

中国形

李晓东
庄庆华

著

中国建筑工业出版社

国家985工程资助项目

中国形

李晓东 庄庆华 著

中国建筑工业出版社

图书在版编目 (CIP) 数据

中国形/李晓东, 庄庆华著. —北京: 中国建筑工业出版社, 2009
ISBN 978-7-112-11156-5

I. 中… II. ①李…②庄… III. 建筑艺术-中国-英、汉 IV. TU-862

中国版本图书馆CIP数据核字 (2009) 第124747号

责任编辑: 王莉慧 何 楠
责任设计: 郑秋菊
责任校对: 李志立 王雪竹

中国形

李晓东 庄庆华 著

*

中国建筑工业出版社出版、发行 (北京西郊百万庄)
各地新华书店、建筑书店经销
北京嘉泰利德公司制版
北京画中画印刷有限公司印刷

*

开本: 787×1092毫米 1/16 印张: 16 1/4 插页: 1 字数: 386千字
2010年6月第一版 2010年6月第一次印刷
印数: 1—3000册 定价: 48.00元
ISBN 978-7-112-11156-5

(18406)

版权所有 翻印必究

如有印装质量问题, 可寄本社退换
(邮政编码 100037)



致谢

作者向新加坡国立大学建筑高级研究中心以及清华大学建筑学院致以诚挚的谢意，感谢孔媛、郑娟、李峰、Michelle，对本书中文部分的整理、校对、翻译。

Acknowledgement

The authors would like to express their gratitude to Centre for Advanced Studies in Architecture, Department of Architecture, National University of Singapore and School of Architecture at Tsinghua University for allowing us to work on this research. Thank Kong Yuan, Zheng Juan, Li Feng, Michelle for the finishing, proofing, and translation of Chinese part of the book.

前言

这本书是前一部书《中国空间》的补充，二者的目的都是试图寻找一种属于本源的抽象概念，因为我们相信，任何一种文化形态的形式特征在其形成、演变及成熟的过程中，都受控于其背后的概念。

本书所关注的对象是中国古典建筑的形式逻辑。通过对典型案例的形式特征及其规律性进行分析、整理，我们希望能够建立起一种对中国建筑形式阅读的连贯性，因为这种连贯性本就存在且作为一种形式鉴赏体系而控制着中国传统建筑审美的全部过程。

在过去3000年里，即使没有任何理论上的支持，中国传统建筑的整体结构与形式都保持着高度的统一性。各地清晰的建筑制度鲜明地揭示出其早期的标准化特性，标准化指引了中国建筑逐渐理性化的进程，也随之激活了形式体系的生成过程。因此通过这种形式的制度化与定则，便能够得出暗含于建筑构成之中的初始逻辑，从而揭示出形式是怎样构想出来的并发展成为可实施的标准规范的。

对中国古代传统建筑的研究大多集中在经验数据的发掘与理解，或者对类型学、结构与美学的概要性分析。这为更为深入的分析与研究打下了必要的基础，毕竟我们所理解的中国传统建筑的“设计概念”是基于我们对其外部形式特征的直观感知。但如果要理解中国传统建筑在发展演变时期的内在逻辑，那么研究其设计初衷尤为必要，特别是设计背后的潜意识。

因此本研究从认知视角来研究中国传统建筑，以弥补基于技术或者符号象征意义上研究之不足。虽然这一研究本身并不完全客观，但通过这种认知上的探索，我们希望能从形式体系所暗含的分类学建构中推理出中国传统建筑形式构成的本质。

对这些形式追根溯源，便不能不提到这些建筑所建时代的重要文献，如《考工记》（大约公元前475至前221年）、《营造法式》（宋代，公元

1100 年)等。虽然古代建筑缺乏理论基础,但其设计思想是在中国古代传统文化背景下生长发展的,因而为了建立起形式生成与意识形态之间的联系,研究其文化背景也尤为必要。为此本书将涉及如宇宙哲学、数学以及玄学等领域的传统思想。由于中国建筑与其他艺术暗含着类似的审美原则,本书同时也会对中国古代绘画、音乐等传统艺术思想有所涉及。

通过这种研究,以分类学的探讨方法为基础进行表述,意在抽象的形式特征进行系统的分类,从而形成整体的形式构架体系,以较清晰地叙述中国传统建筑中具象的形式逻辑。依此,我们也对研究方法 with 构架体系本身进行了反思。

Preface

This research takes on a cognitive approach in understanding architecture developed in the past, by deriving a formal framework based on the analysis of formal properties from a case study, in order to provide a coherent reading of form as it was originally conceived as well as to appreciate its operation as a formal system.

