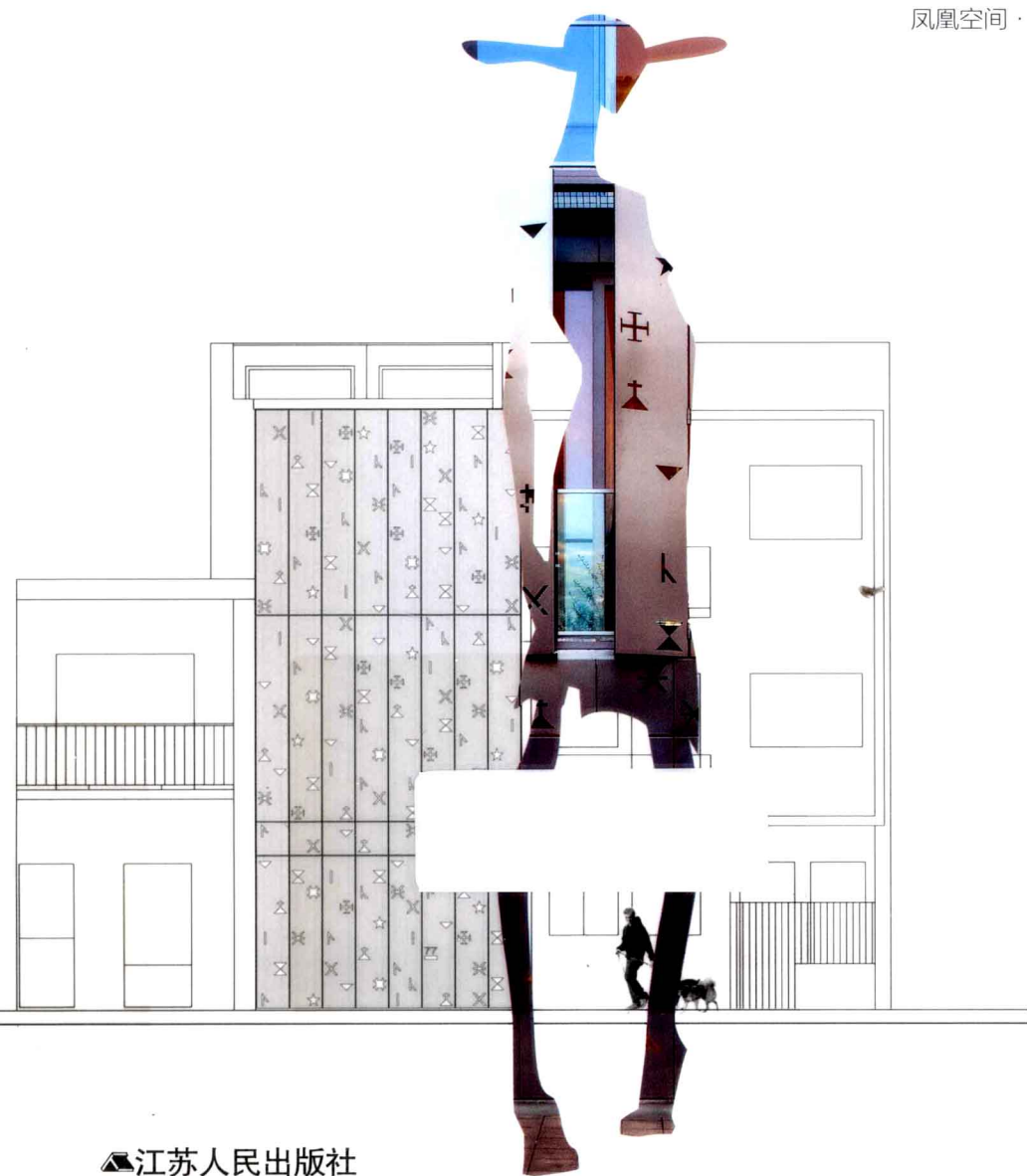


建筑“装”定制

FASHION IN ARCHITECTURE

金属
METAL

凤凰空间·北京 编



江苏人民出版社

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图书在版编目 (C I P) 数据

建筑“时装”定制. 金属 / 凤凰空间·北京编. --
南京: 江苏人民出版社, 2013. 2
ISBN 978-7-214-09009-6

I. ①建… II. ①凤… III. ①装饰墙—建筑装饰—金属结构—立面造型—世界—图集 IV. ①TU227-64

中国版本图书馆 CIP 数据核字 (2012) 第 290091 号

建筑“时装”定制——金属

凤凰空间·北京 编

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出版发行: 凤凰出版传媒股份有限公司

江苏人民出版社

天津凤凰空间文化传媒有限公司

销售电话: 022-87893668

网 址: <http://www.ifengspace.cn>

经 销: 全国新华书店

印 刷: 北京建宏印刷有限公司

开 本: 710 mm × 1000 mm 1/16

印 张: 12

字 数: 96 千字

版 次: 2013 年 2 月第 1 版

印 次: 2013 年 2 月第 1 次印刷

书 号: ISBN 978-7-214-09009-6

定 价: 58.00 元



(本书若有印装质量问题, 请向销售部调换)

