

XINBIAN

TUMU

GONGCHENG

ZHUANYE

YINGYU

新编

土木工程专业英语

(建筑与规划方向)

刘虹超 王若竹 钱永梅 主编
韩林飞 主审



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·北京·

本书共两部分 9 个单元 27 篇文章，均选自国际上在建筑学、城市规划与城市设计、景观设计方面有深远影响的名著名篇或权威机构发布的公告，使读者近距离地感受经典理论名著的魅力。

本书适用于具有大学英语四级或相当水平的建筑学、城市规划与城市设计、景观设计以及相近专业的专业人员。

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如何使用本书

写给读者

作为需要广阔视角和阅历的设计专业，大量地熟悉国际上经典和最新的理论和实践，是每一个建筑、规划和景观从业者必修的重要功课。现代社会科技的日益发达，给了我们太多在第一时直接触这些“功课”的机会。直接阅读英文资料，不仅可以使我们与作者直接对话，从而最原真地体会作者所要传达的思想，而且能够帮助我们始终站在学科的前沿，随时保持最敏锐的专业思想。

与很多读者想象中的难度不同，其实大多数包括名著在内的英语文献，都行文流畅、语言简洁、通俗易懂。有时候，倒是其中文译本反而稍显晦涩难懂。当然，在接触英文专著的最初，必然会有一个适应的过程。但是，“No pain, no gain”。一点点的付出，换来专业内具有深度和新鲜的视角，无论如何是值得的。

本教材适用于具有大学英语四级或相当水平的建筑学、城市规划与城市设计、景观设计以及相近领域的专业人员。通过本书的阅读，读者可以了解西方现代建筑、规划、景观的经典理论和著名设计师及其代表作品，提高专业英语的阅读能力。

本教材中的材料大多选自建筑、规划、景观的名著，使读者近距离地感受经典理论名著的魅力。本书对文中的难词难句均作了注释（注释中的加重黑体代表需要掌握的专业词汇），并在每篇课文前面都编写了课文背景，在课文后面提供了文章来源、扩展阅读以及相关信息。每个单元还设置了方便实用的专业 Tips（包括相关网站、专业词汇、专业解读等）。有兴趣的读者，可以参照这些信息，进行更广泛和深入的阅读。

写给教师

专业英语到底教的是什么？是基础英语的延续，还是专业词汇的掌握？所谓失之毫厘，谬以千里。因此在出发前，我们首先要明确自己的目的地。

尽管无论对学生还是老师来说，专业英语都是一门具有难度的课程，但是有一点毋庸置疑：由于建筑学、规划和景观学科的特殊性，绝大部分新思潮、新技术都源于国外，要想有效提高自己的专业水平，必须熟练地阅读英文文献，保持在第一时间内了解、掌握这些新趋势。此外，对于那些经典的英文著作来说，通过亲自接触原文，更能了解作者最真实的意图，加强对内容的理解。从这个意义上说，“专业英语应该成为相关专业人才培养环节中的有机组成部分——把英语作为一种工具，通过阅读英文专业文献拓展专业视野，掌握西方现代常见理论和经典作品，了解西方现代学科发展”。本着这样的原则，我们认为专业英语的教学目标是：以英语为载体、以专业为目的，即利用英语提高自身的专业素质。

本教材的第一部分均选自有影响的名著或权威机构发布的公告，每单元的第一课建议作为精读，后两课可以选择作为泛读；第二部分的内容是知名建筑师及景观专业的实际作品，可作为学生的扩展阅读材料。全书第一部分内容包括 9 个单元，可以满足 18 课时（或 36 课时）的要求。其中的 Glossary、Critical Innovation、Structure and Function 等课文，可以安排学生用英文做 PPT 演示（presentation），并根据实际情况安排教学内容。

本书对课文及背景均进行了简要的介绍，教师还可根据课后所提供的信息找到课文相关资料。

我们愿与大家一起交流、共同进步。

前 言

面对当今世界经济全球化的挑战，专业英语作为重要而便捷的学习和专业交流手段，将占据愈加重要的地位。本教材旨在英语和专业之间找到一个平衡点，让专业英语焕发生机、为广大师生所接受，从而真正发挥为专业服务的作用。

本教材主要供建筑设计、城市规划与城市设计、景观设计等相关专业本科生和研究生使用，同时也适用于具有大学英语四级或相当水平的专业人员。本教材既可用于专业英语的精读和泛读，也可用于西方现代建筑、规划、景观设计类课程的双语教学。

本书的编写主要遵循了以下几个原则。

(1) 经典性。本教材的选题均来自有影响的名著名篇、权威机构发布的公告以及著名建筑师的实践和作品。内容经典、实用性强。

(2) 可读性。虽然专业的名篇名著众多，但是并非所有的文献在内容上、难度上、趣味性上都适合作为课文使用。本教材针对大学教学的实际情况，从经典著作中用心挑选了内容生动、语句优美、逻辑性强、覆盖面广的部分，从而极大增强了文章的可读性。

