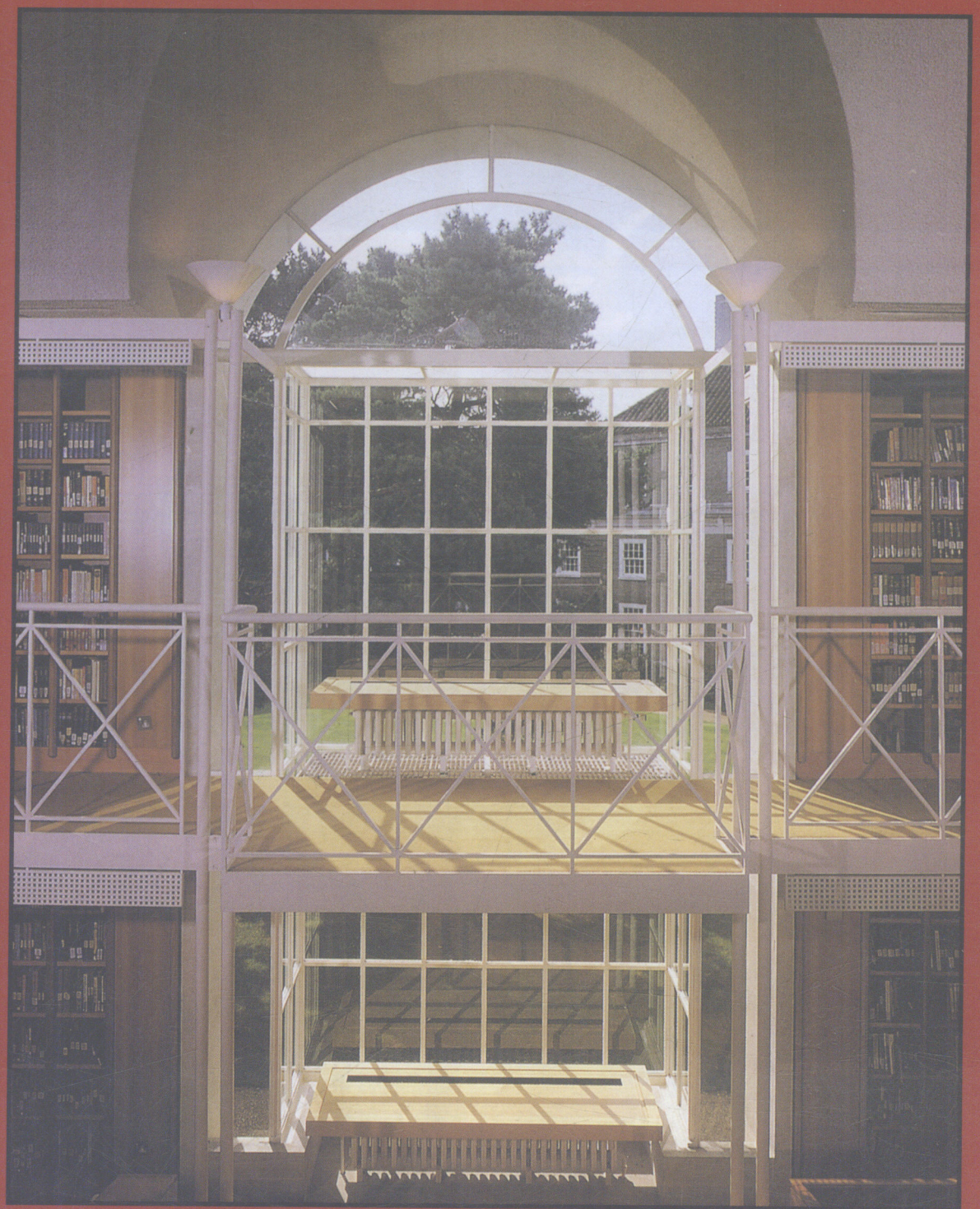
世界建筑大师优秀作品集锦

THE MASTER ARCHITECT SERIES

ARUP ASSOCIATES

阿鲁普联合事务所



中国建筑工业出版社

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Selected and Works

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阿鲁普联合事务所

王剑译

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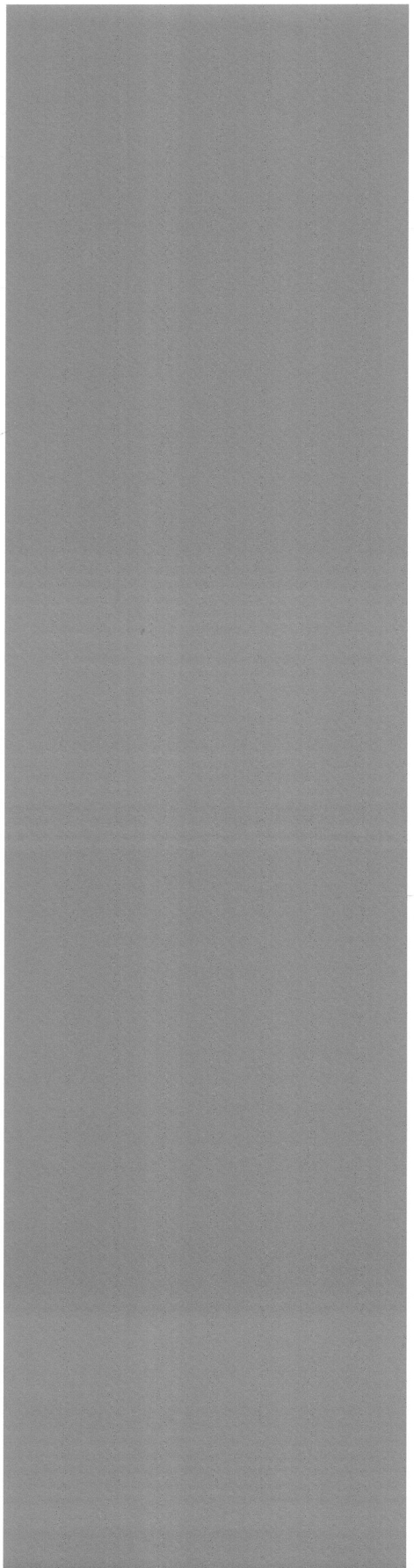


Introduction

导　言

Arup Associates — Five Perspectives

阿鲁普联合事务所—五位专家的评述

我们所建造的作品应该是一个整体，一个统一体，而设计工作很大程度上就是要赋予它作为艺术作品的整体性和完美性。

奥夫·阿鲁普强调整合所有设计相关决策使之一体化的必要性，从而为设计工作开创了独特的视角和方法。他倡导配合默契的小型设计团队，在共同的空间中连贯地开展工作。他相信这样的工作模式可以使得团队成员相互学习和汲取彼此的特长，在这样的条件下，所谓的领导力问题几乎不存在，每一个人都能领导着自己的方向……甚至所谓的专业界限也将消失。

