

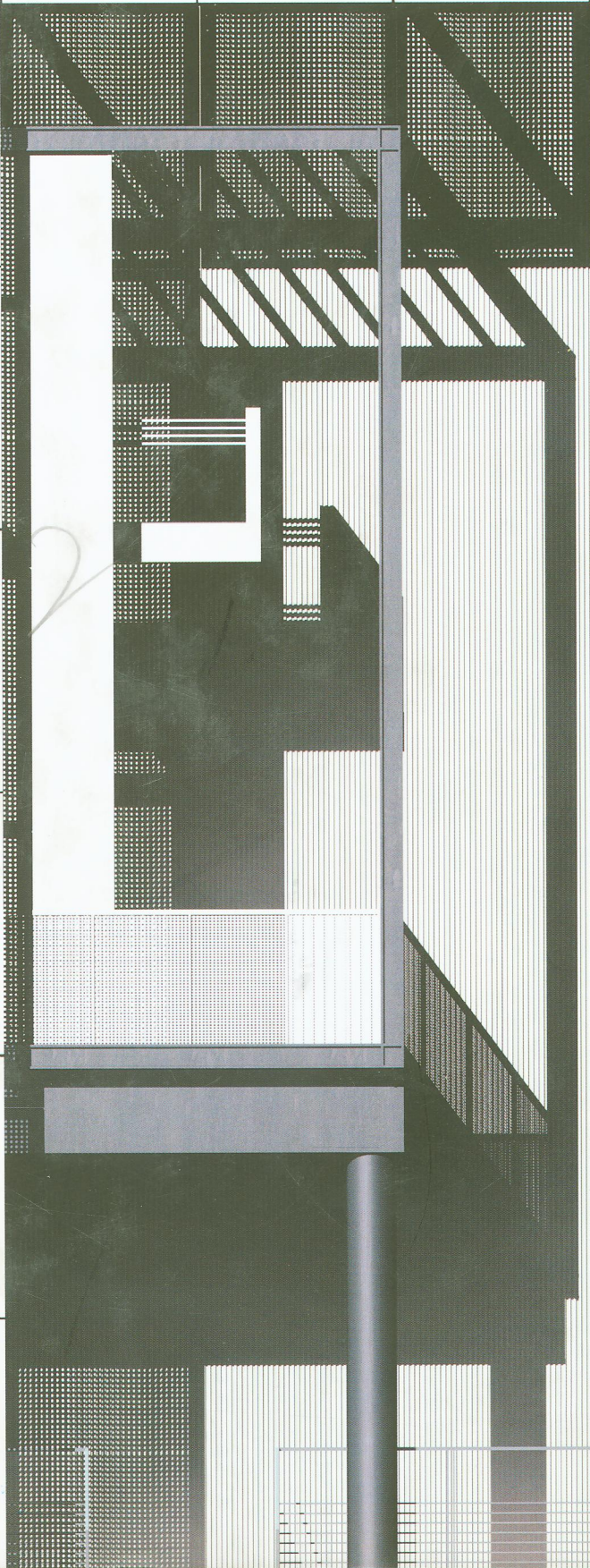
水晶石

CRYSTAL CG

建筑表现 II

北京水晶石电脑图像开发有限责任公司 编

ARCHITECTURAL RENDERINGS



知识产权出版社
Intellectual Property Publishing House

水晶石建筑表现 II

北京水晶石电脑图像开发有限责任公司 编



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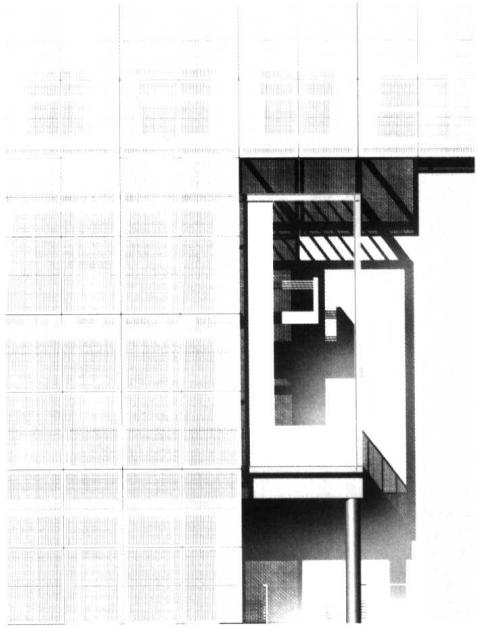
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CRYSTAL COMPUTER GRAPHICS

