ISSN: 2710-0170

Analysis of Creative Expression of City Image by Electro-optical Urban Medium "City Lighting"

--Illuminated River, a large-scale light artwork for the Thames Canal in London

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Abstract

As an important medium of electro-optical city, urban lighting plays an important role in the construction of the city's image, communication and conceptual expression. In the 21st century, more and more lighting media incorporate more creative design, having broken through the traditional lighting "shape", strengthened and enriched for its innovative application of urban expression style matrix. This paper focuses on the lighting media in the large-scale light art works carried by the four bridges over the Thames in London, which is an electro-optical city of the 21st century, and analyzes and evaluates the creative expression of the lighting media by combining with the city's representational style matrix, aiming to analyze the concrete practice of the city's representational style matrix in reality, exploring the significance and communication value of the city's media for the construction of urban image.

Keywords

Urban media and communication; elector-optical city, urban lighting; representational style matrix.

1. Case introduction:

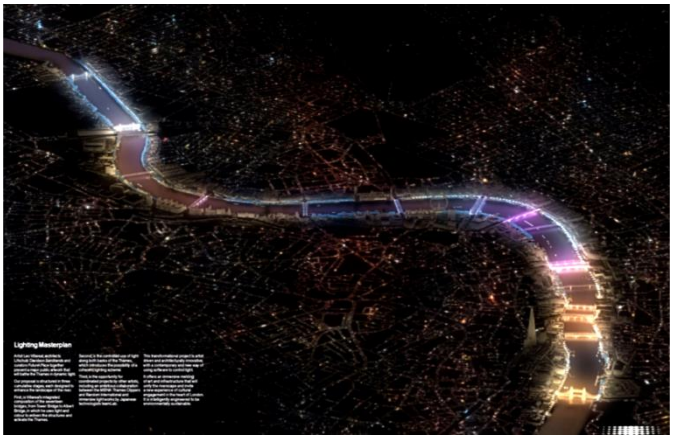


Figure1：《Illuminated River》

The Illuminated River - the 'River Illuminated' scheme - is a design competition led by London Councils, which opened in June 2016 and invited bids from around the world for the most dazzling reinvention of the river, the River Thames at night.

Eventually, an American new media artist Leo Villareal's bid was successful, and it took four years to build, culminating in the evening of April 13, 2021, when the large-scale light artwork Illuminated River was officially launched on the River Thames in London. The project aims to illuminate 15 bridges in central London, totaling 3.2 miles in length, along 4.5 nautical miles of

ISSN: 2710-0170

the Thames, from Albert Bridge to Tower Bridge, making it the longest public artwork in the world. The artwork is on display from early evening until 2am every day and is expected to be viewed more than 200 million times a year. The Thames, London's main artery, is illuminated with 'digital light and shadow', making possible an urban transformation and perceptual awakening in central London.

In the four years between 2016, when the City of London launched a worldwide tender, and the official launch of the project in 2021, the first phase of the Riverlight Shine program has already lit up four bridges at the heart of London's Thames Canal - London Bridge, Cannon Street Bridge, Southwark Bridge and Millennium Bridge. LED lights which are installed on each bridge have different lighting patterns, creating a different light art form.

This paper will focus on the medium of lighting in the electro-optical city--the medium used in the large-scale light art work carried by the four bridges over the River Thames, and analyzes and evaluates the expression of the medium of lighting in conjunction with the matrix of expression styles.

2. Media expression analysis:

2.1. The reality of media expression - introduction to media content:

As the mother river, the Thames has always been the symbol of London's history, culture, society, business and urban development. These bridges have accompanied the growth of generations of Londoners and witnessed the seasons of London with the eternal identity of objective objects and different historical identities.

Spatial art is based on the digital reproduction of scenes, constantly reawakening the individual's more precise emotions, perceptions and expressions. Leo Villareal's vision is to create a unified lighting design concept for the project, in order to refocus people's attention on the Thames bridges, through LED lighting, the water and the light of the light changes, so that the old bridge building with a new visual image in the city, so that the Thames River is revitalized, so that the cultural vitality of London is renewed, and to construct a river in the new era. The relationship between the river, people, bridges and the city will trigger a rethinking of architecture, light and shadow, and the city.

