Media Renewal of Urban Public Art under the View of Digitization

Ming Cheng[a*], Lingxuan Wang[b], Mengyuan Chen[c]

Affiliation, Xiamen Academy of Arts and Design, Fuzhou University, Fuzhou, China

[a*]2277950567@qq.com, [b]80382866@qq.com, [c]814457968@qq.com

Abstract. This paper takes the medium of modern urban public art as the research goal, conducts research on the public art cases based on digital technology as the creation method in urban public space, analyzes the medium form, visual characteristics and application space of urban public art under the influence of digital technology, and further discusses how to optimize the existing medium experience form and predicts its future development trend, so as to provide new directions for the renewal of public art under the domination of digital medium. The article further discusses how to optimize the existing forms of media experience and predicts its future development, providing a new direction for the renewal of public art under the dominance of digital media.

Keywords: Public art; urban space; digital media; spatial carriers.

1   Introduction

Since the second half of the twentieth century, murals, sculptures, and other forms of public art have emerged in urban public spaces. With the accelerating process of updating digital technology, the digital medium has gradually penetrated urban public art. Urban public space is filled with luminous light boxes and LED screens of varying sizes. However, the proliferation of digital media around the world has resulted in the convergence of urban landscape features, which has gradually dissolved the public's perception of the city. How urban public art can utilize the renewal of media to activate the public's multicultural experience has become an urgent issue in the public sphere.

2   The Media Traceability and Research Status of Urban Public Art

At present, the research on urban public art is mostly studied from the perspective of sculpture art and urban planning, such as Ming Cheung chose to use qualitative research methods to classify 50 research-related research papers and determined that the impact of public art was divided into eight categories, covering place creation, society, culture, economy, sustainability, well-being, wisdom and innovation. Recommendations for the

impact of public art and future research are provided [1]. Weng Jianqing, who has proposed a detailed compendium and analysis of the development history and conceptual iteration of contemporary public art in China [2]. Wang Chong believes that the creative construction of public art media can accurately convey urban culture and thus promote the growth of urban humanity [3]. Scholar Hu Beilei discussed the significance of new technologies in artistic innovation and multi-directional interaction between the public, artworks, and cities by listing cases of digital public art [4].

In addition, there are studies on digitalization and media, such as Marshall McLuhan's analysis of the categories of media and their impact on human and social development from the age of electricity to the age of information, in which he argues that people can break the boundaries of the physical field through media, and thus perceive the dissemination of information. Negroponte puts forward his vision of the opportunities and challenges facing the survival and development of human society in the future digital era. Christiane Paul explores artistic practices in which digital art merges physical and virtual spaces and enhances physical places and existing buildings in the context of networked shared spaces, thereby redefining the boundaries of public art [5]. Jiang Tan and other scholars believe that new media art centered on digital technology has the characteristics of the era of scientific and technological innovation and occupies an increasingly important position in public art [6].

All of the above research results point out that the subjectivity of media in art works has been continuously improved. Due to the digitalization background of urban public art media update this field of research is still vacant, combined with the latest urban public art media characteristics and its development trend of research needs to be strengthened.

3   Visual Characteristics and Media Expansion of Urban Public Art in the Digital Era

3.1   Naked Eye 3D Imaging Medium and Building Facade Space

The naked eye 3D imaging medium is attached to the LED curved screen and is presented on top of it. nowadays, many urban public art utilize the façade of urban buildings to place giant curved LED screens. the LED screens use the façade of the urban buildings as a reference to make the flat image medium visually form a real three-dimensional space. The Year of Painting. The Year of Painting" is a public art video work presented by CCTV Channel and Flint Walk Art Team on the facade of the Taikoo Li building in Chengdu's core business district, (see Figure 1). The creative team transformed the traditional elements of Mianzhu New Year's Paintings into a digital model, produced 3D animated images of real pandas, Mianzhu New Year's Paintings, and other intangible cultural heritages, and moved them onto the naked-eye 3D screen. The exquisite New Year's Paintings were presented in the building with the visual effects of frames and staged a visual feast on the streets of the city, which gathered regional humanities and the atmosphere of the Lunar New Year.

