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一次关于城市景观对人类健康影响的学术对话（下）
A Dialogue on the Impact of Urban Landscape on Human Health (Ⅱ)

姜斌
Bin JIANG

伊利诺伊大学香槟分校景观设计学与可持续城市发展专业博士候选人、健康景观研究与设计中心高级项目主管及研究员
PhD Candidate in Landscape Architecture and Sustainable Urbanism; Senior Project Manager and Investigator of the Sustainability and Human Health Research and Design Center, University of Illinois at Urbana-Champaign

威廉·C·苏利文
William C. SULLIVAN

伊利诺伊大学香槟分校景观设计学系教授，可持续发展与健康景观研究与设计中心主任，前美国环境科学院院长及董事委员会主席
Professor in the Department of Landscape Architecture, Director of the Sustainability and Human Health Research and Design Center, University of Illinois at Urbana-Champaign; Immediate Past President of the Council of Environmental Deans and Directors

张俊彦
Chun-Yen CHANG

台湾大学园艺与景观设计学系教授，健康景观与健康人群实验室主任
Professor in the Department of Horticulture and Landscape Architecture, Taiwan University; Director of the Healthy Landscape and Healthy People Laboratory

翻译 Translated by / 姜斌 Bin JIANG
校对 Proofread by / 李霞 Xia LI

摘要

本文对城市景观影响居民身心健康的重要机制和问题进行了探讨，其中包括生物多样性的重要性及相关研究方法、绿色基础设施对健康的影响及如何建设健康的城市绿色基础设施、电子技术对创造健康景观这一研究课题的影响，以及城市设计与康体活动的关系。

关键词

城市景观；身心健康；生物多样性；绿色基础设施；电子技术；城市设计

Abstract

This article focuses on discussion of several important mechanisms or issues related to the influence of urban landscape on human health, including the importance of biodiversity and related research methods; opportunities of developing a comprehensive green infrastructure and its effects on human health; how electronic technology would alter research and design for creating healthy landscape; and effects of urban design on physical activity.

Key words

Urban Landscape; Human Health; Biodiversity; Green Infrastructure; Electronic Technology; Urban Design

1 生物多样性与健康之间的关系

姜斌（以下简称姜）：让我们来来探讨生物多样性对健康的重要性。如果绿地中一年四季都有不同的植物繁荣生长，那么经常置身于这种生动的景观之中或许能够促使我们更有兴趣去欣赏自然并与之互动。因此，要想改善人们的健康状况，需要增加城市绿地的生物多样性。

张俊彦（以下简称张）：是的，自然总让人神往。但是，你并不需要刻意去留意枝头的小鸟、池塘中的游鱼，抑或是挺拔的树木。我们已经从统计学的角度证明了生物多样性有益于人体健康，特别是在心理健康方面[1]-[4]。但是，问题在于如何解读这其中的联系。

威廉·C·苏利文（以下简称苏利文）：我认为这种情况容易被植被密度这一因素所干扰。因为，一个拥有更多绿色植被的空间更可能拥有较高的生物多样性，反之亦然。生物多样性与植物密度之间存在着紧密的关联，所以我们需要在保持植被密度不变的情况下，就不同程度的生物多样性对健康所产生的影响展开更加细致的研究。

张：这正是难点所在。如果想要在实验中保持某些变量恒定，就需要更大的样本量。对于这种研究来说，基本的统计单位是场地。研究往往需要至少30个样本场地来对照各种环境变量以进行有效的统计分析，这是此类研究一直面临的挑战。

苏利文：可以通过电脑软件来模拟场地条件，从而在保持场地条件不变的情况下改变生物多样性的丰富程度和植被密度，采用这种技术就无须很多的实际场地。

1 Biodiversity and Health

Bin JIANG (JIANG hereafter): Let us discuss the importance of biodiversity. If there are many plant species in a green space, you can see something new blooming during the whole year. If you have regular contacts with this kind of vivid landscape, you may be more interested in watching or interacting with nature. Thus, in order to promote human health, we may need to increase the biodiversity of the urban green spaces we design.

