

Vincent Callebaut ARCHIBIOTIC

A utocatalytic
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E nergetic
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O rganic
P rocessual
Q uantum
R enewable
S ustainable
T emporal
U ltra-sensitive
V ectorized
W eightless
X -rayed
Y ielding
Z oomorphie

ARCHI+BIO+NICT

The association in Architecture of the Living (Bios) and the NICT (New Technologies of the Information and the Communication) can reach the antique Chinese thought that always refuses to separate the nature of the humanity that nourishes itself, the body and the spirit that would not exist without it.

Parallel to the research of new architectural prototypes with positive energy and positive biodiversity, i.e. producing more energy or biodiversity that they consume, we face a global world in which the transmission of the information encounters a quasi fictional implosion. Whereas the humanity wishes a re-naturalised real world that develops itself durably, it gives itself body and soul by schizophrenic reaction in an endless virtual abyss controlling each daily gesture of the world-citizen. The civilisations are in continuous interactivity mixing themselves in new identities.

Further to the acceleration of the demographical evolution and the economical and industrial development of these last decades, the entropic activity is considered as responsible for the «global ecological crisis». On the thesis, the Ecopolis of tomorrow will build themselves durably by the possible merge of the sciences of the nature and the technologies, the projects of the agency Vincent Callebaut design new innovations of green and sustainable architectures tending to a right balance of our human actions on our environment!

These intelligent and interactive buildings called "Archibiotics" are presented in this monograph around three reflection poles: Land'Arch, Virtual Matrix and Growing Process.

华中科技大学出版社



信息生物建筑 Vincent Callebaut

法国当代建筑实践—哲匠之门出品

图书在版编目(CIP)数据

信息生物建筑——VINCENT CALLEBAUT作品 / 蓝青 主编

-武汉:华中科技大学出版社, 2008.4

ISBN 978-7-5609-4466-1

I. 信... II. 蓝... III. 建筑设计—作品集—法国—现代 IV. TU206

中国版本图书馆CIP数据核字(2008)第034985号

信息生物建筑——VINCENT CALLEBAUT作品

主 编: 蓝青

美国亚洲艺术与设计协作联盟(AADCU)

出版发行: 华中科技大学出版社

地 址: 武汉市珞瑜路1037号(邮编: 430074)

出 版 人: 阮海洪

责任编辑: 吴亚兰

责任监印: 张正林

制版印刷: 北京画中画印刷有限公司

开 本: 889mmx1194mm 1/16

印 张: 19

字 数: 221千字

版 次: 2008年4月第1版

印 次: 2008年4月第1次印刷

ISBN 978-7-5609-4466-1/TU·323

定 价: 248.00元

销售电话: 010-64155566

邮购电话: 010-64155588-8022

网 址: www.hustpas.com

AADCUC PUBLICATION

WWW.AADCUC.ORG

INFO@AADCUC.ORG

ACKNOWLEDGEMENTS

This publication has been made possible with the help and cooperation of many individuals and institutions. Grateful acknowledgement is made to Vincent Callebaut for his inspiring work and for his kind support in the preparation of book on ARCHIBIOTIC for the AADCUC book series of the world's most emerged practices in the field of digital, multi-media and net based architecture design.

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PROJECT DIRECTOR: BRUCE Q. LAN

COORDINATOR: XIAOQU LUO/Stanford University

CURATOR/EDITOR IN CHIEF: BRUCE Q. LAN

BOOK DESIGN: °C Office®/BRUCE Q. LAN(principle)

EDITED AND PUBLISHED BY: Beijing Office/United Asia Art&Design Cooperation/bj-info@aadcu.org

IN COLLABORATION WITH: Vincent Callebaut/www.vicent.callebaut.org; d-Lab&International Architecture Research; °C Office®

ISBN: 978-7-5609-4466-1

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编辑与出版: 亚洲艺术与设计协作联盟\美国\info@aadcu.org

协同合作: Vincent Callebaut\法国;

国际建筑研究与设计中心\美国;零度事务\美国

主编及学术项目总策划: 蓝青

国际总协调: 罗小渠\斯坦福大学

书籍设计: °C Office®\蓝青(艺术总监)

翻译: 李 瑶\清华大学建筑学院

※美国亚洲艺术与设计协作联盟的建筑出版项目旨在关注国际前沿建筑学研究 and 实践,由于诸多因素的制约和学术环境的差异,中文阅读建议敬请读者最大程度参阅相对应之英文,并致以歉意和谢意。※

Vincent Callebaut ARCHIBIOTIC

A A D C U 2008 ARCHITECTURE DESIGN MONOGRAPH SERIES:
法国当代建筑实践 VINCENT CALLEBAUT, PARIS, FRANCE
信息生物建筑

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DIGITAL EFFERVESCENCE

Introduction

by Vincent Callebaut, Paris, 2007

Since my diploma obtained in June 2000 with the "Grand Prix d'Architecture René Serrure", critics about the graphical virtuosity of my realisations and the prospective inventiveness of my creations enabled me to be well distinguished during worldwide exhibitions and competitions in Europe, Asia and United States of America.

The prospective sampling is a new way of creation which consists in mixing a scientific and cultural survey with a computer programmatic approach in order to transcribe in architecture landscape distortions or ecosystem abstractions. Each architectural project at any scale, wants to anticipate through this digital hybridization, the future lifestyles by inventing new imaginary worlds. More poetic worlds. More equitable worlds. More natural worlds. Actually, more humanistic worlds!

As in the contemporary art universe, a young architect must nowadays follow transversal tactics. He must be very flexible such as a free electron reforming itself in every new project according to a different structure. It is a real challenge to carry out parasite strategies which are beyond the partitioning between practices. In a global world, the prospective sampling offers infinite possibilities of interferences and opens new action plans with Sciences, Arts and Literature. The architect becomes a true Disc Jockey of the planetary information building the space by mixing and reducing the practices coming from everywhere else outside the field of architecture.

"To believe in the world, this is what we miss the most: the world is completely lost to us, we have been deprived of it. To believe in the world also means to create events, even insignificant ones, that gets out of control, or create new space-times, even in reduced surfaces or volumes (...) it's on the level of each attempt that the capacity of resistance or, on the contrary, submission to control may be judged." Deleuze in "Pourparler"⁽¹⁾

Considering this global context, all the projects share also a view of the progressive landscape based on biomimetic and physionic projection. My architectures leave actually the inertia and are inspired by the miraculous perfection of the human body and its functioning. They are very flexible and evolve like real living organisms able to move, to change and to develop themselves in osmosis with their environment and in entire energetic autonomy. These projects of evolutionary transformation of contemporary urbanity become impregnated with the environment in order to better adapt themselves there thanks to new biotechnologies and new telecommunication systems which offer a maximal spatial and temporal flexibility.

