

The Influence on Society and Culture of Engineering Demolition

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Abstract: This paper has mainly discussed the influence on society and culture of engineering demolition, by analyzing constraint problems of engineering demolition starting with noise pollution, dust pollution, hidden danger and cultural value loss, of which the reasons have been expounded and some corresponding countermeasures have been proposed.

Keywords: Engineering demolition; Pollution; Safety; Culture value

INTRODUCTION

With the rapid development of urbanization construction, more and more buildings have been demolished, and demolition has become one of the important aspects of construction project. Demolition project, involving the difficulty of its construction, the degree of danger, appalling working conditions and safety hazards, have caused serious harm to society and culture, has attracted widespread attention. Based on the analysis of the main problems and causes in the process of demolition project, some effective measures have been put forward to reduce the effects on the society and culture.

EXISTING PROBLEMS

Noise Pollution

Noise pollution refers to the environmental noises that exceed the environmental noise emission standards prescribed by the government and affect people's normal work, study and life. Due to its great harm, noise has been known as "deadly chronic poison". Noise pollution has become one of the four major environmental problems, attracted widespread attention around the world. Exposing to long-term noise pollution, it would not only interfere with sleep and affect the work efficiency, but also damage the hearing and vision, and even cause high blood pressure, heart attack, memory loss, hard concentration, and other mental syndrome. Furthermore, noise can result in psychological fear and masking of alarm signals.

With the development of the construction industry, noise pollution of construction has been particularly serious, especially in the densely populated areas, the

noise pollution generated by demolishing buildings will have a serious impact on the surrounding people's life, and at the same time affecting the healthy image of the a city. The disputes caused by noise problems often occurred between the construction companies and the neighboring community, and complaints from people also have been increasing continuously, thus it has become important to cope with the noise pollution effectively and create a quiet environment for the public.

Dust Pollution

Under air pollution control, according to the atmospheric dust particle size, it could be divided into fly ash, dust, suspended particles and PM2.5. Dust from demolition project mostly belongs to the dust, which is consist of the solid particles in the atmosphere particles larger than 10 μm , and under gravity, it can sink to the ground in a short time [Lu, 2009]. Around the demolition buildings, because dust concentration is becoming bigger, it becomes a carrier of fly ash and toxic gases, thus having a serious effect on the surrounding ecological environment and the lives of the residents. The dust will not directly hurt someone, but will cause great harm on the respiratory tract, eyes and other organs, or even lead to lung disease, cardiovascular disease and a series of pathological changes. In addition, the suspended dust will shorten the service life of equipment, and increase the cost of maintenance, so as to exert impact on the output and economic benefits of the enterprise. Dust pollution are like holes in the ozone layer, land desertification, soil erosion that can cause all kinds of deadly diseases on human beings and other creatures, and even extinction. So, we should pay enough attention to the problem of dust pollution.

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Security Issues

The security problem has been the main problem of engineering demolition in our country, especially in the blasting demolition for towering buildings [Ding et al., 2014]. In recent years, safety accidents, which have occurred frequently due to engineering demolition, pose great threat to human life and property, and also hinder the construction of socialism in our country. It also can bring the negative influence to the construction enterprises, such as damaging the image severely and being not conducive to set up a good brand benefit. Demolition compensation of engineering also has certain security risks, which can cause social unrest easily and is not conducive for the stable development of the society. The society and the related government departments should attach great importance to the safety management problems in the process of building demolition.

Cultural Value Loss

Old buildings are the most important symbol to represent the development level of each historical stage. By reflecting the cultural connotation of each historical stage, thinking pattern and lifestyle in different times and regions, they have profound historical value. But with the rapid development of urbanization, these old buildings seem to have completed their mission, and have been replaced by high-rise buildings. The demolition of these ancient buildings removes the childhood memories from the older generation and our splendid culture history of ancient Chinese is disappearing as well. However, this loss of cultural values did not bring concern in society, though the problem of demolition has been becoming more serious.

ANALYSIS OF CAUSES

Causes of Noise Pollution

Causes of noise pollution in the process of engineering demolition are in many aspects, the mainly in the following:

- 1) The noise generated by human in the process of engineering demolition.
- 2) The noise produced in the operation of machinery and equipment components.
- 3) The noise caused by using removal tools through cutting and other ways.
- 4) The noise resulted from colliding and collapsing to the ground between demolitions [Chen et al., 2008].
- 5) Various noises during the demolition blasting.
- 6) The noise pollution caused by construction at night.

Causes of Dust Pollution

Demolition of multi-layer and lower-layer buildings generally adopt the way of artificial and mechanical matching, and blasting technology is adopted in the high-level building, during which demolishing produces large amounts of dust. Production of dust mainly comes from the following ways.

- 1) Long term adsorbing on building surface.
- 2) During drilling and blasting, caused by human or machinery.
- 3) Colliding and collapsing to the ground in the demolishing process.
- 4) Demolished buildings collapse to the ground instantly, rise the dust generated on the ground soil.
- 5) After blasting demolition, shattered by the formation of dust.
- 6) Rise by transport cars at the construction site in running time.
- 7) Generating in loading and unloading process of the construction waste after demolition.

