Visual Exploration of Public Art Construction in Shanghai

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ABSTRACT

Public art is becoming a way to re-promote cities. The purpose of our study is to explore the relationship between urban public art and the development of shanghai city. In order to reveal the pattern of public art construction in Shanghai, we have designed and produced a set of data visualization and interaction tools to analysis the POI data of the city with the data of public artworks by using different kinds of data, combined with the development outline of Urban Planning in Shanghai. At the same time, through interactive tools to obtain the public's attitude of public art, we hope to be able to find out the public's preference of existing public artworks, and to provide the reference for future construction of public artworks.

Keywords: Public art, urban data, interactive tools.

1 INTRODUCTION

The Shanghai government held the first urban space art season in 2015 through the Shanghai Urban Public Space Design Promotion Center. This urban space art season consists of 3 parts including the Main Exhibition, Site Projects, and Community Events. The government held the second and third urban space art seasons in 2017 and 2019, changed the contents into Main Exhibitions, Site Projects and Joint Exhibition. Shanghai Municipal Planning and Land & Resources Administration organized the "Walking Shanghai 2016 - Community Space Micro-Renewal Program" special activities in 2016, the activities screened 11 community public space pilot projects out, and achieve the community public space micro-renewal practice of the public wisdom through a multi-group participation platform. Based on the existing work mechanism of 2016, the special activities make further summarizes the experience, optimize the working mode, straighten out the work path in 2017. During the activity, it strengthens community publicity and promotion, organizes community public activities, residents' salon, designer salon, public space design forum, etc., attracts all walks of life, more social groups to actively participate in the community space micro-renewal plan; In 2018, the micro-renewal program is entering its third year. On the basis of paying attention to the public space of the old community in the past two years, the micro-renewal work has entered into various gray Spaces in the city. The 2018 micro-renewal plan focuses on some under-bridge space. "Walking Shanghai 2019 - Urban Space Micro-Renewal" released a pilot project of micro-renewal of space under the bridge and solicitation of information. Based on 2018, further exploration and discussion were made on how to activate the space under the bridge and how to design "urban furniture" to improve the quality of the space environment.

2 DATA COMPOSITION

We obtained data from the city's public art season and the city space micro-renewal data through the manual collection, in which the longitude and latitude data of the works were obtained through the online acquisition tool. At the same time, we have purchased and downloaded various POI data from Internet (updated in December 2018), including catering services, road ancillary facilities, scenic spots, public facilities, corporate enterprises, transportation facilities services, financial insurance services, etc.

Cooperate with the searching for the development outline of Urban Planning in Shanghai (Shanghai City Master Plan (2017-2035), Shanghai Municipal People's Government, Measures for the Construction of Urban Sculpture in Shanghai, Measures for the Construction of Urban Sculpture in Shanghai), We use Tableau to explore and analyze data in spatial and temporal dimensions, and mark all works on the map, hope to find a relationship between the public art construction for many years, combined with the concept of 15-minutes life circle, we made a preliminary analysis of the surrounding business environment and summarized the observed characteristics, such as the areas where micro-updates are concentrated and how the art season develops, etc.

3 Visual design

We choose to explore the influence of urban public art not only from the perspective of cultural influence，but also from the perspective of collected urban POI data. The location of public art and each data point are collected on the same particle map to establish a dynamic data map of Shanghai's urban public art and business forms, to make corresponding data more intuitive and spatial. In combination with the basic unit of 15-minute life circle proposed by Shanghai, we will show the 15-minute business circle around each public art, and the difference between each public art is marked more prominently.
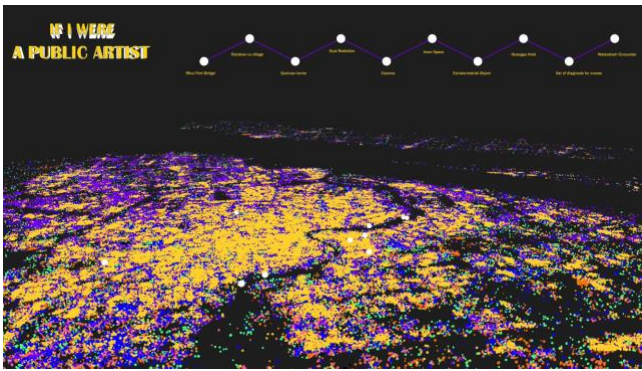
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Figure 1: Dynamic Data Map of Urban Public Art and Industry in Shanghai
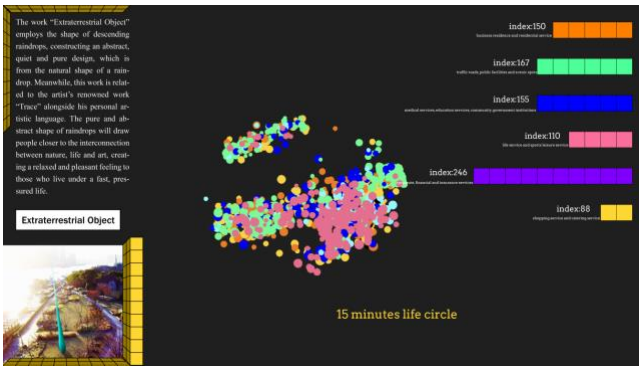

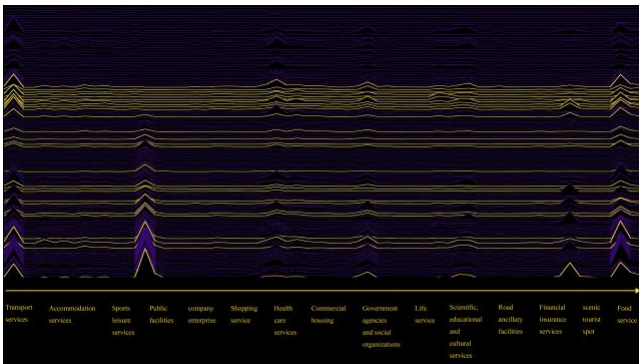Figure 2: 15-minute circle around public art

Figure 3: A waveform of the surrounding industry of public art

Vertical axis represents years of time, the horizontal axis represents transportation services, accommodation services, sports leisure services, public facilities, businesses, shopping services, healthcare services, commercial housing, government agencies and social organizations, service life, science, and education culture service and ancillary facilities of roads, finance, and insurance services, scenic spot, catering services, waveform figure represents each surrounding forms of public art.

4 Interactive process

To understand the public's propensity towards public art, we have designed an interactive installation for public art to interact with the public. This installation allows the audience to answer questions to get the public art that suits them. This interactive device consists of a 360-degree rotary encoder programming board and a computer with our system.

After audiences enter the system by operating the external encoder, they face a choice of six categories of dimensions through the home page and obtains the two recommended public arts obtained by computing the similarity between the two groups of feature vectors. After viewing the details, audiences can continue to view the information through the interactive hardware and enter the more intuitive and visual particle map. Finally, the process will be finished when the summary report of this operation appears on the interface. The public's choice of a favorite piece of public art will be fed back to our system for preservation. Each data map of public participation is a data collection aimed at the public's preference for public art.

Figure 4: Information Wall

5 Conclusions and prospects

We have selected several representatives works in many cases of public art, produced a storyline for the construction of public art in Shanghai, and presented the basic logic of Shanghai's public art construction to the user for the interactive experience.

"If I were a public artist" is our attempt to explore how urban development promotes the landing of public art and how public art can drive the surrounding cities. We hope to be able to demonstrate the public's tendency to choose and provide a reference for future public art.

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