

北京生态社区

北京市海淀区南沙河区域“反规划”

Beijing Ecological Community

Negative Planning in Nanshahe, Haidian District, Beijing

俞孔坚 阿德里安·布莱克韦尔 斯蒂芬·欧文 等编著

Edited by Kongjian Yu, Adrian Blackwell, and Stephen Ervin

哈佛大学设计学院 景观建筑与城市规划与设计系研究报告 2014年春季

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INTRODUCTION

课程介绍

China's Dream: a new urbanization

China's "reform and open" period, which began in the late 1970s and accelerated in the early 1990s, has unleashed an unprecedented process of urbanization. The development of land has had a central role in the reform economy, as both a key infrastructure for other forms of production and as a key commodity in its own right. It has precipitated an equally unprecedented migration of people from rural areas into cities, and at the same time created serious ecological problems.

The speed of transformation has produced enormous mismatches between the supply and demand of housing, with much of it sitting empty for investment, while migrants live in crowded factory dormitories or urban villages, creating an urban environment of economic polarization. At the same time, the current design of cities exacerbates the global ecological crisis. Water, air and soil have been dangerously polluted, farmland is disappearing, and disastrous flooding is a yearly occurrence.

These problems are evident to commentators around the world, and they sit at the forefront of concerns that the Chinese Central Government is struggling to address. In response to these growing problems, new policies call for "New Urbanization", to replace the "Old Urbanization", which has been characterized as socially unequal and ecologically unsustainable. New Urbanization should support for social equity, build an ecocivilization and produce a flourishing culture. As a step in this direction, the idea of landscape security patterns, a concept developed by Kongjian Yu in his dissertation at the GSD has adopted as a national strategy.

中国梦：新的城镇化模式

中国的改革开放政策始于20世纪70年代，并于90年代开始大规模地影响中国的城市化进程。土地的使用权商品化及其关键性生产基础设施的地位，使其在经济转型中发挥了核心的作用。这个过程伴随着规模空前的农村人口向城市转移，同时引发了严峻的生态问题。

过快的城市发展和转型，导致了居住空间的供给和需求之间巨大的错位。一方面，大量住房因用于投资目的而空置，而另一方面大量的新移民却拥挤在工厂宿舍和城中村中，城市环境突显出经济两极化。另外，当前的城市规划和设计也加剧了全球生态危机：水体、空气和土地被严重污染，耕地逐渐消失，灾害性的洪水常年造访。

这些生态环境问题不仅引发了全世界的关注，也是中国中央政府正竭力解决的头等问题。作为应对，最新的国家政策提出了以“新型城镇化”替代社会发展不平衡和生态不可持续的“旧城镇化”之路，以此促进社会公平，建设生态文明并推动文化繁荣。为了实现这个目标，俞孔坚教授在哈佛大学博士论文中提出的“景观生态安全格局”的概念，受到国家领导人重视，并把它提升为一项国家战略。

本课程设计以景观作为主要的工具来重新思考城市设计中的关键问题。这种规划策略建立在俞教授的“反规划”理论基础上，即以生态基础设施引导城市发展。中国

This studio considers landscape architecture as a key tool for rethinking essential processes of urban design. It will build on Yu's theorization of negative planning as a strategy for letting ecological infrastructure lead urban development. The Chinese urban revolution has severed social and ecological fluxes that once allowed for the healthy functioning of both social and natural systems. The aim of the studio is to analyze these systems in order to consider how a new process of urbanization might proceed through the reconnection of these damaged social and ecological systems.