Chun-Yen CHANG (CHANG hereafter): Yes, nature is often fascinating. However, you do not have to force yourself to look at the bird in the tree or the fish in the pond or the lovely tree outside your home. We have found statistically significant relationships between levels of biodiversity and health benefits, especially psychological benefits[1]-[4]. But the problem is how to interpret these relationships.

William C. SULLIVAN (SULLIVAN hereafter): I think the situation is also confounded by the density of vegetation. That is, a greener space is more likely to have a higher biodiversity, and the opposite is also true. So it is hard to pull biodiversity and the density vegetation apart. We need some careful research that keeps density of vegetation constant and varies biodiversity.

CHANG: That is a hard part. If you need to hold some variable constant, you need to have a large sample size. For this kind of study, the statistical unit is a site. So you need at least more than 30 sampling sites to control environment variables to conduct a powerful statistic analysis. That is always a challenge for this kind of study.

SULLIVAN: But you could create simulations of sites using computer software. Then, you can keep the setting the same but change levels of biodiversity and change the density of vegetation. You do not need many sites if you use this technology.

CHANG: The biodiversity we are talking about right now is the biodiversity of vegetation. We should also consider the diversity of birds and insects.

SULLIVAN: Would not the biodiversity of vegetation be an indicator of a larger biodiversity? When you have a higher biodiversity of plants in a setting, you are more likely to have more invertebrates and more birds.

CHANG: I agree. But if we go back to planning and design approaches, the question is: What is the appropriate scale? What is the range? If you are designing a big rural area or wooded area, biodiversity is probably not our main concern — basically, what we need to do

1. 台北高密度的城市和指状绿色廊道，摄于2010年。© William C. Sullivan
1. High-density City with finger-like green corridors, Taipei, 2010. © William C. Sullivan

is to preserve the biodiversity that exists already. The main species there are plants and animals, not humankind. But in the urban area, the situation is different. The main species is humankind. Thus, we need to increase biodiversity by bringing wildlife to urban areas and then help the wildlife live ecologically or sustainably with people, even in a non-protected area.

First, we need to have a policy or objective regarding the development of urban green spaces that can both promote biodiversity and address human needs. Sometimes people make the mistake of attempting to build a purely “wild” or “primitive” space within a city. But actually this is not feasible because nature has been disturbed already and such places may drive people away. Still, whatever we design should promote healthy ecological functioning. And we should be careful to be sure that we design not only for people but also to increase biodiversity.

Then we need to know the scale of planning. In this regard, we need to define the scale. We call scale “grain” in landscape ecology, kind of like the resolution in a digital image. You can represent a habitat for a species, like birds or butterflies, but all of your representations are affected by the users’ preferences[5]. So we are not merely stating that we will have a park so that we can experience some nature. We are also thinking about the specific size of the park, the content of the park, its composition and configuration in a corresponding effort to promote healthy ecological functioning.

2 Green Infrastructure

CHANG: Another thing I always talk to my students is that they

张：我们现在所说的生物多样性通常是指植被的多样性，应该将鸟类或昆虫的多样性也考虑进来。

苏利文：植被的多样性不能够指示更广泛意义上的生物多样性吗？当环境拥有更高的植物多样性，就可能拥有更多的无脊椎动物和鸟类。

张：我赞同这个观点。但是如果我们回过头来考虑规划和设计途径，就会发现问题：什么样的尺度是合适的？其范围有多大？如果你所设计的是一片很大的乡村地区或林地，生物多样性也许不是我们的首要考虑对象，我们基本上只要保护其既有的生物多样性即可。因为那里的主要物种是动植物而非人类。但是在城市中，情况则有所不同：人类是主要物种，我们需要通过引入野生动植物来提高城市中的生物多样性，即使在非保护区，也应促进野生动植物以生态的或可持续的方式与人类共存。

