

国外建筑设计详图图集 4

竹中工务店设计实例

[日] 竹中工务店设计部 编著 滕征本 滕煜先 译 周耀坤 滕 百

中国建筑工业出版社

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竹中工务店设计实例

[日] 竹中工务店设计部 编著

膝征本 滕煜先 周耀坤 滕 百 译

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内田 祥哉 (明治大学教授,建筑师)

建筑师的工作程序是首先进行总体构思,然后再考虑细部。然而,却不能说,细部构想就一定是总体构思的一部分。举例来说,有时一考虑细部,常常需要涉及基本问题,这时,就不得不对总体构思进行修正。当重新确定了总体构思后,再从总体向细部作深入考虑时,又可能遇到新的问题。如果遇到的是基本问题,就要再一次重新审查总体构思,不过,第二次的工作速度要比第一次来得快。如果还有第三次,那就会更快。这是因为预先知道问题出自细部的缘故,假如时间允许,若能做到从细部到总体多次重复的话,才能体现出潜心做出周密设计的人的责任心。

如上所述,我们知道,细部构想并不一定是总体构思的一部分,其中,甚至不乏细部构想成为决定总体构思的关键的情况。这样的细部我称之为"关键细部"。

有的细部必须由具有特殊专业知识的专家才能解决。 在这类细部当中,有一部分可以作为局部性工作由专家处 理,还有的部分,尽管是专业性的,若对总体有较大影响 时,多数还是要与总体构思共同推敲。此外,有时存在着 涉及多种不同专业领域共同处理的细部,这类细部属于必 须由统筹总体构思的建筑师解决的细部。

在解决这类细部时,需要跨专业的广博的知识,由于需要调整不同专业领域的差别,材料和施工方法的差异,以及在各自领域中所起的作用的不同等,所以,哪怕是对很小部分的细部,也应该像对待建筑总体构思一样来构思。对于这类细部,我想"细部——微型建筑"这一说法是很

恰当的。

房屋建筑视其坐落地点的地形、风土和气候的不同而各有不同。但是,生活在同一时代,用相同的材料,又在相同的社会组织中的技术人员制造的东西,即使总体形态有所不同,细部方面若能通用还是有好处的。若对这类细部一个一个地仔细琢磨岂不浪费时间,使用以前用过的细部当然很好。或者是,改掉不合用的,使用改造好的,岂不是更好。经过这样的不断反复锤炼出来的细部必然是成熟的,尺寸精确的,外观标致的,便于操作的,而且是耐久的。对于这类细部,我则称之为"定型细部"。不敢说这是常识,是因为不必作为知识记在心中,只要有需要就用得上,既然是好用的事物,如作为常识来记忆的话,也是无可厚非的,作为一种常规手法,视使用方法的得当与否,有时用得好,有时也会用得不好。有一种比喻,即"常规是职业之本,而打破常规是职业的追求。"用在这里,是再贴切不过了。

本书计划写三部分内容: 其一是对一幢建筑的局部细节进行归纳分析; 其次是对建筑的各组成部分的细部构造的精选; 最后是披露竹中工务店多年来的部分积累。这个计划的确够得上是作为描述建筑细部的书籍的好计划。书中非常具体地体现了我的关于"关键细部"、"细部——微型建筑"、"定型细部"等的说法所表达的内涵。

不论是对富有经验的老建筑师,还是对初涉此道的年 轻建筑师,本书都不失为一部难得的好资料,决非过言。

Introduction:

"Key Details", "Details as a Micro-architecture", and "Details of Formation"

Yositika Utida (Architect, Professor of Meiji University)

The work of an architect usually starts from the concept of total building and leads to details. However, the concept of details is not necessarily a part of the total concept. For instance, one is often faced with basic problems only when thinking about details.

At that time, the total concept needs revising.

When a total concept is restructured, and a thought goes from the whole to details, one may encounter a new problem.

If it involves a basic problem, the total concept should be reviewed. The second time is much faster than the first; and, the third time should be much faster than the second. This is because one can guess the problems that will probably arise regarding details. If time is permitted, one's conscientious nature might order shuttling between details and the total, if detailed design is the objective.

As is clear from the above, the concept of details is not necessarily a part of the total concept of the total concept of the whole; and, always cases, the concept of details serves as the key to the concept of the whole. I usually call such details the "key details".

