## How to Better Apply New Building Materials in Structural Design of Building Engineering

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**Abstract:** New building materials are the product of the development of the new era, with the integration of innovative technology and traditional technology, and the application of new building materials in the structural design of building engineering has been appreciated by many people, which is the product of the development of the new era.

## 1. Introduction

With the rapid development of the times, the construction industry has also developed by leaps and bounds, and all kinds of buildings, large and small, have appeared in people's lives one after another, and their quality is also improved than before. This also represents that construction engineering has developed new structural design concepts, especially the integration of the current concept of green development and sustainable development, and more and more energy-saving and environmentally friendly building materials have been introduced, which not only improves the quality of construction projects, but also brings people a better enjoyment experience. The better application of new building materials in structural design of building engineering is also a long way to go.



Figure 1 Construction engineering

# 2. Significance of Application of New Building Materials in Structural Design of Building Engineering

## 2.1. Green Development of Construction Projects

After many years of development in the industrialization era, people are increasingly aware of the importance of environmental protection, which includes the development concept in various industries. And the present architectural engineering structure design has achieved this goal, has become one of the representatives of successful transformation and development. In architectural engineering design, many of the components of new building materials are made up of some waste products, such as construction waste and some remaining construction waste and so on. In fact, in

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previous construction projects, the remaining construction waste is often discharged without special treatment, and the discharge of these wastes in the invisible impact on the natural environment, and then affect people's health and safety. And these abandoned building materials are not fully utilized, causing unnecessary waste to some effective resources, contrary to the concept of sustainable development. However, the current use of new building materials is to make a strategy to this problem.

For example, some new types of building materials are transformed through scrap. Gypsum particleboard is a main representative, no need for complex production process, its plate strength is relatively high, and there is no release of those harmful gases. So it is a very environmentally friendly building material, but the building quality of gypsum particleboard is also very excellent, and it will not reduce its essential performance because it is a green and environmentally friendly building material. The application of this highly efficient and recyclable material in the structural design of building engineering is really one-shot, carrying out the concept of environmental protection development, realizing real sustainable development and protecting the environment, starting from now on and from all walks of life[1].

## 2.2. Reducing the Cost of Building Materials

When new building materials are used in the structural design of new building engineering, the design cost will be saved to a certain extent, and the whole project cost will be reduced. This can effectively improve the development efficiency of construction projects and achieve efficient development. In the usual structural design of building engineering, building materials are the most basic components. At the same time, the demand for building materials is also very large. Therefore, in the preparation of building materials can consume a large amount of money, which also reflects that its cost price is very high, to the relevant construction projects of enterprises also brought great pressure to work. And the new building materials are cheaper than the traditional building materials, can provide people with greater benefits, but at the same time, because of its low cost, many customers also gradually develop a sense of distrust of it, think that the lower cost represents poor quality and so on, the wide application of new building materials has no sense of security and belonging.

For example, thermal insulation materials are developing towards integration. High efficiency, energy saving and environmental protection, waterproof, heat insulation and other functions can be integrated, in line with contemporary architectural engineering design, its thermal insulation efficiency will not be reduced. And the most important thing is its low cost, heat insulation materials using heat-resistant and corrosion-resistant silicone acrylic emulsion and waterborne fluorocarbon emulsion, greatly improve its thermal insulation effect, but also improve the durability of the application, and this material can be diluted with water, low carbon environmental protection, harmless to the human body, and the cost of construction is relatively low. not only improve the quality of construction projects, but also improve the economic benefits of construction enterprises.



Figure 2 Construction engineering

## **3.** Better Application Strategy of New Building Materials in Structural Design of Building Engineering

#### 3.1. Research and Development of Innovative Building Materials

First, we must persist in the research and development of new building materials. Business leaders should understand that today is an era of innovation, no longer as usual to encounter any change is a timid look. If stagnant, it will be compared to other better industries, this is an era of survival of the fittest, so it is necessary to invest in the innovative research and development of new building materials to ensure the smooth progress of the whole construction project. Increasing investment and focusing on the research and development of new building materials are conducive to the development of structural design of construction engineering. In the future, the new building materials will be more and more environmentally friendly, the quality will be higher and higher, the scope of popularization and application will be wider and wider, and the new building engineering will also bring people a better experience of using.

