PARKING BUILDING

新型停车场

高迪国际出版有限公司 编

大连理工大学出版社
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PREFACE-1

序言 -1

C. F. Møller Architects

Shortly after the introduction of the car as mass transportation, the concern for mass parking became a result. The evolution of parking structures thus has followed the evolution of car traffic through all its phases, from the heroic staging of mobility as celebrated by the modernist movement, to the everyday dependency of the late 20th century, and onward to the increasing rolling back of the cars' dominance over the urban domain that is today the norm in cities worldwide.

Most likely, the further evolution of parking will be a result of the ongoing changes in the nature of mobility, which promise to alter both the way cars are operated as well as their status in the public sphere. So far, however, it is not the basic nature of parking garages as a building type that has changed, but rather their significance in the greater context, which has become the focus of creative design.

Most examples of parking structures basically consist of only two elements: Structure and veil. The choice of structure is intricately linked to the parking layout, choice of ramping principle and building technology available, all with a view to deliver a maximum of parking spaces with a minimum of cost. This part, in essence, is purely rational and almost mathematical – in fact, design algorithms have been implemented which can instantly provide optimized solutions from just a few variables.

This in turn leads to the paradoxical fact that the second element – the veil – often becomes the sole bearer of the architectural intent and design ambition, even though the thickness of the façade is no more than a few centimeters, literally creating a beauty which is only skin-deep.

The assumption lies at hand that therefore the design of parking facilities is a banal task, but this would be disregarding the impact that these structures have on their surroundings, which means that although functionally simple, the parking garage typology requires just as much design quality as a more complex building type to make a successful contribution to the city and landscape.

Creating a user-friendly, pleasant and intuitively navigable layout is key – as it is evident by the countless examples of the contrary, which can be found anywhere in the world. But it is also important to understand the potential that such structures can offer by means of becoming hubs in their own right, and by challenging their inherent nature of mono-functionality.

Especially in the urban context, classical parking structures have revealed themselves as a double-edged sword. On the one hand, they can help free up valuable urban space for public purposes, reduce the barriers of car-filled streets, and at the same time help increase the density and intensity of the urban condition. On the other hand, free standing parking garages, if not cleverly integrated, often lead to monotonous and inanimate street frontage, or even a full disruption of the urban context – and especially larger structures can risk creating traffic barriers of their own.

This is where good design can make the difference, activating the potential of parking as a positive catalyst in the public domain. Not just in the visual appearance, but also in the understanding of the building as a direct continuation of the urban realm, including the need for mixed use and integration of various traffic forms – highlighting the fact that car parks should first and foremost be created for people, not cars.

Julian Weyer
Partner, architect
C. F. Møller Architects

在汽车成为主要交通工具之后不久，针对停车的大量关注成为必然的结果。停车场建筑的演变因此也跟随着汽车交通的发展经历了各个阶段。从现代主义者运动庆祝的英雄般的机动性展示，到 20 世纪末汽车成为日常必需工具，而将来，汽车将逐渐失去作为城市标准的主导地位。

最可能的情况下，停车场的变化将会是机动化本质继续发展的结果，机动化有望在公共范围内于操作方式以及状态上发生变化。然而，到目前为止，建筑类型的变化并非停车场基本本质的变化，而是在更大环境中意义的变化，这成为创意设计的焦点。

多数停车场建筑基本仅包括两个元素：建筑和幕帘。建筑的选择与停车场布局、扩张原理的选择及可用的建筑技术复杂地联系在一起，所有一切都是为了利用最少的费用建立最大的停车空间。本质上，这部分是纯理性的，几乎是数学的设计 —— 事实上，设计算法已经改进，能够即时地提供优化的方案。

这反过来引出自相矛盾的事实，即第二个元素（幕帘）经常独自体现出建筑意图以及设计抱负，即使车库正面的厚度只有几厘米，的的确确地创造了一个“肤浅的美女”。

现有的假设在于把停车设施的设计看成是一个平凡的任务，但是这将忽视建筑对周围的冲击力，意味着尽管停车场功能简单，却需要有与其他复杂的建筑一样的设计质量，从而成功地为城市和景色作出贡献。

