

Exploring Flexibility in Urban Planning Formulation of China

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ABSTRACT. Flexibility was once seen in planning literature as a negative feature, whereas today it is perceived by urban planners as a positive asset to cope with the challenges of growing complexity, opportunism and diversity in cities. There is an increasing awareness that urban planning cannot define and control the whole future with the great probability in the development of modern urban economy. The traditional rigid urban planning paradigm cannot meet the need of the urban construction. The flexibility will become the developing direction of urban planning at the new stage. It is the ability of a system to adapt or respond to changes in the environment. The flexible theory of urban planning suggests that planning should be a dynamic and harmonious thought. This article will introduce some planning practices of China and explore how urban planning can deal with uncertainties and unexpected developments in a fruitful way.

KEYWORDS: flexibility, uncertainty, planning and controlling method, urban planning.

In a rapidly globalising world, global connections become more close and swift with the development of science and technology, especially with the rapid development of the technology of communication and transportation. In terms of network and mobility, the process of globalisation causes comprehensive effects and changes in resources, environment, culture and other aspects. The interaction of different countries or cities becomes complex and profound. All these changes make the future full of uncertainty, and the cities will face more uncertainty and irrationality.

At present, China and other developing countries are undergoing the period of rapid urbanisation. Certainty and rigidity theory and the method of urban planning cannot be adapted to the reality. Therefore, it is very important to recognise the uncertainty in the process of urban development and explore the adaptable and flexible theory and method to solve the dynamic problem of urban planning.

I. CONCEPT OF FLEXIBILITY

A. Flexibility in general

Flexibility is a concept that has a broad general meaning and has different applications and meanings in different disciplines. It comes from the term “elasticity” in physics. It refers to the variability that objects have around their inherent benchmark, under the premise of maintaining the essential characteristics. In economics, flexibility refers to the reaction sensitivity of some economic variables when the related variables change [1]. The general meaning of flexibility is sometimes described as the ability to bend and the ability to change and adapt to different circumstances. It is described not only as quality but also as the quality of an activity.

B. Flexibility in urbanism

The concept of flexibility in urban planning is defined as the compatibility and adaptability of planning thought and planning system to the randomness market. There should be much more flexibility and uncertainty in many aspects during the process of planning formulation such as urban development strategies, land planning, population forecast and so on in order to maintain the overall stability of urban development [2]. In Western European countries, flexibility theory is widely applied to various fields of planning. It has been proved that flexible planning has strong adaptability and guidance of the development of the city and the rational allocation and use of resources in the environment of market economy.

The concept of flexibility in urbanism includes the following. Firstly, it reflects the concept of dynamics, which can make urban planning adapt to various changes in uncertain contexts. Secondly, it reflects the concept of coordination. One of the important features of urban planning is diversity and complexity. There are interactions and influence between various factors. Therefore, it is an important task of urban planning to coordinate the relationship of all kinds of factors. Thirdly, it refers to the diversity, which includes all types of stakeholders, planning goals, methodologies and so on. The city should be planned by means of formulating multiple goals and using diverse methods, as well as involving several stakeholders.

II. NECESSITY OF FLEXIBILITY IN URBANISM

A. Uncertainty of urban development

The process of urban development is very comprehensive and contradictory. We can hardly confirm the historical development path of the city exactly even though it has some regularity to a certain extent. As mentioned before, the urban development is dynamic and changing. Uncertainty is the main reason for using flexibility in urbanism. It contains both external and internal factors [3]. External factors refer to the complexity and changes in the urban development. The changes influence the way that people make use of the environment and the wishes they have about the physical environment. The way an area can satisfy needs of transportation, social safety, the creation of identity, economic development, the communication of culture, and so on influence the success and position of an area. Technological, economic and social changes of globalisation not only pose new demands to the current physical environment, but also demonstrate the probable influence of changes yet to come. Internal factors refer to the planning activity itself that is uncertainty during the process of planning formulation because of the lack of information, different subjective wishes of urbanists, limitations of technology etc. First of all, an important feature of urban planning is that it is work to forecast the future. This means that one can design on the basis of

knowledge, experience and assumptions about the future, but it is often uncertain how things will work out exactly. On the other hand, urban planning is a broad and multi-disciplinary field. In this context, the professional has to be able to work as a generalist, but also often has to specialise in a narrow field. It shows that the role and the task of urbanists are not static. They are always very flexible depending on different circumstances. This means that it is always uncertain for urbanists on what projects they will exactly work in the future and what role they will have to play.