The Architecture becomes an important and complex exchange of variable sensations according to emotions, feelings, atmospheres, uses, but also to climates, geographies, food chains and all other cycles of the nature. When people are aware of the impact, they have on the lasting development of their own planet; it deals with creating first intermediary places of sociability which grasp territories without purifying them. The strategic ambitions of this "interactive" architecture, that means in total interaction with its environment for a sustainable development, are the self management, the recycling of organic, industrial and domestic material, the configuration in real time, the eco-morphing, the biological and genetical diversity, everything leading to artificial geographies and dynamical ecosystems beginning new life cycles.

In order to outline the first research of this "living" architecture, all the recent projects and those presented in this second monograph "ARCHIBIOTIC" use the "digitalization" not only like a theoretic process of conception leading to a first essay of artificial intelligence in architecture, but also like a useful tool of construction to retranscribe the virtual architectures in the real and concrete world!

"Vincent Callebaut always questions, by our renewed and intrigued vision, (and not formatted, televised, asepticized) a vision of a territory inhabited but not fixed. He proposes the building as a living entity, participating in the individual and social development ... It's to demonstrate one's desires to the

world. It's trying to open a gate towards the future, to join the opinion that the world is in becoming and not ending, curled up on itself. It's giving the best of oneself, a generosity, to be in complicity with the other, it's trying to have an opinion of one's own about our society and the world we live in (is this how people live ?), where everything that steps out of the boundaries of commonplaces seems to be prohibited. There is no watchword, if it isn't "resist". Resist to everything and to oneself." Agnès Martin in "Walking on the wild side" ⁽²⁾

To anticipate. To prospect. To touch.

This is the great challenge to reinvent and to implement day by day the life of the worldwide citizen!

⁽¹⁾ Editions de Minuit. Paris 1990. Réed. coll. « Reprise ». 2003

⁽²⁾ «New Worlds, Vincent Callebaut Architectures». Editions Damdi. Séoul 2005. pp.7-10

沸腾的数码

引言, Vincent Callebaut, 巴黎, 2007

置, 生态形态, 生物和基因多样性, 它们都引导着我们走向人工的地理因素以及开始新生命循环的有活力的生态系统。

为了概括对于这个“活的”建筑的第一次研究, 近期所有的项目以及出现在第二段独白“建筑生物性”当中的项目, 不仅将“数字化”作为一种创造概念的理论性过程并直接导致了人工智能建筑的第一个篇章的诞生, 更将它作为虚拟建筑在现实和混凝土世界的重新转录中的建造工具。

自从在2000年6月获得ReneSerrure建筑大奖之后, 我在图形表达上的实现能力和独创性的创造令我能够从容地进行在世界范围内的展演, 以及在欧洲、亚洲和美国的竞赛。

预期取样是一种新的创造方式, 它为了在建筑景观变异以及生态系统提取之间转换而将科学性和文化性的调研与计算机程序化方式结合在一起。任何尺度上的建筑性项目, 都想要通过这一数字化的网格以及通过发明新的虚拟世界而产生的未来生活方式来占据先机。更加诗意的世界, 更加平等的世界, 更加自然的世界。事实上, 就是更加人性化的世界!

就像处于当代艺术领域一样, 一位年轻的建筑师必须顺从于横向的策略。他必须能够像一个自由电子一样, 根据每个新结构的不同而不断改变形态。而事实上提出寄生虫的策略是非常具有挑战性的, 因为它是超越实践当中的分离的。在一个全球化的世界里, 预期取样为人工干涉提供了无限的可能性, 并为科学、艺术以及文学提供了一个新的行动计划。建筑师通过混合并减少来自建筑领域以外每个角落的实践来建造空间, 而成为了真正的播放行星间信息的D.J.。

“相信世界, 这正是我们最为缺失的; 世界对我们来说已经完全丧失, 我们偏离了它。相信世界还意味着去创造事件, 有可能是无关紧要却失去控制, 或创造出了新的空间-事件, 甚至减少了表面和体量的事件。每一种尝试都具有抵抗的能力, 或者相反, 对于控制的屈服都是可能被评价的。” 引自Deleuze (德勒兹) 的“Pourparler”⁽¹⁾

考虑到这种全球性的文脉, 所有的项目都共同分享着一种基于仿生学和物理性反射的革命性景观。我的建筑实际上脱离了惯性, 并被人体及其功能奇迹般的完美激发了灵感。它们是非常灵活的, 并且进化成了像真实的活的有机体一样可以移动、可以改变并可以将其自身与环境以及整个能量自治体系相互渗透。应当感谢新的生物技术和电讯系统所提供的最大化空间性和即时可变性, 当代文明的进化性改变为了其自身能够更好地适应环境, 被注入到环境中。

这种建筑于是成为不仅跟随感情、感觉、气氛、用途所带来的多种感受重要而复杂的相互交换作用, 更是基于气候、地理状况、食物链以及其他自然循环的。当人们意识到这些因素时, 他们已经对这个星球的长期发展产生影响; 它通过首先创造出社会性的中间媒介空间来将掌握这个地域, 同时又保证不去摧毁他们。这种交互式建筑的策略性野心, 也就是在可持续发展当中与环境保持互动, 是一种自我管理的方式, 有机物、工业性和生活性材料的回收循环, 实时配

“Vincent Callebaut总是在通过我们重建并暗中捕捉到的视角 (不是格式化的、电视的或者腐化后的) 提出问题, 那是一种可居住但并不固定的地域。他将建筑作为有生命的整体提出来, 并令其加入到个人和社会的发展当中。它将通过这样来将一个的的愿望传递给全世界。它正尝试向未来展开一扇门, 并附着世界正在变得更加扭曲, 而且这一过程将不会完结。它正在将自身最好的部分呈现出来——一种宽容性, 来与其他人成为共同体, 它正在尝试着对于我们的社会和所生存的世界抱有自我的幻想, (这不是就是人们的生存之道?) 在这里, 每一件跨越平凡界限的东西都似乎都被禁止了。暗涌并不存在, 如果它不是“拒绝”的话。拒绝一切和拒绝自己。” 引自Agnes Martin “在原始的一边行走”⁽²⁾

