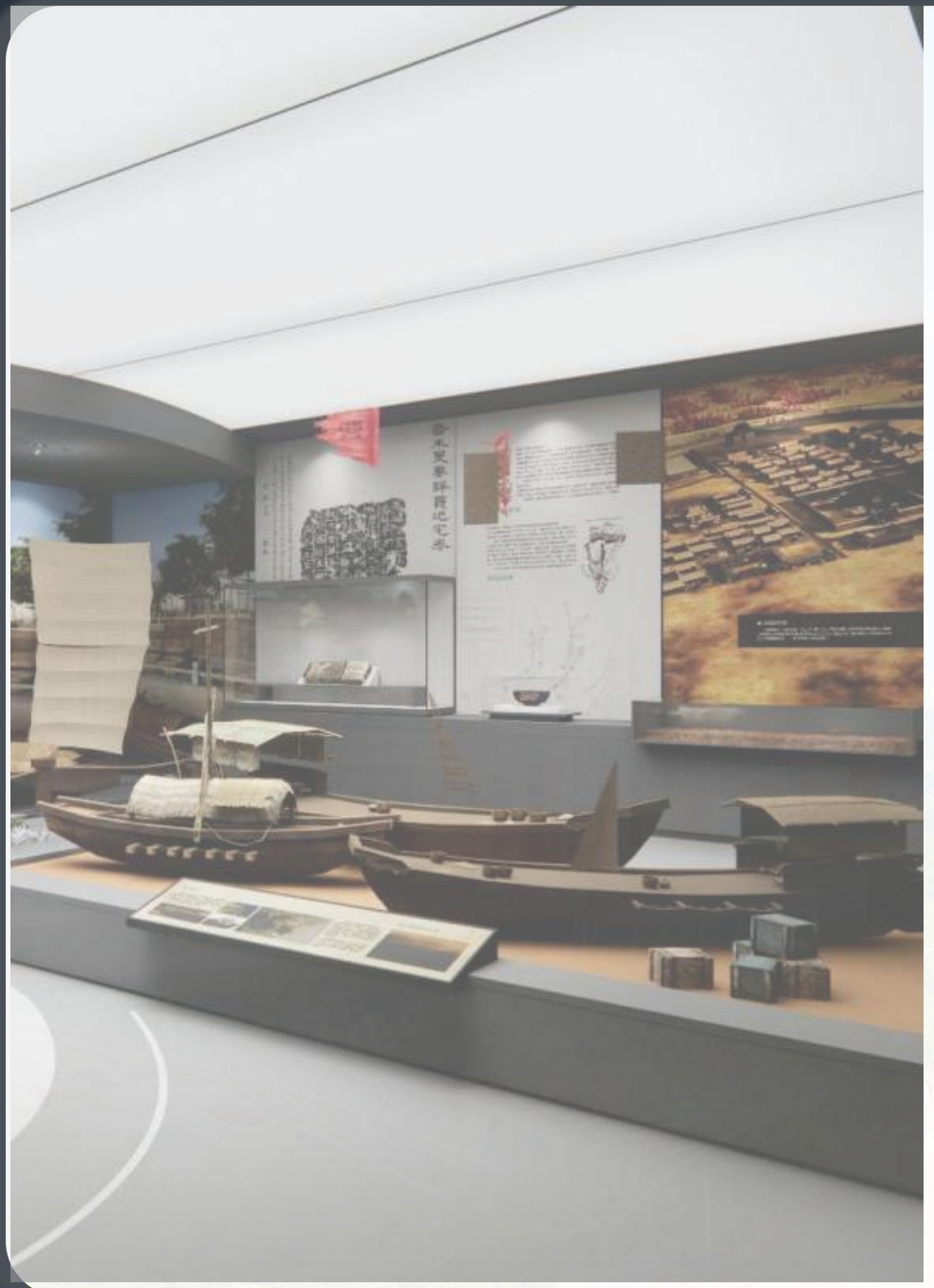

MEANS OF FORMING THE DESIGN OF A CULTURAL AND EXHIBITION SPACE BASED ON THE CONCEPT OF INTERACTION

Qualification work for obtaining the SVO «Master»

in the specialty B2 Design OPP «Design of the architectural and landscape environment»

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Relevance of the Topic

The development of rural cultural exhibition spaces is advancing towards the integration of cultural heritage, interactive experiences, and community co-construction. Future research can delve deeper into the combination of digital technology and cultural exhibitions, while also focusing on how to continuously promote the revitalization and prosperity of rural communities in the balance between cultural preservation and economic development.

Focusing on the unique characteristics of rural cultural exhibition spaces, the study is not only based on the basic functional positioning of rural cultural heritage, satisfying the spiritual needs of villagers and developing rural tourism, but also closely adheres to the basic connotations of interactive design— “user-oriented” and “emphasizing participation and interactivity”. It deeply analyzes the spatial status quo, cultural resources and audience demand characteristics of the Benniu Park Cultural Exhibition Hall, focusing on three dimensions:

1) interactive spatial planning reconstruction;

2) interactive exhibition content transformation;

3) optimization of service system experience.

Overview of the Research Project

Relevance of the research topic

Focusing on the integration of interactive concepts with rural cultural exhibition spaces, using the Benniu Park Cultural Exhibition Hall as a concrete carrier. It not only responds to the practical needs of rural cultural dissemination but also uses interactive design to overcome the limitations of traditional exhibitions, achieving an accurate connection between theoretical application and practical implementation, possessing both academic value and practical guidance significance.

Research Objectives

Based on and guided by the concept of interaction, and practiced through the design of the cultural exhibition space in Benniu Ancient Town. By incorporating interactive design into the exhibition space, it aims to continue and promote the traditional culture of Benniu Ancient Town. Under the guidance of interaction concepts, a comprehensive rural cultural exhibition space is created for cultural experience and promotion through scenario-based narrative design, immersive experience construction, the application of digital media technology, and the introduction of a community co-construction model.

