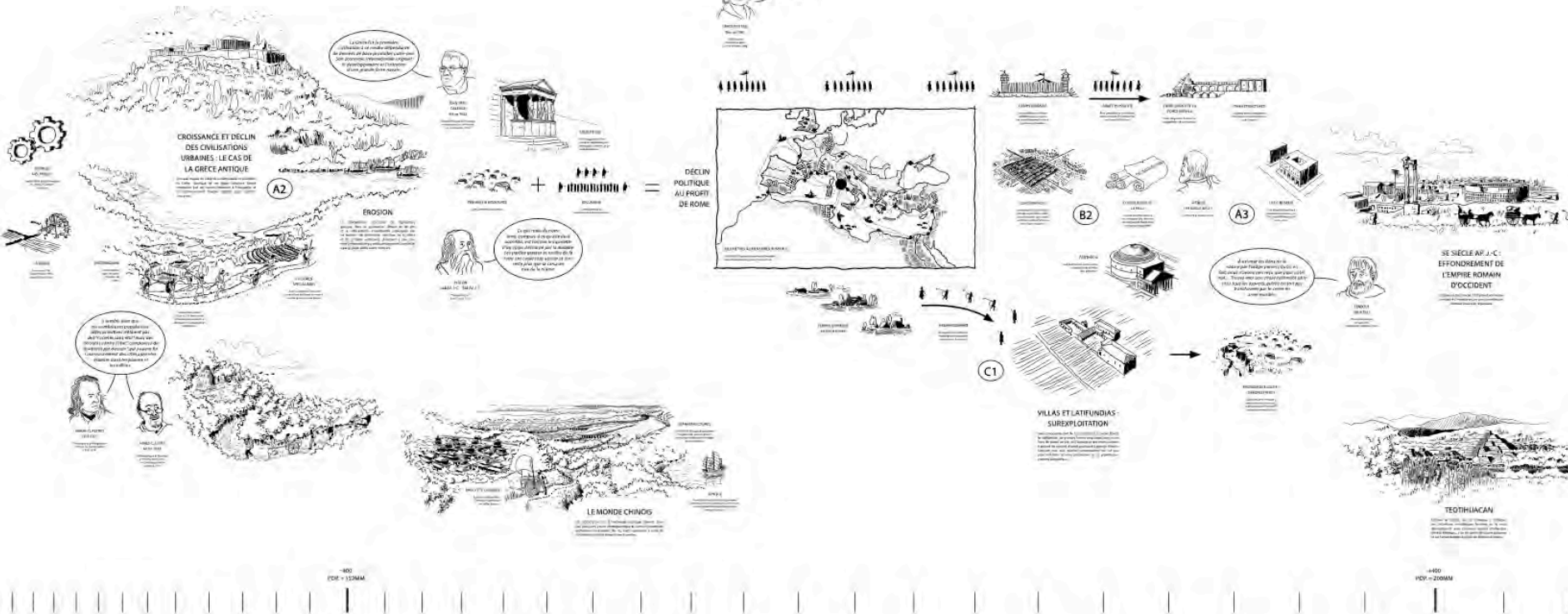


- As incubators of the transformation from chieftdom to state and empire, these first cities were a stepping stone along the path that led from the neolithic multispatial settlement system to the human part of modern nations and their global bipolarization. In the context of the Industrial Era, and the associated rural exodus, it is tempting to forget that double bind (complexification / simplification) as if it had been overcome by "progress". But far from being a continuous success story, history since the neolithic has also been a long chronicle of collapses, all more or less directly caused by the way they mismanaged their resources and limits to growth.

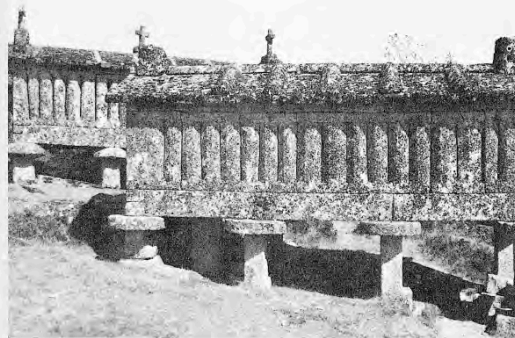
- Yara Garden Childs,
The Urban Revolution for 1900
- Peter Skerfving, *Regals for den
Hemmetpark, Salskamp, 1909.*
- Marie Livrari, *Urb, The First City,*
Equinox Publishing, 2006.
- Marie Livrari, *The Ancient Near East
History, Society and Economy,*
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- James C. Smith, *Against the Odds:
A Deep History of the Eastern States,*
Yale, 2017.

PREMIERS EMPIRES

La civilisation du monde méditerranéen par l'Empire Romain, depuis le Proche Orient jusqu'à l'Europe du Nord, pour être devenue, comme une première phase majeure dans l'histoire de la globalisation, à la fin du premier siècle avant Jésus-Christ, un réseau civilisationnel standard sur un territoire immense, dans les différentes régions, furent conduites à se spécialiser dans la culture et la production de ressources spécifiques (et notamment d'économie).



①



②

Georg Poulakos, *Democracy and the Temple of Democracy: A Study in the History of the Temple of Democracy*, New York, 1990.

Georg Poulakos, *Democracy and the Temple of Democracy: A Study in the History of the Temple of Democracy*, New York, 1990.

O templo dórico é uma das principais manifestações da arte da arquitetura. Mas de onde vem esse orden e o que representa exatamente? A tese clássica sustenta que foi uma transposição mineral de um edifício público em madeira: enquanto as colunas representavam colunas, o fuste era uma estrutura em madeira que sustentava triglifo a representação e o fim das vigas. Não é evidente?

Mas na década de 1980, o historiador da arquitetura Georg Poulakos apresentou uma outra hipótese. Mostrando exemplos de celeiros vernáculos por toda a Europa, alguns ainda em uso na década de 1980 (como os que Bernard Rudofsky documentou na Grécia, no seu famoso *Architecture without Architects*), sugeriu que o templo era basicamente uma transposição desses celeiros onde o tesouro da comunidade era guardado e preservado de um lado para o outro: enquanto as colunas representavam as colunas que protegiam o grão da humidade e as suas capitais as defesas habituais contra as pragas, o fuste era a esmagadora esmagadora do próprio celeiro, ou seja, um puro interior perfurado por grades de ventilação em intervalos regulares (os triglifo).

Evidentemente, o templo não era um celeiro. Mas é a questão: por estar nele não era mais dependente e comprometida com o crescimento, as importações, os conflitos e a sobrevivência de uma economia marítima que se tornava cada vez mais "internacional"? A Fúria grega inventou o peripeto para sublimar (isto é, evocar) esta realidade, numa celebração monumental da autonomia e providência das comunidades das aldeias. Um exemplo inicial e - provavelmente - de incorporação.

③



④



DORIC



IONIC



CORINTHIAN

- ① *Reproduction: L'Architecture, Grèce / L'Architecture, Grèce*
- ② *Reproduction: L'Architecture, Grèce / L'Architecture, Grèce*
- ③ *Reproduction: L'Architecture, Grèce / L'Architecture, Grèce*
- ④ *Reproduction: L'Architecture, Grèce / L'Architecture, Grèce*
- ⑤ *Reproduction: L'Architecture, Grèce / L'Architecture, Grèce*
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TEMPLE / GRANARY

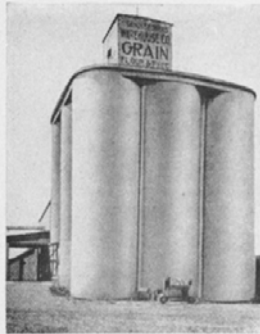
The Doric temple stands as an embodiment of the art of architecture. But where does this type come from, and what did it actually represent? The classical interpretation holds that the temple was a mineral transposition of a public building made of wood: while columns stood for pillars and the frieze was a stylized wooden floor structure with triglyphs representing the end of beams. Obvious, isn't it?

Yet in the 1980s, architectural historian Georg Poulakos challenged this interpretation. Showing numerous examples of traditional vernacular granaries across Europe, some still in use the 1980s (such as those in Greece which Bernard Rudofsky had documented in his famous *Architecture without Architects*), he suggested that the Doric temple was basically a monumental transposition of these granaries where the treasure of the community was kept and preserved from one year to the next: while the columns stand for the pilasters or stilts that protected the grain from humidity, and their capitals for the usual defenses against pests, the frieze was the stylized expression of the granary itself, i.e. a whole story regularly pierced by ventilation grids, hence the triglyphs.

Of course, the temple was *not* a granary. But that is the whole point: as the Greek Polis became more and more committed to, and dependent on the growth, imports, conflicts and endeavours that came with being a more international, maritime economy, it invented the peripeto to sublimize (i.e. evocate) this reality in a monumental celebration of the autonomy, foresight and independence of village communities. An early - and troubling - example of incorporation.

Georg Poulakos, *Democracy and the Temple of Democracy: A Study in the History of the Temple of Democracy*, New York, 1990.

Georg Poulakos, *Democracy and the Temple of Democracy: A Study in the History of the Temple of Democracy*, New York, 1990.



Silo à grain.

TROIS RAPPELS
A MESSIEURS LES ARCHITECTES
I
LE VOLUME

ARQUITECTURA MODERNA E ELEVADORES DE CEREAIS /
MODERN ARCHITECTURE AND GRAIN ELEVATORS
Vers une architecture, Le Corbusier, 1923

Ce que les historiens classiques appelaient le Moyen Âge correspond au régime féodal qui succéda à l'effondrement de l'empire romain d'Occident. Une longue période au cours de laquelle l'Europe se fragmenta en une constellation de communes agraires locales où la puissance des seigneurs était contrebalancée par la commune, c'est-à-dire par un ensemble de droits d'usage et de contraintes collectives qui, en limitant la portée et les privilèges de la propriété, définissait et synthétisait un territoire de justice collective et de démocratie locale. Les communes.

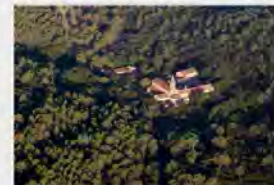


1



- 1. Mosteiro de Monte Cassino, Itália, século VIII ou IX. Gravado por Giovanni Battista Piranesi em 1763.
- 2. Mosteiro de San Pietro di Gail, Áustria, século XII. Gravado por Giovanni Battista Piranesi em 1763.
- 3. Mosteiro de San Pietro di Gail, Áustria, século XII. Gravado por Giovanni Battista Piranesi em 1763.
- 4. Mosteiro de San Pietro di Gail, Áustria, século XII. Gravado por Giovanni Battista Piranesi em 1763.

2



3

DO LADO DO CAMPO

João de Deus, o fundador do mosteiro, e o mosteiro de São Bento, em São Paulo, século XVIII. Gravado por Giovanni Battista Piranesi em 1763.

Se a história das civilizações é muitas vezes apresentada como uma marcha em direção a formas cada vez mais complexas de organização, esta também tem uma longa tradição de colapso e "períodos escuros", frequentemente associados a mudanças de que se discute o significado e o contexto. Por isso, desde um ponto de vista histórico, as paisagens e os regimes sociais, tendem a ser ignorados pelas histórias modernas. Um desses períodos começou na Europa com a queda do Império Romano. Demandou uma dispersão por comunidades mais pequenas e uma retração das cidades, e para esse período os primeiros historiadores modernos, retrospectivamente, usaram o termo *Idade Média* ou *Idade das Trevas*. Uma reavaliação desse período facilmente está em curso e é extremamente necessária.

Poder-se-ia pensar que a história da política comunitária e da administração de recursos locais a partir de um olhar retrospectivo sobre o "medievalismo" que ocorreu por toda a Europa seriam úteis. À luz disso, em vez de que a conquista urbana se tornou algo em si, não há dúvida de que essas regiões desenvolveram a capacidade de que agora chamamos "Stadthaus" ou "Stadthaus" e a capacidade de lidar com um processo típico de urbanização, mesmo moderno.

As ordens religiosas estiveram na linha de frente desta reavaliação em áreas remotas, onde viviam e criavam comunidades e nas cidades no cultivo da terra (desenvolvendo toda uma série de práticas e técnicas agrícolas) e no tratamento de um legado cultural. Os mosteiros renasceram, em particular, áreas de desenvolvimento em áreas distantes que eles transformaram em mundos férteis: eles inventaram a agricultura e a pecuária modernas de modo a fazer com que eles mantivessem a distância. A sua perfeição que eles alcançaram, tanto na arquitetura quanto na agricultura e no artesanato, definitivamente terá sido superada no Ocidente, desde então.

TAKING THE COUNTRY'S SIDE

If the history of civilisations is often presented as a march forward to ever larger forms of organisation, it was also a long chronicle of collapse and "low periods", often much more profound than the surge of inclination they evoked. As they left less obvious traces on landscapes and official records, they have tended to be overlooked by modern historians. Such a period began in Europe with the fall of the Roman Empire. It demanded a dispersal into smaller communities, and a shrinkage of cities for which early historians retrospectively coined the terms of Middle or Dark Ages. A reappraisal of that fascinating period is in its way and badly necessary.

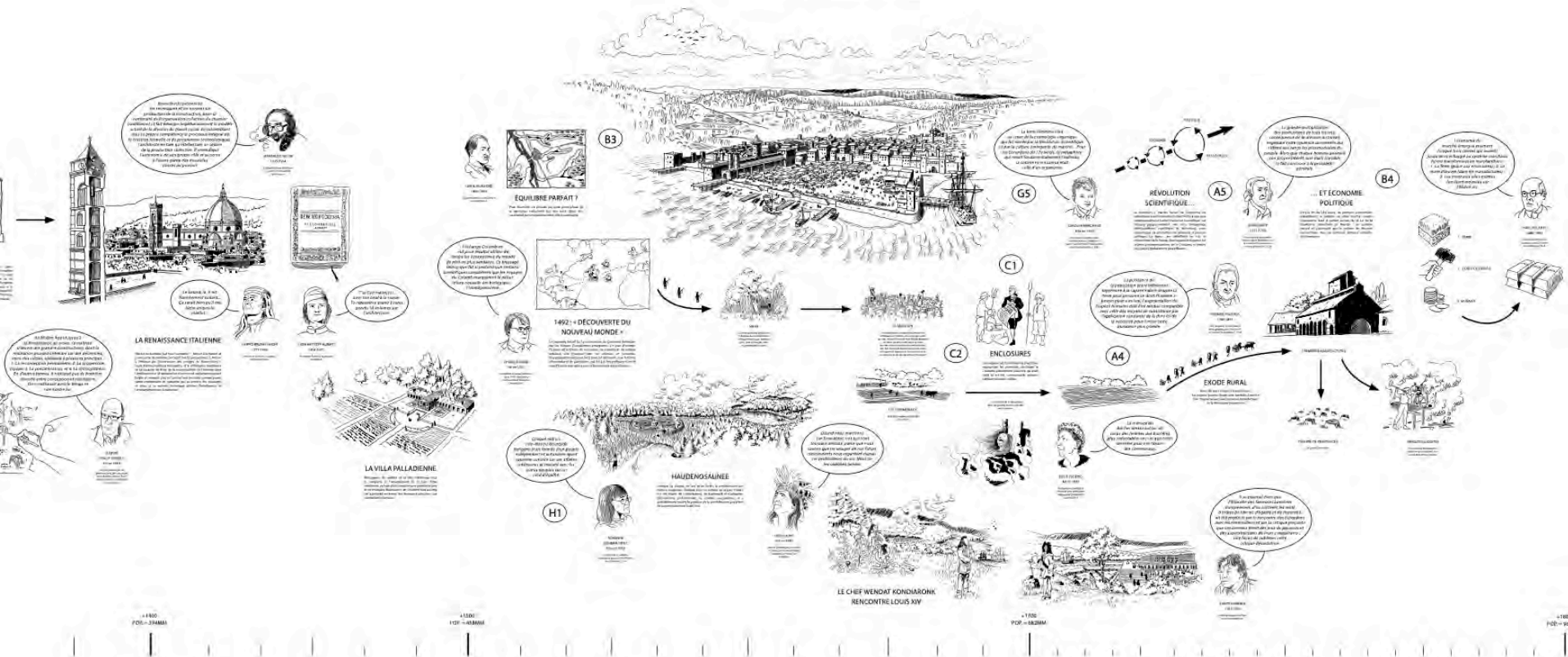
Until recently in common opinion and local memory stewardship could be drawn from a renewed look at the civilisation that took place across Europe during those centuries. In the light of what the urban condition has become nowadays, no doubt they would challenge the assumption that only "Stadthaus made free", and cast it as a typical line of modern urbanisation.

