

# Study on FAR Award System from the Perspective of Planning Implementation and Management in China

Wenxiu Lia, and Fang Xv

**Abstract**—FAR award system originated from the new Zoning Act of the United States in 1961. It aimed at solving the problem of absence of dynamism in cities caused by overemphasis on functional segregation in the former Zoning Act adopted in 1916. Since China has adopted the FAR award system, the social forces has been fully mobilized, and the flexibility and adaptability of FAR in planning execution has been firmly raised. However, in recent years, irregularities issues in urban and rural planning areas were particularly prominent, and corruption issues in urban and rural planning also caused widespread concern. Why did the "Flexible implementation" result into "Planning loophole"? This paper studied into this problem from the perspective of the planning implementation.

This paper started with the concepts and implementation path of FAR award system, and presented problems within the implementation process and the reasons for the formation while learning from foreign experience. Meanwhile, the paper made an in-depth analysis of the core content and safeguards mechanism of U.S. FAR award system to give some suggestions for China FAR award system from the perspective on planning legislation and system reform.

**Keywords**—FAR award system, resilient planning, planning implementation, planning management, planning legislation.

## I. CONCEPTS INTERPRETATION

FAR awards originated from the new *Zoning Act* of the United States in 1961. They aimed at solving the problem of absence of dynamism in cities caused by overemphasis on functional segregation in the former *Zoning Act* adopted in 1916. It was put forward based on the background of several social environmental problems such as private ownership of land, the pursuit of higher land productivity, the decrease of open space and the damage of historical buildings (complex), aiming at the coordination of the private economic interest and public environmental interest, and it made several practical achievements in the later implementation. The operation of FAR awards mechanism includes two selection process: the first one is the making process of the incentive rules by government, which means that the government makes the elastic adjustment

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range, the operation rules of the incentive method according to the development of the city and the planning goal; the second is that in the realization process of the planning target, the private groups would select programs related to their own demands to construct according to the planning target and the incentive rules formulated by the government. Therefore, in the two selection processes, the key factor of implementation is the floor area ratio.

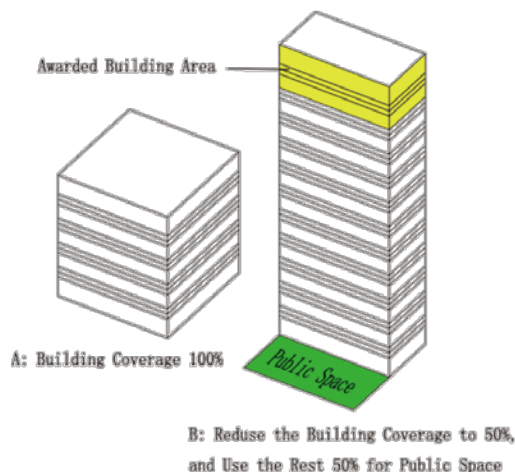


Fig. 1 Schematic diagram of how FAR award works

## II. FEASIBILITY ANALYSIS OF FAR AWARDS

### A. The Mutual Boost of Three Benefited Sides

For developers, they not only facilitate the urban development and construction, but also gain profits from it; they are both executors and enjoyers, and the goal that they pursue is the maximum profit [1]. The government is the spokesperson of public interest, so how to guarantee the realization of public interest is the first factor that it considers. So FAR awards give both the developers and the government a win-win opportunity. The developer's cost is much less than the benefit to provide open space to the public by the mechanism of FAR awards. Usually the cost of building a square is no more than 1–2% of the total expense for developing. The cost of organization and maintenance is made up through lease revenue. The extra built area as rewarded could also make extra revenue. Meantime, the good outdoor space could attract people to go inside, which has great benefit for improving land price and adding project

reputation; for the government, the FAR awards is good for improving the quantity and quality of open space. It is good for the intensively and equally deploying of public resources and land. Meantime, it can leave space for secondary use of the land value. Meanwhile, as enjoyers, the public can enjoy more open and superior public space and improve the quality of their life. Therefore, within the rational rewards scope, through the common promotion from all three beneficiaries, the FAR awards mechanism could considerably improve city environment, boost the construction of open space and optimize public space environment.

#### *B. The Development Potential Of Intensified Land Is Relatively High, Which Allows To Properly Increase The Floor Area Ratio*

In comparison with developed cities, in 1990s, the floor area ratio of New York was 7 to 18, and in the central area of Hong Kong SAR, the ratio was as high as 21.7. While in 2011, the average floor area ratio of land use in China was about 1 [2]. The intensity of land use can be embodied in the phenomenon that city center is under excessive pressure while there are severe waste of land resources and excessive spread in suburb, with the situation of low degree of comprehensive intensive use in the city. Because of the developers' mentality of maximizing profit with other factors such as the high price of land, the commercial development in urban center is usually excessively concentrated with extremely limited open space which has been formulated such as green space and squares, what is more, the population concentration in urban center outdistances that in suburbs, which lead to the worsen environment in urban center. Meantime, low floor area ratio indicates that there is great potential for development in domestic cities. It needs to change the development direction to developing inwards, improving the intensive degree in the city. Therefore, the appropriate FAR awards would not affect the quality of overall environment. Instead, it improves the benefit of land exploitation. With the daily increasing number of people and the increasing pressure of land, highly intensive utilization of land is the development tendency of utilizing land in future, so reasonably raise volume rate will be the inevitable choice in rapid development process of our country's urbanization.

