

建筑与基础设施 Architecture and Infrastructure



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摘要

城市基础设施由于缺乏文化及艺术的介入，导致如今很多城市的景观不理想，城市基础设施的许多空间也因未能得到合理的利用而被废弃。城市管理中的条块划分致使城市功能相互割裂是造成这些现象的主要原因。而建筑设计能够为基础设施工程增加艺术和文化的考量，并能通过综合的城市治理和空间扩展，为市民创造更美好的生活。

关键词

建筑设计；基础设施；城市管理；城市质量

Abstract

Ignoring the artistic and cultural facets of urban infrastructure is the reason why so many urban landscapes are not satisfying. Many spaces taken by infrastructure are also abandoned because of unreasonable use. These urban problems like fragment of urban functions are primarily caused by the frame segmentation of urban management. Architecture design can add consideration of art and culture into infrastructure, and through integrated urban governance and space expansion, architectures provide better life to citizens.

Key words

Architecture Design; Infrastructure; Urban Management; Urban Quality

您如何看待城市基础设施，以及建筑设计在城市基础设施建设中的作用？

崔愷（以下简称崔）：作为建筑师，我对建筑设计的理解有一个逐渐发展的过程：过去总是从工业建筑、民用建筑、公共建筑这些分类系统来看待建筑设计。但当你从城市整体环境的角度来看时，将会发现城市中发挥主要作用的可能并不是建筑，而是城市的基础设施。例如，高架桥实际上是城市中最主要的风景（如果你将其视为风景的话），交通枢纽其实是城市居民和游客共享的公共空间。建筑之所以称为“建筑”，是因为它是工程与艺术、文化结合的产物。而将诸如高架桥的构筑物定义为基础设施，说明我们还是倾向于将其看作是一个工程，从而忽视了它们应该具备的艺术性和文化性。这正是导致如今很多城市景观不理想的主要原因之一。同时，基础设施实际上是城市大系统中的一个节点，因此与城市其他的方方面面都有着很强的相关性。它既包括设施本身的构筑，也包括与之相关的整个环境的信息，因此其设计就需要一体化地来考虑。而现

在，我们有时候会过分强调某个节点的艺术性，而没有顾及到其之于一个城市的系统性的问题。

大约在2002年，我第一次到英国，去参观伦敦的千年桥地铁线项目。当时主管这个项目的官员特别兴奋地向我们介绍，这是英国近百年以来第一次由建筑师来设计地铁站。由于建筑师的参与，城市公共艺术的品质有了很大的提升。在中国，现在也有一些建筑师能够参与地铁线的设计，但事实上只是负责地面部分的站棚设计。如果要将地铁线当作城市的一种公共空间来安排，建筑师应该在最初阶段就介入。目前，我们的地铁站设计比较重视装修，是在标准的结构基础上通过装修将空间包装起来。而在巴黎、伦敦新建的地铁站设计中，空间的高度、连贯性、自然采光都是通过结构形式的创新来实现的，看不到太多装饰。

我想谈的另一个方面是城市的高架桥。高架桥下方的空间在大城市中所占的比例其实非常之大，而且管理和使用的状况也很糟糕。为什么不利用这些架高的城市基础设施下方的空间来提供一些城市服务呢？例如，出租车司机没有地方上厕所、

What do you think of urban infrastructure, as well as the role architectural design plays in the development of urban infrastructure?

