

# 基于景观基础设施的城市建设 City-making Based on Landscape Infrastructure



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**摘要**  
景观在构成城市扩张的新组成部分的同时，也奠定了新的城市生活形态。而“景观基础设施”将社会和文化层面作为城市平衡构架的一部分，在物质层面和操作层面展示了其在城市建设中的潜力。本访谈探讨了景观与基础设施之间的关系、景观设计项目如何融入城市尺度的基础设施，以及中国景观设计师应如何参与到城市发展的设计过程之中等问题。

**关键词**  
景观基础设施；城市建设；丰产性；城市综合体

**Abstract**  
Landscape structures the new parts of the expanding city and new forms of city-life. "Landscape Infrastructure" invokes the social and cultural elements as part of the equation, and physically and operationally demonstrates its potential of city-making. This interview explores the relation between landscape and infrastructure, how the landscape design integrates into the urban-scale infrastructure, and the way for Chinese landscape architects to engage into the urban design process.

**Key words**  
Landscape Infrastructure; City-making; Productivity; Urban Hybrid Entity

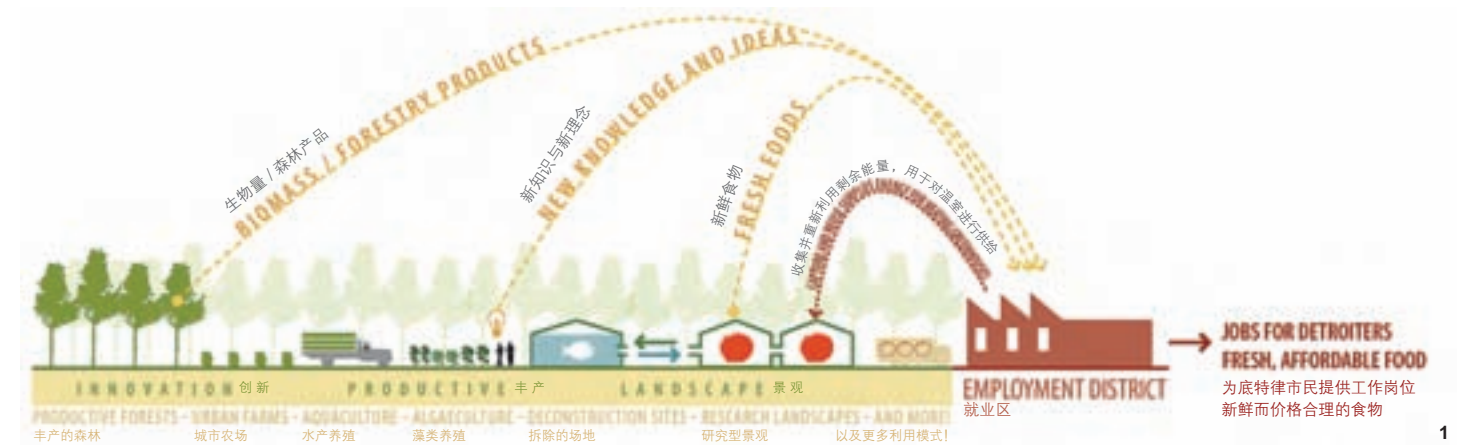
## 在当前呈现基础设施化的城市发展中，您如何理解景观与基础设施之间的关系？

克里斯·里德（以下简称里德）：我通过都市主义和城市建设来表达景观。在对城市，尤其是19世纪城市的研究过程中，我已经清晰地认识到景观能够具有我们目前熟知的基础设施所能担负的功能，且具备组织城市和环境功能的潜力——景观包括但不仅限于开放空间——景观在构成城市扩张的新组成部分的同时，也奠定了新的城市生活形态。这一点在19世纪的美国表现得尤为明显。景观曾频频在有关公共健康、水质、社会改革、环境和经济发展的各种问题中发挥作用，成为了一种切实可行的重塑城市和扩张城市的方式。该时期的景观是经过综合考量的结果——景观不是对城市基础设施建设的绿色装饰（或美化），而是同时具备多种社会功能、实用功能以及环境功能的一种综合实体。这种整合了景观和基础设施（可引申为城市建设）的综合体正是我们正在努力寻回的城市形式。

