LA CHINA
景观设计学
LANDSCAPE ARCHITECTURE CHINA

北京大学景观设计学研究院 主编
黑龙江科学技术出版社 出版
2010 No.3
06月20日
总第11辑

本辑主题
适应气候变化的景观设计
Landscape Architecture Adaptive to Climate Change

上升的海平面：应对气候变化的纽约滨水区项目规划
——纽约市设计师团队在MoMA展示的5个方案
Rising Currents: Projects for New York's Waterfront to Respond to Climate Change
——5 Showcases of MoMA Exhibition by Teams of NYC Architects

再造秀美山川：国土资源部总规划师胡存智关于景观设计学与创新土地利用总体规划的讲话
Reconstruction of Enchanting Mountains and Rivers: Speeches on Landscape Architecture and Innovative Master Plan for Land Use from Cunzhi HU,Chief Planner of the Ministry of Land and Resources

一起去日本——"城市景观之路"2010樱花季日本景观考察
Tour Japan with you——the Way of Urban Landscape, 2010 Study Trip of Japanese Landscape

1

上升的海平面：应对气候变化的纽约滨水区项目规划——纽约市设计师团队在MoMA展示的5个方案

Rising Currents: Projects for New York's Waterfront to Respond to Climate Change——5 Showcases of MoMA Exhibition by Teams of NYC Architects

展览概况

为了应对气候变化给纽约滨水地区所造成的影响，美国现代艺术博物馆（MoMA）和P.S.1当代艺术中心发起一项创意展览，此展览从2010年3月24日~10月11日在美国现代艺术博物馆展出。展览介绍了基于建筑设计的方案：注重在纽约和新泽西的北部海湾设计具有自我适应性的软性基础设施，从而使纽约市和它周围的区域变得更加有弹性，以应对海平面上升和愈加频繁的浪潮。这些设计方案包括：海湾沿岸的咸水湿地/淡水湿地、具有威尼斯特质的水景观、适宜居住的水上码头、人工岛屿以及一个可供牡蛎繁殖的保护性暗礁。从2009年11月~2010年1月，在P.S.1当代艺术中心举行了专题研讨会提出关于“上升的海平面（Rising Currents）”的建议，并且选出了纽约市的5个团队参加这项活动，他们是由基于建筑、工程、景观设计等多学科组成的设计团队。

上升的海平面：纽约滨水地区项目展由巴里·柏格多（Barry Bergdoll）策划，他是美国现代艺术博物馆中飞利浦·约翰逊建筑设计事务部的主要策展人。普林斯顿大学的结构工程学和建筑专业教授、普林斯顿大学人类价值中心顾问盖伊·诺登森（Guy Nordenson）是此次展览的顾问。负责人克劳斯·毕森巴赫（Klaus Biesenbach）和P.S.1当代艺术中心策展负责人安东尼·格雷罗（Antoine Guerrero）在“上升的海平面”专题研讨班的组织阶段贡献突出，此研讨班是P.S.1自由空间活动的组成部分。P.S.1自由空间活动正在进行，邀请艺术家和非营利性的艺术组织利用画廊的可用空间进行排演练习、专题研讨、学术研究和包括展览交流以及参观者参加现场报告等其他一系列活动。

“在P.S.1当代艺术中心的集中研讨会期间，创新的方案甚至超出了我最乐观的预期”，柏格多说。“上升的海平面”展览不仅为设计港口城市提供了一系列完全不同的视角，同时也已对赋予美国现代艺术博物馆和P.S.1当代艺术中心的全新角色做出了诠释：博物馆和艺术中心对于公众关心的建筑和规划领域的关键问题正发挥着促进和主导作用。在此，气候改变不应被简单地视为我们所面临的问题，应将之视为我们亟待把握的一次机遇。伴随着不断改变的海平面和愈加频繁的风暴潮，城市描绘出它在未来几十年的蓝图，但是在展览中展出的项目代表了现实的可能性，而这些项目的影响和作用在不远的未来将被感受到。这些项目虽然立足于本土，但与此同时它们也无疑具有全球意义。

