

普通高等工科教育机电类规划教材

工业设计专业英语

何人可 张兵 江建民 编

The cover features a complex, colorful geometric design on the left side, composed of various colored blocks (blue, yellow, green, red, purple, black) stacked and arranged in a way that suggests a mechanical or architectural structure. On the right side, several sharpened pencils in various colors (yellow, green, purple, orange) are shown, pointing upwards. The background is a light, textured white.

ENGLISH
FOR
INDUSTRIAL
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English for Industrial Design

工业设计专业英语

何人可 张 兵 江建民 编

章晋新 主审

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内 容 简 介

本书是根据全国工业设计专业教学指导组审订的《工业设计专业英语》教学大纲编写的全国统编教材,选材基本上涵盖了工业设计的学科领域,包括了设计史及理论、设计基础、产品设计、平面设计、环境设计、设计技术等内容。另外,在每课的课文后面还附录了若干篇相关的阅读短文,以扩大阅读范围,增加专业词汇量。本书的课文及阅读短文主要选自国际上有影响的学术著作及期刊,因此,本书也是一本有一定学术价值的专业论文集。本书可供工业设计专业本、专科学生学习专业英语之用,也可供相关专业选用。

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前 言

工业设计专业英语是工业设计专业的一门重要的基础课。随着工业设计的日益国际化以及国际互联网的发展,熟练掌握专业英语对于促进国际交流,了解国际上工业设计的最新发展动态有着越来越重要的意义。近年来计算机辅助工业设计的兴起,使得专业英语的学习变得更为迫切。为了满足工业设计专业英语的教学需求,我们根据 1997 年全国工业设计专业教学指导组审订的《工业设计专业英语》教学大纲,编写了本书。

工业设计是一门综合性的交叉学科,内涵非常丰富,涉及面广,本书的选材力求在有限的篇幅内尽可能涵盖工业设计的学科领域。本书由六个方面的内容组成,即第一单元设计史及理论,第二单元设计基础,第三单元产品设计,第四单元平面设计,第五单元环境设计,第六单元设计技术。另外,在每课的课文后面还附录了若干篇相关的阅读短文,以扩大阅读范围,增加专业词汇量。各学校可根据自己专业的具体情况,选择其中的内容进行教学。

本书的课文及阅读短文主要选自国际上有影响的学术著作及期刊,因此,本书也是一本有一定学术价值的专业文集,使读者在学习工业设计专业词汇及表达方式的同时,学习到相关的专业知识。

本书由湖南大学工业设计系何人可、张兵、无锡轻工大学设计学院江建民共同编写。其中何人可负责全书的结构及第一单元、第五单元的编写,张兵负责全书的统稿及第二单元、第四单元的编写,江建民负责第三单元、第六单元的编写。湖南大学西语系章晋新担任本书主审。

由于编者的学识所限,本书难免存在缺点和错误,敬请读者批评指正。

何人可

1998 年 2 月 4 日于美国北卡罗莱纳州立大学

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Unit One Design History and Theory

Lesson 1 A History of Design

Industrial design suffers from the fact that it has become one of the alternative religions of our century. Essentially, the definition of the meaning of the phrase ought to be a very simple matter — it is the business of determining the form of objects which are to be made by machines, rather than produced by hand. But how immense that range of objects now is, and what a multitude of different categories they occupy! Industrial design can concern itself with everything from a teacup to a jet aeroplane. Yet it is not a matter of diversity alone — there is also our feeling that the machine production of a whole series of objects which are not merely similar but identical puts the designer of those objects into a very different position from the person who designs objects which are produced by hand. The former is divorced from the actual business of making, while the latter probably (but not absolutely inevitably) remains very close to it. The industrial designer therefore stands aside from the physicality of the manufacturing process, yet is responsible for analysing and trying to make sense of it. He is responsible for what F. H. K. Henrion, President of the Society of Industrial Artists, called “an ordering process, creating at its best an inspired, new and unique order from a state of chaos”.