Religious orders were at the forefront of this reevaluation in remote areas, where sisters and brothers created their own in both the cultivation of the earth (developing a whole range of agricultural practices and techniques) and the transmission of a cultural legacy. Renaissance monasteries in particular were exemplary of this ecological movement in distant deserts which they turned into thriving worlds: inland islands and spiritual airports within the larger world they kept at bay. The last perfection they jointly attained in architecture, agriculture and craftsmanship has hardly been surpassed in the West ever since.

João de Deus, o fundador do mosteiro, e o mosteiro de São Bento, em São Paulo, século XVIII. Gravado por Giovanni Battista Piranesi em 1763.

MONTÉE EN RÉGIME DE L'ÉCONOMIE DE MARCHÉ

Une intervention concertée par l'ensemble des effets avec leurs conséquences d'ailleurs et leurs guillemets de marchand, en l'absence de la mesure qui n'est souvent acquiescée qu'un moment dans la vie des sociétés agraires, devant élargissement d'un territoire et un lieu permanent dans les villes, et bientôt les mondes ou parfois interdit par l'impact du chapitre des valeurs vers les individus.



PLANTAÇÕES E "ENCLOSURES"

PLANTATIONS AND ENCLOSURES



①

- ① The plantation de sucre de Saint-Denis, 1700. Engraving by Pierre-Thomas LeClerc.
- ② Engraving of the plantation de sucre de Saint-Denis, 1700. Engraving by Pierre-Thomas LeClerc.
- ③ Engraving of the plantation de sucre de Saint-Denis, 1700. Engraving by Pierre-Thomas LeClerc.

②



②

FEUDALISMO VS. LATIFUNDIA

Quem é o Estado e de senhores de longa duração, os proprietários de terras do final do império romano gradualmente evoluíram para senhores cujo poder estava baseado num conjunto de direitos locais. A propriedade absoluta sobre a terra e os seus lucros relativos em um pool de um sistema complexo de direitos e deveres, o "costume", que fez o poder pendurar para as comunidades camponesas entre os séculos X e XIV. Este sistema camponês (e o seu sucessor de latifúndios) evoluiu para feudalismo, que se desenvolveu em Inglaterra e na Holanda por volta do século XVII, mas persistiu na maior parte da Europa pelo menos até ao final do século XVIII.

Em Espanha, a Reconquista, logo seguida pela conquista do Novo Mundo, deu origem a uma nova classe de grandes proprietários de terras focados no comércio. O cultivo intensivo de algumas colheitas como plantações extensivas e concentração da mão-de-obra e do tráfico de escravos. Em Inglaterra, os senhores feudais tornaram-se os proprietários de terras com propriedade absoluta sobre a terra e não mais como líderes comunitários. Com o apoio ativo dos camponeses mais ricos, ajudados por incorporação e consolidação no caso de latifúndios, aboliram o "costume" para desenvolverem agricultura intensiva e orientada para a exportação. Esta evolução, conhecida como enclosures, levou os pequenos camponeses do acesso à terra. Inesperadamente, ao substituir nas suas pequenas parcelas, os agricultores não pôde sustentar-se para as cidades, para trabalhar na manufatura, ou para as colônias. O resultado foi um forte declínio da agricultura de pequena escala e uma crescente especialização das regiões, que mais tarde abriu caminho para a industrialização.

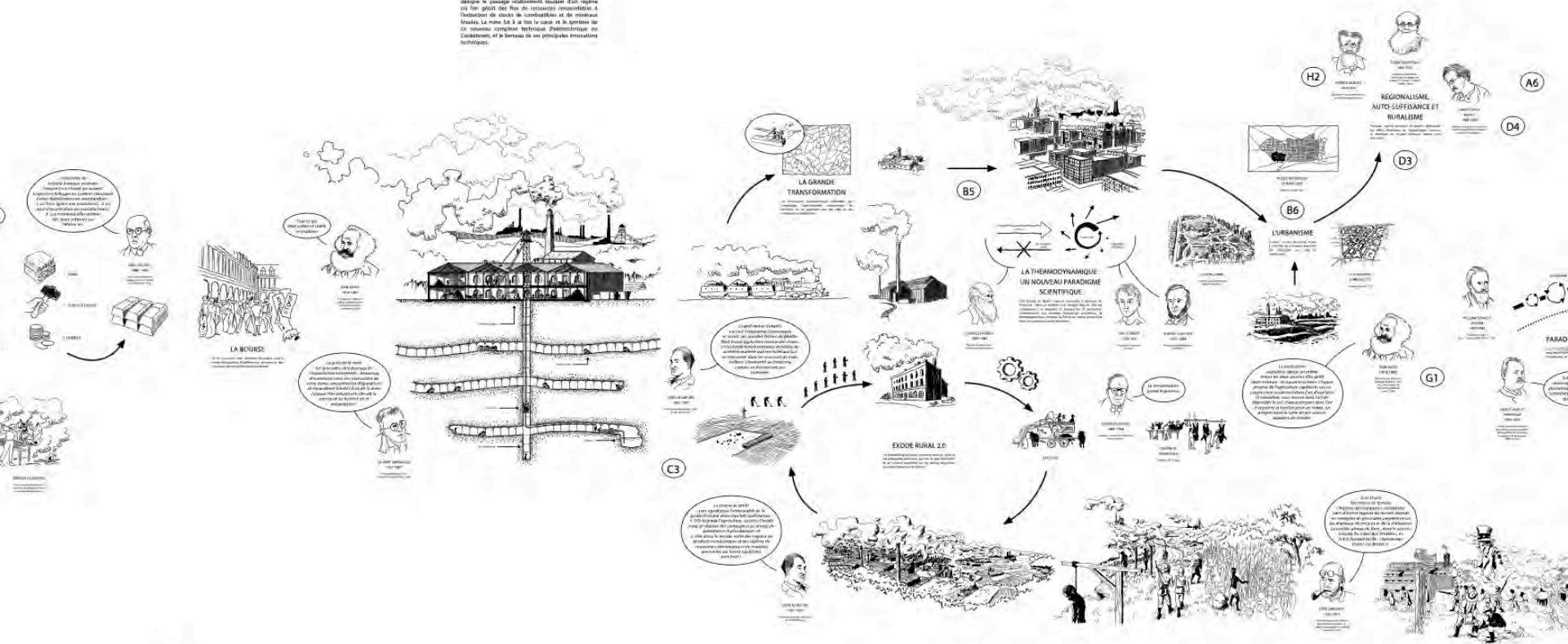
FEUDALISM VERSUS LATIFUNDIA

With the erosion of long-distance trade and state, landowners of the late Roman empire progressively evolved into lords whose power was poised by a whole set of local rights. Absolute ownership over land and humans decreased in favour of a complex system of rights and duties, the "custom", which reinforced the power towards peasant communities between the 10th and the 14th centuries. This socio-political system (and its successor of commons), known as feudalism, was to be dismantled in England and the Netherlands around the 17th century but persisted in most of Europe until at least the end of the 18th century.

In Spain, the Reconquista, soon followed by the conquest of South America, gave rise to a new class of large export-oriented landowners. The extensive cultivation of a few crops on those plantations spurred the reinstatement of slavery and slave trade. In England, feudal lords increasingly viewed themselves as landowners with absolute ownership of the land, no longer as community leaders. With the active support of the wealthiest peasants, eager to incorporate and consolidate their shares of the commons, they abolished the "custom" to develop extensive and export-oriented agriculture. This evolution known as the enclosure deprived small peasants of their access to land. Unable to sustain on their small plots, the poorest farmers moved either to the towns to work in manufacture or to the colonies. The result was the compelling decline of small-scale farming, and a growing specialisation of regions which later paved the way for industrialisation.

RÉVOLUTION INDUSTRIELLE I

Dès son émergence dans l'histoire de la société humaine au 18^e siècle, la Révolution Industrielle fut dotée d'une dimension dans l'énergie et le transport, essentielle, à la large circulation des biens et des personnes aux distances colossales, commercial à première vue. Elle marque le passage industriellement soudain d'un régime au fort profit des flux de ressources renouvelables à l'industrialisation des combustibles et des métaux lourds. La mine fut à la fois le cœur et le symbole de ce nouveau complexe technique (technologie au Carbone) et le berceau de ses principales innovations technologiques.

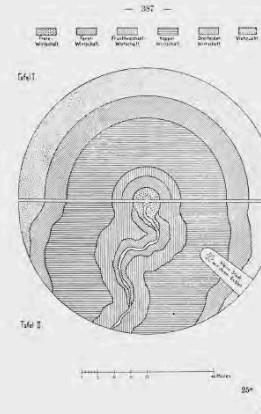
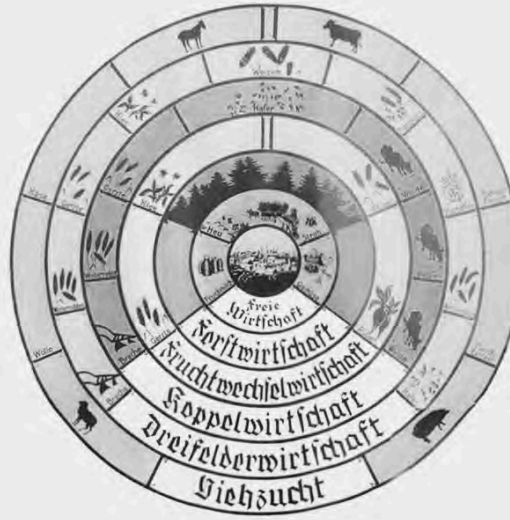


MODELO DE USO DA TERRA

D4

LAND USE MODEL

Die Thünen'schen Kreise J.H.v. Thünen „Der isolierte Staat“



Elaborado por: Dr. Roberto Siqueira

Thünen's concentric circles model of land use

O GRADIENTE DAS PAISAGENS PRÉ-INDUSTRIAIS

J. H. von Thünen, *Der isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie*, 1826.
Copyright: Thünen Institute, 1998.

Em 1826, o proprietário de terras e economista alemão J. H. von Thünen propôs um modelo do mundo como um "estado isolado" naturalmente tendendo a usar sua terra. O "estado" específico, explica Carolyn Steel, "consistia numa 'cidade muito grande' no meio de uma planície montanhosa e fértil, esta última habitada apenas por agricultores racionais em busca de lucro. Sob tais condições, a natureza agrícola em redor de uma cidade organizava-se numa série de zonas concêntricas. O mau tempo interno consistia nos cultivos e zonas de produção hortícola e leiteiras, cuja vantagem seria um maior benefício do transporte da cidade. Depois disso, haveria um anel de bosques para lenha; e depois disso, terra arável onde os cereais da cidade seriam cultivados, suficientemente perto da cidade para facilitar seu transporte. Para lá disso, haveria pasto para o gado e, finalmente, o ermo: uma terra tão longe da cidade que não valeria a pena explorá-la."

Na visão de von Thünen, os territórios pré-industriais eram basicamente estruturados pela qualidade mais ou menos homogênea, transportável ou perecível dos recursos locais (alimentos, fibra, energia), sustentando a cidade central para onde convergiam. Naturalmente, o modelo raramente correspondia a regiões reais, onde as contingências da geografia (rios, rios, colinas, estradas, etc.) distorciam significativamente a sua geometria simples. Mas, apesar disso, o modelo de von Thünen descrevia com eficácia os padrões básicos e o gradiente de uso da terra numa economia predominantemente agrícola. Ironicamente, o momento em que ele formulou o modelo foi precisamente quando este se começou a desmoronar sob os efeitos da "Grande Transformação".

THE GRADIENT OF PREINDUSTRIAL LANDSCAPES

J. H. von Thünen, *Der isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie*, 1826.
Copyright: Thünen Institute, 1998.

In 1826, the German landowner and economist J. H. von Thünen proposed a model of the way an "isolated state" would naturally tend to use its land. The anonymous "state", Carolyn Steel explains, consisted of a "very large town" in the middle of a featureless, fertile plain, the latter inhabited only by rational, profit-seeking farmers. Under such conditions, the farm belt around a city would organize itself into a series of concentric rings. The innermost one would consist of market gardens and dairies, whose profits would most benefit from the city's proximity. Beyond this would be a ring of coppice for firewood, and beyond that, arable land where the city's grain would be grown, close enough to the city to make its transport feasible. Beyond that, there would be grazing for livestock, and finally, wilderness: land so far from the city that it wasn't worth exploiting."

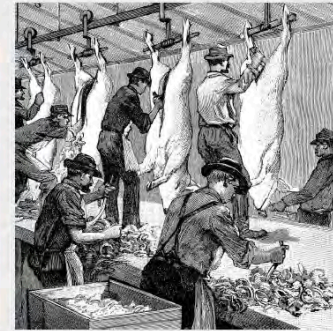
In other words, von Thünen saw the economy of preindustrial territories as homogeneously structured by the more or less profitable, transportable or perishable quality of local resources (food, fibre or energy) sustaining the central city where they converged. Of course, his model, projected on a clean slate, rarely corresponded to the situation of actual regions where the contingencies of geography, the presence of roads or other sites significantly distorted this simple geometry. But provided one took these contingencies into account, von Thünen's model effectively depicted the basic parameters and gradient of land-use in a mostly agrarian economy. Ironically, the time when he formulated it was basically when his model began to crumble under the effects of "The Great Transformation".

D4

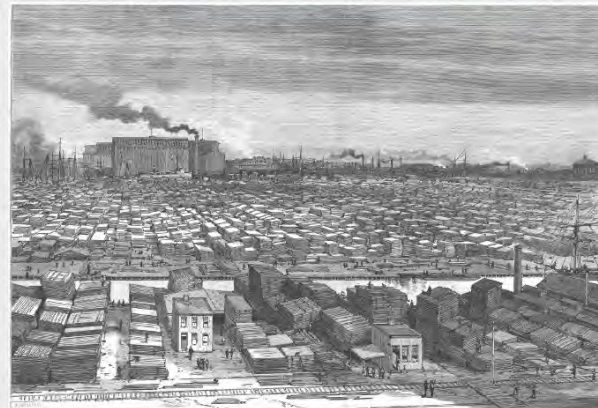
DA NATUREZA AO MERCADO

NATURE TO MARKET

1



2



3

“TUDO O QUE É SÓLIDO DESFAZ-SE NO AR”

Edwin Ross, The Chicago Scene, Architectural Record, 1906.
Abner Doyensky, Chicago is the Center, The City as an Energy System, Architectural Record, Dec. 1970.
William Cronon, Nature's Metropolis: Chicago and the Great West, Boston, 1991.

Se alguém escolhesse uma metrópole como a capital da arquitetura moderna, Chicago seria um pretendente sério. E, com efeito, a minúscula cidade fronteiriça que se tornou na quarta maior metrópole mundial na segunda metade do século XIX também pode ser vista como um laboratório da moderna cidade industrial. Abner Doyensky mostrou isso com veracidade em Chicago is the Center: The City as an Energy System (1970), um importante manual que prepara o caminho para *Delirious New York* (1978), de Rem Koolhaas. Mas estes arquitetos apenas captaram metade da imagem.

