

**MIES
VAN DER ROHE**

IIT CAMPUS

密斯·凡·德·罗导读系列

伊利诺伊理工 学院校园规划

[瑞士] 维尔纳·布雷泽 编著
杜希望 译

中国建筑工业出版社

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密斯·凡·德·罗导读系列

伊利诺伊理工学院克朗楼

CROWN HALL

[瑞士] 维尔纳·布雷泽 编著

杜希望 译



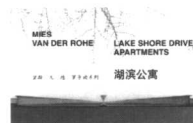
密斯·凡·德·罗导读系列

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LAKE SHORE DRIVE
APARTMENTS

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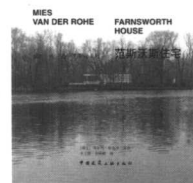
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IIT Campus

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密歇根大道

密歇根大道

RH
密歇根大道

康宁安楼
密歇根大道
3100号 (1955年)

冈索勒斯楼
密歇根大道 3140
号 (1943年)

45 停车位

宿舍楼
瓦伯什大道 3241号

东楼
第32大街71号

研究生楼
第33大街70号

利维新楼
第33大街70号

FARR
密歇根大
(1948年)

10
贝利楼
瓦伯什大
道 3101号
(1948年)

7
卡曼楼
第32大街60
号 (1943年)

6
小教堂
第32大街65
号 (1952年)

北楼
第32大街71号

住宅楼
瓦伯什大道 3241号
(1959 - 1966年)

第32大街
71号

PKP
瓦伯什大

瓦伯什大道

第31大街

凯汀运动中心
瓦伯什大道 3040号
(1968年)

8 康芒斯楼
瓦伯什大道 3200号

瓦伯什大道

州大街

州大街

斯图尔特楼
第31大街10
号 (1971年)

生命科学馆
州大街 3110
号 (1966年)

工程楼1
第32大街10号 (1968年)

校友纪念楼
迪尔波恩大街 3201号 (1946年)

迪尔波恩大街

1

波尔斯坦楼
第33大街10号 (1946年)

3 威施尼克楼
迪尔波恩大街 3201号 (1947年)

5 西楼
迪尔波

19

美国铁路协会
迪尔波恩大街 3120号 (1956年)

联邦大街

赫尔曼协会楼
联邦大街 3141号 (1962年)

第33大街

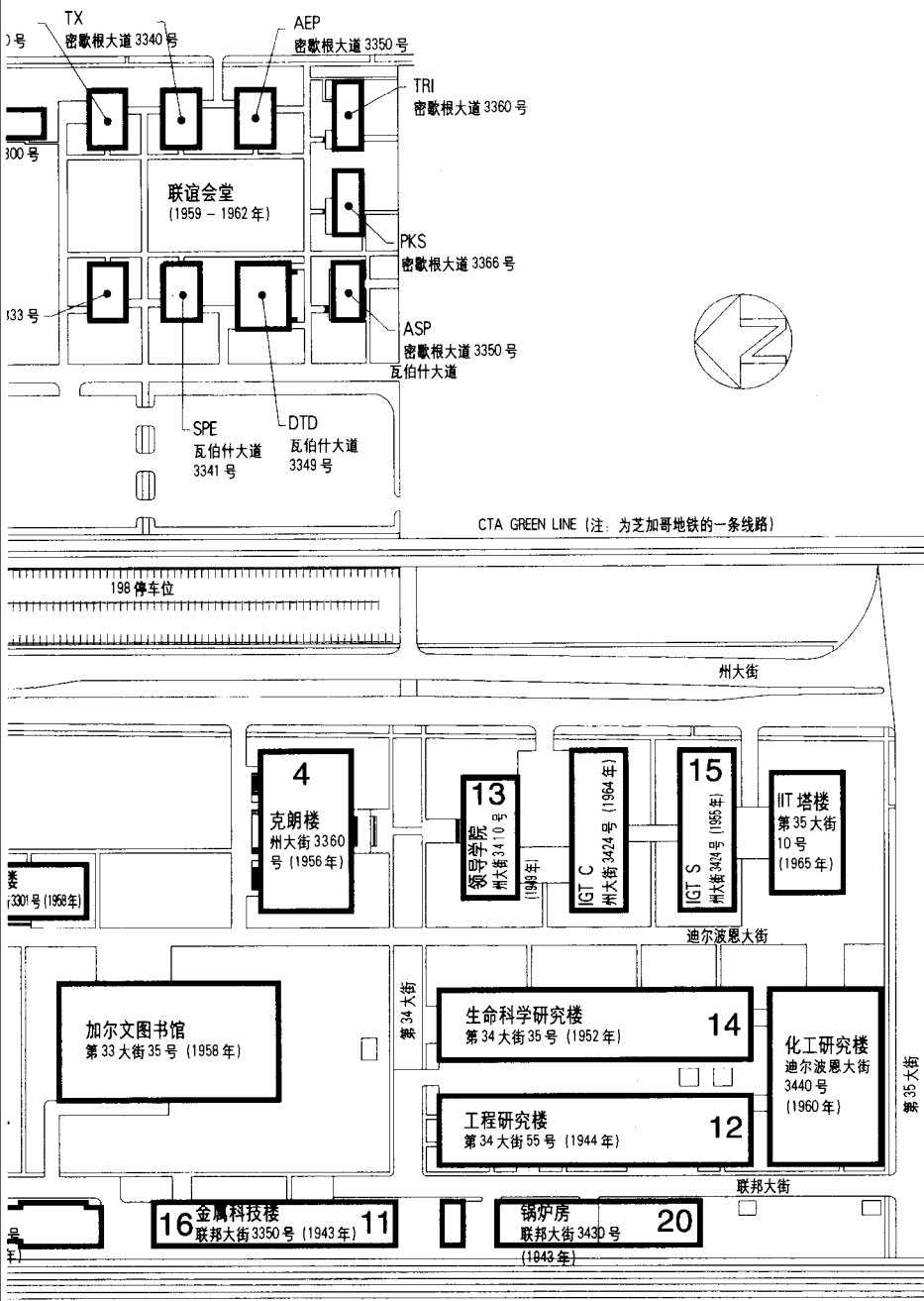
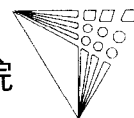
18
美国铁路协会
联邦大街 3100号
(1953年)

