

# Campus Cultural and Creative Product Design Based on Spatial Narrative Perception: The Case of City University of Macau

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**Abstract:** Campus cultural and creative design is in an emerging period, so the development is not mature enough and there are some problems and challenges. In this paper, we use spatial narrative theory to design campus cultural and creative products with common emotional memories of users and campuses. Through interviewing and extracting the classification elements, we reconstructed a new narrative using spatial narrative theory and designed a handbook product with the common emotional memory of the user and the campus. The booklet consists of a book jacket cover, a functional book, a three-dimensional bookmark and a highlighter pen. The design is a fusion of subconscious perception design and figurative memory extraction design, and allows the user to use the pen to participate in the process and to construct a shared memory with CityU. Therefore, this study proposes a design framework for campus cultural and creative products based on spatial narrative perception and a specific application of handbook design, hoping that the framework and the design practice can provide new ideas and methods for the design and practice of campus cultural and creative products, and contribute to the enhancement of campus culture transmission and promotion.

**Keywords:** Spatial Narrative; Emotional Memory; Subconscious Perception; Figurative Design; Intentional Extraction; Campus Culture; Cultural and Creative Design.

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## 1. Introduction

In the high-speed development of today's era, people gradually attach importance to the emotional trust, people no longer only require the use of commodities in the function, the emotional value of which is also the demand that people now pay attention to, and cultural and creative is based on the emotional value of the generation, so cultural and creative design has become a designer and the public is extremely concerned about the importance of the industry. [1] Cultural and creative design combines culture and creativity as well as traditional cultural elements with modern art, and conveys cultural information and generates economic value through innovative ways. In the current society, the application of cultural and creative design is becoming more and more extensive, and it has an important role and value in promoting cultural heritage, promoting economic development, and enhancing the city's image and cultural taste.

The practice and attempts of campus cultural and creative products in the scope of schools have been widely carried out after Takashi Murakami proposed "throwing out one's own product idea and forming it" in "Theory of Entrepreneurial Art". [2] Some of the most important cultural and creative products in the world have been designed by Murakami, and some of the most important ones have been designed by Murakami. [2] representative of Tsinghua University, Fudan University, Nanjing University, etc., relying on their own long history of schooling, unique environmental conditions and social influence, coupled with better design standards, so that their cultural products have a certain market. However, the competition among universities is getting more and more intense, and there are still some problems and challenges in the cultural and creative design of China's campuses, such as serious homogenization, poor quality, and the lack of a systematic development strategy.

Therefore, in order to better promote the development of campus cultural and creative design, it is necessary to conduct more in-depth research and exploration. This study is based on the spatial narrative perception of campus cultural and creative design as a research object, based on the theory of spatial narrative, reverse extraction of the perceptual elements in the route to the school purpose, and once again according to the theory of spatial narrative to re-construct the story, used in new design products, for the future campus cultural and creative design to provide a new design ideas and methods, to promote the development of the cultural industry of the campus of a different path.

## 2. Organization of the Text

### 2.1. Theory of Spatial Narrative

Spatial narrative refers to a design concept and method that takes spatial elements as part of the narrative, and conveys the storyline, emotional experience and other information through the design and layout of spatial elements. It emphasizes the close connection between the space and the narrative, through the reasonable use of spatial elements to shape the scene, create an atmosphere, guide the user's emotional experience, to achieve a deeper level of conveying the narrative information and create user value. [3]

The theoretical basis of spatial narrative mainly comes from architecture, aesthetics, psychology, sociology and other fields. In architecture, spatial narrative is related to the spatial structure, layout and function of buildings. In aesthetics, spatial narrative emphasizes the aesthetic performance of spatial elements and compositional rules. In psychology, spatial narrative is concerned with users' emotional experience and behavioral responses. In sociology, spatial narrative emphasizes the social meaning and cultural value of space.

Spatial narrative is a kind of design concept and method that takes spatial elements as part of the narrative, and conveys the storyline, emotional experience and other information through the design and layout of spatial elements. It has a wide range of theoretical foundations and application areas, and also has important application value in campus cultural and creative design.