COMPUTER GENERATED ARCHITECTURAL RENDERINGS

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序

崔恺

中国建筑学会副理事长

中国建筑设计研究院副院长

一排高大的混凝土柱子在强烈的阳光下泛着沉着的灰绿，梁下一片浓重的阴影强化了透视的感觉，把人的目光引向了画面的纵深。左上角现出两行大字“水晶石建筑表现 1995 - 1999”，在深重的背影下显得醒目而有力。

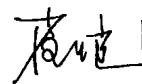
我喜欢这幅封面，不仅是画面的构图带来的具有震撼力的视觉效果，我以为它更代表了水晶石电脑图像公司这些年的发展历程，坚实、质朴，一步一个脚印。

想起来与“水晶石”打交道已有六七年了，从北京百万庄那座拥挤的小楼，到木樨地地震局办公楼那阴暗的一角，直到搬入月坛北街由穿孔钢板和玻璃构成的“另类”空间，“水晶石”们总是没日没夜地盯着屏幕，敲着键盘，按照建筑师的要求发出指令，做出一幅幅漂亮的画面来。无论在设计竞赛的图板上，还是房地产商的售楼处，甚至在北京申奥的专题片中，都能看到他们辛勤劳动的成果。这本精美的专集不过收录了其中的一部分。

作为建筑师，当我们为“水晶石”的成就喝彩的时候，也多多少少带有一点失落和惆怅。建筑画儿这个建筑师的看家本事，似乎正在逐渐退化，设计与表现也因为专业分工而造成脱节：过于精美的画面质量更像是商业化的包装，而大量的资料储备使建筑造型的随意拼贴、堆砌变得更加容易，信手捏来。建筑创作所应有的严肃性好象正在被花花绿绿的画面所遮掩，而设计竞赛的评比会也有变成选画会的危险。当然我们不应以消极的心态去抱怨信息时代带给我们的种种问题，关键是探索解决问题的途径。比如建立网络让建筑师与绘图师配合得更加密切，比如把建筑表现引入建筑创作之中而不仅仅是对结果的表现，比如设定环境，光线时更多采用照片融入方式，强调实景效果，而不是亮丽的舞台布景，更重要的是我们应以建筑技术和建造质量上的提高来逐步弥补现今建筑画与实际建筑效果的巨大反差。

应该感谢“水晶石”开办的“FAR 2000”网站，它使我们有了了解畅所以欲言和学习交流的机会，感谢“水晶石杯”全国大学生设计竞赛，它使年轻的学子更多地关注信息时代的建筑创作，近来还听说“水晶石”要办建筑文化公司等等……我们期待着。

“水晶石建筑表现”出第二辑了，这又是一本精美的画册，里面有多少能最终成为真正的建筑呢？建筑师应该努力。



二〇〇一年七月

Prologue

By Cui Kai

July 2001

A row of tall concrete columns reflect a dark sage green under the blazing sunshine, the strong shadow under the girder enhances the perspective effect, which leads your eyes into the depth of the picture. The two rows of big characters of "Crystal Architecture Expression 1995-1999" on the top left looks striking and powerful under the solemn background.

I like this cover, not only because of the striking visual effect caused by the composition of the picture. More importantly, I think it represents the development history of Crystal Computer Image Company plain and stable, step by step.

I have come into contact with Crystal for more than half dozen of years. From the crowded small building in Baiwanzhuang, to the dark corner in the office building of Seism Bureau in Muxudi, until to the "strange group space" made from perforate steel and glass in Yuetanbeijie, all the "Crystal" have always been staring at the computer screen, tapping the keyboard, and producing beautiful pictures according to the requirements of the architects. We can find their fruits anywhere, from the competition drawing board, from the real estate office, even from the special film for Olympic bid.

This book only includes a small part of their works.

As an architect, I feel some lose and melancholy while cheering for Crystal. Architecture drawing, the former basic work for an architect, now is gradually degenerating.

