

# Research on Mirror Materials in Interior and Landscape

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## ABSTRACT

In this era of rapid social and economic development, people's material living standards have been improved, and at the same time, their aesthetic ability has also been greatly improved, which means that the requirements for design are getting higher and higher. On the existing basis, how to use old things to add elements of innovative design to create new things, so that people can get more beauty and new feelings from the visual experience is the focus and difficulty faced by designers. Mirror material is currently widely used in design as a decorative material. It is not only decorative, but also can expand space and create unique light effects, especially in large cities where resources are scarce. The potential design power of the mirror material is very strong, for example, through modeling innovation, element innovation, process innovation, etc., the existing space can be completely new. This article describes and summarizes the use of mirror materials in interior space and landscape design, studies and analyzes its role in interior space and landscape design, clarifies the design positioning, analyzes the designer's successful cases and interprets them in combination with actual conditions. It aims to improve people's awareness of mirror materials, thereby strengthening the correct use of mirror materials, and provide certain references and feasibility suggestions for the innovative use of mirror materials in the future, so that there will be breakthrough, innovations and long-term development in design and use.

**Keywords:** mirror material, indoor space, landscape design

## 1. INTRODUCTION

The ancients said, "With copper as a mirror, you can straighten your clothes." Most people's cognition of mirror materials is only the basic mirror reflection function. After entering the new era, ordinary but ever-changing mirrors have been widely used indoors. In space and landscape design, under the collision and fusion of traditional fixed force innovation tension, it decorates the environment, enriches space and extends visual effects, creating endless artistic beauty. We take mirror materials as the research object and analyze it from many aspects Its characteristics, advantages and disadvantages, combined with theoretical knowledge and practical cases, explore its application methods in interior space and landscape design, and make it play the best role.

## 2. THE CONCEPT AND PROPERTIES OF MIRROR MATERIAL

The concept of mirror material

Mirror material does not only refer to mirror material, it is a material with high surface finish, which can produce optical reflection and three-dimensional images. The clarity and light transmittance of objects illuminated by different materials will be different. Common mirror materials include: water bodies of natural materials and industrial materials such as glass (mirror), metal, stone, high-gloss acrylic sheet, etc.

As one of the important components of indoor and outdoor environmental design, the mirror material is widely used in architecture, landscape, home and other fields because of its unique decorative effect. As the mirror surface can play a role in improving and expanding and optimizing the space, the designer uses its different material characteristics to make up for the space defects in the design, improve the building pattern

and lighting and other problems, so that the space can be better decorated. The effects and functions add a unique charm.[1]

The properties of the mirror material

On the one hand, from the perspective of material properties, mirror materials can be divided into reflective, reproducible and expressive. If reflection is the basic physical property of a mirror material, then replication is another feature. The people and objects, houses and scenery reflected in the sight can trigger the viewer to think about the work itself. The mirror surface also connects the real space and the imaginary space, creating the illusion of infinite extension. The expressiveness is embodied in that it breaks people's traditional visual cognition, and changes people's stereotypes of original things through reflection reconstruction and exaggerated deformation.

On the other hand, from the perspective of functional properties, mirror materials can be divided into practicality, environmental protection, and decoration. As an environmentally friendly material, the mirror surface has a self-cleaning function. Because it can divide and combine the space, the mirror surface material is a decorative effect that other materials cannot replace, and it shows its uniqueness and artistic beauty.[2]

### **3. APPLICATION OF MIRROR MATERIAL IN INTERIOR SPACE AND LANDSCAPE DESIGN**

#### ***3.1. Application of mirror material in indoor space***

##### ***3.1.1 Improve visual effects***

Mirror material is currently the most direct and effective way to change people's visual impression of indoor space. Because of the smooth and bright surface, it will present a virtual mirror space after reflection, making the original space more colorful and colorful. Space comfort is the basic requirement that interior design needs to meet. In addition to being beautiful and tidy, people pay more attention and expectation to how to create unlimited visual experience in a limited space, thereby reducing the psychological impact of the enclosed environment. The sense of depression brought by. Designers usually use a whole piece of mirror in small spaces such as dressing rooms and powder rooms, and place mirror materials in small areas in other spaces, ceilings, background walls, etc., supplemented by lighting, to enhance the brightness of the space and optimize the visual effect of the space, Add a sense of hierarchy and meet people's needs for beauty.

