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新都市调节器——多层型林荫大道
New Urban Adapter — Multi-layered Boulevard

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摘要

林荫大道的基本概念是一种结合了混合交通与绿带休憩空间的道路类型。这类街道跨越了各种尺度，往往连接着城市中的标志性建筑物或重要的开放空间。本文论述了林荫大道产生、发展与衰败的历史，并对各时期林荫大道进行了总结；然后以台南市海安路为例，阐释了作为一种新型的城市街道空间类型的多层型林荫大道对城市发展的重要意义。

关键词

林荫大道；园道；多层型林荫大道；城市基础设施

Abstract

The concept of the boulevard is of a hybrid road, which includes transport links and greenbelt open spaces. This type of street, found across wide scales, usually links a city's landmarks or significant open spaces. This essay discusses the rise, development, and decline of the boulevard, as well as the types found during different historic periods, and will use the case of Tainan Hai-An to illustrate the significance of the multi-layered boulevard as an emerging type of street space for urban development.

Key words

Boulevard; Parkway; Multi-layered Boulevard; Municipal Infrastructure

1 林荫大道：一个绿带、人行步道、车行交通的混合系统

林荫大道（Boulevard）是指一种结合了混合交通与绿带休憩空间的道路类型。这类街道跨越各种尺度，往往是连结城市中大部分重要公共建筑或开放空间的主要系统，甚至可以成为整个城市的中心轴线。其具有复合性功能，融合了公园的特质与联系交通的属性，所以是一种具有混合景观功能的基础设施。巴黎的香榭丽舍大道、纽约布鲁克林的海洋公园大道，以及北京明城墙遗址公园一带，都是我们十分熟知的林荫大道。林荫大道不仅仅是旧城区更新的催化剂，随着都市的扩大和发展，它逐渐成为了新城区开发的主干，以及旧城与新建城区间的连接廊道。林荫大道有着悠久的历史，在都市塑造与重建的过程中具有关键性的意义。

2 林荫大道的产生与发展

“Boulevard”一词在法语中的意思是“城墙中被强化的片段”。16世纪，城墙作为防御性的构筑物，可供士兵与马匹在其上方迅速移动。依据当时的定义，长城可以说是全世界最长的“Boulevard”。到了17世纪，许多城墙无法逃脱被拆除的命运：抛物线炮弹的发明，使得城墙丧失了原有的防御功能；另一个原因是当时人口的增长迫使城市不得不扩张发展。城墙拆除后，内城与外城之间的连结关系显得尤为重要，政府在这些城墙遗址的带状空间上种植树木，并将其称为“Boulevard”（图1）。尽管早在16世纪末至17世纪初，很多欧洲的城墙空间已进行了绿化，以作特定的休闲用途，但直到1670年，法国国王路易十四下令拆除巴黎的城墙以作散步场所（Promenade）后，才正式将这些地点作为具有公共性质的游憩空间使用。18世纪中期，随着巴黎的城市发展，这些散步场所逐渐形成一个网络，整座城市都沿着林荫大道系统展开。巴黎的林荫大道在当时成为了一种同时涵盖休憩与运输职能的基础设施。然而这些概念仍然建立在17世纪将城墙改造为绿带的基础上（图2）。

19世纪是林荫大道系统迅速发展的年代，以1852年霍斯曼的巴黎改造计划为开端。不同于原先散置于城市中的散步空间，霍

1 Boulevard: A Hybrid System of Greenbelt, Pedestrian Path, and Driveway

The boulevard is a hybrid road type that includes transport links and green open spaces. This type of street exists at many scales and often links important public buildings or open spaces, or could even form the central axis of an entire city. With complex functions, the boulevard combines qualities of park and transportation. It is an infrastructure of mixed landscape functions. The Champs-Elysees in Paris, Brooklyn's Ocean Park Boulevard, and Beijing's Ming-Dynasty City Wall Ruins Park are well-known examples of boulevards. The boulevard is not only the catalyst of renewal for an old city, with the expansion and development of the city, but can also gradually become the backbone of new urban development, as well as the connecting corridor between the old and new city. With a long history, the boulevard plays a crucial role in the process of shaping and rebuilding the city.

