

专业外语

Professional English in Architecture

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南昌大学建筑与设计学院

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《专业外语》教学大纲

1. 课程概论(3月2日)
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专业文献精读

第五讲



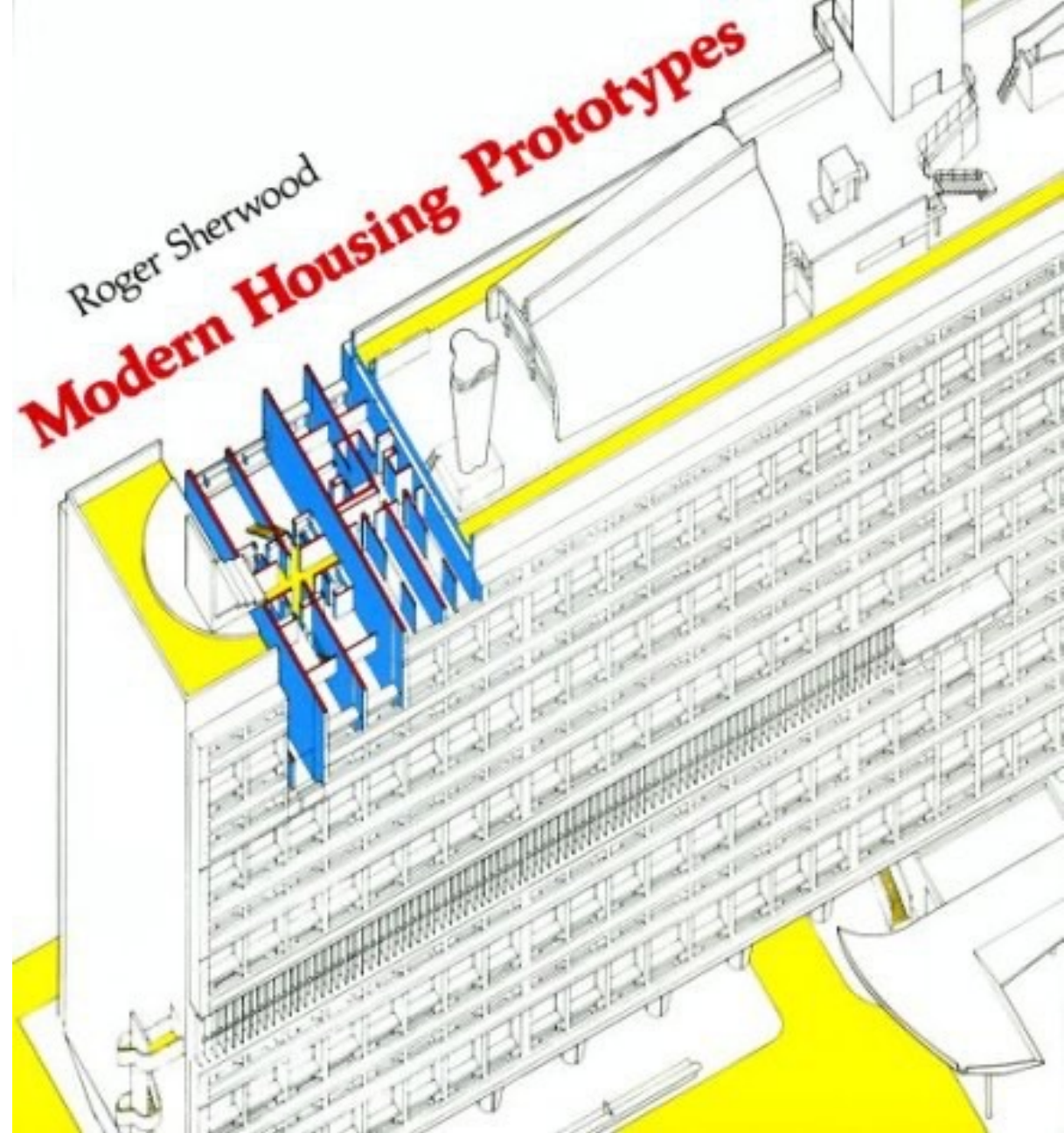
Unit 10

Modern housing prototypes

Roger Sherwood

Roger Sherwood is a practicing architect and Associate Professor of Architecture at the University of Southern California

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Words and Phrases

- two-level unit 复式单元
- single-loaded 外廊式
- double-loaded adj.内廊式
- Walk-up n.无电梯的公寓/adj.无电梯的
- skip-stop corridor 隔层设置的走廊
- corridor-every-floor 每层设置走廊的
- vertical circulation system 垂直交通系统
- low-rise adj.低层； high-rise adj.高层
- rowhouse adj.联排式住宅
- slab n.板式住宅；
- tower n.塔式住宅
- Single-orientation unit 单一朝向单元
- Double-Orientation Unit 90° 转角单元
- Double-Orientation Unit, open-ended 双向开敞的单元
- natural light 自然采光
- natural ventilation 自然通风
- mechanical ventilation 机械通风
- transverse walls 横墙
- building codes 建筑规程
- staggered- plan 交错变化的平面
- auxiliary mean 辅助设施
- self-contained adj.设备齐全的
- single-run 单跑楼梯
- return stairs 双跑楼梯



