

# **International Journal of Civil Engineering and Machinery Manufacture**

**Volume 2, Issue 2, March 2017**

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Publisher: HongKong New Century Cultural Publishing House

Address: Unit A1, 7/F, Cheuk Nang Plaza, 250 Hennessy Road, Wanchai, Hong Kong

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# The Study of Modern Building Indoor Environment Detects

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**Abstract:** With the rapid development of social economy and the increasing of people's living standard, indoor decoration has been more and more get the favor of people. At the same time, people in the pursuit of decorative beauty, however, forgot to bring their own due to decoration of safe hidden trouble. Indoor environment pollution has become the killer of human health, therefore, to control and prevent the indoor environment pollution has becomes very urgent.

**Keywords:** Interior decoration; Indoor environment; Countermeasure

## 1. Introduction

In recent years, with China's housing system reform and the improvement of the living standard, residential interior decoration has become an important part of improving living conditions. [1] Public environmental awareness, environmental awareness and health awareness increases quickly, improve the working life and living environment, the expectations of the increasingly strong, housing decoration standards. Continuously improve the level and the upward trend. [2] However, due to the use of building decoration and new building decoration materials, the environmental pollution and pollution case encroach on human health have been reported. The main pollutants of indoor environmental radon, formaldehyde, ammonia, benzene and total volatile organic compounds (TVOC) [3], the reason is free of harmful substances in the new and selected the reconstruction of building materials, some even exceed the standard, it will cause indoor air pollution. [4] According to our indoor air hygiene standards, formaldehyde and benzene for maximum allowable concentration of 0.08 milligrams per cubic meter, but the sample test results show that the new non residential decoration, indoor air formaldehyde exceed the standard all reached above 40 times. The average concentration of 5 days; the decoration of indoor formaldehyde is 30 times the standard value, after half a year still exceed the standard 3 times. Formaldehyde content in indoor air of benzene in China more than half a year after the decoration in the Wei More than two times the standard. [5] The following is the decoration of residential indoor air pollution performance, environmental testing and prevention for a simple exposition.

## 2. Status of Indoor Environmental Testing

Detection of the indoor environment as the evaluation of engineering quality and decoration engineering acceptance of the supervision work content tend to be necessary and inevitable. As residential and office activities, the quality of the environment directly affect human health, to the existence and management of indoor environmental pollution, has attracted people's attention, the indoor environment testing the need to provide a guarantee. [6] At the same time, the state of the decoration caused pollution is more and more attention, in June 7, 2001, Premier Wen Jiabao in the China News Agency Liu Changzhong "interior decoration pollution, standardize the market to the instructions >" this relationship between the resident health and should be paid more attention.

Decoration company the importance of indoor environment testing is more and more obvious. With the enhancement of environmental awareness, people on indoor decoration not only appearance and quality, and pay more attention to the quality of the indoor environment, so that the decoration companies have become increasingly demanding. The administrative departments for Industry and commerce, with the relevant State regulations, the decoration industry contract will become the "green decoration contract", the quality of the indoor environment will become one of the important factors of the benign development of the decoration company. Indoor environment evaluation, management will become an important part of the indoor environment test. Indoor environment testing is an important means to measure the quality of the indoor environment, its development will be linked to decoration, many factors management and evaluation, simple detection has been unable to meet the needs of high-end users. The greater the detection scope of promotion, development time The longer, more development of the evaluation, governance needs. When the evaluation, governance has become the support of

detection, detection work can be carried out more in-depth and lasting, thus forming a virtuous circle, and the organic combination of detection, evaluation and treatment, more help for people to create a good indoor environment.[7]

### 3. Problems of Indoor Environmental Monitoring

#### 3.1. Complex types of indoor pollutants

At present, the indoor air pollution material variety, complex nature, such as radon, formaldehyde, ammonia, benzene and total volatile organic compounds (TVOC), therefore, when the indoor test, because the detection technology, inconsistency detection standard and detection method, may detect the quality of the indoor environment bring some difficulties. In general, the specification of indoor environmental pollution control of civil building engineering GB503252001<, the standard specified in the concentration of various pollutants limits, such as radon (Bq/m<sup>3</sup>) = 200, ammonia (mg/m<sup>3</sup>) = 0.2 (mg/m<sup>3</sup> = 0.08) of free formaldehyde, benzene (mg/m<sup>3</sup>) = 0.09 (TVOC, mg/m<sup>3</sup>) = 0.5.