(3) 全面性。为了全面地介绍专业相关的知识和词汇，本教材的选题尽可能全面地覆盖专业内各个方向的分支理论，包括建筑历史、空间概念、建筑文脉、建筑形式、建筑技术、城市设计、城市规划、景观设计等多方面的内容。

(4) 时效性。由于当今理论和技术的迅猛发展，知识更新越来越快。为了达到与时俱进的学习状态，本教材无论在理论研究还是建筑大师介绍中，都在年代选择上做了精心挑选：在保证经典的基础上，以突出现代状况为主。因此全书第一部分理论的 27 篇文章中，建筑、规划、景观三个专业各选择了一篇 20 世纪 60 年代及以前的经典著作，其他 24 篇课文除少量出版于 70、80 年代外，均是 90 年代以后、21 世纪以来的新思想和作品。

(5) 实用性。本教材不仅对本书内的课文做了难词难句的详细注释，并用黑体字标明了所应该掌握的专业词汇，而且考虑到在教学过程中，还会随时涌现新理论新技术，而设计是实用性很强的学科，需要我们随时跟踪业内最新动向，因此本书中也增加了检索专业信息、相关国外专业网站介绍等实用内容。此外，每单元后面的思考练习题，既有助于帮助学生深入思考课文，也有助于教师利用其作为课堂讨论和平时考核，有机灵活地组织课时。在单词注释中，用黑色加粗字体表示必须掌握的专业词汇。

本教材由刘虹超、王若竹、钱永梅任主编；李雷立、王亚峰、金玉杰、田伟任副主编；王亮、柳红明、周春艳、钱坤、张文宝、刘志伟、樊荣参编；并聘请北京交通大学韩林飞教授担任主审。鉴于水平所限，本教材难免存在不足之处，恳请广大读者和专家批评指正。

编 者

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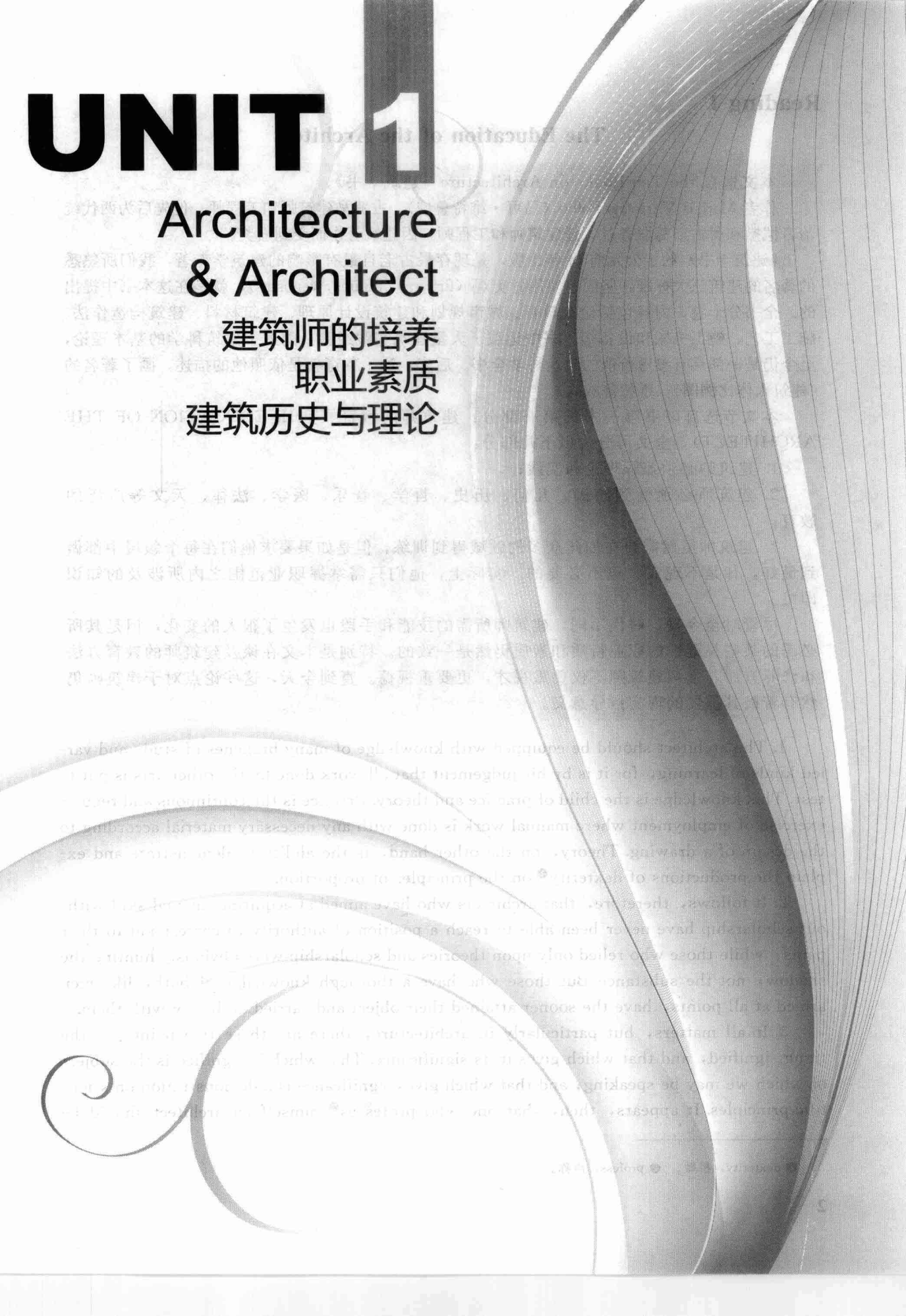
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UNIT 1