The design and expression are losing contact with each other due to the professional division. The over delicate pictures are more like commercial package, and a large amount of pictures make the change of architecture structure more easily and freely. The solemnness of the architecture creation is gradually blinded by the colorful pictures, therefore the appraisal of the competition products will become choosing of the pictures.

Certainly, we should not complain the problems caused by the information age with negative attitudes. We should attach more importance on seeking methods to solve the problems. For example, network should be set up to draw the architects and the painters closer, the architecture expression should be introduced into the architecture creation, the real exteriors while not the splendid stage setting should be given more consideration while we are choosing the environment and light. More importantly, we should improve the architecture technology and construction quality to compensate the difference between the architecture picture and real construction effect.

We should appreciate the FAR2000 website set by Crystal because it provides an opportunity to say our say and to study and communicate with each other. We should also appreciate "Crystal Cup" University Students Design Competition because it causes more concerns from the young students on the architecture creation in the information age. We also have heard the news that Crystal will set up an architecture culture company recently. We are looking forward to it.

The second edition of "Crystal Architecture Expression" will be published. We believe it is another fancy picture album. But how much will be transferred into real architecture? We think the architects should make more efforts on it.

前言

王路

世界建筑杂志社 主编

建筑绘画是建筑师用以表达设计意图与业主沟通交流的基本手段。正如汪国瑜先生所说,它是建筑师“以画代言,以图表文,以象证实,以形达意的语言工具和表达手段。”与纯粹的美术作品不同,建筑绘画是一种艺术和技术结合的产物,它既要求建筑师有对空间和形体造型上的推敲,还要有逻辑的思辨。建筑绘画由来已久,我国古代曾有的“界面”实际上也是一种建筑绘画,然而在建筑绘画中引入透视法则是在文艺复兴早期的佛罗伦萨,布鲁乃列斯基首先在建筑图纸中以二维的空间表达出三维空间的效果。

建筑表现的种类很多,除了模型,建筑绘画也门类繁多,各种表现手法在色调、质感、环境渲染、光影、造型特征和空间性格等方面的处理上都各有千秋,随着社会的进步、技术的发展,建筑绘画表现也由早先对铅笔、钢笔、毛笔、喷笔、马克笔等的运用发展到现在的电脑绘画。

建筑设计是一个过程,在这一从构思、推敲、修正直至最终较为完善地表达设计意图的过程中,都离不开建筑的图形表达。建筑师利用草图在设计前期的构思阶段演奏建筑这一凝固音乐的序曲,可以说它实际上能最“纯真”地表达设计观念,并提供建筑师有益的联系,富有情趣和朦胧诗意的草图本身就是一项“建筑作品”,历史上如辛克尔、柯布西耶、罗西等的构思草图都是很好的例子。随着专业分工的细化,建筑师在很多情况下不再参与设计最终的图纸制作,而把它委托给专职的表现公司和个人,由他们来协助建筑师完成设计成果的最终表现。随着信息技术和建筑业的发展,电脑图像的艺术魅力和实用价值越来越受到全社会的关注,与其他种类的建筑表现手段相比,电脑建筑表现以设计图为依据,以其独特的美学品质,在透视角度的选择上,在基调和节奏的确定上,在光影、色彩、材质、形体、立面划分、细部刻画、建筑与周围环境整体性的表达及配景处理上,都有明显优势,它能以清晰准确、较为客观逼真的图景反映建筑师的设计意图,达到古人所说的“真境逼”境界,为业主、开发商或政府部门的决策提供形象依据。尤其是动画表现,在建筑空间的表现中注入了时间的节奏,表达建筑空间环境可居可行,可游可观的真实场景和体验价值,使人可以俯仰自得、徜徉在现实与梦境之中。

无疑,电脑建筑表现在对建筑真实性和精确性的表达上有很大的优势,然而建筑表现还要注重建筑空间环境整体的意境的渲染与营造,即“建筑意”的表达,不仅要“真境逼”,还要“神境生”。这就要求作者不仅要熟谙电脑技术,更要具备良好的建筑学以及绘画艺术方面的素养和品味。