But this is not all. Industrial design is not a neutral occupation. It remains coloured with the moralism of a race of Victorian prophets and pioneers — the chief among them was John Ruskin — who reacted against what they saw as the intolerable waste and squalor of the Industrial Revolution. This moralism has since been carried over into situations where it is not always appropriate. The twentieth-century industrial designer is seen as the custodian of public taste, a person responsible for guiding the recalcitrant mass towards enlightenment. Herbert Read, one of the great propagandists for industrial design in the first half of this century, spoke of “the conflict between ideal form and popular taste” as if this was something inevitable. It is easier to understand what industrial design really is, and how the concept has developed historically, if one makes a resolution to ignore the more hectoring kinds of design propaganda.

In this connection — the actual history of design and the emergence of industrial design as a recognized profession — it is worth recalling that the word “industry” was itself quite slow to acquire the meaning with which we endow it today when we employ it in the context presupposed by this book. In French, for instance, the equivalent word “industrie” appears no earlier than the eighteenth century, while the adjective “industrial” is first recorded in 1770. The paradox is that many centuries before this the idea that beauty in everyday objects was somehow linked to efficiency and appropriateness for use had already occurred to intelligent men. In Xenophon’s *Memorabilia Socrates* is quoted as saying, in reply to

Aristippus: "Is a dung - basket beautiful then ? — Of course, and a golden shield is ugly, if the one is well made for its special work and the other badly."

People were also acquainted with the notion that use must often be allowed to dictate form. Francis Bacon wrote: "Houses are built to live in, and not to look on; therefore let use be preferred before uniformity, except when both may be had." Bacon's statement already seems to presuppose the kind of thought process outlined by Herbert Read in his essay, "The Origins of Form in Art", which seems so typical of our century thanks to the emphasis it puts on functionalism (figure 1 - 1).

Read distinguishes three stages in the development of objects of utility: "Namely (1) discovery of functional form, (2) refinement of the functional form to its maximum efficiency, and (3) refinement of the functional form in the direction of free or symbolic form."

Long before the profession of industrial designer was invented, there were people who carried out the designer's function. Basically, they can be divided into two groups — the artisans and the architects. Artisan design evolved from direct work with tools and materials, and even, in the early stages of the Industrial Revolution, from direct work with machines and an intelligent exploration of their possibilities. Industry unconsciously evolved its own aesthetic, and this aesthetic was from the beginning one which intelligent designers, whatever their background, tried to obey (figure 1 - 2). Philip Webb, the architect who built the seminal Red House for William Morris, and who later made designs for that fountainhead of the English Arts and Crafts Movement, the firm of Morris & Co.; once said: "I never begin to be satisfied until my work looks commonplace." The table - glass which he designed for manufacture by James Powell & Sons at Whitefriars proves that he meant what he said. The idea was thus planted very early that the successful industrially produced object eschewed not only ornament but anything which might make it seem conspicuous.

Yet it is also deeply significant



Figure 1 - 1

A. W. W. Pugin: Silver - gilt ciborium made by Hardman for St Mary's Church, Clapham, London, 1851.

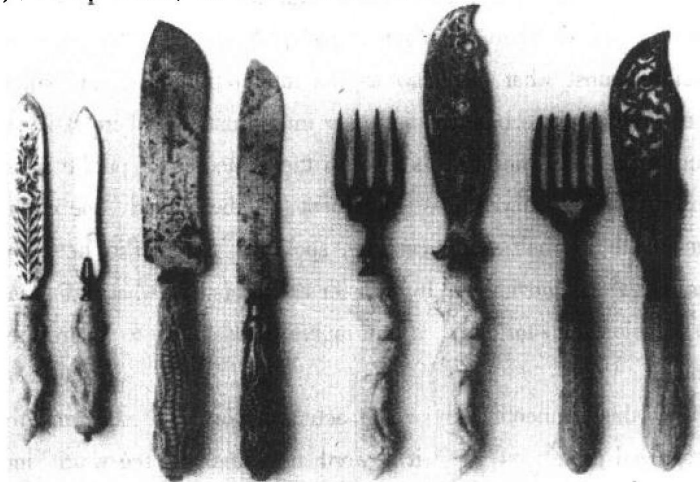


Figure 1 - 2

John Bell: Flax knife, paper knife, two bread knives and two pairs of fish - servers, with parian porcelain or ivory handles, made by Joseph Rogers & Sons for Summerly's Art Manufactures, 1847 - 8.