Section 1 Intensive reading

- **Part 1**

- **INTRODUCTION**

- This book is presented in the belief that a re-examination of some of the great housing projects of this century is appropriate at a time when the design of housing commands the attention of architects the world around. The buildings offered here as case studies were selected because of their importance as prototypes, projects that set the standards and patterns of much that was, and is, to follow.
- 本书的提出是基于这样的信念：在住房设计引起全世界建筑师关注的时候，重新审视本世纪的一些伟大的住房项目是合适的。这里提供的建筑被选作案例研究，是因为它们作为原型的重要性，这些项目为过去和现在的许多项目设定了标准和模式。



Section 1 Intensive reading

- Other considerations were diversity--so that a wide range of countries, buildings types and problems would be represented--and architectural quality. My assumption is that there is no excuse for poor architecture; that housing, like all buildings, to paraphrase Geoffrey Scott, must be convenient to use, soundly built, and beautiful.
- 其他的考虑是多样性--这样才能代表广泛的国家、建筑类型和问题--和建筑质量。我的假设是，没有任何借口可以为糟糕的建筑辩护；用杰弗里-斯科特的话说，住房和所有建筑一样，必须方便使用，建造合理，并且美观。



Section 1 Intensive reading

- But why prototypes? One of the essential points of heuristic(启发式的) thought --the process of discovery and invention relating to problem solving --is the awareness that, until a problem is clearly defined, guesses or conjectures(猜想) must be made to help clarify the problem.
- 但为什么是原型？启发式的思想--与解决问题有关的发现和发明过程--的一个基本点是意识到，在问题被明确定义之前，必须进行猜测或猜想来帮助澄清问题。



Section 1 Intensive reading

- During the period of uncertainty, reference to analogous problems can be used to give a new turn to one's thinking. Through the study of solutions to related problems, a fresh conclusion may be reached.
- 在不确定的时期，参考类似的问题可以用来给自己的思维带来新的转机。通过研究相关问题的解决方案，可以得出一个新的结论。



Section 1 Intensive reading

- Various writers have suggested that it is never possible to state all the dimensions of a problem, that “truly quantifiable criteria always leave choices for the designer to make.”
- 不同的作者提出，永远不可能说出一个问题的所有层面，“真正可量化的标准总是让设计者做出选择”。



Section 1 Intensive reading

- In the absence of clear design determinants, and to avoid purely intuitive guessing, it has been argued that analogous reference might give design insight; that perhaps a paradigm ['pærədəɪm] (范式) of the problem might be accepted as a provisional(临时的) solution, or an attack on the problem might be made by adapting the solution to a previous problem; that during the period when many of the variable are unknown, a “typology of forms” might be used as a simulative technique to clarify the problem.
- 在没有明确的设计决定因素的情况下，为了避免纯粹的直觉猜测，有人认为类似的参考可能会给设计带来启示；也许问题的范例可以被接受为临时的解决方案，或者通过对以前问题的解决方案进行调整来对问题进行攻击；在许多变量未知的时期，“形式的类型学”可以作为一种模拟的技术来澄清问题。



Section 1 Intensive reading

- The notion of using an analogous problem as a paradigm for gaining insight into a present problem is not, of course, new. A mathematician typically looks for an auxiliary(辅助的) theorem ((尤指数学)定理) having the same or a similar conclusion.
- 当然，用一个类似的问题作为洞察当前问题的范式，并不是什么新概念。数学家通常会寻找一个具有相同或类似结论的辅助定理。



Section 1 Intensive reading

- In architecture, invention often passes through a phase of groping(摸索), where ideas about a projected building form are triggered by exposure to some existing building with a similar program, functional specification, or site condition. The analogous building then becomes in some sense a model or a prototype.
- 在建筑学中，发明往往要经过一个摸索的阶段，即通过接触一些具有类似程序、功能规格或场地条件的现有建筑来触发关于预期建筑形式的想法。然后，类似的建筑在某种意义上成为一个模型或原型。



Section 1 Intensive reading

- The use of prototypes is especially useful in the design of housing because housing lends itself to systematic typological study. Most building types, such as theaters, schools, factories, or even office buildings, have to respond to different programs and are rarely consistent and repetitive.
- 原型的使用在住房设计中特别有用，因为住房本身适合于系统的类型学研究。大多数建筑类型，如剧院、学校、工厂、甚至办公楼，都要对不同的项目做出反应，很少有一致和重复的情况。



Section 1 Intensive reading

- Housing, because it consists of repeating units with a consistent relation to vertical and horizontal circulation, can more logically be studied in terms of its typological variations. Although housing would seem to embrace almost unlimited possible variations, in fact there are not many basic organizational possibilities and each housing type can be categorized easily.
- 住宅，由于包括重复的单元，它们有一致的水平和垂直流线的联系，所以可以依照类型上的变化来进行更加逻辑性的研究。尽管住宅似乎包含几乎无限种可能的变化，但事实上没有那么多基本组织的可能性，而且每一种住宅组织类型都可以被简单地归类。



Section 1 Intensive reading

- While building regulations, construction techniques, and housing needs have considerable impact on the form that housing may take at any given time in any given culture, still only a few dwelling unit types are plausible(看似合理的), and these units may be collected together in only a few rather limited ways that do not change very much from country to country. An apartment building unit today in Zagreb--as an organization of building units--is much like an apartment building in Berlin or Tokyo.
- 虽然建筑规程、建造技术和住宅需求会在任何指定时间和任何指定文化之下对建筑形式产生相当大的影响，仍然有少量的居住单元形式是合理的，这些被选择的单元以很少的相当局限的方式组合在一起，这些方法在国家与国家之间改变很小。现今在萨格勒布的一个公寓大楼单元——像一个建筑单元的组合——与柏林或东京的公寓大楼很像。