创建一个易于使用、令人愉快、直觉可行的布局是成功的关键 —— 我们随处可见的反面例子可以证明这一点。但是理解设计潜力也是很重要的。我们需要理解可设计的潜力，这样的结构可以通过自身的实力以及挑战其固有的单一功能性的本质表现出来。

尤其是在市内环境中，经典的停车结构就像一把双刃剑。一方面，它们有助于空余出市内空间用于公共用途，减少车辆拥挤街道的障碍。另一方面，独立的停车库，如果不能有效地整合，经常导致单一的、毫无生气的街道风景，甚至破坏市区的景色——尤其是大型停车场，它们本身有可能造成交通阻塞。

因此，优秀的设计会与众不同，它活跃了停车场作为公共场所积极的一面，不仅仅在视觉效果上，而且在对建筑物的理解上。停车场是市内区域的直接延续，包括混合使用的需求及多种交通类型工具整合的理解——突出一个事实，即，停车场应该首先，而且最重要的是，为人而设计，而不是为车而设计。

Julian Weyer
Partner, architect
C. F. Møller Architects

PREFACE-2 序言 -2

Can Yeger

Rediscovering Elegance in Car Park Architecture

Can a car park be truly attractive?

Most people would probably say "no" to this question. Think of a car park and a totally functional, ugly gray concrete block springs to mind, with unpleasant lighting, low ceilings and dirty smeared stairways. A car park is usually a building that makes you feel rather uncomfortable and you do not want to stay in it for long; more suitable as an atmospheric backdrop of impending danger in a gangster movie. Many people, and especially women, are rightly scared of being in one. Utilitarian car parks are the darkest of all municipal buildings; a necessary evil of a motorized society. They epitomize inhumanity; simply providing a place to hide your car away from prying eyes, encouraging human beings to vacate the area as soon as possible.

This negative image of an ultra-functional parking facility is not representative of their 100 years of architectural history. At the beginning of the 20th century, a parking garage was a novel and challenging building project, inspiring architects and engineers to search for a style suitably appropriate for the housing of these new-fangled machines. The first dwellings for car parks were "cathedrals of progress", according to the historian Joachim Kleinmann. A prime example was the garage on the Rue Ponthieu in Paris built in July, 1906 by Auguste Perret and demolished as late as 1970. The sweeping arches of the basilica provided a high central nave, which was flanked on both sides with three levels of car parking space. Above the central entrance to the street, the facade was crowned with ornate and colorful windows befitting a cathedral.

The architecture of car parks took a decisive turn during the 1950s, with the beginning of mass motorization after the Second World War. More and more people wanted to move in a city independently and they could afford the luxury of owning a car. They wanted access to the city center, to cinemas, theaters, sports arenas and shopping malls. Expensive urban land was increasingly turned over to the building of larger and taller parking facilities, and the multi-storey car park was born. The economic constraints of the 1960s and 1970s were responsible for, and can almost excuse, the functional architecture of contemporary building projects, the car parks included. It is from these times that the negative image of multi-storey car parks was established in the collective consciousness. The original charm and appeal of the pantheons to progress of the original parking garages were lost, seemingly forever. The purely functional car park of more modern times reflects the total lack of interest of the frantic motorists.

The brutality of these buildings casts a disrespectful snub on the older city edifices, scarring the cities permanently. The skyline of the city was no longer etched with filigrane church and town hall towers but was overwhelmed and dominated by cheap and grotesquely huge buildings, robbing the historic buildings of their finery and symbolic significance.

The car is rightly considered an enemy of architecture in its traditional form. Streets have been optimized for the sake of traffic. City planning, at best, seems only to react to the swelling invasion of cars in our cities. Our lifestyles are being destroyed by cars. Nevertheless,

重现停车场建筑的优雅

停车场真的可以吸引人吗?