that architecture was Webb's basic profession. The notion of a responsible designer who is separated from the craft process, but who still has the right to instruct the craftsman, and tell him what to do, was established by the great architects of the eighteenth century, and particularly by Robert Adam, who designed the fittings and contents of some of his great country houses almost to the last detail. The furniture which Thomas Chippendale produced to Adam's designs was very different from the furniture he designed himself and published in his book *The Director*. The architect was a professional man, and it is from him that the industrial designer of our own day inherits his claim to professional status. Indeed, the two professions are still very often combined.

Industry, however, did not simply establish itself and then become a constant, a stable background against which the designer must work. It constantly threw up new problems. What happens, for example, when a machine is used to produce, not just some simple object, but another machine? Here, newborn, is a mechanism which may seem to dictate a surface which is visually complex, to reflect the complexity of a multitude of parts. Is the designer obliged to follow faithfully whatever lies beneath the casing? If he does, this may result in a form which is economic from the material point of view, but uneconomical visually because it requires a much greater effort of perception (figure 1 - 3).

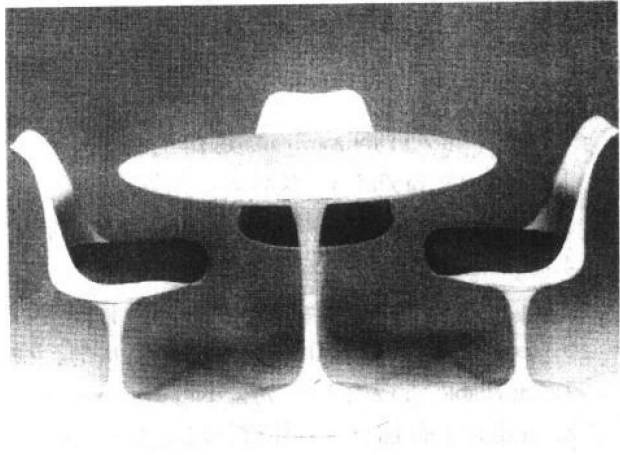


Figure 1 - 3

Eero Saarinen: plastic and aluminum "Tulip" table and chairs for Knoll Associates, 1957.

If one looks at the career of a pioneer American designer, Raymond Loewy, one finds that much of what he did was an effort to solve this kind of problem. Often his proposals met with resistance from the engineers with whom he had to deal. Thus, when Loewy arrived to redesign the locomotives of the Pennsylvania Railroad, there was already an established notion in railway workshops about what a locomotive ought to look like — a tradition which stretched well back into the nineteenth century. To engineers, if not to the travelling public, a locomotive of traditional form seemed preferable to the streamlined design Loewy came up with, because for them it was far more expressive of the true nature of steam power.

Loewy was not himself a trained engineer, but someone who took over after the engineers had done their best or worst. This is a very common situation where industrial designers are concerned, and it calls into question the assertion made by one authority on the subject — that good design is "the outward expression of the engineer's confidence in his work". In fact, whether it is the creation of trained engineers or not, industrial design is quite often palliative, not radical. It is a technique that may be used to conceal faults, such as distortions in die-castings, introduced by the inaccuracy of machines, rather than to show off their accuracy. In these circumstances the industrial designer's job is to see that these inevitable faults do not spoil the finished result — for example by introducing a moulding to disguise an imperfect

fit. In any case, the designer's task is often to establish limits rather than to conduct a search for perfection. He tries to trace the frontiers within which a range of acceptable solutions can be found. These boundaries are usually drawn for him by questions of cost as well as by those of structural strength and mechanical efficiency.

What else does the designer have to do in the real world? He must create objects which not only work as intended, but which clearly indicate what their function is — things which speak a visual language which anyone who is likely to use them will understand. This in turn means that the industrial designer has to deal with the way in which things are perceived, as well as the way they objectively exist. He must take into account both psychology and sociology.

