连接海洋的廊道： 沿海都市主义 BIGHT: COASTAL URBANISM

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- 2067年时的纽约州牙买加湾愿景图。位于高地之上的、更加致密化的城市开发在牙买加湾的水岸上创造了一个充满活力的新城。
- Jamaica Bay 2067: Densified urban development on higher ground creates a vibrant new city around the waterfront of Jamaica Bay.

目前，美国三州地区（纽约州、新泽西州和康涅狄格州）已饱受洪水侵袭，其中，纽约州和新泽西州约有250万居民生活在洪水易发地区。这一问题将随着海平面上升而进一步恶化，但我们不能坐以待毙。2017年1月，美国区域规划协会（RPA）启动了一项设计竞赛，希望借助建筑师、景观设计师及城市规划师的力量，将一系列针对该区域的政策变化、新的投资及创新理念进行可视化展示；新的规划旨在为三州地区带来不同的物质空间变化，以为未来25年做好准备。DLANDstudio景观设计事务所和Rafi Segal A+U建筑与都市主义事务所被选中为海湾地区（即连接该地区与海洋的廊道）制定未来愿景和设计。

海湾地区犹如海岸上的一个切口，在洋流的作用下，泥沙在这里持续堆积，使得岸线不断变化。海湾地区本身也是一种人造工事：这条硬质海岸线是20世纪大规模建造的产物，但已无法适应当前的环境，连同老化

（且不符合当代需求）的人居环境，正经受着暴风雨和海平面上升的威胁。气候变化和愈加频发的极端风暴事件对海湾地区有着重大影响。虽然政府和相关机构提出了抬升部分海岸线这样保守的解决方案，但这种做法在社会、经济及生态层面上都弊大于利，而且海平面在几年（而非几十年）后便会高出海防设施，届时将会有越来越多的城市人口面临洪水威胁。全球技术顾问提议在抵御海水入侵和控制高地河道方面投入数十亿美元用于各种新技术研发，却未考虑由这些新技术建立的系统可能存在的失败风险。

这些对抗性措施使得那些不能移动的城市在无法遏制的自然事件面前变得前途未卜。现在是时候来消除城市与海洋的边界了。为了缓解数百英里海岸线所面临的威胁，并确保上百万居民及上千亿美元财产的安全，我们建议以一个新的“景观经济区”来取代城市和自然之间的硬质边界：通过建立一个土地和水系相互交织的缓冲区，为人类栖居、

<http://doi.org/10.15302/J-LAF-20180610>
收稿时间 RECEIVED DATE / 2018-11-15
中图分类号 / TU982
文献标识码 / B

摘要

在2017年全美区域规划设计竞赛中，由苏珊娜·德雷克和拉菲·西格尔率领的设计团队脱颖而出，被选定为纽约大都会区的其中一个片区制定规划方案。他们提出的“连接海洋的廊道：沿海都市主义”方案建立在一系列系统性的景观和城市设计战略的基础上，以为该区域滨水地区的转型提供指导。两位设计师分别所在的DLANDstudio景观设计事务所和Rafi Segal A+U建筑与都市主义事务所通过与来自麻省理工学院的研究团队展开合作，使他们的设计能够直接并积极地应对气候变化、极端暴雨事件和海平面上升带来的巨大挑战。

关键词

都市主义；景观经济区；海平面上升；沿海开发；水；可持续发展

ABSTRACT

The project is a result of a national design competition in 2017, through which a team led by Susannah Drake and Rafi Segal was selected to contribute to the 4th Regional Plan for the New York Metropolitan area. Their proposed Bight: Coastal Urbanism project builds upon a systems-based landscape and urban design strategy to guide the transformation of the regional waterfront. Working in collaboration with colleagues in their offices and at the Massachusetts Institute of Technology (MIT), their project directly and proactively responds to the immense challenges of climate change, extreme storm events, and rising sea levels.