No mínimo igualmente instrutivo é *Nature's Metropolis*, de William Cronon, que retrata Chicago como um produto e um motor da industrialização da agricultura no Meio-Oeste. Cronon documenta como a cidade, graças à disseminação de redes técnicas como a ferrovia e o telégrafo, e inovações como os elevadores de cereais movidos a vapor, reorganizou completamente o produto e o mercado de recursos básicos (cereais, madeira e carne) sobre um imenso território onde ecossistemas foi radicalmente transformado no processo: recursos os cereais nativos e as leguminosas foram substituídos por milho e trigo e o abate de búfalos por vacas de leite e bovino importados – todos a atenderem nas linhas de demanda do meat district de Chicago – as enormes florestas de Illinois e Michigan foram literalmente minadas e drenadas (através de canais, rios e ferrovias) para os depósitos de madeira da cidade.

“Da riqueza da natureza, os americanos tinham aprendido uma abundância humana e a partir dessa abundância tinham construído a cidade de Chicago. A riqueza de Chicago com os primeiros brancos tinha sido excessivamente intrínseca, surgindo de forças ecológicas e econômicas que, por um breve período, se tinham reunido num único mercado, uma única geografia. As tentativas naquele mercado e naquela geografia destruíram por fim o sistema consistente que ajudou a criá-lo – mas nunca antes isso já não era importante. Talvez a maior ironia foi que, sobrevivendo às florestas que tinham alimentado seu crescimento, Chicago poderia facilmente vir a parecer uma criação inteiramente humana.”

“ALL THAT IS SOLID MELTS INTO AIR”

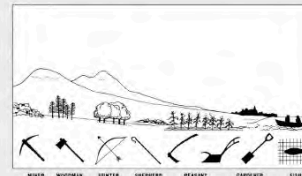
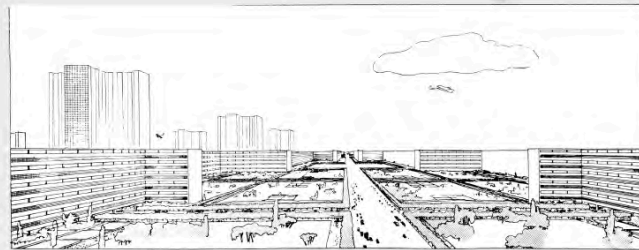
Se você quer escolher uma metrópole como a capital da arquitetura moderna, Chicago seria o mais óbvio candidato. E, de fato, esta pequena vila que cresceu para ser a 4ª maior metrópole mundial no mundo no final do século XIX também pode ser vista como um laboratório da moderna cidade industrial. Abner Doyensky mostrou isso em *Chicago is the Center: The City as an Energy System* (1970), um manual que abriu o caminho para *Delirious New York* (1978), de Rem Koolhaas. Mas estes arquitetos apenas capturaram metade da imagem.

Al menos igualmente instrutivo é *Nature's Metropolis*, de William Cronon, que retrata Chicago como um produto e motor para a industrialização da agricultura no Meio-Oeste. Cronon documenta como a cidade, graças à abertura de redes técnicas como a ferrovia e o telégrafo, e inovações como os elevadores a vapor, totalmente reorganizou a produção e o mercado de recursos básicos (grãos, madeira e carne) sobre um vasto território cujo ecossistema foi radicalmente transformado no processo. Enquanto cereais e leguminosas nativas foram substituídas por milho e trigo, e enormes rebanhos de búfalos foram substituídos por vacas e carneiros importados – todos a atenderem as demandas do distrito de carne de Chicago – as enormes florestas de Illinois e Michigan foram literalmente minadas e drenadas (via abate, rios e ferrovias) para os depósitos de madeira da cidade.

“From the wealth of nature, Americans had wrung a human plenty, and from that plenty they had built the city of Chicago. Chicago's relationship to the white ground had been exceedingly intrinsic, emerging from ecological and economic forces that for a brief time had come together into a single market, a single geography. The tensions in that market and in that geography finally destroyed the distant ecosystem which had helped create them – but then it no longer mattered. Perhaps the greatest irony was that by harvesting the forests that had nurtured its growth, Chicago could all too easily come to seem a wholly human creation.”

Edwin Ross, The Chicago Scene, Architectural Record, 1906.
Abner Doyensky, Chicago is the Center, The City as an Energy System, Architectural Record, Dec. 1970.
William Cronon, Nature's Metropolis: Chicago and the Great West, Boston, 1991.





- ① *Diagrama do Plano de Hipodamo para a cidade de Mileto.*
Hippodamus, 450 a.C.
- ② *Diagrama do Plano de Hipodamo para a cidade de Mileto.*
Hippodamus, 450 a.C.
- ③ *Diagrama do Plano de Hipodamo para a cidade de Mileto.*
Hippodamus, 450 a.C.
- ④ *Diagrama do Plano de Hipodamo para a cidade de Mileto.*
Hippodamus, 450 a.C.

AS TENDÊNCIAS E ESCOLAS CONFLITUANTES DE UMA NOVA DISCIPLINA

Diagrama do Plano de Hipodamo para a cidade de Mileto, 450 a.C.

Se se prestar atenção ao contexto histórico em que emergiu, o termo "urbanismo" não designa tanto a arte de construir cidades quanto a de gerir o crescimento explosivo das cidades existentes, causado pela revolução industrial e pelo êxodo rural maciço. A historiadora Françoise Choay distingue três grandes escolas de urbanismo que podem ser qualificadas da seguinte forma:

- A. O Progressismo insistia que esse crescimento explosivo representava uma mudança na natureza. O que era necessário era uma análise minuciosa do programa latente da cidade moderna, as suas novas tecnologias e modos de vida, segregando as suas funções para uma melhor eficiência. A Carta de Atenas (1933) foi a formulação mais clara dessa ideologia.
- B. O Culturalismo sustentava que, apesar de toda a sua magnitude, as extensões urbanas ainda procediam de um organismo existente que se desenvolvia com o tempo. À tarefa era entender esse organismo, os seus ADN e padrões, de modo a transpô-los. *City Planning According to Artistic Principles* (1899), de Camillo Sitte, foi um manual desta abordagem.
- C. O Naturalismo afirmava que o principal guia para a gestão das extensões urbanas deveria ser o próprio território em que elas ocorriam: as paisagens ambientais da cidade, a sua topografia, pedologia e hidrografia seriam a espinha dorsal e as infra-estruturas de um "urbanismo paisagístico". Frederick Law Olmsted, com os seus sistemas de parques, é o grande defensor desta filosofia.

A uma lista deve-se acrescentar o Regionalismo, que postulava que a cidade era apenas um segmento de um todo maior, englobando a agricultura, assim como todas as atividades que a sustentavam. Este todo, a região, era o verdadeiro assunto daquela disciplina a que Patrick Geddes chamou "geotécnica" ou "geografia aplicada".

THE CONFLICTING TRENDS AND SCHOOLS OF A NEW DISCIPLINE

Diagrama do Plano de Hipodamo para a cidade de Mileto, 450 a.C.

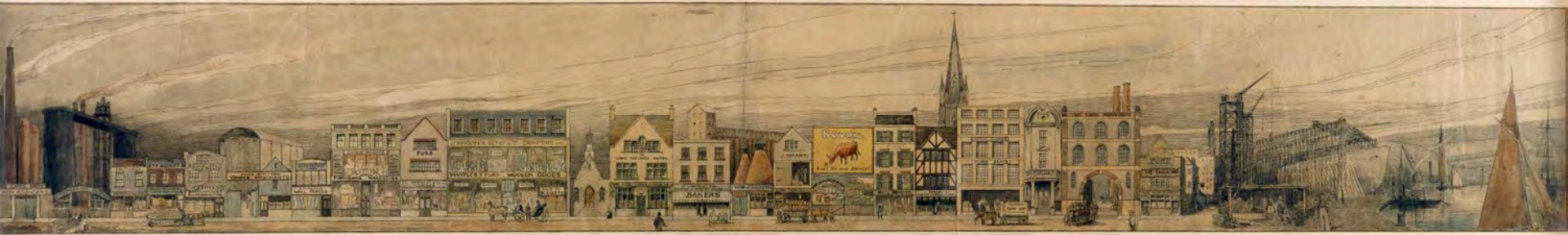
If one pays attention to the historical context in which it emerged, the term "urbanism" does not designate the art of building cities as much as that of managing the explosive growth of extant cities due to the industrial revolution and its rural exodus. Historian Françoise Choay distinguished three major schools of urbanism which might be characterized as follows:

- A. Progression insisted that explosive growth amounted to a change in nature. What was needed was a thorough analysis of the latent programme of the modern city in new technologies and ways of living, segregating its functions for increased efficiency. The Charter of Athens (1933) was its clearest and most expressive formulation.
- B. Culturalism held that for all their magnitude, urban extensions were still proceeding from an extant organism that had developed over time. The task was to understand that organism, its DNA and patterns so as to transcribe them. Camillo Sitte's *City Planning According to Artistic Principles* (1899) was the textbook of this approach.
- C. Naturalism stated that the main guide for managing urban extensions had to be the very territory on which they were deployed: the surrounding landscapes of the city, their topography, pedology and hydrography were to be backbone and infrastructures of a landscape urbanism. Frederick Law Olmsted and his park systems as the genuine champion of that philosophy.

To this list, one should add Regionalism, which postulated that the city was only one segment of a larger whole which comprised agriculture as well as all the activities that sustained it. This whole, the region, was the real subject of that discipline which Patrick Geddes called "geotechnics" or "applied geography".

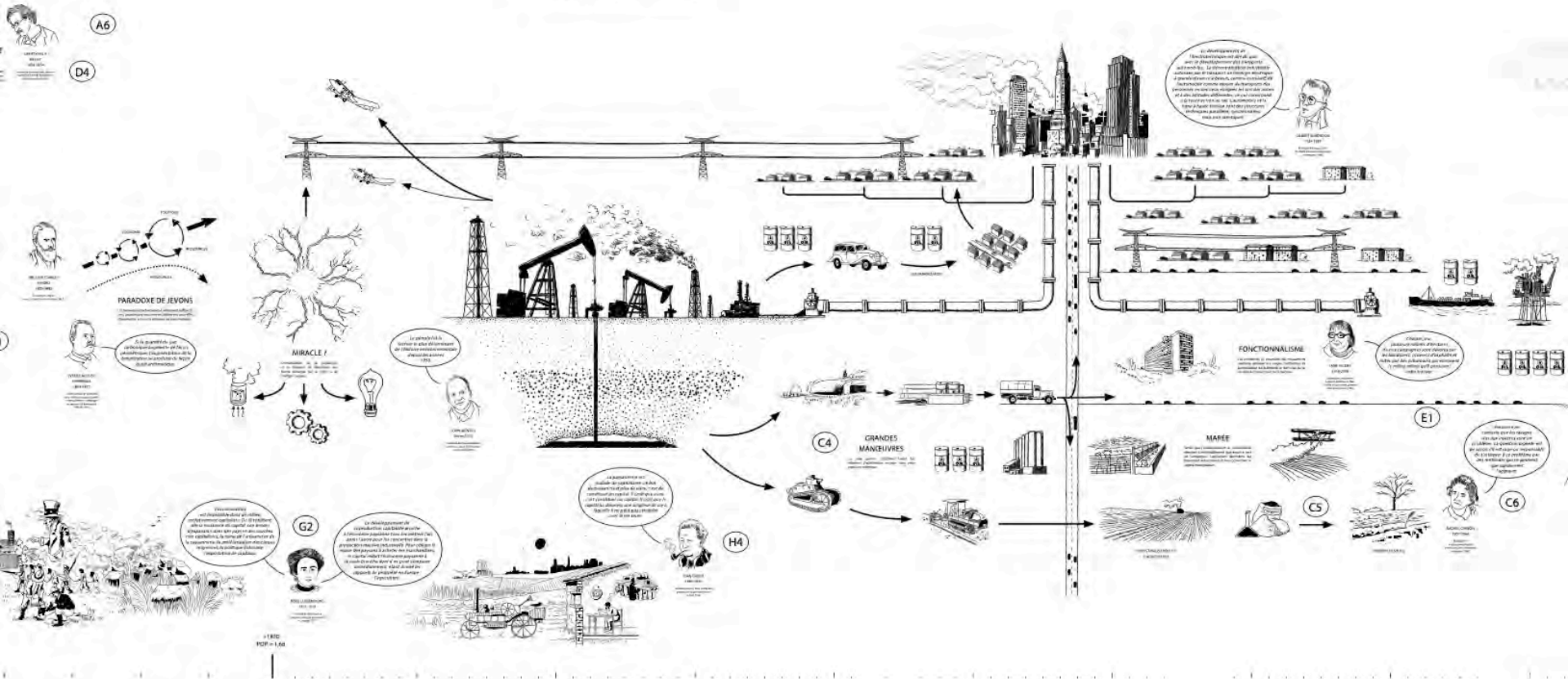


QUARRYING GOLDMINING FORESTRY HUNTING SHEEP FARMING ARABLE FARMING CATTLE FARMING MARKET GARDENING VINEYARDS HOP FIELDS FISHING VILLAGE



IRON AND STEEL GOLDSMITHS TIMBER AND PAPER MERCHANTS FURRIER WOOLLEN GOODS BAKER & CORN CHANDLER BUTCHER GREENGROCCER JAM FACTORY BREWERY PORT

Tendre que le pétrole et le gaz accroissent leurs stocks d'énergie primaires à cause des charbon, la maîtrise de la production et de la distribution de l'électricité. Illegales la partie de la ressource nationale. Au cours de la première moitié du XIX siècle, un autre complexe technique prend naissance (dans l'effort) la complexité Paléolithique ou Coléoptère. Ainsi, comme Jean-Jacques Goddard l'appelle "Métallurgie", l'histoire de l'immobilier. John Rockefeller le dégage aussi le nom de Metcalf. Le sort la chaîne de montage. Automatique, l'essor, le chimie, le plastique, les engrais artificiels, etc tous développés par des entreprises de plus en plus grandes.



DA GUERRA AO TRABALHO DE CAMPO

FROM WAR TO FIELD OPERATIONS



1. Aquecimento global / Global warming
2. Oito dias de guerra / Eight days of war
3. Oito dias de guerra / Eight days of war
4. Oito dias de guerra / Eight days of war
5. Oito dias de guerra / Eight days of war
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AGRO-QUÍMICA E MECANIZAÇÃO

James S. Macdonald, *For the Good of the World: The Story of the Nitrogen Industry*, La Habra, 1960

A descoberta de Liebig sobre o papel do nitrogênio não transformou imediatamente a agricultura, devido à falta de fontes naturais de nitrogênio. O único recurso conhecido, mas limitado, era o guano da costa do Pacífico, na América Latina, principalmente no Peru. No final do século XIX, os europeus foram surpreendidos pela "armadilha malhousiana", uma interpretação tendenciosa da teoria de Malthus sobre a relação entre a população e os recursos naturais.

A escassez de nitrogênio parecia ainda mais absurda devido à abundância de nitrogênio na atmosfera. Desde então, a captura sintética de nitrogênio tornou-se um novo ramo da química. Em 1910, Haber e Bosch conseguiram converter e industrializar um processo para a síntese de amoníaco (NH₃). No entanto, o processo era extremamente caro e difícil de manter rentável para a agricultura. Mas os nitratos, derivados do amoníaco, também são uma base para explosivos. Durante a Primeira Guerra Mundial, o Império Alemão, inicialmente limitado por outros países em guerra, recorreu à produção de amoníaco sintético. No final da guerra, a Europa estava quase equipada com uma gigantesca infraestrutura industrial que poderia rapidamente ser convertida para a produção de fertilizantes.