本书是水晶石公司继1999年出版的《水晶石建筑表现1995-1999》后的又一成果展示,收录了近两年该公司在电脑建筑表现方面的新作,从中我们不仅可以看到水晶

Forword

By Wang Lu

June 30, 2001

Architecture painting is the basic method for an architect to show his design intention and to communicate with the owner. Just as what Mr. Wang Guoyu said: it is a tool to say words by painting, express facts with abstracts. Unlike a pure artistic work, architecture painting is a combination of art and technology, which not only requires the architect to polish the space and the structure, but also to have a logical thought. The architecture painting has existed for a long time. The "Jie Mian" (interface) in ancient China is actually a kind of architecture painting, while the perspective principle was firstly introduced into the architecture painting in the early times of Revival of Learning in Florence. Bruneueschi was the first to show three-dimension results with two-dimension space on the architecture drawings.

There are many kinds of architecture expressions, including variety of architecture paintings besides models. Each method has its own characteristic on treating the tone, sense of reality, environment color, light shadow, and structure and space character. With the progress of the society and development of the technology, the architecture painting has also developed into the computer drawing from the application of pencil, pen, brush pen, air brush and Mark pen.

Architecture design is a process that includes conception, polishing, modification and perfectly expressing the design intention. The graphic mode is of great importance in this process. The conception is developed by the architect with sketch drawing in the early stage of design, which starts the prelude of the solid music he architecture.

It can show the design conception in the simplest way. The romantic and poetic sketch is an "architecture work" itself. The conception sketches made by F-Schinkel, Le Corbusier, Aldo rossi were all good examples in the history. With the further division of the specialty, the architects in most situations would not participate in making the final design drawing while entrusting it to professional companies and persons, who can assist the architect to fulfill the final work. With the development of information technology and architecture industry, the artistic fascination and practical value of the computer image has caught more and more concerns from the society. Compared with other architecture expression, computer expression has obvious advantages on the choice of perspective angel, the decision of keynote and rhythm, the harmony of light, color, material, figure, space division, architecture and environment, based on the design drawing with its unique aesthetics character. It can reflect the design intention with a clear and objective prospect and get a vivid result, which can provide an image basis for the decision making of clients, developers or government organizations. Especially the animation expression, it is endowed with a time character in the space expression, which shows the dynamic actual scene and value, and makes you roam between the reality and dream.

It is no doubt that the computer architecture expression has a great advantage on the expression of the reality and accuracy of the architecture. Nevertheless, the architecture expression also attaches great importance on producing and exaggerating the integrated space environment and artistic conception, i.e., the expression of "architecture conception".

石公司在电脑图像表现方面作出的不凡成就,也可以从一个侧面看到我国近两年来在建筑创作领域百花齐放、百家争鸣的大好局面。世界没有其他任何一个国家象中国这样在世纪转折的这两年,在城市建设和建筑创作领域发生如此巨大的变化,也没有任何一个国家象现在的中国这样,在建筑舞台上演出如此丰富多彩的剧目。从该书中我们还不难看出,中国建筑师正在不断走向自信,水晶石公司也在不断地探索中稳固地发展。

在中国建筑界,人们对水晶石这一名字已不陌生,它以清新脱俗的品味已越来越获得建筑师的认同和赞赏。他们不仅在电脑建筑表现上不断探索并尝试着新的方向,还积极参与各种建筑活动,如2000年的“水晶石杯”大学生设计竞赛, FAR 2000网站建设等都在国内引起很大反响,为活跃中国的建筑学术起到了良好的推动作用,现在他们又在迈向新的目标。

古人云:“有境界则自成高格”,水晶石,并非因为其名字的华美,而是以其作品清新自然的品格,以其不断探索生发的激情和底蕴向更高的境界迈进。祝水晶石为中国建筑未来描画出更加美丽的风景。

王石

2001年6月30日

It not only shows the appearance, but also the spirit, which requires the designer to be familiar with computer technology as well as the architecture and graphics arts knowledge.