17
音乐学院
联邦大街 3140号
(1950年)

便利车库
联邦大街 3240号 (1901年)

机器楼
第33大街100号 (1901年)

主楼
联邦大街 3
(1891 - 19



Plan by Masami Takayama (2001) of the campus buildings incorporating the architecture by Mies 1-20.

密斯规划的校园建筑物平面图 1-20 号, Masami Takayama 绘制 (2001 年)

Masami Takayama

Masami Takayama

In August 1938 Mies came to Chicago to chair the department of architecture at Armour Institute of Technology. According to Henry Heald, then the president of IIT, Mies was invited on the recommendation of John Holabird who said, "I don't know Mies van der Rohe, but the Barcelona Pavilion and one or two other things that he has done are outstanding. After all, even if we don't know too much about this fellow, he is so much better than any of the people you could get to head a school of architecture, why not take a chance?"¹

Apparently, the decision paid off, and the rest is history. The actual appointment of Mies, however, was not without many twists, and it was realized only after a precarious chain of events which are well documented by Franz Schulz in his Mies biography.² Heald even felt that "Mies wouldn't have had this opportunity, if it had not been for an act of God".³

Mies consequently received commissions to do both the master plan and the majority of buildings for IIT campus over the following twenty years.

IIT Master Plan

Soon after his arrival, Mies was asked to develop a master plan for the new campus of IIT which was formed by the merger of Armour Institute of Technology and Lewis Institute of Technology. At that time, the architecture department was located in the attic of the Art Institute (the museum) on South Michigan Avenue. Mies rented an office across from the museum on the 5th floor of the Santa Fe Building, and hired an assistant to work on the IIT projects. The assistant was George Danforth who later succeeded Mies as director of architecture and planning at IIT.

Danforth recalls that the famous 24' × 24' grid was already established by the time he began to work in the early spring of 1940. The grid was the structural module used as a mechanical tool for locating building columns and, therefore, buildings. But, as Mies put it, "orderliness is the real reason".⁴ The 24' × 24' dimension was determined from a room size, accommodating all three types of expected activities (classroom, drafting and laboratory work), which in turn was determined from the

