3D Mapping Technology's Shaping of Sculpture Space

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Abstract— With the rise of immersive art and its development to the 21st century, the impact of the art field in the face of the emerging new technologies and new media is reflected in the following three aspects, first of which is reflected in the transformation of artistic expression methods and media. : The rise of immersive art has expanded the technical methods of artistic creation, and new media methods have emerged at the historic moment, such as digital modeling technology, 3D scanning technology, 3D printing technology, 3D Mapping projection technology, AR, VR, MR and other technologies. Style art combines music, lighting, theater and other media as artistic presentation methods to bring viewers a whole new experience; secondly, it is reflected in the turning of artistic expression objects and themes: artistic expression is no longer like the artists of the 1980s and 1990s. Limited to criticizing and reflecting on real life and living conditions, but more combining personal experience with public visual symbols and images, turning them into artistic expression methods, and creating works that can resonate with the public; finally new The influence of media technology on the field of art is manifested in the identity shift of the artist group: As the creation of contemporary art works requires the intervention of new technical means, artists not only appeared in the public view as individuals, but began to cooperate with creators from different "non-art" professional fields in the form of art teams and groups, and then formed a new way of art work.

At the same time, in this period of rapid technological development, the challenges and choices faced by artists are constantly increasing. The use of new materials and new technologies, as well as cross-border and cross-field cooperation, are constantly highlighting the infinite creation of this era, possibility. The same is true for sculpture art. As an art for creating space and materials, the exploration of new materials and new technologies has never stopped. Sculpture artists always have the freshness of new things and the enthusiasm for creation. The ability to shape space brought by immersive art has also aroused great interest among sculpture artists. As the boundaries of sculpture continue to expand, sculpture creation has begun to rely on the support of various technical means. Emerging technologies represented by 3D Mapping have just proposed such a possibility. This article intends to discuss the use of this technology to shape the expression of sculpture itself, and strives to find new ways to expand the expression of sculpture space. It involves cross-border language communication and learning, and the growth and cultivation of new creative thinking. It is in this context. Due to the richness, cutting-edge and unknownness of technology, artists are more concerned about their future creative path. full of expectation.

Keywords— Immersive art, 3D Mapping technology, sculpture space.

I. SPACE SHAPING IN SCULPTURE

As the art of space, sculpture itself is a kind of plastic art that emphasizes the occupation of three-dimensional three-dimensional space. Its main feature is the threedimensional occupation of the actual space by the material form, and has the characteristics of influencing and changing the surrounding environment. Therefore, the essence of sculpture works is full of Realistic, physical. When viewers perceive the sculpture space, if they want to obtain some kind of "information", they must obtain perception from its space, form, volume, texture, color, etc. through observation from various angles. At the same time, sculpture artists attach great importance to the spatial shaping, visual sensory, and tactile experience of artistic works in their creation. Especially in traditional sculpture, Rodin, "a famous French sculpture artist, an epoch-making figure in the history of Western sculpture, and known as the "greatest sculptor since Michelangelo in the history of sculpture"", the overall space embodied in his works The exaggeration of the effect, the convexity and concavity of the space expression, the movement of the space tension expression, the suggestiveness of the space, the consciousness of the transformation between spaces, the use of virtual and actual techniques, etc., have extremely important practical significance for the shaping of the space of the sculpture."

The sculptural space is composed of the physical space defined by the sculpted entity and the virtual space contained in the vision generated by the entity itself. The important component of the space is the "direction" and "trend" of the entity to the surrounding space. A good sense of space is a quality that sculptors must possess. It guides sculptors to grasp the potential vision, touch and sense of movement in their creations.

In the traditional sense, the viewer's perception of the sculpture space is the visual aesthetic experience of the aesthetic object at a certain distance. The viewer cannot be integrated into the work space. The viewer is more from the traditional sculpture itself.

Shape and material to feel the sculpture. And what the sculpture maintains is also the characteristics that start from its own body, which is basically a block shape, and the way of shaping is to accumulate from the center of the entity. The shape that the artist pays attention to is the sculpture entity itself, the space emphasized and created. It also arises from the unconscious.