Section 1 Intensive reading

- Even extreme cultural requirements, such as the provision for a tatami life-style in Maekawa's Harumi slab in Tokyo (Figure 10—1) (晴海高层公寓 (1958)), have resulted in an organization that can easily be compared to a Western model: Park Hill in Sheffield of the sixties(Figure 10—2). For example, is organizationally similar. Both have larger and smaller units in the typical section.
- 即使是极端的文化需求，例如在东京的提供榻榻米生活方式的 Maekawa's Harumi公寓（图10-1），也成为一个组织能够容易地与西方范例作比较：例如，60年代在谢菲尔德（Sheffield）的Park Hill（湖滨公寓）（图10-2）。他们在组织上很相似，都在典型的剖面中有大大小小的单元。

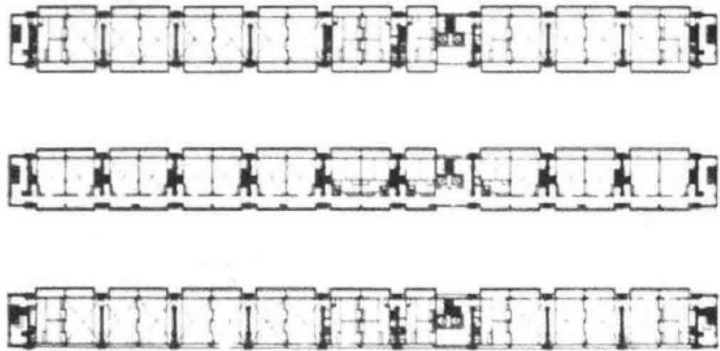


Figure 10-1 Harumi Apartment House, Tokyo. Kunio Maekawa, 1958.