这就是阿鲁普联合事务所1963年成立之际所秉承的原则。随着建筑物变得越来越复杂多变，工程建设者需要了解更全面更广泛的信息，不仅仅是设计事务，还要包括规划、建造、法律、工程技术、环境景观、成本控制和合同管理。因此，随着工程实践的需要，以多学科交叉的小型团队为主体的工作组织模式得到发展。这种团队包括建筑师、结构工程师、环境工程师、预算师和室内设计师等等。设计团队可以在从前期规划、初步设计的形成一直到工程资料的准备和最终决算的全过程保持与用户的直接沟通。

这样的设计工作模式成功地迎合了环境和人类的需要，同时也融合了技术进步带来的益处，本书中详尽介绍的这些工程项目就是实例。

工业建筑、实验室建筑和科研设施的设计经验使阿鲁普联合事务所相信在结构的整体性设计和建造过程自有的理性次序有特别的关联。这种关联在早期的工程如CIBA有限公司和埃沃德有限公司的工厂项目中得到发展，在后来的伯明翰大学采矿和冶金学院工程的设计中得到升华——这一项目采用垂直相交的单元，使设备管线可以清晰连贯地布置在结构板层中。这样的设计来源于对建筑功能的独到见解，来源于对结构设计、管线布置和施工技术这三者的系统把握。

What we build should always be a whole, an entity, and the job of designing it is very much the job of giving it the wholeness of a work of art and the inevitability of the perfect tool.