Traditional Chinese architecture is chosen as the case, mainly because of its overall structural and formal consistency in the past three thousand years, even without much theoretical development in its indigenous evolution. Yet its early standardization explicitly shown in its several institutionalizations had in fact pointed towards a process of rationalization through which the production of a formal system was enabled. It is thus through such institutionalization of form and the established principles that the original logics underlying its composition can be studied, rationalized and inferred, in order to reveal how knowledge of form was conceived and developed into its actualized norms.

Modern research on traditional Chinese architecture in the past century had been focused mainly on either empirical data finding and understanding, or general analysis on typology, structure and aesthetics. While they have laid a firm foundation from which more specific studies are made possible, the “design concepts” that have so far been analyzed are no more than external formal characteristics that we at present can directly perceive. To understand how traditional Chinese architecture was perceived during the time it was developed, there is a need to study how it was originally conceived then, i.e. the underlying cognitive basis of such design undertaking.

This research thus seeks to offer an alternative perspective in the study of traditional Chinese architecture, complementing other researches that are mostly of tectonic or symbolic orientation. Although full explanation is not the objective of this study, as form itself is never the goal of building-making, through this cognitive exploration some reasoning of the nature of this architecture could be provided by the taxonomic structure implied within the formal system, with the establishment of formal categories.

To derive these formal categories, references are made back to the ancient documents that were written at the time when these architecture were still in the making, such as *Kao Gong Ji* (The Artificers' Record) (probably 475-221BC), *Yingzao Fashi* (The State Building Standard) (AD1100, *Song* dynasty), etc. Due to the lack of theoretical basis, the cultural background that had helped to cultivate such design thinking will also be studied in order to establish the linkage between formal product and its preconceived ideologies, by assessing the relevance of various classical texts on other fields such as cosmology, mathematics and metaphysics, while not without reference to other classical arts such as painting and music of which architecture is believed to share similar principles of aesthetics with.

With these studies, and based on the taxonomic approach in representation, the research aims to provide a systematic categorization of formal properties as abstracted, so as to arrive at an overall formal framework that is capable of formulating the representational system of formal knowledge in traditional Chinese architecture, which in turn, evaluating the approach and the framework themselves.

The authors would like to express their gratitude to those in the Centre for Advanced Studies in Architecture, Department of Architecture, National University of Singapore for allowing us to work on this research.

目 录

致 谢
前 言

第一章	形的塑造	1
第二章	形式架构	15
	第一节 局	16
	第二节 布	45
	第三节 形势	80
第三章	经典作品（图版）	123
第四章	结语	207
注释		219
参考文献		239

Content

Acknowledgement

Preface

I	In the Making of Form	I
2	Formal Framework	15
	System of Framing	16
	System of Arrangement	45
	Aesthetics of Proportion	80
3	Classical Works	123
4	Epilogue	207
Notes		219
References		239

第一章

形的塑造 In the Making of Form

第一章 形的塑造

从历史上看，“形”或者说形式，在中国人的审美当中向来不是被强调的重点。《易传·系辞》中指出：“形而上者谓之道，形而下者谓之器。”¹意识（道）是超越物质层面（器）的更高层次，其只能以美学或哲学的方式探寻，否则它仅能得到肤浅的定义。然而，这种物质性却体现了意识形态上看待及分类事物的尺度与方式。因此，形式的价值不可小窥，即使是未被确切定义，它的覆盖面是如此之广以至于其他事物不可避免地将其作为参照。²事实上在《易传》中对形式系统的连贯性已经有了整体的认识：“在天成道，在地成形，变化见矣。”³在形式的连贯与组合的可变性之间，动态关系的变化是可构想的。因此，本文将基于对中国传统建筑的研究，探寻这种形式架构的内在关系。

中国传统建筑，虽然自古以从来未被定义为一种艺术门类，却无可争议地被看成中国传统文化的杰出产物。尽管它只是手工业实用性的产物，这些宏伟的综合体和精妙的结构技术水平却相当高超（特别是在运用木材上），同时，它们也是中国传统封建意识形态、等级制度、农业社会经济和艺术的反映。

与其他构成中国文化的门类一样，中国建筑亦经历了三千余年缓慢而完整的发展过程——正如建筑史学家梁思成先生所说：中国建筑早在远古时期就在本土产生并成长，在汉朝达到青春期，在唐朝成熟并达到辉煌，在宋朝变得更加成熟而优雅，至明朝初期变得虚弱僵硬并显出了老化的迹象。⁴发展是历史的必然，然而整个结构的发展表现出令人惊讶的连贯性，建筑的特质几乎未曾改变。⁵究竟进步和退步是怎样发生的是许多学者研究的课题，而另一些学者却对某段历史感兴趣，而结构上的必要

