

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.

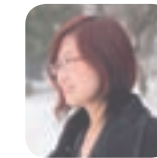
Infrastructure development can often guide or stimulate the development of a specific region. There are now ideas of “landscape first” and “landscape replacing infrastructure”. What is your opinion?

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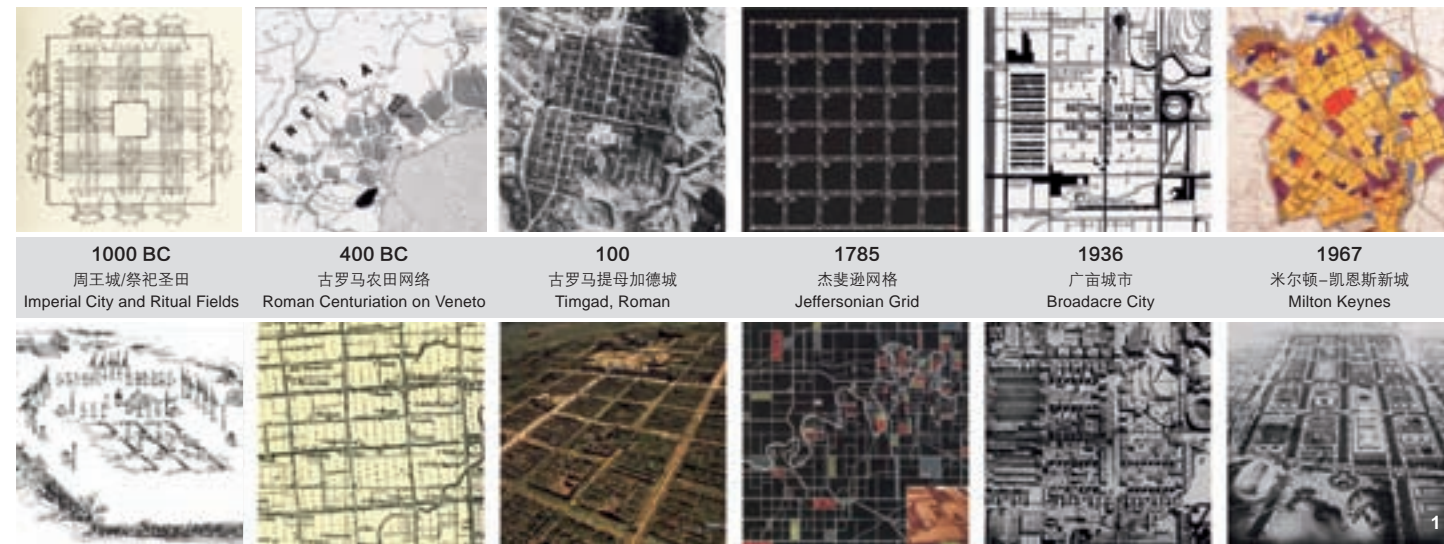
下，美国国会颁布的《土地网格划分法案》将36个方格街区所组成的9.66km×9.66km的土地设为乡镇，由南北向和东西向的道路分割，每个街区为1.6km见方。但当该土地法案真正落实，当规则的杰斐逊网格遇到不规则的景观元素后，网格需要根据河流等大型的自然结构而进行调整。

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



1. 道路：作为建构城市的手段 1. Road: As the urban intervention

(Broadacre City) 的概念。当时随着汽车和电力工业的发展，赖特认为已经没有必要将一切活动集中于城市。他将“分散”定位为未来的城市规划原则。居住区之间以高速公路相连接，提供方便的汽车交通，并沿公路兴建公共设施。

20世纪60年代的英国新城米尔顿-凯恩斯则代表了电信时代的“不相邻社区”，其基本道路由1km×1km的网格构成。米尔顿-凯恩斯的市中心并不是一个传统的中心，而是一个没有等级的网格城市，商业和社区服务中心均匀地分布在网格中。