Some details require very specialized knowledge that can only be handled by specialists. Among these, some may be left to specialists as a partial task, while others, though being specialized parts, exercise a large effect on the total system, thus having more of a relationship to the total concept. Furthermore, there exist details of parts where various tasks from various specialized fields converge; and, these are the details to be determined by the architects who collate the overall concept.

Decisions on the details of such parts require a wide range of knowledge going beyond the boundary of each specialty; and, as it is necessary to adjust differences in materials or constraction methods in each area, and their roles, even minor parts would require a concept equal to the one needed for visualizing the total concept of a building. "Details as a micro-architecture" may be a suitable expression for these details.

Each building is different because of the topography, natural features, climate, etc. of each location. But those made in the same age by using the same materials by the same workers who live in the same social structure, may share the same details. As scrutinizing every single one of such details would simply be a waste of time, it might be all right to rely on the same details used before. It would be better to mend the faulty parts.

Details created by this repetition would be refined, free of error, attractive, easy to work, and lasting.

I usually call such details, "details of formulae".

The reason why I didn't dare to call them "factual matters" is that they are not what one must have as knowledge, but are the sort of things one may use when the need arises; thus, it is not simply safe if it is kept as "common sense", but it could be used either in good or bad ways. I feel that, as the saying goes, "professional players base their moves on formulae, and they have to figure out how to break them".

This book comprises three sections: one exclusively focusing on the details of buildings, another showing groups of parts, and one in which Takenaka Corporation introduces its long-accumulated achievements. And this would be a most suitable project for the introduction of details. I sincerely hope that the significance of details as expressed by my words, "key details", "details as a micro-architecture" and "details of formation" should be presented vividly in this book.

I am confident this book should prove to be extremely valuable material for novice and experienced architects alike.

目 录

前言
创作细部·······g
吉本大厦······10
东京理科大学长万部校园20
有乐町中央大厦(有乐町麻里昂)24
福冈银行协会会馆······30
长濑产业总社大厦36
里磐梯高原宾馆⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯44
日本生命笹岛大厦······48
MOA美术馆·······52
梅田中心大厦60
贤岛竹友庄·······70
部位细部75
屋顶78
外墙·······104
门、窗
顶棚144
内墙 ···········158
楼梯及其他166
CAD(计算机辅助设计)细部199
标准化细部SF(标准化制品)······205
通则
地面与墙的装配图210
顶棚与墙的装配图215
标准化细部SD219
屋面220
外墙(蒸压轻质混凝土板)225
门、窗······226
内墙、顶棚
室内细木工232
房所、盥洗室·······234
浴室236
栏杆、楼梯237
常用铁件

竹中工务店的建筑细部

昭和20年代(1945~1955年)是起源于包豪斯(Bauhaus)的现代建筑运动在第二次世界大战后的美国重新振兴的年代,竹中工务店设计部的新的业务活动正是这个时期开始的。

满怀国家复兴的愿望,每个人无不孜孜以求地奋斗的年代到来了。

当时,我们共同的愿望是尽快恢复正常生活,为提高 生活水平而一心一意地努力工作。

尽管国力极度凋败,物资和物价都受限制,人民生活处于无奈的困难之中,然而,对未来却满怀希冀,心情舒畅,精神上是富有的。

这个时期的海外建筑方面的信息只有刚刚复刊不久, 纸张印刷很差的建筑杂志,视其中少得可怜的信息为至宝, 潜心研读。美国的建筑,其中不乏出类拔萃、匠心独运的 佳作,对SOM 建筑师事务所和密斯·凡·德·罗建筑师事 务所等的建筑细部产生了强烈印象,唤起了我们的无限憧 憬和动力。