前言

PREFACE



■ 弗兰克·盖里说：“金属是我们这个时代的材料，它使建筑变成了雕塑。”

■ 金属材料具有无数类型和色彩，而且经碾压、打磨能够达到精密的、要求严格的容差，给设计者提供无限的应用范围。

■ 金属的拼板，在现代面漆工艺下，自身便可以拥有无数的色彩。此外，相互间些许角度的不同，即能反射出更多的色彩。

■ 就连锈蚀的立面都有着那“饮尽孤独”的现代范儿，成为大家争相追随的偶像。

■ 镂空的性能让更多传统的手艺可以依附于建筑之上。

■ 在世界的每一个城市的近代建筑当中，钢材和其他的建筑用金属均生成于火红的熔炉里面，它们增强了现代建筑师能够建造更高大、更大胆和更富有表现力的建筑物的信心。

■ “For us, metal is the material of our era,” Frank Gehry said. “It turns architecture into sculpture.”

■ Metal has many types and colors. Through lamination and polishing, it will create precise tolerance, providing designers with a wide range of options.

■ Modern paint finish technique brings metal panels countless colors. Moreover, a little angle difference among the metal panels will give rise to various reflected colors.

■ Rusting façades can attract architects with unmatched modern charm.

■ The performance of hollow-out enables many traditional crafts to be reborn on architecture.

■ In modern times, steel and other metal materials were all born in smelting furnaces. They boosted modern architects' confidence in building higher, more challenging and more expressive architecture.

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第一部分 PART 1

建筑金属“时装” 历史

HISTORY OF METAL "FASHION"
IN ARCHITECTURE

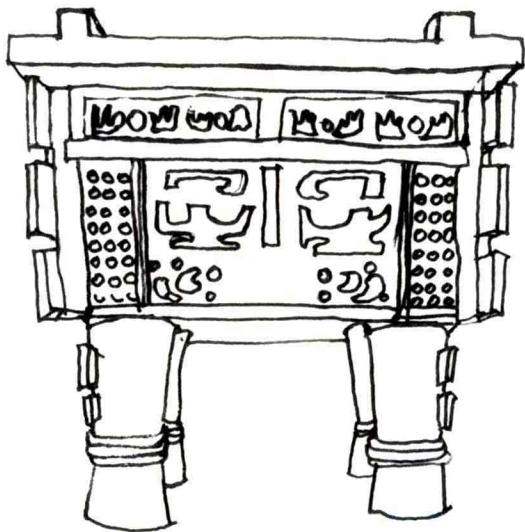
在这里，我们一起来回顾一下建筑的金属立面设计的历史，带领大家穿越时空，共同领略建筑“时装”的美，领略建筑“时装”设计师们的别具匠心，体味带有金属质感的建筑奇观。

Here, let's look back over the history of metal façade in architecture, appreciate the magnificent metal "fashion" and the creativeness of architects, and enjoy the metal architecture wonders across time and space.

1. 古代

谈到金属立面，我们首先就会联想到我国的鼎，它是最早的金属立面物体。原来最开始的金属“时装”并不是穿在建筑上，而是穿在了日常用来炖肉和祭祀用的大鼎上面。大鼎的壁饰相当于建筑的立面，极富艺术感染力，并且能烘托环境氛围。

锻铜壁饰是壁饰的一种，它采用铜质薄板材料，通过“锻”制手段成型，悬挂或固定于建筑立面的装饰性浮雕。壁饰勾勒出先民们对宗教、生活、情爱的直白表达。进而随着对金属材料、矿物颜料的认识，制作工具的进化，出现了艺术表现水准极高的石木浮雕、石窟壁画，如：汉代画像砖、画像石、敦煌石窟、云冈石窟、龙门石窟壁画等。壁面表现的艺术形式逐步成型，并趋于多样化。之后这种技艺，逐渐运用到了建筑当中，产生了不朽于世的建筑艺术精品。