大多数人对这个问题的回答会是“不”。一想到停车场，我们脑海中就会出现完全为了达到停车功能，灰色丑陋的水泥建筑形象，照明昏暗、顶棚低矮、楼梯脏污。停车场通常让人感到很不舒服，不想长时间在其中停留，更适合作为黑帮电影中烘托危险临近气氛的背景。许多人，尤其是女人，会害怕进入停车场。实用停车场是所有建筑中最黑暗的，它是机动化社会必不可少的恶魔。这种停车场是缺乏人道的缩影，它只提供一个防止汽车被偷的场所，处身其中的人们只想尽快离开。

这种过渡功能性停车设施的负面形象并非其 100 年建筑历史的代表。在 20 世纪初，停车场是新奇并具有挑战性的建筑项目，鼓舞建筑师和工程师探索适合停放这些新兴交通工具的场所。据历史学家约阿希姆 克莱恩曼所说，最初的车库是“进步的殿堂”。一个典型的例子就是 Auguste Perret 于 1906 年 7 月在巴黎 Rue Ponthieu 建造并直到 1970 年才拆倒的车库。长方形车库完全采用拱形顶棚，使得车库中心很高，拱顶与侧面的三层停车空间连接。在其面对街道的中心入口上方，外墙上镶嵌着适合殿堂的绚丽彩色玻璃。

随着二战后机动车的大量生产，停车场的建筑在 20 世纪 50 年代发生了关键性的转变。越来越多的人想在城市内独自活动，而且他们能够负担得起拥有汽车这种奢侈品。他们想进入市中心、电影院、剧院、体育场和商场。昂贵的市区土地越来越多地变成更大更高的停车设施，多层停车场应运而生。20 世纪 60 年代和 70 年代的经济窘迫，几乎成为功能性现代建筑项目的借口，其中也包括停车场。从那时起，多层停车场的负面形象在公众意识中建立起来。最初停车场发展的殿堂所具有的魅力和吸引力好像永远地消失了。现代的完全功能性的停车场反映了机动车迷兴趣的缺失。

这些冷漠的建筑反映了对古老城市建筑无礼的冷落，给城市带来永久的疤痕。城市的轮廓不再是教堂和市政厅高塔，而是被廉价而奇怪的巨大建筑所覆盖和占据，夺去了历史建筑的优美和象征意义。

在传统意义上，汽车被恰当地看做建筑的敌人。由于交通问题，街道被优化。市政规划最多只是针对我们城市中汽车数量不断增长的反应。我们的生活方式被汽车所破坏。然而，没有人可以面对没有汽车给我们带来机动性和自由的世界。汽车已经成为交通的一种普通方式。但是，我们为此付出了代价。专家估计，在西方，多达 80% 的城市公路交通仅仅为了提供停车场所而存在。我们都面临着停车难的问题。为了避免徒劳地

nobody can envisage a world without the mobility and freedom of choice provided by a car. The car has become the normal form of transport. This is achieved at a price, however, and experts estimate that in the West up to 80 percent of urban road traffic consists simply of provision for parking. We are all faced with the same problem of where to park the car. To avoid wasting time in the vain search for an empty parking space, most people eventually have to opt for a vacant space in a car parking facility.

Architects are now rediscovering this long neglected type of construction and approaching their design with fantasy and imagination. A paradigm shift has occurred and architects are becoming increasingly drawn to this area. Multi-storey car parks have changed from being purely functional buildings to becoming attractive eye-catchers in the cityscape. The standard solutions of the 1960s and 1970s are no longer standard and it is the consumer, and not the car, that is king. The provision of a friendly and attractive atmosphere is one of the main design criteria for the newest parking facilities.

This more nuanced view of the task has produced a new vocabulary of forms. A parking facility offers added value to your environment. Modern car parks are no longer piles of masonery and steel, but constructions that blend naturally into the urban space, just as life with a car has been fully integrated into our lifestyles.

The task of building a "car park" has not yet reached the end of its development, even after 100 years of automobility. Though suburban and urban areas will require different solutions. In suburban areas, settlements and suburbs, the boundaries between the parking spaces for cars and other uses have become increasingly blurred over the years. Parking areas are now multifunctional spaces and host other activities, such as markets, festivals and cultural or commercial events. In the densely urban areas of the inner city, the compression of parking space is being increasingly sought. The economic use of space is a necessity and solutions that provide automated parking systems are more self-evident in Japan than in Europe or elsewhere. These provide opportunities for public places, which had been purloined for parking, to be won back as habitats for people, enhancing the inner-city neighborhood.

The vision that mass motoring is dying and our urban centers will become free of cars is, for the foreseeable future, utopic. True, the combustion engine powered by fossil fuel will be a thing of the past in the not too distant future.