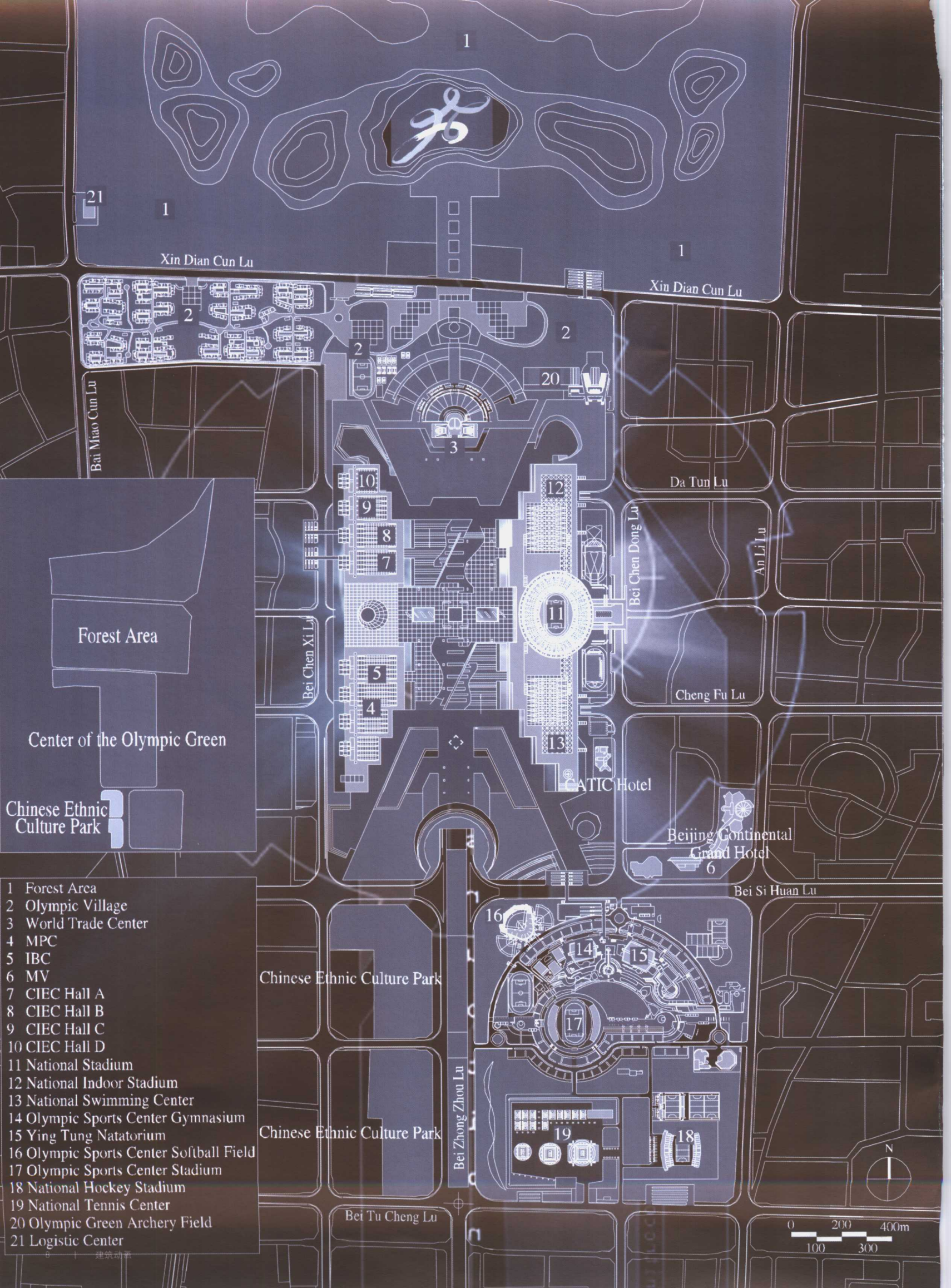
This book is another achievement following the book of "Crystal Architecture Expression" published in 1999 by Crystal Company, which incorporates the new products on computer architecture expression in recent years. We can not only have a glimpse at the outstanding achievements on the computer image expression by Crystal Company, but also feel the prosperous and competitive atmosphere in the architecture field in recent years in China. Not any other country in the world has experienced such a huge change in the city construction and architecture fields like China in the turning of the century, and not any other country like China has given such a rich performance on the architecture stage. We can easily draw a conclusion that China architects are gaining more and more confidence and Crystal Company is steadily developing in the process of exploration.