Section 1 Intensive reading

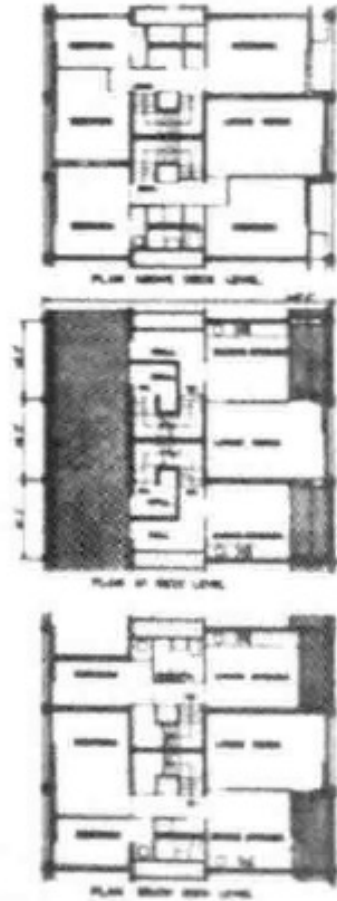
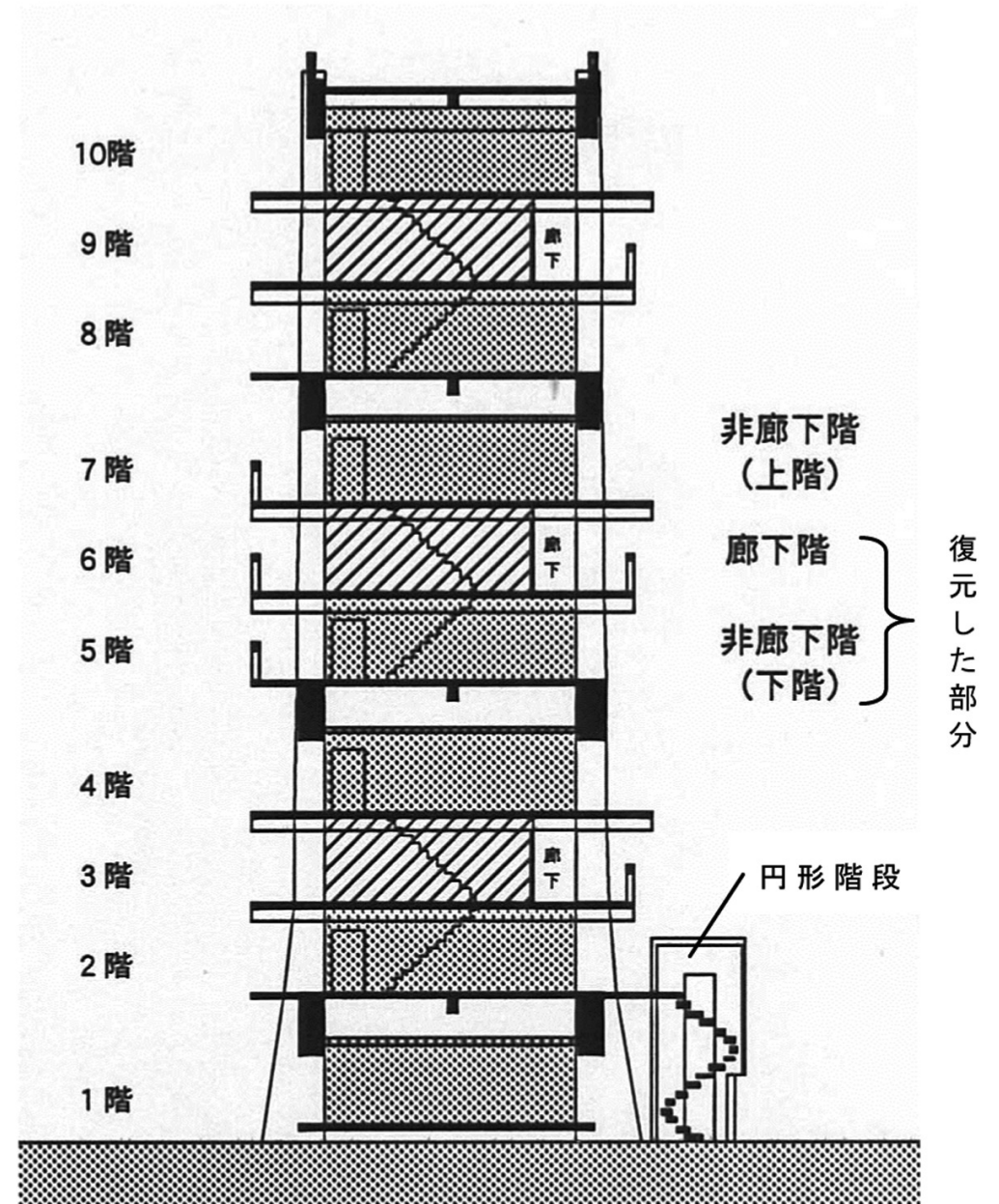
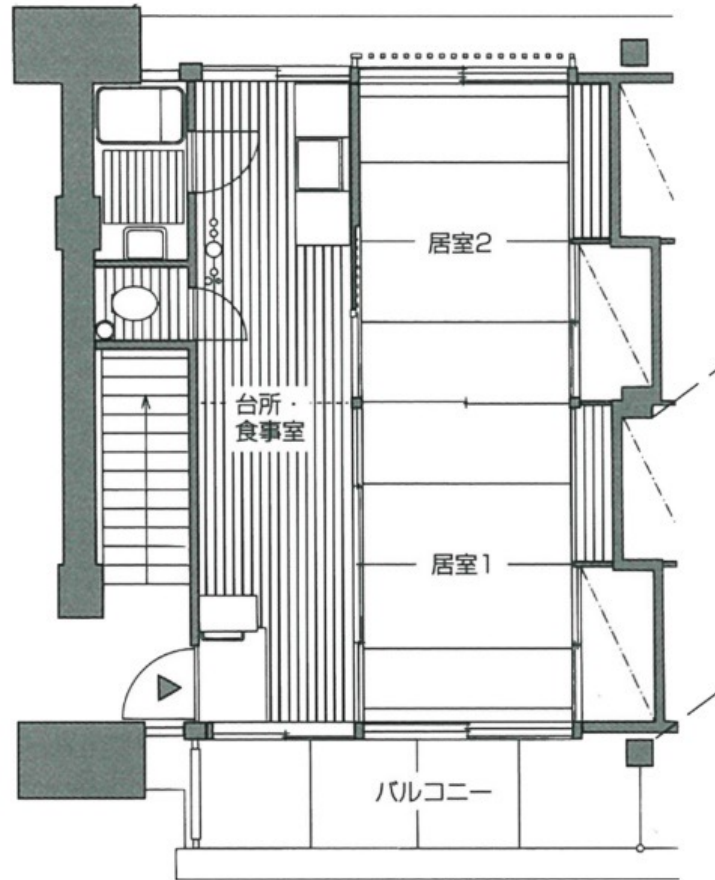


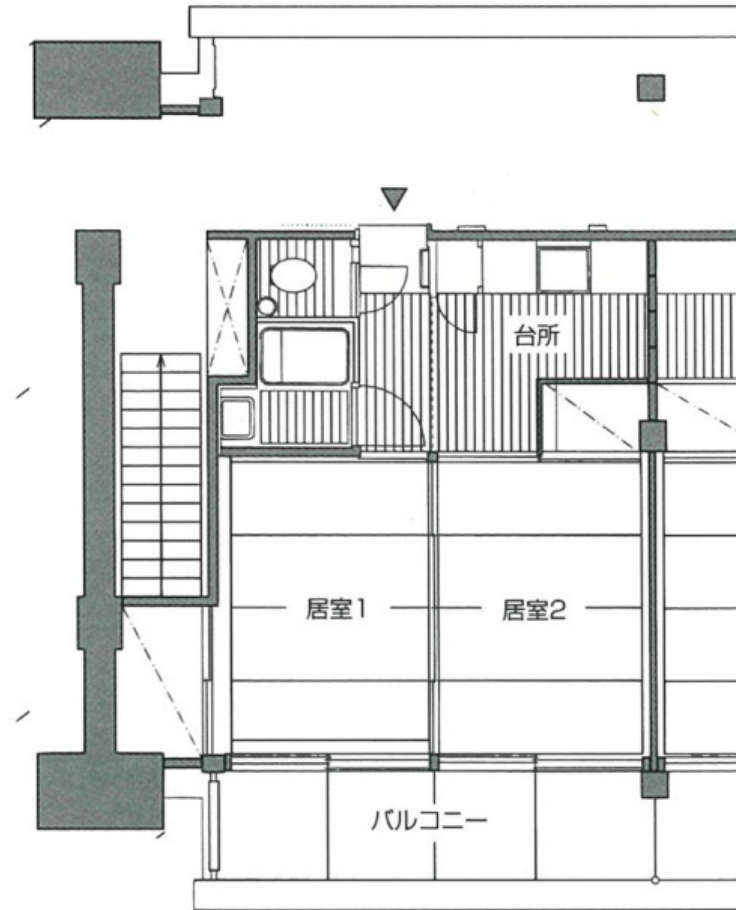
Figure 10-2 Park Hill, Sheffield.
Lewis Womersley, 1959.



