

# *Research on the Application of Environmental Design Concept in Film and Television Art Creation*

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**Keywords:** Environmental design concept; Film and television art; Creative application

**Abstract:** This article focuses on the application strategies of environmental design concepts in film and television art creation. In terms of scene construction, natural landscapes are integrated, and abandoned land and natural scenic spots are cleverly used for framing. The layout follows ecological balance, saves energy, and adds charm; In terms of prop carving, we will explore the potential of old and discarded items, revitalize props for urban and historical dramas, and strictly control the source of material selection; Clothing customization is moving towards sustainable fashion, using environmentally friendly fabrics and circular design to fit the character and showcase the imprint of the times; Special effects enhance innovation through green screens and virtual green energy collaboration, reducing energy consumption and expanding fantasy boundaries. This concept comprehensively reshapes film and television art, helps the industry ecology and art win-win, and opens a new chapter of innovative development.

## **1. Introduction**

In today's era, the film and television industry is flourishing and has become an important field for global cultural dissemination and entertainment consumption. However, in the process of film and television art creation, there are often many resource consumption and environmental impact issues, such as material waste caused by large-scale scene construction, and the disposal of props and clothing after production. This is in stark contrast to the increasingly severe environmental situation at present. There are intricate internal connections between artistic creation and environmental protection, and their mutual integration can endow works with deeper value; The rise of scene building AI technology has also brought new opportunities and possibilities for film and television art creation. In view of this, this article aims to explore in depth the application of environmental design concepts in film and television art creation, the combination of art creation and environmental protection, and the role of AI in scene construction, hoping to contribute to the sustainable development of the film and television industry on the road of environmental protection.

## **2. Analysis of the Role of Environmental Design Concept in Film and Television Art Creation**

### **2.1 Enhance artistic quality, carve unique visual effects with environmentally friendly materials**

In the field of film and television art creation, the choice of materials is like the paint in the painter's hand, directly determining the visual texture presented by the work. The concept of environmental design advocates the use of renewable and recyclable materials, which brings unique artistic charm to film and television images. Taking wooden materials as an example, many film and television works pursue a retro and natural scene atmosphere. Although traditional craftsmanship can achieve the desired effect with solid wood props and scene construction, it often comes at the cost of cutting down a large number of trees. Under the guidance of environmentally friendly design, recycled wood, bamboo, and other materials have become alternatives. These materials themselves retain the natural growth texture, their unique fiber orientation, and color changes. After being skillfully crafted, they can perfectly restore the ancient style and charm in costume dramas and historical films<sup>[1]</sup>. Like some film and television works that depict traditional rural life, the bamboo built house frames and furniture not only fit the story background, but their elegant color and warm texture also appear fresh and elegant under the lens, blending with the actors' performances to create a simple and realistic picture, making the audience feel as if they can smell the natural atmosphere through the screen. From the perspective of texture details, the recycling and processing of metal waste materials for the production of props in science fiction and industrial films can be considered a masterpiece. The fine wear marks and irregular oxidation color on the surface of the re forged metal sheet are difficult to simulate with new materials. Placed on futuristic mechanical devices and extraterrestrial technological equipment, these "traces of time" actually add credibility and mystery, giving the cold machinery a sense of story, making the audience believe that it has gone through vicissitudes and carried a heavy history, greatly enhancing the richness and viewing value of the picture, and enabling film and television art creation to break away from the monotonous industrial perfection and embrace a vibrant artistic texture.

### **2.2 Deepen the connotation of the theme, convey ecological thinking through green imagery**

The soul of an excellent film and television work lies in its theme, and the concept of environmental design is rooted in it. With the help of green imagery, it can subtly convey ecological thinking to the audience and elevate the film's style. When the film is filmed in nature reserves and ecologically fragile areas, if the art creation team adheres to the concept of environmental protection, designs the shooting environment with minimal intervention, and preserves the original style, then lush forests, clear streams, and dynamic wildlife become natural theme rendering elements. This is particularly evident in the field of documentaries, where the camera focuses on the habitats of endangered species. The non-destructive filming allows the audience to witness the reproduction of life and ecological cycles, and deeply perceive the beauty and fragility of nature. In drama films, such as the story of conflict and reconciliation between humans and nature, the wilderness scenes preserved through environmental protection techniques become a reflection of the protagonist's inner transformation - from initial fear and confrontation to final awe and protection, the natural landscape sets the theme throughout, and the audience follows the protagonist's emotional journey to appreciate the preciousness of ecological balance. At the level of prop design, incorporating environmental imagery is equally crucial<sup>[2]</sup>. In the environmental themed film, biodegradable plastic products replace traditional plastics, which may seem like a small change, but is like a butterfly flapping its wings. When actors hold such props and shuttle through urban ruins and polluted water areas to rebuild scenes, the props symbolize the determination of