### III. THE "VARIATION" OF FLEXIBLE IMPLEMENTATION

China's FAR awards system is formed based on reference of overseas practical experience. Many cities in domestic all introduce the specific operation methods of FAR awards and defining standard of open space conforming to the premise of reward into the interrelated construction management items. The implementation of FAR awards, greatly promotes intensive utilization of land in our country, and also adds the flexibility and dynamic nature in the control implement and management of floor area ratio. However, the problems having emerged cannot be ignored. There are too many similarities among the provisions of the open space in each region, such as over 5 meters of net width in any direction and not less than 50 m<sup>2</sup> of the actual usable area in Nanning; over 4 meters of net width in

any direction and not less than 80 m<sup>2</sup> of the actual usable area in Shanghai. There are almost no differences for other conditions, which lack different compares of regional climate conditions and people's living habits. We can see from it that the governments of all places are short of experience when they formulate terms for FAR awards. More targeted investigation and survey about "how much reward to give in what terms and what rang" at a local level are needed [3].

Besides, in recent years, big corruption cases involving floor area ratio are exposed continuously, attracting widespread attention. Also it accelerates self-questioning of the public, the department formulating plan, the administrative department about the FAR awards system. The article published in the magazine "Finance" - "Shady Deals: Dijingyuan in Shanghai Offers 50% Discount to the Officials Who Purchase Houses" - described: During the less than 2 years from the presale to selling out of Dingjing Yuan Project, the developer increased the built area from 64124 m<sup>2</sup> as agreed upon in the contract in 1999 to 90297 m<sup>2</sup> by three land transfer contract in Dec., 2002, Jan, 2004 and Jun., 2004. The polt ratio increased by almost 50% while the total replenished deposit was less than 5 million [4]. Increasing the floor area ratio is of great interests of "government and merchant cooperation" in real estate. By calculating the opening price at ten thousand yuan per square meter, the Royal Court project profits up to hundreds of millions of yuan by increasing volume rate. While the premise of getting the profit, is that the land, planning, construction and even other government departments with more high level, need to be opened up each ring.

### IV. RESEARCH ON DIFFERENT FAR AWARD SYSTEM

#### *A. Comparison Of Different FAR Awards System*

**The volume rate United States mentioned in the new area by the US in the new Zoning Act**, is the practice that used to reward the developers in high-density areas provide extra public space for cities, and add some certain floor areas according to the provision. In the block of highest density in Manhattan, the more unit of open space the developer provide in the passenger side, the more unit of built area he can obtain in height, Almost each large new architecture in the Manhattan all fully utilized this preferential policy, during more than ten years from its establishment to the year of 1973, only the precious lower Manhattan center there is a public walking square with 4.45 hectares (about 44,500 square meters) provided privately, the high-quality public activities space of the famous SONY Building in New York is also provided privately [5].

**Japan modified its Building Standard Law in 1970**, and put forward the method of "FAR awards", to boost the formation of more open space, and provided that the ratio of effective open empty area in the building is no less than 20%, if higher than 20% can obtain extra FAR awards according to a certain formula, and according to different planning floor area ratio, the increased volume rate of the same space area provided is different as well. The higher the planning volume rate, the more the rewards are. As of May in 1986, there has been over 200

“public vacant lots” created by the means only in Osaka and Kobe. Since earthquakes take place frequently in Japan, “FAR awards” has dual meanings: besides providing the public with leisure places in high-density commercial districts, office areas and residential areas, the application of it can be further extended to encourage developers to reserve places for preventing disasters and taking refuge.

**Guangdong Province in China has promulgated similar regulations:** in principle, developer should maintain the original volume rate indicator, but public buildings or residential construction projects that provided public space or public facilities for the city can be FAR rewarded based on the limits of traffic impact, public health, and fire. Incentive cap are not more than 120% of the approved FAR; for the extra provided free-use public facilities in the city (latrines, cultural activities and activity room for policing, the youth and the elderly), every one more square meter area is allowed to increase another 5 m<sup>2</sup> building area; for the public parking area that is provided beyond the regulatory requirements, the awarded area ratio is 1:4; for the public green area along city roads that is implemented by the developer, 50% of the public green area multiplied by the net volume rate is the awarded implementation green area, while the awarded building area is not allowed to exceed 120% of the approved construction area.

