

Application of Weathering Steel in Landscape Design—Take the Landscape Design of Zigong Cultural and Creative Park as an Example

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Abstract

Along with the continuous innovation and application of materials, landscape design has become more and more colorful, and people's acceptance for the use of new materials has become higher and higher. Weathering steel increasingly appears in urban landscape design cases. Through analysis of the material characteristics of weathering steel and the value of landscape art, this paper studies and summarizes the application types of weathering steel plates used in landscape design. The specific analysis of the use of weathering steel in the landscape design of Zigong's local culture is conducted, discusses the development prospects of weathering steel plate and the development of modern landscape art design, and discusses its application in modern landscape design, and provides richer creative space for landscape designers.

Keywords

weathering steel, landscape, culture.

1. Introduction

With the continuous development of society, people's aesthetic requirements for public landscapes continue to increase, which cause designers to continuously seek new shapes and introduce new materials, and widely used in landscape design. In recent years, weathering steel, as a new generation of advanced steel materials, has been pushed into more fields such as landscape design and interior design due to its high strength and plasticity; it has gradually become the new favorite in the current design.

Weathering steel, also known as corrosion-resistant steel and Corton steel, it is a new type of steel which is made of low alloy steel series between ordinary steel and stainless steel by adding niobium, molybdenum, phosphorus, titanium and other weathering elements to form a dense oxide layer between the rust layer and the substrate. The existence of this dense oxide film on the surface of weathering steel prevents the penetration of oxygen and water into the steel matrix in the atmosphere, thereby slowing the development of rust into the steel material and improving the resistance to atmospheric corrosion. In the early stage of research and development, weathering steel was only used as an industrial material in construction, shipping, railway and other fields.

The weathering steel plate can be designed into a variety of forms such as fold lines or curves by folding and twisting. Because the material itself has a certain bearing capacity, weathering steel is mostly used at the edge of the landscape space and the side walls, by folding or twisting, the weathering steel is used to enclose the space in the landscape design to define a space with a turning transition. The weathering steel plate has the characteristics of good toughness, high strength and strong plasticity. In landscape design, it is usually processed into any geometric shape required by the space in the form of plate to define the three-dimensional landscape space. In addition to the construction of regular facades, retaining walls, and fences, irregular

polygonal lines and curved surfaces can also be created by folding and twisting to create landscape spaces with different turning and changing effects. In materials, weathering steel is different from traditional brick-concrete stone and other structural forms. He can carry out various patterns hollow designs on the surface of the board, and the pattern is very decorative, and forms a façade space with strong contrast between reality and reality.

The second way defines the headspace in landscape forms such as structures and sketches. It is mostly used in some landscape aisle spaces, and it can also be attached to the original load-bearing structure by means of steel plate splicing, it can make people feel the unique taste of space in the process of passing.

The third way is to create floor space in the form of floor pavement. Based on the original masonry and other ground materials, combined with weathering steel plates, auxiliary decoration is carried out on the steps and floor paving.

In addition, weathering steel plates also often play a role in enclosing plant spaces in landscape design. They are often used as planting troughs, tree pool board decoration, platform-type plant landscape partition boards, and plant background walls. According to the level of trees, shrubs and groundcovers, the weathering steel plates are processed into a variety of perforated or more closed structures in the form of plates to form an open, semi-open visually transparent space or a closed plant canopy space. Its rough rusty red texture and plant green form a contrast relationship in texture and color. The color change of the two also changes dynamically according to the environmental climate, forming a harmonious combination relationship in the landscape space. The side walls of the weathering steel plate are full of volume and weight. They are set against each other against the background of greenery, which reflects the charm of other artistic values.