战后 40 年来,经济受限时代已成过去,国力空前高涨的今天,回顾当年,大有隔世之感。

发展总是螺旋形上升的,达到一个顶点之后,又要沿着曲线向下一个顶点攀登。战后,从一张白纸起步的日本,现在已是国力充实,正在沿着更高的曲线向上攀登着。

正在沿着新的曲线登攀的社会是不会单单只将建筑孤立起来的。自从现代建筑在包豪斯兴起以来,已经超越了建筑形式的追求,今后的建筑也将以新的姿态出现。

如果说,新时代总是能够依照人们的意志向前发展的话,但愿21世纪的建筑能真正满足人们的心愿,并以坚固耐久和健全完善的面貌展现在人们的面前。

建筑的最终目的不外乎首先满足建筑业主的要求,并进而贡献社会。耐久、无故障、便于维修等质量上的满意感,必须靠拥有多年积累的高度可靠的设计技术和施工技术才能取得。

除了质量上的满意感之外,建筑业主最关心的是向社会标榜自己,这个问题只能通过创作出格调高雅端正,而且精湛完美的设计的这种精神上的追求才能达到。

幸而,竹中工务店的设计部在不断向前推进的历史进程中,创造上述优秀作品的技艺和技术力量继往开来,连绵不断。创作出来的作品被人们誉为"竹中风格"建筑,对此,在深感自豪的同时,也深感责任的重大。

关于"竹中风格"建筑的问题,根据从设计部的员工征询来的意见可知,原来"竹中风格"的涵义是指端庄宏伟的设计,格调高雅的设计,精巧的设计一类关键词汇所代表的精湛而又品位高的作品,此外,还反映以追求明快为目标的色调,使得设计的格调更加令人瞩目;设计与色彩的相互衬托的效果构成了"竹中风格"的显著特征。

当然,并不是说,要整天想着我们的设计思想是否端正,格调是否高雅,作为"竹中风格",它是将前辈们一脉相承的传统融进了我们的日常设计活动中,而自然形成的。

"竹中风格"建筑将与时代共同进步,要在我们所保持的传统中将反映新时代的因素汇集起来,并加以综合后,注入下一代的"竹中风格"中去。不纠缠于过去,不违背常理,不随波逐流,紧跟时代,不断创新,设计部的传统才会不断加深和发扬光大。

细部遍布于建筑的空间和外观的所有部分。细部担负 着增进空间功能的任务,细部的设计还能起到提高空间的 气势的作用。因而,对这种空间来说,恰如其分的细部能 给建筑增添新的意义。

有许多细部就在身边,看得见,也摸得着,还有的细部不在日常的生活空间中,属于空间标志性细部,由这些细部构成的个性十足的空间必将演奏出和谐的音符,使建筑获得高度评价。从这个意义出发,也必须创造出新颖的细部。

细部是受设计者的趣味所支配的。不论设计者是个人,还是组织,全无不同,因为这不单单是反映设计者的情感和理性,细部中还反映着设计者的品格。恰如其分的细部可以提高建筑的档次,还能维护建筑在社会上的声望。这可是一件关系到建筑业主"满意"的问题,设计者必须重新认识建筑细部的重要性。

当一眼看到枝繁叶茂,茁壮生长着的大树,树上的每一根树枝和树枝上的每一片树叶,都是树木生长不可缺少的重要组成成分,并作为大树的细部而存在着。

树叶有支承它的叶柄和叶脉等具有各种功能的细部。 大树的存在全仗树叶的贡献。在自然界中,不论是在看得 见的场所,还是在看不到的地方,在这宇宙万象中,这个 原理都是无处不在的起着作用。对于人所建造的建筑来说, 贴近自然界的规律,又能与自然界保持一致的精神是宝贵 的。

恰到好处的细部设计可以营造出协调的空间, 所以, 如果存在超越需要的浮夸的细部的话, 就很有可能破坏了建筑的应有秩序。

物体与物体交接的部位需要细部构造,空间与空间交 界处要做建筑细部。有的是不同材料的坚固结合,还有的 是相互依存而连接起来的,所以,细部构造各不相同。

对于空间来说也是同样。有需要空气流通的细部,还 有要求声光效果好的细部,这些细部全都应该具有符合其 自身用途的型式是理所当然的。

一个优秀的细部设计可使建筑空间标新立异。在大大 小小的各式各样的空间中,需要具有相应密度的细部与各 种空间相匹配,不能草率从事,必须努力探索最恰当的细 部。

近来,不断出现设计完美的优秀部件。品质优,价格低,令人鼓舞。如果能对这样的部件加以很好利用,必将提高建筑的档次。市场若能大量供应优秀的部件和优秀的细部,对于我们来说,就等于预先做好了设计完美的优秀部件的储备,当然就会减轻劳动。若能迅速取得有关库存部件的信息,又能做到合理的搭配利用,必将提高设计效