In designing close to this vision, each bridge has its own unique architectural and historical identity, and has witnessed a different picture of London in a different context and at a different time. Villarreal's project has been carried out with full respect for this and draws a great deal of vibrant inspiration from it. The lighting medium can thus be seen to honor the unique structure and architectural aesthetics of each bridge while revealing their individual identities.



Figure 2 : Blackfriars

Soft rose-colored light combinations throughout the arches of the Blackfriars Highway Bridge, inspired by the now demolished old railroad bridge and the remaining piers in warm tones,

ISSN: 2710-0170

with subtle dynamic color rendering of the train passing through the vibration and roar; subtly restored that full of railroad meanings.



Figure 3:Waterloo

The Waterloo Bridge is the longest bridge in London, and the artist has enhanced the lines of the bridge with just a simple band of light, and introduced soft colors to illuminate the center of the piers on both sides, mapping the constant bustle and cultural activity of the surrounding area.



Figure 3 : Westminster



Figure 4 : Lambeth

Westminster Bridge and Lambeth Bridge are of profound significance in British constitutional history. One red and one green, the same color as the leather benches of the House of Lords and House of Commons, respectively, at the Palace of Westminster. The artwork reinforces this theme by illuminating the latticework of Westminster Bridge in soft shades of green, echoing the benches in the House of Commons debating chamber. The red glow of Lambeth Bridge, on the other hand, illuminates the railings and architraves, corresponding to the hue of the House of Lords benches.

During the installation of the LED lighting materials, the lighting algorithms varied according to the different characteristics of each bridge, and these lights will completely change the impression of the Thames at night.

The River Thames looks more beautiful and calm at night under the reflection of the "River of Light", and the lighting medium on each bridge interprets and expresses the "expressed-bridge" and its most suitable objective appearance with the expression of this technology. The "real image" and the attempt to construct the spatial existence of these bridges and the Thames, and even the existence of people and the city.

Here one can not only appreciate the river and bridges, but also notice the various architectural and engineering heritage along the River London.

ISSN: 2710-0170

2.2. Application of media to the urban representation matrix--Reflections on "Monet" London based on Danto's Forgotten Style Matrix Derivation:

Light and shadow map the surrounding area, where noise and quiet meet, and the bridge over the Thames has warm colors. Rose-colored lights run through the arches of the Black Friars Highway Bridge; a simple band of light runs through the soft colors of Waterloo Bridge, illuminating the center of the abutments on both sides; dynamic colors render the vibration and roar of the passing train, the Cannon Street Railway Bridge is full of "railroad meaning" outlining the vitality of the city; Lambeth Bridge, the dominant color of the Lords Bridge and the red of the leather benches; the less dramatic green light under the bridge hole illuminates the Westminster Bridge. The main color of Lambeth Bridge echoes the red of the leather benches of the House of Lords; a less overt green light underneath the opening illuminates Westminster Bridge and activates the distinctive grid pattern.

The unique light and shadow of the bridges, Villarreal seems to "program" the design on the spot. Here, sunrise, sunset, moonlight, the changing light and shadow of the sky and the flow of the river, the architectural history of the bridge's surroundings, business, society, as well as the topography, hydrology and other natural elements, are all involved in this art project, forming a kind of "organic" art based on the dynamics of the local nature of the development as a whole.

The artistic value of the public space becomes meaningful as a result. Absorb inspiration from natural changes and feel the interplay between the architectural elements of the bridge over the river and the artistic creation of light and shadow.

Looking at Illuminated River as a light art project on this level, there is no one clear expression that can be categorized as a realist style. Realism seeks to portray the real world in a realistic and objective way, pursuing an accurate rendering of details.

In contrast, this project is closer in its use of lighting to the techniques used in the style matrix with the medium - the modernist style or contemporary art style that expresses urban content.

Modernist art pursues an innovative and experimental exploration of form, emphasizing a grasp of color, light, space and movement. The Illuminated River project employs the advanced LED technology in modern lighting technology, which allows for more precise, diverse and controllable lighting changes, allowing artists and designers to achieve a higher level of creative expression. The use of this technology reflects the positive attitude and innovative spirit of modernist art towards technological advances.