Architecture & Architect 建筑师的培养 职业素质 建筑历史与理论



Reading 1

The Education of the Architect

本文选自 the Ten Books on Architecture 《建筑十书》。

作者 Marcus Vitruvius Pollio (马可·维特鲁威), 古罗马建筑师和工程师。他先后为两代统治者恺撒和奥古斯都服务过, 任建筑师和工程师, 因建筑著作而受到嘉奖。

《建筑十书》约于公元前 14 年出版, 是现存最古老且最有影响的建筑学专著, 我们所熟悉的著名的建筑三大标准: 坚固、实用、美观 (firmitas, utilitas, venustas), 就是在这本书中提出的。全书分十卷, 内容包括建筑教育、城市规划和建筑设计原理、建筑材料、建筑构造作法、施工工艺、施工机械和设备等。书中记载了大量建筑实践经验, 阐述了建筑科学的基本理论, 至今仍是一部具有参考价值的建筑科学全书。后来, 达·芬奇就是依照他的描述, 画了著名的《建筑人体比例图》(维特鲁威人)。

本文节选自该书第一书的第一部分: 建筑师的教育 (THE EDUCATION OF THE ARCHITECT)。全文可分为以下几部分:

1. 建筑师必须兼顾理论和实践;
2. 建筑师必须受到绘画、几何、历史、哲学、音乐、医学、法律、天文等广泛的教育;
3. 建筑师虽然需要在如此众多的领域得到训练, 但是如果要求他们在每个领域中都做到最好, 却是不现实, 也不必要的。实际上, 他们只需掌握职业范围之内所涉及的知识即可。

尽管时至今日, 时代不同, 建筑师所需的技能和手段也发生了很大的变化, 但是其所必需的某些关键性的职业特质和素质仍然是一致的。特别是本文在谈及建筑师的教育方法和修养方面, 强调建筑师不仅要重视才, 更要重视德。直到今天, 这些论点对于建筑师仍然有着极其重要的现实指导意义。

1. The architect should be equipped with knowledge of many branches of study and varied kinds of learning, for it is by his judgement that all work done by the other arts is put to test. This knowledge is the child of practice and theory. Practice is the continuous and regular exercise of employment where manual work is done with any necessary material according to the design of a drawing. Theory, on the other hand, is the ability to demonstrate and explain the productions of dexterity^① on the principles of proportion.

2. It follows, therefore, that architects who have aimed at acquiring manual skill without scholarship have never been able to reach a position of authority to correspond to their pains, while those who relied only upon theories and scholarship were obviously hunting the shadow, not the substance. But those who have a thorough knowledge of both, like men armed at all points, have the sooner attained their object and carried authority with them.

3. In all matters, but particularly in architecture, there are these two points: —the thing signified, and that which gives it its significance. That which is signified is the subject of which we may be speaking; and that which gives significance is a demonstration on scientific principles. It appears, then, that one who professes^② himself an architect should be

① dexterity, 机敏。 ② profess, 声称。

well versed in^① both directions. He ought, therefore, to be both naturally gifted and amenable to^② instruction. Neither natural ability without instruction nor instruction without natural ability can make the perfect artist. Let him be educated, skilful with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of the heavens.

4. The reasons for all this are as follows. An architect ought to be an educated man so as to leave a more lasting remembrance in his treatises^③. Secondly, he must have a knowledge of drawing so that he can readily make sketches to show the appearance of the work which he proposes. Geometry, also, is of much assistance in architecture, and in particular it teaches us the use of the rule and compasses^④, by which especially we acquire readiness in making plans for buildings in their grounds, and rightly apply the square, the level, and the plummet^⑤. By means of optics^⑥, again, the light in buildings can be drawn from fixed quarters of the sky. It is true that it is by arithmetic that the total cost of buildings is calculated and measurements are computed, but difficult questions involving symmetry are solved by means of geometrical theories and methods.