2 The Rise and Development of Boulevard

In French, "boulevard" means "the strengthened part of the wall". In the 16th century, as a defensive structure, walls are used to protect cities and allowed for soldiers and supplies to pass. Based on the definition at that time, the Great Wall could be called the world's longest "boulevard". By the 17th century, many walls were removed for the invention of parabola shells, and walls lost their original meaning of defense. Meanwhile, population growth forced cities to expand. With the removal of defensive walls, the connection between the inner and outer city became increasingly important. Governments planted trees in the zonal space of wall ruins and these former walls slowly transformed into transportation "boulevards" (Fig. 1). From the end of the 16th century to the early 17th century, many European walls had already been planted with green plants for specific leisure purposes. However, these sites were formally used as public open spaces after King Louis XIV of France ordered for the walls of Paris to be removed and turned into promenades in 1670. By the middle of 18th century, with increasing urban development in Paris, the promenades gradually formed a network, where the entire city grew and developed surrounding the boulevard system. Boulevards in Pairs became the infrastructure to support both leisure and transport. Yet, the concept of radial transportation was based on the transformation of city walls into green belts in the previous century (Fig. 2).

The 19th century was an era of rapid development in the boulevard system, beginning with Haussman's Paris Reconstruction in 1852. Differing from the original sporadic development of urban open space, Hausssman's boulevards strengthened the relationship between greenbelt and transportation network. A straight or radial road system reorganized the spatial network of the entire city (Fig. 3). Haussman aimed to use boulevards to renew the old urban block and link into new urban development. Until the beginning of the 20th century this concept of street still had an impact on urban planning in Europe and America, and it has even affected the planning of Asia and Latin American cities in the 20th century. Besides Paris, the urbanization of Barcelona, Boston, and Brooklyn are typical cases based on use of the boulevard. The urban development of these cities employs the boulevard system as one of the main axis' of the design and illustrates the spatial configuration of boulevard.

3 The Death of Boulevard

In the early 20th century, multi-lane boulevards were still constructed in parts of European cities. In the United States, however, the multi-lane design method was replaced by a "speed-distinguished" design method. After World War Ⅱ, vehicle performance was highly improved and the number of cars on the road was increasing rapidly. However, this also caused conflict between the speeds of driving in the middle of the road versus driving in slower lanes on both sides. Traffic accidents frequently occurred at the turning of lanes and boulevards had therefore become dangerous sections of the city. Coupled with the lack of control over the scale of the landscape path, the unlimited expansion of the car caused a decline in the overall quality of road space. This over-running of automobiles on the boulevard violated the original purpose of the boulevard and destroyed the previously pleasant driving atmosphere.

1. 比利时鲁汶的城墙遗址 © Pei-Chun Wen, 2013
1. The remains of the old city wall in Leuven, Belgium © Pei-Chun Wen, 2013

斯曼的林荫大道强化了绿带与交通路网之间的关系，并以直线或放射线的形式重组了整个城市的空间系统（图3）。霍斯曼的用意在于利用林荫大道更新旧街区，并连接新开发的地区。这一新兴的街道理念直至20世纪初期仍然对绝大部分欧美城市规划产生影响，它甚至影响了亚洲和拉丁美洲各国20世纪的城市规划思想。除巴黎外，巴塞罗那、波士顿和纽约布鲁克林均为都市现代化过程中极具代表性的经典案例。这些城市的规划皆采用了林荫大道系统作为设计的主轴线之一，并对林荫大道的空间形态做出了不同的诠释。

3 林荫大道之死

尽管20世纪初欧洲的部分城市还在兴建多车道型林荫大道，但美国的道路规划逐渐被另一种“区分速度”的设计方法所取代。主要的原因是，第二次世界大战后，汽车的性能得到了大幅度提升，数量也激增，道路中间穿越性车道与两侧慢车道产生了速度上的冲突，车道的转换处时常发生交通事故，使得林荫大道反而成为了城市中的危险路段。加之没有对园道的尺度加以控制，使其被无限扩大，反而造成了整体空间质量的下降。这些现象违背了林荫大道的初衷，也失去了其原本宜人的氛围。当时奥姆斯特德的园道系统被认为是一种过时又危险的街道设计。于是美国的工程师发展出一个新的系统——道路功能分类系统（Functional Classification of Streets and Highways）。

“道路功能分类系统”是根据各区域使用行为的强弱，依区域性交通和穿越性交通做总体评估的设计指标。这个系统依交通量、车速、出入口数量、街道层级和连结性作综合评估，将街道分为：高速公路、快速路、主干道、次干道、地区性道路这5个层级。因为这种交通层级的分类观念能够成功地解决安全上的隐患，所以大多数国家深受这种观念的影响。然而，此系统下的街道设计理念认为兼具高度穿越性与进出便捷性的街道不可能同时存在，所以这个新系统将结合两种特质的林荫大道类型排除在外。自此之后，这个以汽车作为主要考虑对象的设计手法主导了整个街道设计系统。而那种认为城市道路仅仅是运输设施的偏狭观念，忽略了街道空间所蕴含的多重环境意义。