The rise in oil prices because of waning natural resources has accelerated the development of environmentally friendly technologies to power our cars. Electric motors, hybrid drives and fuel cells will not only benefit individuals but also enable the architects of today to reintegrate the car within the sculptured surroundings of our everyday lives.

The question of whether there will be beautiful, intelligent, and clean, parking facilities can be answered with a resounding "yes". Encouragingly, the examples in this book show this is already reality.

Dipl.-Ing. Architekt Can Yeger
(Meyer-Wolters & Yeger Architekten)

浪费时间寻找空闲停车位，多数人最终不得不在停车设施中选择一块空地停车，而非停车位。

建筑师们现在正在重新探索这种长久以来被忽略的建筑类型，并通过幻想和想象来进行设计。情况已经发生了根本的转变，建筑师们越来越被这一领域所吸引。多层停车场已经由单纯的功能性建筑转向为引人注目的城市风景。20 世纪 60 年代和 70 年代的标准方案不再是标准，真正关键的不是汽车，而是消费者本身。友好和吸引人的氛围是最新停车设施的主要设计标准。

这个项目的设计产生了新型的语汇。停车设施提供了环境附加值。现代停车场不再是石块和钢铁的堆砌，而是自然地融入都市生活的建筑，正如拥有汽车的生活完全融入我们的生活方式之中。

建造“停车场”的任务并未到达其发展的终点，即使在自动化 100 年之后。而且郊区和市区需要不同的方案。在郊区，居住地和郊区之间、停车和其他功能之间的界限在过去的这些年里逐渐地模糊起来。停车区现在是多功能区，可以开展其他活动，如作为市场或举办节日、文化及商业活动。在市中心的人口密集区域，如何压缩停车空间是急需解决的问题。空间的经济使用是必然的结果，比起欧洲和其他地区，日本提供自动停车系统方案的必要性更加不言而喻。这给以往被用于停车的公共场所提供了机遇，使之成为人们生活的场所，加强了市中心周围的生活氛围。

在可见的未来，大量汽车消失而市中心不再有车，是乌托邦式的愿景。的确，使用矿物燃料推动的内燃机车在不久的将来将成为历史。

由于自然资源的减少而导致油价上涨，加速了汽车动力环保技术的发展。电动马达，混合动力以及燃料电池将不仅使某些个人受益，也会令当今的建筑师们将汽车重新融入到我们精心塑造的日常生活环境中。

对于是否能够建造美丽、智能、洁净的停车设施的问题，答案是响亮的“是”。令人鼓舞的是，本书中的例子表明这已经成为现实。

Dipl.-Ing. Architekt Can Yeger
(Meyer-Wolters & Yeger Architekten)

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Architect: ATP Architects and Engineers
Location: Graz, Austria
Area: 5,330 m²
Photographer: Kurt Kuball

Park & Ride Fölling

The garage is conceived as a double-winged, two-storey building with central circulation. Access to the site is from the West via an access road running along the site boundary which serves both the parking garage and a residential complex which is planned to the North. The garage is entered via its southern wing.
The parking deck has a composite steel construction with a column grid of 2.5 x 16.8m and strip foundations. The load of the roof construction is transferred to the columns via primary and secondary steel-profile beams (galvanised) combined with steel panel elements.
As a result of the low inherent stability of the ground it was necessary to improve ground conditions before starting construction.
The volume containing the ancillary spaces was built out of prefabricated reinforced concrete elements with a concrete strip foundation. The kiosk shop is built from in-situ, fair-faced concrete and also has a strip concrete foundation.


ZUGANG EG + OG

该停车库被构思为一个带有中央循环的双翼两层建筑。该场地通过一个沿着停车库边界的入口道路从西面进入。该边界既服务于停车库，又服务于将在场地北侧筹建的居民区。停车库从其南翼进入。

停车层为带有 2.5 米 × 16.8 米柱网和狭长地基的混合钢结构。屋顶结构的负载通过与钢板相连接的主副钢梁（电镀的）加载到柱上。

为了确保地面的稳定性，开始施工之前有必要改善地面状况。

包含有附属空间的整个建筑由预制钢筋混凝土建造，带有狭长的混凝土地基。小商亭由现浇装饰性清水混凝土建造，也有一个狭长的混凝土地基。

Site Plan