B. Diverse and dynamic planning goals

The goal system of urban planning is a series of subjective prediction or wishes of urban development, which belong to different parties, such as government, urban planners, developers, and other stakeholders involved. This determines that the planning goals must be diverse and should provide a variety of choices for multiple parties. Furthermore, the planning goals are always determined according to the planner's own values and criteria and the external environment at that time. As the planning process progresses, values and the evaluation criteria will improve continuously. The original goals will be revised and the new ones will be produced. Therefore, any goal hardly becomes a final ultimate goal of urban development and urban planning. This requires that planning formulation is flexible to adapt to the constant changes.

C. Problems of traditional urban planning

It indicates in the traditional urban planning theory that people can predict the future accurately with enough information and create a complete planning model and then, also can propose appropriate planning countermeasures. Thus, traditional urban planning has a high degree of rigidity. Various elements of urban planning are static and lack suitability responding to the environmental changes. In the past years, a lot of urban practices showed some problems, for example, breakthrough of some urban development quotas, deviation of urban functions between planning and reality, and so on. It was common to modify the urban planning frequently in the past years. All these problems show that the static planning weakens the guiding role of urban planning and it is not suitable for the high-speed development of contemporary cities in China. Therefore, it is necessary to adopt a more flexible method to solve the problems of contemporary cities.

III. DIRECTION OF IMPROVING FLEXIBILITY IN URBAN PLANNING

A. Introduction of urban planning formulation system of China

The urban planning system of China is divided into two levels of master plan and detailed plan. Large and medium-sized cities can add the level of district plan on the basis of master plan according to the actual circumstances and the needs of the cities. Detailed plan can be divided into two types depending on the different missions, goals, and the depth requirements specified in the regulatory plan and site plan [4]. Master plan is the overall positioning and integrated deployment for urban development. Regulatory plan is the link between urban planning formulation and administration. It plays an important role in the process of urban administration.

B. Improving and refining the urban planning system

Master plan is the core of the urban planning formulation

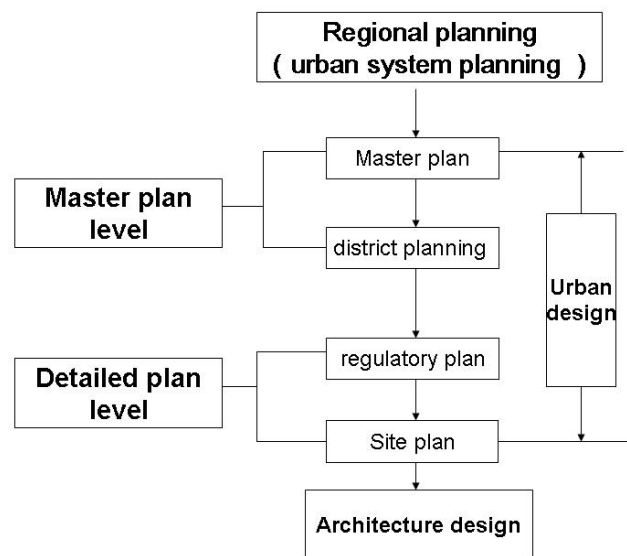


Fig. 1. Urban planning system of China

system, but it cannot directly guide the acts of urban construction. The content of master plan is complicated, and sometimes too specific and detailed to guide the lower level of planning and urban construction. Thus, it is recommended refining the urban planning formulation system. Some scholars put forward that master plan can be divided into two parts, i.e., strategic development planning and land-use planning in order to separate the macro-strategic problems from specific engineering content. Formulating the planning according to the different focus of different content, it is possible to combine rigidity and flexibility of planning effectively. Nowadays, some cities of China have proposed the “conceptual planning”, “strategic planning” and so on.

C. Exploring new methodology

As mentioned before, planning is full of uncertainty during the urban development, so the main task of planning is to find, evaluate and solve the problems of uncertainty. We should explore targeted approaches to enhance flexibility at different stages of urban planning. There have been many research documents related to the uncertainty and methodology in the world. For example, Christensen (1985) proposed the matrix method in response to the uncertainty during the planning process [5]. Friend (2001) proposed a strategic approach to resolve the uncertainty in the planning process [6]. Mastop (1997), Faludi (1997), Needham and Zwanikken (1997) conducted thorough research on performance theory [7].

D. Multi-target proposals

They involve two levels of meanings. The first one refers to the development and distribution of multiple objectives embodied in the planning program. The second one implies the elaboration of different programmes according to different planning goals in order to provide a variety of options to multiple parties involved, such as the government, investors and other stakeholders.