New Words

1. moralism /'mɔrəlɪzəm/ *n.* 道德主义
2. prophet /'prɒfɪt/ *n.* 预言者, 先哲
3. intolerable /ɪn'tɒlərəbl/ *n.* 不能容忍的, 难堪的
4. squalor /'skwɒlə(r)/ *n.* 污秽的, 卑劣
5. custodian /kʌ'stədiən/ *n.* 保管人, 管理员, 监护人
6. recalcitrant /rɪ'kælsɪtrənt/ *adj.* 不服从的, 反抗权威或纪律的
7. inevitable /ɪn'evɪtəbl/ *adj.* 不可避免的
8. outline /'aʊtlaɪn/ *n.* 外形, 轮廓, 要点, 大纲
9. artisan /'ɑ:ti'zæn/ *n.* 工匠, 技工
10. seminal /'seɪnɪl/ *adj.* 种子的, (喻)能够引发的, 启发性的
11. fountainhead /'faʊntɪnhed/ *n.* 根源, 本源
12. eschew /ɪ'stʃu:/ *vt.* 避开, 戒除
13. conspicuous /kən'spɪkjʊs/ *adj.* 显而易见的, 引人注目的
14. casing /'keɪsɪŋ/ *n.* 匣, 盒, 保护性的外罩

Phrases and Expressions

1. carry over 保留, 继续
2. in this connection 在这个方面, 相当于 in this state of affairs; in this respect
3. symbolic form 象征造型或图形
4. in terms 措辞, 说法

Notes

1. It is easier to understand what industrial design really is, and how the concept has developed historically, if one makes a resolution to ignore the more hectoring kinds of design propaganda.

如果不去理会那些虚张声势的设计宣传, 要理解什么是工业设计以及这一概念的历史进程其实并不难。

2. The notion of a responsible designer who is separated from the craft process, but who still has the right to instruct the craftsman, ... almost to the last detail.

“The notion”是此长句的主语，“was established”是谓语部分。

Free Reading

1. AALTO, Alvar(1898 - 1976)

Finnish architect and designer. Aalto studied architecture at the Polytechnic in Helsinki from 1918 to 1921. He established himself as an architect in 1923, and his Sanatorium at Paimio (1929 - 1933) is a classic of International Modern architecture. At the same time he began to design plywood chairs, and in 1935 set up a firm, Artek, to market his simple and successful furniture. Some of his plywood is cantilevered like Bauhaus tubular steel, but clearly softer in finish. His furniture was successful in England and in America and prompted other experiments in that direction, notably by Jack Pritchard. From 1937 he designed glass for Iittala, using asymmetrical shapes and subtle curves. Though part of the International Modern movement, Aalto was always sensitive to brick as a material, and he was one of the gentler exponents of Modern forms.

2. BEHRENS, Peter (1869 - 1940)

German painter, graphic designer and architect. He was a graphic artist until 1901 when he built his own house at the Darmstadt artists' colony, two years after having been invited there by its patron, the Grand Duke Ernst Ludwig. From 1906 he established the “corporate identity” of AEG, the vast German electrical company, producing architecture, graphics, kettles, fans and clocks for the firm. In 1907 he became a founder of the Deutscher Werkbund. At one time in 1910 Le Corbusier, Gropius and Mies van der Rohe all worked in his office. Behrens has been called a pioneer of Modern design, but this preservation of the traditions of the Renaissance and Schinkel suggest how far he was in fact a classicist.

3. RUSKIN, John (1819 - 1900)

British writer and critic. Ruskin was educated privately and at Christ Church, Oxford, from 1837 to 1842. In 1843 he published the first volume of his *Modern Painters*, completed in 1860. He became interested in architecture, and the Gothic style in particular, publishing *The Seven Lamps of Architecture* in 1849 and *The Stones of Venice* in 1851 - 1853. He wrote prolifically, and inspired Morris and the Arts and Crafts movement to turn away from industry for aesthetic and social reasons. He disliked railway trains, glass and iron, machine ornament and any decoration which lacked truth to materials, and wrote, for example, about the “fatal newness” of veneered rosewood furniture. *The Stones of Venice* contains a chapter “on the Nature of Gothic” in which the beauty of medieval craftsmanship and architecture is equated with the joy experienced in its creation. Ruskin met Morris in 1857; Mackmurdo studied under him at Oxford in 1873 when Ruskin was Slade Professor of Fine Art (1870 - 1879). He held that post again from 1882 to 1884, and although increasingly arbitrary in his judgements, and sometimes even insane, he influenced the whole of the second half of the nineteenth century. His influence was also felt in America, where Charles Eliot Norton was a friend of his, and “Ruskinian Gothic” architecture began to be produced as early as 1863.