率, 又能创造出高质量的作品。

要想获得质量上乘的部件,必须拥有与此相配套的优秀设计,因而,全面改革过去的细部设计手法和概念的时代业已来临,在设计伊始,就必须对细部进行细致而全面的分析和研究。

对于今后的设计者来说,选配部件的本领至关重要,能 将这些部件量材使用地选配于细部构造上的才能和判断力 则更加重要。尽管采用相同的部件,未必都能做出令人称 赞的作品来。

创造优秀文化的背景中,包含着当地的历史和风俗乡情。文化是扎根于本地,父传子,子传孙,代代相承,并在反复净化的历史过程中形成的。建筑也必然要在各自土地上接受作为背景的文化赋予的浓重影响。在"竹中风格"建筑得以问世的背景中,也受到了其所在地的历史赋予的巨大影响。

由继承辉煌的王朝文化的京都市和拥有商业中心文化的大阪市这二者加在一起构成的日本关西文化圈,以及在江户 300 年文化基础上再加上从明治政府开始的新式中央政府的东京圈,也都分别赋予"竹中风格"建筑以各自不同的文化影响。成熟的西部文化所偏爱的细部,东部未必也爱。东日本也好,西日本也好,或者日本全国的"竹中风格"建筑都受到地方文化的熏陶,互相竞赛,切磋琢磨,力求创作出精雕细刻的设计和更加超群的细部、迎接新时代的到来。

本细部图集分成"创作篇"、"部位篇"和"标准化篇" 三大部分。

"创作篇"描述的是总体和局部,即空间和外观与细部的关系,为此,提供了10个设计项目作为本篇内容。

"部位篇"刊载的是屋顶、外墙等个别部位,考虑到便 于应用和为了易于了解总体和局部的关系,尽量对周围部 分多联系一些。

"标准化篇"编辑了竹中工务店多年积累,并经过补充、 修改、完善的部分中抽取的特别重要的细部。

读者若能置本书于案头,在探索高质量的空间中所从事的细部创作上有所裨益,实为望外之喜。

最后,借此机会谨向致力于本公司的这本书出版的各位,以及支持本公司的建筑业主、学会和本行业的有关各位给予的热情支援、指导和勉励表示深切的谢意。

山中 孔(竹中工务店常务董事)

Architectural Details of Takenaka Corporation-Introduction

In the decade after World War II, when the modern architectural movement, which originated with the Bauhaus, started showing new developments in the post-war United States, the Takenaka Corporation's Design Department was also initiating new activities.

Those were the days when people were working hard to reconstruct their nation. The common wish shared by all was to resume the normal pace of life as soon as possible, while improv-

ing the average standard of living.

In a poverty-stricken nation with goods and their prices being strictly controlled, people were forced to undergo a series of deprivations, but still their hearts were filled with hope for the future and the promise of spiritual plenty. Information on overseas architecture at that time was filtered through the their recently revived architectural magazines being stricted on poor quelity preserved.

printed on poor quality paper.

Studies were continued by using that scarce information as vital food for thought. American architecture was truly refined and outstanding; details by S.O.M. or Mies van der Rohe evoked powerful impressions, providing us with plenty of hope and

Today, 40 years after the end of WW II, now that Japan has advanced to become one of the top-level and affluent nations in

Growth is always a continuous "S curve"; on reaching the zenith, another S curve is sought. Japan, which started from scratch in the post-war days, is now about to move in search of another curve after witnessing the build up its strength to the fullest.

In a society which is actively in search of a "new curve", architecture alone can not remain isolated. Just as modern architecture tried to surpass other forms, starting from the time of the Bauhaus, architecture in the future will reappear under a

If a new age is always opend up by people's minds, I hope the architecture of the 21st century will appear on the stage in a healthy form and with a long life, by virtue of its earnest reflec-

tion of people's hopes.
The ultimate goal of architecture is to contribute to society

through the satisfaction of the client.

Satisfaction in quality, such as high durability, reduced flaws, and easy maintenance, can only be achieved through highly reliable design technology and its implementation.

What is very much in demand by clients, besides satisfaction in

quality, is a message to society.