KEY WORDS

Urbanism; Landscape Economic Zone; Sea Level Rise; Coastal Development; Water; Sustainability

整理、译 田乐

EDITED AND TRANSLATED BY Tina TIAN

项目地址：
美国纽约州和新泽西州
项目面积：
海岸沿线约966km
项目委托：
美国区域规划协会
景观设计与城市设计：
DLANDstudio景观设计事务所、Rafi Segal A+U建筑与都市主义事务所
项目负责人：
Susannah Drake、Rafi Segal
项目团队：
Sarah Williams、Greg Lindsay、Brent Ryan、Benjamin Albrecht
研究与设计团队：
Mary Lynch-Lloyd、Chaewon Ahn、Jan Casimir、Mary Hohlt、Erin Wythoff、Charles Huang、Dennis Harvey、Zach Postone、Ellen Shakespear、Xinhui Li
设计时间：
2017年

LOCATION:
New York and New Jersey, USA
AREA (SIZE):
Approximately 600 miles of coastline
CLIENT:
Regional Planning Association of America
LANDSCAPE ARCHITECTURE AND URBANISM:
DLANDstudio, Rafi Segal A+U
PROJECT LEADERS:
Susannah Drake, Rafi Segal
PROJECT TEAM:
Sarah Williams, Greg Lindsay, Brent Ryan, Benjamin Albrecht
RESEARCH AND DESIGN TEAM:
Mary Lynch-Lloyd, Chaewon Ahn, Jan Casimir, Mary Hohlt, Erin Wythoff, Charles Huang, Dennis Harvey, Zach Postone, Ellen Shakespear, Xinhui Li
DESIGN PERIOD:
2017

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工作、娱乐及自然保护创造新的空间。

该方案并没有一味地坚守海岸线，而是提出了“接受、保护、适应”的理念，通过加强高地地区的城市框架和节点，来创建新的密度更高的居住空间；利用缓冲区的洪水吸纳能力来保护低洼地区，并创建一种更加适应水陆融合环境的生活方式——将海岸线转变为新的城市生活区。

方案希望建立一个不再漫无目的地扩张且更具生产性的海岸，通过打造更具适应性的住宅、街区和城市，全面提升区域韧性。从百老汇交通中转站，到牙买加中心，再到肯尼迪国际机场，城市增长将促进牙买加湾周边地区的发展；郊区通过增加更加致密

化且具有历史意义的廊道来创建更多适宜步行的城镇中心；沿海地区将建立度假区、别墅、船屋等临时构筑物；对肯尼迪国际机场和其他对美国及国际经济至关重要的关键基础设施将加大保护力度。

设计所描绘的未来城市生活愿景能够更加适应气候变化，而非否认气候变化的存在或与之对抗（阻挡大西洋海水入侵）。人类试图在各种尺度上、通过各种手段克服和控制自然力量的妄想只会使我们的社会与经济不断衰败。我们仍需大力扭转对于环境的态度，并在生活的方方面面中予以施行。基于此背景的设计不仅提供了更多切实可行的解决方案，更激发了人们的想象力来应对不断

2. 项目区域面临着海平面上升问题。照片为新泽西州海湾地区。
- 3-1. 纽约州洛科威地区现有的高架铁路（摄于2017年）。
- 3-2. 纽约州玛斯提海滩上虽然已出现了零星的底层架空式住房，但仍然缺乏应对洪水的总体规划（摄于2017年）。
- 4-1. 项目提出将一个边界分明的沿海地区转变为一个陆地与海洋相互交织的区域。
- 4-2. 基于路面高程，“抬升区划”方案提出了不同的区划和建设管控措施，以减少风暴潮和洪水的风险。

2. Water rising all across the region. Photo of bayside, Sea Bright, New Jersey.
- 3-1. Existing elevated rail, Rockaways, 2017.
- 3-2. Elevating homes sporadically without an overall plan to address flooding, Mastic Beach, 2017.
- 4-1. Diagrams showing the proposed transition from a rigidly-defined coastline to a zone of varying wet-and-dry conditions.
- 4-2. “Elevation-Based Zoning” proposes different zoning and building regulations based on grade elevation to address the risks of storm surges and flooding.