As a self-illuminated device, the naked eye 3D curved screen is characterized by high brightness and high contrast. Compared with the public art presented by the traditional LED direct screen, applying the naked eye 3D curved screen as a medium in the public art project extends the visual range and creates a strong sense of spatial depth and three-dimensional visual effect in the real public space, breaking the barrier between the digital world and the physical world, and reaching a merger of illusionism and realism. This kind of media in the imaging mode gives the public present realistic three-dimensional visual experience, deepening the public's sense of immersion in the presence of the ancient traditional crafts in modern life to revitalize, to obtain the art of visual effects and cultural dissemination effect of the good response to the digital science and technology contributed to the organic unity of the modern public art of culture and art.
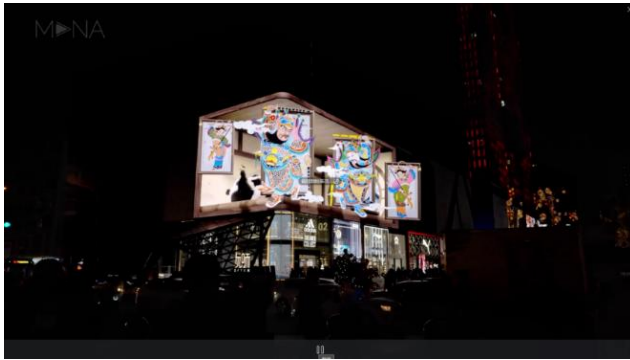

Fig. 1. CCTV "New Year's Paintings - The Year of Painting

Source: MANA

3.2   Light Sculpture Projection Medium and Monument Landscape Space

The light sculpture projection medium utilizes sensors to scan and collect three-dimensional data of the building, and then organically integrates the architectural structure with the visual image laser projection. Night on the Yellow Crane Tower is a landmark public art project based on high-tech light, shadow media such as sound, light and electricity, and centered around the history and culture of Wuhan, (see Figure 2). The design team utilized XR technology to refine and incorporate into the same visual space animal images that represent different meanings, such as the phoenix, which is a totem in the Chu culture, the yellow crane, which is auspicious, and the tiger, which is the zodiac sign for the year of renin. Using the Yellow Crane Tower as a projection vehicle, the structure and architecture of the building were also taken into account in the artistic creation. The new digital visualization immerses the public in a light and shadow show that blends the reality of the famous monuments with modern technology in the night sky.

This public art exhibition utilizes landmark buildings as physical media carriers, supplemented by large-scale audio and laser projectors to form a complete audiovisual

system, superimposing the three-dimensional data information and dynamic image information projected by the projectors on top of the real buildings, and designing public artworks with highly distinctive shapes, wide coverage areas, and dynamic and changeable visual landscapes. According to the specific application environment and theme, the creative team plans the dynamic relationship between the projection medium and the projected image, reconstructs the expression of the public artworks in the physical space, and gives digital life to the monumental building and the surrounding landscape.

Fig. 2. Night on the Yellow Crane Tower.

Source: Mataview

4   The Future Trend of Digital Media Intervention in Urban Public Art

The influence of the change of media materials on the innovation of new technology and the expansion of new situations is immeasurable, and the main position of media in art creation is constantly raised. However, nowadays digital media has not yet been perfected, and there are still problems such as the following: how to optimize the multiperspective visual presentation of digital media, reduce the difference between the onsite effect and the promotional video, enhance the interactive interest between the artworks and the public, and deeply excavate the humanistic connotation of the creation of urban public art, which is an important part of the process of innovation of urban public art in the digital era.

The medium as the visual presentation carrier in urban public art has been initially updated in the process of scientific and technological progress in the digital era, but the display effect of the digital medium still has certain limitations, and the optimal viewing angle exists in a specific zone and the range of the zone is relatively small, which can't make all the members of the public present get a good viewing experience. In the future, public art will need to optimize the coverage of the optimal viewing point by taking into account the precision of the display medium, as well as the magnitude of the video's stretching and perspective angle. The digital media applied in future urban public art can be combined with holographic gauze to broaden the coverage of the media so that

the space outside the carrier can be effectively utilized to create a visual spectacle of the live viewing perspective and to achieve the effect of the live viewing effect in line with that of the promotional video effect.

