

MEGA PUBLIC BUILDING SAFETY ASSESSMENT PROCEDURE REGULATIONS

Mega public building safety inspection system consists of time point setting, establishment of the inspection organization, inspector's constitution, selection of checking methods, implementation of inspecting procedures, confirmation of inspecting content and result conclusion. Each of these will play a key role of the inspecting job. Failure of each procedure may go against the governmental supervision and even make the whole system losing the principle of transparency, publicity and equity. Therefore, in order to make the realization of standardization of the whole procedure, the author will put forward procedure regulations of mega public building safety inspection system which will be a text format specification of the whole inspecting procedure. But it has been noticed that practice procedure is not unchangeable. During the practice, the inspection organizations and inspectors can make a corresponding change of inspecting methods or procedures according to the characteristics of buildings. Generally, the procedure regulations of mega public building safety inspection consist of five parts.

Concretely, the general rule is the original version of the procedure regulations of each stage which is mainly about omnibus description of the inspection job on the perspective of the life cycle. Its specific contents should include first of all, defining the jobs of assessment and making clear the emphasis of the inspection job; secondly, the confirmation of the target and inspection agency as well as the inspector's constitution; thirdly, expatiation of inspection procedures, contents and conclusion report. As the inspection procedures are being phrased, according to the characteristics of the inspection job during each stage and based on the regular rule, inspection procedures regulations of each stage are necessary, such as mega public building safety inspection procedure regulation of the design stage, mega public building safety inspection procedure regulation of the construction stage, mega public building safety inspection procedure regulation of the operation stage and mega public building main risk resource inspection procedure regulation of construction stage. Concretely, these four parts should be focused on the description of inspection procedures, selection of inspection methods and the requirements of the conclusion report. Meanwhile, the regulations should be enclosed with the table of inspection procedures, the report template, format requirements, material lists provided by the person in charge of mega public building safety management.

CONCLUSION

This paper mainly introduces the establishment of mega public building safety risk assessment system in China which includes legal researches, inspection contents, inspection methods, inspection procedures, inspection organizations and inspectors. This system will make a profound impact on the building safety management in China. It can not only make the whole building supervision system more regularly,

but also serve to realize the building life-cycle management system. Furthermore, the establishment of mega public building safety inspection system will be an example of a new management model change in the future.

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A new model of supervision of Chinese government over building

safety: based on the third-party assessment mechanism

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【Abstract】 With rapid development of Chinese urbanization, the number of city buildings is growing rapidly. The original building safety supervision system: supervision functions are divided into many departments, supervision focused on the spot, could no longer be effective. There exist problems with the deficiency of executive resources, blind management zone and unclear responsibility. By employing third-party assessment agencies as a “chain” of building safety management, the original divided and intermittent administration functions can be integrated into an organic network, so the supervision system could evolve into a long-lasting and adaptive management system. This paper mainly researches the construction approach and the operating mechanism of this new regulatory model, clarifies the responsibilities of the parties involved in this model. It is hoped that this model can provide a feasible solution to the public management reform on building safety supervision in China.

【Key words】 building safety, government supervision, third-party mechanism

Building safety management is one of the responsibilities of the government .In China, these duties are distributed to different departments. However, the state of building safety management is not optimistic. "5.12" earthquake and other disasters also highlight the deficiency of the current building safety supervision system. It is urgent to study and solve this problem.

1. Analysis of present state of building safety supervision in China

Governments of all levels pay close attention to the building safety. The government has promulgated a series of laws and regulations related to the building safety. These laws have covered the domain from "Building ordinance" the fundamental law of construction to State Council code, urban government rules and regulations. The government also adopts a series of management tools, including the administrative examination and approval, periodic inspection, on-site inspection and other means. These laws and tools have formed a set of supervision systems at all

levels and covered the whole life cycle of the building safety. However as the urban building scale grows fast, the system can no longer meet the needs of the state. Chart 1 outlines the present state of Chinese building safety supervision in China and its deficiency.