2 道路：作为城市的轴向空间

礼制、宗教和社会活动的发展，使得道路和城市公共空间紧密地联系在一起，道路成为城市文化地景和城市的公共空间。从古至今，道路对公共空间的诠释在不断地改变，某种程度上，它也象征着社会的进步和审美信仰的变迁。

意大利文艺复兴早期的城市设计根源于将城市的公共空间进行“剧场情境式” (Scenographic) 的解读，市政规划和情景设计拉第奥设计的维琴察奥林匹克剧场，成为了以后3个世纪中影响西方城市设计的主要场景：首先，由一个通往远方的三岔路交叉点，并在四周点缀纪念性建筑物的广场，唤起人们对古罗马的感受；其次，这个由雄伟的建筑物围合形成的开敞广场的中央是一个纪念性建筑物，例如庙宇或凯旋门。这一舞台场景在文艺复兴晚期和巴洛克时期的罗马被付诸实践。

文艺复兴晚期的罗马虽然修建了许多教堂，但是由于城市过于拥挤，人们甚至无法看到很多教堂壮观的立面。教皇西斯图

斯五世在封塔那等才华横溢的建筑师的协助下，规划出笔直的大道，将人们的视线引向教堂或古罗马遗留的方尖碑，从而串联起不同的广场。最后，“永恒之城”的计划在伯尼尼的手中完成：三条大道架构起大罗马城——由通往南方的中央大道、东方的巴布伊诺路和西方的里佩塔街交汇而成。这个壮观的、带有强烈政治色彩的城市大道结构，直接影响了一批近现代城市的规划，如1791年郎方设计的华盛顿规划方案、1859年霍斯曼的巴黎改造工程、1908年的堪培拉规划方案。在现代社会之初，这些中央大道是城市最重要的公共空间之一。

3 道路：作为城市现代化的技术动力

道路的革命与交通工具的革命紧密相连：每当新的交通工具出现时，城市的景观也会随之革新。从霍斯曼的巴黎改造到厄尔

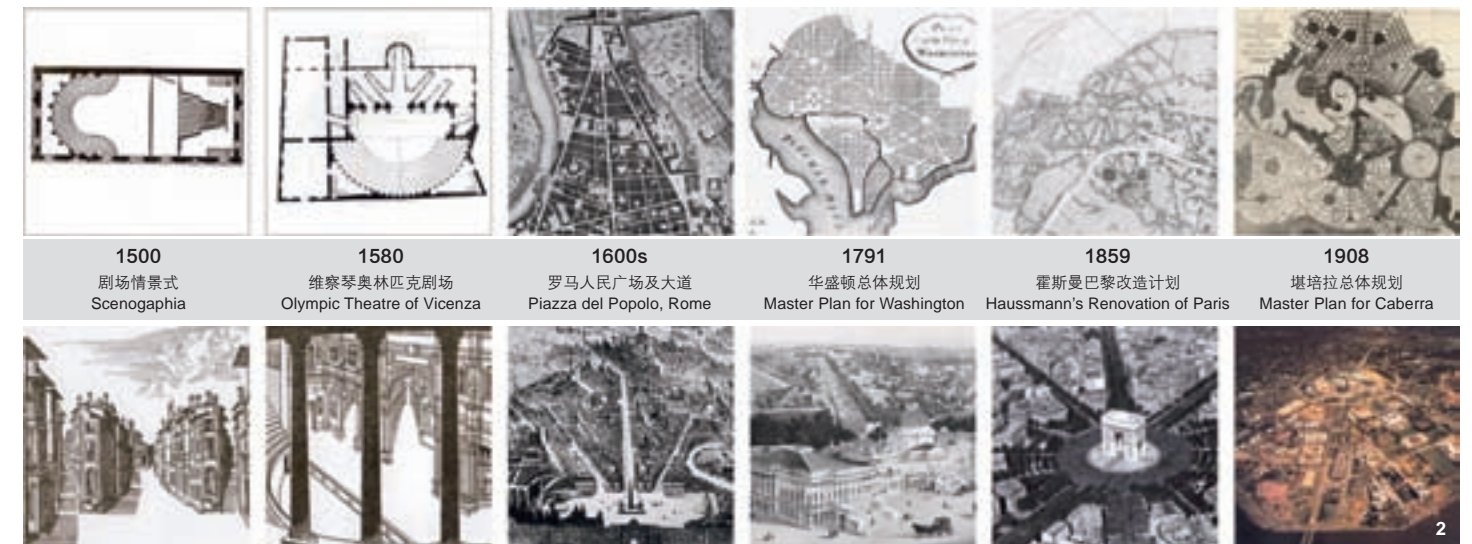
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证了当时交通工具速度的提升对道路空间和穿城速度的要求。新交通工具的出现缩短了时间和空间上的距离，加之工业革命的发展和老城区的拥挤不堪，使得越来越多的产业迁移到近郊发展。由此，道路与大都会的扩展以及卫星城的建设变得息息相关。