目前的城市化截断了维持健康社会和自然系统功能所仰赖的社会和生态流，而本课程设计的目标便是对这些社会和自然系统进行分析，并通过恢复这些被破坏的系统间联系来为中国的城镇化进程提供一种新模式。



BUILDING A NEW COMMUNIST COUNTRYSIDE-PROPAGANDA DRAWING
建设社会主义新农村宣传画

大寨村 资料来源：黄国平收集
Dazhai Village Source: Collection of Huang Guoping



FARMERS IMMIGRANT INTO THE METROPOLIS AREA AFTER 1990S
20世纪90年代大量农村居民入城工作



THE FACT BEHIND HIGH SPEED URBANIZATION
高速城市化背后被破坏的生态环境和自然灾害

SITUATION

According to Beijing's 2004-2020 Master Plan, the metropolitan region will evolve toward a polycentric structure, with "two axes, two belts and multiple centers". The two axes run east to west and north to south, crossing at central Beijing. The two belts are the western ecological belt and the eastern development belt.

Multiple centers refer to points of density and commercial activity within the broader field of mixed-use urban development. Haidian district is located on the northern section of the western ecological belt and is noted for its educational resources and high-tech and scientific research developments. The official Haidian district plan calls for the expansion of these specialized industries, coupled with residential new towns, and the preservation of important open-space and ecological reserves. The Nansha River runs through the town of Shangzhuang in the northern part of Haidian District. It is a tributary of Wenyu River one of the most significant waterways feeding Beijing. The total length of the river is 21km, while the catchment area covers 220 sq km.

This area is characterized by a seemingly random mix of urban and rural spaces. Aerial photography clearly illustrates that it is formed as a checkerboard of alternating and diverse uses that seem to have little connection to one another, from rural farmland to urban villages, or from relocation housing to high tech and even creative industries. In order to understand this condition better the studio examined its diverse ecological conditions, its rural practices, and its urban incursions, in order to map the problems and potentials that the site offers for urban life.

Within this area environmental challenges include urban flooding and water pollution. Mono-functional engineering, such as channelization and damming have brought fundamental changes to the urban hydrological process and functions, such that the river and its tributaries no longer have the capacity for flood control or self-purification through ecological processes, leading to the ongoing degradation of

现状

北京城市总体规划（2004 - 2020）提出构建“两轴一两带一多中心”的新城市空间格局。“两轴”指在北京中心交会的东西轴和南北轴，“两带”则指的是西部生态带和东部发展带。

多中心是指城区中混合功能的高密度发展区域。海淀区位于西部发展带的北面，集中了北京市的高等教育资源，是高新技术产业基地和科研机构聚集区。海淀区的发展规划要求进一步扩展这些特色产业，新建住宅区域的同时保留重要的开阔地和生态保护区。南沙河流经海淀区北部的上庄镇，是北京重要的饮水水源温榆河的一个支流，全长21公里，流域覆盖220平方公里。

这块区域像是城市和农村的随机组合。从卫星图像上很明显地看到，其内部用地类型像棋盘格一样交替、混合分布，但各自间又似乎缺乏联系，比如耕地旁边是城中村，农民安置房又紧挨着科技园甚至创意产业园。为了深入了解这种发展现状，本课程设计将通过研究不同的生态环境、农村发展实践和城市扩张的情况来揭示南沙河城市化过程中的问题和潜力。

在这个区域中，环境挑战包括城市防洪和治理水污染。单一功能的工程设计，如开挖泄洪渠道和建立防洪堤等做法已从根本上改变了城市的天然水文过程及功能，河道及支流慢慢丧失了其生态防洪和自我净化的能力，导致区域生态持续恶化。

城中村本是城市外围的郊区居住地，随着城市的扩张在过去的20年里逐渐变为农民工聚集区，但这里的居住环境无法满足他们对清洁饮水和卫生设施的要求。海淀区北部的新房建设包括奢华的别墅区，外来专业人士的经济