## 您认为“绿色基础设施”与“景观基础设施”之间存在着怎样的联系与差异？

里德：“绿色基础设施”的出发点很好，它包括雨洪/雨水花园、污水处理湿地，甚至是风暴潮景观。绿色基础设施项目已经成功地改善了水质和城市环境质量，这是一件好事。但绿色基础设施往往缺乏对社会层面的考虑。而“景观基础设施”将社会和文化层面作为城市平衡构架的一部分，并且在都市主义的项目中将社会、文化层面与功能、环境层面视为同等重要。此外，景观基础设施已超越了小尺度绿色基础设施对项目的改善范畴，其在欧洲、北美洲和亚洲的许多地方已成为标准化做法。景观基础设施重获组织力，也在物质层面和操作层面展示了其在城市建设中的潜力。以下列举两个例子：

最近，Stoss景观都市主义设计事务所参与了一个在未来50年内重建底特律市的合作项目。很显然，在过去的几十年间，底特律的工业衰退以及人口减少造成了大量的空置土地和建



## How do you understand the relation between landscape and infrastructure in the current context of highly infrastructural cities?

**Chris REED (REED hereafter):** I came to landscape through urbanism and city-making. In studying 19th-century cities in particular, it became clear to me that landscape could perform what we now know to be infrastructural roles, organizing urban and environmental functions — including but not limited to open space — while structuring new parts of the expanding city, and new forms of city-life. In 19th-century America, in particular, landscape took on roles in public health, water quality, social reform, environmental and economic development initiatives — it became the de facto way to re-make and extend cities. And it did this in an integrated way — not landscape as a green palliative (or apology) for urban infrastructures, but as a hybridized entity that performed multiple social, functional, and environmental roles simultaneously. It is this integrated hybridization of landscape and infrastructure (and, by extension, of city-making) that we are recovering.

## How do you think of the relation and the differences between “Green Infrastructure” and “Landscape Infrastructure”?

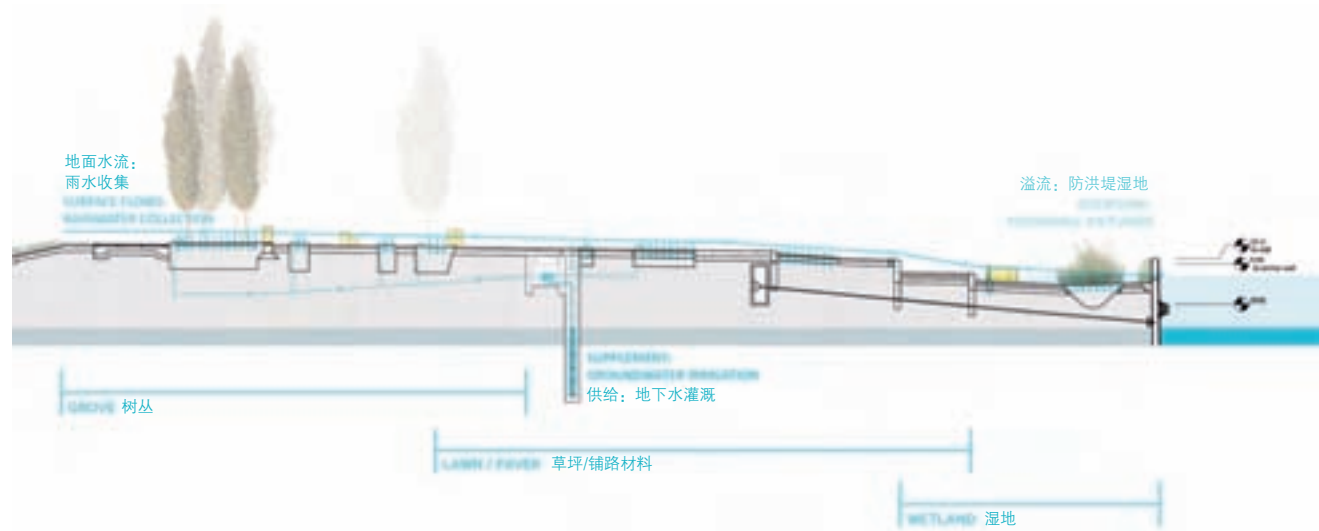
**REED:** “Green infrastructure” is a good starting point. It includes stormwater and rain gardens, treatment wetlands, even storm surge landscapes. Green infrastructure projects have been responsible for helping to improve water quality, and the environmental quality of urban environments; this is good. But it tends to lack a social dimension. “Landscape infrastructure”, on the other hand, invokes

the social and cultural elements as part of the equation, it takes the position that these components of the project of urbanism are as important as the functional and the environmental. It also moves beyond the smaller-scale kinds of green infrastructure