1938年8月,密斯来到芝加哥,主持阿默理工学院的建筑工作。据后来成为伊利诺伊理工学院院长的亨利·赫尔德称,密斯是由约翰·赫拉伯德推荐而受到邀请的。赫拉伯德推荐说:"我不认识密斯·凡·德·罗,但是他完成的巴塞罗那德国馆和其他几件作品是杰出的。毕竟,即使我们对这个人了解不是太多,他也要比你们能找来领导建筑学院的其他任何人强很多,为什么不冒险试试呢?"¹显然,这是一个英明的决定,其他的就是历史了。然而,密斯的实际任命并不一帆风顺,这只是在弗朗兹·舒尔茨的《密斯·凡·德·罗评传》中详细提供的一系列不确定事件之后才发现的。²赫尔德甚至觉得,"要不是上帝的旨意,密斯将不会获得此机会。"³

因此,密斯获得了委任,并在此后的20年中为伊利诺伊理工学院校园做了整体规划和设计了大部分的建筑。

伊利诺伊理工学院总体规划

密斯到来之后不久,就被要求为伊利诺伊理工学院新的校园做整体规划,新的校园是由阿默理工学院和路易斯理工学院合并而成的。当时,建筑系位于密歇根南大道艺术学院(博物馆)的顶楼。密斯在博物馆对面的圣达非大厦的五楼租了一间办公室,并雇了一名助手来做IIT项目。助手是后来继任成为IIT建筑和规划领导者的乔治·丹弗斯。

丹弗斯忆起1940年早春他开始工作时,著名的24英尺×24英尺的模数栅格网已经建立。栅格是作为机械工具来定位平面柱网及建筑的结构模数。但是,密斯这样描述它:"秩序是真正的原因。"⁴ 24英尺×24英尺的尺寸由房间大小决定,它能容纳所有3种预期的功能(教室、制图与实验室),这3种功能依次由课桌、制图桌和实验室工作台的尺寸与排列方式决定。由此,房间的尺寸又决定了整幢建筑的尺度。

因此,IIT总体规划从基本家具元素到教室、再到建筑,

1. Four Great Makers of Modern Architecture Symposium: March to May 1961, Columbia University School of Architecture, New York, 1963, pp. 105-108.

1. "现代建筑的4位伟大缔造者座谈会", 1961年3-5月, 哥伦比亚大学建筑学院, 纽约, 1963年, 105-108页。

2. Schulz, Franz, Mies van der Rohe: A Critical Biography, University of Chicago Press, 1985.

2. 弗朗兹·舒尔茨,《密斯·凡·德·罗评传》,芝加哥大学出版社,1985年。

3. Four Great Makers of Modern Architecture Symposium: March to May 1961, Columbia University School of Architecture, New York, 1963, pp. 105-108.

3. "现代建筑的4位伟大缔造者座谈会", 1961年3-5月, 哥伦比亚大学建筑学院, 纽约, 1963年, 105-108页。

4. Architectural Record, Vol. 97, November 1952.

4. 《建筑实录》, 97卷, 1952年11月。

size and arrangement of desks, drafting tables and lab benches. The room size then determined the building size.

IIT master plan, thus, evolved from the basic furniture elements, to the room, to the building, and finally to the campus. This process allowed later expansions of the campus without changing the fundamental characteristics of the original plan.

By starting from the basic elements, Mies reversed conventional planning that first defines the overall design. While the conventional master plan would predetermine the final form of the campus, the Mies plan merely defined the direction of growth in the future.

Universal Space

Contrary to the calm, introspective image we have of later Mies, Danforth draws a picture of an energetic, vibrant Mies during his first years in Chicago. Mies was busy not only developing the master plan, but setting up a new curriculum, preparing promotional drawings for various new campus buildings, and designing buildings for actual construction as well, with only the help of a few inexperienced students.

In February 1943, Joseph Fujikawa, who later became Mies' most trusted collaborator, came to study with Mies at IIT. Rather than studying in the classroom, Fujikawa was immediately put to work on the IIT projects. Fujikawa remembers it was more like an apprenticeship with a master craftsman. They worked all day long with Mies, ate a dinner together, and then went back to the attic to work until after midnight. Mies often was at the drafting board himself and even worked on models. He was very good at making people from aluminum foil for scale models.

As busy as he was, it was also the time many important ideas were conceived and evolved. These ideas included expression of structure, exterior walls as skin, overlapping placement of buildings to allow space to flow, and above all "universal space".

The evolution of the universal space concept can be traced through the different stages of the master plan and various architectural studies.