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由一条公共交通线（有轨电车）连接马德里和郊区的一个小城市。新的城市沿公共交通线两侧发展，同时依靠地产的收益来弥补昂贵的交通工程费用。这个理念在当时并没有变成现实，而是之后在英国伯明翰得到了实施，一种以公共设施廊道为轴向的城市发展模式也随之形成。

19世纪末，所有的城市学家、社会学家都在思考如何分散城



2. 道路：作为城市的轴向空间 2. Road: As the urban axial public space

landscape.

Roads remain a dominant method to construct cities through standard road grids found in modern city planning. In 1785, the *Land Ordinance Act of 1785* was established by the USA Congress led by Thomas Jefferson, which set up each new townships upon 9.66 km × 9.66 km units of land comprised of 36 square lots, divided by south-north and west-east roads. Each lot is a square with the side length of 1.6 km. However, when the rectilinear grid was applied to topographically varied countryside, the grid had to be adjusted in light of the large structures such as rivers and mountains when it was confronted with irregular landscape elements.

The USA architect Frank Lloyd Wright proposed the conceptual design of Broadacre City in the 1930s. At that time, with the rise of automobiles and electricity, Wright considered it unnecessary to concentrate all activities within the city. He saw the principle of dispersal (both living and work) as the future for urban planning. Based on automobile transportation, residential areas would be connected by highways and public facilities would be established along the highways.