5. A wide knowledge of history is requisite because, among the ornamental parts of an architect's design for a work, there are many the underlying idea of whose employment he should be able to explain to inquirers.^① For instance, suppose him to set up the marble statues of women in long robes, called Caryatides^②, to take the place of columns, with the mutules^③ and coronas^④ placed directly above their heads, he will give the following explanation to his questioners. Caryae^⑤, a state in Peloponnesus^⑥, sided with^⑦ the Persian^⑧ enemies against Greece; later the Greeks, having gloriously won their freedom by victory in the war, made common cause^⑨ and declared war against the people of Caryae. They took the town, killed the men, abandoned the State to desolation, and carried off their wives into slavery, without permitting them, however, to lay aside the long robes and other marks of their rank as married women, so that they might be obliged not only to march in the triumph but to appear forever after as a type of slavery, burdened with the weight of their shame and so making atonement^⑩ for their State.^⑪ Hence, the architects of the time designed for public buildings statues of these women, placed so as to carry a load, in order that the sin and the punishment of the people of Caryae might be known and handed down even to posterity^⑫.

6. Likewise the Lacedaemonians^⑬ under the leadership of Pausanias^⑭, son of Agesipolis^⑮, after conquering the Persian^⑯ armies, infinite in number, with a small force at the battle of Plataea, celebrated a glorious triumph with the spoils and booty^⑰, and with the money obtained from the sale thereof^⑱ built the Persian Porch, to be a monument to the renown and valour^⑲ of the people and a trophy^⑳ of victory for posterity. And there they set ef-

① versed in, 通晓, 精通。 ② amenable to, 服从。 ③ treatises, 论, 理论。 ④ compasses, 圆规。 ⑤ the square, the level, and the plummet, 这里指: 直角、水平线和垂线。 ⑥ optics, 光学。 ⑦ Caryatides, 女神柱。 ⑧ mutule, 飞檐托块。 ⑨ corona, 飞檐的上部。 ⑩ Caryae, 城邦名。 ⑪ Peloponnesus, 希腊南部的半岛。 ⑫ side with, 站在……的一边, 与……友好。 ⑬ Persian, 波斯帝国。 ⑭ made common cause, 联合在一起。 ⑮ atonement, 赎罪。 ⑯ posterity, 后代。 ⑰ Lacedaemonians, 希腊的斯巴达。 ⑱ Pausanias, 城邦的君主名。 ⑲ Agesipolis, 城邦的君主名。 ⑳ Persian, 地名。 ㉑ spoils and booty, 战利品。 ㉒ thereof, 它的。这里“the sale thereof”指“它的销售收入”。 ㉓ valour, 英勇。 ㉔ trophy, 战利品。

figies^① of the prisoners arrayed in barbarian^② costume and holding up the roof, their pride punished by this deserved affront, that enemies might tremble for fear of the effects of their courage, and that their own people, looking upon this ensample^③ of their valour and encouraged by the glory of it, might be ready to defend their independence. So from that time on, many have put up statues of Persians supporting entablatures^④ and their ornaments, and thus from that motive have greatly enriched the diversity of their works. There are other stories of the same kind which architects ought to know.

7. As for philosophy, it makes an architect high-minded and not self-assuming, but rather renders him courteous, just, and honest without avariciousness^⑤. This is very important, for no work can be rightly done without honesty and incorruptibility. Let him not be grasping nor have his mind preoccupied with the idea of receiving perquisites^⑥, but let him with dignity keep up his position by cherishing a good reputation. These are among the precepts^⑦ of philosophy. Furthermore philosophy treats of physics (in Greek φυσιολογία) where a more careful knowledge is required because the problems which come under this head are numerous and of very different kinds; as, for example, in the case of the conducting of water. For at points of intake and at curves, and at places where it is raised to a level, currents of air naturally form in one way or another; and nobody who has not learned the fundamental principles of physics from philosophy will be able to provide against the damage which they do.^⑧ So the reader of Ctesibius^⑨ or Archimedes^⑩ and the other writers of treatises of the same class will not be able to appreciate them unless he has been trained in these subjects by the philosophers.

8. Music, also, the architect ought to understand so that he may have knowledge of the canonical^⑪ and mathematical theory, and besides be able to tune ballistae^⑫, catapultae^⑬, and scorpiones to the proper key. For to the right and left in the beams are the holes in the frames through which the strings of twisted sinew are stretched by means of windlasses and bars, and these strings must not be clamped and made fast^⑭ until they give the same correct note to the ear of the skilled workman.^⑮ For the arms thrust through those stretched strings must, on being let go, strike their blow together at the same moment; but if they are not in unison^⑯, they will prevent the course of projectiles^⑰ from being straight.