鼎，中国 Bronze Tripod, China



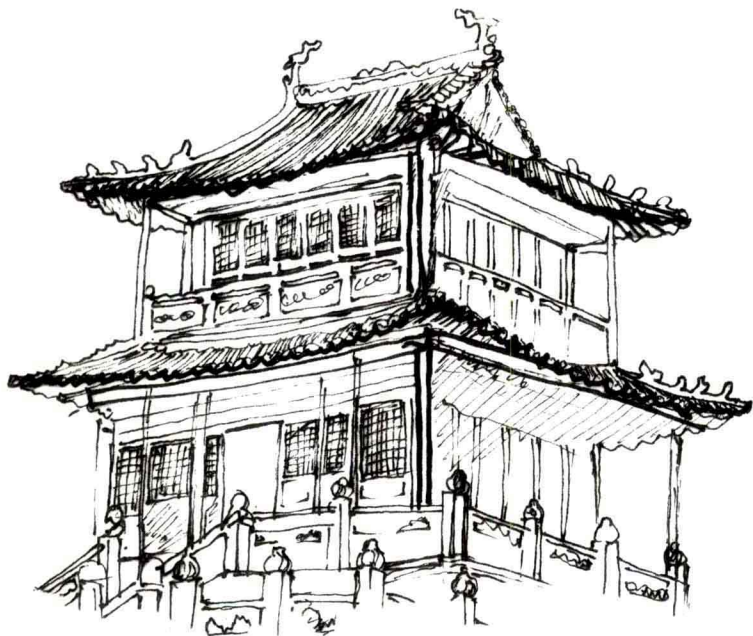
1. ANCIENT

Speaking of metal façades, people will think of bronze tripod, an ancient Chinese cauldron which was used for cooking and the preparation of ritual offerings to ancestors. The earliest metal "fashion" did not appear in architecture. Instead, it was used as surface decoration on tripods. It was, of great artistry, equivalent to building façades.

Copper murals are the decorative embossments hanging or fixed on building façades. They are made of forged copper sheets, intuitively depicting ancestors' religion, life and love. With the evolvement of tools and the growing understanding of metal materials and mineral pigment, a number of high-quality stone reliefs, wooden reliefs and Grotto mural were created, such as the Pictorial Bricks and Stones of the Han Dynasty, the Dunhuang Grottoes, the Yungang Grottoes, the Longmen Grottoes, etc. This art form began to develop and diversify. This technique was then gradually applied in the field of architecture with which a huge number of immortal architectural masterpieces were created.

我国传统的建筑文化博大精深，金属立面的建筑还体现在铜殿、铁塔、铜塔，以及一些金属屋面的建筑当中。让我们来回顾一下我国古代具有典型代表意义的金属立面建筑吧。

五台山的显通寺铜殿，建于明万历三十三年（公元 1605 年）。铜殿宽 4.7 m、深 4.5 m、高 8.3 m，铜殿雕花镂空、飞翼翘角，光彩夺目。殿内四壁共铸有铜佛 1 万尊，精美无比。殿内供奉铜铸文殊坐狮像，铸艺高超，表情逼真，是明代铜铸佛像之珍品。铜殿虽然历经风霜雪雨，但在金属“时装”的遮蔽下，仍旧躲过了风雨的侵蚀，历久弥新。现如今在我们看来，似乎它的建筑时间就在昨天。可见金属“时装”的建筑特点，就是能经历住时间的长久考验，不走样、不变形，能够较好地保护建筑远离冰霜雪雨，历经烈火等的考验，持久焕发出金属“时装”建筑的完美雄姿。



五台山显通寺铜殿，中国 The Copper Palace of Xiantong Temple at Wutai Mountain, China



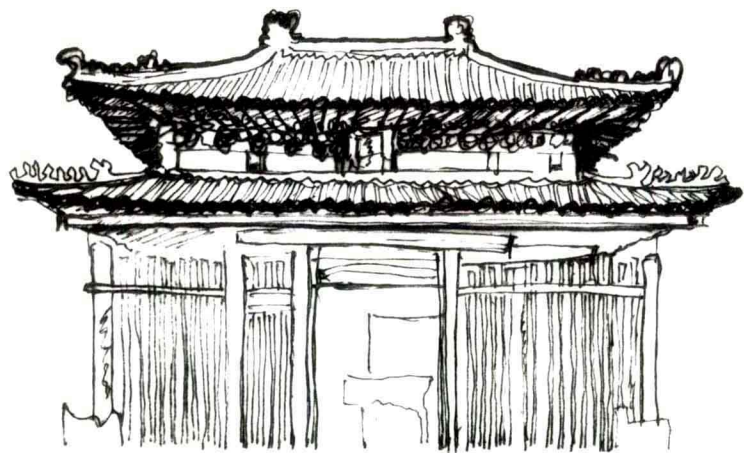
China's traditional architectural culture is broad and profound. Metal façades were commonly found on copper palaces, iron towers, copper towers and other buildings. Let's take a look at some representative architecture with metal façade.