In the Making of Form

Historically, Xing [形], or the conception of form, was never the emphasis in Chinese understanding of aesthetics. In *Yizhuan-Xici*, it was concluded that: “What is above form is called tao; what is within form is called tool.”¹ It was usually beyond the state of materiality that higher level of consciousness was sought after in a philosophical or artistic pursue, otherwise it merely acquired a technical orientation in definition. Yet in this way, such physicality presented the very ideological measure in classifying what and how things were to be conceived. The value of form thus cannot be undermined, for it had, on the other hand, become so encompassing that references were inevitably made to its inherit system,² even if less defined. In fact, the consistency of a formal system, in a holistic view, had also been acknowledged in *Yizhuan-Xici*: “In heavens phenomena take form; on earth shapes take form. In this way change and transformation become manifest.”³ It was this working relation between coherence of form and configurative variability that changes, or development, could then be conceived. This study will thus explore such inherent formal framework, based on the case of traditional Chinese architecture.

Traditional Chinese architecture, though historically unqualified as a class of arts, is undoubtedly one of the most prominent products of Chinese culture. These magnificent complexes and refined structures have been a result of advanced technology particularly in the use of timber, as well as a reflection of developed ideologies in political ruling, social hierarchy, production economy and aesthetics, despite its status of merely a creation of craftsmanship due to its association with practicality.

Like the rest of disciplines that made up the entire

性被他们看作是导致该一致性的主要原因。⁶

实际上对中国传统建筑的研究至今，只持续了百余年。在此之前，类似的研究仅限于实用的指南和相关文献的注释。⁷直到西方和日本的学者被中国文化吸引，开始了基于现代视角的研究。他们总结建筑特征及其发展，记录下建筑的历史意义和在文化上的成就。⁸这种方法很快被中国人接受，梁思成与刘敦桢是其中最著名的两位。1929年他们共同创建了中国营造学社，从那时开始，他们调查并记录了新发现的古代建筑，并对其进行了相关的文献考证。那时的研究主要致力于对中国建筑发展历史的全局性的理解，以及掌握某些构造方面的原理。这一时期的成果在梁思成的一些重要著作中被加以阐释：《中国建筑图像史》（1947年）⁹及《清式营造则例》（清朝建筑标准）（1934年）。而后对中国建筑的研究因为战争被迫停止。

新中国成立后，研究得以重新开始。在已有的对清朝建筑的了解之上，1952年梁思成和莫宗江一起开始了对宋代建筑导则《营造法式》（国家建筑规范）进行了注释和图片解释。¹⁰借助对中国传统建筑的深刻理解，他们将古建筑归纳为各种类型，并简述构建它们的基本规则。¹¹他们的研究给后来研究中国传统建筑的东西方学者带来了莫大的方便，从而开始了类型学上的细致分析——从朝代的特征到单体建筑和文献的细节。¹²另一方面，历史的进程从未停止对信息和观点新的修正，如刘敦桢的《中国古代建筑史》（1965年）和约瑟夫·尼达姆著名的《中国的科学与文化》（1954-1973年）。¹³

在大多数研究都停留在对现存建筑描述上时，最近的一些研究开始对中国传统建筑的内涵理念产

culture, the slow but integrated development of Chinese architecture has been blessed with continuity for more than three thousand years – as described by architectural historian Liang Sicheng, “it is an indigenous growth that was conceived and born in the remote prehistoric past, reached its ‘adolescence’ in the *Han* dynasty, matured into full glory and vigor in the *Tang* dynasty, mellowed with grace and elegance in the *Song* dynasty, then started to show sign of old age, feebleness, and rigidity, from the beginning of the *Ming* dynasty”.⁴ Evolution is inevitable. Yet, the overall structure appears surprisingly consistent throughout its development such that the spirit of its architecture remained intact.⁵ How such progression and declination took place thus becomes the study of many researchers; while others express interests in its “anatomy” of a particular period, as structural necessity is believed to be the primary essence that contributes towards such consistency.⁶

In fact, research in traditional Chinese architecture only began about one hundred years ago. Before that such study was either in the form of practical manual or confined to literature interpretation.⁷ It was not until Western and Japanese scholars who were intrigued by rich Chinese culture that they initiated the research in a modern perspective, summarizing its characteristics and development while noting its monumentality and cultural achievement.⁸ Such approach was soon picked up by Chinese, among whom Liang Sicheng and Liu Dunzhen were the two most notable figures. Together, they led the Institute for Research in Chinese Architecture established back in 1929, which had since surveyed and documented several newly discovered extant monuments, cross-examined with related documents. Research during this period generally sought to arrive at an overall