Research subjects

The research focuses on the Beniu Park Cultural Exhibition Hall, a rural cultural display space, concentrating on the current application of interactive design and the needs for expressing rural culture, with the core aim of exploring the paths, methods, and practical forms for integrating the two.

Subject of research

Means and concepts of interactive design and rural cultural exhibition space design, with the Benniu Park cultural exhibition hall as the specific practical medium.

Goal of Research

Based on the concepts of interactive design and considering the design of the cultural exhibition space of the ancient city of Benniu as a practice, this research aims to continue and promote the traditional culture of the ancient city of Benniu through interactive design in exhibition spaces. Taking into account the concepts of interactivity, the design will create a comprehensive rural cultural exhibition space for cultural experience and promotion, integrating situational narrative design, immersive experience construction, the application of digital media technology and the model of community co-construction.

Goal of Research

1)improving the interactivity of cultural exhibition spaces through interactive design, making the spaces more vivid and enhancing the sense of participation and experience of visitors;



2)dentifying the elements of inheritance and promotion of the historical culture of the ancient city of Benniu, creating an interactive exhibition space as a carrier of cultural meanings;

Goal of Research

3) providing a comprehensive and more intuitive cultural experience through innovative digital exhibition technology methods to meet the needs of modern audiences;



4)creating a set of technological methodologies for interactive exhibition design to provide theoretical and practical recommendations for the future design of similar cultural exhibition spaces;

Research methods

Analysis and Synthesis

Allowed to determine the main theories that are mandatory in solving the exhibition space taking into account interactivity. The main directions of research were aimed at analyzing Chinese and foreign scientific sources that determined the main directions of solving the problem of preserving the cultural heritage of the PRC.

Scenario Prediction

Ilt recreates scenes of life and trade of the ancient city, allowing visitors to experience the cultural context in an exciting way. It enhances the sense of presence and memorable moments, enlivening static exhibits and effectively conveying the historical depth and unique charm of the ancient city of Bennu.

Immersion

Allowed to offer elements of an interactive game for immersion in a simulated reality for the development of bilingualism.

Grapho-analytical

The nodal scheme emphasizes the main exhibits, enhancing focal impressions; the linear scheme combines the cultural context of the ancient city, directing orderly excursions. Combining these two elements can balance an emphasis on key presentations with a complete narrative, enhancing both the quality of the museum visit and the effectiveness of the transfer of cultural knowledge.

Research object

Rural cultural exhibition space design, focusing on the specific medium of the Benniu Park cultural exhibition hall through the implementation of interactive design concepts. It emphasizes the study of how interactive design concepts adapt to the functional needs and characteristics of the rural cultural exhibition scene, taking into account the analysis of interactive transformation directions, application effects and practical developments in the formation of exhibition hall design from the perspective of spatial planning, exhibition scenario and methods, and service experience. The proposed exhibition space design will clarify the specific role of the proposed interactive concepts in invigorating rural cultural communication, enhancing the sense of experience of exhibition spaces, and enhancing the effectiveness of national cultural heritage, so as to provide a practical reference for optimizing the design of similar rural cultural exhibition spaces.

Feasibility Study

Analysis of real conditions

1、Benniu Ancient Town, as a historic and culturally renowned town, possesses rich cultural heritage and profound historical significance.
2、Although the cultural exhibition space in Benniu Ancient Town is currently almost nonexistent, the overall design and planning of Benniu Park provide a solid physical foundation for the construction of exhibition spaces.



Technical Feasibility Analysis

The interactive design strategies proposed in this study rely on a variety of modern technological means, including AR/VR, holographic projection, motion-sensing interaction, and intelligent guided tour systems. Currently, these technologies are widely applied in cultural exhibition projects both domestically and internationally, with a high level of technological maturity, and there are already well-established implementation experiences and cases, such as the Future Prism Exhibition Hall in Shanghai and the Light and Shadow Immersive Show in Wuhan. The feasibility of these technologies provides solid support for this project.



The research approach adopted

The research plan includes an in-depth analysis of the cultural background of Bennu Ancient Town and its existing exhibition spaces, identifying existing problems and improvement needs. The technical approach involves literature review, case studies, user research, and model design.
Establish a theoretical foundation through a literature review, then conduct a field study in Bennu Ancient Town to collect data, identify cultural and spatial characteristics, and assess the shortcomings of existing exhibition spaces. Based on the concept of interactivity, propose innovative methods for exhibition space design and construct a basic element model for interactive experience design. ...



Chapter One

Analyze the research on interactive concepts at home and abroad to draw core conclusions: The interactive design of rural cultural exhibition spaces at home and abroad has shifted from traditional static preservation to dynamic innovation, with technology application and scene construction becoming the core driving forces.

1. Domestic research has gone through four stages: 'resource preservation → multifunctional integration → interactive innovation → community co-construction,' focusing on balancing cultural heritage and rural revitalization.
2. Foreign research emphasizes digital technologies (VR/AR, haptic feedback, etc.) and immersive experiences, with higher community participation and technology integration.

3. Key application directions include guided interaction, scenario narrative design, and digital empowerment, while adhering to the principle of cultural authenticity.

Basic Methods for Constructing Interactive Exhibition Halls

Node-based and series layouts

The node-based layout highlights core exhibits, strengthening focal experiences; the linear layout connects the cultural context of the ancient town, guiding orderly tours. Combining the two can balance the emphasis on key presentations with narrative completeness, enhancing both the quality of the museum visit and the efficiency of cultural transmission.



Scenario Narrative Design

Scenario-based narrative design can recreate scenes of ancient town life and commerce, allowing visitors to experience the cultural context immersively. It enhances the sense of presence and memorable points, bringing static exhibits to life and efficiently conveying the historical depth and unique charm of Bennu Ancient Town.