The Copper Palace of Xiantong Temple at Wutai Mountain was built in Wanli reign period of the Ming Dynasty (1605). It is 4.7 meters in width, 4.5 meters in depth and 8.3 meters in height. The copper palace engraved with fine patterns shines with dazzling brilliance. Ten thousand bronze statues of Buddha are enshrined in the hall, prominent among which is the bronze statue of WenShu Bodhisattva sitting on a lion. It shows the exquisite casting skill of Chinese craftsmen and is the art treasure of the Ming dynasty. Under the shelter of the metal coating, the copper palace survives wind, rain and snow and becomes more attractive with age. It seems to have been completed only yesterday. Therefore, we can clearly find the properties of metal façades that they can withstand the test of time and resist deformation. Under the protection of metal cladding, buildings are free from the erosion by severe weather and natural calamities, taking on a long-lasting, glamorous look.

我们再来看湖北武当山的金殿。它位于湖北省丹江口市境内武当山天柱峰顶，建于明永乐十四年（公元1416年），是我国现存的四大铜殿中建置最早的一座，殿高5.5m、面宽5.8m、进深4.2m。大殿全系铜铸，部件铆焊拼榫而成，外鎏赤金。大殿翼角飞举，殿脊装饰着镂空的珍禽异兽，檐角天鹤飞空。殿内神像、几案、供器等均为铜铸，殿基为花岗岩砌成的石台，石雕栏杆围绕，给人以庄严凝重、金碧辉煌之感。传说永乐皇帝在建筑这座金殿时曾说：“务要坚固壮实，万万年与天地同其久远。”这是我国古代金属立面建筑的一大重要成果。

如果说具有悠久历史的木结构建筑，勾勒出我国古典建筑的优美图景，那么仿木结构的金属“时装”包裹的建筑，无疑是一大奇观。它避免了木建筑的不足，能够防虫、防火，并且能够非常好地保留建筑的原貌。我国的铜殿从武当山金殿、五台山显通寺，到万寿山铜亭等，都处在曲径通幽的名山胜境之中。

古代社会的生产力并不发达，却造就了一批建筑的奇观，不得不令人惊叹。



武当山金殿，中国 The Copper Palace at Wudang Mountain, China



Let's have a look at another copper palace situated on the top of Tianzhu peak of Wudang Mountain, Danjiangkou, Hubei Province. Built in 1416 (14th year of the Yongle reign of the Ming dynasty), it is the earliest of the existing Four Copper Palaces in China. The palace is 5.5 meters in height, 5.8 meters in width and 4.2 meters in depth. The palace is wholly made in copper with components welded together and gilded surfaces. The ridges are decorated with rare animals and birds and the upturned eaves are decorated with flying cranes. The base of the palace, surrounded by stone railings, was made of granite. The statues of gods, tables and sacrificial wares were all cast with copper. The whole palace gives a sense of solemnity, reverence, resplendence and magnificence. It is said that Yongle Emperor requested "the palace must be solid enough to last as long as eternity" when the palace was under construction. It is an important achievement of Chinese ancient architecture with metal façade.

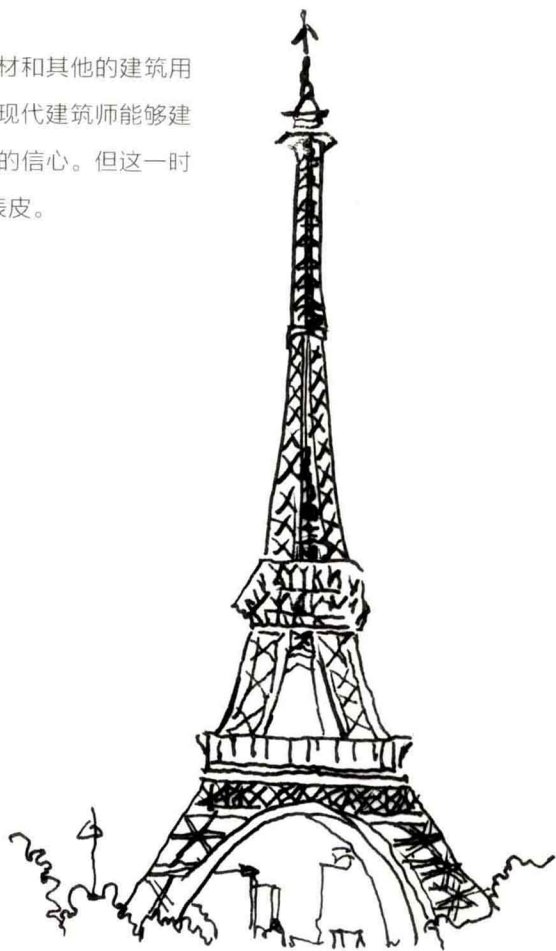
Wood architecture has a long history in China. If we say they reveal the elegance and beauty of Chinese classical architecture, the architecture with metal fashion are undoubtedly a wonder. Compared with wood architecture, they are insect-proof, fire-proof and can keep buildings the way they were. Whether the copper palace in Wudang Mountain, Xiantong Temple in Wutai Mountain, or copper pavilion in Wanshou Mountain, all are located in the places with beautiful sceneries.