生兴趣。有些研究致力于建筑构造中采用的模数制,例如陈明达《营造法式大木作制度研究》¹⁴;而有些研究则主要侧重于从单体建筑到城市层面上的平立面布局进行分析,例如傅熹年的《中国古代城市规划》、《建筑群布局和建筑设计方法研究》¹⁵;而另一些研究则站在全局的角度,即对传统建筑“设计理念”的一系列原则(如果当时有这样的原则体系的话)进行阐释,最著名的是李允铎的《华夏意匠》¹⁶。

20世纪,对中国传统建筑领域的研究取得了很高的成就。研究初期对现存建筑和文字资料方面相关信息的整理,为之后技术和建造层面进一步的研究奠定了坚实的基础。所有的前期研究对近期关于中国传统建筑设计准则(无论是基于构造还是符号学层面)的讨论都起到了促进作用。这些研究显现了一些建筑的设计和建造准则,而且在一定程度上与广阔的文化背景相联系,但这并不能明确表明当时的建筑就是如此构思的。例如我们知道大多数传统设计在构图中都遵循严格的对称和平衡,并且这可能与古老的习俗有关,但这也不能解释那些看起来无穷无尽的建筑的组合。也就是说我们不知道的是这些对称的理念是如何表现于人们的观念中,并与等级观念等结合将意识形态通过复杂的过程转变为一个或多个形式化的组织系统的。进一步讲,这些系统将怎样与城市规划的体系以及建构系统进行比较,或怎样与其他形式法则相联系,都是我们值得探究的。过去的形式的研究描述了中国传统建筑被建成什么样子,却没有表明它们是如何被建造,或为什么被这样建造。

由此可见,对“理念”的讨论到目前为止,尚未超出我们能够直接感知的“外部形式特征”的范畴。为弄清传统中式建筑在其发展过程中是如何被

understanding of Chinese architectural history as well as principles of construction to certain extent, as illustrated by some important works put together by Liang, such as *A Pictorial History of Chinese Architecture* (1947)⁹ and *Qingshi Yingzao Zeli* (The Qing Building Standard) (1934), before the research was put to halt due to the subsequent wars.

The founding of People's Republic of China saw the revival of the study. Building on the foundation of Qing's construction knowledge, Liang, together with Mo Zongjiang, had interpreted the Song's building manual *Yingzao Fashi* (The State Building Standard) with annotation and drawings in 1952.¹⁰ Some good knowledge of traditional Chinese architecture had enabled the researchers to continue with its categorization into various typologies and formulation of basic rules,¹¹ which had since greatly benefited both Chinese and Western researchers in the later years, and thus led to specific analysis of typologies, periodic characteristics as well as detailed study of individual monument and textual document.¹² On the other hand, the overall historical approach had never ceased to be revised with new information and insights, such as Liu's *Zhongguo Gudai Jianzhu Shi* (A History of Ancient Chinese Architecture) (1965) and Joseph Needham's influential study - *Science and Civilisation in China* (1954-73).¹³

While most of the studies had been descriptive in nature, some of the recent researches had shown interest in the underlying concepts in traditional Chinese architecture. Several works had dealt with the modular unit adopted in construction as initiated by Chen Mingda in his *Yingzao Fashi Damuzuo Zhidu Yanjiu* (Research on Major Carpentry System in *Yingzao Fashi*);¹⁴ some had studied the composition of plan and elevation from individual buildings to cities, exemplified by Fu Xinian's *Zhongguo Gudai Chengshi Guihua, Jianzhuqun Buju Ji Jianzhu Sheji*

理解的，我们需要知道其最初的构思过程，也就是说，设计所遵循的潜在认知基础是什么。只有当我们了解了当时人们如何构想其周围的世界，如何理解他们自身的存在，如何将外部工具和环境作为自身存在的延伸以及自身思想的反映，我们才能收集到在建造过程之中真正的设计思维。由此，我们研究的目的是了解建筑如何作为一个形式系统而存在，以及各种概念和元素是如何被整合到一起，形成能进一步被构想，理解和鉴赏的建筑。

不可避免的，对形式系统的研究要从对其组成成分的分析入手。但这次我们将研究的重点从建筑形式的特征和符号功能上移开，回归到建筑形式背后的逻辑上。这种对形式的深层分析是必要的。只有基于对形式机制组成的基本原理的分析，完整的形式系统才能建立，而将完整的形式系统综合的中国传统建筑也最终获得社会、政治、艺术的多重含义。