首先，我们需要制定相应的政策或目标以创造出既能提升生物多样性又能服务于人类的城市绿地。有时人们试图在城市中重现纯粹的“荒野”或“原生态”空间，这种想法是不可行的。因为此时自然已经遭到干扰，而人们也并不喜爱纯粹的“荒野”或“原生态”形式的空间。尽管如此，设计还是应该致力于提升健康的生态功能，应该在为人类服务的同时提高生物多样性。

我们还需要清楚规划的尺度。关于这一点，首先需要对尺度做一个定义。在景观生态学中，我们将尺度称为“粒度”，如同数字图像的分辨率。你可以为一个物种，比如鸟类或蝴蝶，设置一个栖息地，但最终的表现实际上将受到使用者偏好的影响[5]。所以我们不能说，只要我们设计了一个公园，就可以让人们领略自然。我们还应考虑公园特定的规模、内容、构成及配置，从而有针对性地提升公园的生态功能。

2 绿色基础设施

张：我总是引导学生们不应将注意力局限在场地之内。因为一块场地不仅是一个点，也是更大的连续统一体的一部分。例如，一个小尺度的滨河公园虽不能改变整条河流的生态系统，但却可以成为改善的第一步。你们必须在理解整个系统之后才能改变这个场地并创造生态效益。有时候设计者只专注于场地之内的事物而忽略了场地之外的问题，从而错过了一些提升生态效益和人体健康的重要机会。

姜：在城市总体规划中描绘一个连续的绿色系统并非难事，但是在实际操作中，无论是对城市规划师还是对景观设计师来说，创造一套完整的绿色系统都绝非易事。例如，场地经常被铁路、高速公路等交通设施切断；有时候项目会因土地所有者的利益冲突而被搁置。对人口众多的城市来说，创建一个连续的绿色基础设施系统的确是一个很大的挑战。在城市化吞没自然区域之前，先于灰色基础设施建立完善的绿色基础设施，以及将城市既有的废弃灰色基础设施或棕地改造为绿地，可能是解决问题的两种方式。

张：最近，我与台北市的政府官员有过一次会谈。基于之前完成的一个项目，我对城市绿色基础设施的建设提出了一个想法。大约一年前，我们采取了一些措施来提高城市人行道的可达性，那是一个相当成功的项目。我建议台北市政府将城市中的每一米绿地都连接起来。尽管台北市拥有很多绿地，如社区公园、城市公园、林荫道等（图1），但缺少一个规划将它们连接起来。我认为人们并不是不知道如何去做，而是缺乏实际行动。

姜：苏利文教授，您认为对于一个拥有高密度人口的城市来说，什么才是发展完善的绿色基础设施的重要机会？

苏利文：我认为关键在于如何处理水的问题。重新思考人与雨水的关系为我们提供了一个巨大的改变契机，城市可以由此建设一套更具可持续性的绿色基础设施（图2）。在当代西方国家，人们通常认为雨水是一种糟糕的东西，并称之为“雨洪”，其潜台词是：“这个东西非常不好，应该马上处理掉”。然而雨水应该是一种资源，与其将它去除，不如将其保留并加以利用。在我居住的社区里，雨水从屋顶落下，沿着宅前车道流到街道上，再流入排水管道，最后汇入河流。这样的排水系统能够尽可能快地排除雨水。但是，现在是时候重新思考我们对于雨水的态度了。

2. 作为休闲目的地的滨水区，摄于2010年。© Bin Jiang
3. 由俞孔坚和土人景观设计的红飘带公园，摄于2011年。© Kongjian Yu
2. Waterfront as a recreational destination, 2010. © Bin Jiang
3. Red Ribbon Park by Kongjian Yu and Turenscape, 2011. © Kongjian Yu

must look outside of the site. A site is just one spot that is often part of a larger continuum. For instance, you may be designing a riverfront park. One small park cannot change the ecological system of a river, but it can be the first step. You have to know the whole system to make changes of the environment to have ecological benefits. Sometimes what designers focus on is only within the site. They forget what is outside of the site and in doing so lose important opportunities to have significant impacts of ecological and human health.