In emphasising the need to integrate all of the design decisions relating to a project, Ove Arup inspired a very particular view of design and a way of working. He advocated small, closely knit teams of designers, all working in the same space and having a continuity of work on a few jobs at a time. It was a way of working that he felt could enable the team to learn from and appreciate each other's unique qualities and where "the question of leadership need hardly arise, each member taking the lead in his own subject . . . even the professional demarcations may fall away".

It was this philosophy that was enthusiastically adopted as the basis for the foundation of Arup Associates in 1963. As buildings have become more complex and varied, so those who commission them need more comprehensive advice, not only in matters of design, but also in planning, construction, law, engineering, environmental servicing, cost control and contract management. Consequently, the practice has developed the skills and organisation to tackle design projects within a framework of small, multi-disciplinary teams that include architects, structural and environmental engineers, cost estimators and interior designers. Those design teams work directly with the client from the development of the brief and formation of initial design responses to the preparation of production information and the settlement of the final account.

This is a way of working which, as the projects illustrated in this book so clearly demonstrate, has successfully developed ideas that are sensitive to the environment and human needs, yet which also obviously profit from technological innovation.

Experience in the design of industrial buildings, laboratories and research facilities encouraged a particular concern within the practice for the integration of structure and the rational order established by the building process itself. These concerns, developed in early projects such as those for CIBA and Evode, were subsequently refined in the design for the Department of Mining and Metallurgy at the University of Birmingham. This design was planned on a tartan grid within which routes for the distribution of services were clearly designated between a series of structural tables. The form of this project was based on a framework that grew out of detailed studies of building uses and highly original interpretations of the systems of structure, servicing and construction.

阿鲁普联合事务所随后的作品也都建立在这样的基础上，在教育机构和其他类型建筑的设计中继续努力地改进工作空间的布局，使这种系统化思想得以实现和发展。

20 世纪 60 年代晚期，阿鲁普联合事务所参与了拉夫伯勒大学的规划和其中一些单体建筑的设计，另外，还承担了诺丁汉的地平线项目的设计，这些项目的设计进一步发掘了正交建筑单元的潜力。设计师们把这些建筑分割成一系列的样图和模型，精确细致地标定和描绘建筑的部件和拼接。新式的施工技术与设计得到了密切的结合，保证这些规模巨大而复杂的工程在短时间内以得以高水平的设计与完成。

在设计新的市政、公司、办公建筑的过程中，设计师们也开始考虑如何将理性的系统化思想和由当地环境、城市架构等因素决定的个性化需要统一起来。公司总部建筑的设计，例如杜鲁门有限公司、英国中央电力局（CEGB）、伦敦劳埃德保险公司查莎姆总部、威金斯·特普、IBM 英国有限公司等等，都创造性地消除了体系和环境之间的原本显而易见的冲突。

经过 15 年的发展，这些得益于我们多学科团队协作工作模式的设计作品，转变了人们对办公工作空间和建筑形态的看法。在这些项目中，建筑结构不仅仅是定义室内外空间，还要与周边环境相融合。场地规划和定位的概念得到发展，并融合在建筑外观和构造细节之中。因此，在杜鲁门有限公司、英国中央电力局、伦敦劳埃德保险公司、盖特威 1 号楼等项目中，可以看到结构开间和建筑构造是开放的，可以清晰地分隔使用空间和设备管线区域。同时，杜鲁门有限公司和伦敦劳埃德保险公司查莎姆总部的设计与城市的轮廓相协调，英国中央电力局、盖特威 1 号楼则改善了城郊的自然景观。

The subsequent work of Arup Associates built on this remarkable foundation. Designs for educational institutions and for other clients keen to improve the design of the workplace, enabled those systemic approaches to be developed and refined.