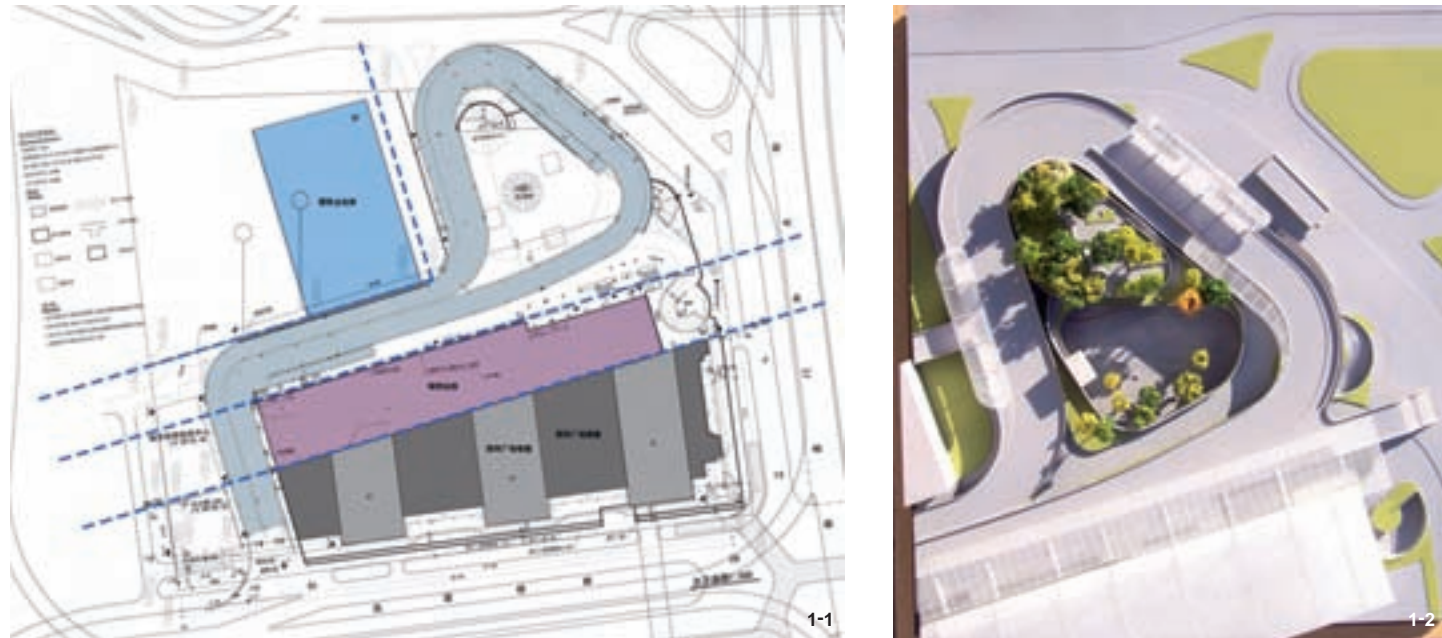
Kai CUI (CUI hereinafter): As an architect, I have had a gradual process of understanding architectural design. In the past, architectural design was always considered in terms of industrial architecture, civil architecture and public architecture. But if you take a look in the perspective of the urban environment, you will find that it is not architecture that plays the major role in cities, but the urban infrastructure. Flyovers are in fact the most principal landscape in cities, while the transport network is the public space shared by urban residents and tourists. Architectures are architectures because they are engineering, artistic, and cultural combinations. Such architectures are defined as infrastructure because they are considered as projects, ignoring the interference and thinking of their artistic and cultural facets. This is in fact one of the major reasons why so many urban landscapes are not good enough. At the same time, infrastructure is in fact a node of large urban systems, and is thus highly relevant. It not only includes the buildings of the facilities themselves, but also the entire environmental information of the related system. As a result, it demands integration. Today, we sometimes over-emphasize the artistic quality of some specific part without taking into consideration of its relation to the urban system.

In about 2002 when I was in the UK for the first time, I visited the London subway Millennium Bridge project. The project director, particularly excited, told us this was the first time in 100 years in England the subway stations were designed by architects. Thanks to the participation of architects, the quality of urban public art had been greatly enhanced. In China, architects have been able to participate in the design of subway lines, also, but they have only been responsible for the design of the ground-level station covers. If subway lines are to be considered as a type of public space, then architects should get involved from the very beginning of projects. Our subway design pays a lot of attention to decoration, wrapping the space with decorations, based on the standard framework. While in Paris and London, when designing subway stations, designers innovate the structures and forms to realize the height, consistency, and natural lighting of the space without much decoration.