A Primeira Guerra Mundial foi também o berço dos pesticidas, derivados do gás de guerra químico; dos tratores, derivados dos tanques; e do arame farpado. A esta lista, a Segunda Guerra Mundial acrescentou uma praga invisível, como as herbicidas, desenvolvidos para destruir os campos do Japão. Até a comida industrial de processamento alimentar remonta à necessidade de alimentar os exércitos. Obviamente, a industrialização da guerra foi o motor da industrialização dos alimentos e da agricultura. Nitratos sintéticos, pesticidas e tratores tornaram-se no eixo de um novo sistema agrário que existiu, durante algumas décadas, o espectro malhousiano.

AGROCHEMISTRY AND MECHANIZATION

Liebig's discovery of the role of nitrogen did not immediately change agriculture because of the lack of natural sources of nitrogen. The only known but limited source was guano of the Pacific coast in Latin America, mainly Peru. At the end of the 19th century, Europeans were haunted by the "Malthusian trap", a neo-Malthusian interpretation of Malthus thoughts about the relationship between population and natural resources.

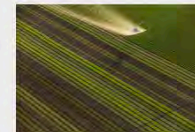
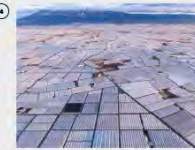
Nitrate shortage looked all the more absurd because of the abundance of atmospheric nitrogen. Hence, the synthetic capture of nitrogen became the new quest of chemistry. In 1910, Haber and Bosch succeeded in industrializing a process for catalyzing ammonia (NH₃). However, the process was extremely energy intensive and hardly affordable for agriculture. But nitrates, derived from ammonia, were also a basis for explosives. During WWI, the German Empire, soon equaled by the other warring countries, rushed to mass produce synthetic ammonia. At the end of the war, Europe was thus equipped with a giant industrial infrastructure which would readily be converted into the production of fertilizers.

Indeed, WWI was also the cradle of pesticides, derived from chemical war gas, tractors, derived from tanks, and barbed wire. To this list WWI would add its own innovations, such as herbicides, developed to destroy the rice fields of Japan. Even our food-processing industry would be traced back to the need of feeding armies. Obviously, the industrialization of war was the matrix of the industrialization of food and farming. Synthetic nitrates, pesticides and tractors became the pivots of a new agrarian system, which survived, for a few decades, the Malthusian specter.

James S. Macdonald, *For the Good of the World: The Story of the Nitrogen Industry*, La Habra, 1960

**"CRESCERE OU
DESAPARECE"**

“GET BIG OR GET OUT”



1. E. del Rio, *Clasificación de las Importaciones de los Países de la RUSA durante la Administración Nizkor / E. del Rio, *Clasificación de las Importaciones de los Países de la RUSA durante la Administración Nizkor**, Charles River, 1975.
2. A. Zloty, *Curso de Historia, División Militar, 1970*.
3. 13100 unidades de transporte militarizadas, para abastecer a 100000 soldados de la División de la 56. Sección, 15000 toneladas de combustible necesario para supply the requirements of 10100. Source: Group Statistics.
4. *Mapa de la Planta*
Estados Unidos de América con España / *Planta geográfica en España*.
Grupo Histórico.
5. *Política de la Unión en California* / *Union being strong in California*.
Grupo Histórico.

A INDUSTRIALIZAÇÃO DA AGRICULTURA: A REVOLUÇÃO VERDE

Matthews Colamer, *Le Tourmente alimentaire*, Paris, 2006.

Ménardus H., *La fin des païens*.
Paris, SEDES, 1987 ; A. Collin.

Van der Ploeg J. D., *The New Peasants: Rural Development in Times of Globalization*, Routledge 2000

O século XIX foi o século da industrialização dos ofícios. No século XX, toda a sociedade, incluindo a agricultura e a alimentação, foi submetida à indústria. Os padrões tradicionais da agricultura eram inadequados para o novo potencial da química e da mecanização. Os governos decidiram adaptar paisagens, agricultores, plantas e animais às máquinas e aos fertilizantes.

A chamada "Revolução Verde" foi o resultado de fortes políticas públicas baseadas em:

1. Crédito para incentivar os agricultores a comprar insumos modernos;
2. Seleção genética de plantas com alto nível de fertilizantes e água;
3. Concessão de terra para criar maiores parcelas e quintais;
4. Subsídios para fertilizantes, pesticidas e sementes industriais. Nesse sentido, as autoridades públicas desenvolveram uma poderosa investigação agrônoma, bancos dedicados à agricultura e subsídios agrícolas, e reformularam toda a cadeia de fornecimento alimentar para promover os intervenientes envolvidos no processo.

A industrialização foi um sucesso em termos de produção alimentar. O rendimento por hectare aumentou a segunda ou terceira potência e o investimento na produtividade agrícola foi muito baixo. Isto conduziu a uma queda dramática da quantidade de mão-de-obra necessária para produzir alimentos, o que reduziu o número de agricultores e a um problema estrutural de sobreprodução, que fez cair os preços. Com o azeiteiro do êxodo rural, a cadeia alimentar tornou-se mais complexa, resultando no desenvolvimento dos setores de processamento alimentar e retalho. Devido ao elevado nível de capitalização, a industrialização da agricultura conduziu logicamente à sua corporatização. Finalmente, como a motorização e a química são elementos dependentes de energia, a agricultura tornou-se dependente da economia que armazenou energia solar tanto no solo quanto na horta, tornou-se um consumidor final de energia.

INDUSTRIALIZING AGRICULTURE: THE GREEN REVOLUTION

The 19th century was that of the industrialization of craft. In the 20th, it was the whole society, including agriculture and food, which were subjected by industry. Agriculture's traditional patterns were ill-fitted to the new potential of chemistry and mechanization. Governments resolved to adapt landscapes, farmers, plants and animals to machines and fertilizers.

The so-called "Green Revolution" was the result of strong public policies based on:

1. credit to inate farmers to buy the machines;
2. Genetical selection of plants able to use high level of fertilisers and water;
3. Land consolidation to create larger plots and farms; and
4. The subsidizing of fertilizers, pesticides and industrial seeds.

To that end, public authorities developed a powerful agronomic research, banks devoted to agriculture, farm subsidies, and reformed the whole food supply chain to promote the actors engaged into the process.

Industrialization was a success in terms of food production. The yields per ha were raised by factor 2 or 3 and increase of labor productivity was even more substantial. This led to a dramatic drop in the number of farmers and to a structural problem of overproduction that pulled prices down. As the rural exodus accelerated, the food chain became more complex with the development of the food processing and retail sectors. Due to the high level of capitalisation, the industrialisation of agriculture led logically to its corporatisation. Finally, as both motorization and chemistry are highly dependent on fossil energy, agriculture, unlike ecosystems which store solar energy in both ground and biota, became a net energy consumer.

Charles C. Mann, *The Wizard and the Dog*, New York, Knopf, 2011.

Mathieu Collard, *Le Tourment alimentaire*, Paris, 2008.

Mendras H., *La fin des paysans*.
Paris, SEDES, 1987 ; A. C.

Van der Ploeg J. D., *The New Possibilities for Rural Development in Times of Globalization*, Routledge, 2000

Depuis la colonisation militaire de la Seconde Guerre mondiale, la globalisation de l'économie de marché et du capitalisme, alimentée par la mondialisation continue de nouvelles sources non conventionnelles d'énergie fossiles, a découlé une croissance exponentielle de la consommation globale de toutes les ressources essentielles. Malheureusement, il apparaît que la plupart des innovations techniques "noues", considérées comme un moyen de cette accélération, ne font que renforcer les dégâts, en donnant une illustration dramatique des effets secondaires du paradigme de la guerre.



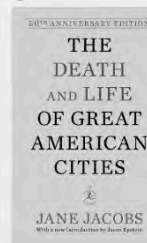
A BLUEPRINT FOR SURVIVAL

A BLUEPRINT FOR SURVIVAL

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O ALARME CRESCENTE DO AMBIENTALISMO

Roger Auden, O Espo, presidente do
Instituto de Conservação da Natureza,
em 1970.

As preocupações ambientais não apareceram de repente na década de 1960. Ao longo da era industrial, várias vozes denunciaram os danos sem saída do desenvolvimento industrial e da devastação de regiões inteiras ou "selvagens". Mas estas vozes foram basicamente silenciadas pelo culto do produtivismo, aderido tanto pelos defensores do livre mercado como pelos seus adversários marxistas. No século XX, à medida que este dogma moderado se tornou cada vez mais dominante, crises marcantes, como a Grande Depressão, alertaram uma primeira estalada de críticos, com uma poderosa expressão na obra de Lewis Mumford. No seguimento da Segunda Guerra Mundial e do seu término nuclear, enquanto alguns formulavam esse critério no "sistema tecnológico", outros conseguiram a formular uma "ética da Terra". Mas a febre da Reconstrução e a "ideologia do crescimento" da pós-guerra abafaram essas mensagens.

Estas linhas de visão 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 investigações científicas. Se bem que a maioria desses denunciantes previu das consequências da vida, alguns deles argumentaram os seus argumentos a partir do campo da economia. Nicholas Georgescu-Roegen, particularmente versado em questões agrícolas, demonstrou que nenhum raciocínio económico consistente poderia ignorar a segunda Lei da Termodinâmica.

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Programa de conservação e desenvolvimento da agricultura
1960-1965 (1960-1965) (1960-1965)
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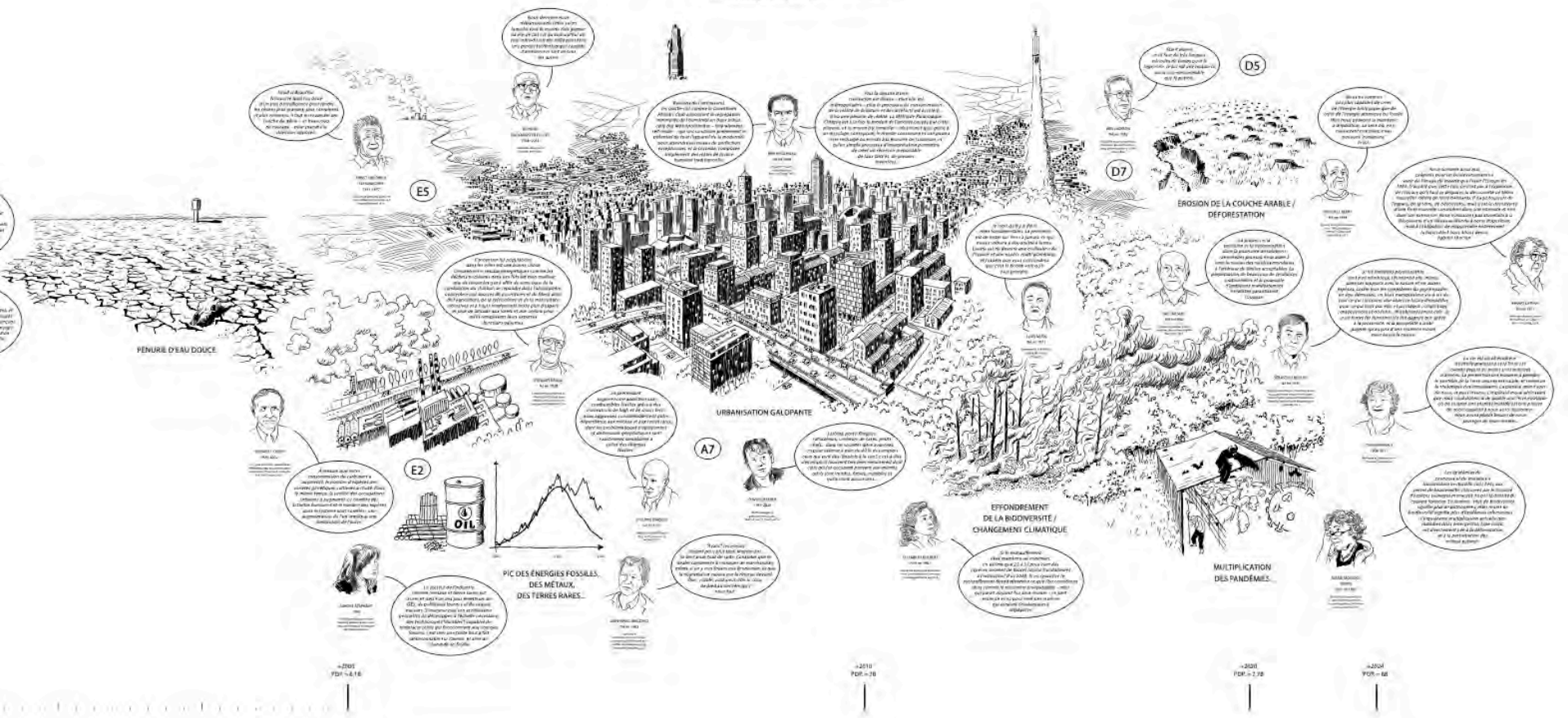
THE MOUNTING ALARM OF ENVIRONMENTALISM

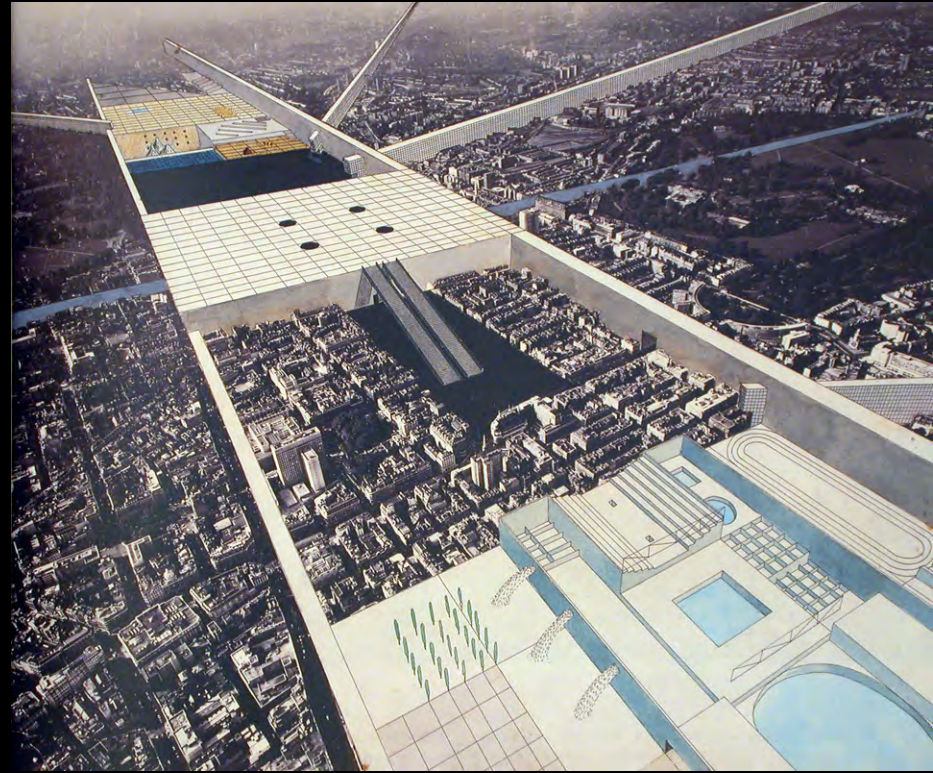
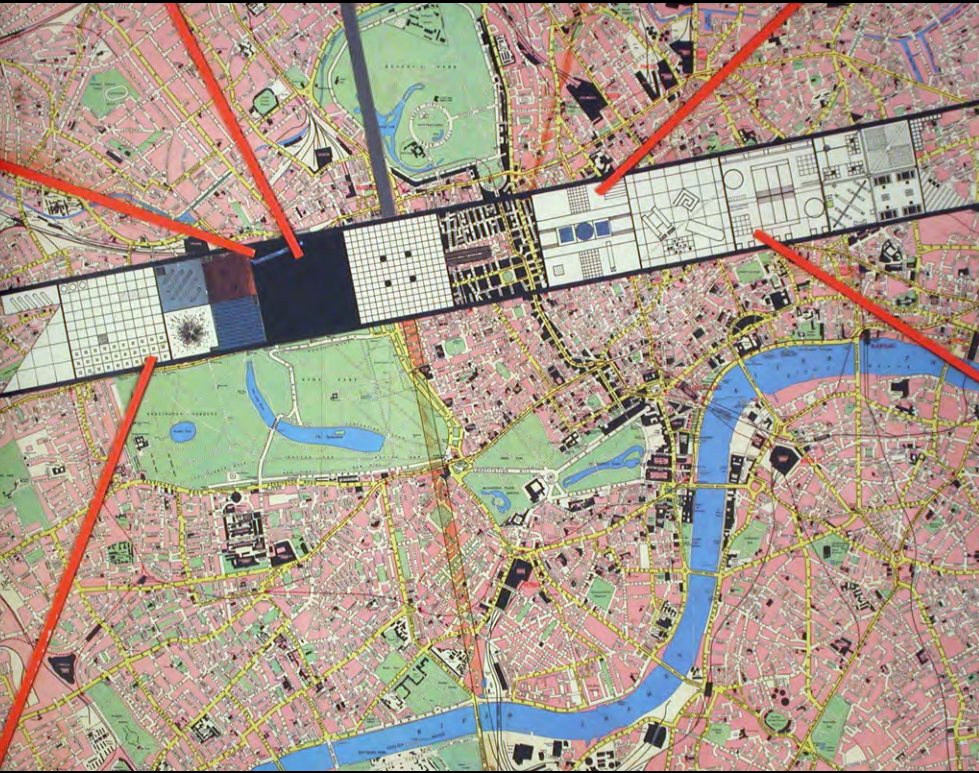
Environmental concerns did not suddenly appear in the 1960s. Throughout the industrial era, several voices denounced the dead ends of industrial development, and the devastation of entire regions and colonies. But these were basically silenced by the pervasive dogma of productivity, worshipped by both the champions of the free market and their Marxist opponents. In the 20th century, as that moderate cult became more and more dominant, major crises, such as the Great Depression, sparked 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 "addition to growth" covered up the message.