去展望, 去保护, 去接触。

这是重新发明并将全世界居民的生活都执行出来的巨大挑战。

附录注释请参考英文

DESIRE OF «ECOPOLIS»

Essay

by **Alexandre Seron**⁽¹⁾, Mons, 2007

Overturning the classical approaches of the design of the harmonious city, Vincent Callebaut asks the audacious question of the necessity of an ambitious design of the long lasting city. And which is the best theatre for his reflection than future China? The audacity of the visionary architect is so precise: he wonders after the polemic on the "infinite" Chinese growth, the day when Peking welcomes the Olympic Games, the day before the revision of the Kyoto protocol. Because China is in the heart of many polemics and it is worldwide expected that it proves its opening and behaviour change ability. But beyond the Chinese case and its numerous paradoxes, the architect invites to something more universal: he put a stress on one of the essential stakes of tomorrow: the worldwide development of the long lasting cities, the desire of "Ecopolis"!

From the emergence of world-cities⁽²⁾

Since the end of the 20th Century, the cities are hybrid and split. Between pandemonium buildings and saturated slums. Between middle age pictures and flashy modernity. In 2000, 3 Latin American people out of 4 lived in the city. About half of the worldwide urban population lives in cities of 1 million of inhabitants. 13 out of 21 worldwide megalopolis are Asian. China envisages the creation of 250 new cities of 2 million inhabitants each! Whereas the rural areas dump yearly almost 70 million of migrants looking for a job and prosperity towards the cities, more than the half of the population gathers in true receptacles that are the urban areas. And within 2050, according to demographic projections, 2/3 of the humanity will survive in cities almost in congestion, implosion⁽³⁾!

The irresistible ascension of the megalopolis puts major challenges in terms of health, education, housing, mobility, environment... as much in the north as in the south. Without talking about the scandal of the food⁽⁴⁾. Thus, the world is so quick urbanised that we do not know if the planet has enough

resources to cope with this irreversible trend: eager of energy, theses contemporary and sprawling cities devour the resources of the earth so quickly rejecting high quantities of waste⁽⁵⁾.

As the urban Eldora do concerns especially on the worldwide level the cities that are bad prepared to a so fast evolution, the uncontrolled urban spreading deteriorates the peripheral natural spaces. It overturns the social balance and the new links created by the diversity and the spatial proximity of the people, it reinforces the social inequalities and move away the social groups the ones to the others. It discriminates the access to basic services. It fragments the urban tissue and disintegrates itself from the territorial cohesion. It increases the insecurity and the uprooting. It threatens health and environment. It impacts dangerously the budgetary needs of the cities. It oppresses the infrastructures of the space and generates a true growing "slum-urbanisation". Actually, the peripheral quarters of the cities, adding the handicaps, tend to extend, to pauperize and marginalize itself: in 2005, 23% of the worldwide urban population lived in slums that experienced a worrying worldwide growth, constituted true delayed bombs for the humanity and are one of the major political problems⁽⁶⁾! Peking does not escape from this rule.

The globalisation of the economy favours the polarisation of the activities in these privileged places that are these extensible cities. Actually, the extension of the urban territories appears by the creation of world-cities, network-cities with worldwide dimension, linking of these non contiguous territories, but deeply interconnected and interdependent. The globalisation is thus based on this urban metropolitan archipelago to develop itself: growth, power and wealth are more and more concentrated in a limited number of "global cities"⁽⁷⁾ - besides often of capitals, mostly based in the northern countries... - and by pass more and more by their cross-border state, the intermediary areas of the periphery. This phenomenon leads to a triple worldwide crisis: sovereignty crisis (overtaking of the state), territoriality crisis (overtaking of the frontiers) and authority crisis (general overtaking by the current global disorders). Ever since, the cities become political actors: they concentrate potentially more powers which make the question of the decentralisation, sometimes the autonomy, unavoidable and painful. According

to ONU-Habitat, the cities of more than 100 million inhabitants will have such powers that they will act as State-cities free of all national or regional interference.

Thus, to the economical growth corresponds an extension of the urban territories. But as the economical growth is not infinite, the urban extension is not infinite neither. Control and planning are thus urgent. The nature of the urban growth/concentration leads to an massive impact on the environment: the cities experience huge problems of space consumption and using of rare resources (water, energy, etc.) and produce also many nuisances (air pollution, waste, noise, etc.). Faced with phenomenon of world metropolization, we assist to a receding of the city's right, a spreading of the social cohesion for which the city stands security, a true centre/periphery segregation. The questions aroused by the urban mutation, true identity introspection on the future of the city: "such as excessive as a silicon breast, the cities have a misleading nature and are empty inside"⁽⁸⁾ - and the necessity to answer the economical social, environmental and cultural challenges of the city have made it an privileged application ground of the long lasting development. From the economical growth to the long lasting development

The growth is as we know it a quantitative process which is used to measure the variation of the wealthy created by the exchanges. However, when the countries of the OCDE have never been so rich and the progresses so important it becomes unhealthy that the model keep or reinforce the inequalities between rich countries and poor countries, rich population and poor population inside the same country, the same region or the same city which leads to the constitution of a dual worldwide society. As the "credo" of the growth brings intrinsically the social exclusion, the irremediable deterioration of the natural environment and the de-cultivation, our narrow and limited world-society is questioned: it cannot not been designed without taking into account the social progress, the fight against the inequalities, the preservation of the environment and the natural resources, and the respect of the cultural diversity. That is the sense of the questioning that brings to the notion of long lasting development in the 90's.

From 1992, in the report ordered by the United Nations to a commission presided over by Mrs Gro Harlem Brundtland first and then at the Convention of Rio on the environment and the development, the notion of long lasting development has been defined and built. It has been built as being the necessity of a development in the North as in the South compatible with the ecologic preservation of the planet and its resources, and taking into account the next generations and their poorest populations. It has been defined as a development that meets the needs of the present time without compromising the ability of the next generations to answer their needs. The planning for the 21st Century, called planning 21 is ready! 1992 would mark a change of the states in favour of the long lasting development. However, the after-Rio is far to have led to great actions, and even less on the expected scale. Fortunately, the reference to the long lasting development has freed itself from the international spheres! Actually, we owe the persistence of the idea of a long lasting development policy more to the mobilisation of certain territories, communes, districts or regions. Already on the fringe of Rio, then in 1994 in Aalborg, the cities, European first and then worldwide take the opportunity to set up the local planning 21. Opportunity to establish the principles and instruments of long lasting urban management around several fields (natural resources management, urban economy, social field, mobility and accessibility, territory planning, urban regeneration, cultural heritage and tourism). Opportunity to renew the urban approach, open the innovative perspectives and offered a new reading line of accelerated mutations that experience the cities nowadays. Opportunity to stimulate the local action to the realisation of a long term project, inherent to each local entity and guided by a logic of action and planning principles.