这5个团队由建筑研究工作室（Architecture

Research Office）&德兰工作室（dlandstudio）、LTL建筑事务所、Matthew Baird建筑事务所，nARCHITECTS事务所和SCAPE/LANDSCAPE ARCHITECTURE PLLC工作室组成，各组的建筑师、工程师和景观设计师负责设计5个不同场地的项目，其中这5个场地的属性由Latrobe团队负责调查和界定。Latrobe是依托于普林斯顿大学的一个跨学科的团队，它由美国建筑师协会赞助，由盖伊·诺登森领导，同时其助手凯瑟琳·斯维特（Catherine Seavitt）和亚当·扬斯基（Adam Yarinsky）也参与其中。Latrobe团队的研究成果和相关的出版物——《水上栅栏湾》（*On the Water: Palisade Bay*），用作5个团队所作项目的指导基础框架，以设计出更具适应性和更大范围内的可用基础设施。该书也在这次展出之列。

为了使大家了解场地问题和事件的背景，美国现代艺术博物馆邀请这5个团队在“上升的海平面”的设计期间发表演讲。此次展览以Latrobe团队的项目背景报告开始，包括该项目的总平面图、概要性的建议、关于地貌学的详细报告和深海测量学的数据，以及基于海平线上升的预期洪泛。诺登森、斯维特和扬斯基的著作是设计师对于纽约和新泽西州的海岸线多样性倡议的基础，它不仅可以为即将到来的气候改变提供更具弹性的设计，同时也是对感知和体验滨水城市的再定位，这将会使纽约和哥本哈根、阿姆斯特丹、新加坡、香港一样加入日益注重滨水城市综合性利用的城市群。

在展览中心陈列有5个团队合作完成的实体模型、数字模型和绘图，以及由5个团队的成员和美国现代艺术博物馆的展览设计和生产部门工作人员合作完成的展览。

“上升的海平面”展览为一系列新的建筑设计展览举行了题为“当代建筑事件”（Issues in Contemporary Architecture）的开幕仪式，它立足于建立在城市尺度上的当代建筑的时事性话题，以便在学术范围内提升公众的关注度。■（张德娟 译，周明艳 校）

NEW YORK, March 4, 2010—Rising Currents: Projects for New York's Waterfront, a major initiative organized by The Museum of Modern Art and P.S.1 Contemporary Art Center to propose solutions for the effects of climate change on New York's waterfronts, culminates in an exhibition at The Museum of Modern Art from March 24 through October 11, 2010. The exhibition presents architectural proposals that emphasize adaptive-soft infrastructure solutions for New York and New Jersey's Upper Bay to make New York City and surrounding areas more resilient in responding to rising sea levels and more frequent storm surges. Elements of the proposals range from the creation of salt- and freshwater wetlands along the banks of the bay and a Venice-like aqueous landscape, to habitable piers and manmade islands, and a protective reef of living oysters. Five multidisciplinary teams of New York-based architects, engineers, and landscape designers selected to participate in Rising Currents developed the proposals during the initiative's workshop phase at P.S.1 Contemporary Art Center, from November 2009 to January 2010.

Rising Currents: Projects for New York's Waterfront is organized by Barry Bergdoll, the Philip Johnson Chief Curator of Architecture and Design at MoMA. Guy Nordenson, professor of structural engineering and architecture at Princeton University and a faculty associate of the Princeton University Center for Human Values, served as a consultant. Klaus Biesenbach, Director, and Antoine Guerrero, Director of Operations and Exhibitions, at P.S.1 Contemporary Art Center, were instrumental in the organization of the workshop phase of Rising Currents, which was part of the P.S.1 initiative Free Space, an ongoing program in which artists and non-profit arts organizations are invited to use available gallery space for rehearsals, workshops, research, and events in exchange for an exhibition or live presentation for P.S.1 visitors.