humanity to correct mistakes and move forward, metaphorically symbolizing the resilience of environmental protection actions, although small. The repeated appearance of plant seed shaped accessories and commemorative items reconstructed from waste materials reinforces the concept of environmental protection, prompting viewers to unconsciously reflect on their environmental actions in life after watching the film. This elevates the film from entertainment to enlightenment, and the theme can take root in reality and radiate deeply.

### **2.3 Optimize cost-effectiveness, leverage economic leverage through resource recycling**

The production cost of film and television is high, with art creation accounting for a significant proportion. Environmental design concepts demonstrate excellent economic wisdom here, leveraging resource recycling to leverage cost-effectiveness. The construction of scenes can be regarded as a big cost. In the traditional mode, disposable boards and foam materials are used to build grand scenes. After shooting, more waste is disposed of, and funds and resources are wasted. After the introduction of environmental protection concepts, modular design combined with recyclable materials has become a new trend. The detachable metal frame and reusable plastic components can be flexibly combined and adapted to various storylines during construction. After filming, they can be classified and recycled, and with slight adjustments, they can be put into new drama shooting. Taking common ancient costume palace dramas as an example, the layout of palaces in different dynasties has similarities. Recyclable components are reorganized according to historical blueprints, saving a lot of new material procurement and processing costs. Funds flow to key links such as creative polishing and acting improvement, enhancing the overall quality of the works. The clothing and prop rental system is also an economic highlight born from environmental protection. In the current era of multiple types of film and television works, each production team has overlapping demands for special costumes and retro props. We plan to establish an environmentally friendly rental platform that not only meets the recycling needs of niche style clothing and props such as steampunk mechanical accessories and medieval knight armor, but also avoids waste caused by single crew customization and saves huge production costs for the crew. The capital turnover of the production team is accelerating, and the production cycle is flexible and controllable. Small film and television companies also have the opportunity to produce excellent works under limited budgets, promoting the diversified prosperity of the film and television industry and demonstrating the powerful empowerment of environmental design in the industrial economy.

### **2.4 Expand creative boundaries and foster diverse innovative expressions within limitations**

Seemingly strict environmental requirements, in fact, open a door to diverse innovation for film and television art creators, stimulating unlimited creative potential under limited conditions. In terms of space utilization, traditional large-scale real-life construction often encounters site and budget constraints, while environmental design concepts encourage local materials and small-scale exquisite creation. In urban themed films, abandoned factories are transformed into underground bases with a cyberpunk style, with mottled walls and rusty pipes as natural backgrounds. Creators only need to cleverly arrange lighting and embellish waste electronic components to outline a future wasteland world, with a sharp reduction in costs and a unique industrial ruin aesthetic that is refreshing. When filming in rural areas, idle barns are transformed into warm indoor scenes, old farming tools and haystacks are transformed into simple decorations, which fit the plot and explore local customs, injecting fireworks into the story. Environmental technology innovation expands the dimensions of special effects creativity. Green screen cutout technology combined with virtual scene construction reduces environmental damage caused by on-site special effects construction. In

the field of combining animation and live action, using environmentally friendly materials to scan and model, such as simulating mountains with waste paper and simulating wave dynamics with fabric folds, integrating into the digital world, breaking the boundaries between reality and virtuality, and creating a fantastic visual feast. Creators no longer rely on high energy consumption and high consumable special effects methods, but instead explore the digital possibilities of daily materials, respond to environmental demands with innovative thinking, continuously expand the creative landscape of film and television art, and make their works steadily move forward on the balance of art and environmental protection.