4 台南市海安路多层型林荫大道——林荫大道的新类型

林荫大道是一种全然不同于一般街道概念的城市空间类型。作为一个复杂的整体，其利用简单的分隔来解决不同交通层级上的冲突，混合各种用途与活动，并保持宜人的特质。高密度的空间使用方式使得街道中“人为活动”的价值更显重要，而城市的核心也必然不再是以方便汽车通行为主导。

20世纪前半叶，中国台湾省曾沦为日本的殖民地（1895-1945），日本当局政府对城市进行了一系列现代化的规划改革。该规划将台南市旧城墙遗址外侧的大型街道串连为环状的绿带，并与台南市的各个大型公园相连。尽管规划的架构已形成，但部分路段上的林荫大道并未完全建成，位于东段的海安路便是被遗忘的关键部分。

目前台南市的重要开放空间主要分布在“蓝绿双环”的结构中（图4）。“蓝环”指的是城市西侧被台南运河所环绕的水道系统，而“绿环”则是城市东侧由林荫大道所串起的绿带系统。海安路恰恰位于这两个系统的交界处，它横跨台南市最重要的历史街区与商业中心。城市管理部门于1993年在此投资兴建地下街道，但是却因招商不利与工程问题，使得整条道路工程被延宕将

2. 1734年巴黎旧城墙空间改建的带状公园 © Howard Saalman, 1971
3. 巴黎勒努瓦大道 © Howard Saalman, 1971
4. 台南市“蓝绿双环” © Pei-Chun Wen, 2006

2. Promenades between the old and new city, Paris, 1734. © Howard Saalman, 1971
3. Boulevard Richard Lenoir © Howard Saalman, 1971
4. The Rings of the Blue and Green, Tainan © Pei-Chun Wen, 2006

The Olmsted park system was deemed to be an outdated and dangerous street design. In response, American engineers developed a new system — the Functional Classification of Streets and Highways.

The Functional Classification of Streets and Highways is based on the strengths of regional traffic uses and behavior, and meets a design evaluation according to regional traffic and local traffic. According to the comprehensive evaluation of traffic volume, speed, number of entrances, and street level connections, the system divided streets into five levels: highways, expressways, main roads, secondary roads and regional roads. The concept of dividing traffic volume by classification succeed in resolving many transportation security risks, and as such, many countries were highly influenced by this concept. However, this street design concept considered high volume streets and convenient access streets as incompatible. This new system excluded the boulevard and combined the two above-mentioned traits. Since then, the vehicle has become the main object leading street design. This concept, that believes urban roads are designed just for transportation infrastructure overlooks the multiple environmental significances of street space.

4 Tainan Hai-An Multi-layered Boulevard — New Type of Boulevard

The Tainan Hai-An Boulevard is an urban space that completely differs from normal streetscapes. It is a complex network which uses simple separation of people and cars to solve conflicts at different traffic levels, while mixing functions and maintaining a pleasant street character. The high usage of high-density urban spaces along the street, highlights its value as important to supporting “human activity”. As a result, the design of the urban core will no longer be led by convenience for vehicles.

For the first half of the 20th century Taiwan, China was Japanese colony (1895-1945). The Japanese Government launched a series of modern planning reforms in the cities. In this planning spree, large streets outside of the old city wall of Tainan were linked as a ring of green belts that connected large parks in Tainan. The initiative establishes a regional planning framework, but construction in some road sections was never fully completed. Among them, Hai-An Road located in the eastern section was a key part that was left behind.

At present, the important open spaces of Tainan remain spread across a “The Rings of the Blue and Green” (Fig. 4). The “blue ring” refers to the waterway system surrounded by the Tainan Canal on the west side

of the city, and “green ring” refers to greenbelt system connected by boulevards on the east side of the city. Hai-An Road is located at the junction of the two systems, and traverses the most important historic districts and commercial centers of Tainan. In 1993, the government invested heavily on an underground street in the area. However, failure to invest and engineering problems caused the entire road project to be delayed for nearly ten years, and a huge tunnel, measuring 816m in length and 15m in depth with two-floors underground, was left behind. The huge underground space could be viewed as a giant ruin. Buildings in both sides are gradually transformed, however, and what remains on both sides reflects a trace of the former road, where a crumbling gable walls still stands (Fig. 5). The existing, partially completed structures make it possible for new boulevard system to be built.