4. LOEWY, Raymond (1893 – 1986)

French designer, naturalized American. Loewy trained in France as an engineer and moved to New York after serving in the First World War. He was a graphic and theatre designer until 1929, when he streamlined a Gestetner duplicating machine. He set up his design office in the following year, and re-designed the “Coldspot” refrigerator for Sears Roebuch in 1934, Greyhound buses in 1935 and streamlined locomotives for the Pennsylvania Railroad in 1937, as well as Electrolux appliances in 1939. Loewy became one of the best – known international designers, with offices in New York, Paris and London, and went on to produce objects for the NASA space programme until 1972. He was so prolific that in the 1950s an estimated 75 per cent of Americans came into contact with one or more of his designs everyday.

5. GROPIUS, Walter (1883 – 1969)

German architect. After studying architecture between 1903 and 1907, he worked for Behrens from 1908 to 1910. His earliest pre – First World War furniture was neoclassical. He was a member of the Deutscher Werkbund and in 1919 succeeded Van de Velde as head of the Weimer School of Arts and Crafts. This became the Bauhaus, first at Weimar and then in 1925 at Dessau, in a new International Modern building designed by Gropius himself. Gropius otherwise designed very little, but as director of the school was a major influence through his selection of staff, for example *Moholy – Nagy*. He went into private practice in 1928, having appointed Hannes Meyer as Bauhaus director. After a period in England between 1934 and 1937, during which he designed some furniture for Pritchard’s Isokon group, he emigrated to America to become Professor of Architecture at Harvard. In 1945 he founded the Architects’ Collaborative (TAC), which produced, amongst other things, architecture and ceramics for Rosenthal.

6. SOTTASS, Ettore (b.1917)

Italian architect and designer. Sottsass studied architecture at Turin Polytechnic from 1935 to 1939, and after war service opened his own office in Milan in 1946. He became design consultant to Olivetti from 1958 and set up a design studio for the company at Ivera, near Turin, in 1960. He designed the “Elca” computer for Olivetti in 1959, as well as the “Praxis” and “Valentine” typewriters in 1963 and 1969. Besides producing such examples of “good form”, Sottsass became a father – figure of “anti – design” in the 1960s. He produced furniture based on Pop Art for Poltronova from 1966, and Indian – inspired ceramics in 1969. The anti – design aspect of his work increased after 1979 when he became associated with Studio Alchymia, and in 1981 he formed the Memphis group, which continues this tradition. Of late, Sottsass’s Memphis designs — for example his “Hyatt” table of 1984 — even pay homage to Post – Modern Classical work by Hollein. The ambiguity of Sottsass’s approach to design makes him a key figure in Post – Modernism, in that he is able to reject “good form” where necessary for the sake of light relief.

Lesson 2 Working from Home

Working from home is on the increase in Europe and North America. A convergence of new technologies, economic changes and social demands is dramatically reshaping the living patterns which have dominated much of the twentieth century. The nine – to – five routine, which tied employees to a single location, is being replaced by more flexible ways of working.

The home office became an attractive concept for both companies and employees during the 1980s. Corporations faced with steep rises in property prices and rents, and the runaway costs of heating and lighting, began to question the wisdom of running large corporate office environments. Employees, meanwhile, questioned the need to endure stressful daily commuting from the suburbs to work in crowded, often dirty, city centers. The home office offered a more cohesive lifestyle: work time could be more varied, involving evenings and weekends, to fit in better with the schedule of family life.

