

# Decoding the architectural theory

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**Abstract:** Starting from the illustration of the definition and concept of the architectural theory, the author established his unique understanding about the framework of the architectural theory and the innovation of the architectural theory underlined by Chinese characteristics.

**Key words:** architectural theory; framework of architectural theory; starting point and destination of architectural theory; innovation of architectural theory

## 1 Introduction

As an architectural professional, the author always believes that the prior task of the professionals should be the establishment of scientific concept, scientific thought and scientific attitude, and then the scientific decision, scientific method and scientific measure.

In China, for a very long period, the politics could crush anything and the practice could take place of everything. The architecture has been simplified, vulgarized, conceptualized and rigidified. The theoretical research field of architecture is especially in the central area of the disaster. The real original theoretical research field is almost a void.

For a relative long time, there is no clear boundary among the architectural science, the architectural technology and the architectural engineering. Designers have a narrow view and a narrow thought. The work of the architectural authorities, research departments and educational or cultural departments were almost oriented to engineering, taking engineering design as the top priority. That is the systematical reason why the absence of science in the building industry could not be improved for a long time.

The most common problems such as the architectural form, engineering structure and design theory are difficult to be solved due to the lack of clarification of terms, conceptions and discipline systems.

At present, the architectural theory problems which should be urgently studied and solved are as follows: the nature and feature of architecture, the design principles of various architectural types (There are many architectural types newly emerged and the content and form of the old architectural types have had great changes also.), the theory of architectural style,

the construction mode of city, building and landscape, the management mode of city and building, the management basis of the architectural education and professional training standards, the theory of human settlement environment, etc.

## 2 Architectural theory<sup>[1]</sup>

### 2.1 The definition of architectural theory and the status quo of its research

The definition of the architectural theory in "Concise Encyclopedia Britannica" reflects the people's phased understanding of the architectural theory. As the era developed, it cannot cover the contemporary people's understanding of the deepening and development of the architectural theory. It needs a lot of supplements and improvements.

It is stated in the Encyclopedia<sup>[2]</sup> that the architectural theory is the criteria for judging the quality of an architecture or an architectural scheme. This kind of judgment is an indispensable part of the architectural creation process. It is also stated that generally speaking, the complete architectural theory is nothing more than the 3 Latin words raised by Vitruvius: convenience, durability and beauty, namely the proper space layout, solid structure and beautiful appearance. It continues that the building could only have the real beauty when the structural form and the appearance of the building are in accordance with the structural system. This definition seems completely a theory about the building itself. It has nothing to do with those architectural systems such as a group of buildings, the built environment, the constructed area, city, etc. It can not cover the intrinsic factors of a building either.

"Concise Encyclopedia Britannica" also presents two kinds of controversial understanding about the ar-

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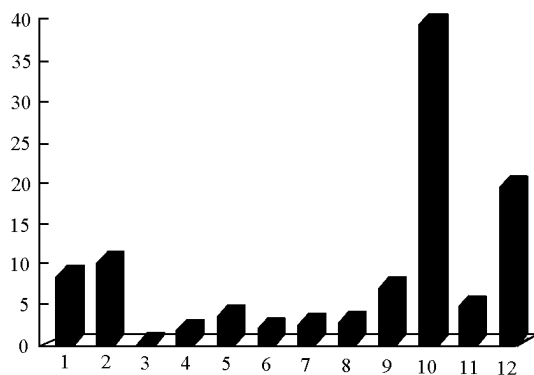
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chitectural theories. One understanding believes that the basic principals of architecture are the implementation of the general basic principals of arts on a special art. The other thinks that the basic principals of architecture are a separate and independent system. Although it has many common features with other theories of arts, it has natures different from them.

Although the two kinds of mutually exclusive understanding of architectural theories still exist and there are more various architectural schools deriving from them and forming the present reality of diversities of architecture, the author thinks that both of them only partially reflect the nature of architecture, not comprehensively and deeply enough. The former overstates the artistry of the architecture whereas the latter overstates the particularity of it. There are still a lot of misunderstandings in the research field of the architectural theories. Following are some examples of them: taking the listing of architectural phenomenon and cases as architectural theories, taking the application of some architectural principles as the application of architectural theories, taking the filing of architectural information as the result of architectural theories, taking some thoughts about architectural problems as architectural theories, taking some political principles, directions and policies as architectural theories, taking some words of VIPs as the theoretical basis of architectural theories, taking “form follows content” as the golden rule of architecture, taking the research on architectural history as the theoretical research of architecture, etc.. The fuzzy understanding of architectural theoretical definition and concept is the root of the fuzzy understanding of architectural theory.