With the intervention of the medium of 3D Mapping in the sculpture space, certain original language features of the sculpture can be better presented. My point of thinking is mainly the influence and shaping effect of 3D Mapping technology on the level of sculpture space, and here I divide the main body of this space into two aspects. One is the "inner" space of the sculpture, that is, the space occupied by the sculpture body.

Three-dimensional space, real and sensible. The second is the "outer" space, which refers to the invisible virtual space surrounding the sculpture, which depends on the entity of the sculpture. And separately discuss the effect of this technique on the "inside and outside" space after the intervention of the sculpture.

II. CHANGES IN THE "INNER" SPACE OF THE SCULPTURE

As an art that focuses on the distribution of objects in space, sculpture has a spatiality that is different from other art categories. Carola Gian-Wilk, author of "Modern Plastic Art", puts forward: "In the 1930s, the essential opposition between time art and space art became the basic starting point for judging the unique achievements of sculpture."Corolla pays great attention to the spatiality of sculpture media. She believes that sculpture is composed of static materials. This is the special feature of sculpture's natural generation.

Therefore, the fundamental principle of sculpture is not determined by time, but by extension in space. By comparing the works of Brancusi and Gabo, it can be seen that under the shaping of the sculpture space, the former achieves the streamlining of the space volume by reducing materials, while the latter uses light to complete the generation of the spatial structure of the sculpture itself, which points to the different spaces of the sculpture. Shaping method. The "inner" space of a sculpture refers to the control of the "quantity" of the shape, which is a horizontal change. The size, scaling, and distortion of the shape are directly related to the change of space.

With the intervention of 3D Mapping technology, the "inner" space of the sculpture can complete the integration and mutual penetration of the viewer and the viewing object. After entering the work space, through the sound and light technology in the 3D Mapping technology, it can create an anomalous spatial effect that is different from the existence space. In the anomalous space effect, it can complete a kind of emotional perception and space for the space.

The transfer of the self-expression meaning of the subject of creation, this kind of spatial change depends on the richness of the sculpture's own space.

Taking "Shogyo Mujo", a collaboration between Josh Harker and BARKERSA Design Studio, as an example, analysis shows that the internal space changes of the sculpture after the intervention of 3D Mapping technology.

This work is a collaboration between an independent artist and a visual design team. It is also a cross-border collaboration between art and technology.

The work proposes new aesthetic thinking and conceptual expression. The title of the work is "Shogyo Mujo". The term originally comes from the Japanese Buddhist tradition. It means that everything is over and nothing is eternal. It contains a kind of Buddhist thought. In the context of the coexistence of current culture and media, the work is called the first "living sculpture".

His work hides a certain philosophical meaning behind the emerging visual expression, and also puts forward the concept of "timeliness" of sculpture. As Rosalyn Klaus emphasized in her book "The Changes in Modernist Sculpture": "Time is the main attribute of sculpture, and it exists at the same time as the more obvious use of space.

From Tatlin to Serra, Klaus Si argued for the "externality", continuity, and publicity of the works in the book in terms of space and time." This work is an attempt to convey such a kind of visual expression from the work through 3D Mapping technology. possible.

Different from the above two examples of works, from the analysis of the projection carrier, this work sets a skull-shaped sculpture solid model on site, and the work carrier is a solid sculpture completed by 3D modeling (Figure1, Figure2).



Figure 1 and 2: Josh Harker and BARKERSA Design Studio, Shogyo Mujo, 2019

And the fusion degree of its image and modeling is simulated in the three-dimensional software in advance. Compared with the indoor plane space and the outdoor natural environment space, the sculpture as a carrier has a special directionality in the form language. In the way of presentation, the sculpture body is placed in an outdoor space, and 6 professional high-luminance 3D Mapping projection devices are used at the same time to completely cover the surface of the sculpture at different angles according to the preset points. The surface of the sculpture is changed with the changes of the digital image animation. Changing the form, pattern, texture, and color, the surface projection animation will continue to change with the music, forming a dynamic and vital scene.