Demographic change, with women forming a higher proportion of the working population, and economic conditions, with more people becoming self – employed, have contributed to this shift. What has made the choice possible — and engineered major changes in the attitudes of corporate employers — has been the enormous advances in telecommunications, from answering and facsimile (fax) machines to personal computers, modems and electronic mail (figure 2 – 1).

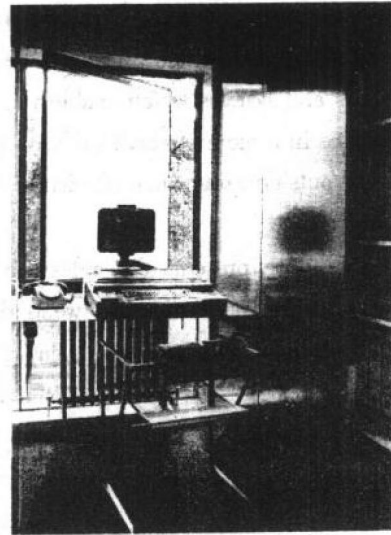


Figure 2 – 1

A typical home office sited on a half landing : home working is now a popular concept but major physical and psychological problems must be overcome.

But choosing to devote a part of your home to a working office involves a series of important design decisions. No matter how popular the concept becomes, there are undeniable disadvantages to be overcome. These fall into two categories: physical and psychological.

How can you physically divide up your living space so that your home office has privacy? Do you want an entirely separate office or one which converts daily from the living area? Do you even have a choice?

And there are a host of other physical considerations. Where do you house your computer and printer? Should you invest in a separate phone line? Will you need an answerphone and a fax machine? What work surface should you use? How will you organize storage? What are the local authority laws on running a business from home?

It is the psychological disadvantages which are often harder to deal with, however. Home – workers, even those plugged into the most advanced electronic networks, complain of isolation, of not being able to share the work experience with others. The distinctions between work and leisure time are also torn down: lost is that ability to shut your mind to the job as you leap aboard the commuter train each evening.

But the design of the furniture and lighting, machines and accessories (figure 2-2) with which you equip your home office can go a long way towards solving the most fundamental physical and psychological problems.

It is argued that working from home makes you more professional, not less, simply because you are not in an environment custom-built for work and so have to redouble your efforts to overcome the obstacles. Artefacts and systems which enable you to organize your workspace in a more streamlined way and communicate with the outside world more efficiently are of paramount importance.

This book presents the milestone products which have paved the way during the twentieth century for the unprecedented sophistication of today's home office. Our selection is more than a buyer's guide for those contemplating a retreat from the communal office: it provides an insight into the work culture of modern times and the way it is now changing.



Figure 2-2

Valentine Portable Typewriter: Ettore Sottsass for Olivetti 1968.

New Words

1. convergence /kən'veɪdʒəns/ *n.* 集中, 收敛, 合聚
2. cohesive /kəu'hɪsɪv/ *adj.* 有凝聚力的, 有结合力的
3. commute /kə'mju:t/ *vi.* 每天往返上下班, 定期往返
4. demographic /di'məgræfɪk/ *adj.* 人口统计学的
5. milestone /'maɪlstəʊn/ *n.* 里程碑, (喻)历史上或人生的(重要)阶段或事件

Phrases and Expressions

1. a host of 许多, 大量
2. plug into 连入网上, 加入

Notes

Demographic change, with women forming a higher proportion of the working population, and economic conditions, with more people becoming self-employed, have contributed to this shift.

此句主语为两个并列成分组成, 即“Demographic change”和“and economic conditions”, “have contributed to this shift”为谓语部分。

Free Reading

1. Changing Work Patterns

Looking at the tall corporate office blocks that dominate the skylines of the world's major cities, it is easy to believe that office began in commercial buildings. But, in fact, the earliest offices in the West were home offices. In early agrarian communities, farmers conducted transactions over the farmhouse kitchen - table, and this integration of home and "office" space continued during the era of the wealthy burghers of medieval Europe.

The first banks were housed on the ground floors of private residences. Colonial traders and shipping magnates also converted part of their homes for the pursuit of business until expansion forced them to seek alternative accommodation.