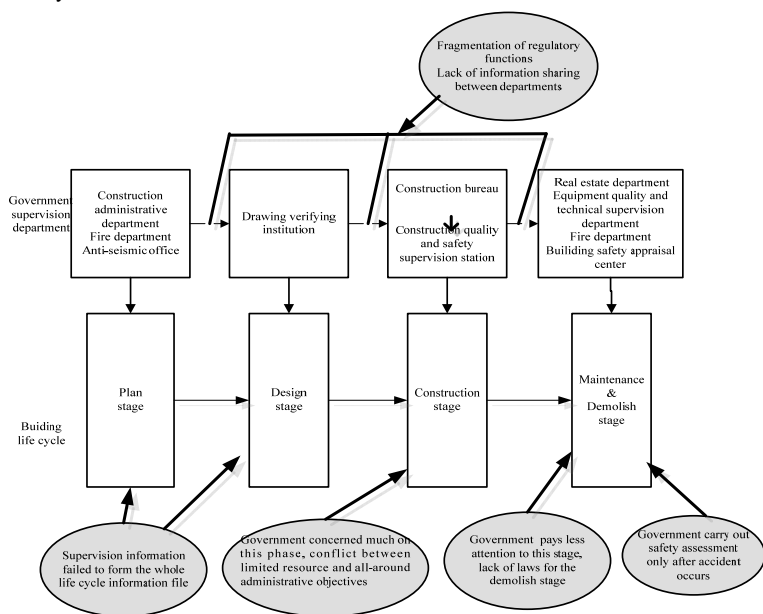


Fig1.present Chinese building safety supervision system

From chart 1 we can conclude the characteristic of the present building safety administration supervision system as follows:

(1) Fragmentation of administration functions

In the present administration system, the building safety public administration function belongs to different departments according to the phase and the type of work it takes. The supervision of building plan phase belongs to the urban planning department. The construction executive department is in charge of the design and the construction phase. The safety of the operational phase is the responsibility of urban real estate department. The building fire protection safety is the function of public fire department. The safety of elevators and other special equipment is the duty of the quality and technical supervision department. We may find that the supervision system is dissevered factitiously .On one hand, this arrangement makes the building owner face different government departments, and this may increase the social cost.

On the other hand, repeated inspection or absent supervision may occur in some areas. This may leave the hidden danger of supervision behind, and also it is a waste of precious government supervision resources.

(2) Absence of the government supervision for the building operational phase

Since the implementation of reform and open-up policies, the urban construction has seen fast development which progresses by leaps and bounds. The statistical data have demonstrated that the annual average completed residential areas amounts to 630,000,000 square meters in the past three years. With more and more buildings facing the aging problem, the safety of the building structure and the building equipment is becoming prominent day by day.

However, since government supervision has formed a tradition that it pays more attention to the construction phase and less attention to the building maintenance phase, through establishing administrative permission, controlling administrative examination and approval, the state and municipal government intend to prevent the possible management risk in the construction phase. By inviting construction quality and safety supervision stations to carry out on-site inspection, the government means to control the entity quality and safety of the building. But the government actually pays little attention to the safety of building operational phase. An obvious example is that there are few laws or regulations related to the building maintenance and demolition phase at present.

(3) Conflict between limited supervision resources and all-around administrative objectives

Unlike the fact that government pays little attention to the building maintenance phase, it concerns lots about the construction quality and safety. Governments at all levels spend much time and resources in inspecting the building quality and safety in case that a construction accident occurs in their district. However as China has entered a fast growing urbanization era, limited administrative supervision resources are unable to meet the all-around administrative goals.

Take the building quality supervision as an example, according to one report from the Ministry of Construction, there were 2659 quality surveillance organizations and approximately 42,000 professionals engaged in this field all over the country by the end of 2008. And at the same time the house construction area around the country was 4,740,000,000 m². In most big or medium-sized cities, The average surveillance area per person was about 30,000 m² in the early 90s, and now this figure has increased from about 500,000 to 1,000,000 m². Supervision resources are insufficient for a long time.

(4) Emergency management mechanism

The government concerns less about the building maintenance phase, and this attention is mainly laid on the urban dangerous house. But even in this small field, government supervision is still insufficient. Regular house safety check is organized by house owners, after having discovered possible danger, they apply for a building

safe assessment. But in everyday life, there are only a few house owners carrying out a regular house check, and this risk-preventive measure plays a less important role in the building safety management. In many situations, related government departments organize safety inspections after accidents occur. This kind of emergency management can do little to prevent potential building hazards, and it is also impossible to form a persistent building protection mechanism.