This is attained by the pursuit of spirituality, embodied in a

graceful, dignified and refined design.

graceful, dignified and refined design. Takenaka Corporation's Design Department, fortunately enough, has inherited the technique and capacity to bring about such works in the course of our history. We, at Takenaka Corporation, feel proud of our awareness of this great responsibility, and the works we create are expressive of the architecture most aptly befitting our firm, that is, the distinctive Takenaka style of architecture.

According to an inquiry carried out by our Design Department staff, the Takenaka style of architecture exhibits simplicity, grace and delicacy, qualities which are further emphasized through the sensitive use of color tones. Exploration into the multiple effects of design and color is the outstanding characteristic of

the Takenaka style.

This does not mean that in our daily design activities we are always aware of being simple, or of attaining grace or like, but something more traditional that we have inherited directly from our predecessors is infused into our design works, representing

Takenaka-style architecture has matured with age; the tradition on which our work is based will be added to with elements reflecting the culture of a new age in order to further evolve into the Takenaka style of the coming generation. New developments best reflecting each age, unbound by the past, never defying logic or carried away by emotion, should enrich the tradition of our Design Department, extending its capacity for further

Details involve the "parts" in the space and the external appearance of architecture. They play the role of enhancing the functions of space, and their design serves to raise the spirituality of the space Details most befitting a space provide architecture

with new force.

Details close to us in our daily lives, that we can easily spot and touch, or sublime details found in nonquotidian space, serve to characterize a space and come in harmony with it, thus raising the reputation of architecture. Details should be created from this standpoint.

Details are subject to each designer's individual taste. Regardless of whether a designer is working individually or as part of an organization, not only his emotions and logic, but also his

personal qualities are reflected in the details. Suitable details enhance the grade of architecture, helping architecture secure its place in our society. This leads to the satisfaction of the clients. Designers should again recognize the importance of details.

When one looks at a huge, mighty and graceful tree, every single leaf on its branch exists as a detail and serves as an important part of the tree's growth. A leaf has supporting petioles, veins, and other details serving many different functions. When each leaf makes its contribution, a big tree can exist. This same principle lies in all phenomena in the world, whether visible or invisible. For the architecture that man creates, the effort to address and to harmonize with the order of nature becomes important

Details create harmony in space through necessary and sufficient design. If there exists any design showing off more than necessary for its existence, the destruction of order in

architecture may result.

Details exist where things meet things, and details are created where a space encounters another space.

Depending on whether different materials have a powerful

meeting or are joined together by complementing each other, the details born will vary.

The same applies to space. Some details may let you feel the air flow, while others effectively present sound and light. The desired effects will naturally dictate the form of the details.

Details conceived and created consciously result in what enhances space in architecture. Effort is required to arrive at the most suitable details, and these must be designed to the

appropriate intensity.

Well designed parts are often spotted today. We are happy to well designed parts are often sported today, we are nappy to see high-quality and lower-priced parts around us. Masterly use of such parts will surely enhance the quality of architecture. An ample range of good parts and good details on the market will allow us to have superbly designed parts in stock in advance and will save labor. If more knowledge is gained about information on such stocked parts, and if they are exquisitely combined, design efficiency will surely be improved, allowing us to produce quality work.

Quality details need good design to bind them together. A day will arrive when the existing methods or concepts of detailing are drastically revised. This means that details should be stu-

died more closely in the initial stage of designing.

Designers in the future will be required to have an expert's eye to choose parts. The capacity and judgement needed to fit those parts to the most suitable points will gain further importance. Using the same parts does not necessarily result in equally

charming works.

Superior culture is born out of the history and climate of each region. Culture, rooted in the region, is transmitted from father region. Culture, rooted in the region, is transmitted from father to son, from son to grandson, and completes itself in the framework of history by repeating self-purging effects. Naturally, architecture is strongly affected by the culture of its locality. The Takenaka style of architecture is no exception; it has been strongly influenced by the history of its birthplace. The architecture of Takenaka has been affected by many local cultures: Kyoto, the cradle of the exquisite court culture; Osaka, dynamic commercial town; Kansai. a culture which combines

dynamic commercial town; Kansai, a culture which combines the two: and Tokyo, the executive seat of the newly established Meiji Government that is based on 300 years of Edo Culture. All these cultural regions have influenced the Takenaka Style. Details rooted in the matured culture of Western Japan differ from those of coatern Japan Thoughout Japan the Takenaka style. those of eastern Japan. Throughout Japan, the Takenaka style of architecture exhibits an inexhaustible attempt to create more refined designs and details for a new age, while remaining

refined designs and details for a new age, while remaining acutely aware of the culture of each region.