The boulevard can become the infrastructure to organize the city. It reflects a concept of crossing and cutting, it picks up and gathers side street activities. The original design intention of Tainan Green Park Road was to intimate European and American urban structure and spatial quality. Now a solid street in its own right, the underground portion of Hai-An Road has an opportunity to differ from typical surface streets. The basic design concept is to move car transportation to the second floor underground, and to open ground floor and the first underground floor as a public activity space (Fig. 6). To the north, the Hai-An history settlement district, now deserted, contains an area for a new park. The vacancy reflects the absurd planning policies of the era, but can also provide a distinctive urban landscape park. The architecture styles of the southern commercial end extend to the pavement, creating a new usage of the commercial boulevard — the multi-layered boulevard.

The “multi-layered boulevard” refers to a type of street that

近10年，并遗留下一个长816m、深15m的二层结构的巨型地下通道。它大致上可以算是一个巨大的废墟。道路两旁的建筑物逐步被改建，而目前两旁的畸零地依然保留了当年拓宽马路的部分痕迹，许多半毁的山墙还矗立在街道两旁（图5）。尽管如此，这个现存的结构体反而为新型林荫大道系统提供了可能性。

林荫大道是组织城市的基础设施，它包含快速穿越和切割的概念，以及缝合街道活动的意图。原本台南“绿环”的设计初衷在于仿效欧美的城市结构与空间质量，但是现在海安路地下结构体却提供了一个不同于一般水平街道的机会——因为它是一条立体街道。其设计的基本理念是将快速穿越的交通移至地下二层，并将开放地面层与地下一层作为公共活动及区域性交通的空间（图6）。海安路北端历史聚落区所呈现的下挖式荒废景观公园，反映了那个时代政策上的荒谬，同时也提供了一个非同一般的城市公园景观。而南端的商业区则沿用两侧有机的建筑样式，并延续至路面上，创造出一种全然不同于传统的沿街商业模式——多层型林荫大道。

“多层型林荫大道”是指一种通过利用立体关系将传统林荫大道的元素进行重新组合的街道形式。多层的概念时常出现在建筑物中，却极少发生在街道空间里。海安路的地下二层可供穿越性交通使用，故可大量减少路面的车流量。至于地面层，除了解决基本的区域性交通外，剩余的空间则可结合地下一层形成立体的公共空间（图7）。这个公共空间可以延续都市两侧的肌理，连结两侧的活动。地上空间可用于建造新的公园或商业市场。藉由废弃的地下结构体，这个基地摆脱一般街道二维空间观念的限制，达到各种意涵“叠加”的可能。

多层型林荫大道的多重涵义可以从“多重层级”（Multi-layer）、“多重表层”（Multi-level）、“多重用途”（Multi-use）3个方向来谈。首先，在城市尺度上，林荫大道将形成了解城市形态的直观架构：其丰富的绿带是最易辨识的元素，构成了城市的心理地图。另外，在区域尺度上，它同时界定并连结了台南市中心的各个社区：北端五条港的历史区是台南市最早开发的街区之一，这里目前虽没有被高度开发，却有丰富的市民生活活动；南端的中正商区从日据时代以来一直是台南市的核心商业带，近年却因地下街道工程而稍有没落，但其潜在的商业活力并未消失。尽管海安路的北端与南端呈现出截然不同的风格，但通过林荫大道这个混合了商业与公园属性的空间的串连，整合成了一种丰富而多元的场景。

在海安路的设计中，垂直维度的空间再加上附近的公共土地，即可整合形成更为丰富的功能。首先，我们从林荫大道的首要条件——交通谈起。穿越性的交通可从地下二层快速通过；而地面层则设有区域性的道路来连结两侧的居民与商店。另外，地下二楼可设置地下停车场，供周边的居民与游人使用。园道原本呈线性的绿带，因覆土层与地下一层结构体所结合的空间，形成了立体式公园。这个公园配合历史街区原始的纹理与破败的山墙，可以创造出颓圮的景观，并让人行步道自由穿梭其中。南端的中正商区，则可藉由它来复苏商机，形成复合的消费空间。这不只是单纯的废弃景观的再利用，而是一种对林荫大道的反思与再诠释。

5 结语

海安路的案例不仅形成了地面的目的性交通系统，同时利用地下结构体解决穿越性交通，使得地面层有机会回归林荫大道原本强调的连结街道两侧活动的功能。这种林荫大道是一种新的街道空间类型，多层型的立体街道反映了现代都市的复合与多元。LAF

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recombines traditional boulevard elements through the vertical organizing approach, which is often applied in architecture design. For example, if the second floor underground of the Hai-An Road was made available for transportation, it could significantly reduce the traffic flow on the road. As for the ground floor, in addition to providing a road space for local transportation, the remaining space could form an active urban public space combined with of the first floor underground (Fig. 7). The public space would link activities and extend the structure of the city on each side. The ground could then be used as new landscape park or commercial market. Due to abandoned underground structures, limitations of two-dimensional street space could be reduced and the idea of “complex” could take on a variety of meanings.