9. In theatres, likewise, there are the bronze vessels^⑱ (in Greek ηχεια) which are placed in niches^⑲ under the seats in accordance with the musical intervals^⑳ on mathematical principles. These vessels are arranged with a view to musical concords^㉑ or harmony, and apportioned in the compass of the fourth, the fifth, and the octave^㉒, and so on up to the double octave, in such a way that when the voice of an actor falls in unison^㉓ with any of them its power is increased, and it reaches the ears of the audience with greater clearness and sweetness. Water organs^㉔, too, and the other instruments which resemble them cannot

① effigies, 雕像。 ② barbarian, 野蛮的。 ③ ensample, 例子。 ④ entablature, 檐部, 柱子的上部。 ⑤ avariciousness, 贪婪。 ⑥ perquisite, 额外收入。 ⑦ precepts, 戒律, 规则。 ⑧ Ctesibius, 希腊的物理学家。 ⑨ Archimedes, 阿基米德, 希腊的数学家、物理学家和发明家。 ⑩ canonical, 权威的, 标准的。 ⑪ ballistae, 弩炮 (一种古代武器)。 ⑫ catapultae, 弹弩 (一种古代武器)。 ⑬ made fast, 拴紧, 绑牢。 ⑭ in unison, 完全一致的。 ⑮ projectile, 子弹。 ⑯ bronze vessels, 青铜器 (vessels, 容器)。 ⑰ niche, 壁龛。 ⑱ musical intervals, 音程。 ㉑ concord, 和谐。 ㉒ octave, 八度音。 ㉓ unison, 一致。 ㉔ organ, 风琴。

be made by one who is without the principles of music.

10. The architect should also have a knowledge of the study of medicine on account of the questions of climates (in Greek κλίματα), air, the healthiness and unhealthiness of sites, and the use of different waters. For without these considerations, the healthiness of a dwelling cannot be assured. And as for principles of law, he should know those which are necessary in the case of buildings having party walls^①, with regard to water dripping from the eaves^②, and also the laws about drains, windows, and water supply. And other things of this sort should be known to architects, so that, before they begin upon buildings, they may be careful not to leave disputed points for the householders to settle after the works are finished, and so that in drawing up contracts the interests of both employer and contractor may be wisely safe-guarded.^③ For if a contract is skillfully drawn, each may obtain a release from the other without disadvantage. From astronomy we find the east, west, south, and north, as well as the theory of the heavens, the equinox^④, solstice^⑤, and courses of the stars. If one has no knowledge of these matters, he will be able to have any comprehension of the theory of sundials^⑥.

11. Consequently, since this study is so vast in extent, embellished and enriched as it is with many different kinds of learning, I think that men have no right to profess^⑦ themselves architects hastily, without having climbed from boyhood the steps of these studies and thus, nursed by the knowledge of many arts and sciences, having reached the heights of the holy ground of architecture.

12. But perhaps to the inexperienced it will seem a marvel^⑧ that human nature can comprehend such a great number of studies and keep them in the memory. Still, the observation that all studies have a common bond of union and intercourse^⑨ with one another, will lead to the belief that this can easily be realized. For a liberal education^⑩ forms, as it were, a single body made up of these members. Those, therefore, who from tender years receive instruction in the various forms of learning, recognize the same stamp on all the arts, and an intercourse between all studies, and so they more readily comprehend them all. This is what led one of the ancient architects, Pytheos^⑪, the celebrated builder of the temple of Minerva^⑫ at Priene^⑬, to say in his Commentaries^⑭ that an architect ought to be able to accomplish much more in all the arts and sciences than the men who, by their own particular kinds of work and the practice of it, have brought each a single subject to the highest perfection.^⑮ But this is in point of fact^⑯ not realized.

13. For an architect ought not to be and cannot be such a philologist^⑰ as was Aristarchus^⑱, although not illiterate; nor a musician like Aristoxenus^⑲, though not absolutely ignorant of music; nor a painter like Apelles^⑳, though not unskillful in drawing; nor a sculptor such as was Myron^㉑ or Polyclitus^㉒, though not unacquainted with the plastic art^㉓; nor again a phy-

① party wall, 界墙。② eaves, 屋檐。③ equinox, 春分或秋分。④ solstice, 至日, 东至或夏至。⑤ sundial, 日晷。⑥ profess, 声称。⑦ marvel, 罕见之事, 奇迹。⑧ union and intercourse, 联系和贯通。⑨ liberal education, 通才教育。⑩ Pytheos, 希腊的建筑师。⑪ Minerva, 罗马神话中主管智慧、技艺、战争的女神, 希腊神话中称作雅典娜。⑫ Priene, 希腊的地名。⑬ Commentary, 评论。⑭ in point of fact, 实际上。⑮ philologist, 语言学家。⑯ Aristarchus, 希腊的语言学家。⑰ Aristoxenus, 希腊的音乐家。⑱ Apelles, 希腊的画家。⑲ Myron, 希腊的雕塑家。⑳ Polyclitus, 希腊的雕塑家。㉑ plastic art, 造型艺术。

sician like Hippocrates^①, though not ignorant of medicine; nor in the other sciences need he excel in each, though he should not be unskillful in them. For, in the midst of all this great variety of subjects, an individual cannot attain to perfection in each, because it is scarcely in his power to take in and comprehend the general theories of them.

14. Still, it is not architects alone that cannot in all matters reach perfection, but even men who individually practise specialties in the arts do not all attain to the highest point of merit. Therefore, if among artists working each in a single field not all, but only a few in an entire generation acquire fame, and that with difficulty, how can an architect, who has to be skilful in many arts, accomplish not merely the feat^②—in itself a great marvel—of being deficient in none of them, but also that of surpassing all those artists who have devoted themselves with unremitting^③ industry to single fields?