It was the Industrial Revolution in the early nineteenth century which stimulated the development of the modern commercial office. As the economy of first Britain and then other nations was transformed from an agrarian to an industrial base, as factories were built and cities developed, so the paperwork mounted up and the clerical industry was born. In the USA the number of clerks increased tenfold between 1880 and 1920.

A series of key inventions quickened the pace of office work in the late nineteenth century. In 1844 the first Morse telegraph had speeded up communications. This was followed by the introduction of the first practical typewriter in 1874, a Sholes and Gliden machine produced by E Remington & Sons, and the invention of the telephone by Alexander Graham Bell in 1876. Three years later Thomas Edison successfully developed the first tungsten - filament light bulb at Menlo Park, New Jersey.

Architects joined designers and inventors in creating a new world of work. In 1884 William Le Baron Jenney designed what is arguably the world's first skyscraper, the Home Insurance Building in Chicago. By 1919, the year that the National Association of Office Managers was formed in the USA under the leadership of Frederick Taylor, the USA was leading the world in office practice. Taylor was an advocate of scientific management and carried out many time - and - motion studies to determine the most time - saving and cost - effective ways to organize office layout and procedures. Offices had become vast, complicated places peopled by large numbers of staff.

The look and layout of the commercial office has changed over the years, depending on the architectural fashion of the time. But whether cellular, open plan or bürolandschaft (landscaped), the office has remained an enduring symbol of a century in which fewer and fewer people have actually made things and more and more people have processed information. Many developments in materials, furnishings and lighting can be traced directly to the needs of corporate and government employers and their staff.

But even at its zenith many innovations developed for the commercial office, for example, ergonomically correct seating, uplighting and track lighting, quickly crossed the domestic threshold and so paved the way for the creation of effective home offices. And just as the late nineteenth - century inventions of Bell, Remington and Edison encouraged people to organize work away from the home, so a modern generation of designers and manufacturing companies are encouraging them to return home to work.

2. Furniture and Lighting

Of all the items of equipment needed for a home office, the desk is the oldest and, in many aspects, the most unchanged. Despite a century of breathtaking scientific advances, a work surface is still a work surface — and many people still simply use the kitchen table as a desk.

Many contemporary pieces are reworkings of ideas from earlier centuries. For example, there is in the Victoria and Albert Museum in London an oak desk dating from 1500 A. D. which has a hinged lid and a receptacle below for books. There are also references in fifteenth – century manuscripts to desks which revolve on a spiral column.

By the late eighteenth century English cabinet – makers such as Thomas Sheraton and Thomas Chippendale were showing a technical and creative ingenuity which in many ways has been unsurpassed. Their collection of cylinder writing tables, escritaires, secretaries, desks and bookcases, presents a wide variety of designs with decorative and functional elements perfectly combined. Reproductions of this work now abound. The originals are, of course, expensive antiques. Dating also from that time is the davenport, a small, sloping desk with a case of drawers below on castors. It was first made to order for a Captain Davenport by the firm of Gillow.

In furniture Modernist design ideals the early twentieth century centered on a simplification of form and the exploration of new materials. For example, chairs by Bauhaus participant Marcel Breuer in the 1920s end by Serge Chermayeff in the 1930s exploited the cantilever ability of tubular steel.

Later, after 1945, the special properties of newly developed plastics came into their own. Plastics brought a lightweight, space – saving potential to the home office. Furniture could be stacked or folded away, and new stacking storage and wall containers could be utilized. The Italian company Kartell, founded in 1949, was swiftest to see the possibilities. Its high – quality injection – moulded products — among them, Joe Colombo's storage trolley of 1970, Simon Fussel's Drawer system of 1974, and Anna Castelli Ferrieri's stacking armchair of 1986 — have captured the imagination of design – conscious home – workers, as did Florence Knoll's desks in the 1950s. Giancarlo Piretti's folding Plia chair (1969) and Platone desk (1971), which cabins ABS (Acrylonitrile Butadiene Styrene) plastics with chrome tubular – steel, are also classics of simple ingenuity, both for Castelli.