The multiple meanings of multi-layered boulevard could be discussed from three perspectives: “Multi-layer”, “ Multi-level”, and “Multi-use”. First, on the urban scale, boulevards form the visual structure to understand urban structure. Plentiful greenbelts are the most prominent elements which form the mental map of the city. In addition, on a regional scale, it defines, as well as links, each community of the Tainan downtown. For example, the Wutiaogang Historic District on north end was one of the first blocks developed in Tainan, and although it has not been highly used recently, it is rich in public activities. Chiang Kai Shek Commercial District on the south end has been the heart of Tainan’s commercial zone since the colonial era. In recent years, it has declined due to the increased use of the underground street, however its potential commercial vitality has never disappeared. Though sharing different street styles, the north and south parts of Hai-An Road are linked by boulevards, and the mixed commercial and park spaces integrate a richness and diversity into the landscape.

In redesigning Hai-An Road, the vertical spaces, as well as surrounding public lands, would be take on a variety of functions. First of all, we could start from the primary condition of the boulevard, namely transportation. Transportation would be relocated to the second floor underground, and the regional road aboveground would link residents and shops on the ground floor. In addition, underground parking could be set on the second floor for the usage of surrounding residents and guests. The original linear greenbelts of the landscape path could form a park in the space between the surface and the ground floor. The park would combine original textures and crumbling gable walls of the historic districts, creating a decadent landscape for pedestrians to move through freely. The commercial opportunities of the Chiang Kai Shek Commercial District could be revived and help create complex consumer spaces. This is not just a recycling of abandoned landscape, but a reflection and reinterpretation of the historic boulevard form.

5 Conclusion

The case of Hai-An Road not only forms the above ground transportation system, but also resolves overburdened transportation issues by using the underground substructure to make a ground floor. It uses the precedent of the boulevard to emphasize activities that link both sides of the street. The Hai-An Boulevard represents a new type of street space and the use of the multi-layer street reflects the complex and diverse nature of the modern city. LAF

REFERENCES

[1] Busquets, J. (2012). Urban History as clue for designing the cities today: The Case of Barcelona and its Grid Plan of Cerdà. Architectural Journal, (11), 2-16.
[2] Hou, S. (2009). Integration between City and Nature — The Construction and Significance of the Boston Metropolitan Park System. World History, (4), 73-85.
[3] Wen, P. (2006). Urban Adaptor: Toward Making a New Kind of Boulevard. (Master’s thesis). Cheng Kung University, Tainan.
[4] Xiao, Q. (2005, August). The Past and Present of Hai-An Road. ARTCO, 126-128.
[5] Beridge, C, Rocheleau, P. (2005). Frederick Law Olmsted: Designing the American Landscape. New York: Rizzoli Publications.
[6] Jacobs, A. B., MacDonald, E., Rofe, Y. (2002). The Boulevard Book: History, Evolution, Design of Multiway Boulevards. Cambridge: MIT Press.
[7] Wong, W. (1999). The Studies of Southern European City Squares from Ancient Greece to Renaissance. Taipei: Garden City Publisher.
[8] Huang, W. (1998). Contemporary Taipei City Planning in Japanese Colonial Age (1895-1945). Taipei: The Research Studio of Taiwan’s Urban History.
[9] Zhuang, Y., ed. (1996). Bird’s Eye View of Taiwan — Topography Maps of Taiwan in 1930s. Taipei: Yuan-Liou Publishing.
[10] Saalman, H. (1971). Haussmann: Paris transformed. New York: George Braziller.
[11] Couperie, P. (1968). Paris through the ages: an illustrated historical atlas of urbanism and architecture. New York: George Braziller.

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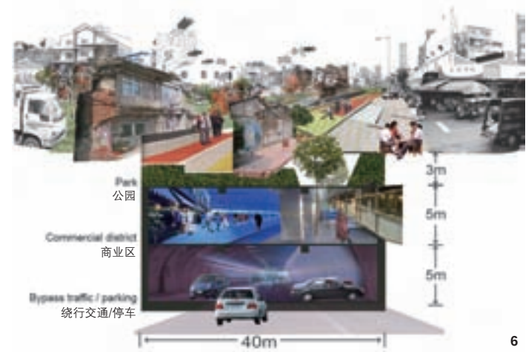

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