Weathering steel sheet, it can be used as a separate material, such as in landscape sketches: Because the material has good strength and toughness, it can be processed into thin-film unit modules of predetermined specifications, which can be used as exterior skin decoration for architecture, sculpture sketches, and artistic creative devices; or through panel splicing, it is shaped into three-dimensional structures with different functions, designed as landscape facilities such as tree pools, seats, signage, corridors, and landscape walls. In landscape design, it is also necessary to combine other different materials to jointly create a landscape space, especially with the combination of landscape materials, relatively large differences in texture and color, which can better serve each other. Combined with plants, its stable and uniform natural rusty red color forms a sharp contrasting color relationship under the background of green plants; combined with wood and masonry, it is easy to form a visual coordination relationship under a similar color system; combined with other metal materials, similar material structure, the difference in surface texture is obvious. It can reflect a "temporal" spatial atmosphere relationship. The combination with rough and gravel will produce a rough and original texture contrast effect; the combination with glass will better reflect the modern design atmosphere in the contrast between pure and transparent and thick and stable. In the contrasting combination of rough and delicate textures, cold and warm colors, and soft and hard materials, it has condensed into a rich modern landscape design context.

As the theme of urban cultural creativity, Zigong cultural and Creative Park embodies creative, cultural and artistic landscape features in the landscape design of the entrance. The weathering steel plate can also be used as a carrier of information, and the effect of the facade can be achieved by hollowing out or adding text and graphics. Such as project introduction, park plan map, industrial distribution of the park, technological development history description and creative coordinate positioning pattern. In addition to the application of geometric space structure, the diversity of application of weathering steel plates is also reflected through the use of small sculptures, seats and other materials. For example, in material combination, in the paving design, the ground uses red brick materials, and the stepped facade uses weathering

steel plates as external decoration. The same color relationship allows the two materials to better integrate together.

The metal material characteristics of the weathering steel; and the rusty color relationship make it have the theme atmosphere of "old industrialization", which can better integrate Zigong Cultural and Creative Park with "culture and creative industry aggregation as the core, integrating cultural and artistic experiences, themes creative business in one "theme. In specific applications, in addition to the material's suitability to the theme, in the weathering steel plate surface decoration design, it also uses yin and yang hollow carving and creative graphic text welding as the industrial description of the park. The expression of the entire entrance landscape can produce a kind of "The sense of psychological substitution in the industrial years, on the basis of which is decorated through the facade, is full of modern design and creative atmosphere, in line with the theme of the creative park.



Fig.1 logo design of Zigong Cultural and Creative Park

The weathering steel plate is used as a material in all aspects of modern landscape design, and its special material characteristics have both use functions and aesthetic functions. In terms of landscape space color performance, the weathering steel sheet surface is natural, relatively uniform rusty red, not easy to fall off, and can maintain its stability for a long time. It has lower color purity than ordinary rusty red paint, and it more naturally and truly reflects the original ecological iron of the material itself. Quality rust color characteristics, and has a strong color visual impact in the landscape space; in modeling, weathering steel plate can be processed into a variety of modeling structure forms according to design needs, has a strong shape shaping ability. In addition to defining landscape space and surrounding landscape plant space, it also presents diversity in combination with other landscape materials. At present, it is mainly applied to landscape outdoor sketches, sculptures, structures, etc., and is widely used as a carrier of text and graphics.



Fig.2 Landscape wall design of Zigong Cultural and Creative Park

The landscape of Zigong Cultural and Creative Park uses a large number of weathering steel materials to combine the space and combine materials such as red brick to form an overall color combination relationship, highlight the theme atmosphere of the cultural and creative park. In Zigong Cultural and Creative Park, there are a large number of flower ponds and flower platforms using weathering steel profiles, with green plants, rusty red heavy metal feeling and soft plants in sharp contrast, but the entire landscape has achieved unprecedented harmony in color. The park under the old industrial wind environment is full of vigor and vitality.



Fig.3 design of flower and tree ponds in Zigong Cultural and Creative Park

The weathering steel plate has various design combinations in landscape design, its research and development except the above research and summary, the differences in volume, structure and application theme will produce different landscape experience effects, they also have different spatial psychological feelings for people, the landscape design of Zigong Cultural and Creative Park provides a reference for the development and application of weathering steel plates in modern urban landscapes.

References

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