1. In the 1939 preliminary scheme of the IIT master plan, we find Mies still in the mode of 1920's European modernism. The well publicized perspective of the scheme was drawn by Danforth and finishing touches like shading and trees were added by Mies. In the perspective

并最终到校园这样发展。该流程允许校园的可持续扩展，而不会改变最初规划的基本特性。以基本元素为出发点，密斯颠覆了首先确定总体设计的传统规划方式。传统的总体规划是预先确定校园的最终形式，而密斯的规划仅确定将来的发展方向。

通用空间

与我们后期印象中冷静、内省的密斯相反，丹弗斯描绘了一幅他在芝加哥第一年工作期间，精力充沛、充满活力的密斯形象。密斯不仅忙于开发整体规划，还创建了新的课程，并只在几个没有什么经验的学生的帮助下，制备各种新校园建筑的推广宣传画，设计投入建造的建筑。

1943年2月，后来成为密斯最信任的合作者的约瑟夫·藤川来到IIT与密斯学习。藤川很快投入到IIT项目中，而不是在教室里学习。藤川回忆说，那更像是和匠师的学徒关系。他们整天与密斯一起工作，一起吃晚餐，然后回到顶楼工作，直到后半夜。密斯经常亲自绘图，甚至做模型。他非常善于为模型制作铝箔制的比例人。

密斯虽然非常繁忙，但仍有许多构思与发展想法的时间。这些想法包括结构的表达、外墙表皮、建筑物的叠置生成的流动空间，以及最重要的——“通用空间”。

通用空间概念的发展可以回溯到总体规划和建筑研究的各个不同阶段。

1. 在1939年IIT总体规划的初步方案中，我们发现密斯还处在20世纪20年代的欧洲现代主义模式中。该规划极为引人注目的透视图由丹弗斯绘制，最后的润色如阴影和配景树由密斯添加。在透视图，我们发现，6幢校园主体建筑围合成一个很大的开敞空间；结构特殊的礼堂和楼梯，则处理成主体建筑以外的独立视觉组分。

2. 初步方案假定封闭南北向的迪尔伯恩大街。然而，封闭是不允许的，所以密斯不得不重做方案。重做该方案对于密斯突破过往来说，意义非常重大。发表在1942年2月的《建筑论坛》的新方案中，重新出现了迪尔伯恩大街，并

we see one large central open space surrounded by six major campus buildings. Auditoriums and staircases, which require special structures, were treated as separate visual components outside the main building blocks.

2. The preliminary scheme presupposed the closing of Dearborn street, the north-south thoroughfare. However, the closing was not permitted and Mies had to rework the plan. Reworking the plan proved to be a vital incident for Mies to break from the past. In the new scheme published in the February 1942 issue of "Architectural Forum", Dearborn Street reappears, and the large but rather static central space in the preliminary scheme was dispersed. The space between the buildings becomes more dynamic. Auditoriums and staircases completely disappear. These special components are now contained within the rectangular building block.

3. This idea of containment is explored further in the "Museum for a small city" project.⁵ In the museum project the auditorium is contained within a large rectangular space. In the perspective drawing we see two trussed girders spanning over the auditorium component. Here, the standard steel frame and trussed girder systems are independently placed within a single rectangular block. This hybrid system can be seen as an intermediate step before the concept of universal space matured in Mies.

4. In the collage of a concert hall, we see the final evolution of universal space. Here, Mies placed an auditorium in the huge column-free space of an aircraft hangar under enormous steel trussed girders. He must have seen in the aircraft hangar photo the capability of steel to create large, column-free space, far exceeding the scale of ordinary functions.

The collage⁶ demonstrates that in column-free "universal space", the auditorium as well as any other component can take its own intrinsic form, free from the constraints of building structure. Concurrently, building structure is not compromised by interior functions.

IIT Buildings by Mies

Today there are 20 buildings designed by Mies on the IIT campus. There are five IIT classroom buildings, five residential and related buildings, six ITRI laboratory buildings, three AAR administration and laboratory buildings, and one boiler plant.