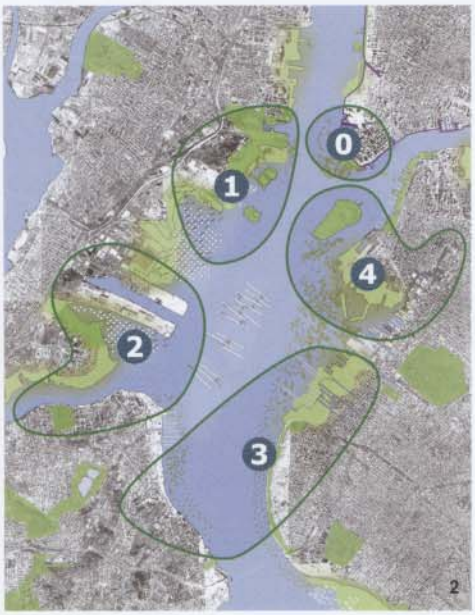
The innovative proposals developed during the intensive workshop at P.S.1 extend beyond even my most optimistic expectations, said Mr. Bergdoll. Not only has Rising Currents created a set of visions for a different kind of harbor city, but it also is illustrative of a new role for P.S.1 and MoMA in stimulating and harnessing debate about vital issues of public concern in architecture and urban planning. Climate change is seen here not simply as a problem to be confronted, but an opportunity to be seized. As the city charts its future in coming decades with the realities of changed sea levels and more frequent storm surges, the proposed projects featured in this exhibition represent realistic possibilities whose impact and influence could be felt in the not-so-distant future. The projects are truly global that is, conceived for local conditions, but with global implications.

The five teams of architects, engineers, and landscape designers—led by principals at Architecture Research Office (ARO) with dlandstudio, LTL Architects, Matthew Baird Architects, nARCHITECTS, and SCAPE/LANDSCAPE ARCHITECTURE PLLC—have conceived projects for five sites, identified and researched by the Latrobe Team (a multi-disciplinary Princeton University affiliated group funded by the Fellows of the American Institute of Architects and led by structural engineer Professor Guy Nordenson, and including his associates Catherine Seavitt and Adam Yarinsky). The Latrobe Team's study, and the related publication, On the Water: Palisade Bay, served as the framework for the teams' work toward adaptive and widely applicable infrastructure for the sites, which is on view in this exhibition.

To provide the context for understanding the problems and issues that the teams were required to address during the workshop phase of Rising Currents, the exhibition begins with a background presentation of the Latrobe Team's project, including its final master plan and schematic proposals, a detailed presentation of topographic and bathymetric data, as well as projected flooding based on incremental sea level rise. Nordenson, Seavitt, and Yarinsky's work is the basis for the various proposals for the coastline of New York and New Jersey, not only to render it both more resilient for climatic changes to come, but also to reorient the perception and the experience of the city around the water, allowing New York to join a host of cities around the world from Copenhagen and Amsterdam to Singapore and Hong Kong, which increasingly focus on an active waterfront of mixed use.

At the center of the exhibition are the physical and digital models and drawings produced by the five teams, whose members worked collaboratively to create the exhibition with members of MoMA's Department of Exhibition Design and Production.

Rising Currents inaugurates a new series of Architecture and Design exhibitions at MoMA called Issues in Contemporary Architecture, which will focus on timely topics in contemporary architecture with an emphasis on the urban dimension in order to increase public dialogue around seminal issues. ■



1. 上升的海平面：纽约滨水项目展览现场，此展于2009年3月24日~10月11日在现代艺术博物馆展出。
2. 项目分区图

1. Gallery view of the exhibition Rising Currents: Projects for New York's Waterfront at The Museum of Modern Art, on view March 24 – October 11, 2010.
2. Map of project zones

区域 Zone 2

范库尔水道和巴约讷地区
Kill Van Kull and Bayonne

Matthew Baird事务所 / Matthew Baird Architects

项目负责人：Matthew Baird
设计团队：Kira Appelhans、Kristen Becker、Nim Lee, Ajay Manthripragada、Maria Milans del Bosch、Danny Greenfield、Juanita Wichienkuer
相关信息参见：www.bairdarchitects.com

Project Leader: Matthew Baird
Project Team: Kira Appelhans, Kristen Becker, Nim Lee, Ajay Manthripragada, Maria Milans del Bosch, Danny Greenfield, and Juanita Wichienkuer
Website: www.bairdarchitects.com