#### 3.2. Relevant national inspection laws and regulations

Improve and perfect the relevant laws and regulations of the state detection, provide a clear reference standard for indoor environmental testing, the testing can be better. In addition, the relevant inspection department at the time of the inspection, to adopt a flexible approach to the detection of the indoor environment, can be detected by using a variety of detection technology. To ensure the correctness of detection. For example, the entire renovation of residential construction, detection of indoor air ammonia, in addition to the standard method of measurement of the national standard "environment of ammonia in the air >GB/T145821993 outside, still can use field instrument determination method.

#### 3.3. Detection time sampling

Sampling is an important part of the indoor environmental quality testing, sampling is correct, whether the typical will directly affect the results of the late, however, the sampling is not easy. Sampling, sampling time, sampling location, different effects and sampling sampling instrument contained different vessels all of the results. Therefore, the quality of sampling problems affected the detection results, must be sampled for detection of this link to give the necessary attention. To consider the detection point arrangement is uniform distribution before sampling, avoid ventilation and air vents monitoring point setting should also consider the site layout and three-dimensional layout in the sampling quantity, sampling should be representative of typical

pollutants in the indoor environment, and the number of sampling of pollutants shall not be less than 5% and so on.

## 4. Solving Countermeasures

### 4.1. Optimal design and reasonable decoration

The architectural design and environmental design of the principle of combining the reasonable planning construction plan, city microclimate improvement are taken into account, as far as possible the effective utilization of natural energy or the least energy to achieve maximum efficiency, so as to ensure the safety of the indoor air quality. In addition, in addition to the optimization design, in the decoration should also implement the green decoration, the spirit of "natural, beautiful, safe, simple, comfortable and low consumption" concept, do some useful amount with decorative flowers, to beautify the indoor environment but also ensure the healthy quality of the indoor environment, conducive to people's physical and mental health.

### 4.2. Ventilation to eliminate indoor air pollution

The indoor and outdoor air exchange, can reduce the pollutants in indoor air, to the owner of the physical and mental health. And, the indoor and outdoor air exchange rate is high, the decrease of indoor pollutant effect is high. Therefore, to strengthen the indoor ventilation, indoor air has been diluted fresh outdoor air, the concentration is reduced, thereby improve indoor air quality, this is a method to improve the indoor air quality is the most convenient and fast. As everyone knows, air conditioning has entered thousands of households, of course, the use of air conditioning brings a lot of convenience to people, but the air conditioning brings risks cannot be ignored. Therefore, reasonable use of air conditioning, in order to improve indoor air quality play the role is significant. It can be mainly from the following aspects: the reasonable control of the indoor temperature, humidity, temperature and other aspects of the situation, pay attention to seasonal The change of temperature, adjust itself with the external condition; air conditioning not often open, the best time is in the use of air conditioning, open a window, the outdoor fresh air into the room; the choice of some indoor air treatment equipment with air conditioner used together, such as: humidifier, dehumidifier, filter and negative ion generator.

### 4.3. Indoor garden

Plant purification refers to a method for people with green plants to decorate and beautify the indoor environment, but also a kind of indoor air purification is effective way. In some areas of China and developed

countries, a considerable part of the area, there have already been successful experience, such as Chlorophytum, aloe and other plants. To reduce the concentration of harmful gas chamber; Monstera planting can absorb carbon dioxide effectively; the pomegranate planting can absorb in the air and lead; rose, the rose plant can absorb hydrogen sulfide, hydrogen fluoride, phenol and ether and other harmful gas and so on.

#### 4.4. Selection of environmentally friendly home appliances

In order to reduce the pollution caused by household appliances, household appliances to choose, to choose those good performance, low noise products; to the use and maintenance of electrical attention to family noise control in the reasonable scope; to minimize the use of electric blanket, less contact with microwave oven, not for a long time, watching TV and near distance. Pay attention to open doors and windows for ventilation, to make the face after watching TV. Household appliances to be cleaned regularly and timely disinfection, vacuum cleaner to replace the filtering velvet pad, reduce dust by. Every year the first start before air conditioning, to please the professional cleaning staff will conduct a thorough cleaning and disinfection of air conditioning air conditioning room. When the default windows open for ventilation.

#### 5. Conclusions

With the development of social economy and people's lives improved, the requirements of indoor environment quality is more and more high, but the lack of a correct understanding of the indoor environment, and bring the

pollution of the indoor environment. The indoor environment to meet the needs of using function at the same time, whether it is conducive to human health, to meet the requirements of environmental protection is more and more attention. I hope that the people all over the world hand in hand heart, together to create a beautiful environment, make the earth more beautiful!

#### 6. Acknowledgement

Research and application of indoor environment control technology. Project number, cstc 2015shms-ztzx30005

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