JIANG: It is easy to draw a well-connected green system for a city on a master plan. But in practice, it is very difficult for urban planners or landscape architects to create an integrative green system. For instance, sites are often disconnected from other green areas by transportation infrastructures like railways and highways or sometimes the project is hindered because of land owners' conflict of interest. Creating connected green infrastructures is really a challenge for cities with a high population density. There are two possible ways to address this problem: First, locating a comprehensive system of green infrastructure before urbanization encroaches natural areas; Second, transforming obsolete or inefficient grey infrastructures or brown fields into green spaces.

CHANG: Recently, we had a meeting with the Taipei City government. I proposed an idea based on a previous project. About a year ago, we developed an effort to make all sidewalks in the city accessible. I think it was a quite successful project. I used that idea to suggest to Taipei City government that we could connect all green areas within Taipei meter by meter. Although we have many green spaces — neighborhood parks, city parks, boulevards (Fig.1) — we do not have a plan for how to connect them. I believe we know how, but people need to do the work and to make the green space accessible.

JIANG: Professor Sullivan, what is a great opportunity for developing an integrative green infrastructure in a high-density city?

SULLIVAN: I would argue that the key is the way in which we deal with water. Rethinking our relationship with rain water provides a huge opportunity for change — for a more sustainable green infrastructure (Fig. 2). Right now in the West, we treat rainwater as something awful. We call it "stormwater". By calling "rainwater", "stormwater" we are saying, "This is very bad. We have to get rid of it quickly". Instead, we should be thinking of water as a resource. Rainwater is not something you want to get rid of — maybe you want to retain it. Right now in my community, the rain falls off the roofs, then goes down the driveways and into the streets, into drainage pipes, and finally into the river. We design our cities to move rainwater away as quickly as possible. It is time to rethink our ideas about rainwater. We should build new communities and renovate existing communities so the rain is treated as a resource. For big rains, maybe we still need to have drainage capacity. But for most rains, we can allow the water to move into areas on site and percolate back into the ground.

First, locating a comprehensive system of green infrastructure before urbanization encroaches natural areas; second, transforming obsolete or inefficient grey infrastructures or brown fields into green spaces.

One way to do that is by designing rain gardens. Rain gardens serve multiple purposes: They retain rainwater, increase the amount of water that gets recharged into the ground water system, they increase biodiversity, and they often increase the level of beauty in the landscape. The question then becomes, how do we incorporate rain gardens with street systems? How do we incorporate this new way of retaining rainwater with bicycle paths or sidewalks? We can use water as an opportunity to organize green infrastructure. The challenge is how to bring nature to every doorstep. In sum, I think one crucial way to do that is to modify how we manage water in cities.

CHANG: I like your idea very much. I think it will help us increase healthy landscapes in urban areas, especially because water can create a variety of habitats. There are high mountains in the middle area of Taiwan. People said forty or fifty years ago, if there was a rain in the mountains, the rainwater took two months to flow to the seashore, but today, it only takes two hours. That has caused a lot of environmental problems.

JIANG: Conventionally, process of construction engineering was dominant during the process of urbanization. However, a great amount of environmental crisises have proved that engineering cannot solve the problem without support of a healthy nature.

Not only experts in landscape architects, but also ordinary citizens are aware of the importance of green river corridor as a green infrastructure. In a recent nation-wide survey study in Switzerland, researchers used the same photos of a river as a baseline pictures and then did computer simulations to show the river corridor with various

无论是建设新的社区还是更新现有的社区，雨水都应被视为一种资源。在降雨量较大的情况下，我们仍需要依靠城市排水管网设施来排洪，但是在降雨量一般的情况下，可以使雨水汇流到场地的某些区域，然后回渗到地下。

有一种方法是设计雨水花园。雨水花园有多种用途：保持雨水、增加回渗进入地下的雨水量、增加生物多样性，以及美化环境。但问题在于我们如何将雨水花园与街道系统、自行车道或人行道结合起来？我们可以将雨水处理看作一个将绿色基础设施系统化的机会。我们所面临的一个挑战是如何将自然带到每家每户。总之，我认为关键在于改变对城市水体的管理方式。