This collection of details comprises three parts: "Works", "Parts" and "S.F. & S.D.". "Works" is a presentation of 10 projects to show the relationship between the whole and parts, and heatiges are external appearance and details

between space or external appearance and details.

The section entitled "Parts", presents examples of roofs, outer walls, etc. in illustrative detail and, at the same time, depicts peripheral parts as much as possible in order to clarify the relationable between the whole and the parts.

tionship between the whole and the parts.

Section "S.F. & S.D." is a compilation of the most important selection of the accumulation, additions, corrections and improvements of past works made by Takenaka Corporation.

The editors hope that the reader keeps this publication close at hand so it may help inspire detail designs for the creation of

quality spaces.
In conclusion, we at Takenaka Corporation would like to express our most sincere gratitude to the numerous clients and related people and bodies in the academic and trade fields for their kind support, guidance and suggestions which helped make this wonderful publication a reality.

Toru Yamanaka (Managing director of Takenaka Corporation)

创作细部



^{1.} 吉本大厦	10
2. 东京理科大学长万部校园	20
3. 有乐町中央大厦(有乐町麻里昂)	24
福冈银行协会会馆	30
5. 长濑产业总社大厦	36
里磐梯高原宾馆	44
日本生命笹岛大厦	48
MOA 美术馆	52
梅田中心大厦	60
0. 贤岛竹友庄	70



有阳台的预制混凝土外墙板

避难阳台嵌装在外墙上。这是首次用于超高层宾馆作为最后一条避难通道用的构造。出口处装有定址装置,一旦开启,便有信号送人监视室。阳台的阴影给人以韵律感和比例感,与外墙的平直性形成了对比的视觉效果。在部分外墙饰面瓷砖上留出细沟,利用太阳光入射角的微妙变化和人的视线的移动,呈现出微妙的情调变化。

(野村 充)