*B. The System Safeguard Of Implement Of The United States' FAR Awards System*

**Relevant departments of American government manage the floor area ratio incentive plan by means of the dual control system of "planning + law.** First, each local government takes advantage of scientific software to evaluate local construction needs, population development density and the level of public facilities, etc., and then formulates the main content and applicability of the FAR awards mechanism according to the evaluation results; Second, at the legal level, convert the main content made through comprehensive planning to standardized norms and regulations which will be considered as the legal basis for developers to implement and plan. For example, San Francisco's Downtown Plan provides the content of volume rate incentive plan, but it is needed to modify the planning code to implement it; the content of Tahoe Environment Protection Plan between California and Nevada is regulated through the regional planning of Tahoe, but it is implemented through Tahoe Regional Planning Agency Code. In the couple hardness with softness dual control system, planning control is the development basis and the comprehensive expression made in spatial terms by local economy, environment, social development; Legal control is program of action and the process of solidifying and standardizing dynamic planning policy. In the implementation and management of the volume rate incentive plan, the planning control and legal control have different divisions of labor and the main content of the volume rate incentive plan is made by the guiding role of the planning; Once the volume rate incentive plan passes the regionalization legislation, all related regulations will be legalized and breaking the regulation will be

considered as breaking the law. The essence of FAR awards mechanism is utilizing market mechanism to accomplish the planning intervention in the public space construction, so with the help of market power, strict regulation mechanism, as the safeguard, is more necessary.

#### V. RECOMMENDATION ON THE IMPLEMENTATION OF FAR AWARDS MECHANISM OF CHINA

When learning from relative experience, we should pay attention to the following two aspects to reasonably implement the FAR awards mechanism:

##### *A. Reasonably Control The Economic Reward Limits And Application Condition Of FAR Awards Mechanism*

The elastic section of FAR awards is determined by the optimum economic floor area ratio and the comprehensive carrying capacity of environment.

In addition, in the implementation process of the FAR awards mechanism, it is also necessary to give award to specific areas and vary the forms of the award. For the standard of FAR awards is almost the same, ignoring the requirement of local development, the regions which need open space have seldom proper cases for it is hard to find the massive land, instead, the area with development intensity find the cases of this method here and there. Integrate the FAR awards provisions with management system of land use and recognize firmly the development density of all cities and formulate the incentive zoning related to city development plans from the aspect of development and control [6]. Are the forms of award still limited to relaxing the restriction of height and increasing the floor area? In fact, from the developers' point of view, financial incentives like tax reduction, loan facility, delay payment, and so on also have the effects of reducing development cost and boosting profits. Only the various forms of incentive can avoid the abuse of floor area ratio incentives and the loss of control of construction capacity.

##### *B. Turn The Single Control Into Multiple Regulations, As "Planning + Law" 2 Wheels Drive*

One of the signs of maturity of market economy is the change of role of government, gradually from an omnipotent government to a power-limited government. And the government is no longer the sole constructor and do not assume the full responsibility of city development, but depending more on market, a invisible hand, to improve the government's market response abilities under the help of the market power. With the continuing acceleration of market-oriented economic processes, only depending on building of governments or the single control mode of implement and management cannot lead the development of market efficiently, so we should mix multiple means of operation to adopt the changes of environment.

Meanwhile, the ideal value of floor area ratio in the market is influenced by factors of two aspects: one is total development quantity, i.e. the bigger the floor area ratio and construction area are, the more the profits will be; the second is the requirements

from consumers. In general, the volume rate is higher, but the quality of environment will be lower and the requirements of consumers are also lower. The developer should balance the two aspects and look for the floor area ratio that will give him the most profits. But the external influence can usually lower the optimum value of floor area ratio that the developer can achieve. Therefore, under the circumstances of lack of supervision and regulation, the number of cases of illegal activities of floor area ratio can grow easily and continuously. Hence a powerful supervision system in the floor area ratio management should be established rapidly. In April, 2009, the ministry of housing and urban-rural development and the Ministry of Supervision jointly issued "The Notice of Strengthening Supervision and Management of the Land Floor area ratio", "The Notice about the Management of illegal actions in Real estate Development and Changing floor area ratio", The problems, including nature of land use change, the problem in adjustments of volume rate and the curb of corruption in the real estate sector, should be in thorough investigation. Local cities make provisions of management for specific volume rate one after another and propose remediation measures. These are the base of volume rate supervision system, belonging to static regulatory approach. On this basis, the integration of dynamic monitoring method should be paid attention to. Dynamic monitoring mainly refers to conducting proper supervision on floor area ratio management by means of public strength and high-tech methods. Only with help of the power from the public can the final goal of city planning be finally achieved. It's also one part of the process of political reform in our country. The government can publicize the results of the regulatory plan on the Internet and makes the contents of government management transparent through netizens' voluntary participation in supervision; at the same time, some modern technologies can be used to realize regular satellites, such as GIS and Google Earth [7].

## VI. CONCLUSION

We can see that in market economy, urban and rural planning faces more intricate situation than ever before in aspect of floor area ratio management. Under the influence of a series of factors, it is right to put forward elastic control thinking of regulatory indicators in the management of planning, which is a reflection of improving city planning adaptability, playing the function of control and guidance of city planning. However, the subsequent problems shall also not be ignored. Now, our country is facing a whole new stage of development. Though, at the present stage, there are still some loopholes in the floor area ratio management of our country, we believe that, in the near future, it will inevitably be scientized, diversified and standardized gradually.

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