张：我非常赞同您的观点。我认为这种理念能够帮助我们在城市中创造更加健康的景观，特别是当水能够创造出多样的生物栖息地的时候。台湾岛的中部地区分布着高山。四五十年前，若山区有降雨，雨水需要两个月的时间才能流到海边，现在完成这个过程只需要两个小时，但这种雨水排放系统导致了很多的环境问题。

姜：在过去的城市化过程中，人工工程占据绝对的主导地位。但是，不胜枚举的环境危机证明这些工程在没有健康的自然环境支持的前提下是无法解决问题的。

现在，不仅是景观设计专家，普通市民也意识到了绿色河流廊道作为绿色基础设施的重要性。在瑞士的一项全国范围的问卷调查中，研究者使用一条河流的同一张照片作为底图，用计算机分别模拟出不同种类的硬质和软质河岸。随后，他们向非专业的受测者展示这些照片。研究结果表明人们更倾向于选择软质的河岸，并且认为软质河岸比混凝土河岸更加美观和安全，其中一些受测者认为软质河岸比硬质河岸更具生态效益[6]。苏利文教授的一系列研究也证明软质自然护岸相对于硬质人工护岸更具审美和生态优势[7][8]。

去年，俞孔坚教授在伊利诺伊大学所做的演讲中展示了他设计的红飘带公园（图3）。他设计了一条非常窄的沿河步道以避免对场地的其他自然栖息地造成干扰。这种设计方法对滨水空间的设计产生了非常深远的影响。我认为苏利文教授的这一理念对于中国也是非常适用的。

4. 人们可以通过个人3D视频装置接触自然，摄于2012年。© Jie Zhao
5. 芝加哥的城市绿色空间能够鼓励人们进行户外锻炼，摄于2011年。© Bin Jiang

4. People can experience nature through a 3D personal viewer, 2012. © Jie Zhao
5. Urban green space can encourage people to exercise outdoors, Chicago, 2011. © Bin Jiang

3 技术

苏利文：让我们换一个话题。当代的技术正以愈发迅猛的速度发生着变革。不论在西方还是东方，几乎每个人都拥有手机，其中不少人使用智能手机。我们还可以方便地携带平板或超薄笔记本电脑去到世界的任何地方，无线网络信号也随处皆是。我们花费很多的时间使用和把玩这些设备。这种状况让我对城市设计的意义产生了疑问。这种生活习惯的改变对于我们的工作，即为人们提供有益健康的场所意味着什么？

姜：显然，让人们停止使用这些高科技电子产品是不现实的。我认为这些新技术实际上为我们提供了新的机会。智能手机的应用可以帮助人们实现一个友好的、安全的、适宜步行的城市环境。比如一个名为“步行指数”的互动性应用程序可以帮助用户查询城市各个区域的可步行性，这个可步行性是根据用户提供的多方面信息进行确定的：如各种“第三场所”[①]的数量和多样性、通勤的便捷度、安全性等。部分手机应用程序和便携式电子设备可以测量人的心跳等生理数据、计算体重指数或记录人每天的步行量和步行路线。我想这些技术都能够提升人们的健康意识，鼓励人们通过步行和骑自行车来探索城市、开展社交和进行户外锻炼，从而促进身心的健康。

现在的三维动画软件和影像设备可以创造出逼真的虚拟环境。它们可以替代传统研究中的真实场所，因此我们可以摆脱很多现实场所的限制，通过精确地控制环境变量来考察某些特定环境因素对健康的影响（图4）。除了视觉上的技术，听觉方面的新技术也能为人们提供即时的、对身心有益的声音环境。比如一个名为“源于自然的舒缓声音”的应用程序，人们可以选择其中任何一种或一组背景声音。例如，你能够将鸟鸣声和流水声组合作为客厅的背景声音。在嘈杂、灰色而拥挤的城市环境里，这些技术将帮助居民即时地、高效地恢复精力。