主要用途 宾馆

占地面积 7005m²

建筑面积 5315m²

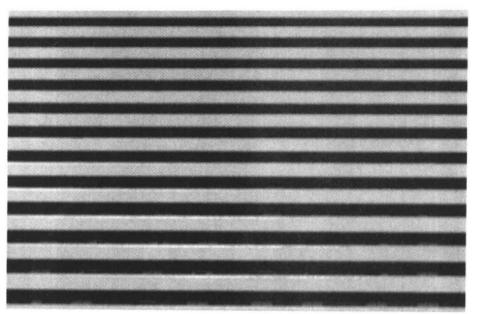
总建筑面积 88029m²

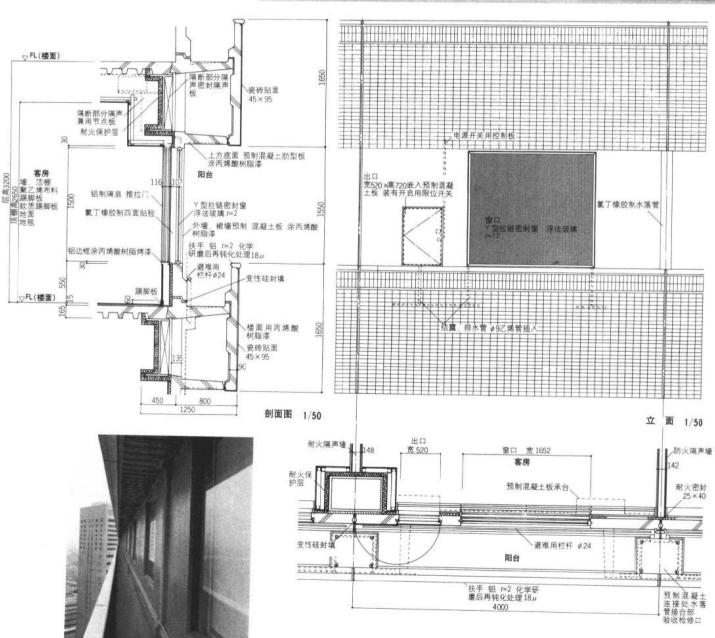
主体结构 钢结构, 劲性钢筋混凝土结构, 钢

筋混凝土结构

规 模 地下4层, 地上34层, 屋顶间2层

工 期 1983年12月~1986年9月



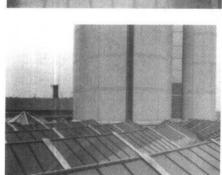


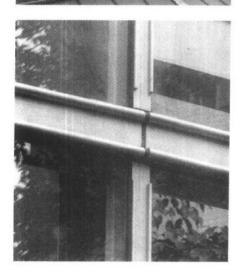
平面图 1/50

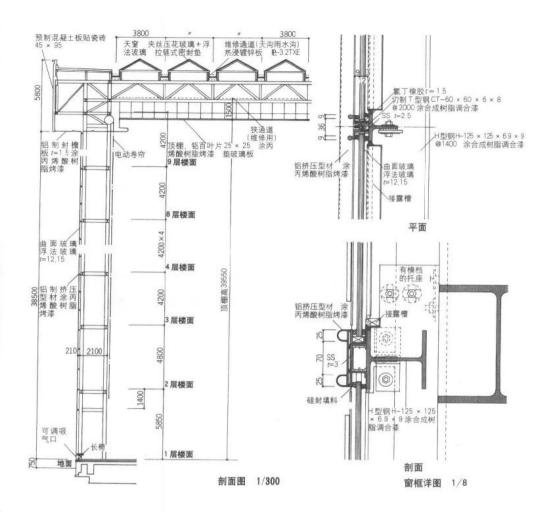
中庭的玻璃屋顶

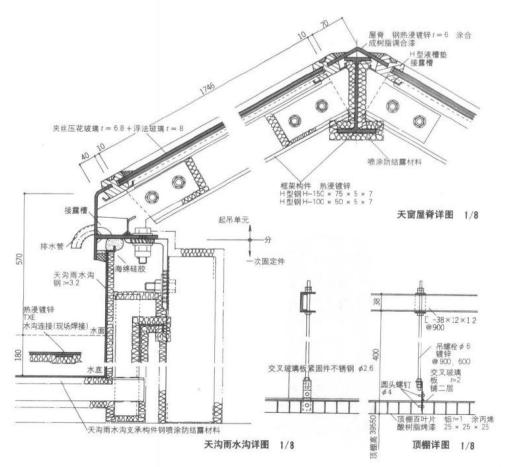
这个顶棚高达 40m 的巨大空间的顶部是用天窗和曲面玻璃幕墙做屋盖的。从天窗射人的阳光经过铝制百叶窗上交叉铺设的玻璃扩散,像一块半透明的薄膜在空间之内飘浮。幕墙用截面为圆弧形的挤压成型的铝型材构成,利用曲面产生微妙的阴影效果的这种细部构造,要比锋利的金属棱边的效果好得多。内侧张挂装有日光量自动感知器的窗帘,对射入中庭的日光量进行控制。





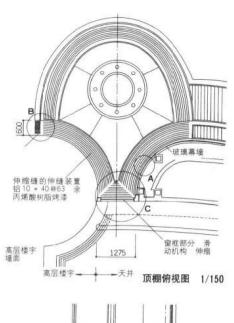


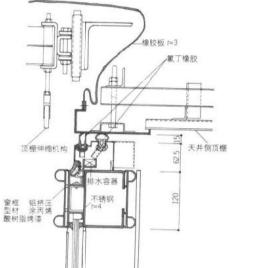


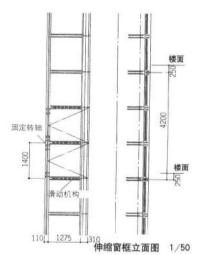


装饰型伸缩缝

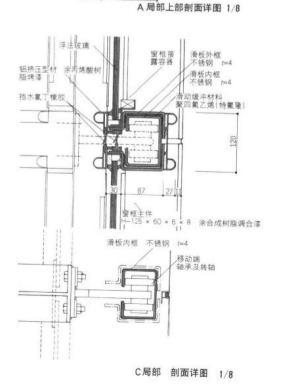
结构上所要求的450mm间隙的伸缩缝不存在技术上的做法问题,而是作为形象上的重要组成部分进行设计。伸缩缝由圆弧形的大型铝板制成的屋檐,两根铝挤压型材做的圆柱,百褶型水平遮阳板和特制的铰链支承的立式铝制饰面遮光格栅,以及立式橡胶挡水板等构件组成,并作为独立的装饰为人们所称道,为建筑立面添彩。 (野村 充)