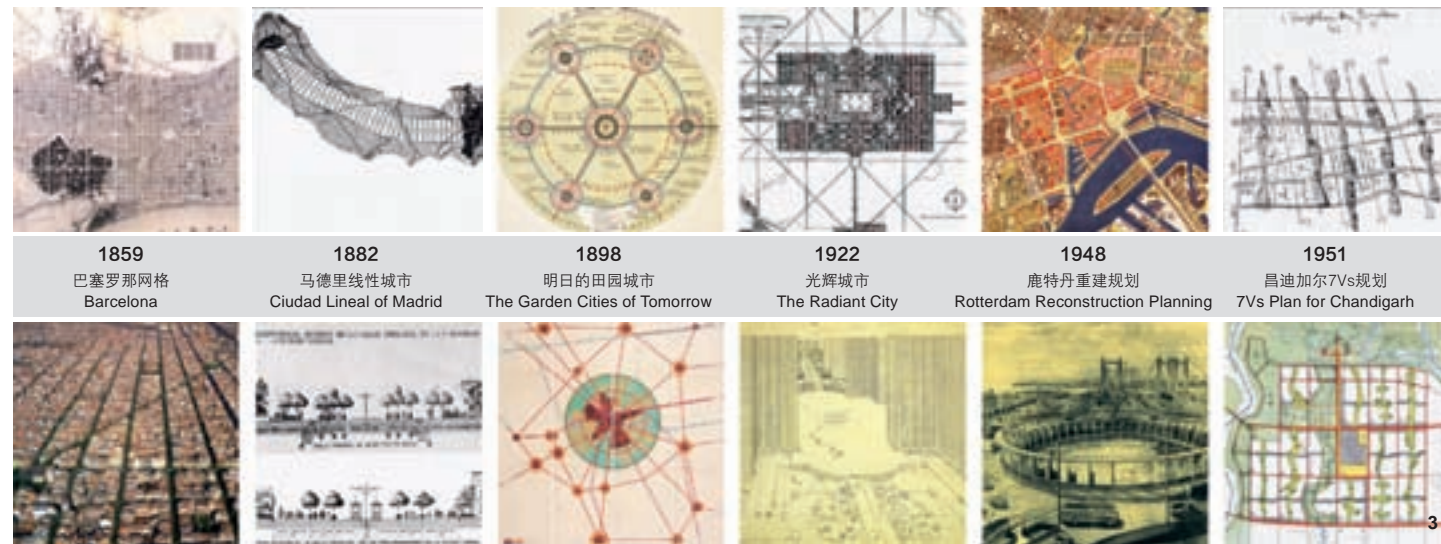
Built in the 1960s, the new city Milton Keynes in the UK represents the idea of “Community Without Proximity” in the era of telecommunication. The central road consisted of 1 km × 1 km grids. The urban center of Milton Keynes is not a traditional center, but a non-hierarchical grid city, with commercial and community service centers evenly distributed within the grids.

2 Road: As the Urban Axial Public Space

Roads create an urban cultural public space. The development of rites and regulations, religions, and social activities has made roads intimately connected to urban public space. Throughout history, the interpretation of public space by roads has been constantly changing. To a certain degree, it symbolizes the social progress and evolution of aesthetic belief as well.

Urban design during the early Italian Renaissance originated from the scenographic interpretation of urban public space, in which municipal planning was mixed with scenic design, while idyllic cities that could not be built in reality were often presented on the stage. The Olympic Theatre of Vicenza, designed by Andrea Palladio in the 16th century, became the major technique that influenced Western urban design for the following three centuries. First, a square is formed at the junction of three roads, with monumental buildings interspersed around. Secondly, an open square is encircled by majestic buildings and in the middle there is a memorial building, such as a temple or a triumphal arch. This practice, of setting the stage for urban activity, was put into practice in Rome during the late Renaissance and Baroque Period.

In Rome during the late Renaissance Period, although numerous churches were built, the magnificent facade of these buildings could not be seen due to the congestion of the city. With the assistance of brilliant architects such as Domenico Fontana, the Pope Sixtus V planned straight thoroughfares to draw people's eyes towards new churches and ancient Roman obelisks, as well as to connect various plazas.



3. 道路：作为城市现代化的技术动力 3. Road: As the technical driver for urban modernization

市的人流，如何合理扩张城市并发展产业。1898年，霍华德提出了“明日的田园城市”概念——由一个核心、6条放射线和几个圈层组成的放射状同心圆结构。整个城区被绿带路网分割成不同的城市单元，同时工业带和生活居住区之间被城市绿环所隔离。新增人口沿着放射线向外部的新区扩展。

第二次世界大战结束后，欧洲不少城市蒙受了巨大的创伤，同时也开启了新的城市建设时代。在1948年的鹿特丹重建规划中，从火车站前引入一条城市快速路，其目的是为了让汽车快速进入城中心，同时城内的汽车可以迅速分流。

