

# The Poetic Expression of Stone in Modern Architecture

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## Abstract:

As building materials, stone is almost as old as human history. The advantages of ecological environment protection and low energy consumption of stone make it an ideal building decoration material. It can not only meet people's requirements for building appearance and interior decoration, but also purify the air, beautify the environment and reduce vibration and noise. For this reason, people feel that they have a strong connection with the stone. Western countries use stone to build memorial buildings, creating an architectural history formed by stone. Oriental stone, as a part of the landscape garden, appears in a more natural state in the vision of human beings, symbolizing people's pursuit of noble character. Just like the Chinese garden elements "mountain, water and stone," "stone" is integrated into the entire natural environment as an element of the landscape. With the increase of people's aesthetic demand for architecture, stone materials also affect the creation of contemporary architectural environment in a new form. It expresses a natural artistic conception through architecture, and also conveys a response to traditional culture and a poetic expression of modern architectural aesthetics.

## Keywords:

Stone Culture, Building Stone, Building Skin

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## 1. Intangible Specificity of Stone

The earliest application of stone processing was the handicraft industry in the Stone Age, and then extended to the construction. With the social development and the continuous progress of science and technology, people put forward higher requirements for building materials. In this context, stone processing technology has made great strides. As a result, the modern stone processing technology has been developed. The dealing of smaller stones by tools has been transformed into the processing of larger stones for buildings, bringing a steady improvement in the human stone processing technology. The application of stone processing technology has been recorded in stone temples since the 2nd century BC in ancient China. Around the 5th century, with the development of social economy, the requirements for stone materials increasing. In particular, the growing demand for marble and granite has led to a sharp increase in the output of stone materials. The variety of stone materials is diversified

and standardized. Stone processing methods, arch technology and other processes have also emerged.

Because stone materials have the physical defects of heavy weight and inconvenient processing, the application of stone materials in Chinese residential buildings is regarded as the representative of the dual attributes of material and spirit in addition to its general practical functions. After hundreds of years of historical development, stone materials have also taken on a humanistic flavor. Stone mountains, stone tablets, and stone landscapes in history have deep roots in Chinese culture. There are many kinds of stone materials produced in various regions. Stone materials in some regions have become the natural business card representing the region. When the local residents began to strengthen the attribution of the regional culture they lived in, the application of stone materials was promoted to generate diversified and multi-level architectural expressions, and these processes were also important contents of the intangible stone culture.

The intangible specificity of stone materials in architecture are the diversified manifestations of different stones in different natural climates and cultural habits. Different regions have different kinds of stone materials, and people have different understanding and requirements for architecture due to different geographical conditions, living environments, and folk cultures. The regional characteristics of stone materials in building construction are affected by regional culture, while regional buildings react on regional culture. The different treatment means, colors and textures of stone in different environments can give people completely different psychological feelings. The dignified, magnificent, solid and permanent stone buildings usually use large scale stones, presenting regular geometric shapes with edges and corners, and arranging and combining in a repetitive and regular way, so that people can perceive their own insignificance in a way that exceeds the human scale. The natural, gentle and intelligent stone buildings will choose stones with appropriate or smaller scale. The appropriate scale can give people more cordiality, and the memorial meaning of stone often gives people profound impression. Stone brings people a firm and eternal emotion, which makes human beings endow stone buildings with some commemorative significance in the long history. Over time, some special types of stone buildings have become important cultural and intellectual symbols. Just like the famous Great Wall of China, in this era, it is no longer needed to defend the country against foreign enemies, but as a cultural and ethical symbol[2].

Sicheng Liang and Huiyin Lin put forward the term “architectural meaning” in their “Miscellaneous Records of Buildings in the Suburbs of Beijing” [1], which in fact also follows the concept of “the law of beauty”, meaning to create the authenticity, goodness and beauty of stone materials in architecture. They express their feelings through the rational application of stone materials, reminding builders that stone materials are not ruthlessly stacked when used in building construction, but should be linked with the whole culture, and stay true to the expression of stone materials. That means it is sensibility that contributed to builder’s creation. One of the leading factors is that “sensibility” stresses on the invisible framework, while “sensibility” takes material materials as sustenance, and once produced, it can play a lasting role in history. Compared with other materials, this kind of accretion is persistent and bestows profound meanings upon stone. Therefore, in traditional architecture, stone is generally used as the material bearer of permanent, commemorative, emotional and some symbolic pursuits, and is used in large-scale building steps, altars, tombs, monuments, sculptures and other buildings. Now, through the continuous innovation

and development on the nature and types of stone by the stone masons, the construction technology has been improved, so that the material properties and formal beauty displayed in the construction of modern buildings are more diversified.