From the logic framework of the long lasting development

In conclusion, the long lasting development is understood as the putting in practice of some principles contributing to the improvement of the welfare, to more social justice, to the respect of the ecosystems and cultural identities. To be in a perspective of long lasting development corresponds to working around several skylight ideas:

- Open the temporal horizon (on the long time, the one of the future generations) and the spatial horizon (take into account the welfare of everyone, inhabitant of the North or of the South, from a close region, the city or a surrounding district);
- Lay in a global approach (take into account all the existing relationships/interactions between the systems – or between the elements of the systems –, understand the functioning and act on it);
- Carry out a transversal approach rather than a sectorial one (i.e. an approach that measures its implications not in a unique field but in all the fields);
- Develop an interdisciplinary approach (based on the partnership and the cooperation between different actors, disciplines, sectors and/or grades);
- Mobilisation and participation of all actors/strengths to the decision process (via a participative and citizen dynamism of the parliamentary democracy);
- Draw an ethics of responsibility (towards those who do not have access to the decent conditions of life and culture and towards the future generations).

As the long lasting development is an scalable notion, according to the progression of the knowledge and the evolution of the world-society, to follow this logic means also to try to carry out new approaches, methods, reading lines, strategies for a project whose contents have to be define by everyone. There is thus no predestined project of long lasting development – no miracle recipe! but a shared vision and a common methodology for the future of the world to build together. Given the quick evolutions and the tensions they experience today, the cities will appear as privileged fields of application of long lasting development principles.

From the global vision to the local action

The long lasting development is a development process that conciliates the economy, the social, the environment and the culture and set up a virtuous circle between these four poles as well as round trips North/South. On the local level, the city is a space suitable for the realisation of this circle and the resolution of the problems of the world. It is clear that the

energetic consumption of the cities, their consumption in natural resources, the rejection of waste and contaminants affect the planetary ecosystem but first the local life-space and that it seems judicious to act from the source so as to minimise the impact. Thus, if the cities are part of the problem of climatic heating, they are also ~~part of~~ the solution⁽⁹⁾. It is essential first to demolish the false equation "worldwide expansion = urban extension = economic opulence = human happiness", and then to start from the realities of the ground, well known by the cities, to find acceptable approaches of long lasting development. But besides a local materialisation with variable geometry of the global concept, the challenge of the long lasting development of the cities emphasizes also the challenge of the urban governance. If the art of governing inside the cities is in (r)evolution, the change of the local governance reminds also the necessity to pass the horizon of the electoral dates so as to tend to a policy of the city and a political project of the city that de-compartmentalize the cities and take into account the complexity of the city-system.

The principle of long lasting development is at the origin of a renewal of reflections on the city and a redefinition for the urban future of the world. As the city is a sound box of inequalities inherent to the world-system, the question is direct: how to re-orientate the development? As a growing proportion of the population of the cities is left out of the benefits of the society, dominated by exploitation logics, and out of the decision process that shapes their life, this growth model leads to a impasse where there is no place for shared progress, social justice, for healthy ecosystems, of a hybrid and half-blood cultural identity. It is essential to conduct another approach of development based first on the human developments and welfare. Realise it invites to decline the long lasting development concept in a political ethics integrating the notions of: solidarity (between inhabitants), efficiency (resources management), equality (access universality), responsibility (future), auto-determination (democracy). In terms of urban development, mobility, eco-management of natural resources, energy and waste, socio-economical durability, promotion of traditions and cultures in their identity and diversity, and North-South solidarity. But maybe these challenges can bring to essential

questionings about: a) control of the ground and grovelling privatisation of the territories, b) motoring, mobilities and generalised network c) climatic change, ecologic challenges for a long lasting urbanism, d) democracy at all steps, et e) urban culture and hybrid identity⁽¹⁰⁾. Thus, the urban development supposes difficult arbitrations, cultural, mental evolutions pushing the automatisms of the unique thought. Some actors begin to realise it but the collective consciences remain to be shaken to join this cause. On the local, national and international levels.

Deviation by China...

The cities of the world face today with a multidimensional crisis: demographical and political, social and economical, safe and democratical, sanitary and environmental, identity and culture... but also urban and architectural... This reality make the necessity of the "Ecopolis" emerge⁽¹¹⁾. And in China as nowhere else before the Olympic Games 2008. However, the promise of the Chinese government, it is a "ecologic" capital for these Olympic Games! With green hills, clear water, grass, and blue sky. An oriental version of the very occidental "little house on the prairie". The reality is that Peking is one of the most polluted cities in the world. First problem: the threshold of 4 million cars reached these days in Peking (3x more than in 1998). The pollution is the main problem of Peking and the most difficult to manage. With infernal traffic jams and smog visible to 30km, the Chinese capital is on the verge of asphyxia! The second problem is the consumption of coal, Chinese main energy source: Peking consumes ten times more gas than in 1998. The third problem is the urbanistic disruptions: every month, a block of houses is replaced by building of thirty floors. Million of housings, thousands of works, hundreds of small factories, as many polluting sources that reject tons of unbreathable particles. Et caetera... As reply, "plaster" solutions: suspend the traffic during the time of the Games, over control of the temporary works and relocation of the polluting factories towards the periphery⁽¹²⁾.