During the late 1960s, the master plan for a new university at Loughborough, followed by proposals for new buildings there, and for the Horizon Project in Nottingham, further explored the potential of the tartan grid. The designers dissected those buildings in a series of drawings and models, identifying the components and plotting their assembly with painstaking precision. This unusual concern for the making of buildings, combined with innovative construction techniques, made these large and complex projects realisable in a short time and to unusually high standards of design and finish.

The problems of designing new corporate offices encouraged the same designers to consider how best to realise the benefits of this rational systemic approach while at the same time responding to the particular requirements of sites within sensitive natural landscapes or the dense fabric of cities. The design of new headquarters buildings for corporate clients, such as those for Truman Ltd, CEGB, Lloyd's of London at Chatham, Wiggins Teape or IBM, demonstrated highly original resolutions to the often apparently conflicting demands of system and setting.

Developed over a 15 year period, the designs of these projects, clearly inspired by the collaborative efforts of the multi-disciplinary team, transformed attitudes about the nature of office workspace, building form and envelope. In these projects the structure of the building not only defines inside space and outdoor room, but has also been designed to incorporate concepts of environmental design. Ideas about site planning and orientation have been developed to inform both building configuration and tectonic detail. So at Truman Ltd, Lloyd's of London, CEGB and Gateway 1, the structural bay and building fabric are exposed so as to clearly define places to work, to create spaces for services and to be thermally responsive. At Truman Ltd and Lloyd's of London at Chatham, these systems have been ordered to reveal traces of the city and sensitively repair urban sites; the designs for the CEGB and Gateway 1 reinstated natural landscapes on the suburban edge.

这些对解决体系和环境之间冲突的尝试影响了设计规划，影响了与室内和户外空间的布置，影响了材料选择和外部装饰设计。这些来源于实践的想法尝试性而又周密地应用在后来的一些作品中，例如，勒瑟和戈德温项目，Legal & General 规划，皇家人寿保险公司和劳埃德银行项目等。

阿鲁普联合事务所在保护修复古建筑和建造演出场所方面做了许多贡献，例如，第一个作品就是为作曲家本杰明·布里顿建造的莫尔丁斯音乐厅。另外还有亨利·伍德音乐厅、格拉斯哥苏格兰歌剧院和布克斯顿歌剧院等等，都是将原有的古建筑修复投入使用，这些为数众多的重要工程，都体现了兼顾现代技术需要和古建筑保护的设计技巧。在东英吉利亚大学，阿鲁普联合事务所承担了音乐学院新建筑的设计。这些设计技巧在更晚一些的作品中得到进一步发展，如伦敦大英帝国战争博物馆的分期开发，在竞赛中获奖的伊斯坦布尔新文化中心的设计方案等。

阿鲁普联合事务所承担过许多大型的工程开发项目，例如，在伦敦市中心一块 3.2hm^2 的土地上设计新的大型金融中心，在伦敦机场附近一块约 140hm^2 的荒地中建造新的国际商业区等等。这些大型工程越来越要求设计团队在原有的多学科背景的基础上，进一步拓展专业范畴和视野。地质工程师、交通规划师、考古学家、景观建筑师和建造专家都被吸纳到设计团队中，为城市设计发展了一系列新概念。

这样的设计思想也对欧洲一些大型工程项目开发产生了深远的影响。在法国、匈牙利和德国的一些新的商业区的设计方案中，都考虑了场地、景观、建筑设计的贯通，创造性地将公共和私人用途一体化。

These explorations of the areas of conflict between system and setting have influenced the geometries of plan; the formation of outdoor spaces to link the wider context with the indoor room; the materials used; and the design of responsive external skins. The ideas contained within the designs of these projects were tested in use and thoughtfully developed in subsequent schemes for Leslie & Godwin, Legal & General, Royal Life and Lloyds Bank.