Community Co-construction

Community co-construction can gather residents' memories and resources, making museums closely connected to the local fabric. It activates community engagement, gives museums vibrant vitality, and simultaneously promotes both the inheritance of ancient town culture and the enhancement of community cohesion.



Build and showcase system spaces to promote economic and cultural development

Interactive technology applications in exhibition halls

VR Technology

It showcases a virtual exhibition hall that comprehensively utilizes VR technology, featuring virtual receptionists, holographic screens, and other facilities, providing visitors with an immersive interactive experience.



Holographic projection, interactive wall

An immersive 1:1 'Environmental Court' is created in the exhibition hall using panoramic projection, holographic images, and interactive lighting systems, allowing the audience to take on roles and participate in a simulated trial.



Intelligent Guidance System

Develop an AR AI navigation platform, allowing visitors to achieve real-world navigation and accurately locate target exhibition areas through the WeChat mini program.



Chapter Two

Bennu Park Traditional Culture Exhibition Space Design Project Proposal

The project proposal is based on the formation of the design of a traditional cultural exhibition space in Benniu Park, taking into account the concept of interactivity.

The first stage of the work: the research background and the significance of the design of the cultural demonstration space of Beniu Park within the framework of the interactive concept are considered and analyzed.

The second stage: aims to define the interactive concept, collect relevant literature, design examples and research methods related to the interactive concept and cultural demonstration space. It is determined how the concept of interactive analysis is integrated into the design of the demonstration space, as well as what changes it brings to the experience of the interactive audience when applying various interactive technologies in related design fields.

The third stage: analyzes the local culture of Beniu ancient city and the current state of the demonstration spaces, presents the historical and cultural context of Beniu ancient city to provide a cultural basis for the design of the demonstration spaces, including the advantages and disadvantages, to provide a qualitative basis for future improvements of the design proposal.

The fourth stage: incorporates the interactive concept into the design methods of the demonstration spaces, explaining the main content of the interactive concept and its importance in design, and applying it to the design of the demonstration spaces.

The fifth stage: describes in detail the interactive design practice of the cultural demonstration space, specifying the guiding principles and objectives of the interactive design of the demonstration space of Beniu ancient city. Specific interactive design strategies are proposed based on the detailed design plans, including interactive elements and the application of modern technology.

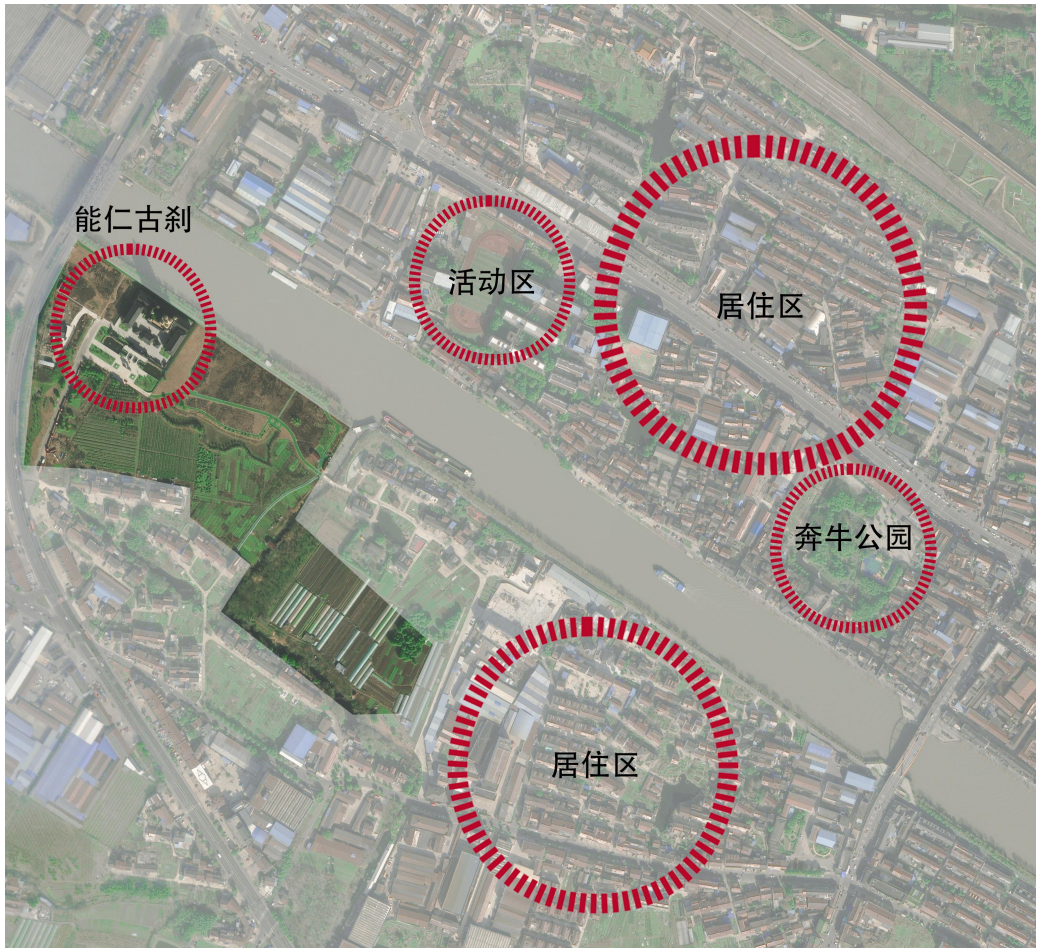
Part six is mostly a summary of the entire article, which addresses the shortcomings of the design plan.