### **3. Application strategies of environmental design concepts in film and television art creation**

#### **3.1 Scene construction, reshaping the charm of real-life scenes through natural integration**

In film and television art creation, scene construction is like a cornerstone that lays the overall tone of the work, while environmental design concepts are like a gentle breeze, advocating deep integration of natural landscapes to achieve a perfect combination of visual shock and ecological care. Many film and television works provide excellent examples. For example, in the American TV series "Westworld", the futuristic and mysterious Westworld Park cleverly incorporates environmental protection concepts in its scene construction. The crew chose an abandoned mining town for filming, whose desolate and dilapidated buildings and dry land perfectly match the dystopian setting of the story where androids gradually awaken and order leads to chaos. The art team cleverly conceived and transformed the existing mine tunnels into passages leading to underground secret bases, decorating the ventilation openings as concealed observation posts. This not only avoids resource waste caused by large-scale construction, but also adds unparalleled realism and Cangsang texture to the series. Taking the domestic historical drama "Empress in the Palace" as an example, when filming the palace garden scenes, the crew strictly followed the principle of ecological balance, borrowed the clever method of borrowing scenery from traditional Chinese gardens, naturally introduced the green mountains and waters outside the palace walls into the picture, and carefully selected local native varieties of plants in the garden to showcase their unique charm in the four seasons. In spring, peach blossoms bloom brilliantly, shining brightly, and petals drift gently in the pond with the wind; In summer, the fragrance of lotus flowers fills the air, and lush green trees provide shade, shielding many concubines such as Zhen Huan from the scorching sun and bringing coolness; In autumn, maple leaves are as vibrant as fire, intertwined with golden ginkgo leaves, forming a colorful and splendid picture; In winter, the white snow rises and falls, and the red plum blossoms stand proudly in the snow and frost, with a lingering fragrance. At the same time, the construction of a rainwater collection system is quietly underway in the park, and the collected rainwater is used to irrigate flowers and green plants; The solar powered device provides clean energy for nighttime palace lantern lighting and flowing water. In this way, it not only achieves the effect of energy conservation and environmental protection, but also injects a unique charm of harmonious coexistence between technology and nature into this classical world, making the audience feel as if they have traveled through time and space, immersed in the poetic and ancient charm, and truly feel the unique charm carved by the power of environmental protection.

#### **3.2 Prop carving, the road to rebirth of waste shines with creative sparks**

Not only in these two works, but many other film and television productions have also joined the trend of using waste materials for prop making. A recent fantasy - themed web drama set in a post - apocalyptic world made remarkable use of waste materials. The dilapidated buildings and desolate

landscapes in the drama were constructed with abandoned building materials such as broken bricks, old wooden boards, and rusty iron sheets. These materials not only created a realistic and immersive post-apocalyptic atmosphere but also sent a strong message about the consequences of environmental destruction and the importance of resource conservation. In the world of theater, the application of waste-made props is also gaining momentum. A small-scale off-Broadway play used discarded plastic bottles to create a series of unique stage decorations. The bottles were cut, painted, and assembled into various shapes, forming a dreamy and colorful backdrop that perfectly matched the play's theme of hope in a polluted world. The actors' costumes were made from recycled fabrics, with each piece telling a story of transformation from waste to art. The use of waste materials in prop making not only brings environmental benefits but also has a positive impact on the film and television industry. It reduces production costs significantly. Instead of purchasing expensive new materials, production teams can source waste materials at a much lower cost or even for free. This cost-saving measure allows more funds to be allocated to other aspects of production, such as scriptwriting, acting training, and post-production special effects, ultimately improving the overall quality of the work. Moreover, it encourages creativity among prop designers and craftsmen. Working with waste materials requires thinking outside the box, finding new ways to transform these materials into something useful and aesthetically pleasing. This creative process often leads to the birth of unique and eye-catching props that add a distinct flavor to the film or television work. From a social perspective, the prevalence of waste-made props in film and television has a far-reaching influence on the public's environmental awareness. When audiences see these creative and environmentally friendly prop designs on the screen, they are inspired to think about their own consumption habits and waste management. It serves as a form of silent education, gradually instilling the concept of recycling and upcycling in people's minds. In conclusion, the road of prop carving using waste materials is a path full of potential and significance. It combines art, environmental protection, and cost-effectiveness, and is expected to become an indispensable part of the future film and television and performing arts industries. As more and more productions embrace this trend, we can look forward to a more sustainable and creative entertainment world.

