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SPECIALISTIC ENGLISH FOR ARCHITECTURE,

普通高等院校建筑专业『十一五』规划精品教材

Architectural Professional Textbooks for the 11th Five-Year Plan

Specialistic English for Architecture,
Planning and Landscape

建筑专业英语

主编 郑启颖
主审 仲德崑

PLANNING AND LANDSCAPE

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建筑专业英语

Specialistic English for
Architecture, Planning and Landscape

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内 容 提 要

全书分为建筑、城市规划、景观设计三大部分，每部分选材涵盖该专业所涉及的主要内容。理论部分侧重基础知识，巩固基础；案例部分力求反映最新的设计思潮，开阔视野。教学模块及特点：课文正文附有主题句中文导读，便于快速了解文章主旨；词汇采用英英注释，且在当页出现，无需翻找，方便阅读；课后所附相关练习有选择题、英译汉等题型；不设全篇译文，避免产生中文依赖。每章包含课文三篇及相关拓展内容一篇（以完形填空的形式呈现）。同时，还附有专业术语中英文解释以及练习答案。光盘附电子版课文和大量图片及演示文档等。

由于书中设有中文导读，阅读查找方便；书后附专业术语中英文解释；光盘部分案例丰富，附大量图片。因此，本书适用于普通高等院校建筑类、城市规划类及环境艺术类、设计类等院系使用，也可供建筑师、城市规划师、景观设计师以及相关从业人员阅读参考。

总 序

《管子》一书中《权修》篇中有这样一段话：“一年之计，莫如树谷；十年之计，莫如树木；百年之计，莫如树人。一树一获者，谷也；一树十获者，木也；一树百获者，人也。”这是管仲为富国强兵而重视培养人才的名言。

“十年树木，百年树人”即源于此。它的意思是说，培养人才是国家的百年大计，既十分重要，又不是短期内可以奏效的事。“百年树人”并非指100年才能培养出人才，而是比喻培养人才的远大意义，要重视这方面的工作，并且要预先规划，长期、不间断地进行。

当前我国建筑业发展形势迅猛，急缺大量的建筑建工类应用型人才。全国各地建筑类学校以及设有建筑规划专业的学校众多，但能够做到既符合当前改革形势又适用于目前教学形式的优秀教材却很少。针对这种现状，急需推出一系列切合当前教育改革需要的高质量优秀专业教材，以推动应用型本科教育办学体制和运作机制的改革，提高教育的整体水平，并且有助于加快改进应用型本科办学模式、课程体系和教学方法，形成具有多元化特色的教育体系。

这套系列教材整体导向正确，内容科学、精练，编排合理，指导性、学术性、实用性和可读性强，符合学校、学科的课程设置要求。教材以建筑学科专业指导委员会的专业培养目标为依据，注重教材的科学性、实用性、普适性，尽量满足同类专业院校的需求。教材在内容上大力补充了新知识、新技能、新工艺、新成果；注意理论教学与实践教学的搭配比例，结合目前教学课时减少的趋势适当调整了篇幅；根据教学大纲、学时、教学内容的要求，突出重点、难点，体现了建设“立体化”精品教材的宗旨。

该套教材以发展社会主义教育事业，振兴建筑类高等院校教育教学改革，促进建筑类高校教育教学质量的提高为己任，对发展我国高等建筑教育的理论与思想、办学方针与体制、教育教学内容改革等方面进行了广泛和深入的探讨，以提出新的理论、观点和主张。希望这套教材能够真实体现我们的初衷，真正能够成为精品教材，受到大家的认可。

中国工程院院士：



2007年5月

前言

本书涵盖三个紧密关联并相互渗透的专业：建筑学、城市规划与景观设计，知识结构清晰合理，理论体系力求完整。本教材立足专业，形式多元，练习设计有针对性，少而精；同时注重内容编排的科学性、实用性。课文设有中文导读，阅读查找方便；书后附有专业术语中英文解释；选材新颖，信息量大，光盘部分内容丰富，附有电子版课文和大量图片及演示文档等素材。本书适用于普通高等院校建筑类、城市规划类及环境艺术类等院系使用；可作为研究生的专业参考资料；也可供建筑师、城市规划师、景观设计师以及相关从业人员阅读参考。

本书从专业角度出发，理论部分侧重基础知识，巩固基础；案例部分追踪学科前沿，开阔视野。此编排方式意在帮助学生建构更为合理的知识结构，培养专业能力以便提高其综合素质。