Chapter Three

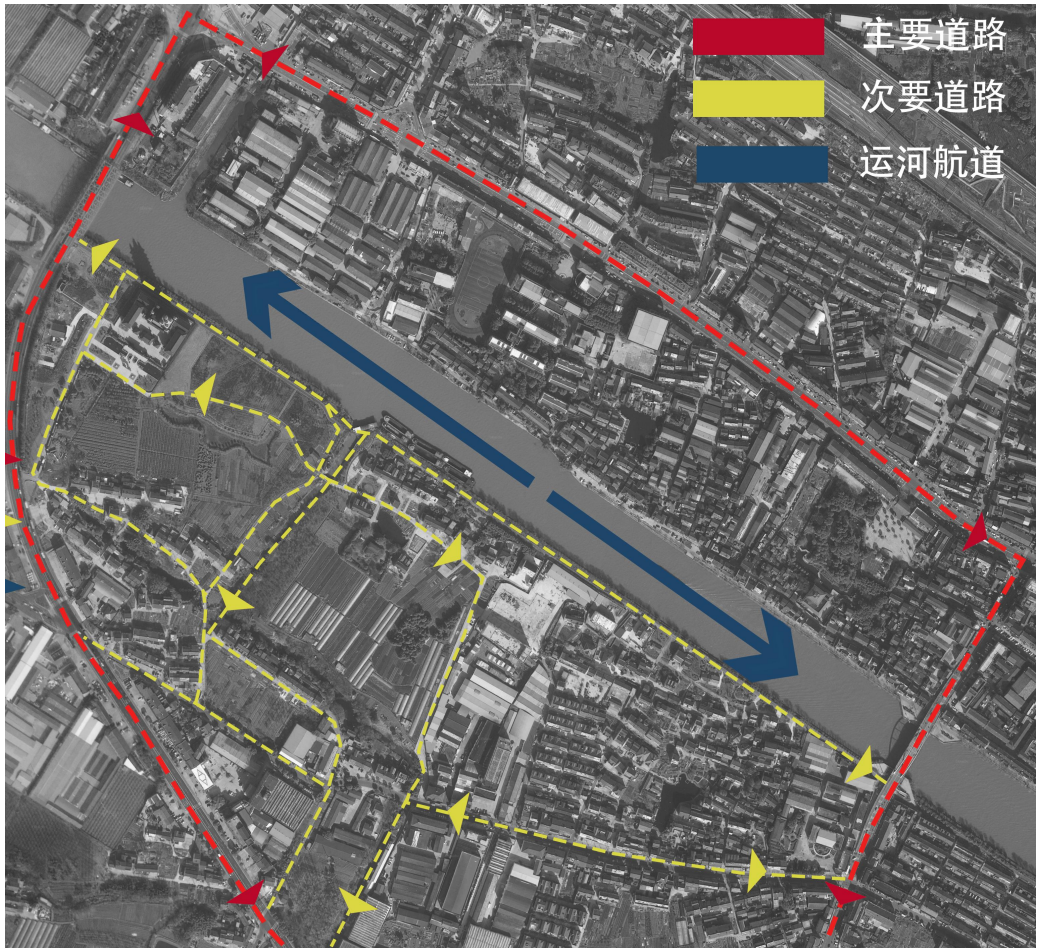
Project Design Output

Create a design for a cultural exhibition space: create thematic cultural exhibition halls in Benniu Park to form a systematic network of exhibition spaces. The thematic halls can be divided into the "Canal History Exhibition Hall", "Liu Guojun's Entrepreneurship History Exhibition Hall" and "Water City Cultural Experience Hall". Through the specialized design of the exhibition space, the historical culture of Benniu Ancient City should be concentratedly presented based on such means as: situational reproduction, scene reconstruction and interactive devices, so as to allow viewers to experience the cultural style of the ancient city in specific historical contexts, thereby enhancing the coherence of cultural content and spatial experience;