Compared with the fraternal disciplines, the architectural theoretical research work in China is less developed. According to a survey on relative soft scientific researches in China in the end of 20<sup>th</sup> Century, the architecture science is the second countdown in the rank, only above the geologic science (Fig. 1).

The architectural theoretical research work is mainly composed of two categories: the architectural history research and the architectural culture research. The architectural history research mainly deals with the archaeology or the finishing of historical documents. The architectural culture research mainly imports and translates foreign publications of architectural theories, but most of them are the ones with practical values, such as the textbooks about design principles and cases, as well as publications introducing the foreign architectural schools.



1—Agriculture, forestry, animal husbandry and fisheries; 2—Industry; 3— Geological survey; 4—Architecture; 5—Communication and transportation; 6—Commerce; 7—Real estate; 8—Health and sports; 9—Education and culture; 10—Scientific research; 11—Finance and insurance; 12—Others

**Fig. 1 Industry distribution of soft science research organizations in China<sup>[3]</sup>**

## 2.2 The essential features and characters and systematic framework of architectural theory

So, what are the essential features and characters of architectural theory approximately? The architectural theory is a knowledge system of quality, quantity and form which is directed against the architectural objects or architectural systems, as well as the interior or exterior research objects relative to architecture. It is also a information system about the architecture system.

The architectural theory approximately has the following 10 aspects of essential features and characters:

Generality—it covers and reflects rich content by simple and accurate architectural terms, concepts and codes. Systematism—the terms, concepts and codes determined by the architectural objects mutually relate and make up with each other and form the theoretical system. University—the architectural theories uncover the contents of university, coming from individuality but surpassing it, to enlighten and direct the people’s understanding and ability against the specialty of architecture. Openness—it will direct the architectural practices but will also accept the examination of the architectural practices. Stageness—architectural theory is a relative truth in a certain stage, not the absolute truth. It does not have the absolute correctness, is not always correct either. Limitations—the limitations of architectural theory are reflected in many respects, such as the limitation of the architectural knowledge, the limitation of its extension and depth. Essential characters (unitiness)—architectural theory can only uncover the universal essential characters of the architectural objects. Normally it can not reflect the full concrete features and characters of the architectural ob-

jects. Form and direction (principality)—the abstract generalization of the architectural theory determines that it can only point out the direction of the form mode of the architectural objects existing. It can not be certain of the details of the concrete forms. Objectiveness (aimness)—the architectural theory pursues the evaluation of the architectural value and the choice of objective. But the realization of value and achievement of the goal will need a lot of practice. Diversity—the same object or extension could develop various architectural theories. The diversity of architectural theory leads to the diversity of architectural form. The architectural diversity without the direction of the

architectural theory is of “randomness”, which is out of our argument.

The author thinks that the key point of the establishment of the architectural theory framework should transmit from object to people and society’s architectural need, to the research objects with architectural philosophy. The research is against the theory of interactions between it and the relative architectural system, interior elements, exterior natural environment, social environment and the disciplinary environment, etc. For this end, the author once tried in drawing a graph on the architectural scientific and technological system (Fig. 2).