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.

Roger Auden, O Espo, presidente do
Instituto de Conservação da Natureza,
em 1970.

On voit que certains voient la technique et la technologie métaphoriquement, comme solution à l'énergie, voire comme source de la vie. L'empirisme physique des attachements humains, si l'on a une poétique technique que l'urbanisme transforme de la plante en site, de la vie en fait avec l'aggrégation constante de toutes les problématiques environnementales (urbanisme) sans être les seuls qui font l'eau, le climat, la biochimie et le pH de toutes les réserves énergétiques ou matérielles. Ce n'est pas à dire que les sciences scientifiques puissent se limiter à l'écologie en question sans assumer les technologies techniques, sociales, matérielles et économiques d'écologie qui ont précédé pendant plus de deux siècles de révolutions industrielles, mais également les modes de "gouvernement" politique et sociale au moyen desquels (notamment) sont organisés et administrés.





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MUTATIONS

REM KOOLHAAS
HARVARD PROJECT
ON THE CITY

STEFANO BOERI
MULTIPLICITY

SANFORD KWINTER

NADIA TAZI
HANS ULRICH OBRIST



MUTATIONS

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HARVARD PROJECT ON THE CITY

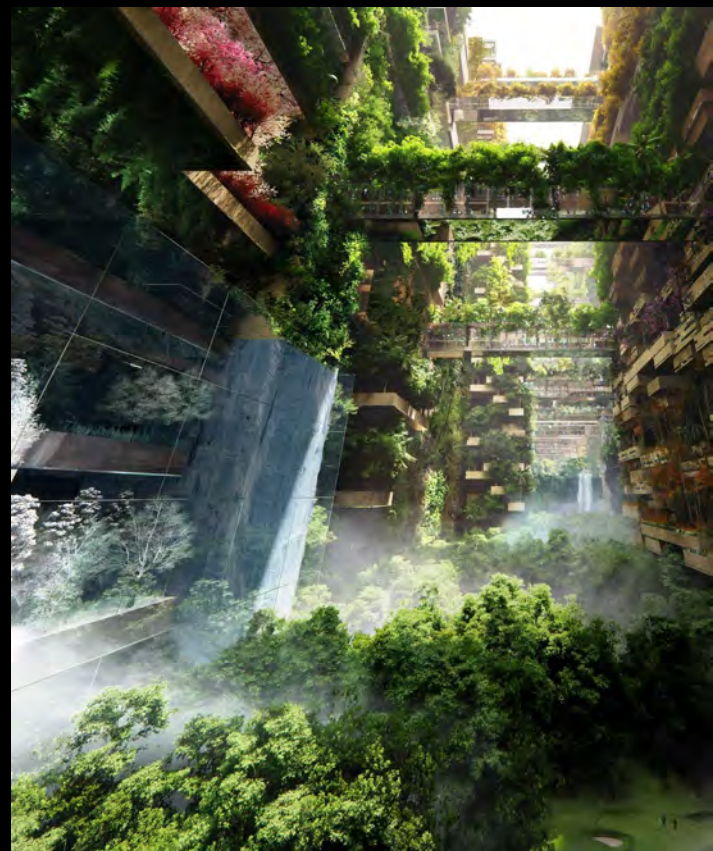
STEFANO BOERI MULTIPLICITY

SANFORD KWINTER

NADIA TAZI

HANS ULRICH OBRIST





Schizophrénie ou dissonance cognitive

Toute personne un peu informée et réfléchie
est aujourd'hui confrontée à une situation assez perturbante :

Quand on se tourne vers le passé, il semble bien que
l'urbanisation du monde est un processus qui n'a cessé de
croître, qu'elle est inévitable, et qu'elle est le sens de l'histoire...

et en même temps,

quand on sonde le futur à l'aune des grosses préoccupations
environnementales, cette même urbanisation globale paraît
improbable, impossible, et comme la fin de l'histoire...

**Comment aborder, comment penser une évolution
qui semble être à *la fois* inévitable *et* impossible?**



CHARLES C. MANN

Author of 1491

THE
WIZARD
AND THE
PROPHET



TWO REMARKABLE SCIENTISTS
and THEIR DUELING VISIONS *to*
SHAPE TOMORROW'S WORLD





THERMO

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





Permaculture

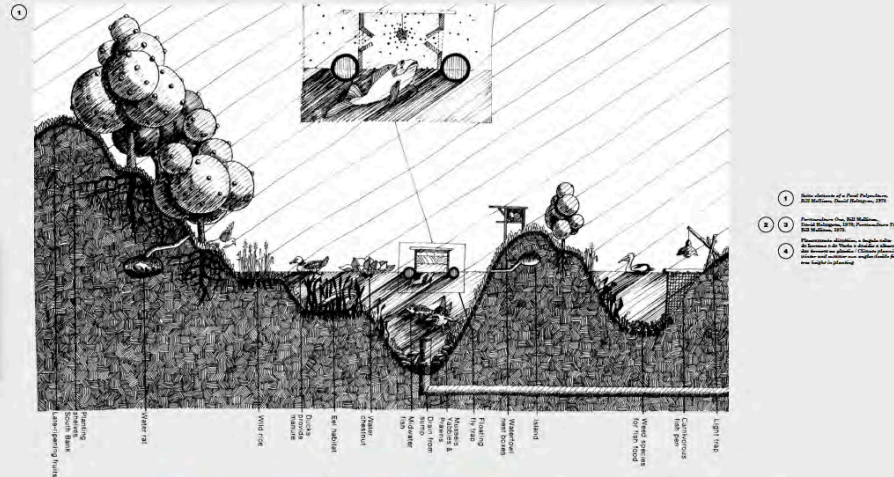
Principles & Pathways Beyond Sustainability

David Holmgren

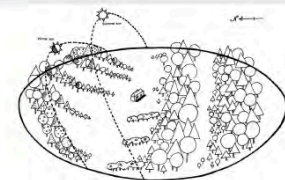
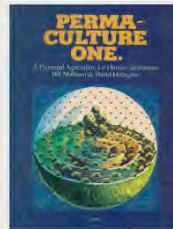
Revised Edition

1978: PERMACULTURE ONE

1978: PERMACULTURE ONE



1. Bill Mollison, *Permaculture: One*, 1978.
2. Bill Mollison, *Permaculture: One*, 1978.
3. Bill Mollison, *Permaculture: One*, 1978.
4. Bill Mollison, *Permaculture: One*, 1978.



UMA AGRICULTURA PERENE PARA O POVOAMENTO HUMANO

A PERENNIAL AGRICULTURE FOR HUMAN SETTLEMENTS

Bill Mollison & David Holmgren,
Permaculture: One & Two,
Apiculture for Human Settlements,
McGraw-Hill, 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 pomólogo, caçador de vespas, botânico, leilão, etc. a ecologista da vida selvagem, e David Holmgren, um jovem muito formado, que, mesmo por experimentos, formou-se na arte de articular a agricultura com a ecologia e a arquitetura paisagística, tendo acabado de se matricular no novo programa de Design Ambiental de Hobart.

Em suma, a *permacultura* foi explicitamente concebida como uma abordagem de design para a jardinagem de subsistência, permitindo que as famílias em as comunidades locais possam localmente o problema ambiental, criando locais auto-suficientes que respondam às suas necessidades locais. Sendo uma das mais consistentes propostas dos princípios alter-funcionalistas de Mollison, o seu objetivo era ensinar as pessoas a se tornarem designers locais (arquitetos e jardineiros) de seus ecossistemas multiespécies e transformar 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 "imagens projetadas" economicamente que imitem os padrões e as relações encontradas na natureza, que fornecem uma abundância de alimentos, fibras e energia para suprir as necessidades locais.

Efektivamente, ao aplicar o pensamento de 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.

Bill Mollison & David Holmgren,
Permaculture: One & Two,
Apiculture for Human Settlements,
McGraw-Hill, 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 foreman, 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.

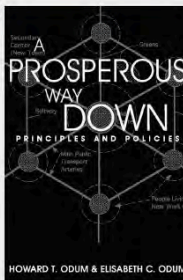
In a nutshell, *permaculture* was explicitly conceived as a design approach to subsistence gardening, enabling households or communities to locally address the environmental predicament locally by steering self-sustaining sites providing for their basic needs. A most consistent implementation of Mollison's alter-functional principles, its aim was to empower people to become the conscious and responsible designers (architects and gardeners) of the multispecies 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 "economically designed landscapes which imitate the patterns and relationships found in nature, while yielding an abundance of food, fibres 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.

12

The figure illustrates the evolution of the Agrarian Landscape through four stages:

- (a) Agrarian Landscape:** A horizontal sequence of icons representing the components of the landscape: Environment (a tree), Agriculture (a field with a plow), Structures (a barn), Industries (a factory), People (a group of figures), and Information (a satellite dish).
- (b) Environmental Sources:** A flow diagram showing the integration of environmental sources. A box labeled 'Environmental Sources' on the left connects to a series of boxes: 'Environmental Work', 'Agriculture', 'Structures', 'Industries', 'People', and 'Information Network'. Arrows indicate the flow between these components, with a central vertical line representing the environment.
- (c) Increasing Transformity:** A complex network diagram showing a dense web of interactions between various elements, including people, structures, and information. A large central node is labeled 'Information'.
- (d) Increasing Transformity:** A flow diagram showing the integration of environmental sources and the increasing transformity of the system. A box labeled 'Environmental Sources' on the left connects to a series of boxes: 'Environment', 'Agriculture', 'People Suburbs', 'Industry Transport', and 'Information Center'. Arrows indicate the flow between these components, with a central vertical line representing the environment. A large central node is labeled 'Information'.



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Howard T. Odum, *Ecology, Fundamentals of Ecology*, Saunders, 1983.

Howard T. Odum, *Environment, Power and Society*, Wiley & Sons, 1971 (revised, 2007).

Howard T. Odum, & Elizabeth C. Odum *A Prosperous Way Down: Principles and Politics*, Univ. Press of Colorado, 2001.

Nas últimas décadas do século XIX, a ecologia emergiu lentamente, para além da biologia, e da morfologia, como importante subárea da biologia, e foi mesmo designada como a "filosofia da natureza viva". Mais tarde, ao desenvolver-se, incorporou conceitos, escolas e hierarquias (escolas, biomassas, ecossistemas, etc.) e no início do século XX, a ecologia estabeleceu-se finalmente como uma disciplina científica por si própria. Depois do trabalho pioneiro do botânico Arthur Tansley ou dos limnologistas 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 tempo, Howard Odum, seguindo uma abordagem "macroscópica" baseada na teoria dos sistemas, desenvolveu toda uma notável energia dos ecossistemas. Em *Environment, Power and Society* (1971), ele modelou os fluxos, faixas e hierarquias da 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 (*energies*) e abria terreno para vários campos de pesquisa, como a economia e a engenharia ecológicas, Odum mostrou que a era industrial enfrentaria, mais cedo ou mais tarde, o problema da redução energética, e que garantir "a prosperidade *way down*", um decréscimo prospero, exigia uma reavaliação e reorganização drástica das sociedades, economias e territórios.

59

In the last decades of the 19th century, ecology slowly emerged, alongside physiology and zoology, one of the major branches of biology, and was framed as the "philosophy of living nature". Still later, as it developed its own concepts, schools and hierarchies (ecophores, 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, pursued a macroscopic approach based on systems theory, famously developing a whole emergence 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.

Thence and for three decades, while refining his energy systems language (*energies*) 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.

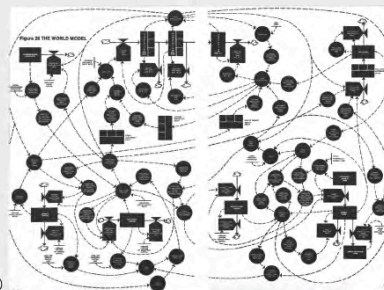
Howard T. Odum, *Emergence of Ecology*, Second ed., 1983.

Howard T. Odum, *Emergence, Power and Society*, Wiley & Sons, 1971 (revised 2007).

Howard T. Odum, & Elisabeth C. Odum, *A Progressive Way Down: Principles and Politics*, Univ. Press of Colorado, 2005.

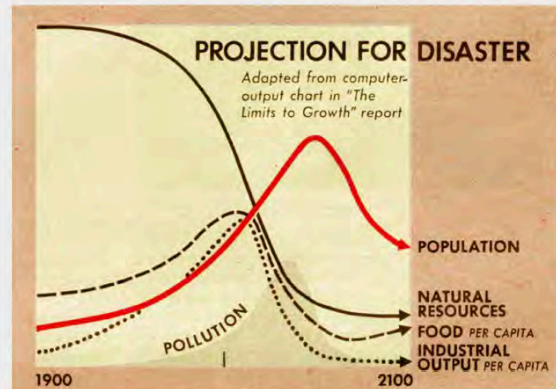
Howard T. Odum, & Elizabeth C. Odum
*A Prosperous Way Down: Principles
and Policies*, Univ. Press of Colorado
2001.

1972: THE LIMITS TO GROWTH



- 1 The Limits to Growth, Dennis L. Meadows, J. Randers, William W. Behrens II, 1972
- 2 Modeling the economy, a simple model, The Limits to Growth, 1972
- 3 A study comparing the world model with actual data, The Limits to Growth, 1972
- 4 A study comparing the world model with actual data, The Limits to Growth, 1972
- 5 A study comparing the world model with actual data, The Limits to Growth, 1972
- 6 A study comparing the world model with actual data, The Limits to Growth, 1972

1972: THE LIMITS TO GROWTH



"Beyond the Limits is a book of stunning intelligence."
—GARY LOFF



"Beyond the Limits is a book of stunning intelligence."
—GARY LOFF

A DINÂMICA DE SISTEMAS VS. A DOXA ECONOMISTA

Dennis L. Meadows, J. Randers, William W. Behrens II, 1972. The Limits to Growth: A Report for the Club of Rome's Project on the Development of Man and the Environment. New York: Random House.