location of the project



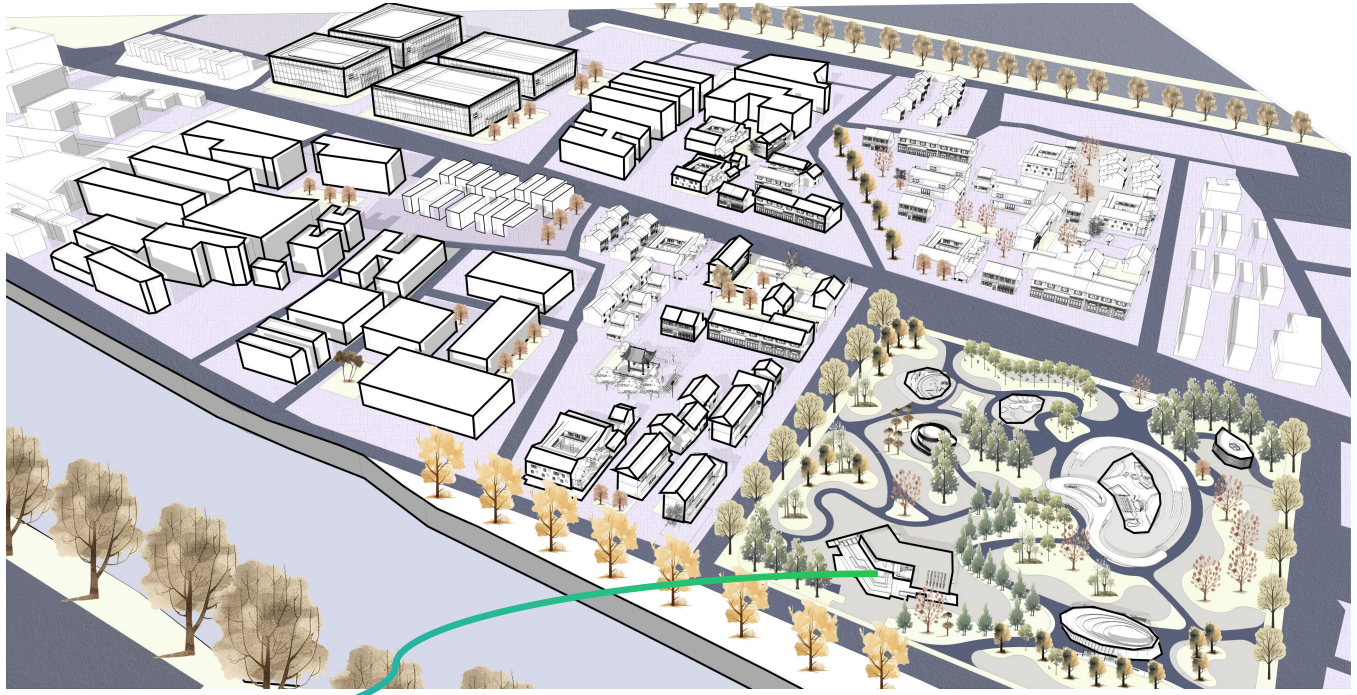
Analysis of the surrounding area



Traffic analysis

location of the project

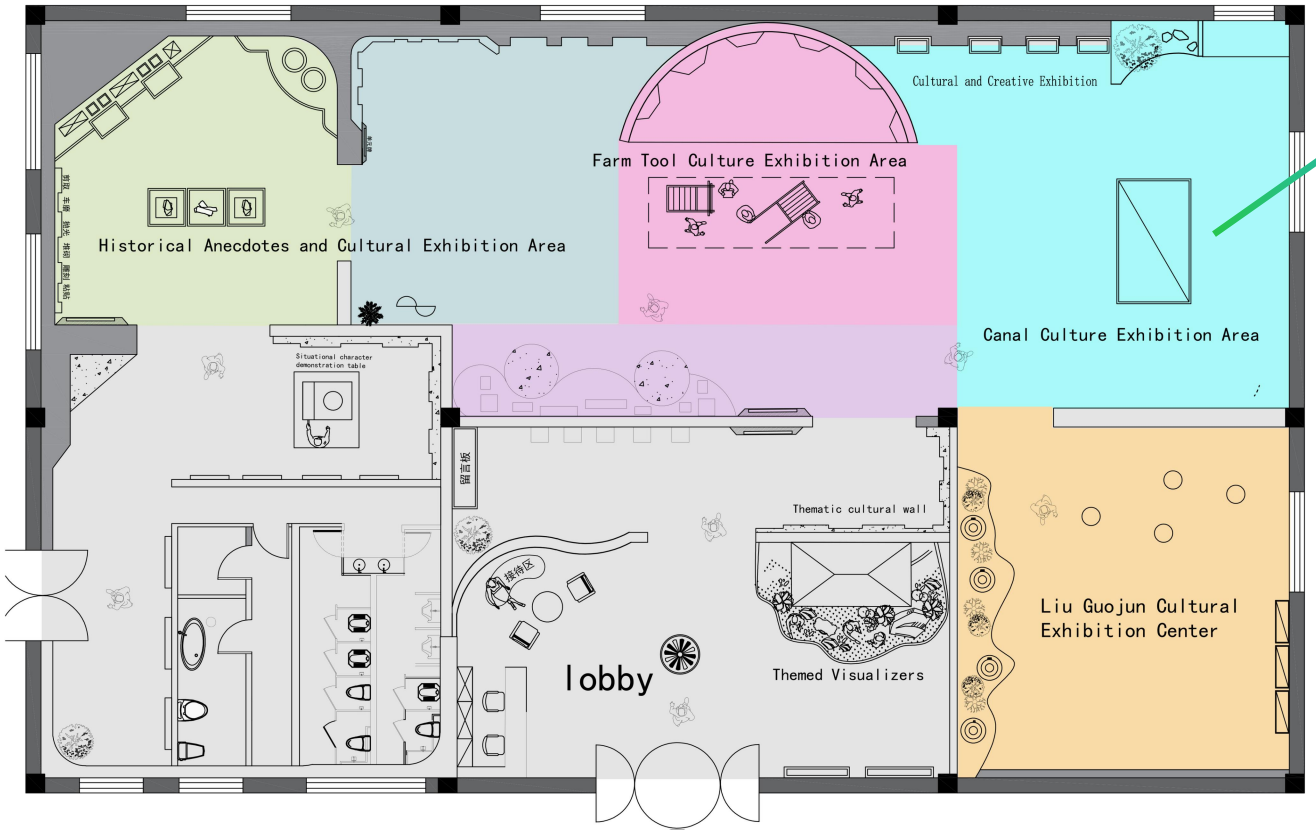




My design project site is located in Benniu Park, which is a multi-functional comprehensive park integrating cultural activities, fitness and leisure, and visits in the old street of Benniu Town, Changzhou City, Jiangsu Province. There are many scenic spots, such as Boya Bridge, Bosom Friend Pavilion, etc.; At the same time, there are two outdoor functional places and indoor functional places for the masses to relax and entertain. However, there is still a lack of systematic indoor cultural display space, and Benniu Old Street still has the problem of lack of cultural space.