For example, every construction engineering enterprise can set up a research and development department, the main task of this research and development department is to develop new building materials, is a high-tech department, master advanced new building materials methods[2]In addition, enterprises should invest more money and employ high-tech personnel to develop new building materials using their expertise, which should be more aware than anyone else of the future of new building materials. With the acceleration of urbanization, more and more tall buildings are rising, and people are looking forward to the wide application of new building materials, people also hope that in the process of rapid development can still protect our human home, reduce the damage to the environment. Therefore, it is necessary to increase research and development to contribute to the wide application of new building materials.

## **3.2.** To Realize the Application of New Building Materials in Load-Bearing Structures of Building Engineering

Secondly, the application of new building materials to load-bearing structures is also a significant progressive sign. The most important thing about a building is the stability of the foundation and its load-bearing structure. In the contemporary era, with the rapid development of society, all kinds of buildings appear in people's vision layer by layer, the building covers an area more and more large, the building floor is also higher and higher, and the construction project will be more and more difficult. Because the load-bearing capacity of the building has been rising and breaking through infinitely, the load-bearing capacity of the building is really the foundation and key of a building, so the building materials in the load-bearing structure of the building engineering are more important. This aspect of materials must not be careless, and new building materials as the most advanced construction engineering technical achievements, must be the first choice at present, the application of new building materials will certainly make people look at it.

For example, construction works will normally take concrete as the main material in loadbearing structures. And the composition of the current concrete has also been improved and innovated, its solidification and load-bearing are enhanced than the previous concrete, the performance of the new concrete with the integration of new technology is also constantly improved. At present, high performance and sensitive concrete, transparent concrete, these concrete can be built into any shape of the building, and its stability is really excellent. At the same time, the concrete produced by the fusion of various excellent concrete has become a new type of building material. Pollution is less, can protect the environment and its stability is strong, as the main material in load-bearing structure is also very certain.



Figure 3 Construction engineering

## **3.3.** To Realize the Application of New Building Materials in the Wall Structure of Building Engineering

Finally, the wall structure is also the main engineering task in the construction project, so it is the following development trend to realize the application of new building materials in the wall structure. New wall materials have always carried out the important concept of green environmental protection development in China, cement lightweight partition board, color steel board, gypsum board and so on are common new building materials in the market at present. In the previous traditional construction projects, the service life of wall materials is often relatively short, and the wall is more easily damaged than the structure in other buildings. The wall material is also the material with people's frequent contact, therefore, its durability must be high, can not casually occur damage, brings the customer bad environment experience[3].

For example, the cement lightweight partition wall with fly ash, slag, stone powder and so on as the main ingredients in the raw materials. And these raw materials have the characteristics of high quality, low pollution, excellent play the role of fire, waterproof, moisture-proof, noise isolation. At the same time, its application can also make the wall thinner and make the user's use space increase, so it is also a great progress in the new building materials. In addition to these, the production cost of new wall materials is also very low, but there is no quality problem at all. Today, some wall materials also have the function of shading and heat conduction, which is also a great breakthrough in their innovation. It should be popularized in construction engineering so that it can be widely used to meet the requirements of construction engineering in the new era.

### 4. Concluding Remarks

To sum up, it can be concluded that with the progress and development of society, people have higher and higher requirements for structural design of building engineering. People not only require the quality of their building materials to pass, but also gradually have new requirements for their aesthetic degree and environmental protection degree. And the new building materials just accord with people's requirements and conform to the contemporary development concept, with high quality, beautiful, green environmental protection and other characteristics. not only reduce the resource consumption in the construction project, but also push the construction project into the new development platform.

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