However the situation would be more open today to build modern or even long lasting. Within thirty years, Peking would have been modernised and internationalised. But it is only

from 1998 - announcement of the Olympic Games - that the antipollution fight has been intensified, as the internal but also external pressure is strong. We begin to see the results of the efforts made. But we are far from the objective of a "environment friendly" capital and "green Games" promised by Peking. And still very far from the integration of the long lasting development on the global policy of the continent-State. It is also in China a revolutionary project: not far from Shanghai, on an island located at the mouth of the river Yangtze, the first 100% ecologic city of China - or even of the world -, Dongtan, should emerge. The project witnesses the interest of the Chinese government: China can not ignore anymore the environmental problems it encounters and acts ! This 100% clean city is one of the initiatives dedicated to fight against this problem. There would be besides other similar projects in China. The eye of the architect concerned about the "Ecopolis" would see an opportunity to practice the great principles of the long lasting urbanism: energetic autonomy, isolation of the buildings, vegetable roofs, wind machines, public transports (especially fluvial shuttle) with solar energy or ethanol, recycling of the waste and the used waters, buildings limited to eight floors and built with local materials, extended spaces reserved to pedestrians, limitation of the buildings on 40% of the urban area, direct access to the products from the local organic agriculture... Likewise some "developers" have already experienced it in Europe, from the Londoner eco-district BedZED to the German eco-cities of Fribourg-en-Brigau. Of course there will always be desolate spirits to outline the artificial nature of the city thus created, the "average-class" of the populations that will live there, the carbon balance certainly better but still superior to the theoretic tenable limit. But maybe can we also see a first step in a resolute direction for this country that houses 20 to 30 megalopolis responsible for the planetary pollution? Maybe... More important maybe, would the local elected members be able to accompany the central urbanisation plans?

From the integration of the "Ecopolis" in the architectural approach

In his approach, Vincent Callebaut invites to a quasi "futurist" view on the contemporary city resolutely focused on a long

lasting urban development. Vincent Callebaut proposes an eminently conceptual reflection to build an ideal city, "Ecopolis" where it would be pleasant to live durably. The challenge is certainly to clear the city of the nuisances, pollutions, ghettos districts, but especially to build a proximity network of services, employment, and education. Vincent Callebaut draws his first steps to the concept of a long lasting city from the harmonious coexistence of different ways of life, social classes and indissociable nature/culture couple. His approach is eminently social: the challenge is to rebuild collective spaces, spaces of social inclusion pleasant for all the inhabitants – native or foreign – born, recent or old, young or senior inhabitants. His subject is also eminently political: if there are obstacles to pass (budget constraints of the cities, awareness/knowledge of the challenges of the long lasting development, phenomenon of the NIMBY⁽¹³⁾ ...) that the architect can more or less, Vincent Callebaut proposes however in this dialectics elected member – citizen to reserve a place to the professionals of the urban planning. Vincent Callebaut puts the professionals of the city in the heart of the challenges such as facilitators of the awareness, projection, and even decision for the application on the ground of the long lasting development in the urban systems. The challenge of their presence is also to understand the terms of efficiency, modernity, reactivity. His reflection is eminently questioning regarding his profession. Will we know how to be ingenious, creative, generous, and able to take into account the new realities of the city? Will we know how to diversify the housing and leave the binary schemes: social housing/ accession to ownership, individual housing/collective housing? Will we know how to answer to the new ways of life? Will we know how to invent new urban morphologies? In one word, will we know how to participate to the fight against the bad urban development and propose a long lasting alternative to the future cities and their inhabitants?

At the crossroads of several disciplines, Vincent Callebaut questions the functions, the roles: urban planner, architect, landscape architect, planner, entrepreneur, ecologist that are craftsmen of the city that certainly fascinate but also make the lines of the urban future. Sometimes true urban designers. Sometimes plastic surgeon of the appearance of the cities and

lives of their inhabitants. Sometimes experts making a territory diagnostic. Sometimes clever communicators to conquer a elected-member – citizen public. Sometimes interface between several skills and different actors. Of course committed, deeply committed: as drawers of the urban and human horizons, Vincent Callebaut invites them and us to be the pioneers of the "Ecopolis", challenge that is in the heart of the current (r)evolution of the contemporary world. Because the interest raised by the problems of the long lasting development is neither a mode, nor a temporary epiphenomenon. Vincent Callebaut recognises its true dimension, of a transformation in power, in phase and in depth of today's society. Vincent Callebaut tells us, tells you: build a city more and better in harmony with the world and its challenges is our biggest challenge. To everybody, to us, to you and of course to all who will follow. And especially do not forget the essential: whereas daily the urban expansion is not always the synonym of urban happiness, it is up to us, to you to strive so that tomorrow urban development rhymes in alexandrine with human development!

⁽¹³⁾Alexandre Seron is graduated in classical philology (UCL) and in political sciences (FUCAM). He is specialised in international politics (ULB). After various professional experiences, especially in the local development and in a centre of political studies, he is coordinator of the research at the Nation Centre of Cooperation to Development (CNCD), that leads him to consider regularly with a crossed eye North-South the international challenges through articles and/or interventions.

⁽¹⁴⁾Read the special file « la ville sans limite », in *Courrier International*, n°864, 24-30 May 2007, and the article « des villes au bord de la congestion », in *Courrier International*, n°855, 22-28 March 2007.

⁽¹⁵⁾Rapport sur la démographie mondiale, Fonds des Nations Unies pour la Population, mars 2007.

⁽¹⁶⁾Thus, the phenomenon of rural migration towards the urban centres digs out the grave of the family agriculture in rural area (thus of the employment and the rural feeding production), which would have for effect to be unable to satisfy the urban food needs and to bring the cities into agriculture imports and agro business. In certain African capitals, such as Kinshasa, we look for stimulate the peri-urban market gardening so as to assure a food sovereignty to the producers and their families.

⁽¹⁷⁾Daily, a city of one million inhabitants consumes: 9,500 tons of fossil fuel, 625,000 tons of water, 32,000 tons of oxygen and rejects: 500,000 tons of used waters and 29,000 tons of carbon dioxide.

⁽¹⁸⁾The slums know especially a sustainable growth in Sub-Saharan Africa (71%),

in Middle East (25%), in South Asia (58%), in East Asia (35%). Almost 1/3 of these slums are located inside the cities, but most of them are in periphery. Read : Mike DAVIS, Le pire des Mondes possibles : de l'explosion urbaine au bidonville global, La Découverte, 2006.

⁽⁷⁾Pierre BECKOUICHE, Les territoires de la globalisation, Univ. 1 Paris, 2005.

⁽⁸⁾« Comme un corps qui enfle », in Courrier International, n°864, 24-30 May 2007.

⁽⁹⁾Regarding this truth that bothers, it is important to recall that 13% of the worldwide urban population live in areas threatened by the increase of the sea and ocean level. The first cities concerned are: Mumbai, Lagos, New York, Cairo or Shanghai. That is also the reason why the fifteen biggest cities of the world, thus the greediest (of which Chicago, Karachi, Toronto, Kyoto or London) gathered at the beginning of June 2007 in New York and committed to reduce their ecologic print of 10%. At the moment that the most prompt and concrete enthusiasm of the cities and their own national governments is emphasized, we will regret the absence of representatives of Indian, Brazilian or Chinese cities... In brief, it remains to convince ! In Le Monde, 09/06/07.