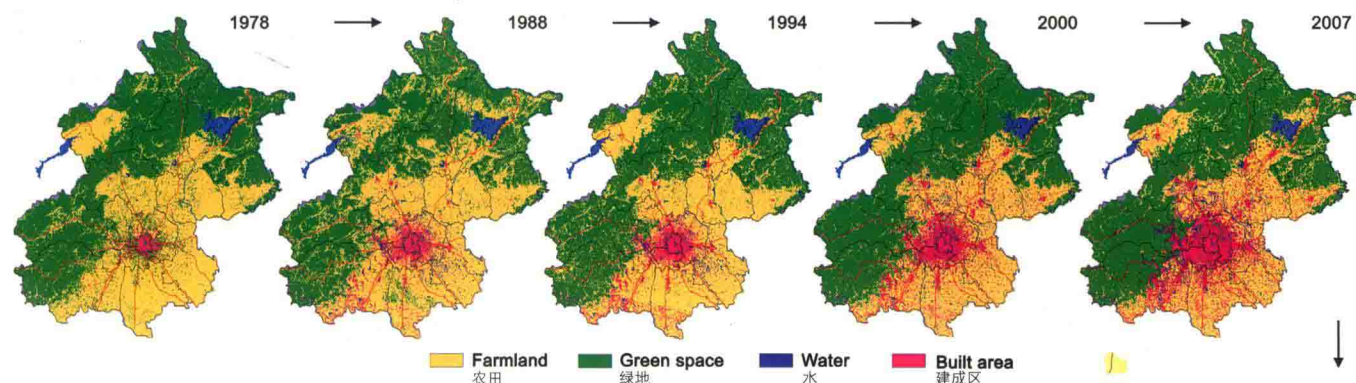
the region's ecology.

Urban villages, formerly rural settlements beyond the city have been gradually connected to urban sprawl and transformed over the past two decades into cramped accommodation for migrant workers. In their current condition these villages are unable to meet their residents' needs for clean water and sanitation services. New housing in northern Haidian spans a broad economic spectrum from luxury villas, to affordable suburban neighborhoods for professional migrants to Beijing, to relocation housing for downtown residents. In each case these new neighborhoods, contribute to increased infrastructure demand while consuming valuable farmland. The emerging tourist industry in the region, which includes "agritainment" and vacation villages, contributes to the water pollution by discharging sewage into reservoirs and rivers.

In the face of these complex problems the studio proposed the design of a mixed use settlement along the Nansha river, starting from the concept of negative planning. Students used ecological infrastructure to reconnect fluxes of water, food and populations, in order to design the new landscape and architectural forms of a "New Commune" which would be socially equitable, ecologically sustainable and culturally flourishing.

适用房，以及拆迁居民的安置房，吸引着不同经济水平的群体。可以预见，满足任何一种社会群体对基础设施的需求都必然要消耗珍贵的耕地。另外，这个区域新兴的旅游业，尤其是农家乐和度假村，常常直接向水库和河流排放污水，加剧了对水资源的污染。

针对这些复杂的问题，课程设计提出从“反规划”的概念出发，为南沙河区域设计一个兼容不同发展需求的方案。学生们将利用生态基础设施来为水、食物和人重新建立联系，通过一种全新的景观和建筑形式来建立一个社会公平、生态可持续以及文化繁荣的新社区。



THE FACT BEHIND HIGH SPEED URBANIZATION
城市化背后被破坏的生态环境和自然灾害

STRATEGY

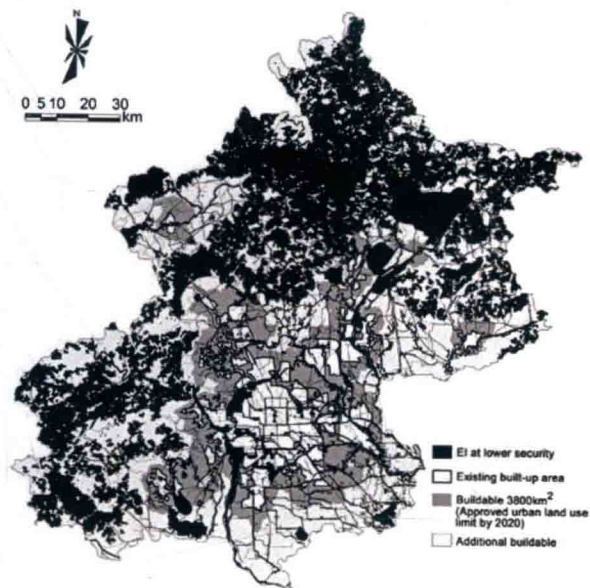
The studio explored the design potentials of Kongjian Yu's strategy of "negative planning" as a method for designing urban landscapes. Negative planning begins by examining and leveraging existing conditions of urban and rural space, in opposition to positive planning which tends to impose novel structures on existing sites. Negative planning has four key dimensions:

1. Negative planning is first of all a fundamental critique of modernist planning methods that focus primarily on population projection and civil engineering solutions to urban problems.
2. It operates by inverting the normative hierarchies of planning, which posit built form as the primary organizing system of urban space. Instead affirming socio-natural networks as the foundation of urbanization.
3. Negative planning locates human and non-human actors on the same plane, privileging three existing systems as primary elements of any new urban plan: a) abiotic – geologic, hydrologic, and climatic -systems; b) biotic systems including both animal and vegetal communities; c) cultural systems incorporating infrastructure, buildings, public spaces, transportation and energy networks, recreational, commercial, educational and other human-built systems.
4. This broad understanding of what makes up the urban, forces designers into inter-disciplinary collaborations that necessarily acknowledge the temporal unfolding of urbanism, as a series of possible scenarios, promoting the understanding of site as a situation, as an intersection of spatial and temporal forces.

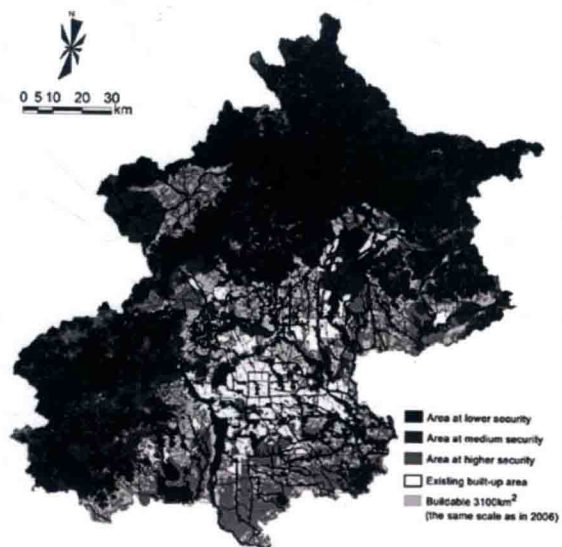
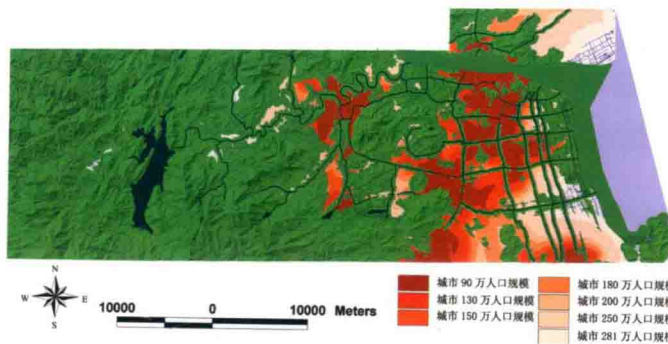
策略

课程设计试图探索将俞教授的“反规划”策略作为一种城市景观设计方法的可能性。正规划通常是在现有空间中强行植入一个新的结构，而“反规划”正相反，它要求先探索和利用现有的城市和乡村空间。“反规划”有四个关键点：