15. It appears, then, that Pytheos made a mistake by not observing that the arts are each composed of two things, the actual work and the theory of it. One of these, the doing of the work, is proper to men trained in the individual subject, while the other, the theory, is common to all scholars; for example, to physicians and musicians the rhythmical beat of the pulse and its metrical movement. But if there is a wound to be healed or a sick man to be saved from danger, the musician will not call, for the business will be appropriate to the physician. So in the case of a musical instrument, not the physician but the musician will be the man to tune it so that the ears may find their due pleasure in its strains.

16. Astronomers likewise have a common ground for discussion with musicians in the harmony of the stars and musical concords in tetrads and triads of the fourth and the fifth^④, and with geometers in the subject of vision (in Greek λῶγος ὀπτικὸς); and in all other sciences many points, perhaps all, are common so far as the discussion of them is concerned. But the actual undertaking of works which are brought to perfection by the hand and its manipulation is the function of those who have been specially trained to deal with a single art. It appears, therefore, that he has done enough and to spare^⑤ who in each subject possesses a fairly good knowledge of those parts, with their principles, which are indispensable for architecture, so that if he is required to pass judgement and to express approval in the case of those things or arts, he may not be found wanting^{⑥⑦}. As for men upon whom nature has bestowed so much ingenuity, acuteness, and memory that they are able to have a thorough knowledge of geometry, astronomy, music, and the other arts, they go beyond the functions of architects and become pure mathematicians. Hence they can readily take up positions against those arts because many are the artistic weapons with which they are armed. Such men, however, are rarely found, but there have been such at times; for example, Aristarchus^⑧ of Samos^⑨, Philolaus^⑩ and Archytas^⑪ of Tarentum^⑫, Apollonius^⑬ of Perga^⑭, Eratosthenes^⑮ of Cyrene^⑯, and among Syracusans^⑰ Archimedes and Scopinas^⑱, who

① Hippocrates, 希腊的医师。② feat, 壮举。③ unremitting, 不懈的。④ in tetrads and triads of the fourth and the fifth, 在四和音和三和音的四度与五度方面。⑤ enough and to spare, 绰绰有余。⑥ wanting 不足的, 短缺的。
⑦ Aristarchus, 在亚历山大的希腊著名数学家。⑧ Samos, 爱琴海中的岛。⑨ Philolaus, 希腊毕达哥拉斯学派的哲学家。
⑩ Archytas, 希腊毕达哥拉斯学派的哲学家。⑪ Tarentum, 地名。⑫ Apollonius, 在亚历山大的希腊欧几里得学派的数学家。
⑬ Perga, 地名。⑭ Eratosthenes, 在亚历山大的希腊数学家、天文学家、地理学家。⑮ Cyrene, 利比亚东部的城市。
⑯ Syracusans, 意大利西西里岛的海港。⑰ Scopinas, 希腊的发明家。

through mathematics and natural philosophy discovered, expounded, and left to posterity many things in connexion with mechanics and with sundials. ③

17. Since, therefore, the possession of such talents due to natural capacity is not vouchsafed^❶ at random to entire nations, but only to a few great men; since, moreover, the function of the architect requires a training in all the departments of learning; and finally, since reason, on account of the wide extent of the subject, concedes that he may possess not the highest but not even necessarily a moderate knowledge of the subjects of study, I request, Caesar^❷, both of you and of those who may read the said books, that if anything is set forth with too little regard for grammatical rule, it may be pardoned. ④ For it is not as a very great philosopher, nor as an eloquent rhetorician^❸, nor as a grammarian trained in the highest principles of his art, that I have striven to write this work, but as an architect who has had only a dip into those studies. Still, as regards the efficacy of the art and the theories of it, I promise and expect that in these volumes I shall undoubtedly show myself of very considerable importance not only to builders but also to all scholars.

Notes

- ① A wide knowledge of history is requisite because, among the ornamental parts of an architect's design for a work, there are many the underlying idea of whose employment he should be able to explain to inquirers.
还需要拥有广博的历史知识。这是因为建筑师在设计中会使用一些装饰成分，而如果有人问起这些装饰物的理念时，建筑师应该能够作出合理的解释。
- ② They took the town, killed the men, abandoned the State to desolation, and carried off their wives into slavery, without permitting them, however, to lay aside the long robes and other marks of their rank as married women, so that they might be obliged not only to march in the triumph but to appear forever after as a type of slavery, burdened with the weight of their shame and so making atonement for their State.
这些希腊人占据城堡，杀戮男人，毁弃城邦，把卡里亚人的妻子劫走当作奴隶，而且不允许她们穿戴长袍以及其他能标志她们是已婚女性的服饰。这样，她们不仅被迫走在凯旋的队列中，而且还沦为永远背负着羞耻、为她们的城邦赎罪的奴隶形象。
- ③ Furthermore philosophy treats of physics (in Greek φυσιολογία) where a more careful knowledge is required because the problems which come under this head are numerous and of very different kinds; as, for example, in the case of the conducting of water. For at points of intake and at curves, and at places where it is raised to a level, currents of air naturally form in one way or another; and nobody who has not learned the fundamental principles of physics from philosophy will be able to provide against the damage which they do.
而且哲学还探讨物理学——希腊人称之为 φυσιολογία。研究物理学需要更精细的知识，因为它包含了数目众多而且种类不同的问题。以输水问题为例，由于在（输水管的）入口点、转弯点以及变高点，总会自然形成气流。如果不曾通过哲学而学习到这个物理的基本原理，恐怕就很难有办法治理由此产生的危害。
- ④ Music, also, the architect ought to understand so that he may have knowledge of the canonical and mathematical theory, and besides be able to tune ballistae, catapultae, and scorpiones to the proper key. For to the right and left in the beams are the holes in the frames through which the strings of twisted sinew are stretched by means of windlasses and bars, and these strings must not be clamped and made fast until they give the same correct note to the ear of the skilled workman.
建筑师还应该通晓音乐，以便了解音阶法及（其）数字的注法，并能正确地进行弩炮的调节。因为在