The audience can participate in the real-time change of the sculpture projection animation and present the work together by touching the screen. At this time, the interactivity of the sculpture not only brings the audience a sense of real-time participation, but also makes the sculpture's own space shaping no longer stylized, and establishes a sensory resonance between the sculpture and the audience through the audience's participation. Although it is still in the relationship between watching and being watched, it has greatly shortened the distance between the sculpture and the audience.

In addition, on the technical level, this work uses the world's advanced projectors and Pandoras Box and other

hardware devices, while also making breakthroughs in hardware devices, and constantly trying new creative media through technological advancements. The main skull sculpture uses a 3D printing material medium, and based on this carrier, an animation design content that cannot be achieved in any other way can be created. (Figure 3 and Figure 4) represent the special patterns in the three signs of Buddhism, representing the concept of impermanence.

Through projection technology, the skull is transformed into countless mappings to visualize, visualize, and transform this philosophy. For dozens of unique visual sensory experiences, a new visual language was proposed on the basis of the original sculpture language.



Figure 3 and 4: Josh Harker and BARKERSA Design Studio, Shogyo Mujo, 2019

Therefore, through the coding of technical means, a virtual interactive space is created, and this interactive space often contains a value concept and the aesthetic space generated by its coding, and gives a scene that cannot be realized and experienced in the real space. As the famous modern philosopher Heidegger said: "The image of the world does not mean an image about the world, but refers to the world being conceived and grasped as an image."

Therefore, the image itself also represents our reality. An objective real world, and under immersive art, artistic creation uses various technical means to bring this sense of reality beyond sculptures into people's aesthetic experience, so as to achieve the expansion of the spatial dimension of sculptures.

III. CHANGES IN THE "OUTER" SPACE OF THE SCULPTURE

The "outer" space of the sculpture is the excavation of the sculptural form and the promotion of the real space, which is a deep change.

In addition, the sculpture itself does not exist in isolation, so the "outer" space of the sculpture referred to here is an environmental space closely integrated with the sculpture. It is a multi-level and multi-form space concept, including natural environment space and artificial environment space. Two parts. Through the extension of self-space, sculpture is also a fusion with environmental space, and there is a relationship between subject and background between the two.

The intervention of 3D Mapping technology is often aimed at the creation of the entire field of work, which includes the spatial shaping of sculptures as objects. From the works of Giacometti and Brancusi, it can be seen that the sense of space presented in the sculpture itself is squeezed by the external environment of the sculpture and the space of the work.

This invisible force can be reflected in the body through traditional sculptures. The ultimate performance on the site is perceived by the audience. At present, through 3D Mapping, a medium of expression that breaks the tradition, this invisible outer space becomes visible and perceivable. Whether it is intervened by light or sound, the spatial change effect it brings is undoubtedly a direct hit on the soul.

This is reflected in the sculpture installation created by the German design studio Onformative in 2015. This interactive installation is called "ANIMA" and (as shown in Figure 5 and Figure 6), a huge luminous sphere with a diameter of 2 meters is suspended from the ceiling of a dark room, as if suspended in mid-air.

Through interactive sound and visual effects, the audience continuously communicates between the sculptures. The work explores the relationship between the installation and the surrounding environment through the movement of the sphere itself and the changes in the surface texture.

As a result, the change of the environment space brings about the change of the sculpture space, and the change of the sculpture space triggers the change of the audience's perception of the work. The boundary between the virtual space and the real space is gradually blurred. The sculpture works are constantly being redefined. People perceive the sculpture space. It also began to shift from viewing to the direct participation of the body's senses.



Figure 5: Onformative, ANIMA, 2015



Figure 6: Onformative, ANIMA, 2015

This work case is a four-day lighting art and emerging technology festival held at the Signal Festival in Prague, Czech Republic.