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变化的未来。

为了验证设计构想，我们分别在未来三个时间节点上选择了三个代表不同城市尺度的场地：

1) 纽约州牙买加湾（2067年）：半淹没的牙买加湾拥有保护良好的海岸，同时也成为了纽约市新下沉式中央公园；

2) 纽约州玛斯提海滩（2050年）：管理完善的度假区成为了长岛最受欢迎的老年社区之一，同时它亦是一个衔接内陆与滨海的“能源农场”；

3) 新泽西州海湾地区（2030年）：一个逐渐被淹没的障壁岛并不会就此“消失”，而是成为“洪水生活”的试验田，形成了一种形制自由的、自组织的水上生活社区。

这些愿景都激发出我们关于该地区未来能源、社区、金融和就业等问题的更多思

考。未来，海湾地区将迎来一系列巨变，包括向可再生能源的快速过渡，以及在高度自动化的时代对休闲进行重新定义。在此背景下，海湾地区将被重新定位为服务于美国人口最密集地区的新的开放空间，而不是越来越不堪一击的泥沙淤积的海岸线。

这些愿景以及它们所奉行的沿海都市主义城市规划和设计原则共同说明，在正确的战略、投资和政治意愿下，纽约－新泽西－康涅狄格大都会区可以为未来风险和经济发展做好充足准备。该方案旨在营建一个新的沿海地区，向世界其他地区展示如何在海平面上升和气候变暖的时代做出适应性改变，取得繁荣，并实现机会平等；这里也将成为一个全球中心，利用其丰富的资源并依托创新型人才，使这个快节奏、高成本的大都市为人们提供更轻松、更健康、成本更低的生活和工作场所。**LAF**

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5. 上图：牙买加湾海平面现状（深蓝色）与海平面上升15cm后的淹没区域（浅蓝色）；下图：项目提出通过加固、致密化和保护陆地的方式，建立了一个“海湾新城”来应对洪泛问题。
6. 牙买加湾社区重构：通过逐渐迁移人口和调整人口密度，可降低高危地区的洪泛风险。
7. 将牙买加湾高地致密化
8. 2067年时的纽约州牙买加湾“海湾新城”泻湖愿景图：沿湖缘而建“水上”住宅成为了其背后陆地的保护屏障。
5. Jamaica Bay + 6 ft flood map based on existing conditions (above), proposed “Bight City” urban plan in Jamaica Bay (below) responds to flooded areas by consolidating, densifying, and protecting dry land.
6. Sending and receiving neighborhoods in Jamaica Bay: a strategy of switching people and densities over time from high-risk areas to safer ground.
7. Densifying high ground for Jamaica Bay.
8. Bight City, Jamaica Bay 2067, view across lagoon: “wet city” housing along the lagoon’s edges protects the “dry city” behind it.

With 2.5 million residents of New York and New Jersey currently living within a designated flood zone, the Tri-State Region of the U.S. is already extremely vulnerable to flooding, a condition that will further deteriorate with rising sea levels, unless action is taken. In January 2017, the Regional Plan Association (RPA) launched a design competition which called on architects, landscape architects, designers, and urban planners to visually demonstrate how policy changes, new investments, and innovative thinking proposed in the 4th Regional Plan

— A Region Transformed can transform different geographic areas in the Tri-State region and prepare them for the next 25 years. DLANDstudio and Rafi Segal A+U were selected to propose visions and designs for the future of the Bight, the region’s Ocean Corridor.

The Bight is the notch in the region’s coast where ocean currents conspire to pile sand, forever redrawing the shore. The Bight is also an invention — a hard coastline extensively built during the 20th century, now stiff with aging settlements determined

(but ill-suited) to stand their ground against storms and sea level rise. Climate change and the increasing frequency of extreme storm events are of significant relevance to the Bight. While elected and agency officials propose timid solutions to elevate selected shorelines that are not productive sociologically, economically, or ecologically, and will be overtopped in a matter of years rather than decades, more and more of urban population is at risk. Global technical consultants propose to spend billions on myriad new technologies for holding back the

oceans and controlling upland waterways without accounting for potential failure of these systems.

These opposing forces, where the immovable cities meet an unstoppable nature, define their uncertain future. It is time to blur the line. To relieve this tension, which threatens hundreds of miles of coast, hundreds of thousands of residents, and hundreds of billions of dollars in property, we propose replacing the hardened edge separating the city and nature with a new “landscape economic zone” — a buffer in which land and water commingle, creating new spaces for habitation, conservation, work, and play.

Rather than futilely trying to hold the line, the project’s mantra is “receive, protect, adapt.” Strengthen urban spines and nodes on higher ground to receive new residents at higher densities. Protect low-lying areas using the absorptive capacity of the buffer and adapt to a more amphibious lifestyle in the zone — transforming the coastline into a new urban frontier.