In China architecture field, Crystal is not strange to the insider. It has gained more and more reputation with its fresh and elegant taste. It not only insists on seeking and trying new method on computer architecture expression, but also actively participates various architecture actions. For example, the "2000 Crystal Cup University Students Design Competition" and Far2000 Website Construction caused a great influence in China, which played an active role in China architecture science. Now it is marching to a new target.

There is a Chinese Saying: "the Noble Personality Produced from High Target". Not only having a splendid name, Crystal, is stepping to the higher level with its fresh and natural character. Wish Crystal become a brilliant star to shine on the sky of China Architecture and draw a more beautiful scene for China Architecture.

ANIMATION

建筑动画



1

Xin Dian Cun Lu

Xin Dian Cun Lu

Bai Miao Cun Lu

Da Tun Lu

Bei Chen Dong Lu

An Li Lu

Cheng Fu Lu

CATTC Hotel

Beijing Continental Grand Hotel

Bei Si Huan Lu

Chinese Ethnic Culture Park

Chinese Ethnic Culture Park

Bei Zhong Zhou Lu

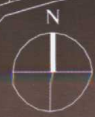
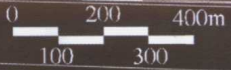
Bei Tu Cheng Lu

Forest Area

Center of the Olympic Green

Chinese Ethnic Culture Park

- 1 Forest Area
- 2 Olympic Village
- 3 World Trade Center
- 4 MPC
- 5 IBC
- 6 MV
- 7 CIEC Hall A
- 8 CIEC Hall B
- 9 CIEC Hall C
- 10 CIEC Hall D
- 11 National Stadium
- 12 National Indoor Stadium
- 13 National Swimming Center
- 14 Olympic Sports Center Gymnasium
- 15 Ying Tung Natatorium
- 16 Olympic Sports Center Softball Field
- 17 Olympic Sports Center Stadium
- 18 National Hockey Stadium
- 19 National Tennis Center
- 20 Olympic Green Archery Field
- 21 Logistic Center





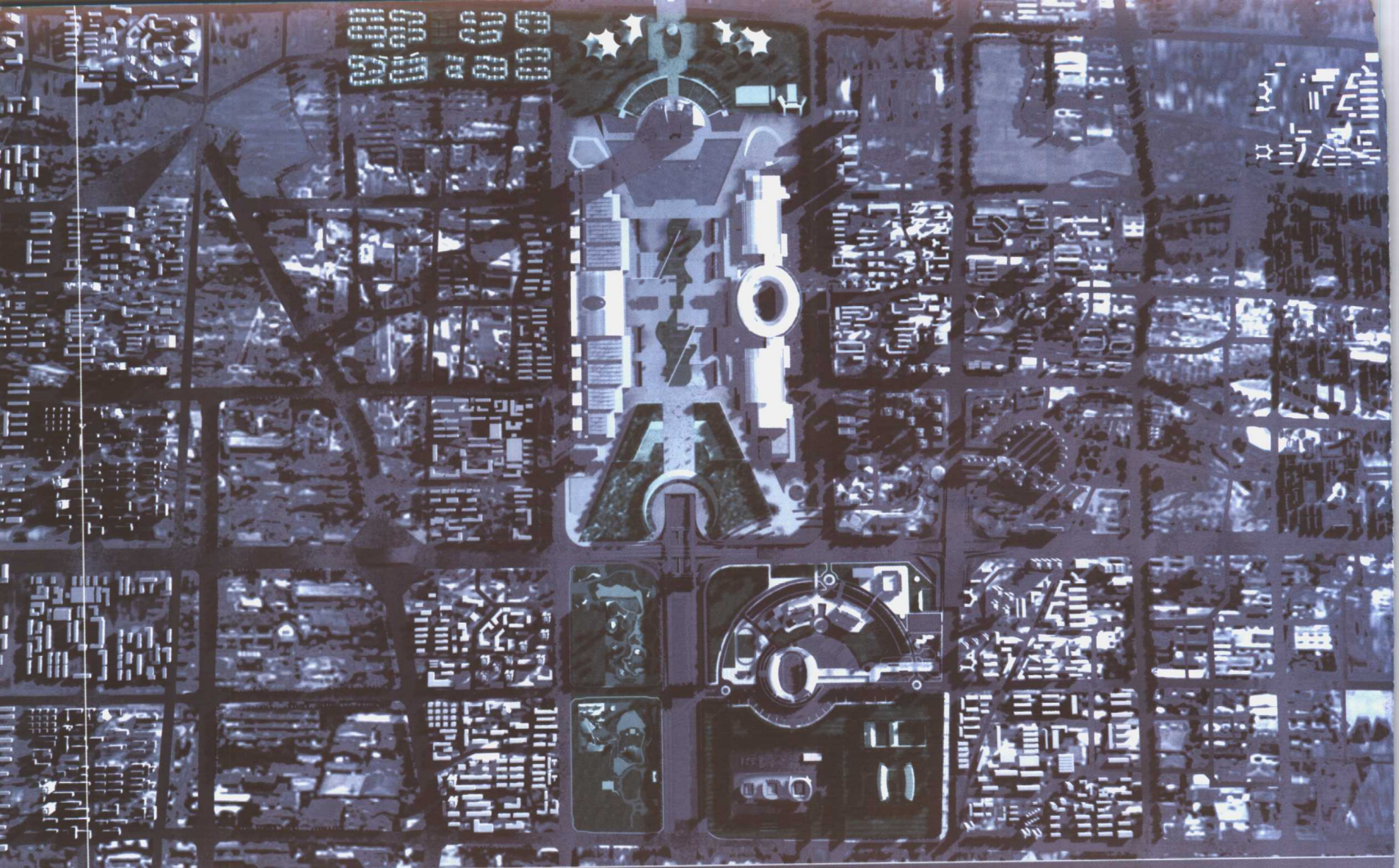
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片 长：4' 50"