The rapid development of CG special effects has helped art teams to create ideal visual effects, realizing the effect of virtual things superimposed on the real world through realistic filming + post-production special effects. The digital media applied in future urban public art can be combined with holographic gauze to broaden the coverage of the media, so that the space outside the carrier can be effectively utilized to create a visual spectacle of the live viewing perspective, and to achieve the effect of the live viewing effect in line with that of the promotional video effect.

Interactivity is another important attribute of public art. Its highest level lies in the audience participating in the creation of the work to achieve the work and the audience, the author, and the audience of two-way communication.

The interaction of traditional public art works is mostly confined to the final presentation stage of the works, the audience's input of information, the public's independent creation and interaction does not run through the whole process of public art works. The new type of urban public art will be led by the public's participation, and the artist, as the initiator of the public art, will transfer the creation and construction of the art to the public and encourage the audience's participation after formulating the rules, establishing the framework of interaction, and building the basic visual form. In the era of real and virtual intertwining, one-way media-led expression has already become the past, the artist can use the Internet platform, the online virtual media, and offline physical media in tandem with each other, through the mechanism of gamification to guide the public to actively experience the urban public art, the public can make choices and experiences according to their wishes, enjoy the fun of participating in the creation of art, and share the fruits of the artistic co-creation. The public can choose and experience according to their wishes, enjoy the fun of personal participation in art creation, and share the results of art co-creation.

This trend will gradually blur the boundaries between the artist and the audience, and promote the combination of virtual network media and real physical interactive media in contemporary urban public artworks, and the works will be transformed from the previous linear creation process to the development of non-linear thinking and expression from the perspective of the individual and the collective, and the resonance and collision between the public's thoughts and contemporary urban public art can further stimulate the innovation and enrich the development of public art. The resonance and collision between public thought and contemporary urban public art can further stimulate the innovation of public art, enrich the expressive language of public art, and make the interaction of public art realize the correlation and interaction among people, urban space, and public art.

5   Discussion and Result

Digital urban public art in the form of artistic expression to achieve a breakthrough, with a new type of visual media to strengthen the public's visual impact perception;

projection media for the original form of the city's architectural landscape a new look; with the induction of multimedia media for the public's presence experience and interactive feedback to add interest. The renewal and iteration of media is not only the physical environment level of urban public space attached to a layer of "digital epidermis", but also the spirit of the core level of the city's cultural veins of condensation and inheritance. Nowadays, China's public art is still in the stage of rapid development, we should actively explore art forms with distinctive regional characteristics, optimize the visual experience of public art, and open up multiple modes of experience for the public, to provide feasible strategies and methods for urban public art under the background of multidisciplinary crossover.

6   Conclusion

This study takes digital display media as the entry point to provide a new idea and method for the digital presentation of urban public art. Through a comprehensive comparative analysis of existing digital display technologies, it is found that the new visual medium is more conducive to the digital dissemination of public art, updating the audience's audio-visual experience, deepening the audience's thinking, arousing the audience's empathy, and allowing the audience to feel the local urban culture in the urban public space.

References

1. Cheung, M., Smith, N., & Craven, O. (2022). The Impacts of Public Art on Cities, Places and People's Lives. The Journal of Arts Management, Law, and Society, 52(1), 37–50.
2. Weng Jianqing. Urban society and sculpture culture - Talking about the similarities and differences between "urban sculpture" and public art [J]. Art Observation, 2021(3):2.
3. Wang Chong. From representation to construction: urban cultural communication from the perspective of public art [J]. Art Observation, 2022(2):76-77.
4. Hu Beilei. The creativity and interactivity of digital public art [J]. Public Art, 2020. (03),76-82.
5. (U.S.) Written by Christiane Paul; translated by Li Zhen and Yanfeng. Digital Art: Exploration of Digital Technology and Artistic Concepts. Original book 3rd edition [M]. Beijing: Machinery Industry Press, 2021.07.
6. Jiang Tan, Cai Yuming, Liang Zheng. Research on the application of science and technology innovation in new media art[J]. Research Management, 2021, 42(11):F0004-F0004.