1. “反规划”首先反对只通过人口预测和市政设施建设来寻求城市问题解决方案的现代规划方法。
2. 它倒转标准性的规划程序，不再以建筑结构作为城市空间首要组织系统，而是把社会和自然网络作为城镇化的基础。
3. “反规划”对人与非人的因素同样重视，在任何城市规划中都把三个现存系统作为考虑的首要因素：a) 非生物系统—地质；水文和气候系统；b) 生物系统，同时包括动植物系统；c) 文化系统，结合了基础设施、建筑、公共空间、交通和能源网络、休闲、商业、教育和其他人类建立的系统。
4. 用更广阔深远的角度去理解城市的构成，有利于推动城市设计师以跨学科的方式合作，让人认识到城镇化多样的可能性。一个特定的场地，不仅富含当下现状的信息，也集中体现了时间和空间力量的交集。



Scenario 2: Green infrastructure within the city: urban growth based on minimum EI.



Scenario 4: Garden suburban: urban growth based on ideal EI.



METHODOLOGY

The studio investigated the site through a strategy of negative planning at multiple scales, following the method outlined below:

1. Students began by studying the fluxes that circulate on the site at different scales. The class was divided into six groups of two, with each group focusing on a different material flux along the Nansha River:

- (1) Water - Hydrology
- (2) Food/Nutrients - Agriculture
- (3) Species - Habitat
- (4) People - Built form
- (5) Energy - Infrastructure
- (6) Economy - Land use

2. After analyzing this system, students followed a process of selection or curation, finding dimensions of the existing (broken) system of fluxes that could be preserved and/or altered to serve as structural elements for a new design. Within case studies and precedents of negative planning this often highlights hydrological systems, but students were encouraged to find these structures within their specific subject of investigation, allowing contemporary patterns of development to be grounded within the site's social history and ecological systems.

3. Next students added strategic infrastructures and built forms to the found system of fluxes, in order to support healthy patterns of urbanization. These new elements learned from local practices and precedents as well as new and globalized technologies. Both the urban design and landscape architectural dimensions of the resulting project were evaluated to see how these systems might produce a "new commune."

方法

本课程设计按照“反规划”的理念，通过以下的方法从多个尺度对此区域进行研究：

1. 学生们首先研究在不同尺度上经过此区域的流系统。学生分成6个小组，每组两人，每组分别研究南沙河的一个物质流：

- (1) 水-水文系统
- (2) 食物/营养-农业
- (3) 物种-栖息地
- (4) 人-建筑形式
- (5) 能量-基础设施
- (6) 经济-用地

2. 分析了这些系统后，学生们需选取其中一个现存（被破坏）的流系统，以保护或改变此系统作为新设计中的结构性要素。以往的案例研究和“反规划”先例往往以水文系统为主体，但我们鼓励学生为他们选中的不同研究主体进行系统结构的剖析，把握好这些后才能确保当前发展规划能与此区域的社会历史和生态系统相适应。

3. 接着学生们要为选中的系统添加策略性的基础设施或建筑形式，来形成城镇化的健康模式。新添的这些元素可以借鉴本地的实践经验、以往的或是新颖的例子、全球范围内的新技术。项目完成后，我们会同时从城市规划和景观建筑两个角度来评估这些系统如何能帮助建立一个新型社区。

4. The final stage of the design process imagined future growth scenarios for the site. Negative planning is in part about setting specific parameters as a framework for future change and evolution. It is a logic that engages uncertainty and adaptability. The studio speculated on how designed infrastructures would allow a vibrant city to evolve in the future.

4. 设计的最后一个阶段是预测该社区的未来发展情境。“反规划”通过设定几个特定的参数形成未来城市发展和演化的框架，给不确定性和适应性留出了充分的空间。本课程设计将大胆地预测这些设想中的基础设施如何能促进城市的未来发展。



NANSHA RIVER WATERSHED
南沙河流域



1993 NANSHAHE LANDUSE
1993年南沙河片区用地



2010 NANSHAHE LANDUSE
2010年南沙河片区用地