The other aspect of infrastructure I would like to talk about is the flyovers in cities. The space under the flyovers is enormous in large cities, yet its management and utilization is extremely poor. Why not make use of the space, which is under the elevated urban infrastructure, to provide urban services? For example, Taxi drivers have problems finding toilets and restaurants. Can such problems be addressed in such space? Professor Shan Jun from Tsinghua University once organized his students to study the ignored space in cities and made many interesting proposals, but none of them seems to have been implemented. Before the 2008 Beijing Olympics, the city made great efforts in improving its urban quality, even demanding that the elevation of residential buildings along the street be re-painted. However, nobody cared about the space under the flyovers. Until now, much of the space is still used as parking lot. Cars, having been parked there for quite a long time, look like deserted trash. We once drew up a plan for Beijing Foreign Studies University, which is divided into two campuses by the Third Ring Road. We proposed that the seven-meter high space under the flyovers be used as foreign language bookstores or facilities to provide service for people outside the university. We submitted the proposal to the Agency of Planning, but the space was under the administration of the Agency of Transport, so nothing happened about the proposal.

Can we say that the difficult point of urban problems is the segmentation of urban management?

CUI: Yes. A city is like chess and its management should not be segmented. With that said, I have been defeated many times, particularly in the experience of designing Xihuan Square at Xizhimen, Beijing. At that time, the China Architectural Design Institute and the French AREP Railway Design Company made a joint effort to participate in the design competition. From the very beginning of our discussion, we took into consideration the way to connect business with subway line 2, Beijing North Railway Station, the bus transit hub and the Xizhimen flyover, as well as the way for a large crowd of passengers to change transport means. The government organized many transport agencies and design institutions into many discussions, but the participants insisted on pushing their own positions and interests, and so it was not possible



1-1. 北京西环广场的条块划分管理方式
 1-2. 北京西环广场设计方案：通过高架桥来引导交通，并为城市居民营造舒适的公共空间。
 1-1. The segmentation of management in Xihuan Square, Beijing.
 1-2. The design proposal of Xihuan Square: Utilizing elevated viaduct to guide the traffic, and providing comfortable public space for citizens.

吃饭。这些问题是不是可以利用这些空间来解决？清华大学的单军教授曾组织过一个学生课题，正是研究这些城市中被忽视的空间，他们提出了许多有趣的方案，但似乎并没有落实。2008年奥运会前，北京花费了很大的代价来提升城市品质，甚至要求重新粉刷沿街住宅的立面，但是却没有人去理会高架桥下的空间；到如今，很多桥下仍然只是停放着一些汽车，有些甚至如同废弃汽车的垃圾场。我们曾经为北京外国语大学做过一个规划，三环路将校园分割成两个部分，我们提出将三环路7m高的高架桥下空间改造为外语书店或是学校的对外服务设施，并将方案提交给了规划部门，但由于三环路隶属交通部门管辖，所以并没能推行下去。

是否可以说城市问题的症结在于这种城市管理的条块划分？

崔：是的。城市应该是一盘棋，要从全局来考虑城市的总体利益。关于这个问题，我有一个特别失败的经历是我参与的位于北京西直门的西环广场的设计工作。当时，中国建筑设计研究院与法国AREP铁路设计公司合作参加设计竞赛。在方案讨论之初，我们就在考虑如何将商业与地铁2号线、北京火车站、公交枢纽，以及西直门立交桥结合起来，并解决大量人流换乘的接驳问题。政府曾组织多个交通部门和设计单位讨论过多次，但大家从各自的利益出发，各持立场，会议始终未能达成共识。但我们还是进行了非常完善的研究，并最终提出采用

简单的高架平台的方式将车流引入场地，使地面层和地下层成为可供人活动的空间，形成具有城市活力的连通方式，而不是像现在这样用围栏把人圈起来。最后，开发商建了西环广场的大楼，铁路部门建了新的北京火车北站，原有的公交枢纽被取消，地铁和城铁之间采用封闭且笨重的桥廊进行连接，既没有优美的环境，也没有活跃的商业活动——商业只是被设置在交通设施旁的西环广场大厦的裙楼中。我们的城市中存在无数隐形的、难以跨越的界限，在这种条块的利益割据中，被牺牲的往往是城市质量和公众利益。