❶ vouchsafe, 赐予。 ❷ Caesar, 陛下。 ❸ rhetorician, 雄辩家。

(弩炮)头部的左右有半音的孔,通过这个孔用绞盘和杠杆张拉起用皮条捻成的股绳。只有在熟练工匠听起来这两根股绳发出了同样的声音后,它们才会被系紧绑牢。

- ⑤ And other things of this sort should be known to architects, so that, before they begin upon buildings, they may be careful not to leave disputed points for the householders to settle after the works are finished, and so that in drawing up contracts the interests of both employer and contractor may be wisely safe-guarded.

建筑师也应该知道其他类似的事情,以便使他们能在房屋建造之前,就保持谨慎地不为业主留下竣工之后可能产生的纠纷,从而在拟定合同时,使得业主和承包商两方面的利益都得到足够的保证。

- ⑥ an architect ought to be able to accomplish much more in all the arts and sciences than the men who, by their own particular kinds of work and the practice of it, have brought each a single subject to the highest perfection.

在所有的艺术和科学领域,建筑师都应该比那些专攻某一特定领域、并已经通过实践而达到相当高水平的人,做得更好。

- ⑦ It appears, therefore, that he has done enough and to spare who in each subject possesses a fairly good knowledge of those parts, with their principles, which are indispensable for architecture, so that if he is required to pass judgement and to express approval in the case of those things or arts, he may not be found wanting.

因此,一个建筑师只要掌握了各个学科中对于建筑必不可少的那部分知识,就足以绰绰有余地完成工作了。当需要他对建筑的事项及技术进行评判或认可时,别人也不会觉得他不够格。

- ⑧ who through mathematics and natural philosophy discovered, expounded, and left to posterity many things in connexion with mechanics and with sundials.

这些人根据数学和自然哲学,发明并解释了许多留给后人的关于力学和日晷的装置。

- ⑨ I request, Caesar, both of you and of those who may read the said books, that if anything is set forth with too little regard for grammatical rule, it may be pardoned.

因此,陛下,以及那些阅读此书的人们,如果这本书没有完全遵守语法规则,我希望能得到你们的原谅。

Extracts from

Text

Marcus Vitruvius Pollio. The Ten Books on Architecture. New York: Dover Publications, 1961.

Further Reading

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Reading 2

Glossary

在本文中，整理了一些在建筑历史上具有重要意义的、作为建筑学专业学生必须了解和掌握的专业名词。对这些名词的掌握，将有助于对建筑历史的深入理解。

文中名词的排列，均按照年代顺序进行。所有释义均节选自 Wikipedia, the free encyclopedia (维基百科, 自由的百科全书)。

全文共归纳了 17 个名词，分别是：古典式、罗马式、诺曼式、哥特式、文艺复兴、新古典主义、表现派、包豪斯、艺术装饰、构成派、现代主义、国际主义风格、功能主义、结构主义、极简主义、后现代主义、解构主义。

1. Classical^① (600 BC-323 AD)

Classical architecture can be divided into: Greek architecture before *Alexander the Great*,^② Hellenistic^③ architecture, and Roman architecture.

There were two main styles (or "orders") of early Greek architecture, the Doric^④ and the Ionic^⑤. The Doric style was more formal and austere^⑥, the Ionic was more relaxed and decorative. The more ornate^⑦ Corinthian^⑧ style was a later development of the Ionic. These styles are best known through the three orders of column capitals^⑨.

The Romans adapted all the Greek orders and also developed two orders of their own, Tuscan^⑩ order and Composite order^⑪, basically modification of Greek orders.

2. Romanesque^⑫ (1000-1300)

Romanesque architecture is an architectural style of Medieval Europe, characterised by semi-circular arches, and evolving into the Gothic^⑬ style, characterised by pointed arches, beginning in the 12th century.