苏利文：有时我就是这样做的。当我在咖啡厅阅读和思考时，我会戴上耳机聆听一些来自自然界的声音，它们可以屏蔽周围的喧嚣，听着这些声音，我便能够轻松地阅读和集中注意力（思考）。

张：要塑造对自然的体验，我认为我们不应该只关注改变物理的生活环境，还需要利用新的技术和设备来创造一个可便捷地体验自然的生活环境。

姜：是的。您的观点提醒我创建多样的自然声音对绿地设计

soft or hard riverbanks. The results showed that participants, who were all ordinary people, preferred images with the soft riverbank — they thought it was more beautiful and safer than the concrete riverbank. Some of them also commented that the soft riverbank had greater ecological benefits than the paved riverbank[6]. Sullivan's studies also suggest that soft, natural waterfront is superior to hard, artificial waterfront in terms of ecological performance and aesthetic preference[7][8].

Last year, Prof. Kongjian Yu came to UIUC and delivered a speech on the Red Ribbon Park (Fig. 3). He designed a narrow pathway along the river to keep other natural habitats free of disturbance. His approach made a phenomenal influence on the design of riverfront. I think Prof. Sullivan's idea is also very useful in China.

3 Technology

SULLIVAN: Let us move to another issue. Technology is changing faster and faster. In the West and the East, almost everyone has a cell phone and many people have smart phones. Now we have tablets, iPads, and very thin laptops you can take anywhere. Wi-Fi is widely available. We spend so much of our life now staring at and playing with our electronic devices. We can go through our lives with our heads inside of these things. It makes me wonder about the implication for the design of cities when people spend a huge amount of their day focusing on these small screens. What does this change in our habits mean in terms of providing healthy places?

JIANG: Obviously, it is impossible to stop the use of these high-tech devices. I think there are new opportunities for us with respect to these new technologies. Some smart phone apps have been developed which can facilitate a friendly, walkable urban environment with great safety. For example, an interactive app named "Walk Score" let people have an access to check walkability of urban spaces, which is evaluated based on information provided by users, such as amount and diversity of "The Third Place"[①], convenience of commute, and safety. There are other apps or mobile devices that can measure human's heart rate, Body Mass Index (BMI), distance and trace of everyday walking. I think all these technologies can promote awareness of health, encourage walking and cycling to discover city, have social interactions and outdoor exercise.

The advanced 3D visual technology can help us to create lifelike virtual urban spaces, which enable us to control confounding environmental variables to accurately examine impacts of specific environmental attributes without many constraints of real sites (Fig. 4). Besides visual technology, new acoustic technology enables people to have an instant access to a sound environment of nature. For example, people use an app called "Relaxing Sound from Nature". There are thousands of sounds from nature collected in the apps. You can choose any sound or a combination of a few sounds. Say, you can combine the sound of birds tweeting and the soothing sound of a creek to create a sound background for your living room. I think all these technologies can provide an instant way for people to efficiently restore and recharge themselves in noisy, barren, and crowded urban spaces.

SULLIVAN: Sometimes I have done exactly that. When I go to a coffee shop to read or think, I put nature sounds on my headphones and block out all the coffee shop noises. I can read and focus easily with the sounds of nature in my headphones!

CHANG: I think we should not only do design to shape the forms of the physical living environment. We also need to design living environments with the new technology and devices to create an effective experience of nature.

JIANG: Exactly. Your words remind me that it is important to create a variety of nature sounds when we design green spaces for people. People like to hear the sound of water flowing and birds singing. Creating habitats for wildlife and facilitating flowing water and wind into site would increase the richness of nature sounds.

CHANG: Yes, we need to ask our design students a question: How many different nature experiences can visitors have by being in this place you have designed?