Section 1 Intensive reading



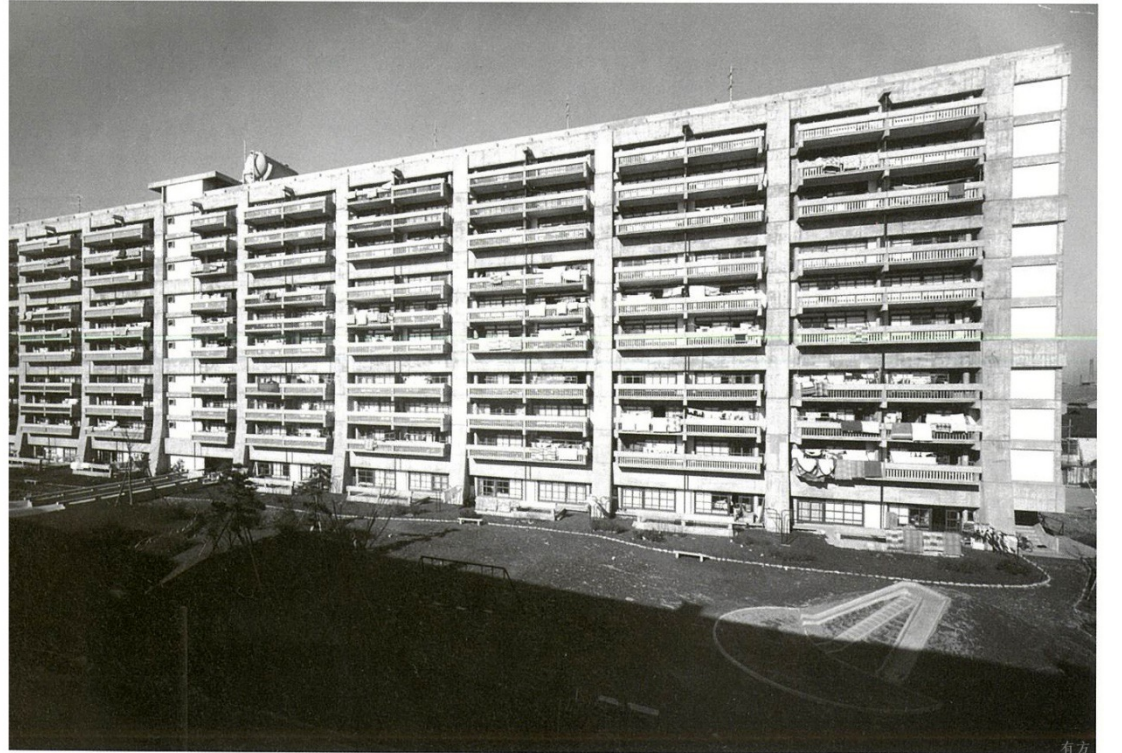
非廊下階住戸



廊下階住戸

Section 1 Intensive reading

- Entrance to the larger of the two--a two-level unit--is at the corridor level, with rooms above: stairs lead to the smaller unit below. In each, therefore, the corridor occurs at every other level, and stairs lead up and down from there.
- 通向两个中较大的一个复式单元的入口是在走廊层面上，它的上方有房间：楼梯通向下面较小的单元。因此，在每一栋楼里，走廊出现在每两层，楼梯引导着内部上与下。



Section 1 Intensive reading



非廊下住户单元面海的房间

Section 1 Intensive reading



非廊下住户的厨房与餐厅

Section 1 Intensive reading

- Although the position of the stairs, kitchen, and both are different--along parallel walls in Harumi and in a zone parallel to the corridor in Park Hill--and the sittings of the buildings are quite different, nevertheless they are organized fundamentally alike.
- 尽管楼梯和厨房的位置都不一样——（楼梯）沿着Harumi的平行墙和一个平行于Park Hill走廊的区域——以及建筑的基址也相当不同，但他们的组织形式基本上是相同的。



Section 1 Intensive reading

- Even the Arab housing designed in Morocco in the fifties by ATBAT (Figure 10—3), where cultural requirements dictated absolute visual privacy, outdoor cooking, and a lack of the usual room sub-divisions and conventional toilets, resulted in a building which, although it has a peculiar checkerboard elevation, is more or less a conventional single-loaded, gallery access apartment building.
- 甚至在50年代由ATBAT事务所设计的位于摩洛哥的Arab住宅（图10-3），（这是为传统穆斯林设计的住宅）当地的文化要求决定着：要有绝对的视觉私密性、户外烹调，由于缺乏对普通房间的划分和传统的厕所，尽管它有着独特的棋盘式立面，也导致这个建筑差不多就是传统的外廊、走廊进入式的公寓建筑。