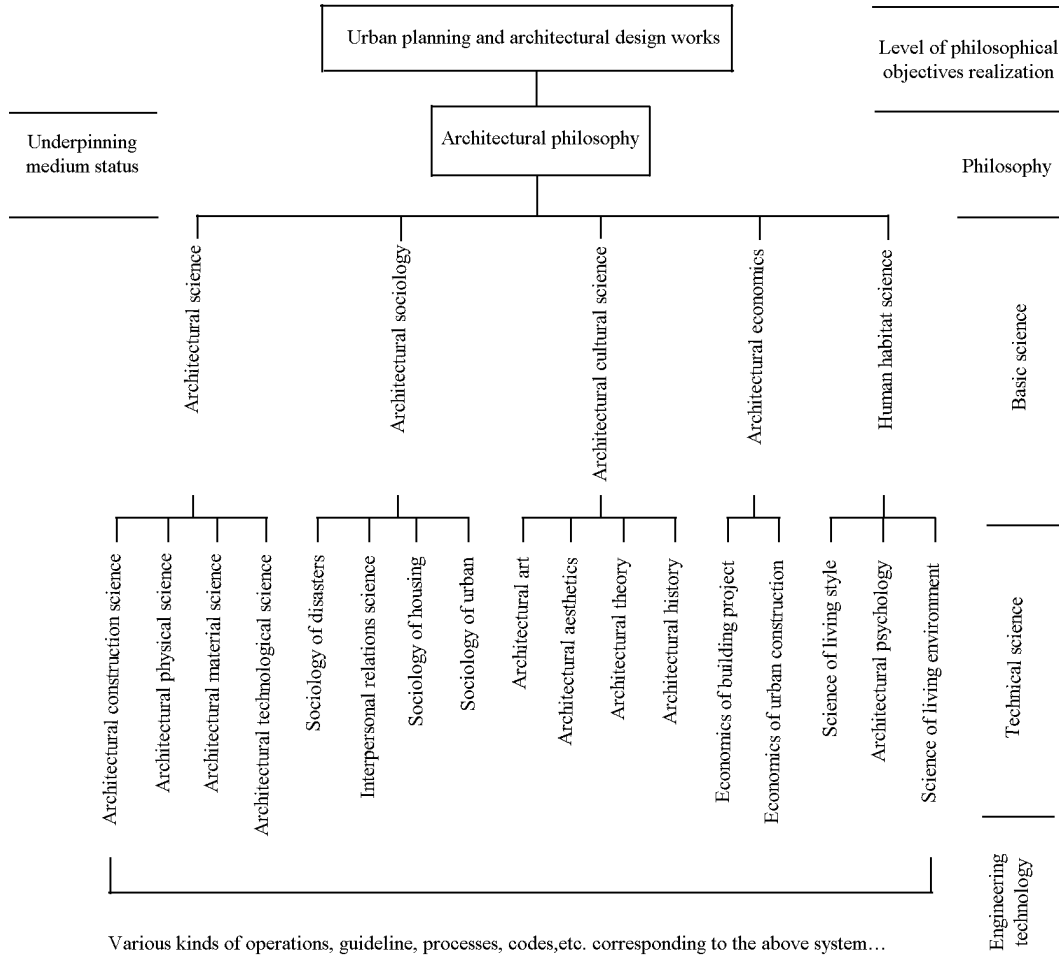


Fig. 2 System of building science and technology

In Fig. 2, the vertical axis is the levels of the nature of a disciplinary theory—architecture philosophy, basic science, technical science, engineering technology level, etc. The horizontal axis is those basic disciplinary groups which are related to the architecture discipline but not the concrete contents such as the architectural forms.

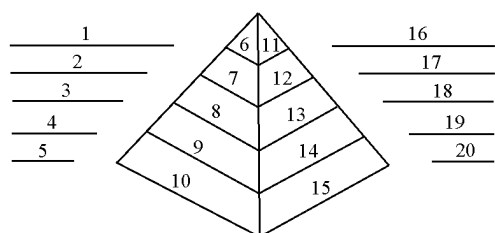
### 3 Information system of architectural theory

The architectural theory system belongs to the information system. The research and construction of architectural theory must take account of the information knowledge and concept. The architectural theory re-

search must employ the information technology and reach the high level required by the information science and civilization.

In order to analysis the nature, level and structure of information visually, to determine the taking or discarding of a certain theory, the author once tried in drawing a pyramid of information science.

The pyramid of information science divided information into five categories ( Fig. 3 ).



- |                    |                            |
|--------------------|----------------------------|
| 1—Directing level  | 11—Synthesis               |
| 2—General level    | 12—Theory                  |
| 3—Experience level | 13—Knowledge information   |
| 4—Needs level      | 14—Operational information |
| 5—Original level   | 15—Original information    |
| 6—Philosophy       | 16—Central status          |
| 7—Promotion level  | 17—Thinking status         |
| 8—Knowledge level  | 18—Procedure status        |
| 9—Operation level  | 19—Professional status     |
| 10—Chaos level     | 20—Edge status             |

Fig. 3 Information science pyramid

1) Original information ( chaos level ). This category deals with the problem of “ what we have ”. It is the description on phenomenon such as the subjective situation, real cases, movements and statistics. These information is helpful for reference, but itself belongs to chaos level just like raw materials. So it needs to be refined whenever to be used. The original information belongs to the pre-science area, with the characters of originality, chaos, and needs to be processed and reorganized.