Show intention

Canal culture

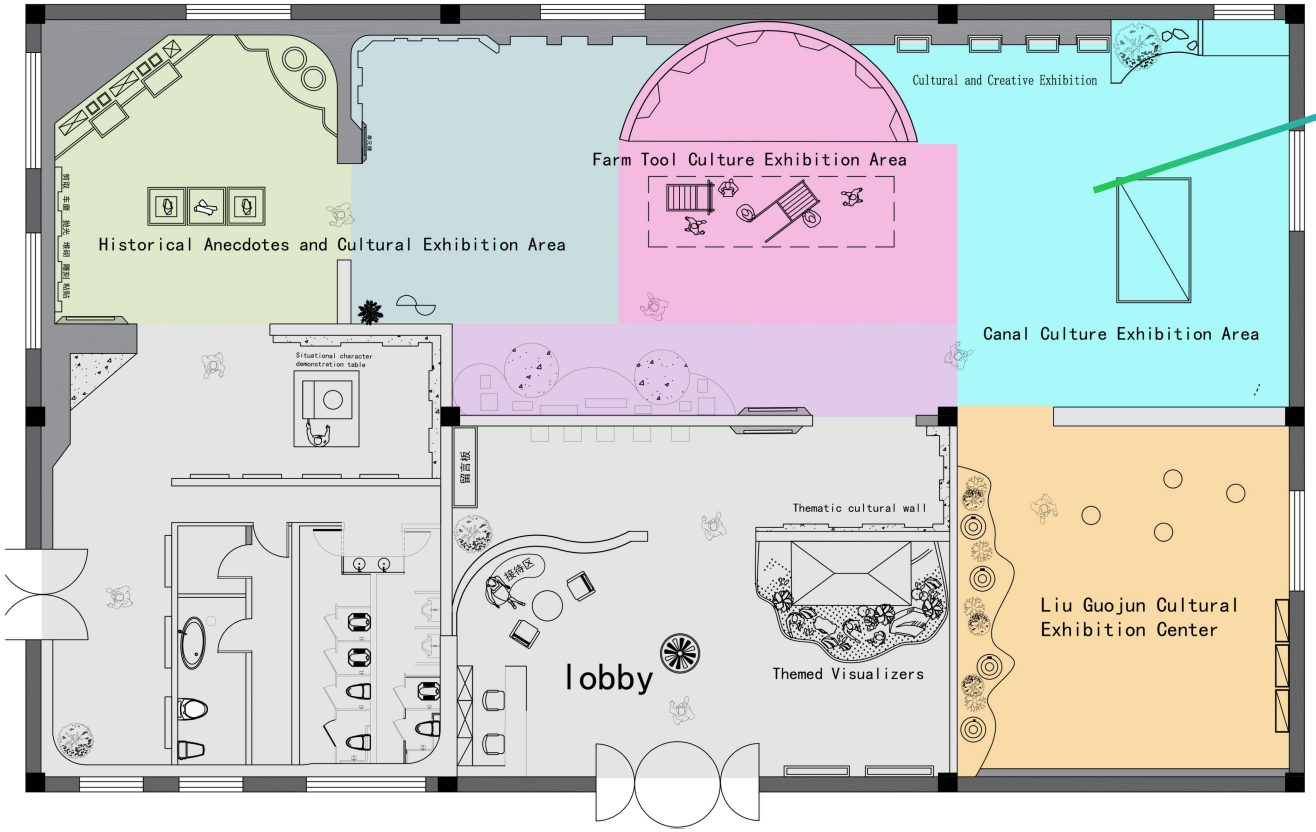


Canal culture exhibition area

This paper introduces the history of water transport culture in Benniu ancient town, the central 4 m×1.2 m digital sand table "water rhyme long table", the audience scans the code to upload old photos and new stories, and the data flows into the "canal cloud" in real time, forming new ripples on the desktop;

Show intention

Canal culture



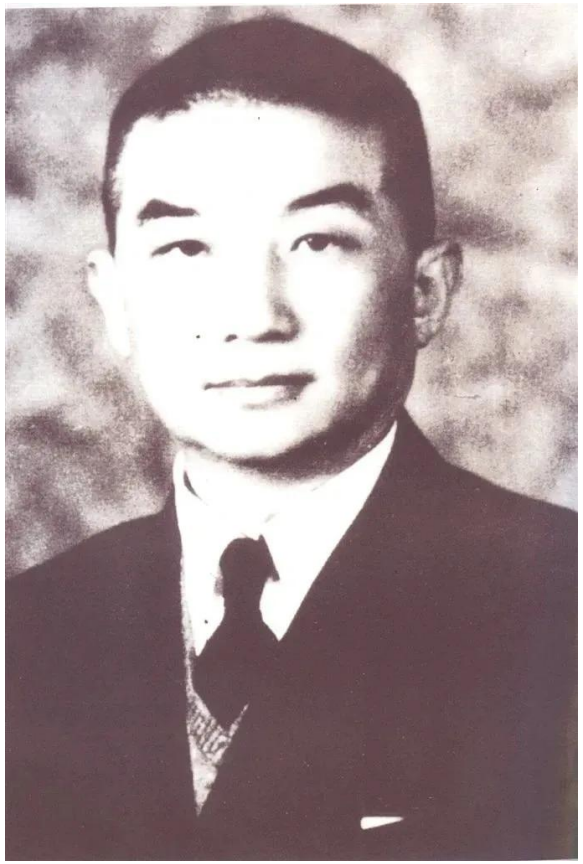
Canal culture exhibition area

Water Vein Corridor-"Living Map"
The "granary walls" on both sides can be drawn, containing 27 pieces of cultural relics of Cao Gang, and the instant wall projection of the drawer tells the story of "Cao Yun culture" simultaneously.

Movable "micro-tea stalls" are set up at both ends to supply "three tea for running cattle", so as to realize "visiting the ancient town after watching the exhibition and recalling the canal with tea fragrance".