##### ***3.1.2. Activating space and extending the dimension of space***

The role of mirror material in extending the spatial dimension is obvious, especially in the design of small apartment interiors. Reasonable use of mirror materials at an appropriate angle can give people visual depth and breadth. Rich and diverse material choices can enhance visual continuity while activating space divisions and levels, it can expand the space. In space modeling, different imaging effects can be obtained by cleverly using the principle of mirror optics. Through the flexible use of repetitive, deformed, and exaggerated mirror materials, different visual forms can be created to enhance the sense of rhythm. For example, the kaleidoscope is formed by three-sided corner mirrors placed at different angles. This structure is also common in the practical application of interior space design.

##### ***3.1.3. Clear decoration style***

With the introduction of the world's multiculturalism, people's aesthetics have been improved, and different requirements for interior decoration styles have been put forward, including American style, European style, Chinese style, modern (simple) style, etc. First of all, we should clarify the overall indoor style before planning the house, and then use mirror materials flexibly and efficiently based on the actual situation to echo the overall style and improve the overall quality. For example, the decoration of Chinese style, taking into account the ideas of "learning from nature" and "harmony between man and nature" adopted by the Chinese nation from ancient times to the present, we should avoid choosing materials with strong metallic texture when using materials, so as not to form a complicated and luxurious style. Based on the above, in order to highlight the classical Chinese aesthetic concept in the design, we can choose more mirror materials with smooth edges, no edges and corners, soft reflection brightness and symmetry, in order to meet the design concept of mediocrity, compromise and harmony, and cater to Overall style.[3]

##### ***3.1.4. Impact on lighting and the psychology of the crowd***

In indoor spaces, we often place mirrors in places where light is weak, and use the principle that the surface can refract light to introduce light from other spaces or natural light into the room, so that the space is visually brightened, and the light sources scattered in the corners of the room are both. Beautify the environment and give people a warmth. Furthermore, the mirror surface can also diffuse the existing light sources in the house. However, even if the mirror material has the above-mentioned advantages, we must use the appropriate amount and be cautious in the

selection. If blindly pursuing gorgeous and eye-catching effects, excessive or even abuse, it will make people dizzy, thereby affecting the experience and comfort of living.

The morphological relationship between people and space can also be reflected through mirror materials. Although the mirror itself has good practicability and decoration, the virtual space it presents can clearly allow people to see themselves and themselves from the third perspective of the mirror. To a certain extent, the location and state of the space have strong implications for people's psychology. The psychological feelings that the mirror material brings to people are good and bad. If you pass the hallway before going out and take a look in the mirror for a short time, your self-confidence will be improved; if you look in the mirror in a private space such as the bathroom for a long time, it will make people feel uneasy and anxious. A study by the University of Leeds in the United Kingdom shows that the longer people look in the mirror, the lower people's satisfaction with themselves. Therefore, we must fully consider the psychological impact of the environment and mirror materials on different groups of people when designing the interior space, and use it appropriately to make it fully valuable.[4]

### 3.2. Application of mirror material in landscape design

#### 3.2.1. Indirect borrowing

From the perspective of the landscape, the most direct way for mirror materials to borrow the scene is to create a sense of depth visually through the water surface and mirror reflection, such as the lack of a garden. A large number of stainless steel mirrors are used in the design of the garden, vegetation and flowers are borrowed into the picture, and the beautiful scenery is presented to the visitors from multiple angles, so that people are in it. Mr. Wang Shouzhi uses a limited area to create boundless feelings for people. Moonlight night winds, people lean on the pavilion to admire the moon, the moon in the water and the moon in the mirror have their own postures, sharing the beautiful scenery enhances the communication between man and nature.[5]

#### 3.2.2. Unreal imaging to enhance the fun of entertainment

The "mirror labyrinth" in Madison Plaza Park is not rigidly placed in the center of the park through the appearance of the mirror surface, which breaks the traditional design concept, forming a variable canopy at any time, integrating with the park environment, allowing people to be in the boundless space and forming an illusion experience. The scene under the

mirror forms an artistic conception of "emptiness" and "emptiness" in reality, which makes a strong contrast between the orderly physical space and the reflected virtual space. Therefore, in addition to relying on the object itself to impress the viewers, the urban landscape design can also stimulate the curiosity of the viewers, satisfy the interest, and increase the favorability through the interaction and performance of the device and people.

The designer introduces nature into the city through the mirror surface, so that urban residents can better perceive the natural environment and integrate into the surrounding environment, and hide in the changes of time and space. For example, the Vessel Ladder of Hudson Square. Art produces physical contact, material collision, and spiritual friction. In this form of communication, it causes a dialogue between the environment and people. The urban landscape and people have a symbiotic relationship, and the urban atmosphere has practical significance.