No final dos anos 1960, o Clube de Roma, um grupo de administradores industriais, cientistas e altos funcionários que possuíam preocupações com o futuro do mundo, encomendou um relatório sobre a "problematização mundial" ao Laboratório de Dinâmica de Sistemas da MIT. A equipe de investigação, liderada por Dennis Meadows, revelou dados mundiais sobre poluição, recursos naturais, alimentos, população e degradação do meio ambiente e introduziu um modelo que, ao longo do século XXI, poderia prever as tendências globais no longo do século XXI e apresentar o resultado de diferentes cenários.

Em 1972, quando foram tornados públicos os livros intitulados *The Limits to Growth*, os resultados consistiram em choque: o cenário "padrão" anunciava um colapso 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 planeta. Mesmo o cenário mais otimista (que dispunha as reservas estimadas de recursos-chave do nosso planeta) apenas atrasava o colapso em uma ou duas décadas (e piorava!). Por outros motivos, as principais lições do modelo foram: 1. que havia de fato "limites para o crescimento", que não se poderiam ignorar globalmente; 2. que impedir esse colapso exigiria uma transição ativa e holística (e não uma mera correção tecnológica); e 3. que a situação no planeta demandava uma mudança comportamental (e não apenas tecnológica) a capacidade da humanidade para lidar com esse problema.

Enquanto os economistas tradicionalmente desconsideraram a pesquisa como científica, interdisciplinar e irrelevante, os seus autores sobressaíram por produzir duas atualizações (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".

SYSTEMS DYNAMICS VERSUS ECONOMIST DOXA

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 problematique" 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 interconnections since 1900, could predict their global trajectories throughout the 21st century and serve as 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 observing 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 predicament.

Whereas mainstream economists immediately dismissed the research as unscientific, interdisciplinary 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".

Dennis L. Meadows, J. Randers, William W. Behrens II, 1972. The Limits to Growth: A Report for the Club of Rome's Project on the Development of Man and the Environment. New York: Random House.

Dennis L. Meadows, J. Randers, William W. Behrens II, 1972. The Limits to Growth: A Report for the Club of Rome's Project on the Development of Man and the Environment. New York: Random House.



"BEYOND INDUSTRIAL TECHNOLOGY"

"BEYOND INDUSTRIAL TECHNOLOGY"

1



2

Designed for Survival, Colin Moore and Diana Rogers, 1972. In: Beyond Industrial Technology

3

Reinventing Architecture: Colin Moore and Diana Rogers, 1972. In: Beyond Industrial Technology

PARA UMA AGENDA ALTER-FUNCIONALISTA

Colin Moore, *Designing for Survival, in: Beyond Industrial Technology*, July 1972. In: *Beyond Industrial Technology*

Em julho de 1972, o *Architectural Design* dedicou uma edição inteira ao tema: "Designing for Survival". O editor convidado era o jovem arquiteto Colin Moore (n. 1947), cujo ensaio "beyond industrial technology" constituiu uma avaliação muito substancial dos efeitos nocivos da "Revolução Verde". A abordagem de Moore foi dirigida contra a "simplificação". "Até ao surgimento da tecnologia industrial, os sistemas de superfície desta planta evoluíram continuamente e evoluíram para uma forma mais complexa e estável. Nos inventamos uma tendência a desfeitos e trabalho de milhões. A simplificação e a estabilidade da atmosfera, hidrosfera e biosfera foram todos afetados negativamente." Na sua opinião, as técnicas 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 mais um ciclo. Era necessário pensar "mais além da tecnologia industrial" e minimizar a entropia, replicando a complexidade dos ecossistemas.

Moore avançou 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 executada de mais de uma maneira." 2. Integridade: "os sistemas tecnológicos devem reduzir e reduzir o máximo das suas inputs e 'externalidades', em vez de visar uma 'eficiência' abstrata." 3. Flexibilidade: "os sistemas devem ser leves, compreensíveis e adaptáveis, para que possam 'responder a uma variedade de situações de situação social'. 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 ignorado."

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

TOWARDS AN ALTERFUNCTIONALIST AGENDA

In July 1972, *Architectural Design* devoted an entire issue to the theme: "Designing for Survival". The guest editor was young architect Colin Moore (b. 1947), whose title essay was a very substantial assessment of the deleterious effects the "Green Revolution". Moore'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 fantasies 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.

Moore advanced three basic principles: 1. Cooperation: "Each element should, wherever possible, be capable of performing more than one function and conversely 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 so sidestepped."

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 functionalism dominant. To say that Moore'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...

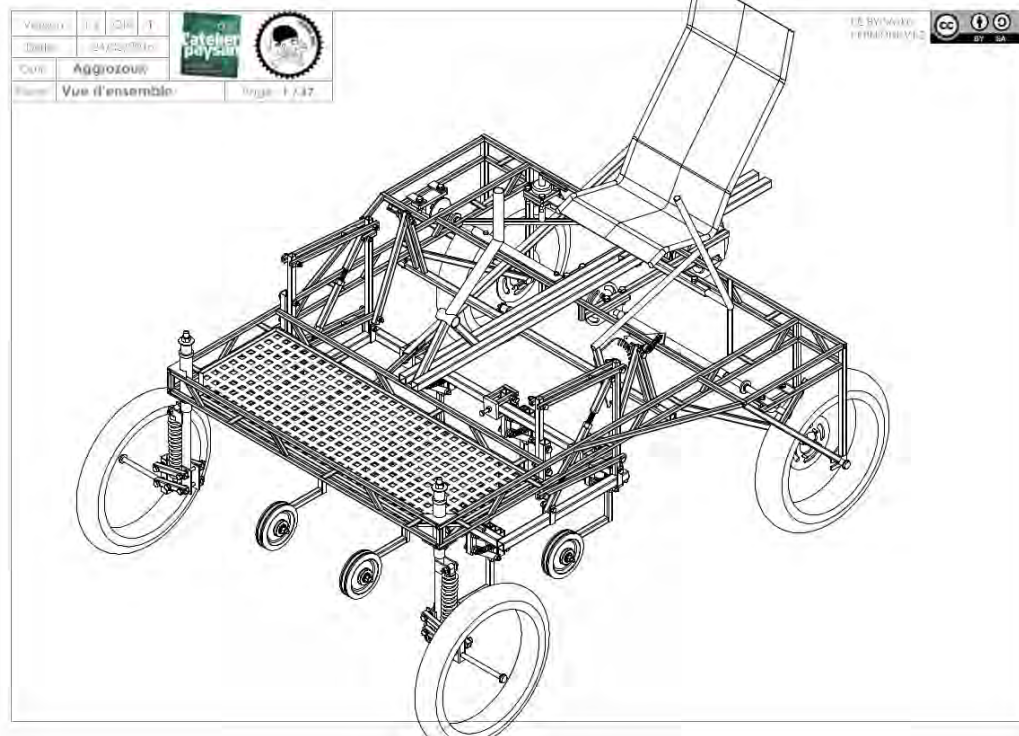
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Colin Moore, *Designing for Survival, in: Beyond Industrial Technology*, July 1972. In: *Beyond Industrial Technology*



REPRENDRE LA TERRE AUX MACHINES L'Atelier Paysan

Manifeste pour une autonomie paysanne et alimentaire



David Holmgren

COMMENT S'ORIENTER ?

Permaculture et descente énergétique

Textes traduits et présentés par Sébastien Marot

W

COLLECTION
LE MONDE QUI VIENT

*« Mon ambition est ici
d'encourager les écologistes
à créer le monde
que nous voulons, et
à ne pas se contenter
de résister à celui dont
nous ne voulons pas. »*

2008: “FUTURE SCENARIOS”



1

A USEFUL COMPASS FOR NAVIGATING THE 21ST CENTURY

Permaculture's political relevance beyond the domestic scale is often questioned. Indeed, permaculturists are more *doers* than *indignados*. But this does not preclude from some kind of internal exile 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 panels), Collapse (a degenerative slide 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 exodus and local resilience; and 4. *Lifboats* - fast energy descent and severe climate change which is causing a devolution of large social organizations 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 *Lifboats*. 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 *Lifboats*.

David Holmgren,
Future Scenarios: How Our Civilizations Are Going to Die
(New York: Chelsea Green Publishing, 2008).

2



BROWN TECH



LIFEBOATS



DESTRUCTIVE GLOBAL WARMING

SLOW OIL DECLINE



FAST OIL DECLINE



BENIGN GLOBAL WARMING

GREEN TECH

EARTH STEWARDS

Nested Scenarios (by scale of related system)

National
Brown Tech

City/State
GreenTech

Local Community
Earth Steward

Household
Lifeboats

NEGOTIATION

AND THE
CIVILIZATION
OF THE
CITY



SECESSÃO

"O PAÍS CONHECE
O RACISMO"

Em 1964, o Brasil viveu um golpe de Estado que marcou o início de uma ditadura militar que durou até 1964. Durante esse período, o país passou por uma série de transformações políticas, econômicas e sociais. A ditadura militar foi caracterizada por uma repressão política e social, pela censura e pela intervenção direta do Estado na economia. No entanto, também foi marcada por um desenvolvimento econômico acelerado, conhecido como "milagre econômico", que levou o Brasil a se tornar uma das maiores economias da América Latina.

Apesar das críticas à ditadura, é importante reconhecer que ela também trouxe alguns benefícios para o país, como a modernização da infraestrutura e a criação de empregos. No entanto, os impactos sociais e políticos da ditadura continuam a ser debatidos e estudados até hoje.

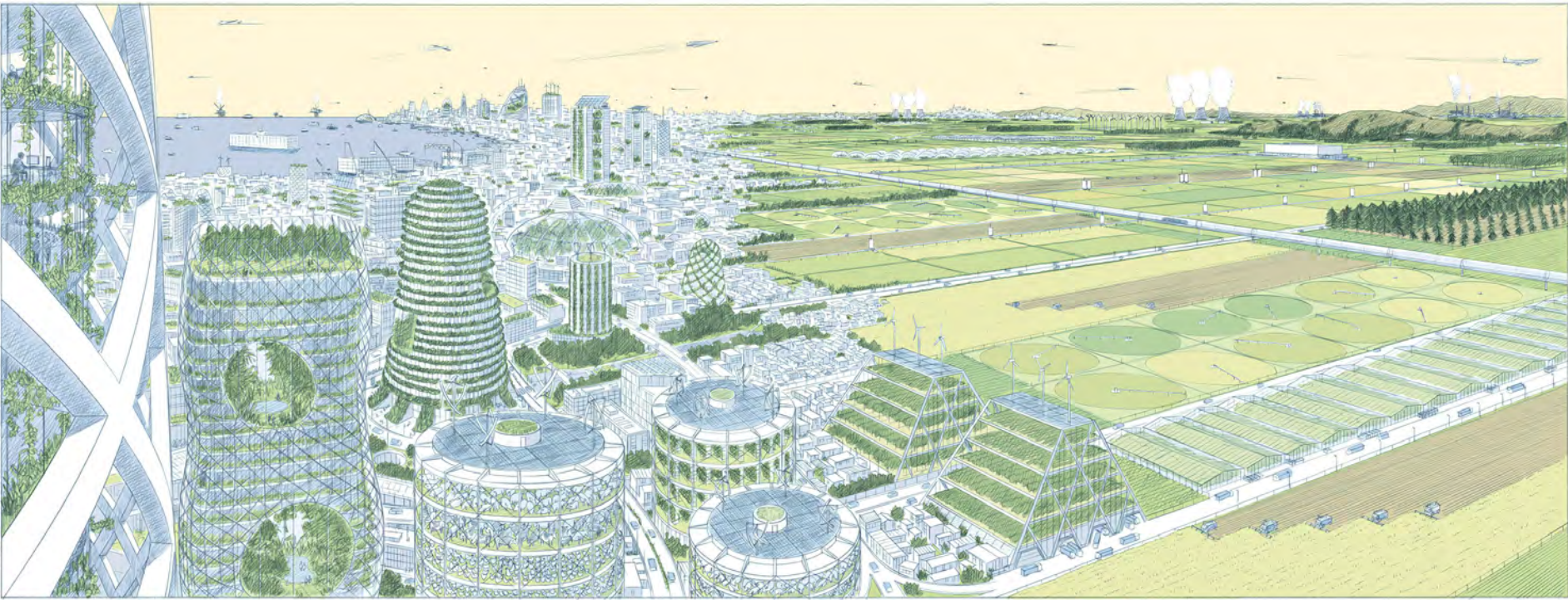
INCORPORATION

THE HIGHLY CAPITALISTIC METROPOLIS ABSORBS AGRICULTURE

What if the industrialisation of agriculture and its subjection to capitalism were logically leading to its urbanisation, or *incorporation* by the metropolis? Such is more or less the common accelerationist belief of those who, confronted with the dire environmental consequences of industrialised agriculture, imagine that the remedy is in the poison, and that only a flight forward into high-tech innovation and concentration may hold the key to a globally liveable future. Mega glasshouses, vertical farms, high-rise feedlot buildings: thanks to the breakthrough and disruptive technologies of soilless culture, hydroponics and closed-system recycling, agricultural productions liberate their vast outlying peri-urban footprints to concentrate into biological reactors or fast-breeders, agri-buildings of agri-cities which turn synanthropic plant and animal species into cohabitants of the metropolitan Noah's Ark.

In this perspective, much embraced by the champions of eco-modernism, eco-pragmatism and agri-tecture (who are also clearly experts in hybrid linguistics), the metropolis is clearly envisioned not just as the *manifest destiny* of mankind, but also as the ultimate condition of our whole biosphere. Meanwhile, the dense city acts as a control tower surveying Countryside 2.0, consisting of a grid of robotised *latifundias*, interspersed with patches of productive forests, mines, natural preserves, and escapist leisure resorts, all scientifically managed by an army of experts. This ethos of concentration is well expressed by Stewart Brand in his *Whole Earth Discipline* (2008): "One emergent principle might be that deleterious elements should be concentrated. Concentrating people in cities is good. Concentrating energy waste products like nuclear spent fuel in casks is an improvement over distributing the greenhouse gases from spent coal and oil in the atmosphere. Concentrating our sources of food and fibre into high-yield agriculture, tree plantations, and mariculture frees up more wildland and wild ocean to carry out their expert Gaian tasks."

Many architects (to say nothing of engineers) seem tempted by this flight forward into what critic Peder Anker calls "cabin ecology", and dream (like its prophets, such as Buckminster Fuller) to precipitate the metabolism of calories in systems and circuits as closed, looped and controlled as possible. The term incorporation connotes the sur-rationalist absorption of agriculture by architectural and urban engineering as well as its ultimate subjection to the economic models of concentrated investment and management of hyper-capitalism.