**提升空气质量** Trees and other vegetation along edges of pools absorb pollutants from the air.  
**减少建设及维护成本** Selective capping and decommissioning of roads / utilities significantly reduces construction costs. Maintaining blue infrastructure costs less than maintaining conventional stormwater infrastructure.  
**推动新型社交生活的开展** Remaining streets become hiking and walking trails through the lake, providing opportunities for recreation, fishing, or bird watching.  
**文化历史** Leaving in place traces of former occupation is important culturally, historically, and psychologically. The remnant road grid recalls the former history of the site and signals that the lake is an intentional construction (not blight).  
**为野生动植物提供栖息地** Edges of raised road bed create shallower areas where aquatic plants and animals thrive.  
**收集并净化雨水** Large lakes offer more capacity for holding stormwater runoff than any other lake infrastructure component.  
**将闲置土地赋予生产职能** Stormwater management is an important new use for vacant land; it manages land that, vacant through lack of conventional demand, would also have contributed to blight. 雨洪管理是闲置土地被赋予的一项新的重要职能。土地闲置是由于缺乏常规供水。这样一来可以有效地减少土地的荒废程度。

- 1. 底特律未来城——景观作为多功能基础设施及城市框架。© Stoss
- 2. 底特律未来城——雨洪湖与城市生态公园。© Stoss
- 1. Landscape as multi-functional infrastructure and urban framework, Detroit Future City. © Stoss
- 2. Stormwater lake and urban ecology park, Detroit Future City. © Stoss



筑，并引发了一系列社会公正、公共健康和环境问题。尽管这些问题通常被视作负面条件，我们却看到了这些“负面条件”背后蕴藏的巨大机遇：以景观作为城市规划的关键组织者，可对城市形式及其运作模式进行反思。从这个意义上说，景观担负着多种生产职能：组织基础设施、提供栖息地、供给食物和能源、提供文化活动的场所、为能够在在大尺度上净化空气和水的森林和湿地提供基址、提供研究和实验场所、充当职业培训中心、供给社会生活，以及作为新型绿色社区的基础。由此，景观基础设施能够将底特律彻底地改造为一个富有活力的新型丰产绿色城市，这是许多世界级的城市梦寐以求的，但又限于缺乏足够的空间而无法实现的愿景。同时，城市的运作模式也会发生相应的转变，将食品生产、加工及配送网络联系起来；从运输、开放空间和生态的角度重组城市网络；将新的土地利用形式与服务成本模式联系起来，从而实现城市经济和环境的长期可持续发展。景观基础设施的综合性，及其可以在不同的时间和空间尺度下发挥作用的特性，使其大大突破了典型绿色基础设施项目“亡羊补牢”的局限性。

在哈佛大学设计学院，我合作教授了一门面向景观设计师的核心设计课程，这门设计课的研究方向是城市建设。哈佛大学景观系认为大型景观基础设施和以景观为基础的都市主义项目已再次成为景观设计师的工作重心。我认为，认识到这一点非常重要。在哈佛大学设计学院，我们对生产性景观和生态进行了研究——无论是水产养殖业、造林学、净水处理，或是风暴潮/洪水的调节等——都是新的城市肌理不可分割的组成部分。这是一个认识上的重大转变：古老的城市往往习惯抹去处于不断变化中的环境成分，如河缘的冲积平原或是沿海和海湾的湿地，而将城市中残余的场地变成景观；一些现代的设计理念更倾向于放弃这些区域，一味地支持生态，清除人类居住的痕迹。在哈佛大学设计学院，我们的主张则截然不同：我们认

为生产性景观和生态是城市构成所必需的组成部分，也是我们日常生活的一部分。因此，我们探讨的是能够兼顾人类生活和生态活力，或使两者有所重叠的设计方式——使这两个曾经被认为彼此独立的领域之间碰撞出富有成效的火花。