The building names listed below are the names used in

且把初步方案中规模虽大却相当静态的中心空间分散开来。建筑之间的空间变得更加动态。礼堂和楼梯完全消失。这些特殊的组分现在被矩形的建筑体块所收纳。

3. 这种收纳的想法在“小城市的博物馆”项目中获得了进一步的探索。¹ 博物馆方案中，礼堂包含在一个大的矩形空间中。在透视图里，我们看到两个桁架梁横跨过礼堂。这里，标准钢框架和桁架梁系统被独立安置在单个矩形块内。我们可以将该混合系统视为密斯的通用空间概念成熟前的过渡阶段。

4. 在音乐厅的拼贴画中，我们看到了通用空间的最终演变。这里，密斯把一个礼堂置于钢桁架梁下无柱的巨大飞机库中。他一定是从飞机库照片里钢的承载力中得到启发，从而创造了远远超越正常功能范围的巨大的无柱空间。

拼贴画²说明，在无柱“通用空间”中，礼堂和其他组分一样，可以采用其内在的形式，而不受建筑结构的限制。同样，建筑结构也不必因内部功能而调整。

密斯设计的 IIT 建筑物

今天，IIT 校园内有 20 幢密斯设计的建筑。它们是 5 幢 IIT 教学楼、5 幢住宅楼及相关建筑、6 幢 ITRI 实验楼，3 幢 AAR 行政与实验楼和 1 个锅炉房。

下面所列建筑的名称是“2001 年伊利诺伊理工学院主校园指南”中所采用的。因指南中未标明密斯的建筑，所以我采用 1958 年 IIT 目录中所使用的名称。显示的日期是建筑的竣工日期。后面的括号里是合作事务所的名字。

IIT 教学楼

- (1) 校友纪念楼，1946 年 (Holabird & Root)
- (2) 波尔斯坦楼，1946 年 (Holabird & Root)
- (3) 威施尼克楼，1946 年 (Friedman, Alschuler & Sincere)
- (4) 克朗楼，1956 年 (Pace Associates)
- (5) 西格尔楼，1957 年 (Pace Associates)

5. Architectural Forum, Vol. 78, May 1943, pp. 84-85. The museum project started as George Danforth's thesis. When a request for recent work came from Architectural Forum, Mies completed it.

1. 《建筑论坛》，78 卷，1943 年 5 月，84-85 页。博物馆项目作为乔治·丹弗斯的论文开始。当《建筑论坛》向密斯征询当时工作的时候，密斯将其完成。

6. We know of two nearly identical collages. One is in the collection of Art Institute of Chicago and the other in the collection of Mies archive at MOMA (Museum of Modern Art) in New York. The collage in Chicago was done by Daniel Brenner as a student project under Mies in 1946. The collage in MOMA is generally attributed to Mies himself in 1942 but the authenticity could not be confirmed at this time. Both Danforth and Fujikawa do not remember seeing the collage prior to Brenner's work.

2. 我们发现两幅基本一样的拼贴画：一幅保存在芝加哥艺术学院的收藏中，另一幅则保存在纽约现代艺术博物馆的密斯档案中。芝加哥的拼贴画是 1946 年作为密斯指导下的学生项目，由丹尼尔·布伦南制作的。MOMA 的拼贴画则通常被认为是密斯自己于 1942 年所作，但其可靠性目前尚未得到确认。丹弗斯和藤川都不记得在布伦南的作品之前看到过该拼贴画。

the current (2001) IIT Main Campus Guide. For the Mies buildings not identified in the Guide, I use the names used in the 1958 IIT catalogue. The date shown is the building's completion date. In parenthesis is the name of the collaborating office.

IIT Classroom buildings

- (1) Alumni Memorial Hall, 1946 (Holabird & Root)
- (2) Perlstein Hall, 1946 (Holabird & Root)
- (3) Wishnick Hall, 1946
(Friedman, Alschuler & Sincere)
- (4) S.R. Crown Hall, 1956 (Pace Associates)
- (5) Siegel Hall, 1957 (Pace Associates)

Residential and related buildings

- (6) Robert F. Carr Memorial Chapel, 1952
- (7) Carman Hall, 1953 (Pace Associates)
- (8) The Commons, 1953
(Friedman, Alschuler & Sincere)
- (9) Cunningham Hall, 1955 (Pace Associates)
- (10) Bailey Hall, 1955 (Pace Associates)

IITRI (IIT Research Institute) buildings

- (11) Metals Technology Building, 1943
(Holabird & Root)
- (12) Engineering Research Building, 1944
(Holabird & Root)
- (13) Institute of Gas Technology, 1950
(Friedman, Alschuler & Sincere)
- (14) Mechanical Engineering Research Building I, 1952
(Friedman, Alschuler & Sincere)
- (15) Physics and Electrical Engineering Research Building, 1957 (Naess & Murphy)
- (16) Metals Technology Building Extension, 1958
(Holabird & Root)