At the same time, Arup Associates were making an outstanding contribution to the restoration of historic buildings and the creation of new spaces for music and performance. The Maltings Concert Hall, designed for Benjamin Britten, was the first of many important projects that established within the practice skills to create design that combined modern uses with the restoration of historic buildings. Designs for the Henry Wood Hall, the Scottish Opera in Glasgow and the Buxton Opera House all restored historic buildings and returned them to use, while the Music School added new buildings to the campus of the University of East Anglia. More recently these skills have been extended in the designs for the phased long-term development of the Imperial War Museum in London and the competition-winning scheme for the new Cultural Centre in Istanbul.

Commissions to design a large new financial centre at Broadgate on a 3.2-hectare site in the heart of the City of London, and the creation of a new international business community at Stockley Park on 140 hectares of contaminated land near London Airport, generated an increasing interest in gathering a broader range of skills in the multi-disciplinary team. With the collaboration of geotechnical engineers, transportation planners, archaeologists, landscape architects and construction specialists, new ideas and concepts in urban design have been developed.

This experience has led to an increasing involvement in the design of large and complex projects, several in Europe. Proposals commissioned for the design of new business communities in France, Hungary and Germany integrate public and private uses in innovative plans for site, landscape and buildings.

在早期的利物浦、利雅得、古德伍德、温特沃斯等地的体育建筑项目中取得成功后，近年来我们也致力于建造新的运动场馆。在柏林和曼彻斯特，这些大型建筑项目被当作是城市大规模改造的催化剂，它们用于举办国际的体育赛事。这些项目的建造体现了开发商和建造商的密切合作，他们都设想了巧妙的方案，使得这些新的体育建筑能够在城市的改造中发挥独到的作用。南非约翰内斯堡为 1995 年世界杯橄榄球赛所建造的城市体育场就使得市区的重要地段焕然一新。

以上罗列的建筑设计和规划范畴广泛，都很好地体现了我们的设计师的技巧和他们多学科协作工作模式的优越。奥夫·阿鲁普将建筑定义为“使人们心灵愉悦的营造手段”。正是这种思想持续促进着阿鲁普联合事务所设计人员与客户之间的协作和沟通，而客户给我们的评价也最好地体现了这种协作。

布赖恩·卡特
阿鲁普联合事务所

Following the success of earlier projects for sports buildings at Liverpool, Riyadh, Goodwood and Wentworth, the practice has also recently developed proposals for new stadia. Planned to act as catalysts for the larger scale urban regeneration of extensive sites in Berlin and Manchester, these projects were prompted by plans to host major international sporting events and were developed in close collaboration with developers and builders. They each outline ingenious ways of integrating large new sports buildings with a mix of other uses to reconstruct the city. A new urban stadium designed to provide facilities for the 1995 Rugby World Cup while also regenerating an important segment of the city, is currently under construction in Johannesburg.

This broad range of outstanding work in the design of building and city emphasises the skills of these particular designers and the significance of their multi-disciplinary approach. Ove Arup defined architecture as “a way of building which delights the heart”. It is that vision which clearly continues to inspire the commitment and collaboration of designer and client at Arup Associates. The responses of our clients that follow vividly describe the nature of those collaborations.

Brian Carter
Arup Associates

斯坦霍普房地产开发公司（Stanhope Properties PLC）

阿鲁普联合事务所将品质视为设计作品的生命。但这究竟意味着什么呢？怎么样才算高品质的设计？不同的人会有不同的看法。对于一些人来说，这纯粹取决于建筑的立面；而对另外一些人，他们可能关心的是建筑物内部的人体工程学细节，或者是建筑物使用的效能，或仅仅是大理石和花岗石的数量。从一个专业开发商的角度来说，他关心的是价值和价格的关系，用户需要、美学、投资者期望和建筑功能之间的平衡。对于开发商，高品质设计就是将这些通常冲突的需求、约束和影响协调和一体化。

阿鲁普联合事务所采用的多学科协作的团队工作模式，使得涉及广泛范畴的不同学科能够非同寻常地默契配合。他们的工作方式——整个团队在共同的空间中工作，团队内部经常性的互相批评和热烈讨论，特别有助于开展创新性的工作。他们处理问题的方式往往大大领先于潮流，例如更有效地使用材料和能源。这些团队积累的经验和信心使他们能够很快地对复杂问题做出可靠的判断。他们的作品看似简单，但由于将结构工程和环境工程的设计与建筑学融合成了一体，往往能一下子解决一大串问题。