The result is a less sprawling and more productive coast, making all more resilient by tailoring homes, neighborhoods, and cities to this new reality. The cities will grow connecting a halo of development around Jamaica Bay from Broadway Junction to Jamaica Center to JFK Airport. Suburban areas adapt with increasing densified historic transit corridors for more walkable town centers. Coastal areas will become retreats, cottages, and boat houses for more temporary occupation. JFK Airport and other select infrastructure critical to the national and international economy will be fortified and protected.

Our designs promote visions of a future urban life that sees opportunities in adapting to climate change rather than denying it or attempting to fight against it (by holding back the Atlantic Ocean). The human hubris of overcoming and controlling the forces of nature at all scales and means will only lead

2017

POPULATION: 1 MILLION
LAND AREA: 65.89 SQUARE MILES
RESIDENTIAL LAND: 20.77 SQUARE MILES
AVERAGE FAR: 0.86

人口：100万
陆地面积：170.7km²
居住面积：53.8km²
平均容积率：0.86

2067

POPULATION: 1.2 MILLION
LAND AREA: 38.64 SQUARE MILES
RESIDENTIAL LAND: 19.97 SQUARE MILES
AVERAGE FAR: 1.66

人口：120万
陆地面积：100.1km²
居住面积：51.7km²
平均容积率：1.66

to the erosion of our society and bankrupt our economy. The shift in our attitude towards the environment needs to be strengthened and broadly implemented in all aspects of life. Design in this context offers more viable and real solutions — also a window to the imagination, peeks of inspiration for a changing future.

To test our hypothesis, we chose three sites representing three urban scales of the Bight in three snapshots from the future:

1) Jamaica Bay, New York (2067) — a half-submerged Jamaica Bay protects its edges while doubling as New York City's new sunken central park;

2) Mastic Beach, New York (2050) — a well-managed retreat produces one of Long Island's most desirable retirement communities nestled inland from a coastal "energy farm";

3) Sea Bright, New Jersey (2030) — a vanishing barrier island refuses the inevitable

and becomes a test bed for “the flood life”: off-grid, self-organized communities living on water.

Each scenario poses an opportunity to raise questions around the futures of energy, community, finance, and work in the region. Ranging from the rapid transition toward renewable energy to the redefinition of leisure in an era of intense automation, these seismic shifts go hand-in-hand with reimagining the Bight as a new open space for America’s most populous region, rather than an increasingly untenable line in the sand.

Together these scenarios and the urban planning and design principles under Coastal Urbanism demonstrate that with the right strategies, investments, and political will, the New York-New Jersey-Connecticut metropolitan area could be a place well prepared for future risks and economic development. The project presents a new coastal region that shows the rest of the world how to adapt and prosper in an age of rising seas and temperatures, and a place that fulfills its promise of equal opportunity; a global hub that harnesses its immense resources and innovative talents to make this fast-paced, expensive metropolis an easier, healthier, and more affordable place to live and work. **LAF**

9.

左图：玛斯提海滩海平面现状（深蓝色）与海平面上升15cm后的淹没区域（浅蓝色）；右图：项目方案主张将陆上高地致密化，并创造新的增长机遇。
10.

玛斯提海滩街区重构：通过逐渐迁移人口和调整密度，可降低高危地区的洪泛风险。
11.

将玛斯提海滩的高地致密化。
12.

2050年时的玛斯提海滩愿景图：新建的“景观经济区”既是保护屏障，也是水产养殖场和自然开阔地，湿地中零散的底层架空式住宅群得到了保留。
9.

Mastic Beach, Long Island + 6 ft flood map based on existing conditions (left), proposed new plan (right) densifies higher ground and creates new opportunities for growth.
10.

Sending and receiving blocks in Mastic Beach: a strategy of switching people and densities over time from high-risk areas to dry ground.
11.

Densifying high ground for New Mastic.
12.

New Mastic, Long Island, 2050: a new “landscape economic zone” acts as a protective buffer, aquatic farm, and parkland while preserving scattered clusters of elevated houses amid wetlands.

2017

POPULATION: 45 THOUSAND
RESIDENTIAL LAND: 0.65 SQUARE MILES
人口：4.5万
居住面积：1.7km²

FAR 容积率
0.5
1.25
2
3

2067

POPULATION: 54 THOUSAND
RESIDENTIAL LAND: 0.87 SQUARE MILES
人口：5.4万
居住面积：2.3km²

FAR 容积率
0.5
1.25
2
3