

高等院校土建学科双语教材（中英文对照）

◆建筑学专业◆

# 空间设计

## SPATIAL DESIGN

[德] 欧利奇·埃克斯纳 编著  
迪特里希·普雷塞尔

董 慰 张 宇 译

BASICS

中国建筑工业出版社

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空间规划和设计是建筑设计的基本内容。不管是景观、城市空间还是室内空间，都可以将一些可以用来比较的原则和参量应用到空间设计与感知中。建筑师、城市规划师或其他个人都可以有意识地设计空间，但空间使用状况与时间印迹也能对空间形式及其改变产生相当重要的影响。此外，空间的感知和评价并不客观，往往依赖于使用者的个人感知及其社会文化背景。因此，我们提出一系列宽泛、可能的设计方法和丰富、多样的设计技术。

本书通过对空间现象的审视来关注现实的核心内容，这些空间现象与具体的空间功能和专业学科并不相关。本书也讨论了人类用于感知环境的不同感官感觉、如何获得和传递感官刺激的方式，以及我们如何基于个人经验对其进行评估。为了更好地解释不同的空间，本书对不同空间类型及其各自特征进行了情境化的描述。“空间设计的参量”一章中讨论了所有类型空间设计必要的基本原则，并在“空间设计的要素和方法”一章中，通过对每个设计方法及其实际案例的阐述对上述基本原则加以证明。作者表达了他对空间特征的深刻理解，提出了可供设计师使用的空间设计方法。

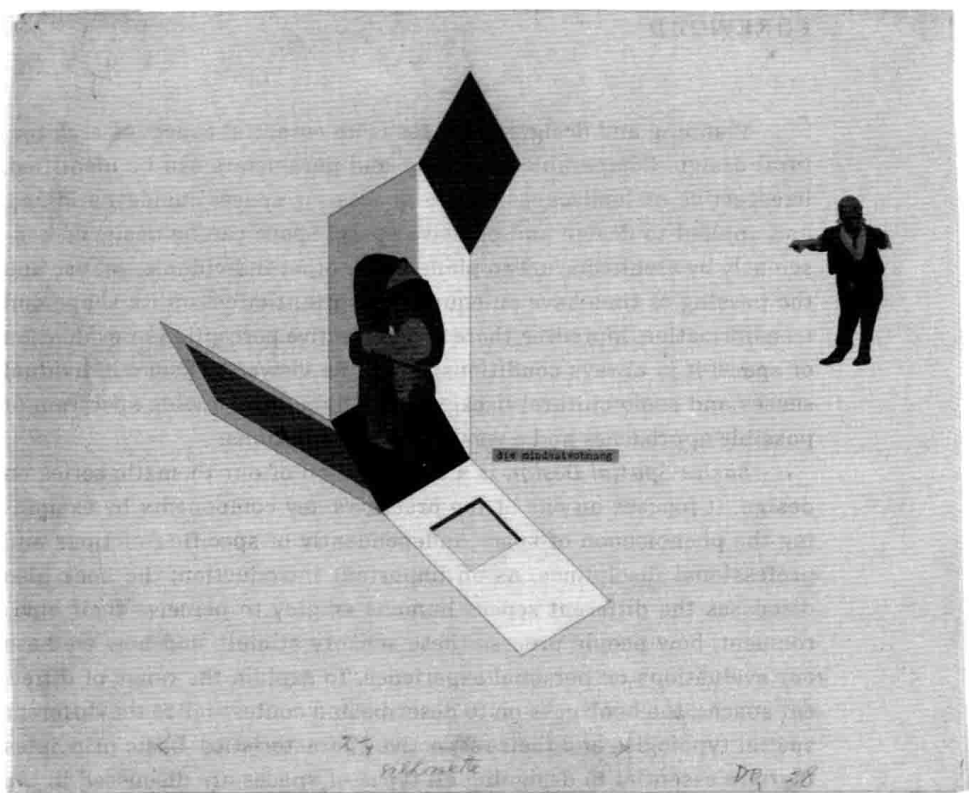
编辑：伯特·比勒费尔德 ( Bert Bielefeld )

## FOREWORD

Planning and designing spaces is an essential aspect of architectural design. Comparable principles and parameters can be identified, irrespective of landscapes, urban spaces, or spaces inside buildings, and applied to design and perceive space. Space can be designed consciously by architects, urban planners, or other individuals, yet use and the passing of time have an equally important effect on its shape and transformation. Moreover, there is no objective perception or evaluation of space; it is always conditional upon the viewer or user's individual senses and socio-cultural background. This allows a wide spectrum of possible approaches and a wealth of design options.