1922年，柯布西耶提出“光辉城市”的理念，表达了他对现代技术的崇拜和热爱。他在概念设计中拆除了巴黎的历史街区，植入高楼，使车行为主导的交通与公共空间彻底分开——汽车在高架路上行驶，人们在开阔的草地上活动。而到了1950年，他不再从建筑的角度去思考城市问题，而是从道路的角度提出了新的规划体系——“7Vs”，设定了道路的7个（速度）等级：快速路、主干道、次干道、进入地块的道路、地块内部的道路、进入建筑的道路以及慢行系统的步行路。这套规划理论最后实施于印度昌迪加尔的规划。值得注意的是，在这个结构中，柯布西耶将景观绿廊作为7Vs的其中一种，同时，他将城市的公共设施布置于景观绿廊之中。这也是较早的将生态基础设施、公共基础设施和道路一并考虑的规划案例。

4 道路：作为城市风景的展示

道路穿越城市不同的空间，也串联起城市中不同的场景。路

线的选择决定了体验的路径，路两边的风景序列成为这种速度空间的重要组成部分。

始建于1934~1937年的美国亨利-哈德逊公园大道，一路穿越若干公园和河道。它不仅将公路定义为交通的廊道，同时也是景观的廊道，车行的经历也是风景展示的过程。

“路径”、“通过运动感知景观”等概念。现代道路以其全新的便捷优势，改变了当时人们感知空间的模式。城市的意象在运动中变成了独特的蒙太奇序列。

现代主义代表作——《向拉斯维加斯学习》，讲述了一条道路和路

表了《再向拉斯维加斯学习》一文，对比了拉斯维加斯1972年和2000年的平面图，发现这个城市不仅仅沿道路发展，而且已经向纵深发展，其周边的产业也逐渐形成了聚落，不再分散。造成这一变化的原因在于城市内形成了一套连续的步行系统，车行在城市中已经不再成为主导。人们通过消费流线进入每一个不同功能的空间，从而使步行空间产生了连续的影像场景。由此，库哈斯说：“拉斯维加斯从此成为了一个场所。”

设计师认为速度会影响人的感知，并对交通基础设施影响

（VVKH建筑事务所）在荷兰的高速公路旁建造了一个如同一面连续的墙体的建筑。设计师认为，为与高速公路的车行速度相匹配，公路旁的建筑立面应该比普通建筑更长。

Eventually, “the city of eternity” plan was accomplished at the hands of Giovanni Lorenzo Bernini: three boulevards framed the great Roman city, which was formed by the confluence of the central avenue Via del Corso leading to the south, the Via del Babuino on the east, and the Via di Ripetta on the west. The magnificent urban boulevard structure of Rome had strong political implications, which directly influenced a number of modern urban planning projects, such as Pierre Charles L'Enfant's 1791 plan for the city of Washington, the 1859 Baron Haussmann's Renovation to Paris, and the 1908 Planning of Canberra. In the development of these cities, the central avenues were some of the most important public spaces in cities.

3 Road: As the Technical Driver for Urban Modernization

The evolution of roads has been intimately connected with the evolution of transportation. The urban landscape has been renewed correspondingly with new vehicle transportation. From the Renovations to Paris by Haussmann to Ildefons Cerda's plan for Barcelona, boulevards passing through old urban areas have served as evidence for the demand of road space that meets traffic speeds. More and more industries have moved into suburbs for development because reliance on the automobile has shortened distances, both temporal and spatial. Thereby, the development of roads has been closely bound with urban sprawl and construction of satellite cities.

In 1882, Arturo Soria y Mata proposed the linear city (La Ciudad Lineal) scheme for Madrid, in which a public transport (tramcar) line connects Madrid and with the suburbs. As a result, the development of a new city spread along both sides of the public transport line. Meanwhile, the high expense of transportation construction was compensated by growth in real estate along the tramline. A similar concept to the Madrid model was implemented later in Birmingham, England, where an axis of public facilities formed the model of urban development.

By the end of the 19th century, urban sociologists were considering how to disperse the flow of people into cities, while also expanding cities and developing industry. In 1898, Ebenezer Howard proposed the Garden Cities of Tomorrow, a concentric pattern comprised of a core, six radiant lines, and several outerrings of development. The city was separated into different urban units by a ring of greenbelts. Areas of industry and living were separated by additional green and park spaces. Population expanded along the radiant lines of the plan toward new

urban areas outside the proposed plan.