通过合作我也向国外的同行了解过，例如在法国，这类项目中也存在各种利益的冲突，但是他们有足够的时间可以去进行细致的研究，例如里昂火车站前广场改造是预计将在30年后完成的。但我们的建设速度太快，今年在讨论的方案也许明年就要实现，这使得很多矛盾得不到真正的解决。也正是因为快，所以我们更应该有一个很好的统筹。

在一些作为基础设施的建筑设计中，建筑师如何考虑与周边基础设施的衔接问题呢？

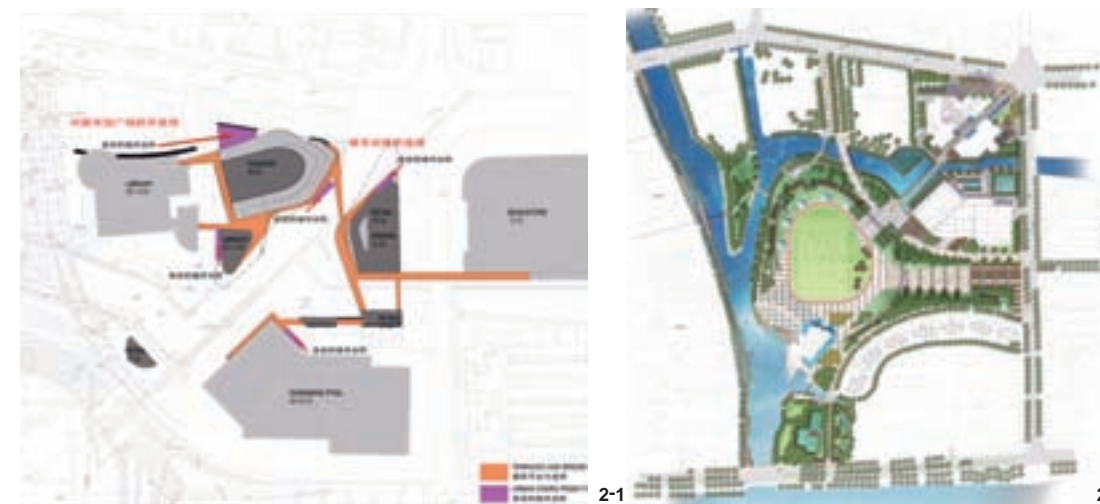
to reach an agreement. Nevertheless, we still conducted an in-depth study and a completed a design, adopting an elevated platform to guide the traffic into the site, making it possible for people to move around the ground as well as the underground levels. This formed an urban dynamic way of connection, rather than the current situation that confines people with fences. In the end, developers built the high-rises of the Xihuan Square, the railway bureau constructed the new Beijing North Railway Station, the original bus transit hub was closed, and subway and city railways were connected by a closed bridge and corridor. In the end, there is no beautiful environment, no active business. Malls in the annex of Xihuan Square nearby are not directly linked to the interchange of transport. In our cities there are numerous invisible and insurmountable boundaries. In such segmentation, urban quality and public interests are sacrificed.

Through this collaboration, I was also interviewed by some people from the same industry, and was told that there were also conflicts in the implementation of such projects in France. However, they had time for a sufficient study. The upgrading of the square in front of Lyon Railway Station, for example, was expected to be finished in 30 years. But development in China is operating at an accelerated speed. With design concepts still in discussions for this year, the same projects might have to be completed the following year, and so, many contradictions are not able to be resolved in any real sense. But, it is precisely because of the high speed at which development is occurring that we must have a better communicate between stakeholders.

In the designing of buildings as infrastructure, how do architects consider their connections with the nearby infrastructure?