⁽¹⁰⁾Thierry PAQUOT, Terre urbaine : Cinq défis pour le devenir urbain de la planète, La Découverte, Paris.

⁽¹¹⁾On the level of some essential principles of the «Ecopolis», retain : 1) assure social justice and equality; 2) promote the community spirit; 3) Assure safety and health; 4) Thrive by history and culture; 5) Create compact cities; 6) Optimize the energetic performance; 7) Contribute to the development of the local economy; 8) Rehabilitation of the urban contaminated or damaged grounds; 9) Create a controlled development; 10) Conform to the ecologic and historical local demands. Read also: Vincent BERDOULAY et Olivier SOUBEYRAN, Ecologie urbaine et urbanisme, La Découverte, 2003.

⁽¹²⁾Of which the most popular example is the removal of the masterpiece of the Chinese siderurgy, Shougang, with its 120,000 workers and blast-furnaces. This industrial city far from 17km of the Tiananmen place, at the entrance of the capital, is in process of removal at more than 200 km of Peking. The workers will be compelled after many years of work to remain employed by following the company to become unemployed by staying in Peking.

⁽¹³⁾NIMBY = Not in My Back Yard.

对于生态都市的渴望

Alexandre Seron ⁽¹⁾, Mons, 2007

Vincent Callebaut完全地颠覆了对于设计和谐城市的传统尝试，大胆地探讨了野心勃勃地设计一个持久城市的必要性。还有比未来中国更为适合其反思的舞台吗？梦想家的胆识是如此的生逢此时：这是他在北京迎来奥林匹克运动会的那一天，也就是京都协定修订的前一天，在中国“无限”的发展所引发的争议之后的惊讶。由于中国是许多争议的中心，并且世界范围内都在期待中国证实其开放性和行为方式的可变性。透过中国这一发展案例以及其中产生的无数悖论，建筑师提出了更为普遍性的东西——他将重点放在明天这个重要的基点上——持久城市在世界范围内的发展，以及对于生态都市的愿望！

从世界城市的出现开始 ⁽²⁾

从20世纪末开始，城市就已经变得混杂而分裂。在繁华的大厦与饱和的贫民窟之间，在中世纪图像与一闪而过的现代之间。2000年，4个生活在城市的美国人中有3个是拉丁裔。而世界一半的城市人口都居住在人口达100万以上的城市当中。世界范围内21个巨型都市中有13个在亚洲。中国令创造250个人口在200万的新城市这一畅想成为现实！而乡村地区则每年有7千万人口流向城市寻求工作机会和财富，而这其中的一半人都聚集在市区内。根据人口统计学的预测，截止到2050年，三分之二的人类将在饱和至即将爆裂的城市中生存 ⁽³⁾！

巨型城市不可抗拒的涌现给健康、教育、住宅、交通、环境等问题带来了巨大的挑战……无论在南方还是北方，这其中还不包括那些与粮食有关的丑闻⁽⁴⁾。因而世界的都市化进程过快而导致我们并不知道这个星球是否有足够的资源来供给这一不可逆转的问题——能源需求，当代这些无计划占用林地的城市不断而快速地吞噬着地球的资源，同时产生出更多的废弃物⁽⁵⁾。随着Eldora都市集中地关注世界范围内那些几乎来不及承受人口爆发的城市，失控的都市扩张也令其外部的自然环境不断地恶化。这种扩张令社会平衡被打破，使由多样性与人类空间的亲近性所创造出来的联系被迫坏，与此同时也增加了社会的不平等性，将不同的社会群体孤立了起来。这种失控蔑视基础福利的获取；也粉碎了城市原有的完整组织并将其自身从地域的和谐性当中分离了出来；增加了不安全感 and 土地根本性质的改变；威胁健康和环境；为城市需求的预算增加了许多危险的影响因素；在压制了空间的基础设施的同时生成了一种真正持续增长的“都市化贫民窟”。事实上，城市的外部区域的扩张企图也成为一种阻碍，使其自身趋于贫穷而被边缘化。2005年，世界上23%的城市人口都生活在不断增长的贫民区当中，这些贫民区构成了人类的定时炸弹和巨大的政治问题的来源 ⁽⁶⁾！北京也同样不能从这一定律下逃脱。

经济全球化偏好将处于有利地位的这些可扩展的城市中的活动两极化。事实

上，都市领域的扩张跟随着世界城市的创造——世界维度上的网络城市，连接了那些地理上不相邻却拥有深刻的内在联系和相互依赖的区域。全球化正是基于这种大都会群岛效应来发展自身的：增长、权力以及财富都更加集中到了极少数“全球化都市”当中⁽⁷⁾，这其中除了通常会被提及的首都，大部分都坐落在北方国家，而通过其边界状态被不断地逾越，城市的外围产生了中间区域。这一现象导致了一个三重的世界性危机：主权危机（国家被占领），地域性危机（边境被占领）以及托管权危机（被当前的全球化秩序控制者占领）。自此，城市便成了政治角色：他们将更多的潜在权力集中起来而引发了分权的问题——有时是自治的问题导致了必然的痛苦。根据ONU-Habitat的统计，居住人口在1000万以上的城市将会具有成为不受任何国家性和地区性干预的城邦力量。

因此，经济增长所对应的正是都市领域的扩张。然而经济增长并不是无限的，都市扩张也同样有限。控制和规划因而成为了急迫的任务。都市发展/集约化的特性导致了其对于环境产生的巨大影响：城市正在经历着空间消费和稀有资源（水、能量等）使用所带来的严峻问题，并同样制造了许多麻烦（空气污染，废弃物，噪声等）。面对世界的都市化的产物，我们希望能够通过一种城市所需要的社会和谐性，一种真实的中心/外围的隔离来帮助减少城市的特权。城市化引发了我们对未来城市身份的自省：“比如像硅胶制的乳房一样多余，城市所拥有的的是一个导向错误的自然，同时它们的内在也是空洞的。”⁽⁸⁾而去回答城市所提出的经济社会上，环境上以及文化上的挑战的必要性使长期持续发展在应用领域内占据了先机。