Following World War II, many European cities, who had suffered extreme urban damage, initiated new urban construction. In the 1948 reconstruction of Rotterdam, an urban expressway was built in the front of the train station, with the intention that automobiles could easily enter the downtown area, while other automobiles could rapidly leave the city. Small-scale pedestrian districts were planned surrounding the main vehicular expressway. This example of post-war planning in Rotterdam represents an early case of introducing large transportation infrastructure into the inner-city.

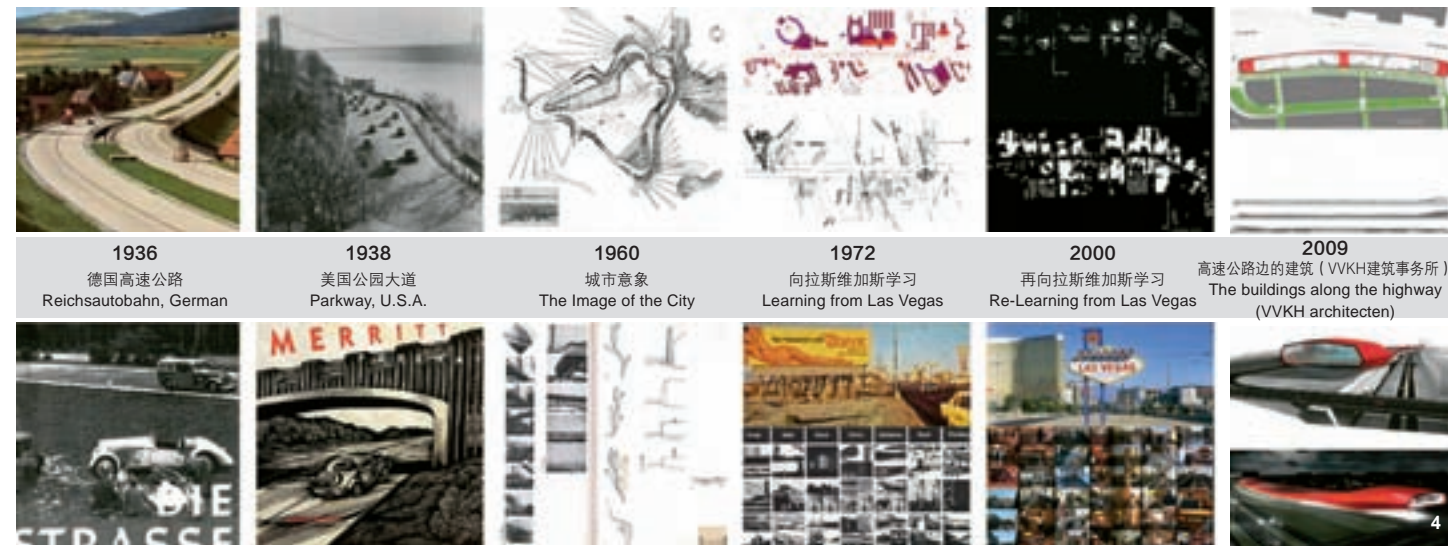
Roads pass through all kinds of urban spaces, connecting different scenes of the city.

In 1922, Le Corbusier proposed the idea of The Radiant City, epitomizing his love of modern technology. He proposed removing the historic districts of Paris and replacing them with modern skyscrapers. The transportation system was dominated by automobiles and segregated from public spaces. In his vision, cars whizzed by on elevated roads while people carried out urban life in open grasslands below. By 1950, he no longer thought of urban issues as an architect, but instead from the perspective of roads and hierarchies. Le Corbusier proposed a new planning system — the 7Vs, which established seven (speed) grades for road design: Fast roads, arterial roads, fast vehicular roads, meandering shopping streets, sector circulation roads, access roads to houses, footpaths, and cycle tracks. This set of planning criteria was actually applied to the planning of Chandigarh, India. It is worth noting that in this structure, Le Corbusier considered the landscape as an interlaced network. Meanwhile, he laid out public facilities within the greenbelt areas. This integration of road and landscape is an early case of layering eco-infrastructure, public facilities, and road planning.