Secondly, it makes more use of modern creative design, combined with unique interpretations of bridge and architectural features, to transform bridges, buildings and riverbank landscapes into a huge art stage by changing the color, brightness, form and movement of light. The illumination and decoration of light not only emphasizes the form and structural features of these objects, but also highlights their unique beauty and historical value, thus creating a cityscape rich in change and dynamism, imaginative and dramatic, with illusionary effects. It focuses on the artistic treatment and expression of space, architecture and natural elements, as well as the guidance of the viewer's sensory experience, which is in line with the aesthetic concept of exploring and presenting space and environment in modernism.

In addition, the project demonstrates a contemporary art that focuses on audience participation and interaction. The audience can walk along the riverbank or take a boat on the river to appreciate the changing lights, and while doing so, they will not only be able to appreciate the river and the bridges, but will also be able to experience the uniqueness of the Thames and the city of London from different perspectives by noticing the various architectural and engineering heritages along the River London, one point at a time as well as from different perspectives. This participatory and interactive approach is one of the most common forms of expression in contemporary art.

ISSN: 2710-0170

Additionally, Danto's style matrix for defining art in Art World. Each row is a certain style of art. Each column is an artistic predicate. Let F be "Reproductive", i.e., let us assume that at some point in the history of art, it was generally recognized that art was reproductive, and let G be "Expressive", i.e., let us assume that at some point in the history of art, it was generally recognized that art was expressive. As the history of art evolved, four possible styles of art emerged: "representational reproduction (e.g., Fauvism); non-representational reproduction (Ingres); non-representational non-expression (Abstract Expressionism); and non-representational non-expression (hard-edged abstraction)".

The beautiful colors of Illuminated River were inspired by the artist's name. The artist was inspired by the Impressionist Monet's painting of the Thames.

Monet's works emphasize the changes, mingling and reflection of light and color, and pursue instantaneous perception and emotional expression of light and natural landscape. He often creates a blurred and dynamic effect through brief brushstrokes and the use of dots or patches of color, allowing the viewer to feel the variability of natural light and the fluidity of the landscape.

The Illuminated River project, on the other hand, references the style of his work by adding Impressionist lilacs, pale pinks, blues, greens and golds to the colors of the light. Under the changing and mingling effects of light or laser, these colors change gradually, adapting to the ever-changing river scene and its surroundings, presenting an effect of softness, fluidity and shifting light and shadow. They are not fairytale-like and shimmering, but real and intriguing, like the intoxicating and dreamy sunset on Waterloo, thus creating an impressionistic atmosphere and a unique artistic experience and cityscape.



Figure 5 : Lambeth



Figure 6 : Westminster

The term "abstraction" is explained in the context of artwork as follows: an art that progressively abandons the appearance of nature or objects, and progressively simplifies or refines the most basic and simple stylistic elements. The lighting algorithms in this project bring subtle colors to the different bridges, which change according to the pattern of movement and do not repeat themselves; this same overall style rejects the existential structure of the work between itself - the bridge - and nature or the environment, which would make the object less recognizable, and represents all three as an abstract whole. Therefore, the lighting project does not contain any "recognizable image". Instead, it is a regular "world of shapes" composed of individual creative elements such as image, color, line and space, which is contrary to the traditional realistic "real world". The objectivity of technology and objects is interfered by the subjectivity of human application of media and imagination, and finally a wonderful combination of reality and fantasy is reached, which can be regarded as a stylistic representation of the fusion of non-representational expressiveness (Abstract Expressionism) and modernism as defined by Danto.

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2.3. The truth and positive significance of the media's expression of the city's image

2.3.1. Digital aesthetic convergence: broken boundaries and reconfigured connections

How to match the scene with the most specific emotions is a major concern of people. Nowadays, when "Habitat-friendly" cities have become the standard, localized scenario design has become the future scenario that people aspire to and look forward to more and more.

The organic combination of public art and space makes possible an urban renewal and a perceptual awakening. We are more and more concerned about how the space around us is changing. There are various forms of urban space, and the local creation of scenes extends from public art to commercial and residential space, leaving people with more thoughts.