Since the 80s of the last century, foreign research on narrative space design, involving a variety of fields. The British interior designer Kurtis set up the Today's Narrative Architecture (NATO) society, which opened up the precedent of spatial narrative perception. In the field of architectural design, Western architects in the second half of the last century to the theme of narrative events for theoretical and practical exploration.[4] Bertrand Berger, who is the author of the book "Narrative Architecture," is the first architect to use this term in his work. [4] Bernard Quemi put forward the view that architecture is composed of space, events and activities, that spatial design should focus on narrative, rather than cold space. The University of Cambridge Architecture Department Digital Space Laboratory and the State Key Laboratory of Subtropical Building Science of South China University of Technology have collaborated to explore the human experience of movement space by utilizing real-time three-dimensional virtual reality and cinematography to try out the possible forms of digital museums in the future. In the field of landscape design, British landscape designers Matthew Pottenger and Jamie Plimpton extended the concept of narrative to landscape design, pointing out that the place itself is an ever-changing narrative site, and the landscape is the scene where the story takes place. In the course of research on narrative space, Wellington University in New Zealand and Simon Fuaser University in Vancouver have both conducted research on narrative design, and believe that narrative is consistent throughout the design. Therefore, spatial narrative perception is an interdisciplinary field of study that applies not only to architecture and landscape architecture, but also involves a variety of fields such as curriculum design. [5][6][7]

In cultural and creative design, designers often need to visual elements, storyline, the overall perception of the expression of means to convey the theme of the work, emotions and values. Spatial narrative theory can help designers to clarify the relationship between these elements, so as to better construct an attractive and infectious works. In addition, designers can use spatial narrative theory to create a more storytelling and immersive works, so that the audience

can be better immersed in the atmosphere and context of the work, and enhance the interactivity and participation of the work. But in fact, because cultural and creative design is a new industry, so in the field has not yet used the theory of spatial narrative design research. With the continuous development and innovation in this field, spatial narrative theory will become one of the directions that can be considered in cultural and creative design.

### 3. A Methodological Framework for Research Based on Spatial Narrative Perception

The most important thing in a spatial narrative is the "event", the identification of a series of events that is the starting point of all narrative activity, which is a manifestation of the creative activity of the mind. However, in order to accurately identify these events, we need to analyze and define "event". The event is the object of the narrative, but the object is not entirely objective. It can be an original event that really happened, or it can be a fictional event, an event that is perceived and realized by human beings, an event that is stored in memory, an event that is recorded in a text, and an event that is read and interpreted by readers. Therefore, the object of narration is neither original nor fictional, but a conscious event. In other words, the narrator is not confronted with objective "facts", but with events reflected through consciousness and memory, which are usually not present. Therefore, in this study, we asked school users about their purpose of coming to school, what impressive events happened during the period, and the impressive scenes and elements, and finally asked about the overall perception of the purpose and the events, so as to obtain enough "conscious events" as the textual data for this study, and to analyze the "conscious events" in this study. The "events of consciousness" were extracted, coded and categorized, then analyzed, and the spatial narrative theory was used again for the design of campus cultural and creative products. [8]

Therefore, based on the spatial narrative theory and the above definition, the research methodology of this study is constructed as shown in Fig. 1, which is divided into the following steps: interview question preparation, in-depth interview, coding and classification, and analysis and application. The specific operations are explained in detail below.

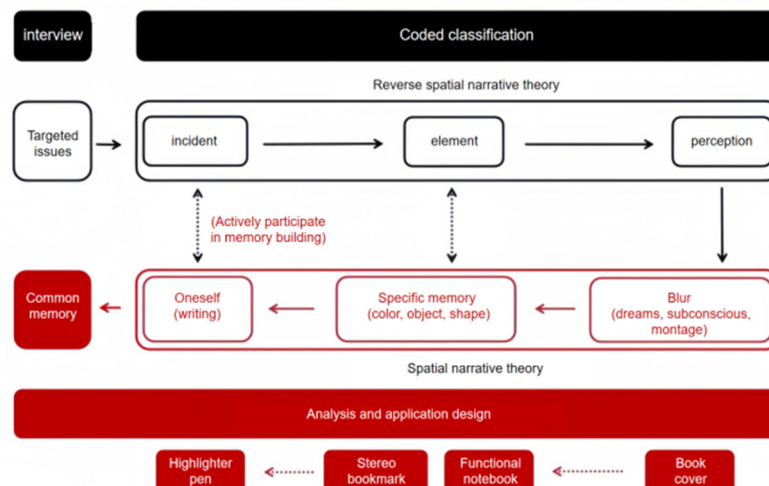


Figure 1. Spatial narrative perception design framework

### 3.1. Problem Preparation

This study is based on spatial narrative theory and uses it in reverse in this step. Spatial narrative is the use of elements to construct an event to construct space by designing a perceptual representation, while in this step the spatial narrative theory is used in reverse by asking the respondents about the purpose of coming to the school to get the event and extracting the elements and perceptions from it. Therefore, through repeated analysis and reflection, this study finally determined the following question framework, as shown in Table 1, and planned to use the ladder-climbing method to further question the specific content of the respondents' answers, and finally ask them about their overall feelings until they could not ask any more questions.