Combining features of Western Roman and Byzantine^⑭ buildings, Romanesque architecture is known by its massive quality, its thick walls, round arches, sturdy piers^⑮, groin vaults^⑯, large towers and decorative arcading^⑰. Each building has clearly defined forms and they are frequently of very regular, symmetrical plan so that the overall appearance is one of simplicity when compared with the Gothic buildings that were to follow.

3. Norman^⑱ (1074-1250)

The term Norman architecture is used to categorise styles of Romanesque architecture developed by the Normans in the various lands under their dominion or influence in the 11th and 12th centuries. In particular the term is traditionally used for English Romanesque architecture. The Normans introduced large numbers of castles and fortifications^⑲ including Norman keeps, and at the same time monasteries^⑳, abbeys^㉑, churches and cathedrals^㉒, in a style characterised by the usual Romanesque rounded arches (particularly over windows and

① Classical, 古典式。 ② Alexander the Great, 亚历山大大帝。 ③ Hellenistic, 希腊风格的。 ④ Doric, 多立克柱式。 ⑤ Ionic, 爱奥尼柱式。 ⑥ austere, 简朴的。 ⑦ ornate, 装饰的, 华丽的。 ⑧ Corinthian, 科林斯柱式。 ⑨ column capital, 柱头。 ⑩ Tuscan, 塔斯干柱式。 ⑪ Composite order, 混合柱式。 ⑫ Romanesque, 罗马式。 ⑬ Gothic, 哥特式的。 ⑭ Byzantine, 拜占庭的。 ⑮ pier, 墩。 ⑯ groin vault, 穹窿拱顶。 ⑰ arcading, 连拱。 ⑱ Norman, 诺曼式。 ⑲ fortifications, 防御工事。 ⑳ monasteries, 修道院。 ㉑ abbey, 修道院。 ㉒ cathedral, 大教堂。

doorways) and especially massive proportions compared to other regional variations of the style.

4. Gothic^① (c. 1190-1521)

Gothic architecture is a style of architecture which flourished during the high and late medieval period. It evolved from Romanesque architecture and was succeeded by Renaissance architecture.

Originating in 12th-century France and lasting into the 16th century, Gothic architecture was known during the period as “the French Style”, with the term Gothic first appearing during the latter part of the Renaissance as a stylistic insult. Its characteristic features include the pointed arch, the ribbed vault^② and the flying buttress^③.

Gothic architecture is most familiar as the architecture of many of the great cathedrals, abbeys and parish^④ churches of Europe. It is also the architecture of many castles, palaces, town halls, guild halls,^⑤ universities, and to a less prominent extent, private dwellings.

5. Renaissance^⑥ (c. 1425-1600 Western Europe, American colonies)

Renaissance architecture is the architecture of the period between the early 15th and early 17th centuries in different regions of Europe, in which there was a conscious revival and development of certain elements of ancient Greek and Roman thought and material culture.

The Renaissance style places emphasis on symmetry, proportion, geometry and the regularity of parts as they are demonstrated in the architecture of classical antiquity and in particular ancient Roman architecture, of which many examples remained. Orderly arrangements of columns, pilasters^⑦ and lintels^⑧, as well as the use of semicircular arches, hemispherical domes, niches^⑨ and aedicules^⑩ replaced the more complex proportional systems and irregular profiles of medieval buildings.

Developed first in Florence^⑪, with Filippo Brunelleschi^⑫ as one of its innovators, the Renaissance style quickly spread to other Italian cities and then to France, Germany, England, Russia and elsewhere.

Cathedral of Florenc^⑬ is often described as the first building of the Renaissance.

6. Neoclassical^⑭ (c. 1715-1820)

Neoclassical architecture was an architectural style produced by the neoclassical movement that began in the mid-18th century, both as a reaction against the Rococo^⑮ style of anti-tectonic^⑯ naturalistic ornament, and an outgrowth of some classicizing^⑰ features of Late Baroque^⑱. In its purest form it is a style principally derived from the architecture of Classical Greece and the architecture of Italian Andrea Palladio^⑲.

Neoclassicism first gained influence in Paris, later British architects developed the style in Britain. It was quickly adopted by progressive circles in Sweden as well.

① Gothic, 哥特式的。② ribbed vault, 肋架拱顶。③ flying buttress, 飞扶壁。④ parish, 教区。⑤ guild hall, 会馆。⑥ Renaissance, 文艺复兴。⑦ pilaster, 壁柱。⑧ lintel, 楣。⑨ niche, 壁龛。⑩ Aedicule, 小型建筑物。⑪ Florence, 佛罗伦萨。⑫ Filippo Brunelleschi, 菲利波·布鲁内列斯基, 意大利文艺复兴早期的建筑师与工程师。⑬ Cathedral of Florenc, 佛罗伦萨大教堂。⑭ Neoclassical, 新古典主义。⑮ Rococo, 洛可可。⑯ anti-tectonic, 反建构的。⑰ classicizing, 经典化的。⑱ Baroque, 巴洛克式。⑲ Andrea Palladio, 安德烈·帕拉迪奥, 意大利文艺复兴时期最有影响力的建筑师。