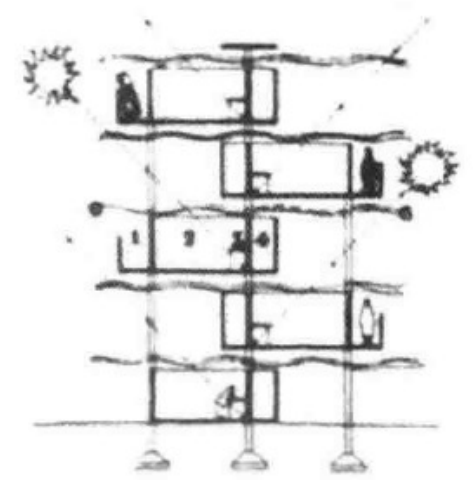


Figure 10-3 Housing, Morocco.
ATBAT, 1950.

Section 1 Intensive reading

- Whatever his cultural, economic and technical constraints, every architect is confronted with choices and questions about organization. How will the individual apartments be arranged? How will the mix of different apartment types be accommodated?
- 无论它的文化，经济，技术限制如何，每个建筑师都应该要正视组织形式的选择和问题。如何布置单独的公寓？如何使混合的不同公寓类型相互适应？



Section 1 Intensive reading

- What circulation systems--horizontal and vertical--can service this mix of apartments? What is the best circulation system? Walk-up or single-loaded, double-loaded, or skip-stop corridor system? Where is entrance and access to the vertical circulation system? What building form dose this collection of units take: low-rise or high-rise, rowhouse, slab or tower?
- 什么样的交通系统能给混合的公寓提供水平和垂直的服务？什么是最好的交通系统？无电梯的公寓、外廊式、内廊式、还是隔层设置走廊系统？哪里是垂直交通系统的入口和通道位置？单元集合采取怎样的建筑形式：低层，高层，联排住宅，板式住宅还是塔式住宅？



Section 1 Intensive reading

- These fundamental organization questions are pertinent(有关的; 恰当的) to any housing project. Modern Housing Prototypes is intended to provide the architect with a set of analogues references to help him solve these basic organizational problems.
- 这些基础的组织问题与各种住宅项目都息息相关。《现代住宅的原形》试图提供给建筑师一套类似的参考去帮助他们解决这些基本的组织问题。



Section 2 Extensive Reading

- **Editorial Reviews**

- Journal of Architectural Education: By including idiosyncratic [ˌɪdiəˈsɪŋˈkræɪtɪk] (乖僻的; 怪异的) works, Sherwood has encompassed the best that “modern” architecture has offered us to live in. His list of examples is difficult to fault and his drawings and informative text make this book well worth owning.
- 《建筑教育杂志》：舍伍德通过包括独特的作品，囊括了“现代”建筑为我们提供的最好的生活。他的例子清单很难挑剔，他的图纸和信息丰富的文字使这本书非常值得拥有。



Section 2 Extensive Reading

- The Yale Graduate Professional: Presented so clearly and concisely, Sherwood's projects may be easily compared and are comprehensible to those unfamiliar with housing design. The book itself is attractively organized, harmoniously balancing text, photograph, and drawing. The juxtaposition [ˌdʒʌkstəpəˈzɪʃn](并置) of these, as well as the use of color in selected axonometric, adds not only to the beauty of this collection but also to the accessibility and clarity of the projects presented within.
- 耶鲁大学毕业生（研究生）专业人士：舍伍德的项目简明扼要，易于比较，不熟悉住房设计的人也能理解。这本书本身的组织很吸引人，和谐地平衡了文字、照片和绘画。这些并置，以及在选定的轴测图中使用颜色，不仅增加了这个系列的美感，而且增加了其中所呈现项目的可访问性和清晰度。



Section 2 Extensive Reading

- **Book Description**

- The design of housing has commanded the attention of the greatest architects of the twentieth century. In this stunning volume, Roger Sherwood presents thirty-two notable examples of multifamily housing from many countries and four continents, selected for their importance as prototypes.
- 住宅设计引起了二十世纪最伟大建筑师的注意。在这本令人惊叹的书中，罗杰舍伍德展示了来自许多国家和四大洲的三十二个多户住宅的著名例子，这些例子因其重要性而被选为原型。



Section 2 Extensive Reading

- Designed by such masters as Frank Lloyd Wright, Le Corbusier, Mies van der Rohe, and Alvar Aalto, they range from single-house clusters to row-houses, terrace houses, party-wall and large- courtyard housing, to urban high-rise towers and slabs.
- 由弗兰克·劳埃德·赖特、勒·柯布西耶、密斯·凡·德罗和阿尔瓦·阿尔托等大师设计，从独栋住宅群到排屋、洋房、联排住宅和大庭院住宅，再到城市高层塔式住宅和板式住宅。



Section 2 Extensive Reading

- The thirty-two buildings or housing complexes are illustrated with photographs, site plans, floor plans, elevations, and marvelous axonometric drawings.
- 三十二座建筑物或住宅区都配有照片、场地平面图、平面图、立面图和奇妙的轴测图。