ANIMATION

为申办2008年奥运会，北京市奥申委明确提出了“新北京、新奥运”(New Beijing Great Olympics)的申办口号，并希望通过一个崭新的奥运场馆规划方案展示未来远景、体现城市综合实力。

在申奥工作的三个重要阶段，即2000年悉尼奥运会的申奥国家展示会、2001年2月国际奥委会评估团对北京的考察、2001年7月莫斯科表决现场，北京奥申委都需要向国际奥委会和公众充分展示北京未来的城市形象和场馆方案。为此，在短时间内高水平地完成未来场馆的三维动画，成为一个重要和紧迫的任务。北京市奥申委经过挑选比较和考察，确定水晶石电脑图像公司为奥申委指定三维图像开发商，并独家承担北京2008年奥运场馆的三维动画制作，以配合奥申委在各个不同阶段的宣传工作。

由于在1993年的申办过程中，场馆三维动画制作完全委托境外公司完成，因此在本次制作中水晶石的动画团队承受了巨大的压力——即必须在短时间内达到要求极高的制作水平。经过15天的紧张工作和与奥申委工程规划部的反复沟通，第一阶段长达5分钟的动画作品于2000年9月完成。在随后的悉尼奥运会期间，北京代表团在发布会上公开放映本片和另一部由张艺谋执导的文化宣传片，取得了良好的效果。其中三维动画的制作甚至引起日本大阪代表团的兴趣与关注。

2001年2月，国际奥委会评估团在北京饭店观看了水晶石制作的第二部三维动画片。2001年6月，第三阶段与北京电视台配合的三维动画片完成。至此，水晶石公司在申奥三个阶段的工作划上了圆满的句号。

在整个过程中，由于时间紧迫和自身的局限，制作团队对完成的作品一直抱有深深的缺憾，因而也更加意识到，水晶石发展的过程永远是学习的过程，创新与技术进步将永无止境。

- 1 | 中心区鸟瞰
- 2 | 场馆分布图
- 3 | 从运动员村看世贸大厦
- 4 | 中心区全景鸟瞰

Xin Dian Cun Lu



北京申办2008年奥运会场馆规划





与巴黎、多伦多不同，北京的奥运场馆“大部分到目前为止还只是存在于虚拟的计算机图纸上”（美联社评论），但在政府财政支持的情况下，北京的优势也在于此——可以保证7年之后的场馆设施的先进性。因此，模拟未来场馆的三维动画片必须有令人信服的真实感。为此奥申委对三维动画提出了具备真实感和视觉冲击力的技术要求，使本片定位于写实风格，并考虑北京传统形象（如天安门广场和中轴线）与未来奥运中心区在视觉上的联系。