#### 景观设计项目所具有的基础设施性功能是否取决于项目的尺度与规模？您如何看待在小尺度景观项目中附加基础设施性功能的设计（例如雨水收集、排洪等）及其成效？

里德：大型的、复杂的城市和大都市项目也许是整合并展示项目的综合性、多功能性，甚至是灵活性和适应性的最好方式——其关键在于从生态系统或城市层面去理解这些项目是如何在较长的时期内进行演变发展的。但同时我们也相信，小尺度的项目同样可以体现这些大尺度的地理、生态、基础设施和社会文化体系，只是以一种更加有所侧重、有所局限的方式。在密尔沃基的伊利广场，我们设计了一个具有综合功能的界面，既能适应河水水位的变化，同时也提供了社会活动的场所；通过减缓水体附近地区的坡度，同时在现有的挡土墙上开槽，使得在重建位于挡土墙背面的原生湿地的同时，允许河水和湖水在洪涝期以及高水位时期可以通过河堤上的开槽，流入湿地。这样一来，这个空间就被赋予了生命——其特色既体现在（当地规模的）社会活动中，也体现在水体设计能够融入更大的环境循环之中。本项目使得人们以一种本土化的、亲身体验的方式参与到更大范围的系统和循环过程中。

#### 以新建成的“哈佛大学校园广场”项目为例，您能否阐释一下景观设计项目如何融入城市尺度的基础设施之中？

里德：该项目位于马萨诸塞州哈佛大学剑桥校园中心的一条道

improvements that have become standard practice in many parts of Europe, North America, and Asia. Landscape infrastructure takes back the organizing force and potential of city-making, physically and operationally. Two examples:

Stoss was recently involved in a collaborative effort to re-make the City of Detroit for the next 50 years. Detroit, of course, is a city that has been deindustrialized and depopulated over the last few decades, leaving significant chunks of vacant land and building, and a whole series of social justice, public health, and environmental problems in its wake. While these conditions are often considered in a negative light, we saw them as embedding a huge opportunity to re-think the physical and operational city using landscape as a key organizer. In this sense, landscape is thought of in many productive ways: as organizing infrastructure; as habitat; as a food and energy producer; as a place for cultural activities; as a locus for large-scale air and water cleansing forests and wetlands; as a territory for research and experimentation; as a job training center; as a sponsor of social life; as a basis for new kinds of green neighborhoods. With this, the city can transform itself physically into a vibrant new kind of productive green city, a form and image that many world-class cities long to have but cannot achieve due to lack of space. But the city also transforms itself operationally, linking food production to food processing and distribution networks; re-networking the city from a transit, open space, and ecological standpoint; and tying new land uses to a cost-to-serve model so that the city becomes economically and environmentally sustainable in the long term. This goes far beyond the largely remedial intentions of a typical green infrastructure project to something more comprehensive and that operates at multiple scales of time and space.

At Harvard's Graduate School of Design, I coordinate and teach a core studio for landscape architects on city-making. I think it is significant that the department recognizes that large-scale landscape infrastructure and landscape-based urbanism projects are again at the center of the work of landscape architects. Here, we look at productive landscapes and ecologies — whether aquaculture, silviculture, water cleansing, or storm surge / flood accommodation, for instance — as both formative to and integrated with new urban fabrics. This is a significant change in thinking: Older cities tended to erase dynamic environmental conditions, like floodplains along rivers and wetlands along oceans or bays, leaving landscape to

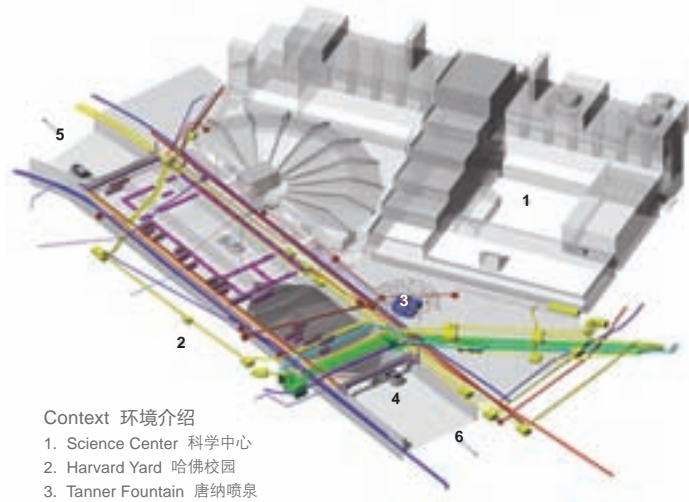
be the leftover place; even more contemporary approaches favor abandoning these areas, erasing human occupation in favor of ecological accommodation. Our approach in the Harvard studio is different: We think about productive landscapes and ecologies as integral to the city, as a daily part of the life of a place. Consequently we look to develop ways in which human occupation and dynamic ecologies can sit side by side, or overlaid on top of one another — allowing for productive reverberations between and among what had previously been thought of as distinct territories.