2) Operational information ( operation level ). This category deals with the problem of “ how to do ”. It includes rules, systems, process, experience, method, mode etc. , and those natures with knowledgeable information. The advantage of this category is that it could be transmitted into direct productivity very fast.

3) Knowledge information ( understanding level ). This category deals with the problem of “ what it is ”. It is the systematic combination of information and the systematic knowledge which have been specially processed and refined. It could be used directly to improve people’s accomplishment, quality and operational ability. The knowledge information belongs to scientific information area, which has its own system and

clarity. It is easy for learning and popularizing.

4) Theoretical information ( improvement level ). This category deals with the problem of “ why it is ”. It is the new ideas and new concepts which systematize and theorize the basic concepts and the basic regularities. Some information in this category is somewhat “ golden sticks ”, which usually could “ spin straw into gold ”, and be able to trigger the qualitative change of stuff. The theoretical information belongs to the scientific theory area, which has high level of generality and regularity. It has a wide range of applicability and guidability. But some theories are relatively too abstractive to be grasped.

5) Synthesis information ( philosophy level ). This category deals with the problem of “ where to go ”. It looks over the whole picture and concludes the historical experience ( including the analysis, evaluation and judgment about the development level, trend, strategy and tactics ). Some of them even have the historical document value. The comprehensive information belongs to philosophy level, which has the nature of generality, comprehensiveness and profoundness. It is valuable to strategic guidance.

To sum up, the information science pyramid, from the angle of information integrity and categories, from the angle of information orientation and qualitative-ness, shows the cognitive relations between people and the information system. So, to the interests of information theory, the information pyramid is very helpful for the information cognition and the application of information.

#### 4 The starting point, destination and innovation of architectural theory<sup>[4]</sup>

People are always interested with the starting point and the destination of the architectural theory.

The problems about the starting point and the destination of the architectural theory are the science of science, namely the philosophy of science. So, the architectural philosophy is the starting point and the destination of the architectural theory.

Science usually starts from conjectures and assumptions.

The innovation of architectural theory is the key of the development of architectural science. It requires us to stand at the frontline of the international academy, to meet the development requirement of the advanced productivity, to count on the advantage of multi-disciplinary interaction, to make innovation of architectural theory, to promote the innovation of architectural system and technology, to initiate the innovation of the architectural technological origin, to accelerate the trans-

formation of the architectural technological achievements into real productivity.

Architecture, intervenient between science and art, is a major section of the science. To develop the architectural science is the undeniable responsibility of the architectural professionals. To accelerate the practice of the architectural theory innovation and to welcome the spring of the architectural theory are the author's objectives for decoding the architectural theory.

### Author

Gu Mengchao, male, born in 1939, graduated from Tianjin University in 1962 and now is a senior architect with professor title. He is the former Deputy Director of the Editorial Committee of the Architectural Society of China. Now he is the Standing Deputy Director of Environmental Arts Committee of the China Construction Culture and Art Association, the expert of the Chinese Institute of Basic Construction Optimization Research, the member of Human Settlement Committee of the Architectural Society of China. He is the visiting Professor of South East University, Tianjin University, Xiamen University, Guangzhou University, Fuzhou University, Harbin Institute of Technology, Lanzhou Jiaotong University. Mr. Gu has published over 100 papers such as *On the Five Major Theories of Qian Xuesen's Architectural Science* and *the Art of Environment and the Environment of Art*, and over 20 academic works such as *the Contemporary Architecture Culture and Aesthetics* and *The Development and Trend of the World Construction Science*. His translation works include *the World Architectural Arts History* and *the Introduction on Architectural Picture Composition*. He is the leading researcher and expert on the architectural science theory, architectural critics and the environmental art theory in China. He can be reached by E-mail: wang\_101400@yahoo.com

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