2

我们的部分设计理念是试图从对场地、材质、资源的密切关注中创造美，并将从环境方面的考虑入手，推陈出新。尽管我们无法对抗自然不断变化的强大力量，但是我们对于为应对这些变化所采取的设计和技术仍然保持乐观。通过对纽约水线细部的仔细观察，我们设想出一个“软基础设施”，它适应性强、灵活变通，并且可将公共领域扩展到了湾内水面。我们的团队把这个挑战理解为城市和水域之间一次有意制造的“碰撞”，能够从中产生出意想不到的多样性新景观以及对上升水线的利用。

该建筑师事务所团队除Matthew Baird外，还包括以下成员：Kira Appelhans、Kristen Becker、Nim Lee和Ajay Manthripragada，他们在美国现代艺术博物馆P.S.1当代美术馆的工作室形成了核心团队，团队还包括Soho工作室的Maria Milans del Bosch、Danny Greenfield和 Juanita Wichienkuer。我们联合了诸多领先的专家顾问——包括建筑师、景观设计师、艺术家、工程师、生态学家、城市规划师、港口专家和经济学家。

在能够挑选纽约港5块不同区域之一而开展工作的情况下，我们选择了围绕着纽约巴约讷码头的巴约讷、新泽西、斯塔顿岛地区。我们发现这个地块不仅充满了挑战，也最令人着迷。我们负责的地区共有4个分区，覆盖了1 813hm^2，包括间距密集的斯塔顿岛北部居住区、纽约港最繁忙的范库尔水道、康斯特泊霍克石油储备设施，以及港内最大的单个填埋工程巴约讷码头。我们被这个地块的工作所深深吸引，一方面是因为它有着悠久的工业和航运历史，另一方面也是因为海平面上升导致设计面临更多的困难和挑战。我们在这个地区中发现了众多复杂又相互关联的层区：一条使用中的水道、工业碎屑、无人问津的临海区域、大量基础设施——所有这些组成了一个复合体，激发了我们的设计灵感。

纽约海岸线海平面上升的前景令人担忧。让我们看一下预期的洪泛区，例如，科学家预

1. 码头和玻璃礁研究 © Matthew Baird Architects
2. 有效水线的局部模型 © Matthew Baird Architects
3. 探索海洋废墟 © Matthew Baird Architects
4. 巴约纳——斯塔登岛北部拟议总体规划 © Matthew Baird Architects

1. Pier and Glass Reef Study © Matthew Baird Architects
2. Working Waterline Sectional Models © Matthew Baird Architects
3. Exploration of Maritimes Ruins © Matthew Baird Architects
4. Bayonne-North Staten Island Proposed Site Plan © Matthew Baird Architects

计该区中每50年中就会有一年可能将有85%的区域淹没在水下。面对这样严峻的现实，我们积极应对即将到来的水面上升，重新改建海岸，以制造出一个可持续的充满活力的未来。在深入思索洪水问题之后，我们提出了如下一系列问题：

1.我们如何运用一种不会进一步恶化气候变化和海平面上升的方法来改造和重建水体边际？我们可以采用哪些易得的材料来实施此方法？

2.我们如何改变公众对于污染区域的看法，从而吸引人们来欣赏旧工业地区的美丽海景？

3.我们如何对即将废弃的现有基础设施的潜在能源进行再利用？

4.鉴于极地冰盖消融和亚洲与美国的东北部新航道的打通，纽约港航运的未来将会怎样？

5.最后，我们如何建立一个更加具有活力、状况良好的水线？

为了解决这些问题，建立有效的水线需要做出4点基本的改变，这也是海滨在接下来80年内转变的目标。第一项改变是建立一个大型的“堤坝公园”（Berm Park）。我们建议把泽西市南部高6m的地形和康斯特泊霍克西南部同等高度的地形连接起来，并用安布罗斯海峡和范库尔水道清理疏通的材料建造一个公园。这个堤坝公园可以覆盖和容纳本地区多年以来因事故、排放造成的污染土壤。它同时还可以作为休息日驾车赏景的绝佳去处和纽约的新景点。

身处于一个海平面持续上升的世界里，经济的原油储量正快速下降。我们的第二项改变就是把康斯特泊霍克精炼厂改造成藻类生物燃料精炼厂，最终使用纽约市高达$1.23 \times 10^9 m^3$的年均下水道排污作为植物染料的养分。从1872年到20世纪中叶，康斯特泊霍克地区曾作为能源基础设施中心推动了纽约的高速增长。我们设想了一个重新定位的精炼厂，它可以成为未来增长的支柱。