## 2. Building Poetics of Stone

The “Stone is silent, but make people love it” contained in Lu You’s “Idle Living and Self-Endowment” of the Song Dynasty can be regarded as a model summary of the appreciation value and mental state of the stone culture in China’s ritual culture. [3]On the surface, Chinese people take shape, color and texture as the basic measurement standards for the materiality of stone materials. However, the spiritual connotation and elegant taste embodied by the integration of the above illustration are the highest realm that people pursue. In modern architecture, stone has diversified decorative and artistic features. When selecting stone, we need to consider its external characteristics such as shape, color and texture. However, somewhere deep beneath the surface lie a logic and structural mode. These potentials are like an iceberg floating in the ocean. What we see is the part of the iceberg exposed to the sea, which behind are deeper internal logic and artistic beauty of materials awaiting architects to explore. Of course, it should be the basis for us to understand the building materials and the relationship between buildings and sites, rather than the rules that constrain architects’ ideas. This spiritual pursuit of truth, kindness and beauty has always inspired builders, sculptors and poets to create a variety of stone works.

Stone can crave a new place in the wave of modern architectural development. It is the architects’ research and exploration of the physical characteristics and mechanical potential of stone materials with the development of the times, which makes stone materials shine again in the application of building skin. Part of the reason is the expression of the ecological and mental nature of stone materials in building construction, such as in building appearance, through the seemingly heavy masonry image of stone materials to expose the light structure inside the building, or directly expose the material interpretation of the architectural shape such as the load-bearing joints of the building, so that materials and modern-built language can be used as a form of visual presentation, which is the expression of the “authenticity” of stone materials. As an ecological and environmental material, stone itself has the ecological significance of convenient access, environmental protection, low energy consumption, which is an ecological principle of “friendly”. With the development of modern sustainable ecological architecture, traditional ecological materials are favored by modern people. Through the development of new technology, the original physical defects of materials can be overcome, and the ecological renewal and evolution of materials can be endowed in the construction. As a traditional ecological material, stone can infuse people with natural, tender, solid texture. The feeling of empathy for materials also makes buildings seem to be sensitive, giving people the enjoyment of “beauty”. Therefore, it is reasonable that stone is deeply rooted in modern architecture.

## 3. Application of Stone In Modern Architecture

Modernist architecture caters to the needs of the social, economic and cultural development of its era. However, it also exposes people’s blind worship of science and technology, believing that construction problems can be solved by construction technology, which has caused a lot of waste and pollution of resources and energy. In contemporary architectural design, there is a wall between materials and buildings, which is the wall of the city and the ideas. In ideology, people have realized the

limitations of modernism, which is manifested in the excessive pursuit of rationalism and functionalism, while ignoring the emotional needs of human beings themselves. With rationality and function as the precursor, while adopting the unified industrial production mode, people pursue the unified mode to realize the architectural structure. However, in the face of the contemporary society with rapid development of spirit, material, culture and economy, and the diversified demands brought by the changes of market subjects, this architectural model is increasingly powerless. The increasingly prominent pursuit of ethical culture makes the patterning of modernist architecture be thrown into doubt. Just as we walk in China's major cities, we can't find out the difference. Until we see some relics, even a piece of wall or tile left over from history, the memory of the city will be highlighted in everyone's memory. Nowadays, driven by the concept of ecological sustainability, people are trying to find a new way for the diversified development of modern architecture in the traditional ecological building materials.

Many domestic designers try to reflect the response to traditional construction ideas through the innovative application of stone in building construction. The application of stone in modern building construction has basically separated from the original material structure property of stone, and is mostly used as decorative materials in the interior and exterior decoration of buildings. Architects began to consider the expression of artistic conception in traditional architectural structures from the perspective of modern architectural needs. Both ancient and modern artistic conception needs to be carried by the material foundation. As a witness of the development of human architectural history, stone, in a new form, shines brilliantly in the interior and exterior of modern and contemporary architecture, not only showing the new vitality of modern architectural thought diversification, but also arousing the human nature to be close to nature.

#### **4. Conclusions**

Nowadays, facing the era of economic globalization, the form of regional places has also decreased rapidly since the wave of modernization, and the buildings around appear to be exquisite but featureless. The application of stone in architectural construction must adapt to the development of the times, and seeking breakthroughs and innovations in form is an important direction for survival and development. The application of stone in the building skin has benefited from an upgraded recognize that people begin to value themselves and constantly enhance their aesthetic needs. In addition to paying attention to the technical structure, they start to advocate a healthy and diversified building construction form to express our response to traditional materials and the texture in our memory and the expression of diversified aesthetic attitudes in modern architectural design; meanwhile, it provides fresh ideas for the construction of modern architecture from the basic meaning of architecture.

#### **Conflicts of Interest**

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