The creative team is a visual studio. The team created works of art with art and technology as the boundary, and presented a visual journey in front of the audience. It crossed the complementary, overlapping, and contradictory technical barriers. The theme of the festival is "the next 100 years".

The team seized the inspiration with the theme of "time" and used a wall of the old asphalt sports square as a canvas carrier (as shown in Figure 7) to imagine the graffiti scene in the next 100 years. The concept of what will change, depicting the possible utopian future of street art.



Figure 7: Vision Studio, The Falcon, 2018

With the theme of "Falcon", the team established a 3D model based on the sketches of the site and the actual size of the site, combined with the screen and made a preliminary simulation of the on-site space environment to prepare for grayscale painting. (Figure 8, Figure 9).





Figure 8 and 9: Vision Studio, The Falcon, 2018

The graffiti painting is attached to the surface of the three-dimensional carrier in the form of textures, and presents a three-dimensional visual effect by adjusting the perspective and the angle of the 3D Mapping projection.

This art project combines cutting-edge technology, custom music and street art, and uses 3D Mapping animation projection to illuminate the graffiti, bringing the audience from reality to an immersive multidimensional experience. (Figure 10, Figure 11).

In terms of space, the artificial outdoor space is more difficult to control than the indoor exhibition hall space. The artist needs to consider the viewing angle and distance of the audience in the creative process.

At the same time, the outdoor space is huge and itself. The complexity of modeling and the uncontrollability of light will be the difficulties faced by creation.





Figure 10 and 11: Vision Studio, The Falcon, 2018

From the perspective of audience participation, the work is more like a "theatre" presentation method. Compared with the conventional flat film screen, the projection carrier has become more local, using the characteristics of the existing venue conditions., And make adaptive animation projection content for it. The audience and the work have a very clear relationship between watching and being watched. The focus is on the visual stimulation that the screen content brings to the audience and the influence and extension of the corresponding carrier space. From another point of view, the sculpture is presented as virtual content in the real space at this time, and its substance is only expressed through flat images. This raises a new question, whether the space of the sculpture can be free from the shackles of concrete entities. Can you perceive the concrete spatial sense of sculpture only from the visual sense of the plane? In this context, the digitization and virtualization of sculptures have brought the audience a new way of perceiving the sculpture space.

V. NEW WAY OF VIEWING

Michael Heim mentioned in "From Interface to Cyberspace—The Metaphysics of Virtual Reality": "The immersive experience that virtual reality art brings to people is mainly a kind of sensory immersion." About "Daily" "Sound" The physical memory of destruction and reconstruction under the action of "light" and "light" technology, sculptures slowly break boundaries, constantly giving new expectations and imaginations, such as Marcel Duchamp's "Spring" urinal now from the necessities of life----- The finished product-becomes a work of art that changes the world's art history. From the perspective of the art system theory, the system theory is not only reasonable after the art system gives daily necessities an identity as a work of art, but also because Duchamp breaks the boundary between art and life. The possibility of a commodity has become a work of art. In addition, it dispels the traditional art's restrictive concepts on art media, art themes and art content. In this sense, it makes the application of new technologies and new media possible.

Combining the above concepts, the immersive art exhibition uses modern technology and media, such as sound, light, and electric media, to reproduce human and nature in our daily life, whether it is natural environment or life scene, in front of people with a surprising attitude, The relationship between human beings. Science and technology, at the same time, jump the human retina out of the fixed cognitive mode, giving a new visual impact, and thinking about the possibility of the future world in this context. In the future world, when Maslow's physiological needs, safety needs, and emotional needs are met, respect is the last remaining project need after being satisfied by artificial intelligence-the need for selfrealization, as the human spiritual world Whether selfexploration and development can produce the meaning of revitalizing our thinking through the satisfaction of "irrational" aesthetic value. Contemporary sculpture creation began to rely on digital technology for creation, and the dissemination and duplication of artistic works have been greatly enhanced. It is inevitable to intersect with science and technology. From artists to viewers, it is easy to get lost in the quagmire of science and technology, shocked by the new sensory experience brought by science and technology, and ignore the pursuit of the value of the art of the work.