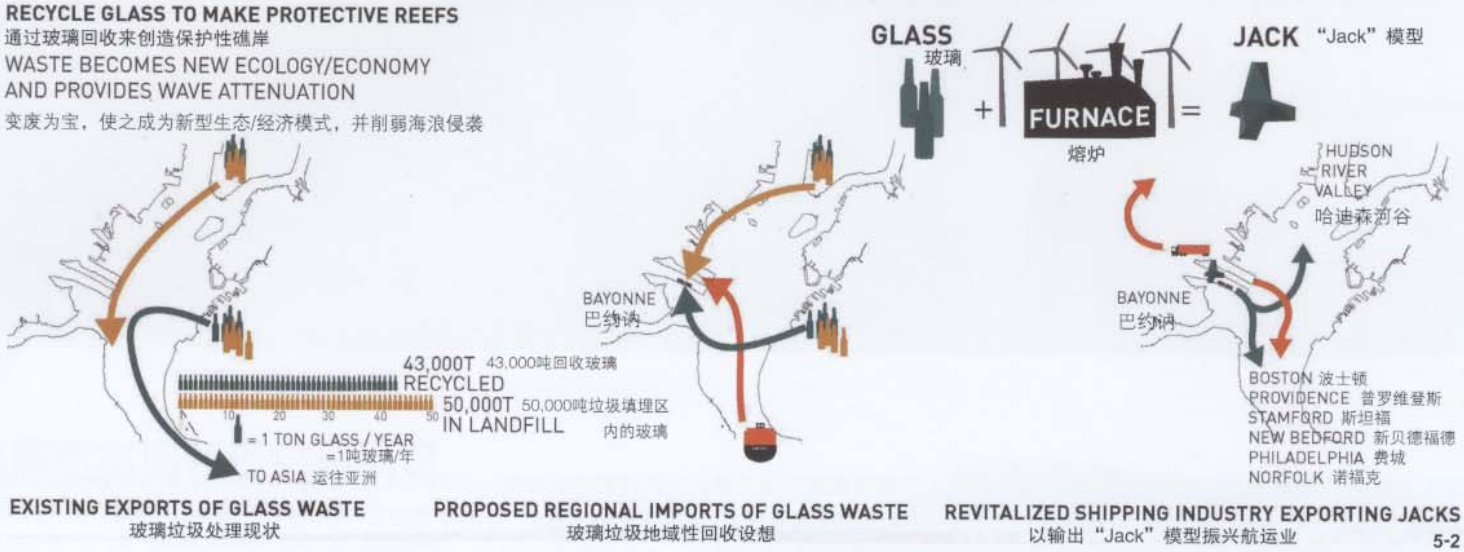
鉴于纽约沿海工业地区被居住区快速侵占，我们建议把巴约讷码头的一半区域改建为一个高效的区域性集装箱海运港口。

最后，我们建议把巴约讷码头的另外一半改造成一个玻璃“Jack”（抛接子游戏玩具）的熔炉。码头上的货仓可以用来建造一个世界最大的玻璃礁制造厂。熔炉用风力发电机和太阳能电池板产生的可再生能源能够把纽约每年共5万吨的废弃物和可再利用的玻璃融化，再铸成一个可以让人想起儿童游戏“抛接子玩具（Jack）”的形式。玻璃是制作礁石的完美材料，它的主要成分和砂子相同，叠在一起时这些礁石单元可以创造出海洋动植物的新栖息地，也缓和了离岸的波浪。■（苏博 译，周明艳 校）

Part of our design philosophy is to attempt to create beauty from a close attention to place, material, and resources, utilizing environmental considerations as a catalyst for innovation. Though we are humbled by the powerful processes of a Nature in flux, we are optimistic about design and technology's ability to work in tandem with these processes. Taking a close look at the specifics of New York's waterline —we contemplated a "soft infrastructure", one that is resilient, is flexible, and expands the public realm into the area of the harbor waters. Our team understood this challenge as a willful collision of the urban and the maritime to produce an unexpected diversity of new landscapes and uses for the rising watery edge.