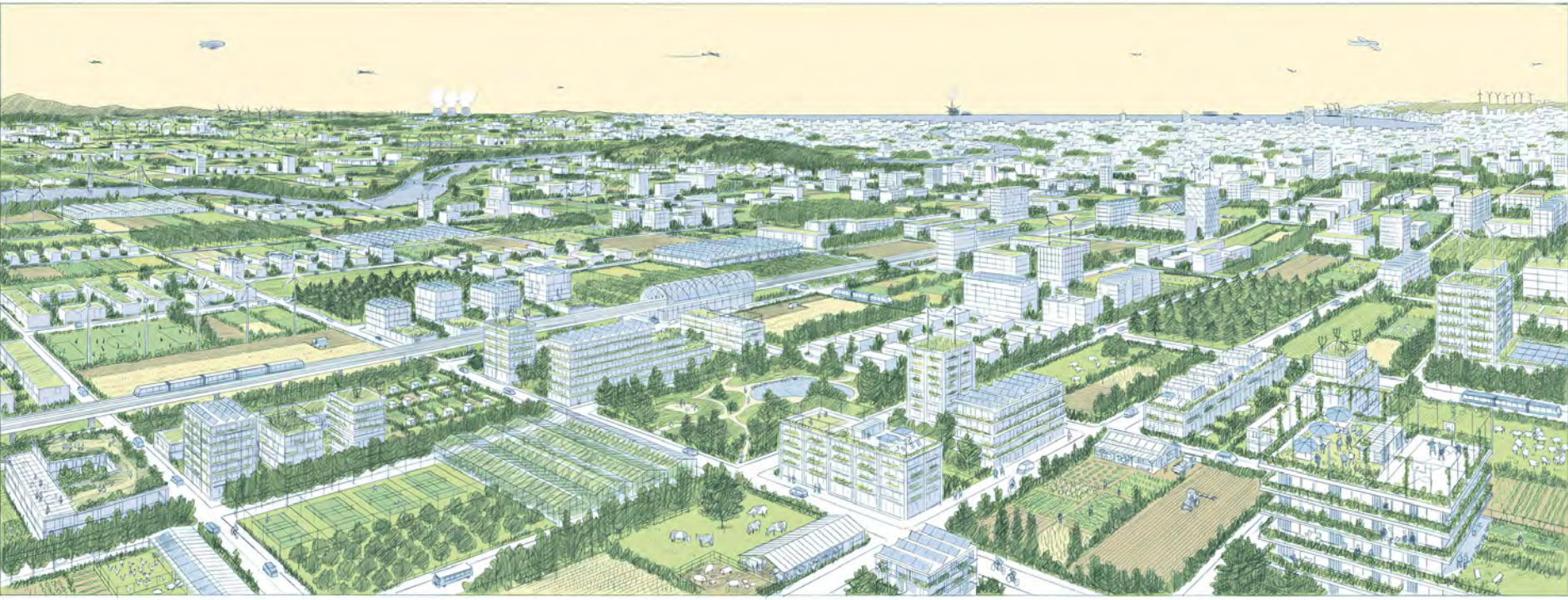
NEGOTIATION

AGRICULTURE BECOMES AN INTEGRAL COMPONENT OF URBAN EXTENSIONS

This is the latent narrative of what we might call agricultural urbanism (in counterpoint to urban agriculture). Cities and metropolises take up spaces and species of agricultural production as integral components in the design of their margins and extensions. In this perspective, which challenges the modern demarcation line between urban, natural and agricultural zones, the latent capacities of agriculture, husbandry, horticulture and forestry to evolve arenas of consociation are hired by planning to foster an evolution of urban forms, syntaxes and modes of production. Park-orchards or park-nurseries, market-gardens, housing developments, open campuses which mix education, agroecology and various activities, eco and agro-districts, greenbelts or corridors of agroforestry, etc.: the list goes on and on of the new hybrid species that combine the best interests of cities and agriculture. These counter the deleterious dynamics of the metabolic rift between city and country and might also erode the persistent frontier between main job, secondary occupation and leisure activities.

Whereas this scenario may appear to be in its infancy today, it can claim some precedent in contemporary agro-ecology, and indeed there is a whole history of jurisprudence in the tradition and models of pre-modernist urban design; the agro-urban ideas and experiments that once converged around the concept of *civic design*. Weren't Olmsted's park systems, Howard's garden cities, Migge's Siedlungen, Geddes' Biopolis, Wright's Broadacre, etc., attempts at defining the figures and structures of an *agropolitan* future (to use a term that geographer John Friedman coined to describe certain regions of Asia)? Might it be time to resume their efforts by devising new contracts at all scales, "new deals", new forms of negotiation between urban and rural practices, that could restructure and give resilience to the *citta diffusa* that has spread and keeps spreading over entire regions?

Unsurprisingly, several of today's most influential approaches and trends in urban design, such as "landscape urbanism" or "ecological urbanism", more or less embrace this narrative of negotiation. They thus promote the idea of a horizontal metropolis which, far from containing and densifying the city against a backdrop of nature and agriculture, strive on the contrary to integrate and nurture the latter within the metropolitan fabric and field. Whether this narrative will succeed in de-simplifying urbanism and evolving more varied and polycultural syntaxes of co-existence, or will be merely hijacked as an alibi for the greedy and relentless growth of urbanisation, is an important, open question.



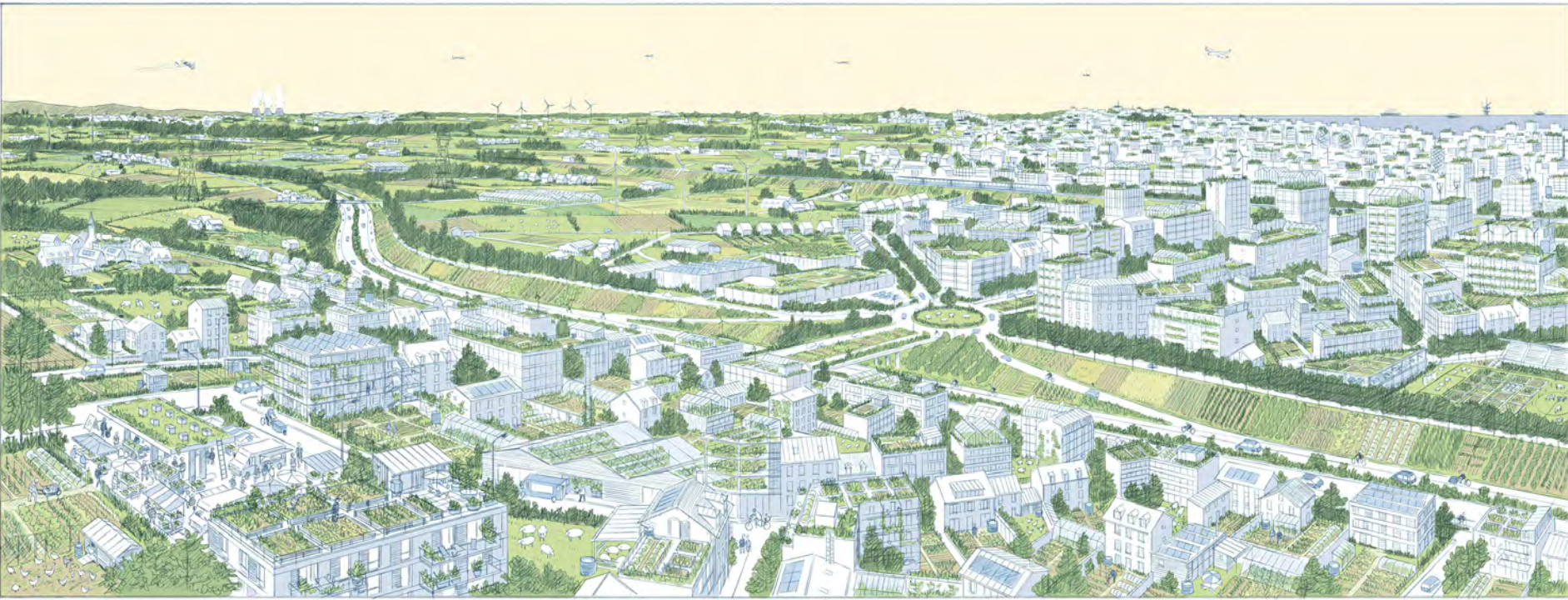
INFILTRATION

AGRICULTURE AND HORTICULTURE INVADE THE CITY

There is an underlying narrative to the work of those who take advantage of the neglected surfaces of cities and metropolises—such as roofs, terraces, vacant lots, median strips or sidewalks—to reintroduce horticulture and feeder gardening within the urban landscape; but also those who, reviving the practices of market gardening, build-up local networks that bypass the circuits of large-scale food business and retail. Without undermining the logic and realities of the urban condition, but rather by exploiting the latter's numerous niches, gaps and discrepancies, these varied initiatives take hold of food cultivation and consumption (and of their reintegration in local or short supply chains) as a means of building up collectives and solidarity-based practices in the uprooted territories of the metropolis.

Whether they proceed through direct integration with the fabric of the city, or through subscription to mixed-farming ventures and co-ops in the hinterland, these approaches all tend more or less to stimulate a higher degree of local interaction in urban territories which might evolve into a constellation of commons. Although it may be encouraged or faked by local authorities, infiltration is essentially a bottom-up phenomenon, an opportunistic and *ad-hoc* logic of self-organisation that does not pertain to planning or urbanism but blossoms here and there, like weeds, in the faults and gaps of urban territories. However, in contexts of severe economic decline or breakdown, such as the ones faced by La Havana (and Cuba in general) during the Special Period, or the City of Detroit after the collapse of its automobile industry, this phenomenon may obviously take on the dimensions of a landslide and significant recapture of urban plots by individual or collective food cultivation practices.

Since economic and energy crises are likely to strike a growing number of large metropolises and urban regions in the near future, and expand the amount of fallow urban areas, one may expect this scenario of infiltration (i.e. unplanned agricultural reclaiming of urban ecosystems and their suburban extensions) to become less and less like acupuncture and increasingly spread over larger metropolitan territories where it would evolve a variety of "rurban" fabrics, forms and syntaxes. How those will coexist with the palimpsests of surviving species and figures of the metropolis, and their struggle for existence, is anyone's guess.



SECESSION

“IL FAUT CONSTRUIRE L’HACIENDA”

This is the more radical perspective of those who question the current hegemony of metropolitics, and hence the ability of urbanism to organise and maintain the eco-political conditions of resilient and satisfying worlds. From the overwhelming evidence gathered on the dire environmental, climatic, energetic and social consequences of consumer society and capitalistic concentration—of which metropolises and their touristic satellites are both the magnets and the most obvious products—the critics of the current politics of urban governance conclude that metropolitan territories are fundamentally unsustainable, doomed to collapse sooner or later, and that what is needed is for communities, by freeing themselves from their orbit and modes of “governance”, to anticipate (if not accelerate) their progressive marginalisation and dismantling.

In this narrative of decentralisation, geared towards building means to achieve a significant degree of local autonomy, the principles of coexistence and the techniques of design and cultivation that enable people to tend a living landscape, a resilient community of interdependent humans, plants and animals, *supplant* urbanism. Alongside several other movements hinted at in this exhibition, from agrarianism to libertarian municipalism, permaculture is among the most disciplined expression of the agenda that would turn territories into confederations of self-managed communes or worlds.

Designating these experiments of non-urban foundation or re-foundation as *secession* may seem excessive. Many of these experiments are not necessarily framed as the antithesis to the metropolitan ethos but sometimes as simple offshoots or havens of “transition”. Most, of course, must accept a certain compromise or *modus vivendi* with the rules and mechanisms of metropolitan governance. Besides, all of them may be more or less tolerated as “enclaves”, or even hijacked and promoted as the prodigal offspring of a metropolis always eager to absorb contradiction by celebrating its own ecumenism.

But three things must be here underlined. Firstly, there is a growing conviction with which these initiatives are dissociating themselves from the narrative of urbanisation as the manifest destiny of humankind. Secondly, there is a strong curiosity amongst participants in these initiatives in how to learn from one another, which turns them into the most active and prospective research centres. Finally, there is an intelligence and energy that participants manage to draw from the positive faith (or at least from the suspension of disbelief) that other natural covenants are eminently desirable, possibly achievable, and absolutely necessary.

In other words, what unites them in their very diversity, is their collective intuition that salvaging the idea of *civitas*, and giving it a new meaning, now badly requires a sub-version of and an exodus from the metropolis.



Un programme pour la métamorphose du design aujourd'hui

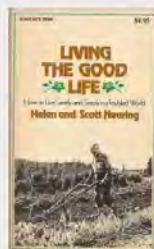
Se tourner vers les authentiques *ressources*,
c'est-à-dire celles qui sont susceptibles de *ressurgir*
moyennant soin et attention...

autrement dit

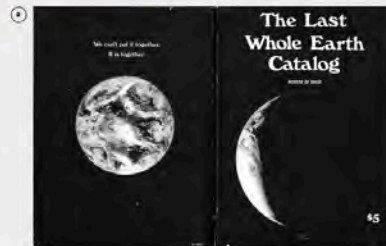
Éloigner autant que possible
l'agriculture, l'architecture et le design en général
du mode d'usage des sols zombie qu'est la **mine**
pour les rapprocher de celui,
beaucoup plus soutenable en principe,
que représente le **jardin**

"TRABALHADORES
DO MUNDO,
DISPERSAI-VOS"

"WORKERS
OF THE WORLD,
DISPERSE"



1



2

Production in the Desert



3



- 1. *Living the Good Life* by Helen and Scott Nearing, 1934.
- 2. *The Last Whole Earth Catalog*, 1971.
- 3. *Production in the Desert*, 1971.
- 4. *Back-to-the-Land and Counterculture*, 1971.

BACK-TO-THE-LAND E CONTRACULTURA

Helen and Scott Nearing, *Living the Good Life*, 1934. Cover of the book, published by the New York Public Library.

No seguimento da Grande Depressão, mas também após a Segunda Guerra Mundial e durante os chamados Trinta Gloriosos, vários intelectuais, pacifistas e veteranos aderiram a uma espécie de estilo voluntário tanto da sociedade de consumo quanto do "complexo militar-industrial". Nos EUA, *Living the Good Life* (1934), de Scott e Helen Nearing – cujos nomes os ambientalistas socialistas relatam a sua experiência vivida em agricultura doméstica auto-suficiente em Vermont e no Maine – foi particularmente influente. A sua redação em 1971 rotulou os autores como os avós do movimento back-to-the-land.

Com efeito, ao voltar – como dizem os autores – da Guerra de Vietnam, os hippies, e já à luz e o momento das preocupações ambientais – esse movimento efectuou-se de grande força. Um dos seus principais legados nos EUA foi o *Whole Earth Catalog*, uma publicação cultural lançada pelo biólogo Stewart Brand, que promoveu todo o tipo de recursos intelectuais, ferramentas práticas e tecnologias alternativas (na jardinagem, carpintaria, alvenaria, cerâmica, comunicações, "nomadismo", etc.) para aqueles que estavam ansiosos por fugir do "sistema".

Como aglutinador abrangente das grandes linhas de pensamento alternativo e contracultural, o WEC foi, durante seus primeiros 4 anos (1968-1972), um catalisador essencial do "avesso ao sistema", do "face root mesmo" e da dispersão, cujo legado é revivido tanto pelo ambientalismo contemporâneo quanto pela cibercultura.

BACK-TO-THE-LAND AND COUNTERCULTURE

Helen and Scott Nearing, *Living the Good Life*, 1934. Cover of the book, published by the New York Public Library.

In the wake of the Great Depression, but also in the aftermath of World War II, and its three decades of continuous growth, several intellectuals, pacifists and veterans embraced a kind of voluntary exile from both the consumer society and the "military-industrial complex". In the US, Scott and Helen Nearing's *Living the Good Life* (1934), where these famous socialists recounted their sustained experience in self-sufficient domestic farming in Vermont and Maine, was particularly influential, and its revision in 1971 branded its authors as the grand-parents of the back-to-the-land movement.

Indeed, it was only then, in a decade marked by the Vietnam War, the hippies and the moon shot and the rise of environmental concerns, that the said movement really gained momentum. One of its main organs in the US – was the *Whole Earth Catalog*, a venerable publication – launched by biologist Stewart Brand – which promoted all kinds of intellectual resources, practical tools and alternative technologies in fields as diverse as gardening, masonry and communications for those who were eager to flee the "system".

A wide-ranging collector of major threads of alternative thinking and counterculture, the *Whole Earth Catalog* was, during its initial 4 years (1968-1972) an essential catalyst for do-it-yourself whose legacy is claimed by both contemporary environmentalism and cyberculture.