Show intention

Liu Guojun culture

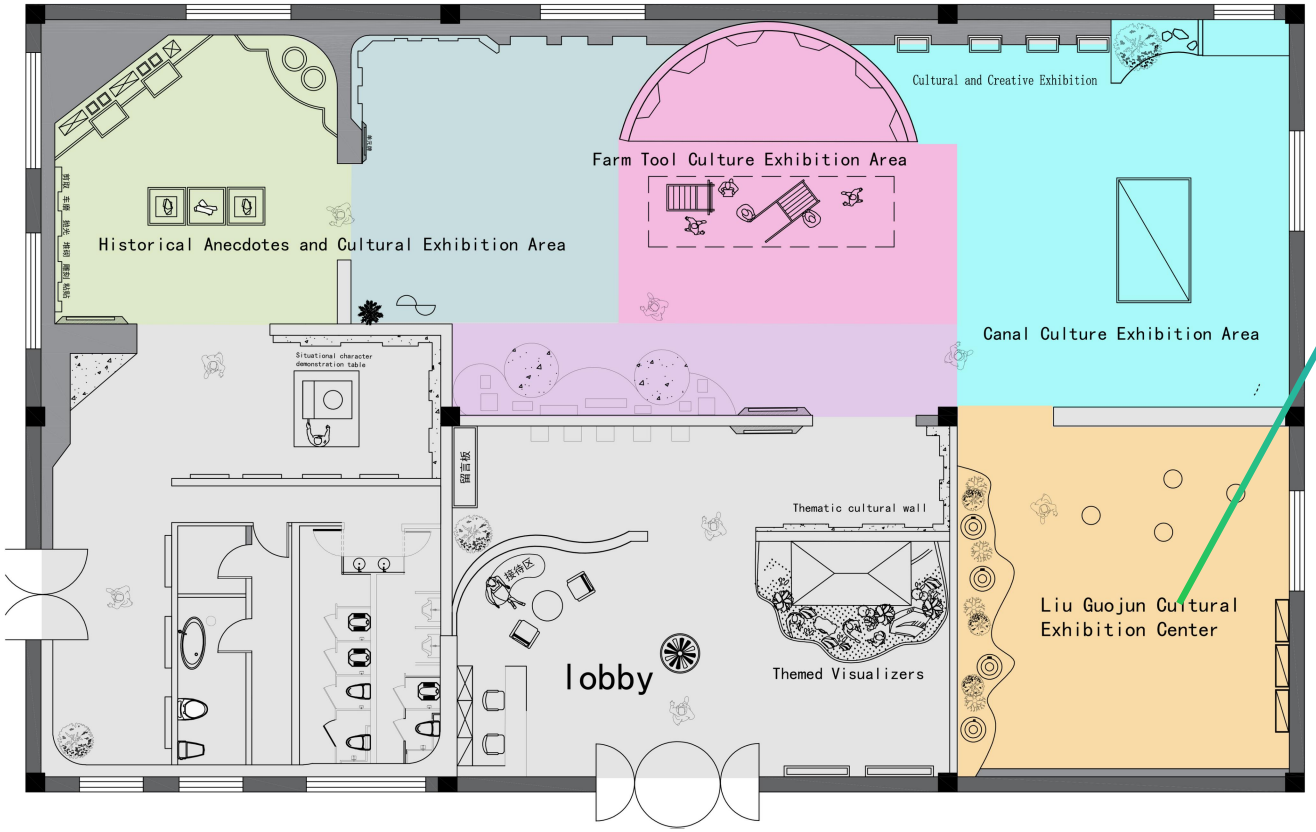


“Textile Tycoon” Liu Guojun



Show intention

Liu Guojun culture

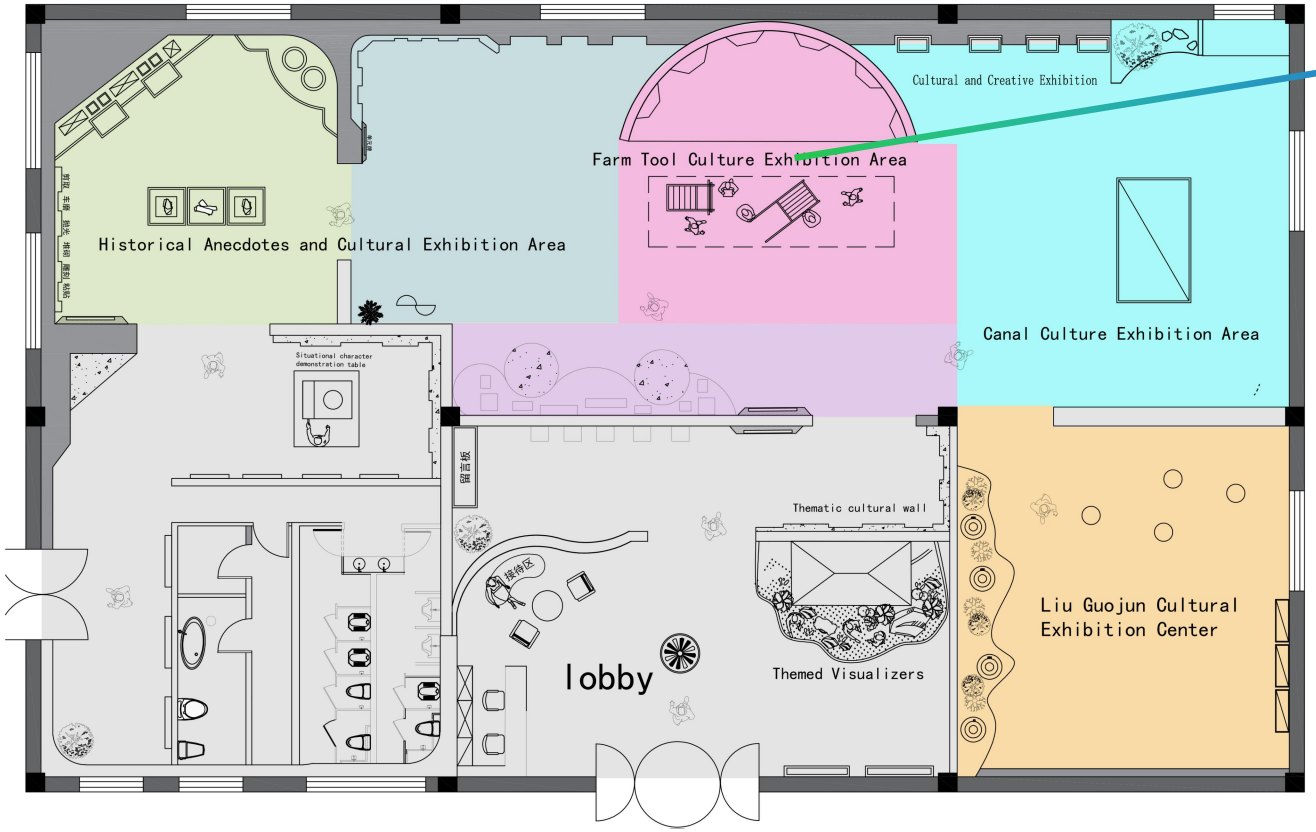


Liu Guojun cultural exhibition area

Liu Guojun's six life nodes (running an ox apprentice → Hefeng starting a business → achieving a great miracle → moving westward during the Anti-Japanese War → a new Republic → donating and collecting) are described and displayed.