AAR (American Association of Railroads) buildings

- (17) Administration Building, 1950
(Friedman, Alschuler & Sincere)
- (18) Mechanical Engineering Building, 1953
(Friedman, Alschuler & Sincere)
- (19) Laboratory Building, 1957
(Friedman, Alschuler & Sincere)
- (20) Boiler Plant, 1950 (Sargent & Lundy)

After Mies left IIT in 1958, the campus work went to the Chicago office of Skidmore Owings & Merrill (SOM) who built 6 more buildings. Both the Library and the

住宅及相关建筑

- (6) 罗伯特·F·卡尔纪念小教堂, 1952 年
- (7) 卡曼楼, 1953 年 (Pace Associates)
- (8) 康芒斯楼, 1953 年 (Friedman, Alschuler & Sincere)
- (9) 康宁安楼, 1955 年 (Pace Associates)
- (10) 贝利楼, 1955 年 (Pace Associates)

IITRI (IIT 研究院) 楼

- (11) 金属科技楼, 1943 年 (Holabird & Root)
 - (12) 工程研究楼, 1944 年 (Holabird & Root)
 - (13) 气体技术学院, 1950 年 (Friedman, Alschuler & Sincere)
 - (14) 机械工程研究楼 I, 1952 年 (Friedman, Alschuler & Sincere)
 - (15) 物理与电机工程研究楼, 1957 年 (Naess & Murphy)
 - (16) 金属科技楼扩建部分, 1958 年 (Holabird & Root)
- #### AAR (美国铁路协会) 楼
- (17) 行政楼, 1950 年 (Friedman, Alschuler & Sincere)
 - (18) 机械工程楼, 1953 年 (Friedman, Alschuler & Sincere)
 - (19) 实验楼, 1957 年 (Friedman, Alschuler & Sincere)
 - (20) 锅炉房, 1950 年 (Sargent & Lundy)

1958 年, 密斯离开 IIT 之后, 校园规划工作转交给了 SOM 事务所的芝加哥办公室, 由其建造了另外 6 幢建筑。图书馆和学生会楼都是由 SOM 合伙人沃尔特·纳什设计的。凯汀运动中心、生命科学楼、1 号工程楼和斯图尔特楼是由 SOM 合伙人米伦·戈德史密斯设计的。另外, 校园南端用于 IITRI 办公室的 20 层混凝土框架塔楼是由加登和艾瑞克森事务所的施密特设计的。

IITRI 金属科技楼有着特殊的意义, 它是密斯在美国完成

Student Union buildings were designed by SOM partner Walter Netsch. The Keating Sports Center, Life Sciences Building, Engineering 1 Building and Stuart Building were designed by SOM partner Myron Goldsmith.

Incidentally, the 20-story concrete frame tower at the south end of the campus for IITRI offices was designed by Schmidt, Garden & Erickson.

The IITRI Metals Technology Building is of special interest. It was the first Mies building completed in America. The building was lauded for its structural expression, and must have provided a sense of direction for the post-war architecture. As late as 1956, the building was listed as one of the most significant 50 buildings in the United States built during the previous 100 years. Philip Johnson wrote, "not since the Gothic has there been such clarity of expression."⁷

Close examination of this "modern" building, however, reveals some conflict. Mies violated his own rule by placing steel columns 23'11-3/4" on center, just 1/4" shy of the 24' × 24' grid. Fujikawa explained this deviation was made to accommodate the unit dimension of brick. Most interestingly, the deviation reveals that the prime material in Mies' mind for his first building was still brick instead of steel.

Practical Order and Spiritual Order

We find another deviation from the grid in Crown Hall, the Chapel and the Commons Building. The deviation in these buildings, however, is different. It stems from a hierarchy of values. In an interview on the occasion of receiving the RIBA Gold Medal in 1959, Mies said:

"You have to realize there are different stages of order. The real order is what St. Augustine said about the disposition of equal and unequal things according to their nature. That is real order. If you compare the Architects' building [Crown Hall] with the other campus buildings you can see that... In the Architects' building I went away from the grid; I took just the grid in a larger measure but the elements are not in the grid any more...