As a result, the artist is loyal to "dazzling technique" when creating works, the viewer is immersed in sensory stimulation when viewing the work, the viewing behavior is consumed, and the work of art is easily reduced to a commercial product. From another perspective, the artist relies on digital technology to simulate the final presentation effect during the creation of the work. The space, scale, lighting, and other effects can be visually displayed in the computer software. The work is displayed in the form of electronic "parameters". The virtual space is transformed into the real space. In this situation, the artist presupposes the existence of a work in the space more as a director. From the perspective of viewing, due to the accuracy of computer simulation, the creation of the work is not The final presentation effect is easier for the artist to grasp, forming a "rational" creative method. How the viewer perceives and participates in the work seems to be within the artist's expectations.

VI. TAKE TEAMLAB'S "FLOWER DANCE FOREST AND FUTURE AMUSEMENT PARK" AS AN EXAMPLE

The TeamLab Borderless New Media Art Exhibition, which is popular abroad in recent years, has brought the audience the ultimate immersive experience and artistic beauty through the interactive design in the creation and display of art works. TeamLab is a team of 400 top talents from various fields. The members include art creators, computer engineers, mathematicians, architects, CG animators, musicians and other interdisciplinary talents. At the same time, they showcase different professions. How do people work together across boundaries to create works of art that challenge tradition? The team is committed to the organic combination of technology and art, using digital technology to expand the form of artistic expression, and immersing the audience in the collection of technology and art, virtual and reality, sensibility and rationality, audience and works through environmental experience and multi-channel interaction mode. , In the integrated perception of man and nature, man and society. Immersiveness, interactivity and real-time are its main characteristics.

For example, the TeamLab team held a large-scale solo exhibition in China in 2016, exhibiting the iconic representative works of TeamLab, Flower Forest, Lost and Immersed. (Figure 12, Figure 13).



Figure 12 and 13: TeamLab, Flower Forest, Lost and Immersed, 2016

The audience is completely in the digital world created by "Teamlab", each space presents different content, either a sea of flowers, a forest, or a vast ocean. For example, the "Eastern Flower" series of works. Each petal is controlled by the program and will change according to the audience's position and movement. Presents a random and novel real experience. If you observe and experience the works of "Teamlab" carefully, you will find that most of the works of "Teamlab" show the relationship between man and nature. If you are too close to the flowers or butterflies in the work, then they It will disappear as you approach. If you keep a long distance from it, the content of the image will hardly change. If the distance is right, then you will witness the development of these elements and the blooming of flowers. (Figure 14 and Figure 15), the audience can experience the sensory immersion brought by the work through such a real-time interaction, and become a part of the work themselves.

It can be seen from this work that the carriers faced by 3D Mapping technology are mostly large-area walls and ground and other environmental spaces, which are projected from different angles to form a richly content intertwined picture. At this time, the audience walks in the space, breaking the inherent viewing method, and perceiving dynamic pictures, psychedelic real sound effects, and undulating complex passages through the body's senses in a state of constant motion. At this time, a purely flat two-dimensional wall The face becomes three-dimensional and three-dimensional, completely relying on complex projection animation to eliminate the flatness of the carrier, the relationship between the artwork and the audience becomes ambiguous, the two intervene and interweave, the real space is compressed or expanded, and the distance is shortened Or prolonged, time is obscured or dispelled, producing a direct and strong sense of "immersion" experience, thus forming a kind of spatial extension and reconstruction.





Figure 14 and 15: TeamLab, Flower Forest, Lost and Immersed, 2016

VII. FREE TEXTURE AND TEXTURE

Sculpture art is different from painting art. It is created by physical materials. Compared with the plane sense of painting art, it has a three-dimensional space and weight in form and texture. The materials used in sculptures are generally permanent, which also makes the preservation of sculpture art longer. For example, traditional sculptures use hard materials such as bronze, iron, and stone. Due to the particularity of their materials, many classic Sculpture works have been preserved to this day, which is also the charm of sculpture art, which embodies a kind of timelessness and historical precipitation. With the development of the times, the advancement of modern science and technology has produced a large number of new materials, such as stainless steel, glass, resin, and other new materials such as ready-made products, making sculpture art creation more abundant and diversified. Materials with different textures and textures have been studied in depth.