Show intention

Agriculture tools culture



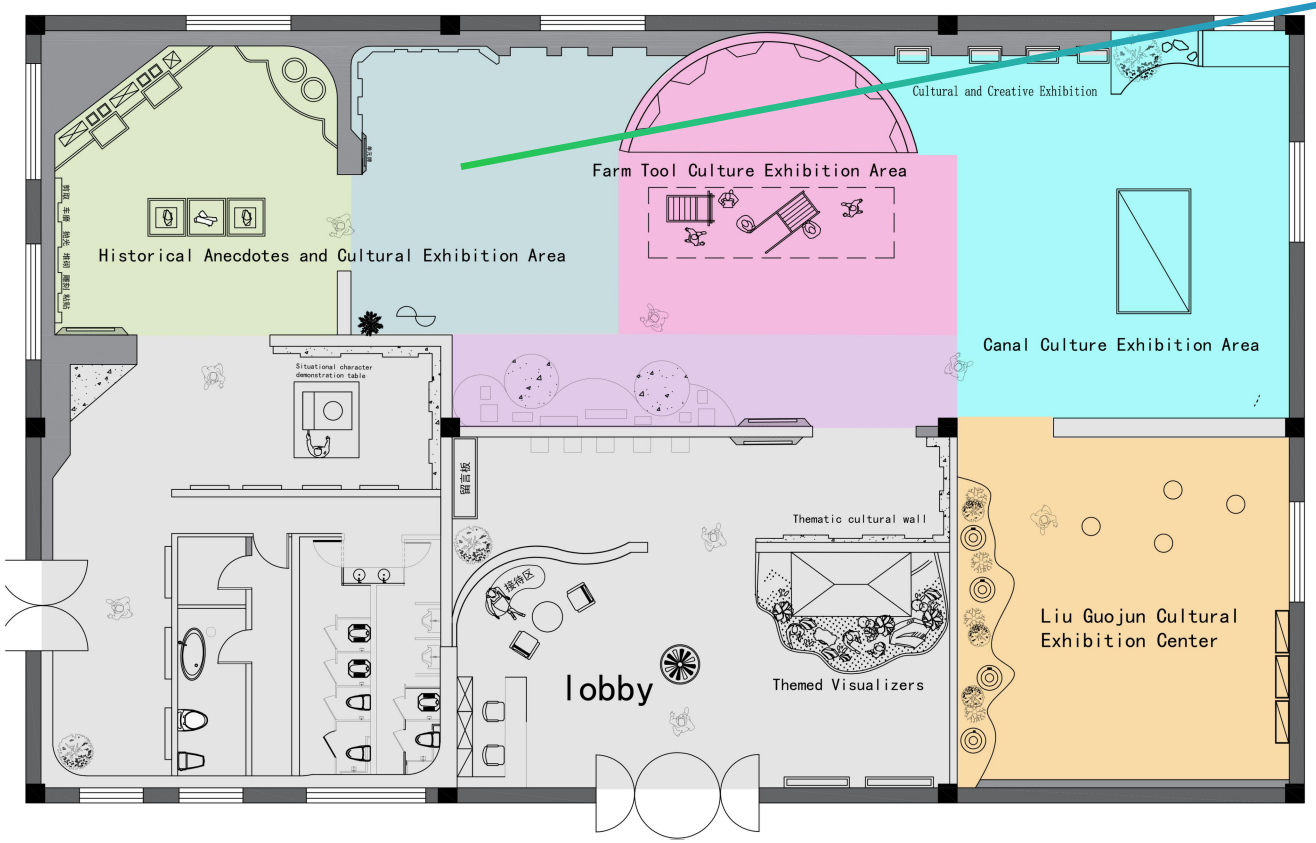
Agricultural tools culture exhibition area

1、Cultural relics display of farming tools.

2、The audience can "plow-drive cattle-thresh" in the virtual 1930s bull-running rice polder, and the vibration of the handle matches the real plow weight to realize "ploughing one square meter on behalf of others"

Show intention

Agriculture tools culture



Historical Allusions Area

Story of True Friendship: Benniu is the place where the story of 'High Mountains and Flowing Water meeting a kindred spirit' originated. During the Spring and Autumn period, the qin master Yu Boya traveled by water through Benniu. On the Mid-Autumn Festival of the fifteenth day of the eighth month, as his boat passed near Zhong Village in Benniu, with the bright moon overhead, he could not help but play the qin. To his surprise, the woodcutter on the shore, Zhong Ziqi, could understand the meaning behind his music and praised, 'Magnificent, for it expresses the grandeur of the mountains,' and 'Expansive, for it represents the flowing water.' The two then became steadfast friends for life.










发展历程
战后复兴（1946-1949）：
重建产业版图，推动行业革新


创业初期（1916-1925）：
扩张发展（1926-1937）：
战后复兴（1946-1949）：
重建产业版图，推动行业革新




高山流水
遇知音
笔墨书香


稻麦的前世今生
粮稳天下安
Stable Grain and Safe World—
The Past and Present Lives of Rice and Wheat
稻麦与人类文明
中国重要史前稻作遗址分布
现址
稻麦的起源
稻麦的发展
耕耘希望，收获未来

Thank you

Respondent: Tang Jiahao