阿鲁普联合事务所的作品的另一个与众不同之处是他们设计中体现出的人性化。他们竭力避免使建筑仅仅成为一个符号，而是努力使城市具有更加持续的品质——这正是战后的英国大多数城市所不幸缺少的。斯托克利园区和布鲁德门就是很好的例子，在伦敦的修复和重建中它们是两个主要部分。新颖的总规划起步于对户外空间的设计，然后才是对实体建筑的设计，从而使得内部和外部空间协调，形成一体化的环境。

这样复杂的工程项目对设计者以及所有相关的人来说都会是一个严峻的考验。很好的例子就是现在被认为是欧洲领先的斯托克利商业园区。阿鲁普联合事务所的多学科协作的团队工作模式在这样的情况下大放异彩。建筑学、规划、景观设计、征用土地、污染控制、土木工程等等学科，在同一个对商业区概念的重新诠释之下被联合在一起。这保证所有项目在非常严格的预算和时间约束下完成。没有他们的技能、智慧、想像力和专业水准，斯托克利园区项目是不能取得今天这样的成功的。

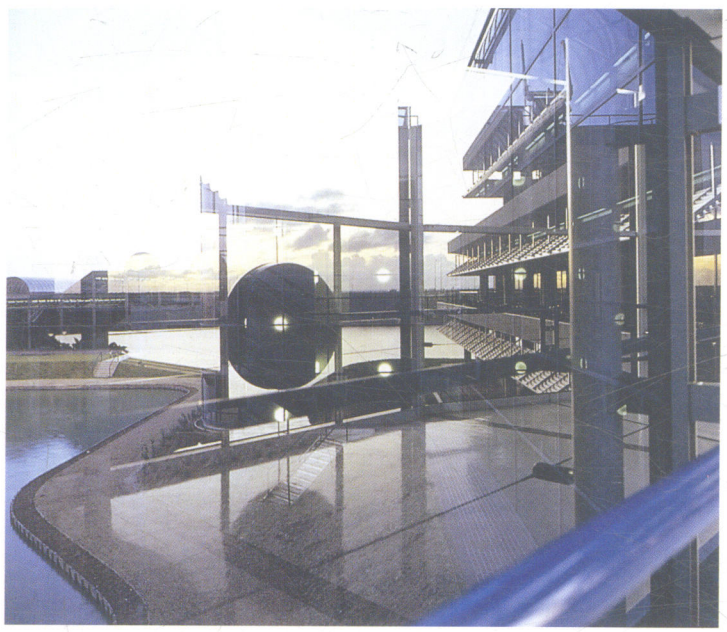
卓越的结果只能通过在所有日益复杂和漫长的研究、规划、设计和建造过程中不断追求完美得到。高品质不是随意可得，也不可能永久保证。它和技巧、理念和管理有关。阿鲁普联合事务所的作品一贯体现了这种理念。他们的设计提供了美观和恰到好处的环境，促进了人与人之间的交流，同时又符合所有的技术要求：这些都是了不起的成就。

文森特·王（Vincent Wang）
斯坦霍普房地产开发公司董事

Such complex projects test to the limit the competence of all involved and provide the acid tests of excellence in the design process. Nowhere is this more apparent than at Stockley Park, now widely acclaimed as Europe's leading business park. Arup Associates' multi-disciplinary approach shines under such circumstances. Architecture, master planning, landscape design, land reclamation, pollution control and civil engineering had to be combined with an understanding of what was then a new property concept — the business park — all to be delivered against a very challenging budget and timescale. Without their skills, ingenuity, imagination and sheer professionalism Stockley Park would not have become the success it is today.