也是很重要的。人们喜欢倾听流水声和鸟鸣声。为野生动物创造栖息地、促进场地中水和风的流动能够增加自然声音的丰富性。

张：是的，我们需要向设计专业的学生提出一个问题：在你设计的场地中，造访者拥有多少种体验自然的方式？

4 城市设计与户外健身活动

苏利文：还有一点很重要，城市中的自然景观能够吸引人们来到户外并鼓励他们进行身体锻炼（图5）。换个角度说，现在人们若想到户外散步或骑车将会遇到很多阻碍。在西方，我们面临着普遍的肥胖问题。相比过去，当代的美国人锻炼身体的机会大大减少。现在有超过1/3的美国成年人身体肥胖，这个比例比我的童年时期要多出3倍有余。在城市设计中，我们必须针对肥胖问题采取相应的对策。在西方，问题在于住宅、商店、学校被规划在相距遥远的不同地点。所以从家到学校不得不开私家车或乘坐公交车。购物也面临着同样的问题，哪怕只是一罐牛奶都需要驾车前去购买。

姜：我有一个能够作为对照的中国案例。几年前，我居住在上海一个地铁站附近的社区里，地铁站的楼上有一个大型的超市。每天傍晚下班之后，我可以走出地铁站直接上楼购买一些食物和生活用品。在回家的途中，我需要穿过一个供市民聚会跳舞的广场和一条布满餐馆、礼品店、咖啡厅和音像店的街道。即使这只是一段10分钟左右的路程，却是一种丰富而有趣的步行体验。

苏利文：在西方，我们需要效仿这种模式。我希望中国不要因为正在经历的快速发展而放弃这种步行即可满足日常生活所需的模式。我们在美国所发展的郊区设计模式是以汽车为中心的昂贵模式。它牺牲了人们锻炼身体的机会，而且长时间驾驶会牺牲人们本可用于工作的宝贵时间，并使大量的温室气体被排放到大气层中。这种失败的城市设计对健康产生了很多负面影响。**LAF**

4 Urban Design and Physical Activity

SULLIVAN: In terms of landscape and health, another important thing is that landscape in cities can pull people outside and encourage them to exercise (Fig. 5). Or another way of thinking about this is that there can be all kinds of barriers that make it difficult for people to get outside to walk or ride their bike. In the West, we are facing an epidemic obesity. People exercise a great deal less today than their parents did just a generation ago. Now more than one third of adults in the U.S. are obese. This is more than three times the rate when I was a child. Urban design must have something to do with our rates of obesity. In the West, our problem is you have only houses here, only shops there, and only schools way out on the edge. So if you want to go to school from your house, you have to get in a car or a bus. Going shopping poses the same challenge. If you need milk, you have to get a car.

JIANG: I have a good case from China for comparison. I lived beside a subway station, and there was a supermarket over the subway station. Every evening after work, I could step out of the station and go upstairs to buy groceries. Then I could go through a plaza where people dance together and a street full of restaurants, gift shops, record stores, and coffee shops before I arrived at home. It was such a rich and interesting walking experience, although it was only a 10-minutes walk.

SULLIVAN: We need models like these in the West. I hope that in China, with all the rapid development you are experiencing, you do not give up this pattern — this ability to walk to meet your daily needs. The suburban design patterns we have developed in America are car-centered and costly. It is costly in terms of people's exercise; it is costly in terms of the time you spend sitting in a car and not being productive; it is very costly in terms of greenhouse gases going into the atmosphere. This poor urban design has many negative health consequences. **LAF**

校者注

① “第三场所”（也被称为第三空间）是一个应用于社区建设的术语，是指区别于通常的居住和工作这两种场所的社会环境。

Editorial Note

① The “Third Place” (also known as Third Space) is a term used in the concept of community building to refer to social surroundings separate from the two usual social environments of home and the workplace.

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原创实践
Initiative Practice

美国亚特兰大城市环路
The Atlanta BeltLine, USA
p92

荷兰瓦登工程
The Wadden Works Project, the Netherlands
p102

荷兰诺德瓦德圩田
Noordwaard, the Netherlands
p108

美国默塞德公园社区
Parkmerced, USA
p116

澳大利亚悉尼科技大学校友绿地
The University of Technology Sydney's Alumni Green, Australia
p124

荷兰莱克运河拓宽工程
The Widening Project of the Lekcanal, the Netherlands
p131

以色列生态集装箱桥
ECOntainer Bridge, Israel
p136