"The texture of sculpture is of great significance to the presentation of the effect of sculpture. The effect of the texture of sculpture on people is not only reflected in the visual, but also in the sense of touch, and even psychological." The texture and texture of traditional sculpture The performance comes from the inherent texture brought by the sculpture material itself, and the spiritual connotation pointed to by the sculpture is conveyed by combining the sculpture shape. This visual experience is based on the basic perception of the material, different textures and textures. The material brings different emotion perceptions to the viewer. For example: Bronze, its own bronze color with blue-green patina on the surface, brings a kind of precipitation of time and polishing of the years; wood, usually warm in color, and the surface has natural rich wood grain, like a human palm The pattern is like a pattern, giving people a very gentle and empathetic visual experience; while the color of stainless steel is colder, the surface is smooth and the surface can be reflected like a mirror, giving people a feeling of coldness, and at the same time, it is also very artificial. This kind of industrial calmness; while other softer new materials bring more complex emotions such as delicate, soft, and fragile.

In summary, the expression of the texture and texture of traditional sculpture has its own inherent expression mode. The viewer's perception of it is direct and constant. Today, with the continuous development of science and technology, facing the emergence of new technologies, the texture of sculpture has become More imaginative, not only limited to the performance of existing experience, its methods and content are constantly updated.

VIII. TAKE RABARAMA'S "BRONZE SCULPTURE" AS AN EXAMPLE

On June 10, 2011, an exhibition called ANTI conforme was opened in Florence. The 3D projection sculpture "Bozzolo", a collaboration between the famous artist Rabarama and the production studio DrawLight, has attracted huge attention. The work uses the advanced 360-degree holographic projection technology at the time to project customized graphic images onto the artist's bronze sculpture. The surface of the sculpture changes over time with different textures, textures and rich patterns, creating a surreal visual experience, which also brings new vitality to the sculptures! (Figure 16, Figure 17). The sensory experience brought by the new technology is what viewers love to see. As the main way of perception, visual experience, enhancing the visual sensory experience often relies on breaking the viewer's daily experience to create a surprise that is far from reality, making the viewer This kind of "uncertainty" is the expectation that immersive art brings to the viewer for the unknown. People often observe a sculpture from the perspective of a kind of "substantial". Such a space is real, and it exists firmly in the real space, and the sense of security and stability brought by this substance Once the sense is involved in the new virtual technology, it will bring about the modification and influence on the original space. For example, the dissolution of form, the transformation of materials, and the distortion of space. All judgments that rely on existing experience are constantly refreshed, resulting in "uncertainty" about the scene, space becomes no longer stable, and reality becomes no longer reliable. This is the special era, new technology What brings is the impact and doubt on the cognition of sculpture space and physics.



Figure 16 and 17: Rabarama, Bozzolo, 2011

3D Mapping uses light and shadow as the medium and projection as a means to give new language expressions to different carriers. Whether it is from an existing carrier or a shell rebuilt for projection, once it is wrapped by a virtual image, its inherent characteristics will be instantly covered. This visual experience makes it difficult for the inherent material characteristics of the sculpture to turn to another one. The metaphorical sensory experience dissociates from the boundary between reality and virtuality, thereby conveying the new expression of sculpture language and the ontological thinking of sculpture in the era of new media.