通过对本书的学习，学生可以掌握相关的专业术语、常用词汇及常见的表达方式等；了解专业英语作为一种特殊文体，不同于一般英语表达的行文规律，如内容的学术性、逻辑性，措辞的科学性、严谨性等；使之能够在正确理解并且快速高效地获取相关专业信息的同时，具备一定的翻译能力和常规的交流技巧，以期促成专业英语课程的教学重点的方向性转变：由侧重“英语的”教学转向“专业、英语并重的”教学。

选材上力求权威和新颖，在丰富学生的专业知识背景、保证专业词汇量的同时，帮助学生了解国外学术信息、行业发展和当代英语特点，拓宽专业视野。由于专业和语言都总是处于一种动态的发展过程之中，需要不断的学习与更新，所以激发学习兴趣是十分必要的。本书为学生搭建了一个平台，借此同学们可以去接触和深入了解更多更新的专业信息。

本书形式立体化，由纸质与电子两部分组成；素材选择多样化，图文并茂，增强了可读性、可看性，以突出建筑类专业的特色。

本书共有三大部分，一般情况下可按两个阶段处理。第一阶段，可根据不同的主修专业，以其中的一个部分为教学重点作精读训练，建议每三周（6 学时）处理一章，以每周 2 学时计，16 周（32 学时）可基本完成一个专业的教学内容；第二阶段，建议有针对性地其他两大部分中选取与主修专业相关的主要内容作精读训练，其余作泛读训练以便拓展相关知识，大约需要 30 学时左右完成。本教材各章节专题内容即相互关联又相对独立，纸质与多媒体素材并行，方便教师在使用时根据不同教学对象、不同的学时要求和不同教学设计的需要灵活掌握。

参与本书编写的教师包括：广州大学建筑与城市规划学院郑启颖、林敏知（Section One: Architecture 第一部分：建筑学）；华南理工大学建筑学院王世福、魏

立华、戚冬瑾，长春工程学院建筑与设计学院孟光伟（Section Two: Urban Planning and Design 第二部分:城市规划）；华南理工大学建筑学院王世福、翁奕城、刘明欣，广州大学建筑与城市规划学院郑启颖、李希琳，东北林业大学土木学院宋海宏，哈尔滨工程大学建筑工程学院张毅（Section Three: Landscape Design 第三部分：景观设计）。

衷心感谢东南大学仲德崑教授在百忙之中抽出时间为本书担任主审工作，精心审稿，从教材的结构框架到素材筛选乃至细节设计等方面，提出了许多宝贵意见。

在编写过程中，编者查阅参考了大量的文献资料，在此谨向这些文献作者表示衷心的感谢。本书所选编的素材是供专业外语教学的载体，文中观点并不完全代表编者的学术立场。

本书的编写在内容和形式上都做了一些新的尝试，因受时间和编者水平所限，书中难免会有一些疏漏与不足之处，欢迎广大读者批评指正。

编 者

2007年8月

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SECTION 1:

ARCHITECTURE

1.1 Form Composition

形态构成

1.1.1 Transformation and Deformation^①

转型和解型

Architecture and construction, by their nature, undergo a constant process of physical transformation, from concept to drawings, and from drawings to buildings. Further, architects themselves are constantly under a process of transformation; they unavoidably exist between the multiple poles of reality and abstraction, of the man-made and the natural, of present and future. John Hejduk^② noted that a painter starts from the real world, and works towards abstraction; an architect works the opposite way. However, “a significant architect is one who, when finished with a work, is as close to that original abstraction as he could possibly be...”

建筑和建造本身就是一个不断转型的过程：从概念到图纸，从图纸到建筑。

Transformation is moulded by three major factors:

型的转变一般来自三方面的需要：

1. External Constraints

This refers to natural, environmental constraints imposed on a building, such as wind, topography^③, view, exposure, orientation, etc.

1. 外部条件；

2. Internal Requirements

This refers to conditions applied to a building, such as building code, planning issues, program requirements, budget, etc.

2. 内部需求；

3. Artistic Response

This refers to the ability, attitude and will of the architect in developing and manipulating built forms based on the above factors.

3. 艺术取向。

Throughout the 20th century, building form and configuration typically evolved out of a direct response at least the first two of these factors, based solely on

① This text is from Jia Beisi. *Architectonics of Modernism*, 1st Edition, Beijing: China Architecture & Building Press, 2003.