4 Road: As the Urban Montage and Sequences

Roads pass through all kinds of urban spaces, connecting different scenes of the city. A road is a path where people can view sights. It is a gallery where people can perceive the world.

The Henry Hudson Parkway in New York was built from 1934 to 1937, passing by parks and rivers. It not only defines the road as a corridor of transport, but also as a corridor of landscape. The vehicular



4. 道路：作为城市风景的展示 4. Road: As the urban montage and sequences

5 道路：作为城市中的流动空间

交通的本质是“流”：是人流、车流、物资流、信息流的集合，承载这些“流”的基础设施因为不同的速度而形成了不同特质的事件场所。

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式人行通道的立体交通环岛，如何在繁忙的交叉路口使得人流和车流互不干扰的问题第一次被提了出来。

20世纪80年代，西方城市学家开始对交通基础设施在城市中占据大量土地的问题进行反思，之后出现了许多将城市功能植入交通冗余空间的设计方案。1986年，努特林斯-雷代克建筑事务所对比比利时安特卫普的城市外环交通环岛进行了一系列研究，来探寻环岛之于城市设计的可能性。

自20世纪90年代起，人们对生态的重视也影响了道路的设计。生态桥的出现弥补了大型基础设施割裂生态生境、阻碍生物迁徙的缺陷。“生态流”也被纳入到交通基础设施的思考之中。

6 结语

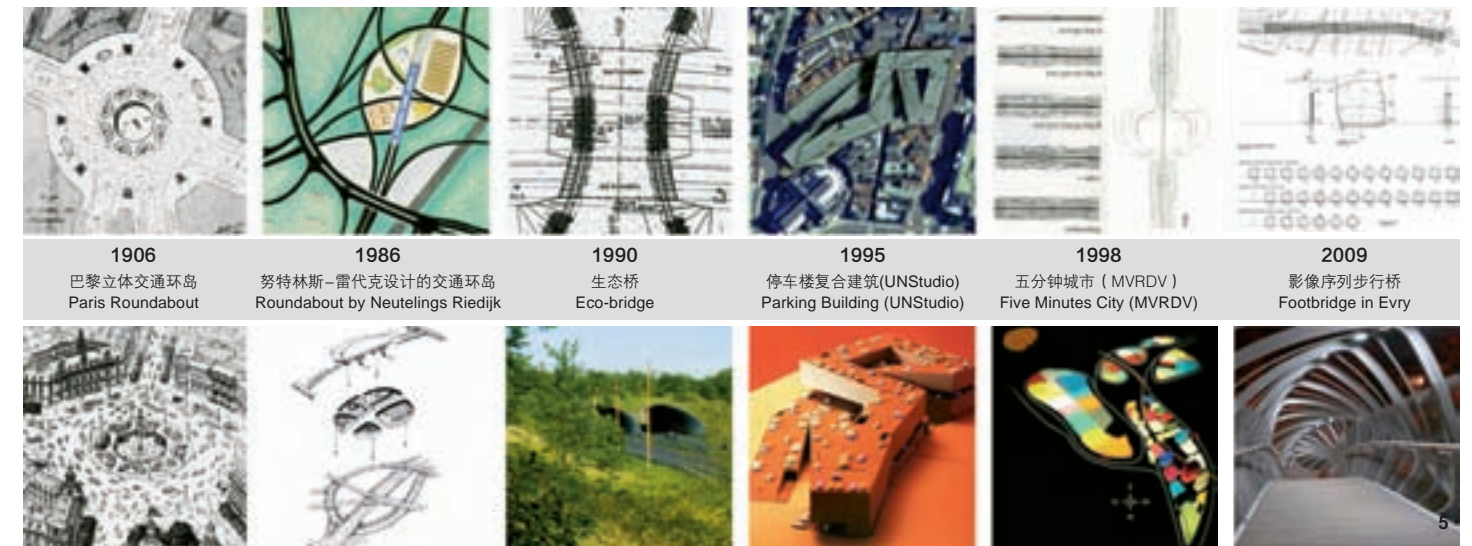
道路基础设施作为工程项目，是理性的、绝对的和功利的。但道路作为景观，在社会、文化、生态、艺术等层面也具有转型和提升的潜力。从小尺度而言，道路具有不同速度的感知空间；从大尺度而言，道路是将景观、建筑和城市连成一体的具有功能性的基础设施——一个作用于环境的生态机器，一个作用于城市的公共空间。LAF