从经济增长到长期持续发展

如我们所知的一样，增长是一个数量性的过程，它曾经被用来衡量交易产生的财富。但是，当OCDE的国家们变得前所未有的富有以后，这一过程由于过于重要而变得不健全起来，这一模式不断地保持并加强贫富国家之间，同一国家内贫富人群之间，同一地区或是城市之间的不平等，进而最终导致了一个双重的世界性社会。随着增长的“信条”带来本质上的社会性排斥，以及无法挽回的自 然环境和未驯服的土地的破坏，我们跌入而有限的世界性社会被质疑了：它不能在不考虑社会进程，对不平等的反抗，环境以及自然资源的保护，还有对于文化多样性的尊重等因素的情况下被设计出来。正是那样的质疑带来了90年代长期可持续发展的概念。

从1992年开始，在联合国要求的由Gro Harlem Brundtland先生所领导的组织提供的报告以及在Rio大会的有关环境和发展方面的议题中，长期持续发展被定义并建立起来了。它作为一个南北方进行开发时，保持地球资源及其生态状况的必要因素，同时将后代与最为贫穷的人群考虑在内。它被定义作为一种没有向考虑后代需求妥协的同时来满足现实需要的开发方式。对于21世纪的规划，即规划21已经准备好了！这将会从长期持续发展上给这些国家带来改

变。但是，后Rio时期巨大的变化尚有一段距离，甚至有些偏离了我们的期望值。值得庆幸的是，长期可持续发展的应用将其自身从国际环境中解脱出来！事实上，我们应当将长期可持续发展政策的坚持归功于某些地域、社区、街区或是地区的运用。先是在Rio的外缘，然后是在1994年的Aalborg，其他城市，首先是欧洲，然后是世界范围内，我们抓住了良机来建立了当地的规划²¹。这是一个在一些领域中（自然资源管理、都市经济、社会领域、移动性与可达性、地域规划、都市再生，文化遗产与旅游）建立长期持续都市管理的原则和方式的良机，也是一个更新都市途径，打开创新视野并提供一条体验现今城市的加速变化的解读游线的良机。还是一个激发在一系列逻辑行为和规划原则指导下，实现一个长期计划、互相和谐的整体本地化举措的良机。

从长期可持续发展的逻辑框架说起

总体来说，长期持续发展被理解为会带来社会福利的提高，更多的公正性同时有益于生态系统和文化可识别性的原则的付诸实践。从长期持续发展的角度提出了许多有趣的想法：

摆脱时间（从长期，未来时代的一段来讲）和空间上的平线（将每个人的福利考量在内，无论是北方还是南方的居住者，无论是一个邻近的地区、城市还是周边街区）；

从全球的角度着手（将所有存在于系统之间的关系/交互行为——或者存在于系统的元素之间考虑在内，理解其功能并由此着手）；

实现一种横向而非纵向的方式（诸如一种从全部领域而非某个特殊领域来衡量其作用的方式）；

发展一种学科交叉的方式（基于不同角色、学科、方向，以及层级之间的伙伴关系及合作）；

决策过程当中，所有角色/因素的运用和参与（通过一种议会民主制度的参与性和公民活力）；

勾画出一种具有责任感的道德规范（针对那些无法对生命和文化进行得体接触的人，以及未来世代）。

正如同长期持续发展是一个可升级的概念，随着知识的衍进与世界社会的进化，跟随这种逻辑就意味着对一个内容由每个人来决定方案尝试实施新的措施、方法、reading lines、战略。因而预制性的长期持续发展方案就不存在一种万能药方！只有可共享的远景和通用的方法来建设未来的世界。在快速发展 and 现今人们所经历的压力之下，城市将会作为长期持续发展原则优先作用的领域。

从全球视野到本土实践

长期持续发展是一种调和了经济、社会、环境以及文化的发展过程，它在这四个点以及南北方之间建立了有效力的循环。从本土层面上讲，城市是一种适合承

载这一循环过程的实现和世界各种问题的解决方案的空间体。我们很清楚城市的积极消费，这种对于自然资源的消费和废气污染物的产出在影响整个生态系统之前，首先影响到的仍然是当地的生命空间，因而似乎从能源的角度考虑问题看起来是减小这种影响最为明智的方式。因此，如果城市是全球变暖问题的一部分，它们也同时是解决这一问题方法的一部分²⁰。最为重要的是首先从现实入手，从我们所了解城市角度找出可以接受的长期持续发展的方式。但是除了对全球性概念从不同的几何角度进行的本土实体化之外，城市的长期持续发展所带来的挑战更加强调的是都市管理。如果城市内在管理的艺术得到了提升，那么为了对应一种划分并将城市系统的复杂性考虑在内的城市政策或是政治性项目，本地管理的改变同样也是超越时代的不可或缺的因素。

长期持续发展的原则在于对城市印象的更新，以及对世界的城市性未来的重新定义。城市就像一个不适合世界体系的不平衡发生器一样，问题是直接的：怎样重新树立起发展本身？当城市的人口比例对于剥削逻辑占统治地位的社會来说不再是有利因素，并且被排除在制定决定他们生活的决策过程之外的時候，这样的增长方式将会导致一种僵局：共享过程，社会公正，健康的生态系统以及一个混合的社会文化都将不再具有发展的空间。发起另一种以人类发展和福利为基础的开发方式就变得非常重要。实现这一过程我们需要从一种政治道德规范上来发现长期持续发展的概念，而这种政治性道德规范综合了以下概念：团结（定居者之间），高效（资源管理），平等性（可获取的普遍性），责任感（未来），取决于自身的果断性（民主）。从都市开发、交通、自然资源的生态策略，能源和废弃物，社会经济的可持续性，对于传统和文化及其识别性和多样性的提倡，南北方的团结等方面的问题都可以反映出这一点。但是或许这些挑战同样带来了难以解决的问题：a) 控制土地被低效率的开发和利用；b) 机动车和普遍化的网络；c) 气候变化，长期发展的城市化所面临的生态挑战；d) 所有进程当中的民主性等；e) 都市文化和混合识别性²⁰⁰。因而都市开发带来了难以作出的裁决以及能够启发独特思维的文化性和精神性的进化。有些角色开始意识到了这一点，但是本土，国内甚至国际层面的大众意识仍然有待加入这一阵营。