IV. METHODS OF FLEXIBILITY AT DIFFERENT PLANNING LEVELS

When uncertainty is reduced, the possibility of changes is assessed and uncertainty is accepted, concrete methods and

concepts can be used to work with it. Some methods are becoming regular practice nowadays; others are not used very often.

A. Master plan level

Although the design and plan are the important instruments of urbanists, it becomes more and more accepted that they are not the complete instruments to manage all processes of the city development anymore. A development vision seems to be a more appropriate instrument to steer the gradual development of an area. It is a useful instrument for larger areas, where there is not one commissioner, but a group of organisations involved. The development vision provides not only a literal plan, but also a handbook and guidelines for the area. This approach acknowledges that urban development and management are not onetime events for a static city, but the on-going concern for a dynamic city, in which different opportunities, coalitions and needs emerge over time. This approach is also reflected in the way that the meaning of a master plan develops. Initially a master plan was considered to be a detailed overall design for an area, but now it gets a different interpretation.

There has been some innovative research on the specific formulation method at the master plan level. For example, the forecast about a level of the urban population and urbanisation is not a stationary monodrome but a range with amplitude and flexibility. It can reflect the dynamic character of urbanism within the range. The planning period should also be flexible. Urban planning is a continuous dynamic process. Different periods of urban planning can only adapt to urban development requirements in a specific period of time and different economic and social contexts. It must focus on the organic combination of the short, medium and long-term planning. It even does not require a limited planning period especially when making urban development strategies and long-term outlook vision but makes the purpose of planning clear. At the same time, we should place emphasis on an immediate plan (period of 5 years) and make it a means of achieving the goals of master plan and use the rolling-formulating method every year.

B. Detailed plan level

Regulatory planning is the important basis of urban planning administration and a means of achieving the goals of master plan. It guides a site plan and architectural design. Here the city of Wuhan will serve as an example. There are some good practices on how to improve flexibility in land use planning, transportation planning, controlling method, planning form, and so on [8].

The urban planners use the concept “flexible land” in land use planning. Planners design the “land skeleton” for land users and the users can determine the specific content according to their requirements. In other words, planners just arrange the ecological land, land for infrastructure and public facilities, whereas it should give more flexible choices to the market.

In terms of road planning, planners provide the scope of the rigid roads and the elastic roads in regulatory planning. The main road structure is rigid while the urban administration department or land users can decide to modify the location, linear of some branches.

Regarding the controlling method, planners use different controlling methods such as continuous line, dotted line, quotas and location according to different requirements. The continuous

line has the highest rigidity implying that nobody can change the location, border, area, building capacity and facilities. The dotted line has little flexibility, i.e., the boundary shape can be modified, but the location, area, building capacity is still rigid. Location controlling means the planning plot can be developed jointly with the adjacent plots under the presupposition of maintaining the public facilities. Quota controlling means that the whole capacity of each block is determined, while the capacity of any building should be determined by location conditions and urban design.

Regarding the planning form, it is divided into two parts of planning documents in Wuhan that are the statutory document and guidance document. It provides the rigid content in the statutory document that includes the urban infrastructures and public facilities. The guidance document is about the flexible content, such as the height of building, architecture form and other requirements of urban design.

C. Layer approach

The layer principle means that there are some different approaches at different levels. For stakeholders especially it means that a project or area should organise responsibilities and choices at the appropriate levels. In that way choices are made by people for whom they are most relevant or who have the most knowledge or experience about the subject. This means that, for example, choices affecting the whole city are made at the municipal level. But if at the municipal level the decisions are made concerning the existing problems in a neighbourhood or, for example, the design of public space in a given area, choices become bureaucratic and the people involved are ignored. To be able to deal with problems and opportunities that emerge, the ability and responsibility to deal with them should be organised at the level that is most appropriate and effective. In that way, a change can be addressed effectively (flexibility), and a change does not become a problem.

CONCLUSIONS

Flexibility is relevant for the field of urbanism because of the increasing acknowledgement and role of dynamics in our field and cities. Uncertainty in urbanism comes from the character and context of our profession, the future-oriented character of our work and the organisation of development processes. Differentiated user needs are present because of natural differentiation in individuals and organisations and increasingly because of a more individualistic culture. Understanding flexibility can lead to a different approach to projects or can result in the use of specific design approaches. In many aspects of the development process, flexibility plays an important role.

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