#### Do the infrastructural functions of landscape architecture projects depend on the scales or sizes of the projects? How do you think of the design giving infrastructural functions (such as rain water collection, flood draining) and their effects in small-scale projects?

**REED:** Large-scale, complex urban and metropolitan projects are perhaps the best for being able to integrate and demonstrate principles of hybridization, multifunctionality, even flexibility and adaptability — key ideas in understanding how projects, whether ecosystems or cities, evolve over long time periods. But we also believe smaller-scale projects can be positioned relative to these larger-scale geographical, ecological, infrastructural, and social-cultural systems as well, just in more focused and limited ways. At Erie Plaza in Milwaukee, we developed a hybrid surface that

3. 美国密尔沃基市伊利街道广场——综合的水文条件。© Stoss
4. 美国密尔沃基市伊利街道广场 © John December
3. Hybrid hydrologies, Erie Street Plaza, Milwaukee, USA. © Stoss
4. Erie Street Plaza, Milwaukee, USA © John December





Context 环境介绍

1. Science Center 科学中心
2. Harvard Yard 哈佛校园
3. Tanner Fountain 唐纳喷泉
4. Cambridge Street Underpass 剑桥街地下通道
5. Harvard Square 哈佛广场
6. Quincy Street 昆西街

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路隧道的上方。它的周围和下方是错综复杂的城市和校园设施——因此这块场地首先是城市基础设施的一部分，其次才是一个社会空间。但是，现有的场地条件却完全无法体现这些特质——仅仅是延用了历史悠久的哈佛校园中随处可见的草坪和沥青路面；其不能很好地满足社交需求，更别说去满足大型集体活动中容纳更多人群的要求。因此，原广场是一个被弃置的、泥泞的、没有得到充分利用的空间。

新建广场改变了这一切。它将这个十字路口改造成为哈佛大学的一个新社交中心，一个可供各种社交和表演活动使用的空间。项目所使用的设计元素非常简单：定制的混凝土铺装、定制的长凳、可移动的桌椅，以及一个沿广场边缘分布的小树林。这些简单的设计和设施使得新广场可以容纳各类项目和活动，不论白天或是夜晚，这个地方全年都充满活力：包括农贸市场、艺术展览、电影之夜、音乐和舞蹈表演、学生活动、正式晚宴等。事实上，这是一个装配灵活的、“即插即用”的广场：集成式的帐篷支点、水和公用设施的接头、可调节的照明设施，所有的这些设备将这个看似简单的广场打造成了一个完善的市政基础设施。

广场的设计同时也考虑了日常生活的使用。为此，定制的坐凳能够被调整成不同的形状以适应不同身型的人、不同的坐姿和躺姿：或直立，或倾斜，或躺卧，或拥抱等。这些坐凳促进了社交互动，广场上的可移动型椅子也同样具有这样的功能，既可以在宽敞向阳的区域支开，或紧靠坐凳摆放，也能够放置于荫凉的树林下。选择的多样性和灵活性是该广场的首要

特质，也是该空间的设计出发点。

总而言之，这个广场在历史悠久的哈佛校园及其充满活力的扩建中的北校区之间形成了一个新的入口，其设计理念也得到了非常明确的表达：浅色的广场铺装昭示着其下方的隧道，并在视觉上和材料上与周围环境形成对比。广场末端挡墙上的开槽也是经过精心设计的，其目的是为了保证视线的畅通，让人们能看到广场下方的道路基础设施——再次呼应该空间作为新型的多功能城市基础设施的重要功能。

在中国飞速的城市化发展进程中，很多人都发出了反对的声音，呼吁“不要走美国20年前的老路”。作为经验丰富的执业景观设计师，您能否从您的个人经验出发，谈谈中国设计师应如何参与到城市发展的设计过程之中？