*Basics Spatial Design* is a continuation of our thematic series on design. It focuses on one of the practice's key components by examining the phenomenon of space, independently of specific functions and professional disciplines. As an important introduction, the book also discusses the different senses humans employ to perceive their environment, how people process these sensory stimuli, and how we base our evaluations on personal experience. To explain the range of different spaces, the book goes on to describe and contextualize the different spatial typologies and their respective characteristics. Basic principles that are essential to designing all types of spaces are discussed in the chapter "The parameters of spatial design" and then substantiated in the chapter "Elements and Means of Spatial Design," using individual design methods and actual examples. The authors hope to convey a deeper understanding of the specific attributes of spaces, and the ways in which designers can consciously influence their subsequent effect.

Bert Bielefeld, Editor



## INTRODUCTION

Space is fundamental to human existence, and much of the spatial environment is designed by people. Day-to-day life always takes place within a space, whether it is a landscape, a city, a house, or a room. People naturally trust that their built or natural environment is permanent, despite the fact that earthquakes or war can suddenly destroy that very environment. People perceive space with their senses directly, individually, and always in a new and fresh way. There are spaces in which we enjoy or do not enjoy walking, relaxing, dreaming, or working. A forest or a street might seem inviting during the day but threatening at night. Within seconds, a spatial situation can feel too close or too large, safe or threatening, inviting or repulsive, which are all impressions that influence our behavior accordingly. Hikers always deliberately choose a resting place according to particular criteria: the sun is shining, the wind is not too strong, it is sufficiently cool, has a pleasant view, and sounds from the environment are absorbed well enough so as not to disturb the sought-after tranquility. The atmosphere of a place such as this is difficult to describe in detail, because various aspects come together simultaneously to make an impression; they are not perceived and analyzed individually.

People design their spatial environment according to their needs for protection against the forces of nature, their various behavioral patterns, work and life style, and their desires and philosophies. Yet a large part of the spatial environment is determined by others or is pre-given, often by the private interests of others, according to natural factors, or the will of the political majority. Constructed spaces can stimulate the senses and the mind through form, materiality, and light or color. Their dimensions can provide either shelter or security, and their design can generate feelings of surprise, astonishment, joy, or wellbeing. Inventing a spatial container is at the same time the invention of a way to enliven it. Spatial design, as a built implementation, can also be described as the cultural-ideological, site-specific, economical, political, social or use-determining parameters that define human existence. These parameters are subject to constant change and always influence constructed spaces. In spatial design, requirements and concepts should be recognized that will be applicable to an individual or relevant to a group, for a millennium, or perhaps only for a few hours.

Spatial design can be generally defined as any type of active spatial appropriation, whether it is a room or a landscape. At the center of this group is space as a relationship, perceived sensorially and cognitively, between things, bodies, or elements of the activated nature. Below,



Fig. 1:  
Cans provide the greatest amount of volume in relation to the most amount of external material, plus a choice of surface design.

we discuss human perception of the built and natural environment, the characteristic phenomena of space, and the means and elements available for designing it.



## SPATIAL PERCEPTION

The prerequisite for any spatial design and its effect is the human sensory and cognitive perception of the surrounding environment. All of the sensory stimuli conveyed by the space are processed by the brain, which influences how an individual feels, behaves, and moves.

Humans are believed to possess up to thirteen senses, including the five main senses of sight, hearing, touch, smell, and taste, as well as balance. Some people do not have access to all of the senses, or are not able to perceive or fully perceive certain sensory stimuli such as light or sound. The sense of equilibrioception is responsible for perceiving gravity, and therefore spatial verticality, as the constant orientation in space.

Spatial perception serves our individual, day-to-day basic orientation, without our needing to absorb all of the spatial characteristics completely. We are constantly using new spaces in our daily lives. Much of a space's information is processed so quickly by the senses and the cognitive system that it automatically influences our behavior without the need to first activate our thinking process. The human processing of perception and information quickly allows a space to appear cozy or uncomfortable, claustrophobic or protective, without perceiving the spatial characteristics individually. We know the moment we enter a café whether we like the atmosphere or not.

Spatial perception is individual. After a long period of time, adults see the place where they spent their childhood as small, although they remember it as being large. At the same time, there are many spatial characteristics that several people perceive in a similar way. Orientation systems, for one, would not function otherwise. Perceiving the spatial environment mostly occurs while we are in motion, which can be encouraged by a space's particular attributes.



### \\ Note:

The cognitive system is the term used for the human function associated with perception, learning, remembering, and thinking; in other words, human thoughts and mental processes.



### \\ Note:

Sensory perception is aesthesia in Greek. In philosophy, the term "aesthetics" is used to describe the theory of sensory perception. In everyday speech however, aesthetic is now used as a synonym for beautiful.