Excellence in the end result can only be achieved by excellence in all the increasingly complex and lengthy processes of research, planning, design and construction. Quality is not an optional extra, and can never be bolted on afterwards. It is, rather, a question of skill, commitment and loving care. Arup Associates' work consistently manifests an understanding of this concept. Their designs provide beautiful and appropriate environments and promote good personal interaction, at the same time meeting all the requisite technical demands: these are huge achievements.

Vincent Wang
Director, Stanhope Properties PLC



IBM（英国）有限公司

从我们在英国开展业务的初期起，我们就一直和阿鲁普联合事务所保持着合作关系。而同时，阿鲁普联合事务所也在英国逐步成长为建筑业的知名品牌。

追溯过去，曾经有一段时期，IBM 取得了空前的增长，为了适应日益扩大的业务规模，我们计划在英国建造新的制造基地，还计划寻找一个合适的地方建造公司总部以代替当时在伦敦市中心租赁的写字楼。

我们在英格兰的南部买下了两块大面积的土地，以满足这两个需求。一块在哈万特，后来建造了我们庞大的制造工厂；另一个地方则建造了公司的英国总部，可以容纳 3000 人办公。在它们的建造过程中，我们一直坚持和我们认为有着创新精神和独特活力的团队保持协作，从而顺利地完成了这些工程的设计和建造。

为了说明这种协作的重要性，我必须强调商业公司在这种大规模建设项目的运作中可能面临的种种风险。巨大的花费都来源于公司过去积累的利润，而我们必须委托外部的公司贯彻我们对建筑的理解和期望。

我们也不能低估问题的复杂性。举个例子来说，有一些复杂的生产车间，他们的生产任务经常会改变，因此就要求空间开阔且可以随时变换设置，以适应新的生产流程。另一个例子是，公司总部在其建筑的使用寿命期内，容纳的办公人员的数量和要求都可能发生很大的变化。

位于哈万特和北港的这两块土地本身的特点也需要特别的解决方案，它涉及到十分复杂的场地土壤条件、土地的征用、交通、周边环境和对景观的重新规划等等。工程师必须和建筑师携手合作解决这些问题。

除此之外，我们还希望我们的场所能够得到可持续的发展，建筑可以适应不断变化的要求，空间适于工作而且有很高的利用效率。阿鲁普联合事务所和我们一起，分析和完成可行性方案、总体规划和具体设计，使我们的期望得以顺利实现。

我们位于北港的公司总部使用的土地是填海而成的，阿鲁普联合事务所采用了先进而复杂的荷兰技术填筑出这片土地，使它达到开发要求。而今天我们漫步在漂亮的建筑和景观之中时，也许根本就意识不到当初在这片土地上所付出的巨大艰辛。这就是对我们的开发伙伴阿鲁普联合事务所的智慧的最好赞誉。

哈万特和北港项目都获得了奖项。在这些建筑里工作的人们、参观和访问过它们的人尤其是我们的顾客，都对它们十分赞赏，因为这些建筑给他们创造了舒适的环境。这样的成绩应归功于建设过程中的坚韧不拔和不断创新，特别是建筑师、工程师和其他学科人员相互协作的团队精神。作为客户，我们对此结果也十分满意。

彼得·温格瑞夫（Peter Wingrave）
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More than that, however, we wanted sites where development could grow logically; buildings that could respond to ever-changing requirements; and spaces that would be both efficient and a delight to work in. Arup Associates worked with us to analyse and devise feasibility plans, master plans and designs that would allow us to grow and expand logically without detriment to everything that had gone before.

Our headquarters site at North Harbour was reclaimed from the sea. Incredibly complex Dutch techniques were adopted by Arup Associates to reclaim the land before it could be developed. Today we are unaware of this tremendous effort when we stroll around the beautifully landscaped site. This is a credit to the ingenuity of our partners in this development.

The projects at Havant and North Harbour have won awards, and deservedly so; they have also won acclaim from all the thousands of people who have had the pleasure to work there, or pass through, in particular our many customers. All of this is due to the tenacity and ingenuity of the practice who conceived and created them, and in particular the tremendous teamwork between architects and engineers of all specialist disciplines and, of course, ourselves, the client. We commend the result.

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