里德：我认为当前的机遇是显而易见的：城市的发展应该顺应环境的动态变化，而不是与其对立，同时应将景观作为城市发展的架构和导向力。这对于正处在快速城市化过程中的中国和亚洲，或是世界各地处于缓慢改造过程中的前工业城市，都是通用的。从这个意义上来说，许许多多的环境条件都将促使在任的景观设计师和正走在成为景观设计师的道路上的学生们成为下个时代的城市规划专家。他们能够在多个尺度上同时开展工作，并有能力应对不断变化的环境和时间发展，这些都是当代城市项目的基础。我希望能够更多地参与到这些有助于引导和发现这些变化的工作中去——尤其是在中国。LAF

5. 美国马萨诸塞州哈佛大学校园广场项目——场地基础设施及构筑物。© Stoss
6. 美国马萨诸塞州哈佛大学校园广场项目 © Stoss
5. The Plaza, site infrastructure and facilities. Harvard University, Massachusetts, USA. © Stoss
6. The Plaza, Harvard University, Massachusetts, USA. © Stoss



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would accommodate both water infiltration and social activities; by lowering the grade near the water and cutting slots into an existing bulkhead wall, we were able to both re-establish a native marsh behind the protection of the bulkhead and allow for river and lake inundation during flooding events and high water cycles. In doing so, the space takes on a life of its own — one characterized by both fluctuations in social activity (at the local scale) and choreographies of water that tap into much larger environmental cycles. This kind of positioning allows people to participate in broader systems and cycles in a localized, very experiential way.

Taking your newly completed project “The Plaza at Harvard” as an example, could you please interpret how the landscape design integrates into the urban-scale infrastructure?

REED: This project lies atop a roadway tunnel at the center of Harvard’s campus in Cambridge, Massachusetts. It is also surrounded and underlain by a maze of city and university utilities — so it is very much a piece of urban infrastructure first, a social space second. But the existing condition refused to acknowledge this — it simply extended the lawn panels and asphalt paths of historic Harvard Yard across the tunnel; it also did not accommodate well social uses — and was not equipped to handle some of the bigger crowds it saw during larger events. Consequently, it was a forlorn, muddy, and underutilized space.

The new plaza changes all that. It transforms this crossroads into a new social hub for the university, a new hangout and event space for social interaction and performance. The elements are very simple: custom concrete pavers, custom benches, movable tables and chairs, and a grove along the edge. But the plaza is designed and equipped to accommodate a wide range of events and activities that will activate it day and night, all the year through: Farmers’ markets, art fairs, movie nights, musical and dance performances, student activities, formal dinners, etc. In fact, the plaza is equipped to be plug and play: integrated tent foundations, water and utility hook-ups, dimmable lighting all make render the simple-looking plaza as a sophisticated piece of civic infrastructure.

But the space is also designed to accommodate everyday. To this end, custom-designed benches are shaped to accommodate different body types or different sitting and lounging arrangements:

Up straight, reclined, lounging, cuddling, etc. They encourage social interaction, as do the movable chairs, which can be set up in open sunny areas, next to the benches, or in the shady grove. Choice and flexibility is paramount, and the space is designed accordingly.

In all, the plaza forms a new threshold between historic Harvard Yard and the university’s vibrant and expanding North Campus, and it does so explicitly: the light plaza surface re-iterates the tunnel below and sets itself off visually and materially from its surroundings. Strategic cuts in the endwalls of the plaza offer glimpses to the roadway infrastructure below — again a nod to this space’s important role as a new multifunctional urban infrastructure.

**Develop cities that work with environmental dynamics, not against them — and utilize landscape as both armature and guiding force. This is true in the context of rapid Chinese urbanization.**

In the process of rapid urbanization in China, many people are opposing it and calling to “avoid following the wrong way that USA took 20 years ago”. As an experienced practicing landscape architect, could you please give some suggestions to Chinese designers that how to engage into the design process?

REED: I think the opportunities ahead are clear: Develop cities that work with environmental dynamics, not against them — and utilize landscape as both armature and guiding force. This is true whether working in the context of rapid Chinese and Asian urbanization or in the slower-paced transformation of former industrial cities around the world. In this sense, practicing landscape architects, and those studying to be practicing designers, are in many ways best positioned to become the urbanists for the next century. They are able to work at multiple scales simultaneously, and they are capable of dealing with flux conditions and long timelines — these are fundamental to the project of the contemporary city. My hope is to become more involved in work around the work — especially in China — to help guide and inform these changes. LAF