In Leo Villarreal's work, the reproduction of Impressionist paintings is as important as realistic pragmatism. As new scenes continue to emerge, through a non-representational + representational abstract expressionism combined with a modernist style, digitization has given rise to a new look for the old river and buildings, and reappeared in the city with a new visual image. This photovoltaic installation revitalizes the Thames in a new era, allowing the relationship between rivers, people and bridges to be rethought.

2.3.2. Design for locality: spatial art accurately awakens individual perception

The River Thames has spanned London for 2,000 years and is a fluid history. The Thames and its bridges have played an irreplaceable role in the birth, growth and prosperity of the City of London, but for a long time the Thames and its bridges have been under-appreciated. Leo Villareal's brilliant and imaginative design has transformed them into the world's longest public artwork, an on-site design that gives the bridges and the Thames a 'monumental' significance, carrying the memories of the City of London and its people and adapting them to the needs of the present day.

I think this work not only brings visual and perceptual presentation and value, but also makes people in the city think: should today's monument form still preserve the significance of our time? Although today's public space is so unstable, always floating in an unprecedented and continuous de-placed state, there are still many questions beyond the form of expression: what is the contemporary connotation of monument? Or who has to fight against oblivion and why? Should monuments be permanent or can they be fleeting events?

When this kind of illumination blurs the visible part and the invisible part behind, changes the objective existence of bridges and buildings, and places the Thames in an imaginary and dreamy state through abstraction, like a temporary preservation, or waiting for a time and space transfer. By allowing the public to reconstruct in their minds the image of things, objects, and even buildings illuminated or in darkness, the work indirectly gives the Thames a monumental symbolic meaning for London.

The LEDs absorb the reflections of the ripples on the water surface, creating a soft current that echoes the sound of people's footsteps on the bridge and the sound of the river's turbulence. Local people stand on the Thames River and feel the interplay between the architectural elements of the bridges over the river and the artistic creation of light and shadow. Looking at the buildings with hundreds of years of history, the stories that once took place here are suddenly remembered in this moment, encouraging people to feel the transient changes of the past, present and future.

The creation of art in this specific place is linked to history and reality, allowing the inhabitants of the city or travelers outside it to think together about where they come from and where they go. "The imagination, creativity, artistry, fashion, and history of Monet's London are thus generated and constructed through the technical forms of the medium.

ISSN: 2710-0170

2.3.3. Innovating the everyday: people resonating with the city and business

The renewal and reconstruction of the community reshape the relationships among people, the community, and commercial spaces. Individuals, as the primary community constituents, adapt their behaviors in response to environmental changes, including alterations in living conditions and purchasing patterns, thereby rendering familiar scenes unfamiliar and importing new scenes into their locality, resulting in ever-changing life experiences.

Bridges represent a distinctive form of architecture intricately interwoven with the fabric of local life, characterized by their strength, functionality, and rich history. The aesthetic ingenuity of the light installations seamlessly integrates ancient bridge architecture with contemporary LED technologies. This integration promises to redefine the longstanding perception of the River Thames in the UK. Concurrently, these innovations create novel nighttime experiences, encouraging locals to venture out of their homes and reinvigorate present or future commercial prospects.

Such enhancements afford individuals the opportunity to sense the pulsating rhythm between urban commerce and natural life, offering unexpected encounters in the mundane and fostering a sense of digital innovation within an artistic ambiance.

3. Negative evaluation of media expression

Such a utopian dream values meaning presentation, although incomparable to art and romance, exists on another level as a reality and history of covering and hiding. How to balance the styles of realism and modernist abstract expression without obliterating the integrity of the objective subject in interpreting the subjective is a problem worthy of consideration.

4. Conclusion

This large-scale light art installation, as a lighting medium using modern art styles and abstract art styles, combined with the surrounding natural things such as: light and shadow, the river, etc. to build an "art stage", renewed the vitality of the River Thames, so that the residents and tourists to better note the significance of the existence of the mother river and value, better perceive the changes in the city, the city of London, to produce the emotional resonance of the interaction between the city and it, so as to build up an image of the city of London in the form of a city, using the urban media to achieve the value of the dissemination of the significance of the public space to the residents of the broadening of the significance.

Acknowledgements

Thank you to all my supportive family members !

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