然而，虽然中国传统建筑经过制度化和标准化显现出高度的一致性，建筑理论的明显缺失却使今天建筑创作中的理性成分让人怀疑。之前曾经提到过，中国传统建筑的发展是本土的，像其他艺术形式一样，经历了从产生到成熟再到衰败的一个有机发展的过程。¹⁷尽管如此，在其发展过程中产生的无数的概念和理性成分不断融合进整个系统，而最后得以显现出来的仅是它的功能。为了对此进行说明，我们下面来模拟隶属于整个中国传统建筑发展过程的形式化发展：在以直觉体验为主的初期，主要是获得片段的观察和经验并加以实践。而后，这些获得的知识逐渐被理论化，并被抽象成一些法则；随后被理性提升为形式导则。这种抽象的阶段可能是无意识中进行的，因为它同时被应用于形式化的实践中。当这个系统达到自身能相互关联的程

Fangfa Yanjiu (Design Methods in Layout of Ancient Chinese Cities, Building Complexes and Buildings);¹⁵ while others had presented an overall view, or rather, a range of principles in explaining the “design concept” (if it were ever conceived) of traditional Chinese architecture, most notably represented by Li Yunhe’s *Huaxia Yijiang* (Design Concept of Chinese Architecture).¹⁶

The achievement in the research on this field was indeed remarkable in the past one century. Documentation of both building and textual information in the early stage had laid a firm foundation upon which specific analysis on technical and tectonic aspects were then enabled. All these had eventually prompted the current discussion on various design considerations in traditional Chinese architecture, whether it is in tectonic or symbolic way. While strategies as such may present the ways in which architectural design can be produced and followed, and to certain extent, related to the broad cultural background, however, it does not necessary mean that building design is conceived this way during the time it was created. For example, we all know that most traditional designs follow strict symmetry and balance in composition, and we know that it was perhaps a subscription to the system of rites whose origin may be historical, but it does not explain the seemingly unlimited patterns of arrangement of building complexes, i.e. what we may not gather is how then such idea of symmetry was represented in the mind of the people then, which together with the system of hierarchy, etc. performed a complex task of translating the ideologies into one, or many formal organizations. Further, how such system can then be compared with the planning of a city or even the arrangement of bracket system, or related to other formal disciplines, is something yet to be investigated. Formal analysis in the past had described what can be done to put

Form-making in Traditional Chinese Architecture



图 1-1 中国传统建筑的形式化进程

Fig. 1-1 Process of formalization in traditional Chinese architecture

度，它就被制度化并形成形式化的理想模型。这些理想模型随后在其发展和重新制度化的过程中被不断调整和完善（图1-1）。

事实上，在“形式化”的过程中，“理性化”起着重要的作用，没有它，不可能最终实现“制度化”。然而，就像之前提到的，这种理性思维在形式化过程中被过滤，以至于最终呈现的结果不同于最初的设想。以此，“认知”基础就先于“实际化”的过程成为我们研究的重点，而这种“认知”主要是指初期对知识的获得和一定程度上的经验积累（这种经验当然也是构成我们对客观世界总体认识的一部分）。这里所指的人的体验和与知识的获取过程中“文化”特性并不等同于主观的感知与表述。但在对认知基本原理的探索中，探索其在主观意识中的相关性也是很重要的。值得学习的一个例子是约翰·安德森关于获取程序化知识的模型（图1-2）。

在这个模型中，安德森假设程序化的知识系统在三个层面上进行表述：认知的，联想的，自主的。在认知的层面，我们将规则形式化；在联想的层面，我们广泛地进行实践；最终在自主层面上我们已将规则视为自身的组成部分而自然地使用它们。这种程序化是一个过程。在这个过程中，我们

together Chinese architecture, but it had not shown how it is done, neither had it explained why it is done this way.

Therefore, the “concepts” that have so far been analyzed are no more than external formal characteristics that we at present can directly perceive. To understand how traditional Chinese architecture was perceived during the time it was developed, we need to study how it was originally conceived then, i.e. the underlying cognitive basis of such design undertaking. It is only through such knowledge, of how the ancient Chinese conceived the world around them, of how they understand their own existence, of how then the use of external tools and surroundings as extension of their existence and reflection of their conception, that we can gather the actual design thinking involved in the making of architecture. The objective of our study is thus how such architecture works as a formal system, how individual conceptions and elements are put together in order to function as a whole, as an architecture that can be further conceived, understood and appreciated.

Inevitably, the search for such formal system is to be conducted again through compositional analysis. This time other than the formal characteristics and their symbolic functions, it is the logic behind the composition that will be investigated. Such formal analysis is necessary. Only through the study of the formal mechanisms as devised from various compositional rationales that a coherent