Un mundo donde quepan muchos mundos

H7

L'AUTOGOUVERNEMENT DU CHIAPAS ZAPATISTE

Au sud du Mexique, le Chiapas est une région de forêt dont la population compte une forte proportion d'indigènes mayas, et où des formes variées de résistance à l'hégémonie extractiviste du gouvernement, soutenues par une Église adepte de la « théologie de la libération », se sont développées depuis plusieurs décennies. Au début des années 1980, une poignée de jeunes guérilleros guérilleros débarque dans cette région pour y établir un foco, c'est-à-dire l'embryon d'une armée de résistance zapatiste, en référence à Emiliano Zapata, héros de la révolution mexicaine qui milita pour la réforme agraire et la restitution des terres collectives aux petits paysans. Peu à peu, au contact des indigènes qui le rejoignent, l'Éjército Zapatista de Liberación Nacional (EZLN) opère une métamorphose théorique profonde :

« La dignité commence à devenir un mot très important et cette idée ne vient pas de nous, du groupe urbain, elle vient des communautés... On a subi un processus de rééducation, de remodelage. Comme si on nous avait démontés, mis en pièces détachées, le marxisme, le léninisme, le socialisme, la culture urbaine, la poésie, la littérature, tout ce dont on était fain, et d'autres choses dont on n'avait même pas conscience... »
(Sous-commandant MARCOS)

Le 1^{er} janvier 1994, jour où entre en vigueur l'Accord de libre-échange nord-américain, censé plier le Mexique dans la mondialisation néolibérale, des milliers d'indigènes sortent armés des forêts pour occuper San Cristóbal de Las Casas et plusieurs autres villes de la région aux cris de « ¡Ya basta ! ». Après de brefs affrontements, le gouvernement mexicain est contraint par l'opinion publique à des pourparlers qui conduisent aux accords de San Andrés en février 1996, lesquels garantissent en principe la reconnaissance des peuples indigènes, la préservation des ressources naturelles

de leurs territoires et une forme d'autogouvernement de leurs communautés. Bien que ces accords aient été aussitôt remis en question par l'État mexicain, les communautés zapatistes se sont organisées depuis comme si, de facto, ils étaient entrés en vigueur.

Les 31 communes zapatistes, fédérées aujourd'hui en 12 provinces autonomes (caracoles), sont gérées par des assemblées et des autorités élues. Choisis par les communautés, ces représentants du mandar obedeciendo (gouverner en obéissant) ne sont pas des experts mais des paysans-artisans qui assument à tour de rôle - caminar preguntando (cheminer en posant des questions) - les tâches de justice comme l'examen des affaires et projets des communautés. Pas plus que les promoteurs de éducation ou de salud, qui opèrent dans les écoles et dispensaires créés par les zapatistes, ces représentants ne perçoivent de salaire en argent. S'il existe des productions destinées à la vente et à l'exportation (comme le café, l'essentiel du métabolisme zapatiste fonctionne - et depuis plus de trente ans ! -, à l'image des symbioses de la milpa (culture associant maïs, haricots et courges ou potirons), en dehors des circuits de l'argent et du capital. Une mauvaise nouvelle pour celles et ceux qui « ont peur que nous découvriions que nous pouvons nous gouverner nous-mêmes »...

Jerôme KACI-MET, *La Révolution zapatiste* (intervention quinquennale de violence ethnique), Flammarion, 2019 (2020).

Sous-commandant MARCOS et Yoon L.R. BOLT, *La Revue zapatiste*, 2001, 1997.

Sous-commandant MARCOS, *Séisme de la dignité*, Cilemex, 2009.

Sous-commandant inséparables MARCOS et MARCOS, *Ellos et nous*, Éditions de l'Écran, 2015.



« Nous sommes devenus soldats pour qu'il n'y ait plus jamais besoin de soldats » : le sous-commandant inséparables Marcos à cheval dans la Selva Lacandona



« Vous êtes en territoire rebelle zapatiste où le peuple commande et où le gouvernement obéit », panneau à l'entrée d'un village zapatiste



Une indigène tzotzil transportant du bois de chauffe à San Juan Chamula, sud Chiapas, photographie de Mauricio LIMA



Conjuntos Integrales Zapatistas, Beatriz AURORA

H7

« Reprendre la terre aux machines »

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LA CAMPAGNE D'ÉDUCATION POPULAIRE DE L'ATELIER PAYSAN

En France, comme ailleurs, plusieurs associations et coopératives ont émergé au cours des dernières décennies, qui œuvrent à un changement de modèle agricole et alimentaire, soutiennent le développement d'une agroécologie paysanne, facilitent l'accès à la terre pour les non-paysans (comme la fédération Terre de Liens), accompagnent les projets d'installation, encouragent le partage et l'échange de savoir-faire, développent des réseaux locaux (comme les AMAP) et épaulent les fermes paysannes dans leur effort pour résister au rouleau compresseur du complexe agro-industriel. En dépit de leurs moyens très modestes, et de leur focalisation pragmatique sur des questions techniques, juridiques ou administratives, ces collectifs œuvrent en réalité à un projet politique d'envergure historique : enrayer, voire inverser la dynamique d'exode rural qui n'a cessé, depuis deux ou trois siècles, de drainer toutes les ressources des territoires ruraux (population comprise) vers ces aimants du capital et du travail que sont les villes et les territoires métropolitains, et vers les concentrations capitalistiques que sont les multinationales fournisseuses d'intrants ou d'équipements agricoles en amont, et les géants de la transformation et de la distribution en aval.

Au sein de cette constellation, modeste par ses effectifs, mais grande par sa cause, l'Atelier paysan est remarquable pour deux raisons. D'abord pour la mission cruciale qu'il s'est donnée dès l'origine : faire en sorte que les paysans et paysannes regagnent la maîtrise de leurs outils et technologies. Et ensuite, pour la clarté diagnostique et programmatique avec laquelle il a formulé les enjeux d'une politique d'autonomie paysanne et alimentaire : dont ce combat particulier est partie prenante.

Depuis sa fondation il y a quinze ans, l'Atelier paysan s'emploie à former les paysans et paysannes à l'autoconstruction de leurs instruments et outils de culture, mais aussi de leurs bâtiments agricoles (granges, verres, étables, etc.). Au cours de stages organisés en atelier ou directement dans les fermes, les participants se forment ainsi aux bases pratiques du travail du fer ou du bois, en fabriquant des instruments, machines ou bâtiments : à leur main, qu'ils seront dès lors en mesure de comprendre, réparer, adapter ou modifier eux-mêmes, et dont les formules, plans et tutoriels viennent enrichir à mesure une bibliothèque coopérative en open source. Inspirés par le courant social de l'éducation populaire, ces formations qui réarticulent les savoirs de l'agriculture et de l'artisanat sont aussi l'occasion d'échanger sur les enjeux de la démarche : s'affranchir de la spirale d'endettement dans laquelle les agriculteurs se sont enfoncés pour acquérir

et remplacer des équipements surpuissants et ultracomplexes qui, en leur dictant leur mode opératoire, les asservissent, eux et leurs terres, aux logiques de croissance et d'expansion de l'agro-industrie et de son « capital mort ».

Mais ce n'est pas tout. Mettant à profit les confinements liés à la pandémie de Covid 19, les sociétaires de l'Atelier paysan ont donné un tour supplémentaire à leur réflexion collective en composant un livre majeur, *Reprendre la terre aux machines*, dont le sous-titre de « manifeste » - à une époque où cet étendard est usurpé par les péroraisons les plus futiles - n'est pour une fois pas volé. Étayé 1) par une analyse limpide de la situation dans laquelle se trouve le monde agricole (avec ses « indépendants prolétaires, endettés et administrés », que les logiques de l'économie concurrentielle ont condamnés à s'entre-dévoier) ; 2) par un repérage systématique des dispositifs (technologiques, syndicaux, administratifs ou réglementaires) qui verrouillent cette situation au profit de l'agro-industrie ; et enfin 3) par un tableau de la dégradation de l'accès à une alimentation saine en France (où plus de 12 % des gens dépendent aujourd'hui de l'aide alimentaire), ce manifeste appelle à sortir de toute urgence d'un modèle économico-politique qui a transformé l'agriculture en débouché et fournisseur d'autres industries, et où l'agrochimie, l'agromachinerie et les biotechnologies rivalisent de « solutions » pour « prendre en charge leurs nuisances réciproques ». Vaste programme... que les initiatives locales (aussi vertueuses soient-elles) ne parviendront pas à faire advenir sans une mobilisation politique (par exemple pour une sécurité sociale de l'alimentation) et sans une campagne d'éducation populaire aux cultures et aux pratiques de l'autonomie. En militant pour l'installation d'un million de nouveaux paysans dans les années qui viennent (dans un pays qui n'en compte déjà plus que 400 000 environ), ce à quoi l'Atelier paysan nous invite est bel et bien un renversement historique de la dynamique de l'exode rural qui, depuis deux à cinq siècles, aura été à la fois la jauge et la signature géographique de l'accumulation du capital. Enthousiasmante, la politique de la subsistance n'est pas une mince affaire : pour prendre sérieusement la chef des champs, il faut d'abord apprendre à la forger.

L'Atelier paysan, *Reprendre la terre aux machines : manifeste pour une autonomie paysanne et alimentaire*, 2022.

L'Atelier paysan, *Observations sur les technologies agricoles*, L'Atelier paysan, 2022.

L'Atelier paysan, *Carte des ateliers de formation en technologies paysannes*, L'Atelier paysan, 2022.



Polytechnique ? Bineuse à doigts à traction animale, l'Atelier paysan, 2020.



Reprendre la terre aux machines, l'Atelier Paysan, Seuil, 2021



Hungar en bois massif avec assemblages traditionnels, chantier pédagogique, l'Atelier paysan, 2021

Countre-exode?

Sébastien Marot

PRENDRE LA CLEF DES CHAMPS

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UNE AMBASSADE PAYSANNE

De l'agriculture, des sols et de l'architecture





UNE AMBASSADE PAYSANNE

*L'architecture est, après l'agriculture,
le premier et le plus utile des arts*

Claude-Jacques Toussaint,
Traité de géométrie et d'architecture, 1811

Contexte

Venise est à la fois un jalon dans l'histoire des villes et de l'économie marchande, et un symbole vibrant de leurs fragilités dans le contexte d'impasse environnementale qui est le nôtre. Chaque année, les Biennales y sont un rendez-vous international majeur, où les mondes de l'art et de l'architecture viennent tour à tour prendre le pouls des questions ou débats qui les animent.

Une particularité de la Biennale d'Architecture 2025 pour notre pays est que son pavillon national y sera fermé pour travaux. Cette circonstance, qui pourrait apparaître comme un gros inconvénient en temps normal représente une formidable occasion d'attirer l'attention sur une réalité majeure de l'évolution des territoires aujourd'hui, à savoir que, avec l'épuisement de l'agriculture paysanne et vivrière par l'agro-industrie, les sols sont en train de se dérober sous les pieds de l'humanité.

La France, où le malaise des agriculteurs défile la chronique, est aux avant-postes de cette prise et crise de conscience. Dans ce pays, en principe très attaché à sa palette de paysages ruraux, l'asphyxie progressive de l'agriculture paysanne, prise en étau entre les multinationales fournisseuses de machines et d'intrants en amont et les géants de la transformation et de la distribution en aval, achève d'étouffer les territoires sous des logiques monoculturelles qui ignorent les métabolismes des sols vivants et leurs particularités locales. Mais les débats très vifs sur la "transition foncière" comme sur les moyens de protéger le monde rural des empiètements (sub) urbains (Loi Zéro Artificialisation Nette), évitent la question centrale de savoir comment "repréndre la terre aux machines" pour encourager le repeuplement des campagnes et des franges urbaines par des artisans-paysans capables de cultiver les sols, de réenclencher partout les cycles et métabolismes du vivant, et de "catalyser des mondes". C'est cette

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CARTE DES TEMPS ET DES LIEUX



L'Intestin du Léviathan

Paris jette par an vingt-cinq millions à l'eau. Et ceci sans métaphore. Comment, et de quelle façon ? jour et nuit. Dans quel but ? sans aucun but. Avec quelle pensée ? sans y penser. Pourquoi faire ? pour rien. Au moyen de quel organe ? au moyen de son intestin. Quel est son intestin ? c'est son égout.

La science, après avoir longtemps tâtonné, sait aujourd'hui que le plus fécondant et le plus efficace des engrais, c'est l'engrais humain (...) Il n'est aucun guano comparable en fertilité au détritus d'une capitale. Une grande ville est le plus puissant des stercoraires. Employer la ville à fumer la plaine, ce serait une réussite certaine. Si notre or est fumier, en revanche, notre fumier est or.

Que fait-on de cet or fumier ? On le balaye à l'abîme. On expédie à grands frais des convois de navires afin de récolter au pôle austral la tiente des pétrels et des pingouins, et l'incalculable élément d'opulence qu'on a sous la main, on l'envoie à la mer. Tout l'engrais humain et animal que le monde perd, rendu à la terre au lieu d'être jeté à l'eau, suffirait à nourrir le monde.

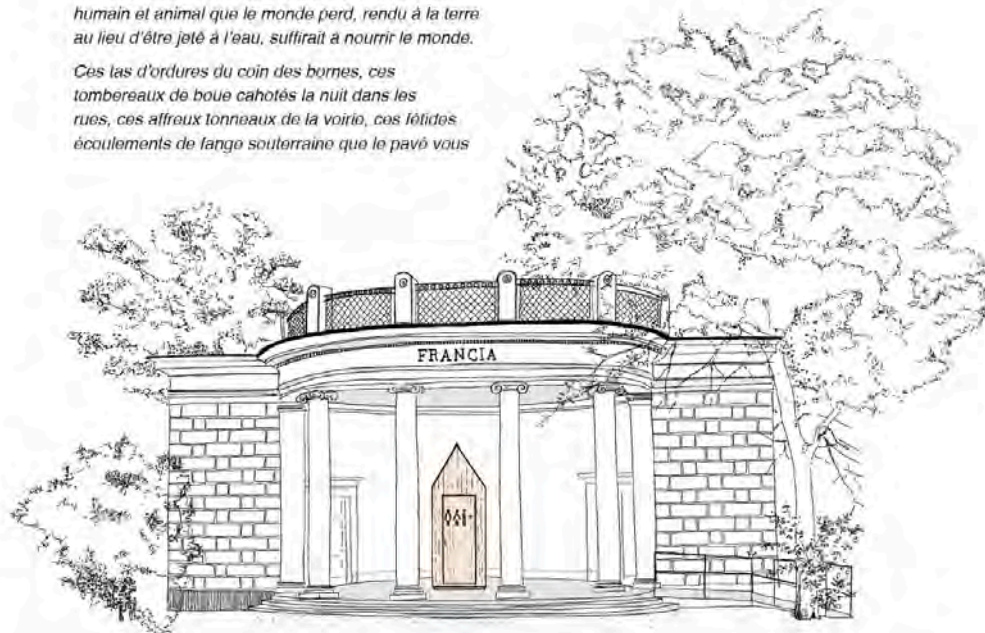
Ces tas d'ordures du coin des bornes, ces tombereaux de boue cahotés la nuit dans les rues, ces affreux tonneaux de la voirie, ces fétides écoulements de l'ango souterraine que le pavé vous

cache, savez-vous ce que c'est ? C'est de la prairie en fleur, c'est de l'herbe verte, c'est du serpolet et du thym et de la sauge, c'est du gibier, c'est du bétail, c'est le mugissement satisfait des grands bœufs le soir, c'est du foin parfumé, c'est du blé doré, c'est du pain sur votre table, c'est du sang chaud dans vos veines, c'est de la santé, c'est de la joie, c'est de la vie. Ainsi le veut cette création mystérieuse qui est la transformation sur la terre et la transfiguration dans le ciel.

Rendez cela au grand creuset ; votre abondance en sortira. La nutrition des plaines fait la nourriture des hommes.

Victor Hugo

***Les Misérables*, tome V, livre 2, 1862**









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<https://agriculture-architecture.com>