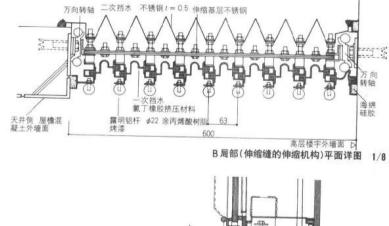


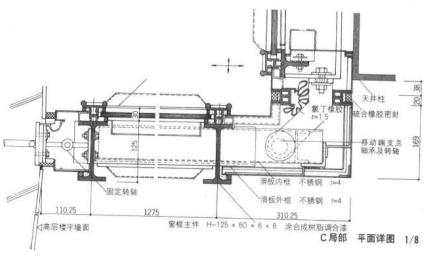








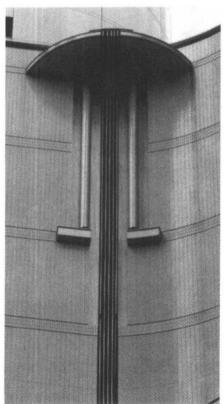


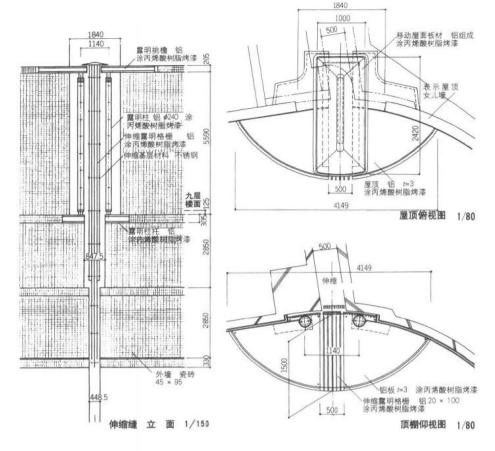


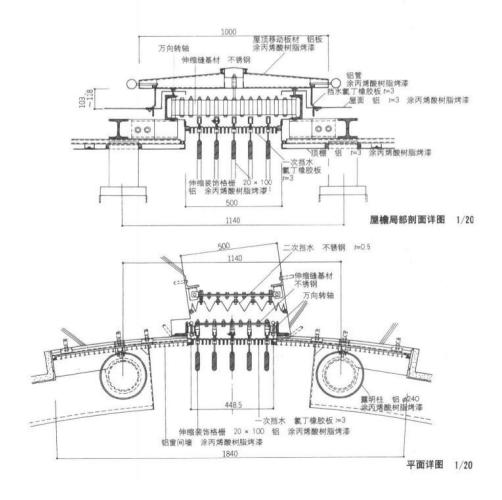
与建筑造型融合成一体的伸缩缝

最大位移达 450mm 的高层楼宇与天井的接合部的伸缩缝设计是建筑的总体组成上的最重要部分之一。为了达到与天井的玻璃幕墙融为一体的目的,采用铝挤压型材和浮法玻璃组成的结构,一侧利用特制铰链使其具有转动功能,而另一侧安装特制滚轮做成滑动机构,这样一来,就拥有了追随 X 轴和 Y 轴两个方向的变位的性能。外墙的预制混凝土板和顶棚面则用由特制铰链支承的铝露明百叶板和新型橡胶挡水板构成。









以圆弧为基调的披屋

这是与宾馆的咖啡商店毗连的茶座平台的披屋,不属于附属建筑,是设计成具有独立造型的亭舍。屋盖由聚碳酸酯树脂板制成,柱、梁是用饰面为热固性丙烯酸树脂烤漆的铝材和镜面加工的不锈钢制作的。外墙流下来的雨水从梁内部流到圆柱的柱脚,再排到人行道。从总体造型到细部构造都体现出圆弧形基调。 (野村 充)