Section 2 Extensive Reading

- In each case Mr. Sherwood gives background information on the project, mentions factors the architect had to take into consideration (social, environmental, financial), points out creative solutions to particular problems, and comments on special features of the design. Laymen as well as professionals will find his presentations enlightening.
- 在每一个案例中，舍伍德先生都提供了项目的背景信息，提及建筑师必须考虑的因素（社会、环境、财务），指出特定问题的创造性解决方案，并评论了该项目的特点。外行和专业人士会发现他的演讲很有启发性。



Section 2 Extensive Reading

- In the Introduction, Mr. Sherwood sets forth the basic principles of organization that apply to housing. He analyzes first the limited number of ways in which individual apartments or living units can be laid out (each type or plan lending itself to variations and permutations) and then the ways in which different units can be vertically and horizontally organized within a single building. Drawings and plans of more than eighty housing complexes in twenty countries accompany his analysis.
- 在引言中，舍伍德先生阐述了适用于住房的基本组织原则。他首先分析了单个公寓或居住单元的有限布局方式（每种类型或计划都适合变化和排列），然后分析在一个建筑中，不同单元在一个单一的空间中垂直和水平组织的方式。20个国家的80多个住宅区的图纸和计划配合着他的分析。



Section 2 Extensive Reading

- Mr. Sherwood offers his book in the belief that there is no excuse for shoddy architecture ; that no branch of architecture is more important than the design of human habitations ; and that much is to be learned from the study of significant buildings of the recent past.
- 舍伍德先生提供他的书是因为他相信劣质建筑没有任何借口；没有任何建筑分支比人类住区的设计更重要；而且可以从对近代重要建筑的研究中学到很多东西。



Section 3 Tips for translation

Translating the passive voice 被动语态的翻译

- 相对于汉语，英语中被动语态用得较多。因此被动语态的翻译是英译中的过程中必须注意的问题。

1. The first Metropolitan Opera House was built on Broadway and 39th Street by a group of wealthy businessmen who wanted their own opera house.

- 大都会歌剧院最早是由一帮想拥有自己歌剧院的有钱的生意人在百老汇和第39大街兴建的。
- 此句的翻译中，**英语中的被动语句式被翻译成汉语中的主动句式。**

2. The Global Financial Center, which will be the highest skyscrapers in China, is expected to be finished in 2008.

- 将成为中国第一摩天楼的环球金融中心可望在2008年完工。
- 此句的翻译中，**使用汉语中的“主语—谓语”被动句式来替代英语的被动句。**译文中的“可望”在汉语中就带有被动含义。下一句也是类似的情况。



Section 3 Tips for translation

3. The structural difference between semi-lattice and tree-like cities can be expressed in a single word: overlapping.

- 半网络和树形城市的结构区别可以概括成一个词：交叠。

4. The problem of historical preservation can be solved in diverse ways.

- 历史保护的问题可以通过不同的方式得到解答。
- **在被动语态的翻译中，也可以通过使用包含被动意义词，如“使”、“由”、“得到”、“给”等等，来体现英文的被动含义。上句中的“be solved”的翻译即是如此。下一句也是类似的情况。**



Section 3 Tips for translation

5. More than 30% the concrete in the world is manufactured by China annually.

- 世界上每年30%以上的混凝土是由中国生产的。

6. It is said that Ando Tadao is going to pay a visit to our school during his stay in Shanghai.

- 据说安藤忠雄在上海停留期间将访问我们学院。

- **英文中的一些常用被动句式如 “It is said that...” 、 “It is reported that...” 、 “It is well known that . . .” 、 “It must be pointed out that...” 等可以不加主语进行翻译，如 “据说” 、 “据报道.....” 、 “众所周知.....” 、 “必须指出的是.....” 。**



科技论文阅读

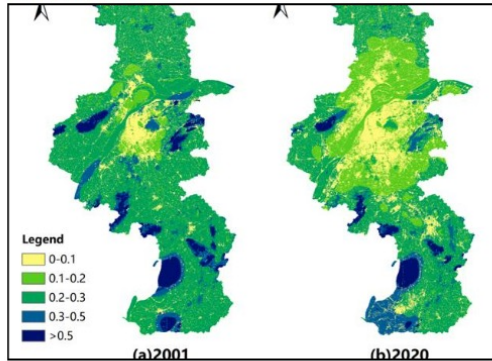


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- 科技论文精读材料，提前下载好！
- <http://icelab.org.cn/NewsDetail.aspx?ID=70>
- Yunqin, LI., YABUKI, N., & FUKUDA, T. (2022). **Measuring visual walkability perception using panoramic street view images, virtual reality, and deep learning.** Sustainable Cities and Society, 104140.
- **使用全景街景图像、虚拟现实和深度学习测量视觉可感知步行性**



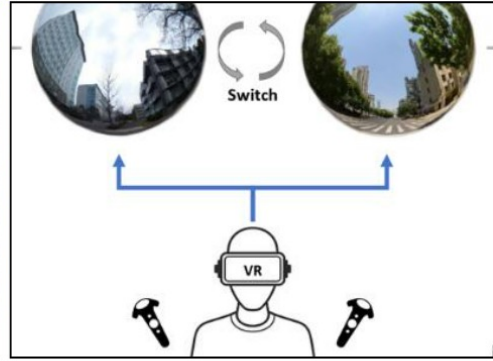
新闻动态/NEWS



实验室研究成果在《Ecological Indicators》(中科院2区, if=6.3) 期刊上发表



2022年8月实验室工作简报



实验室研究成果在《Sustainable cities and society》(中科院1区top, if=10.7) 期刊上发表

ICE Lab
[Series Theme/Organizer]