中国方式的偏离

世界上的各个城市如今都面临着一种多维度的矛盾：民主和政治方面的，社会和经济方面的，大众和个人安全方面的，卫生和环境方面的，身份和文化方面的，同时还有城市与建筑方面的。这样的现实令“生态都市”的出现成为必然²¹¹。而与之之前的任何举行奥林匹克的城市都不同，中国政府承诺的是举办一个奥林匹克比赛的生态城市。它将有碧绿的山峦，清冽的水景，草坪和湛蓝的天空。一个东方版本的Prairie的小屋。现实却是，北京是世界上受到污染最为严重的城市之一。首要问题：北京的汽车拥有量已经超过了400万辆。（1998年的三倍）污染正是北京最为主要而难以解决的边缘！其次，中国主要的能源——煤消耗之外的可见烟雾，中国首都正处于窒息的边缘！再次，中国主要的能源——煤消耗：北京现今的煤消耗量已经达到了1998年的十倍。第三个问题是都市组织的

跨越的障碍（城市的强制预算，长期持续发展带来的意识和知识上的挑战，N1 MBY的产物等⁽¹³⁾），Vincent Callebaut提出无论如何这都应该留给专业的城市规划人员来解决。Vincent Callebaut将专业人员放置在面对城市挑战的中心位置上：诸如意识的推进者，实施者，甚至长期持续发展在城市系统的应用的决策者等。而他们所面临的挑战也包括理解高效性，现代化，反应力的含义。他的反应应当能够不断地从专业的角度反馈出不同寻常的问题。我们是否更能知道什么是独创性、创造性、普遍性，并且有能力将城市的新情况考虑在内？我们是否知道怎样使住宅变得多样化并赋予其双重的效用：社会性住宅/所有权的获得，独立性住宅/集合住宅？我们是否能够知道怎样去对新的生活方式做出回应？我们是否能够知道怎样创造新的都市形态？如果用一句话来表达，那就是我们是否能够知道怎样参与到对抗消极的都市开发当中来，同时为未来的城市及其居住者提出一个长期持续的替代方案？

从多学科交叉的视角来看，Vincent Callebaut质询的是功能和角色：城市规划人员、建筑师、景观建筑师、规划人员、投资者、生态学家。而那些令人神魂颠倒的城市艺术家，同时也可能是描绘未来城市图景的人——真实的城市设计者。有时我们需要的是城市和其居住者的生活的整形手术。专家制造地域性的图表进行分析，而聪明的媒体则去占领那些具有投票权的人——公众。有时众多技术和不同角色的混合同样重要。他们作为城市和人类地平线的决定者受到Vincent Callebaut的邀请来作为“生态都市”的先锋，来挑战这一当代世界性革命中心的激流。由于长期持续发展的所带来的趣味性不是一种模式，也不是一种临时的偶发症状。Vincent Callebaut告诉我们也告诉你们：对于每个人，我们，你们，建设一座更加和谐的城市所带来的挑战正是所面临的最大挑战。并且尤其不要忘记最为重要的一点：鉴于都市扩张并不总是等同于能够带来幸福的都市，一切都取决于我们，或者你们，去决定明天的城市发展节奏和人类发展的节奏！

附录注释参照英文

瓦解：每个月都有一个街区的住宅被30层的高楼代替。百万人的居住，上千份工作，几百个小工厂，许许多多的污染源正在释放着不能供给呼吸的分子。而回应这些问题的只有治标不治本的解决方案：在奥运会期间限制交通，对临时工进行管制，让有污染的工厂迁移到城市的边缘去⁽¹²⁾。

尽管现在的情况更加有利于我们来进行现代化或者长期持续的建设。30年之内，北京将会完全变得现代化和国际化。但是也同样是从1998年——也就是奥运会的主办权决定的那一年，受到同时来自国内和世界的巨大压力都让北京的反污染行动变得密集起来。我们开始看到人们付出的努力开始得到回报。但是我们离北京提出的一个“环境友好”的首都和“绿色奥运”的承诺还很遥远。同时，也离将国际化的长期持续发展的综合体很遥远。一个非常具有革命性的项目也发生在中国一个离上海不远的小岛上：它坐落在扬子江的江口，是中国或许也是世界第一个百分之百的生态城市——东滩。这个项目见证了中国政府的兴趣所在：中国再也无法忽视环境问题，因为它不断地在影响着这个国家！这个百分之百的清洁城市是这场反污染战斗的战役之一，因为在中国的其他地方也将出现类似的项目。建筑师通过对于“生态都市”的关注将会看到实现长期持续发展的城市化原则的实践良机：能量性的自给自足，建筑物互相之间的独立性，充满绿色植物的屋顶、风机、带有太阳能或是乙醇能源的公共交通，废弃物和废水的回收再利用，建筑高度被限定在八层并使用本土材料进行建造，拓展了空间供行人享用，将建筑物限制在城市百分之四十的用地范围内，对于当地有机农业产物的直接获取……同样地，一些“开发商”已经在欧洲经历了这些过程，从伦敦的生态区BedZED到德国的生态城市Fribourg-en-Brigisau。当然对于这些人所创造出来的城市总有人会对其人工性所带来的烟稀少颇有微词，比如即将生活在那里的“普遍阶级”，碳平衡看起来很美但与理论的实际操作还有一定的距离。但是或许我们仍然无法断定这些迈出了第一步的拥有20—30个巨型都市的国家是否就是全球性污染的罪魁祸首。更加重要的是，或许，我们选择的本土官员是否有能力去操作这些中心城市都市的规划？

从“生态都市”与建筑性措施的综合说起

在Vincent Callebaut的尝试当中，他引入了一个准“未来主义者”对于当代城市的观点，这一观点始终将焦点集中在长期可持续发展上。Vincent Callebaut提出了一种建立一个理想城市的“生态都市”观点，这是一个不寻常的概念性反应，在这个“生态都市”当中人们能够持续地快乐的生活。而它所带来的挑战就是如何去清理那些城市中的废弃物，污染物，犹太人区，更是一个如何建立起具有亲和尺度的服务网，雇佣制度以及教育系统。Vincent Callebaut他的第一步落在了一个由不同的生活方式，社会等级以及不可循环的自然及文明和谐共存所构成的共同体上。他的尝试具有着不同寻常的社会性：他所要面对的挑战是重新建立集约型的空间，具有社会性内涵并令所有的居住者都满意的空间，无论这些居住者是本地人还是外来者，是新居民还是老住户，或是年轻或高龄。他的主题也不同于寻常地具有政治方面的意义：如果存在建筑师所必须