2. Supervision model for building safety based on the third-party assessment mechanism

These are many factors influencing building safety management, involving the building's life cycle in each phase. The use phase of a building is a stage in which the risks from entity quality conformation of construction phase appear gradually and the risks from use process accumulate gradually. As shown by survey data, most accidents occur in the use phase, such as building collapse, suspender shedding, could find reasons in the design and construction phase

This characteristic of building safety management causes the concern and research of building life cycle risk management. In fact, the thought of life cycle risk management is also adequate for the safety regulation that government exerts on building. Under the current regulatory regime, different authorities carry out building regulations in different phases. Due to the lack of effective collaboration among these authorities, a lot of regulatory information runs off in the phase transition. The result is that the building risks hidden in the early phase couldn't cause enough concern in late phase, and it may lead to a waste of limited regulatory resources because of repeated inspection.

The building safety supervision system is suitable for organization arrangement of the current administration system. The change which aims to the supervision system will both face the resistance layer upon layer and that huge price must be paid. The reform of the present building safety supervision system must meet both two requirements, i.e. one is to satisfy the methodology of building total life cycle, and the other is that it cannot create big change to the immediately supervision system. The third party assessment mechanism, which profits from both the building supervision patterns of developed countries and regions and the existing administrative reform successful experience in China, was proposed under this mentality.

By employing third-party assessment agencies as a "chain" of building safety management, the original division and intermittent administration functions can be integrated into an organic network, so the supervision system could evolve into a long-lasting and adaptive management system

It's the mandatory stipulation of the law that the building safety owner has the

obligation to control the safety risk under the new supervision pattern, and the building safety owner must regularly require the third party to implement the routine building safety assessment according to the stipulation. The report of assessment can be used to collect the building safety control information in relevant jurisdiction, and also works out the safety control measures for government. As the specialty technical service provider, the third party assessment organization writes up the fitness report, and it must undertake the corresponding technical responsibility. The government carries on the assessment information to set up a file, and then puts it into the unified supervision information platform of government. As a result, the building' life cycle time information supervision system can be established, making the building life cycle time safety control possible. The restructuring government supervision pattern is shown in the chart as follows:

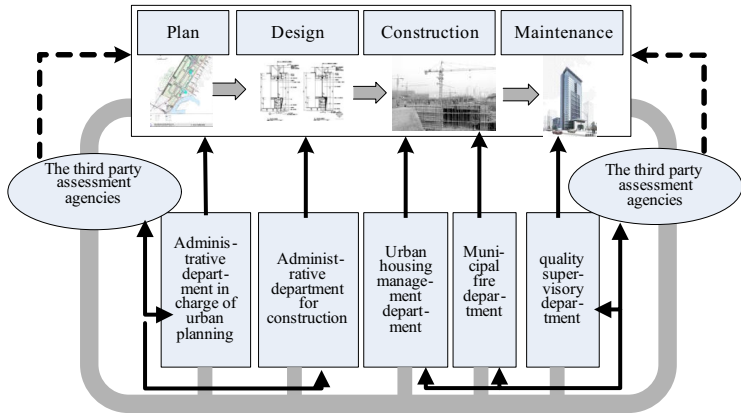


Figure 2. The building safety supervision system with the third party assessment mechanism

3. Establishment of the new building safety supervision system

When introducing the third-party assessment mechanism into the government supervision system, consideration should be taken to every phase and every department affected by this change. From the perspective of system theory, this paper considers that the new supervision system can be made up of four sub-systems, and the new supervision system can be expressed by the following diagram:

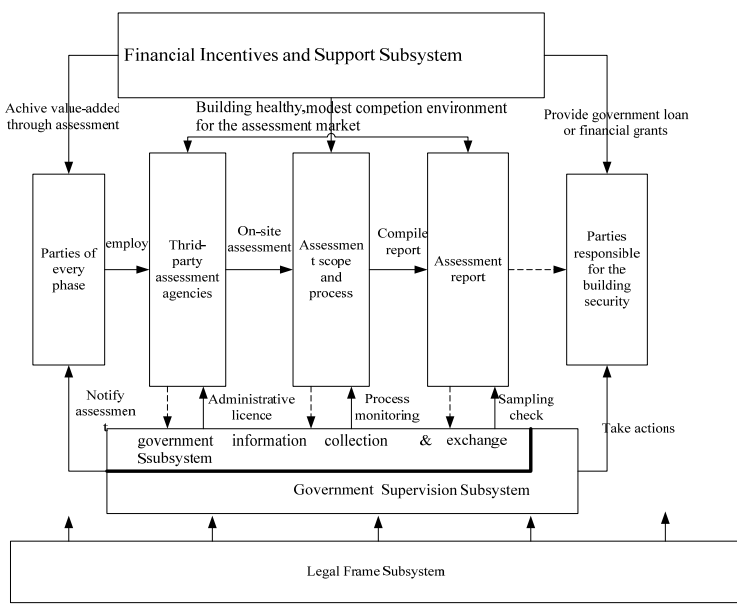


Fig 3. Government supervision system based on third-party mechanism

(1) Legal frame subsystem

The original idea of the government's overall supervision has been changed by the introduction of third party assessment in the government regulatory system, which has extended the scope of government's supervision to the stage of use and removal, adjusted and re-defined building safety regulatory functions of government. The third party is responsible for preparing the assessment report, which should be the basis of safety management measures by the government, giving a certain power to assessment agencies. In the re-organized system, the safety management of building is not any way of automatically application, voluntary identification and self-management by the householder, but a mandatory safety management obligation. Clearly, definition by the laws, regulations and all normative documents is needed for the redefinition of the functions of government regulations, the restraint over the power of third-party assessment agencies and the constraint regulations for safety assessment obligation of the person responsible for building safety. Some enabling and compulsory regulation and safeguards rules to the operation of other system must be determined by the sub-system of the legal frame in the implementation of the whole supervision process of safety supervision system. Sub-system of Legal

Frame provides protection to the orderly operation of other sub-systems.

(2) Third-party assessment sub-system

The third-party assessment operation system is the main part of the re-organized supervision system. This sub-system mainly serves to deal with the process reengineering after the introduction of third-party assessment mechanism in government regulation. In this sub-system, the person responsible for building safety commissions the safety assessment of building to the qualified third-party rating agencies voluntarily, according to compulsory safety assessment obligation under the laws and regulations. Assessment agencies should comply with the appropriate specifications in each stage of safety assessment of building and prepare the assessment report in the specified assessment scope. The assessment report should be submitted to the appropriate government regulatory authorities, which should give instructions to the person responsible for building safety on the basis of contents and conclusions of the assessment report and take some corresponding management initiatives

(3) Government information collection, exchange and supervision sub-system

In the process of safety supervision over life-cycle of building by the government, a lot of supervision information is produced. If there are no proper preservation and delivery of them, it would not only bring potential safety risk, but also bring about duplicate regulation with different departments. Therefore, reengineering system makes arrangement with government information collection and exchange. As the provider for a third party service technical support, the assessment institution acquires the power and duties to issue assessment report. For the sake of preventing appraisers from abusing their appraise power, it is necessary for the government to execute strict management over a third party assessment institution. The government supervision over a third party assessment institution consists of checking up the qualification of a third party assessment institution, granting permit to appraisers, supervising assessment process of assessment institution and appraisers, double-checking the assessment report, etc.

(4) Financial incentives and support subsystem

According to government regulation theory and the research results on the effect of government supervision, the government supervision over the regulation object is rather like a game of "a cat-mouse game". In the case of lacking effective market incentive, the regulation object often sacrifices the interests of the third party to cope with the government. The market economy has its own stabilizer of economy. The government supervision over the main body of building safety management is required to comply with the basic law. The financial incentives and supportive sub-system is the "balance stabilizer" which adjusts the interests between enforceable governmental supervision object and various participants. In the process of building safety supervision, the government could guide building safety sponsors to integrate safety appraise in building safety management. The preservation and

increase of the value of buildings resulting from building safety management would play an active role in initiative appraisal. In addition, the government should not only execute strict management, but also create a healthy, orderly, appropriate competition market environment for a third party assessment institution which would prevent over competition just as general service industry. Enforceable safety appraisal stipulates the obligation of all participants and at the same time should provide financial support for building safety sponsors who are in financial difficulties, the financial support in the form of government subsidy and government loan, etc.

4. Conclusion and prospect

Based on analysis of the current status and the disadvantages of the building safety system in our country, a scheme which inducts a third party assessment institution to reconstruct government building safety supervision mode was produced. The government supervision system is presented in this paper on the viewpoint of system theory and integration theory, which would provide a brand-new idea for solution to the reform of governmental institutions.

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