IX. EXTENSION OF THE FIELD TAKE FRIEDRICH VAN SCHOOR'S ''FLUORESCENCE FOREST'' AS AN EXAMPLE

"Fluorescent Forest" is an art work that uses 3D Mapping projection technology with a more experimental creative idea. This work was created by a three-person team from different fields and combined with the original natural environment to create a "surreal" Visual experience". These three are good at 3D animation art, photography art, graphic design, music composition, film art, and game production. They represent the current popular mode of cross-border art creation. It is not difficult to find that cross-border and cross-domain exchanges and cooperation are important for this era. Artistic creation has gradually become a tacit understanding. Different from the above case where the outdoor environment space was also selected, the creator pointed the projection carrier to the natural forest environment, and cleverly used 3D Mapping technology to cast the flowing light and bright spots on the plants, insects, fungi and other nature in the forest. The surface of the objects makes them look like they have some kind of bioluminescence effect (Figure 18, Figure 19). Its sci-fi sense of color changes and natural and true lighting "breathing" seem to bring the audience into the world of "Avatar", using the fusion of technology and aesthetics to make the original natural and ordinary environment burst into surprise moments.



Figure 18: Friedrich van Schoor, Fluorescent forest, 2020



Figure 19: Friedrich Van Schoor, Fluorescent forest, 2020

From the perspective of the projection carrier, the art work this time focuses on more microscopic elements, and these elements have natural vitality. With the intervention of 3D Mapping projection, a breathing symbiosis of substance, space and existence grows. relation.

The fluorescent forest contains continuous exploration of the relationship between art works and natural environment space, seeking for the important characteristics hidden in it, such as micro and macro, life, minerals, senses, organisms and so on.

With a unique perspective, the creator uses media technology ingeniously and gently in artistic creation, combined with the tolerance and mystery of nature itself, and the projected dynamic light images adopt a restrained attitude. Living in symbiosis with the environment, the energy contained in it is like blood flowing quietly in the depths of the earth, ready to move, endlessly.

Through the above case analysis of 3D Mapping technology involved in art works from different angles, we can see that the spatiality pointed to by different projection carriers in the creation of art works is different, which are mainly divided into the following categories: One is the indoor space The projection space as the carrier creates a certain sense of extreme sensory immersion through a completely enclosed independent space; the second is a space with an artificial outdoor environment as the carrier, and is created by using projection animation as the façade space of the complex entity building A sense of realism of "viewing"; third, three-dimensional sculpture is used as a projection carrier, and the "objects" with the directional characteristics of the sculpture language are integrated through highly conceptual content, so as to realize the reconstruction and extension of the sculpture's own space; It takes the microscopic mass material elements in the natural environment as the projection carrier, and forms a certain visual spatial sense containing the

natural energy field in its special field, so that the original object produces a kind of detachment from the natural space through the action of light and images. The scene.

Generally speaking, immersion art involves a wide range of media, fields, and forms, but no matter what changes in the art practice in terms of form and technology, thought will always come first. Similarly, as a carrier, sculpture itself carries the directivity of language and the concept behind it. The application of new technologies not only enhances the viewer's sensory stimulation of sculptures, but also raises corresponding questions. Some scientific and technical fields are important for business.

The quantifiable results, performance, and value have a certain fetishistic concern, but artistic creation can never regard the pursuit of a certain effect or even just the pursuit of a certain technological progress as the original intention. Continuous questioning and attention to innovation are Artistic creation is indispensable. Immersive art is the artistic presentation of contemporary scientific and technological progress.

It is also a product of people's thought changes and changes that consciousness occur with the materialization and intelligence of society. People are concerned about them daily. The problems, communication methods, and sensitivity of perception have all changed. The relationship between art and the audience has also undergone internal changes. The changes presented by art are only an inevitable trend.

Since our viewing is being replaced by machinery and media, we should be more vigilant against this phenomenon. The media view makes people gradually lose the pursuit of artistic authenticity, and replace it with the worship of technology and the fascination with images.

We must also maintain a vigilant and neutral attitude towards science and technology. Science and technology have changed the way art works and people look at it, and it has also changed people's way of life. In traditional art, artists face the objective world to create.

At present, a large amount of information comes from images and information technology. The connection between man and nature is gradually replaced by digital information. Artistic creation should not blindly indulge in technology. Lost in the illusory space created by technology.

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