CUI: Every time we start a design, we are analyzing the surrounding environment, and this is a very important point of departure for designing. Architecture is not the weird thinking of architects, but the solution produced by studying the urban environment. Architecture is the organic component of urban environment, and this is the value I insist on projecting in practice. Take the Civic Cultural Square in Kunshan for example. The project is located at the crossing of the city's main road and secondary road, a river flows through the site, and there are banks, library, high-rise mansion, and sports field as well as swimming pool for the local residents. Before we got involved, several institutions had made their proposals, all of which were independent buildings with different appearances. In our proposal, we divided the building into several structures connected with roofs and bridges. There was public space between the structures, whose functions worked in concert with the existing facilities in the neighborhood. We were in fact conducting an integrated urban governance and space expansion. Architects should be citizens seeking to provide a better life, instead of show-off egos.

More and more architects take into consideration green infrastructure support, such as adding rainwater collector and roof garden to buildings. What do you think of such trend?



2-1. 昆山人市民文化广场：通过多个体量的建筑来扩展城市空间。
 2-2. 由其他设计单位曾经提交的昆山人市民文化广场方案。
 2-1. Kunshan Civic Cultural Square: using several independent buildings to expand urban space.
 2-2. One of the other design proposals of Kunshan Civic Cultural Square.

崔：我们每一次做建筑设计的时候，都要对周围的环境进行分析，这是设计中一个很重要的出发点。建筑不是建筑师的奇思异想，而是通过对现实的城市环境的研究而提出的针对问题的解决方案。建筑是城市环境的有机组成部分，我在实践中一直坚持这样的价值观。例如我们在昆山的市民文化广场项目，这个项目位于城市主干道和次干道的交叉口，河流穿过场地，周边有银行、图书馆、高层住宅和供市民活动的运动场和游泳馆。在我们介入项目之前，已经有几家设计单位提出过方案，但无外乎是造型各异的独立建筑。而我们的方案则将这个建筑拆分为几个体量的建筑，再用屋顶和连桥进行连接，建筑之间完全开放，构成城市的公共空间，建筑的功能与周边已有的设施形成呼应。实际上，我们是在进行一种综合的城市治理和空间扩展，建筑师是在为市民创造一种更美好的生活，而不是为了炫技。

现在越来越多的建筑在设计中也会考虑到为城市提供绿色的基础设施支持的方面，例如在建筑中增加雨水收集、屋顶花园等，您是如何看待这种趋势的？

崔：生态问题是建筑设计必须思考的问题，或者说是建筑伦理中重要的一点。所以，这件事不是可做可不做，而是必须做。但问题是我们用怎样的代价来做？绿色技术应更多地从实现及维护的角度来考虑。例如雨水收集并不一定需要用工程的手段来解决，在北京的气候条件下，只需要调整绿地的标高，使之低于道路标高就可以满足雨季时短暂的雨水蓄滞问题。绿色不能变成“八股文”，成为束缚设计的条条框框。此外，生态设计一定是结合自然条件的，不可能南北方都一样，这种差异性也将使各地的建筑具有不同的特色。

基础设施的建设通常能够引导或刺激一个地区的开发，现在也涌现出了“景观先行”、“景观代替基础设施”等观点，您对此有何看法？

崔：我认为这样的观点是值得提倡的，就是说在一个城市或者区域的发展中，规划应从自然生态入手。但“景观先行”容易让大家产生误解，因为我们目前对于景观的理解是不一样的，很多人仍把景观理解为装饰性的，并不认为景观是一个区域中生态过程的载体。所以准确一点说，我们应提倡“生态规划先行”。LAF

CUI: Ecological issues must be taken into consideration in architectural design. We can even say that it is an important aspect to architectural ethics. As a result, it is not something that can be ignored, but something that must be done. But the problem is, at what cost can that be done? Green technology should be considered more from the perspective of how it can be realized and maintained. For example, we do not necessarily need engineering methods to address the issue of rainwater collection. With the specific climate of Beijing, to fulfill the temporary demand of rainwater storage in wet seasons, we only need to make sure the elevation of green areas is lower than the elevation of roads. Green measures must not be stereotyped and become a target that must be achieved. In addition, ecological design must be combined with the natural conditions. It will never be the same in the southern part of China and in the north. Such diversity also brings different characteristics to the architecture throughout China.