I think the Architects' building is the most complete and the most refined building and the most simple building. In the other buildings there is more a practical order on a more economical level and in the Architects' building it is a more spiritual order."⁸

Although Mies only talked about Crown Hall in contrast to all the other campus buildings, there seems to be a more subtle hierarchy and different stages of order

的首座建筑。该建筑以其结构表现而广受赞誉，同时也一定为战后建筑提供了方向感。直到1956年，该建筑物还名列“100年来美国最重要的50幢建筑”之一。菲利普·约翰逊这样写道：“这是哥特式以来所未有的清晰表现。”¹

然而，对这个“现代”建筑物的严密检查揭示了某种冲突。密斯把钢柱的中心放在23英尺11³/₄英寸的柱网上，刚好缩进了24英尺×24英尺栅格的1/4英寸。这样，密斯违背了他自己的原则。藤川解释说这种违背是为了按照砖的单位尺寸而做出的。最有趣的是，密斯头脑中为他的第一个建筑物所设想的主要材料是砖，而不是钢。

实际秩序与精神秩序

从克隆楼、小教堂和康芒斯楼中，我们发现对栅格的另一种违背。然而，这些建筑中的违背是不同的。它源于价值层次。密斯在1959年获得RIBA金质奖章时接受的一次采访中谈：

“你必须意识到，秩序存在着不同的阶段。真正的秩序是圣奥古斯丁所说的，根据事物本质来安排同等的和不等的事物。那才是真正的秩序。如果你将建筑系馆（克隆楼）和其他校园建筑比较，就会发现……在建筑系馆中我偏离了栅格；在更大的尺度上我仅采用了栅格，但元素并不再在栅格中了……我想建筑系馆是最完善和最精工细作的建筑，也是最简洁的建筑。其他建筑中存在一个更经济、更实际的秩序，而建筑系馆中存在的则是一种精神秩序。”²

尽管密斯只谈论了克隆楼与其他校园建筑的对比，然而在“其他建筑”中似乎存在着秩序更微妙的层次和更不同的阶段。例如，作为校园生活区中心的康芒斯楼受到了特别的关注。栅格扩大到24英尺×32英尺，更精心、准确地将暴露的钢结构装配在一起。相反，除了第一幢金属科技楼之外，所有IITRI实验楼都在栅格网上，但它们的建造都不是特别精确，并采用了更经济的裸露混凝土。

总体观念

上述的20幢建筑中，两幢教学楼——威施尼克楼和西

7. Architectural Record, Vol. 120, July 1956, p. 204.

1. 《建筑实录》，120卷，1956年7月，204页。

8. Interview by Graeme Shankland for the BBC Third Programme on the occasion of Mies receiving the RIBA Gold Medal in 1959.

2. 1959年密斯获得RIBA金质奖章时，BBC第三套节目Graeme Shankland的采访。

among the “other buildings”. For example, the Commons Building, which was the community center of campus living, received special attention. The grid was enlarged to 24' × 32' and the exposed steel structure was put together with more care and exactness. In contrast, all IITRI laboratory buildings, with exception of the first Metals Technology Building, are on the grid yet built with less exactness and more economical exposed concrete.

General Idea

Among the 20 buildings listed above, the two classroom buildings - Wishnick and Siegel - are identical in size and design; so are the three apartment buildings - Carman, Cunningham, and Bailey. Contrary to the stereotypical criticism of monotony in Mies' buildings, there are as many as 17 different variations on the IIT campus. Each reflects peculiarities such as functional requirements, location, financial restrictions and also the hierarchy of values.

As a group, they demonstrate a general idea central to Mies. In 1963, Mies wrote: “The physicist Schroedinger said of general principles, ‘the creative vigor of a general principle depends precisely on its generality,’ and that is exactly what I mean when I talk about structure in architecture. It is not a special solution. It is a general idea. And, although each building is a single solution, it is not motivated as such.”⁹

The variations in the IIT buildings, therefore, are the solutions based on the same principles, “just as the Gothic men used the same principles for a cathedral as they would use for a barn.”¹⁰

In 1958, Mies retired from IIT. IIT was Mies' laboratory and testing ground for his ideas. With completion of Crown Hall, Mies had accomplished all he could at IIT. He was ready to move on and apply those ideas to large scale commercial developments, the real battle ground for the architecture of the time.

The architect Dr. Masami Takayama from Chicago is one of the most important authorities on Mies van der Rohe. I would like to thank him here for the second scientifically written essay on Mies; the first was on the 860-880 Lake Shore Drive apartments. It takes communicating personalities to consolidate the basics of Mies and pass them on again to a succeeding generation. This is the meaning of greatness in Mies' sense.