② Mr. Hejduk was Dean of the Irwin S. Chanin School of Architecture at the Cooper Union for the Advancement of Science and Art from 1975 until his retirement. He was an architect who largely abstained from conventional practice, and the bulk of his work consisted of theoretical projects, executed in the form of drawings that were combined into poetic, often highly personal narratives.

③ topography [tə'pɒgrəfi] *n.* the configuration of a surface and the relations among its man-made and natural features

programmatic conditions which could be quite restrictive, predictable and utilitarian^①. The overall transformation of an initially imagined solid “mass”, given a permitted number of incremental transformations which respond to optimum^② combinations of constraints, will generally yield mechanical results. The range of ultimate solutions will be virtually fixed, with only some subtle^③ differences. However, the transformation process introduced here will depend largely on the architect's interpretation or response of these constraints beyond a utilitarian approach.

Transformation, as Jorge Silvetti defined, “By transformation we mean those operations performed on the elements of a given existent code which depart from the original, normal, or canonical^④ usage of the code, by distorting, regrouping, reassembling, or in general altering it in such a way that it maintains its references to the original while tending to produce a new meaning.”

转型可以通过加法和减法, 或者一个型与另一个型的关联而实现。

Forms may be transformed through additive and subtractive processes, or through an association of one form to another. An additive design grows from an assemblage of identifiable units, and hence, has a perceptually dominant whole. Subtractive design, on the other hand, develops out of removing parts from a recognizable totality, and hence, it also has a perceptually dominant whole. In either case, the overall massing or image of the building form is massaged in a dynamic, continuous process until the desirable spatial quality is obtained. The resultant whole may or may not be identifiable as a derivative of the original.

转型可以从建筑原型开始, 这种模式的结构和秩序可能有其适用性和合理性。

A transformation may start from a prototypical architectural model whose formal structure and ordering of elements might be appropriate and reasonable, and to transform it through a series of discrete manipulations to respond to the specific conditions and context of the design task at hand. Transformation requires first that the ordering system of the prior, or prototypical, model be perceived and understood, so that through a series of finite changes and permutations^⑤, the original design concept can be clarified, strengthened, and built upon, rather than destroyed. As we have understood, Le Corbusier transformed the geometrical order of the Greek temple—its meaning, clarity, precision, implacable honesty, and economic severity—and incorporated these into his own buildings and ultimately the larger Modern movement. Le Corbusier and other Modernist architects also transformed the literal machine-character into

① utilitarian [juːˈtɪliˈtɛəriən] *a.* having utility often to the exclusion of values

② optimum [ˈɒptɪmə] *a.* most desirable possible under a restriction expressed or implied

③ subtle [ˈsʌtl] *a.* not easy to notice or understand unless you pay careful attention

④ canonical [kəˈnɒnikəl] *a.* appearing in a biblical canon

⑤ permutation [ˌpɜːmjʊ(:)ˈteɪʃən] *n.* the act of changing the arrangement of a given number of elements

machine-architecture, either for its superficial image or its deeper principle. Le Corbusier once elaborated on architectural standardization by taking a typewriter as an example. *"When the typewriter was invented, typing paper was standardized; this standardization had a considerable repercussion^① on furniture, it established a module, that of the commercial format ... this format was not an arbitrary measure."*

Exercises

I. Fill in the blanks with the correct answer.

- Architecture and construction, by their nature, undergo a constant process of physical transformation, from concept to drawings, and from _____ to buildings.
A. messages B. concepts C. drawings D. buildings
- Throughout the 20th century, building form and configuration typically evolved _____ a direct response to at least the first two of these factors, based solely on programmatic conditions that could be quite restrictive, predictable and utilitarian.
A. into B. in C. out D. out of
- Forms may be transformed through additive and subtractive processes, or through an association of one _____ to another.
A. idea B. color C. form D. image
- A _____ may start from a prototypical architectural model whose formal structure and ordering of elements might be appropriate and reasonable, and to transform it through a series of discrete manipulations to respond to the specific conditions and context of the design task at hand.
A. deformation B. information
C. transformation D. formation
- Le Corbusier and other Modernist architects also transformed the literal machine-character into machine-architecture, either _____ its superficial image or its deeper principle.
A. in B. at C. for D. with
- John Hejduk noted that a painter starts from the _____ world, and works towards abstraction; an architect works the opposite way.
A. illusory B. real C. fantastic D. colorful

II. Translate the italic sentences in the text into Chinese.

① repercussion [ˌrɪ:pə(ː)ˈkʌʃən] n. a remote or indirect consequence of some action