### 3.3 Clothing customization, sustainable fashion interpretation of character soul

Film and television costumes bear the important mission of shaping characters and imprinting the imprint of the times. Driven by the concept of environmental design, they are striding towards the path of sustainable fashion, thus deeply fitting the soul of the characters. In the science fiction series "The Vast Sky", the selection of clothing is unique. Whether it's the uniforms of space station staff or the attire of planetary colonizers, eco-friendly fabrics such as organic cotton and recycled polyester fibers are extensively used. The space station workwear is mainly made of organic cotton and printed with a strong sense of technology fluorescent logo. In this way, it can ensure the comfort of astronauts in weightless environments, demonstrate the warmth of humanity in a cold and metallic environment, and avoid the problems of stuffiness and environmental pollution caused by traditional synthetic fabrics. The clothing of Xingxing colonizers is made of recycled polyester fibers, which are processed through innovative textile techniques to exhibit wear resistance and adaptability to different climates. This is in line with the image of arduous pioneers, and can be recycled and reprocessed after being discarded, thereby reducing the environmental cost of the entire lifecycle of clothing. In the movie "The Climbers", the costume design is extremely exquisite, perfectly incorporating the concept of circulation. The jackets of the mountaineers are designed with modularity, which can be disassembled into vests, cloaks, etc. The sleeves of the shirts underneath can also be easily turned into short sleeves, allowing them to adapt to the extreme cold



and heat of Mount Everest at different altitudes, reducing the waste of carrying multiple sets of clothing. In terms of accessories, by using scrap metal to make mountain buckles, ice axe pendants, etc., they become more durable after enduring the baptism of wind and snow; Polishing the shells into necklaces and pendants adds a touch of warmth to the tough appearance of the team members. This not only embellishes the character's image, but also conveys the trend of environmental protection, making the characters emit a charm that resonates with environmental protection from the outside to the inside, enhancing the immersion of the plot.

### 3.4 Special effects support, virtual green energy collaboration opens up a fantastic new journey

Under the vast starry sky of contemporary film and television art creation, special effects are undoubtedly one of the most dazzling stars, and the concept of environmentally friendly design is like a strong driving force, promoting virtual and green energy technology to work together, which can expand the boundaries of fantasy and reduce the cost of the environment. Taking the movie "Alita: Battle Angel" as an example, its special effects production is truly amazing. The innovation of green screen technology can be regarded as a highlight, with the development of low-energy and high-resolution green screen materials, coupled with the optimization of intelligent image extraction algorithms, greatly reducing the energy consumption of lighting and post-processing computing power. When filming the scene of Alita fighting fiercely on the streets of the abandoned iron city, the new green screen can accurately capture every subtle movement of the actors, effectively reducing reshoot caused by material reflection and color deviation, and significantly improving shooting efficiency. At the same time, small physical models were cleverly constructed around the green screen, such as dilapidated car wreckage, broken walls, etc., which integrated with the virtual cyberpunk urban landscape, enhancing credibility and avoiding the floating feeling brought by full virtual special effects, thereby saving massive rendering resources. The animated film "Ne Zha: The Birth of the Demon Child" has a unique approach in virtual scene construction, actively moving towards a renewable energy driven model. Building a cloud rendering farm powered by solar and wind energy provides clean energy for the creation of a fantastic and magnificent world of gods. The creative team is highly skilled, conducting on-site filming in mountains, forests, and canyons to obtain dynamic scenes of waves, clouds, and mist, which are then processed by algorithms and integrated into virtual scenes. So, the mount of Taiyi Zhenren, Feizhu, could shuttle through the clouds and mist, and Nezha could also gallop freely on the surging waves with his wind and fire wheels. In this way, the use of the beauty of real nature greatly enriches the level of special effects, and the core of environmental protection effectively promotes the leap of film and television special effects, thus embarking on a new journey of fantasy creation<sup>[3]</sup>.

## 4. Conclusion

Film and television art creation is like a grand visual narrative, and the integration of environmental design concepts is reshaping every inch of its texture. Reviewing the scene construction, from abandoned mines to the ingenious utilization of natural scenic spots, integrating ecological layout and energy self-sufficiency, making the work rooted in the earth and extraordinary; Prop carving opens up a magical transformation of waste materials, tracing and selecting materials to ensure a green foundation, and delivering creative strokes to the plot; Customizing clothing with sustainable fabrics and circular design, while fitting the soul of the character, showcases an environmentally friendly attitude; Special effects support innovation through green screens and green energy drive, breaking through the boundaries of imagination and reducing environmental costs. The concept of environmental design is not an additional force in film and television art

creation, but an internal driving force. It breaks the traditional dilemma of high consumption and singularity in creation, finding a delicate balance between art, economy, and ecology. In the future, with the advancement of technology and deepening of awareness, this path will continue to expand, promoting the film and television industry to produce more stunning works that care for nature. With the light of the screen, we will reflect on the path of environmental protection and open a new era of harmonious coexistence between film and ecology.

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