格尔楼——在大小和设计上是完全一样的；3幢宿舍楼——卡曼、康宁安和贝利也是一样的。与通常对密斯建筑的批评相反，IIT校园内的建筑不仅不单调，反而有多达17种变化。每一种都反映了诸如功能需要、位置、财政限制以及价值层次等特性。

作为一个组群，它们证明了作为密斯的理论的总体观念。1963年，密斯写道：“物理学家薛定谔说到总体原则，‘总体原则的创造性活力严格地依赖于其总体性’，那正是当我谈论建筑中的结构时想要表达的。它不是一个专门的解决方法，而是一个总体观念。而且，尽管每幢建筑是一个独立的解决方法，但它并非如此被推动。”¹

因此，IIT建筑的变化是基于同样原则的解决方法，“正如哥特人使用建造谷仓的原则来建造大教堂一样”。²

1958年，密斯从IIT退休。IIT是密斯的思想实验室与测试场。随着克朗楼的完工，密斯已经完成了他在IIT所能完成的一切。他准备继续前进，并把那些想法应用到大范围的商业开发中，那里才是当代建筑真正的战场。

芝加哥建筑师Masami Takayama博士是研究密斯·凡·德·罗最主要的权威之一。对于他第二次撰写关于密斯的科技文章，我在此深表谢意：第一次是请他撰写了关于860—880号湖滨公寓的内容。利用密斯生活圈中的朋友来整理他的素材，并将其再次传递给下一代。这正是密斯意义的伟大之处。

9. Architectural Record, Vol. 134, October 1963, p. 149.

1. 《建筑实录》，134卷，1963年10月，149页。

10. Interview by Graeme Shankland for the BBC Third Programme on the occasion of Mies receiving the RIBA Gold Medal in 1959.

2. 1959年密斯获得RIBA金质奖章时，BBC第三套节目Graeme Shankland的采访。

Technology is rooted in the past. It dominates the present and tends into the future. It is a real historical movement - one of the great movements which shape and represent their epoch. It can be compared only with the Classic discovery of man as a person, the Roman will to power, and the religious movement of the Middle Ages. Technology is far more than a method, it is a world in itself. As a method it is superior in almost every respect. But only where it is left to itself as in gigantic structures of engineering, there technology reveals its true nature. There it is evident that it is not only a useful means but that it is something, something in itself, something that has a meaning and a powerful form - so powerful in fact, that it is not easy to name it. Is that still technology or is it architecture? And that may be the reason why some people are convinced that architecture will be outmoded and replaced by technology. Such a conviction is not based on clear thinking. The opposite happens. Wherever technology reaches its real fulfillment, it transcends into architecture. It is true that architecture depends on facts,

科技植根于过去。它主导着现在和通向未来的趋势。它是真正的历史运动——形成并代表它们时代的最伟大的运动之一。只有人类的经典发现、罗马的权力欲和中世纪的宗教运动才堪与之媲美。科技远不止是一种方法，其本身就是一个世界。作为方法，它几乎在任何方面都是优越的。但只有在表现工程的巨大结构时，科技才显露它的真实性质。有证据表明它不仅是有用的手段，还是了不起的事物，本质上了不起的事物，具有意义和强大形式的了不起的事物——事实上非常强大，以致很难表达。那还是科技或建筑吗？这可能就是为何有些人相信建筑即将过时、并为科技所取代的原因。这种认识不是清醒思考的结果。事实恰好相反。无论哪里，只要科技实现真正的价值，它必将超越到建筑中来。建筑的确依赖于现实而存在，但其活动的真正领域是在意义范围中；我希望你们理解建筑与形式的发明无关。它不是孩子、年轻人或老人的游乐场。建

but its real field of activity is in the realm of significance; I hope you will understand that architecture has nothing to do with the inventions of forms. It is not a playground for children, young or old. Architecture is the real battleground of the spirit. Architecture wrote the history of the epochs and gave them their names. Architecture depends on its time. It is the crystallization of its inner structure, the slow unfolding of its form. That is the reason why technology and architecture are so closely related. Our real hope is that they grow together, that some day the one be the expression of the other. Only then will we have an architecture worthy of its name: Architecture as a true symbol of our time.

筑是精神真正的战场。建筑书写了时代的历史，并赋予时代自己的名字。建筑依赖其时代，它是其内部结构的结晶，是其形式的逐步呈现。这就是为何科技与建筑是如此密切相关的原因。我们真心希望它们共同成长，某一天彼此成为对方的表现方式。只有那时，我们才能拥有名副其实的**建筑**：建筑成为我们时代真正的象征。