Causes of Security Issues

Engineering demolition has certain risk, countless casualties and cases of the building collapse. The main reasons are as follows.

- 1) Lack of necessary management mechanism and supervision mechanism, and do not take the demolishing engineering management. At the same time, mistaken for demolition engineering easily, resulting in confusion in the demolition work management. Most demolition team is a patchwork, which doesn't understand the basic technology of demolition. And relevant responsible personnel do not understand the safety technology and management [Zhang, 2005].
- 2) Blind construction. Before the demolition, construction companies do not draw up demolition scheme and are lack of understanding of various pipelines such as building supply, living water, heating, gas, fire water. at the same time, they are lack of security measures, such as the construction area without setting hard sealed enclosure and eye-catching warning signs, increasing the hazard of demolition[Zhang, 2011].
- 3) The Owner blindly pursues demolition speed, requiring the demolition team work overtime frequently, resulting in lack of sleep. So it influences the demolition quality and is easy to cause safety accidents.
- 4) The compensation of removal is insufficient. It is easy to trigger a fight between the ownership of building and the owners, even easily leading to social unrest.

Causes of Cultural Value Loss

The building is a frozen art, with an in-depth exploring cultural value. However, the vicious

economic competition between cities is growing in china. Economic interests cover everything, and money corrupts people's heart. It becomes a common phenomenon that cultural stage and economic singing with the economy as the main body, leading to ancient architecture having historical value is less and less. Although the old building was demolished and then rebuilt, the reconstruction of the building is to local GDP and show only appearance in the form of old buildings, ignoring the value of the culture itself.

CORRESPONDING MEASURES

Measures of Controlling Noise Pollution

It is very serious of that demolition noise impact on society and harms, so it must take effective measures to control, basically has the following ways.

1) Construction units should be strictly controlled and the examination and approval for Administrative department. Before constructed, construction units should consciously to registration department of the environment, early prevention and understand the impact of the construction noise on residents, strengthening the construction at night for examination and approval, approval of the unit need to communicate with local residents[Wang et al., 2012].

2) To strengthen noise monitoring of the construction site and residents' complaints. The problems found during the on-site inspection "early prevention and treatment" attitude, listen to reflect the real situation of the masses. For some construction noise pollution is serious and not to take measures to enterprises, and should be dealt with according to law gives serious punishment.

3) Construction enterprises should spontaneously and reduce noise. In addition to actively cooperate with the regulatory departments, construction enterprises must also be prepared to work , maximum limit of control a noise by people, strict control in the densely populated area carries on the construction of the noise, using lower noise technology and equipment at the same time.

Measures of Controlling Dust Pollution

The dust produced in the process of demolition also has serious harm on the social environment. In order to build a clean environment, actual dismantling can adopt the following measures to control dust pollution.

1) Before dismantling, clean up the building surface adsorption of dust for a long time, and along the continuous closed setting.

2) Timing sprinkling water atomized spray on construction site, and avoid constructing in the windy weather.

3) Strengthen the management of transportation road and detecting quality on the construction site and the surrounding environment.

4) Personnel engaged in the work of dust to use protective equipment, strengthen self-protection.

Measures of Avoiding Hidden Safety Accident

Safety, involving people's safety and social development, can't be ignored. We should adopt effective methods to avoid the occurrence of safety accidents and hidden troubles and can proceed from the following main methods.

1) Attach great importance to the safety of demolition engineering on thought, do a good job in safety knowledge education seriously, implement specific professional skills and safety education for relevant personnel regularly, strengthen supervision and do a specialist treatment work in regularly or irregularly[Pan, 2007].

2) Fully grasp the situation of demolished buildings, formulate the scientific and detailed construction scheme, determine the reasonable construction sequence and take corresponding safety technical measures.

3) Strengthen the management of the construction sites, and formulate the strict safety management system.

4) Government departments should strengthen supervision and management of demolition companies, increasing the punishment.

Strategies for Preventing Cultural Value Loss

After the demolition and reconstruction of ancient architecture, cultural connotation may gradually disappear. We should vigorously protect these ancient buildings, and meanwhile, we have to consider the protection of their sustainable development. Depending on the actual situation, by changing or updating inside buildings and other facilities through functional way to protect ancient buildings in order to reflect its cultural value and the significance of their presence, which will give more vitality for the ancient buildings. Such as Shanghai's Si Nan Mansions [Feng, 2008], which has been built nearly a century, are extremely value in the arts and humanities spiritual level. It does not like other ancient buildings that may be rebuilt or just using as antiques after demolishing, that can be used again. Parts of their houses are converted into boutique hotels, the areas inside of the street are open to the public, and these formed rich local characteristics of an ancient architecture pedestrian street, which became a flow modern history museum, with the new value.

CONCLUSION

With the development of urbanization, the number of demolition is increasing rapidly, and problems in the process of demolition have brought more and

more serious impact in the social and cultural aspects. How to achieve green, safe demolition has become an important issue for people. It should deserve wide attention, further reflection and discussion.

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