driving experience is a process of displaying scenic views.

In 1960, Kevin Lynch described the concepts of “node”, “path”, and “perception of landscape through motion” in *The Image of the City*. With increasing dependency on speed and convenience, modern roads had changed the modes of people’s spatial perception. The image of the city became a unique series of montages in motion.

In 1972, the post-modernist masterpiece “Learning from Las Vegas” by Robert Venturi and Denise Scott Brown was published, telling a story of how a road and advertising along that road transformed a city. In 2000, Rem Koolhaas published the article “Re-Learning from Las Vegas”. By comparing the plan of Las Vegas in 1972 and that in 2000, he found that the city not only developed along the roads, but also developed in depth, radiating out from the central strip. The peripheral industries had formed settlement, dependent on transportation links, rather than being randomly scattered. This urban evolution was caused by a set of continuous pedestrian systems produced inside the city. Following flows of consumption, people entered into functional spaces, and the pedestrian produced a scene of continuous images. Koolhaas concluded: “Las Vegas has, through sheer mass, become a real city.”

Many designers believe that speed affects people’s perception, and have conducted multiple types of research into the built spaces influenced by transportation infrastructure. In 2009, Fons Verheijen (VVKH Architecten) built a structure by constructing a continuous wall by the side of a highway in Holland. The designer believed that the



5. 道路：作为城市中的流动空间 5. Road: As the urban flux

speed of traffic blinded people’s perception of their environment. Therefore, buildings along the highway need longer facades.

5 Road: As the Urban Flux

The essence of transportation is “flow”: the flow of people, the flow of vehicles, the flow of materials, and the flow of information. The infrastructure that bears the brunt of these “flows” has formed different characteristics that represent the virtue of different speeds.

In 1906, Eugene Henard, a pioneer of planning in Paris, designed a traffic circle around a central island, which included a sunken pedestrian tunnel. It is the first time the architect raised the question of how to arrange the flow of people and the flow of vehicle at busy intersections so that the two would operate without disturbing each other.

By the 1980s, with the development of modern and fast transportation, Western urban sociologists began to think retrospectively about the massive area of land that transportation infrastructure had taken up in cities. Since then, many more designs had emerged in which urban functions are superimposed into redundant transportation space. In 1986, Neutelings Riedijk conducted research into the design of traffic circles in the urban outer loop of Antwerp in order to explore alternative urban traffic designs.

In the 1990s, increased focus on eco-consciousness in design began to influence road designs. The emergence of eco-bridges made up for the fact that large infrastructure had separated ecological habitats and

impeded wildlife migration. The idea of eco-flow was increasingly taken into considerations about transportation infrastructure.

6 Conclusion

As an engineering project, road infrastructure is reasonable, absolute, and utilitarian. But as a landscape, a road also has the potential to be transformational in regards to social, cultural, ecological, and artistic considerations. On a smaller scale, a road is a perceptually diverse space operating at various speeds. At a larger scale, a road is the functional infrastructure that integrates landscape, architecture, and city. It is both an eco-machine acting on the environment and a public space acting on the city. LAF

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