【作为传感器的建筑】
[Structure as Sensor]

【强化学习与流规划】
[RL in Optimal Transport]

【董依雯】
[Yiwen Dong]

【黄培德】
[Peide Huang]

【主讲人介绍】

先后就读于南洋理工大学、斯坦福大学，现为斯坦福大学土木与环境工程系博士生，曾获UrbanComp 2020最佳论文。

先后就读于南洋理工大学航天工程、斯坦福大学机械工程，卡耐基梅隆大学，目前在NewIPS、ICAR

【学术研讨会】数据驱动人工智能赋能城市发展



实验室研究成果在《亚洲计算机辅助建筑设计会议CAADRIA2023》上发表

研究成果/PUBLICATIONS

根据用户提供的语义标签合成风格相近的住宅外墙
2023-03-01

整合GIS、深度学习和环境传感器的城市街道步行能力多标准评估
2022-10-18

使用全景街景图像、虚拟现实和深度学习测量视觉可感知步行性
2022-09-01

从城市数字孪生中自动生成合成数据集用于建筑外墙的实例分割
2022-09-01

利用社交媒体数据和深度学习探索建筑环境属性对社会关注度的影响
2022-09-01

基于GTWR和MGWR的快速城市化城市景观格局对生境质量的时空驱动机制研究--以南京市为例
2022-09-01

在研课题/PROJECTS

面向复杂环境的动态目标识别与特征分析
2023-01-23

课程教学/COURSES

建筑类专业外语
2023-03-15

城市大数据教学课程
2022-09-16

研讨会/SEMINAR

【学术研讨会】数据驱动人工智能赋能城市发展
2022年12月17日上午10点，一场以“数据驱动人工智能赋能城市发展”为主题的学术研讨会成功举办。本次研讨会邀请到了两位来自世界知名高校的博士研究生——斯坦福大学的董依雯 (Dong Yiwen) 和卡耐基梅隆大学的黄培德 (Huang Peide) 进行了精彩的报告分享。

计算机技术交叉下的建筑类专业升学就业分享交流会
2022年8月27日上午9点，卡内基梅隆大学 (CMU) 黄培德博士候选人、新加坡科技局 (A*star) 陈家研究员受邀在数字城市与人居环境实验室进行海外留学经历分享与学术报告。

工具资源/RESOURCES

实验室设备概况
2022-09-16

建筑立面解析数据集
2023-03-02

建筑立面品质状态人工评价网络平台
2023-03-02

建筑立面窗墙语义小工具
2023-03-02

建筑立面历史价值判断小工具
2023-03-02

建筑立面色彩识别小工具
2023-03-02

科技论文阅读 <http://icelab.org.cn/>

使用全景街景图像、虚拟现实和深度学习测量视觉可感知步行性

🕒 2022-09-01 👁 49

文章信息

Yunqin, L. I., YABUKI, N., & FUKUDA, T. (2022). Measuring visual walkability perception using panoramic street view images, virtual reality, and deep learning. *Sustainable Cities and Society*, 104140.

论文摘要

衡量城市街道视觉步行性的感知，探索街道建筑环境的视觉特征之间的关联，使步行对人类产生吸引力，在理论上和实践上都很重要。以前的研究要么使用环境审计和主观评价，这些评价在成本、时间和测量规模方面都有局限性，要么使用基于自然街景图像（SVI）的计算机辅助审计，但在真实感知方面存在差距。在这项研究中，我们提出了一个基于虚拟现实全景图像的深度学习框架，用于测量视觉步行感知（VWP），然后量化和可视化贡献的视觉特征。首先开发了一个VWP分类深度多任务学习

（VWPCL）模型，并对人类在虚拟现实中对全景SVI的评分进行了训练，以预测6个门类的VWP。其次，在语义分割的基础上，使用回归模型来确定各种物体与六个VWP类别之一的相关程度。此外，一个可解释的深度学习模型被用来协助识别和可视化那些有助于VWP的元素。该实验验证了VWPCL模型预测VWP的准确性。这些结果代表了在理解VWP和街道层面的语义和特征的相互作用方面的进一步进展。

Abstract

Measuring perceptions of visual walkability in urban streets and exploring the associations between the visual features of the street built environment that make walking attractive to humans are both theoretically and practically important. Previous studies have used either environmental audits and subjective evaluations that have limitations in terms of cost, time, and measurement scale, or computer-aided audits based on natural street view images (SVIs) but with gaps in real perception. In this study, a virtual reality panoramic image-based deep learning framework is proposed for measuring visual walkability perception (VWP) and then quantifying and visualizing the contributing visual features. A VWP classification deep multitask learning (VWPCL) model was first developed and trained on human ratings of panoramic SVIs in virtual reality to predict VWP in six categories. Second, a regression model was used to determine the degree of correlation of various objects with one of the six VWP categories based on semantic segmentation. Furthermore, an interpretable deep learning model was used to assist in identifying and visualizing elements that contribute to VWP. The experiment validated the accuracy of the VWPCL model for predicting VWP. The results represent a further step in understanding the interplay of VWP and street-level semantics and features.

文章下载链接

 Li 等. - 2022 - Measuring visual walkability perception using pano-已压缩.pdf