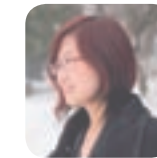
Infrastructure development can often guide or stimulate the development of a specific region. There are now ideas of “landscape first” and “landscape replacing infrastructure”. What is your opinion?

CUI: I think such ideas are worth advocating, meaning in the development of a city or a region, planning should be started from natural ecology. However, the idea of “landscape first” might be misleading, since people have different understandings of the word landscape. Many people still think that landscape is decoration instead of the ecological foundation of an area. As a result, it should instead be “ecological planning first”. LAF

3. 昆山人广场效果图：建筑之间完全开放，构成城市的公共空间。
3. Rendering of Kunshan Civic Cultural Square: public space between the structures.



道路、时间、空间与城市 Road, Time, Space and City



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摘要

道路穿越大地、建构城市、连接建筑；道路具有不同的尺度，能够带来不同速度的感官体验；道路是公共空间、景观、基础设施和城市的融合。本文通过对城市规划中众多经典案例的分析，来探讨道路这种基础设施与城市发展、城市景观、城市意象之间的关联。

关键词

道路；城市；公共空间；流动

Abstract

A road traverses the land, composes cities, and connects buildings. It exists at various scales, bringing to life the sensory effects of different speeds. A road reconciles public space, landscape, infrastructure, and the city. Through analyzing classical urban planning cases, this article explores the relevance of roads as an infrastructure, to urban development, to urban landscape, and to urban image.

Key words

Road; City; Public Space; Flow

1 道路：作为建构城市的手段

道路的出现是与农业耕作密切相关的，其在某种程度上印证了人类社会早期城市和农田的同构性。汉语中，“里”有三重含义：它可以作为长度的度量单位，如“里程”；也可被理解为乡村，如“乡里”；第三重含义为城市，如“里坊”——古代中国

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市的关系：“匠人营国。方九里，旁三门。国中九经、九纬，经涂九轨。”

古罗马也有类似的例证，罗马人以网格状的道路开垦农田，以类似尺度的街道网格建设城市。在意大利威尼顿省的郊区，至今仍在使用当年罗马人留下的引水渠和道路。这已经成为大地景观上鲜明的烙印。

以标准的道路网格形式来营建城市，这种方式在近现代的新

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下，美国国会颁布的《土地网格划分法案》将36个方格街区所组成的9.66km×9.66km的土地设为乡镇，由南北向和东西向的道路分割，每个街区为1.6km见方。但当该土地法案真正落实，当规则的杰斐逊网格遇到不规则的景观元素后，网格需要根据河流等大型的自然结构而进行调整。

美国建筑师赖特在20世纪30年代提出了“广亩城市”

1 Road: As the Urban Intervention

Roads emerged in connection with agricultural cultivation, which to a certain degree demonstrates the isomorphic nature of the city and farmland in early human society. In Mandarin, the character “li” has triple meanings: It could be a unit of measurement for the length of road, such as in the word “licheng” (mileage), or countryside, as in the word “xiangli” (village), and finally as city, in the word “lifang” (neighborhood). The idea of the Emperor’s city and sacred farmland in ancient China also provide corroborative evidence to the significance of roads. The concept of road and urban planning can be found in the chapter of *Kaogongji* (The Artificer’s Record) of the book *Zhou Li* (Rites of the Zhou), “When artisans construct a capital city, the square is nine li long on each side with three gates. In the city, there are nine city roads and nine zonal roads. There are nine tracks for each city road.”

Similar illustrations of the importance of the road could be found in ancient Rome as well. The Romans made new farmland by means of road grids, and built cities by means of street grids. In the suburb of Veneto, Italy, the aqueducts and roads left behind by ancient Romans are still in use. It is a distinctive intervention on the