## 4. DESIGNER CASE ANALYSIS

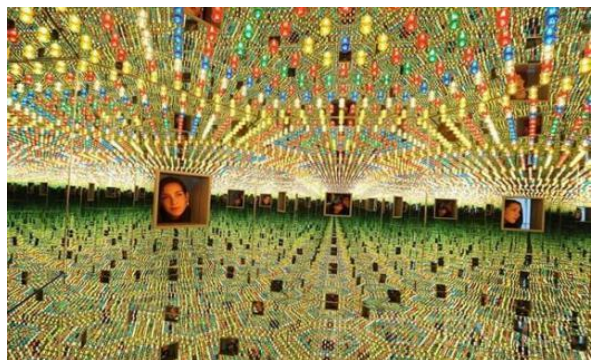
Express a kind of philosophical thinking——Anish Kapoor2

Appearing in the movie "Source Code" in the "Cloud Gate" (picture-1, picture-2) in Chicago Century Park, the entire sculpture is 33 feet tall and weighs 110 tons. It is polished by Kapoor from stainless steel. One of the representative large-scale public artworks with specular reflective materials. Because the shape and posture are soft and simple, resembling a bean, it can evoke people's inner peace and gentleness. According to the unevenness and curvature of the bean, the urban landscape is projected onto this bean, reflecting exaggerated or deformed images, making the surrounding scene Eclectic, leading people's feelings to another level naturally, generating supernatural power, and triggering thinking about philosophy and life. From this work, we can see that Kapoor's work is metaphysical, emphasizing the communication between the work and the surrounding environment and creating a thought-provoking spiritual mood.[6]



Figure 1 "Cloud Gate"(Source: Nettu) Creating an image of an illusion——Yayoi Kusama3

Quite a lot of art schools such as minimalism, surrealism, abstract expressionism, primalism, etc. have summarized the works of Yayoi Kusama. Due to her own growth experience, she is good at reusing high-contrast and colorful dots or patterns in her design, with the aid of mirrors to express an illusion. "Infinite Mirror House" (picture-3, picture-4) is the continuation of Yayoi Kusama's representative wave elements. The design inspiration comes from the hallucinations she produced. She regards artistic creation as the best way to vent her emotions and regard herself The private emotions of the people are visualized in front of the viewers in a direct and popular way.[7]



**Figure 2** The House of Infinite Mirrors: The Results of Eternal Disappearance" (Source Hirshhorn Museum)

Entertaining a visual effect——Leandro Ehrlich4

Leandro is an artist who is good at using mirrors. In his hands, the mirror is not only a simple use of materials, but also uses the scene of the work to simulate the reflection effect of the mirror.[8] For example, he exhibited the works of "Ballet Dance Studio" in the 2002 Shanghai Biennale (Picture-5, Picture-6). Through mirror reflection, two female dancers with the same dress, posture and costume are placed in two rooms, and everyone and objects in the room are arranged in a mirror effect, as if a person is practicing dance in a dance classroom. Let people create an environment. A real mirror is also placed in the scene as an auxiliary tool to confuse the vision. This effect of pretending to be a mirror reflection of the real object gives people a sense of humor and makes the viewer feel the designer's well-intentioned while they can't help but laugh. [9]



**Figure 3** "Ballet Dance Studio" (Source: 2002 Shanghai Biennale)



**Figure 4** "Ballet Dance Studio" (Source: 2002 Shanghai Biennale)

## 5. CONCLUSION

Modern people are pursuing material, psychological and spiritual needs while pursuing a high-quality living environment. This article takes the mirror material as the research object, and requires the designer to not only ensure the comfort, but also reflect the strong decoration in the process of using the mirror material. After weighing the actual situation, determine the amount of the mirror appropriately and pay attention to the function. On the one hand, in the interior space, we should continue to explore and actively create, so as to enhance the use of mirror materials, to achieve the real combination of "intention" and "mirror", so that the material and space can be organically integrated and enriched. Beauty, science and objectivity. On the other hand, in landscape design, we should create new artistic value while meeting the diversified needs of landscape space atmosphere according to the different characteristics of different mirror materials. I hope that through the analysis and summary of this article, combined with the designer's actual case induction and proof, more people can intuitively and deeply understand the usage and characteristics of mirror materials, and hope to provide some ideas and directions for future research.

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