模度制

1.1.2 The Modulor^①

第二次世界大战中及战后, 欧洲急需建造大量住宅, 柯布西耶开发了一套比例体系以适应当时大量性生产标准化的需求。

柯布西耶认为人体与潜在空间的和谐基于某些规律和数学关系之上。

During and after the Second World War, there was a sudden and great demand for housing in Europe. With the advancement of machinery and technology, mass production of standardized building components seemed to offer a timely solution to the crisis. During these years, Le Corbusier developed a system of proportion, which he hoped could be adopted by the design and construction professions. *The Modulor, as it was later called, was meant to be a proportioning grid, which would standardize all objects in the construction of building, from the design of a door and furniture, to the design of a room and building.* If this system was accepted and built, resultant buildings and their components would not only directly express modern industry, but also offer an unlimited variety of harmonious designs and scales.

With the conviction that certain laws and mathematical relationships linked the human body with potentially harmonious spaces, Le Corbusier initially developed a human figure with his left arm raised to a height of 2.20 meters as his starting point. This was a height at which Le Corbusier felt was very much in agreement with the human scale, hence the beginning of a “harmonious architecture”.

It was his belief that if the manufactured goods or designs satisfied the physical requirements of the tallest man, then these goods and designs would also be suitable for use by people of any height. Through establishing various regulating lines, relating with the golden section and the human figure, Fibonacci^② series of interrelated numbers were found in which the sum of two consecutive numbers equals the following number (25.40, 41.45, 66.80 ...). (These numbers have interesting properties and are often evident in nature and art. It is also worth noting its unique, relationship with the golden section^③ rectangle, the ratio of any two adjacent numbers in Fibonacci series after three is approximately the same as the proportional ratio 1:1.1618 found in the golden section rectangle.) These series of numbers were translated into a scale or a measurement related to human activities, such as sitting, leaning, etc., and was used as the basis of all designs. With further experiments, a foot-inch Modulor was later developed based on a six-foot

① This text is from Jia Beisi. *Architectonics of Modernism*, 1st Edition, Beijing: China Architecture & Building Press, 2003.

② Fibonacci [ˌfɪbəˈnɑːtʃi] a number in the Fibonacci sequence

③ golden section: the proportional relation between two divisions of line or two dimension of a plane figure such that short : long = long : (short + long)

human figure. Its inventor saw this as a tool bridging both worlds of the imperial and metric measurements, and hence, universally applicable.

It is interesting to note that since Le Corbusier discovered the mathematical relationships of his Modulor, he found other ancient examples with this underlying harmonious principle: Abbey of Choalis near Paris; an ancient Byzantium church in Kahrie; and the doorway of the Grand Seraglio^① at Istanbul, among others.

The Modulor was first put into practice in Le Corbusier's Unite of Habitation at Marseilles. Here, the Modulor was widely applied: in the planning of apartment units, development of building elevations, the design of interior woodwork, furniture, and even the stone used for the opening ceremony of the project. The Modulor was applied in other projects of diverse scales: typography, traveling exhibition, and wall panels — even a plan for the city of Paris.

It is important to note that the system was used only to establish geometrical order and clarity. It neither carried poetic or lyrical overtones nor inspired any overall theme. Its existence merely established a balance. Although Le Corbusier invented the Modulor system, his projects and designs proved that he was not enslaved by it. If the Modulor produced designs, which looked displeasing, Le Corbusier was willing to drop the tool aside and scrap the system: *"Your eyes are your judges, the only ones you should know The "Modulor" is a working tool, a precision instrument; a keyboard shall we say, a piano, a tuned piano. The piano has been tuned: it is up to you to play it well."*

柯布西耶发现一些古代建筑也运用这种和谐方法。

模度只用于建立秩序，增加清晰度，用来平衡各部分关系，与设计构思等无关。

Exercises

I. Fill in the blanks with the correct answer.

- The Modulor was _____ put into practice in Le Corbusier's Unite of Habitation at Marseilles.
A. fourth B. second C. third D. first
- Through these years, Le Corbusier developed a system of proportion, which he hoped could be _____ by the design and construction professions.
A. abuse B. adopted
C. adapt D. abandon
- It was his belief that if the manufactured goods or designs satisfied the physical requirements of the tallest man, then these goods and designs would also be suitable _____ use by people of any height.
A. by B. for C. with D. in

① Grand Seraglio: living quarters reserved for wives and concubines and female relatives in a Muslim household