It is amazing that a lot of architectural marvels were created in ancient times with low social productivity.

2. 近代

如果说近代的金属“时装”建筑，就不得不提建于 1889 年的埃菲尔铁塔，这是一座位于法国巴黎战神广场上的镂空结构铁塔，高 300 m，天线高 24 m，总高 324 m。埃菲尔铁塔得名于设计它的桥梁工程师居斯塔夫·埃菲尔。铁塔设计新颖独特，是世界建筑史上的技术杰作，是法国的著名景点，成为人们进军“钢铁世界”的一座里程碑。

在世界每一个城市的近代建筑当中，钢材和其他的建筑用金属均生成于火红的熔炉里面，它们增强了现代建筑师能够建造更高大、更大胆和更富有表现力的建筑物的信心。但这一时期的金属多用于内部的构建，而并非建筑的表皮。



埃菲尔铁塔，法国 Eiffel Tower, France



2. MODERN

When it comes to architecture with metal "fashion" in modern times, Eiffel Tower has to be mentioned. It is an iron lattice tower completed on the Champ de Mars in Paris in 1889. It was named after the engineer Gustave Eiffel, whose company designed and built the tower. It stands 300 meters tall, with a 24-meter-long antenna atop, so 234 meters in total. The tower is unique in design and regarded as a masterpiece in the history of architecture. It has become an important scenic spot, a prominent symbol of both Paris and France. It is a vital milestone on the march towards the "metal world".

In modern times, steel and other metal materials were all born in smelting furnaces. They boosted modern architects' confidence in building higher, more challenging and more expressive architecture. However, metal was more often used for the framework of the buildings rather than for the façade.

3. 现代

到了现代，特别是近年来，什么立面的建筑最多、最炫？金属材料肯定是首当其冲。这要得益于面板时代的来临。通常由面板和后面的铝横梁立柱、钢结构、玻璃肋等支撑结构组成的幕墙逐渐取代了传统的砖混立面。随着高科技的发展，面板的类型呈现出多样性，在形态和结构上发生转变。面漆工艺可以让面板呈现任意的颜色，甚至能做到 10~15 年不褪色，整体使用寿命达几十年。新型面板具有更好的延展性、更高的安全性，更灵活、方便、快捷的施工技术，防水性能、保温节能优越，而且在色彩方面具有特性，这让金属成为许多建筑立面材料的首选，发展形势蔚为壮观。就连锈蚀的立面都成为绿色建筑间争相追随的偶像。镂空的性能亦让许多传统工艺可以依附于建筑之上。

本书中展示了近 20 个当代最新锐和美妙的金属建筑“时装”。涵盖了锈蚀、镂空、面板、铸造、金属网等十余种设计手法，不少都是全球首创，是一场真正新颖别致的“金属建筑时装秀”。



3. CONTEMPORARY

What type of material is most gorgeous and most commonly used for building façade in the contemporary era, especially in the recent years? There is no other answer but metal! We shall owe it to the widespread use of panels. Panels, aluminum members, uprights, steel structure, ribbed glass and other structural components compose curtain walls which have gradually replaced the traditional reinforced concrete and brick façade. Along with the development of high technology, the heavy panels become more versatile. Modern paint finish technique brings metal panels countless colors that can even last for 10 to 15 years without fading. The panels' life expectancy can be up to several decades. Incredible advantages in extensibility, safety, flexibility, water proof, thermal insulation and color make metal the favorite choice for façade. It has a huge potential for future development. Even rusting façade has become a fashion sought after by green buildings. Furthermore, the performance of hollow-out enables many traditional crafts to be reborn on architecture.

This book includes around 20 contemporary novel and gorgeous architectural projects featured by corrosion, hollow-out, panels, casting, metal mesh, etc, some of which are unprecedented. It is truly a novel and unique "metal fashion show".