Functionalist ideas have influenced many recent furniture pieces for the home office, most noticeably Israeli designer Ron Arad's high – tech system in the early 1980s, which used Klee Klamp scaffolding to create an office desk and shelving beneath a bed on stilts. But the latest thinking in home – office furniture is mining the rich seam of ideas from the time of Chippendale and Sheraton. Richard Sapper's 1989 *Secrétaire* for Unifor houses a personal computer but is inspired by eighteenth – century antiques and Massimo Scolari's meticulously crafted Tao desk (1989) also turns to Classicism for inspiration.

However, if furniture for studies and libraries had a well established repertoire by the late eighteenth century, developments in lighting for the home office belong very much to this century. In the years after Thomas Edison's creation of the first tungsten – filament bulb, this significant invention was refined by research and development to provide a brighter light.

By 1990 many offices were electrically lit, although they also relied heavily on natural light and had

high ceilings to let in as much sunlight as possible. Meanwhile, in the home, Art Nouveau glassware designers such as Louis Comfort Tiffany in the USA and Emile Gallé and the Daum brothers in France were designing electric lights for wealthy, style-conscious customers.

The desk or task light has become one of the cult objects by which designers measure advances in theory and practice. Christian Dell and Wilhelm Wagenfeld at the German Bauhaus design school experimented with desk lights in the 1920s; the American pioneer consultants of the 1930s, such as Walter Dorwin Teague and Donald Deskey, did so too. But the most outstanding task light of the twentieth century was created in England in 1934, when a young automobile engineer, George Carwardine, collaborated with spring manufacturer Herbert Terry to design the Anglepoise lamp, which is based on the constant-tension principles of the human arm.

The Anglepoise has been scarcely altered to this day. Three years after it was launched, a Norwegian named Jac Jacobsen bought a patent, renamed the light Luxo and introduced it first throughout Scandinavia and then, in 1951, into the USA with great success.

The post-war years in home-office lighting have, however, been dominated by Italian designers, who seized the opportunity presented by heat-formed plastics to create marvelous pieces of functional industrial sculpture. Milan in particular, the home of such progressive companies

as Flos, Arteluce and Artemide, became the center for new ideas. German designer Richard Sapper went to work there in 1958: he married Teutonic engineering precision to the sensuality of Italian design to create the Tizio light of 1972 (figure 2-3), a modern classic.

Since then, lighting technology has moved on apace with advances in low voltage and dimming fluorescent. These advances in light-source technology have been matched by even more ingenious designs of the fittings which house them, but little of this work is of direct relevance to the home environment. There is now a flourishing trade in reproductions of desk lamps from earlier this century, for example Mario Fortuny's circular-framed Table lamp of 1990.

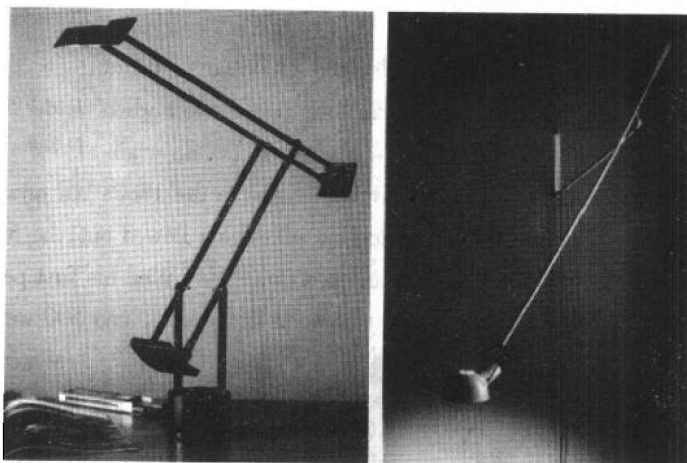


Figure 2-3

(Left) Tizio: Desk Lamp of metal and synthetic resin, Design Richard Sapper, 1972. Artemide. (Right) Model 265: Angle-poised metal wall lamp, Design Paolo Rizzatto, 1973. Flos.

3. Pens and Pencils

Before the telephone was invented, the writing instrument was the most important tool in the home office, suggesting the class and refinement of the occupant. That still holds true to an extent today. Certain writing instruments have acquired the status of cult classics, such as the German Montblanc Meister-