The Baird Architects team is made up of the following collaborators in addition to Matthew Baird: Kira Appelhans, Kristen Becker, Nim Lee, and Ajay Manthripragada formed the core group in the satellite studio at MoMA's P.S.1, and Maria Milans del Bosch, Danny Greenfield, and Juanita Wichienkuer worked from our studio in Soho. We joined forces with a range of leading consultants - a combination of architects, landscape architects, artists, engineers, ecologists, urban planners, port specialists, and economists.

Having the option to work with one of five different zones in New York harbor, we chose the area encompassing the Bayonne Piers in Bayonne, New Jersey and Staten Island, New York. While a challenging site, we found it to be most fascinating. Having four distinct areas and encompassing a total of 7 sq miles, our site is comprised of the tightly knit residential community of Northern Staten Island, the Kill van Kull waterway (the busiest shipping corridor



in NY Harbor), the Constable Hook petroleum storage facility, and the Bayonne Piers, the largest singular landfill project in the harbor. We were drawn to this zone both because of its rich industrial and maritime history and because it seemed to pose some of the more difficult design challenges for sea level rise. We found on the site a number of complex contextual layers: a working waterway, industrial detritus, ignored coastal land, massive infrastructure- a mélange of ingredients that inspired our design approach.

The prospect of rising sea level at New York's shoreline is a frightening one. Taking a look at the projected flood plain overlay, for example, scientists estimate that our site will be virtually 85% submerged with a probability of 1 in 50 years. We tackle this somewhat stark reality by welcoming the oncoming rising currents, and reworking the shore to make for a sustainable and vibrant future. Pondering the deluge, we asked a series of questions:

1. How could we adapt and remake the water's edge by methods that would not further exacerbate climate change and sea level rise? What readily available materials might we use to do so?
2. How could we change the public opinion of a tarnished landscape so as to draw people to the beauty of a post industrial seascape?
3. How could we re-use the latent energy stored in existing but soon-to-be-obsolete infrastructure?
4. What would be the future of shipping in the New York Harbor, given the polar ice cap melt, and the new routes to Asia over the Northeast passageway?
5. And finally, how could we create a more vibrant and working waterline?

To answer these questions, Working Waterline proposes four basic interventions, presented as a vision for a waterfront in transition over the next 80 years. The first intervention is to create a massive "berm park." We propose to connect the 20-foot contours south of Jersey City with the 20-foot contour southwest of Constable Hook, and construct the park of clean dredge material from the Ambrose channel and the Kill van Kull. This berm serves to cap and contain soil contaminated from years of accidents and spills at the site. It also serves as a fantastic place for a scenic Sunday drive and view of New York.

In a world where sea level is rising, inexpensive oil reserves are rapidly declining. Our second intervention is to convert the Constable Hook refinery into an algae biofuel refinery, and to eventually use all of New York City's 27 billion annual gallons of Combined Sewer Overflow for fertilizer for the algae fuel. The site at Constable Hook was once the very spine of the energy infrastructure that fueled the great growth of New York from 1872 to the mid-20th Century. We envision a repurposed refinery as a new armature for future growth.

With New York waterfront industrial sites being gobbled up by more residential zoning conversions, we propose converting half of the Bayonne Piers into an efficient container port for regional shipping.

Finally, for the other half of the Bayonne Piers we propose a Glass "Jack" Furnace. The warehouses on the Bayonne Piers can be used to create the world's largest glass reef manufacturing facility. Taking all of New York City's annual 50,000 tons of waste and recyclable glass, the furnace would serve to melt down this waste using renewable energy from wind turbines and solar panels, and cast it into a form reminiscent of a child's toy jack. Glass is a perfect material for reef building; mostly sand and completely inert, when stacked together these reef building units will create new habitat for marine plants and animals, providing a wave-absorbing mass just offshore. ■

5. 玻璃再利用、巴约讷海运码头及玻璃礁渲染图示 © Matthew Baird Architects
6. 玻璃模型—— "Jack" 样品 © Matthew Baird Architects
5. Glass Recycling Diagram & Bayonne Shipping Piers and Glass Reef Rendering © Matthew Baird Architects
6. Glass Jack Prototype © Matthew Baird Architects