Table 1. Interview questions

Serial Number	Questions
1	What is the purpose of your visit to the school?
2	What is the basic route? Where is the final location?
3	Have there been any incidents that stand out to you while you have been on the route for this purpose? Say whatever comes into your head right now.
4	What are the more impressive scenes in this event? What are the more impressive elements?
5	What is the one perception that stands out to you in this event?

### 3.2. Problem Preparation

In-depth interviews were conducted with students and teachers from different colleges and grades, and eight respondents were selected for this study. In order for the study to be rigorous and effective, it was necessary to explain to the interviewees before the interviews the step-by-step requirements of the design framework based on the spatial narrative, and to be clear about the topic of the study. After that, the respondents were asked questions based on the above questions. After the basic information was obtained, further questions were asked to obtain ideas for scenes and elements and perceptions until no more ideas could be provided. No other interruptions were allowed during the interview.

Table 2. Respondent Information

Serial Number	Gender	Age	College
P1	Male	23	Department of Business
P2	Female	22	Department of Humanities and Social Sciences
P3	Female	24	Department of Innovative Design
P4	Male	21	Department of Humanities and Social Sciences
P5	Female	28	Department of Innovative Design
P6	Female	30	Department of Innovative Design
P7	Male	23	Department of Data Science
P8	Female	24	Department of Data Science

### 3.3. Extraction Classification

As an example, 1 respondents were sampled and their interview data were summarized and categorized into purpose,

destination, element, and perception as exemplified in Table 3.

Table 3. Interviewee Y Interview Content and Extraction Categorization

Elemental Perception Classification <sup>o</sup>				
event <sup>o</sup>	goal <sup>o</sup>	destination <sup>o</sup>	elements <sup>o</sup>	perceptual <sup>o</sup>
P: Climbing is really painful every day. During rush hour, I had to wait for a long time for the elevator in the administration building, and sometimes I had to climb the stairs. I go to the 3 floor for classes, the corridor is very narrow, the elevator is also a lot of people, walking in the corridor will always look at the side of the display boards, there is a Disney internship program haha. The staircase is very beautiful and geometric. Sometimes I would take the elevator on the 7 floor to get to the classroom because the elevator on the 5 floor is too crowded.	go to	Academic Building.	long slopes, administration building, elevators, stairs, narrow corridors	Painful, tired, happy, comfortable
P: If you are not in class yet, you can greet and chat with your classmates outside in the open corridor, which is very enjoyable. Sometimes I would eat breakfast outside. In the summer, the classroom is very cool! The classroom facilities are also very nice and comfortable. However, after 3 hours of class, I am really tired. I'm tired in my head and in my body, but I feel very fulfilled. P: Sometimes when I take the left route to school, I can see the big Koi carp in the school, which is really beautiful! It would be nice to have a chair where I could watch it all the time.	school	Building.	crowds, chatting, open corridors, air conditioning, good facilities, tired, big koi, nice.	fulfilling, cosy.

### 3.4. The Application of Spatial Narrative Perception in Campus Creative Designs

Based on the above definition of "conscious event", what we are facing is not an objective "fact", but an event reflected through consciousness and memory. Therefore, after extracting and categorizing the contents of the interviews, this study uses spatial narrative theory to reconstruct a new narrative for the keywords extracted from different categories according to the flow of the research framework, so as to design a product with the common emotional memory of the users and the campus. In order to maximize the expression of the above idea, we adopted a time- and space-rich product with interactive usability - a handbook. The design is not only a billfold, but also a combination of a book cover, a functional book, a three-dimensional bookmark, and a highlighter, so that the product can be used in the same way as we move through a space. Starting from the most basic perception to set a tone for the user's feeling, to transforming the extracted events, scenes, and elements into a design that constructs a new common campus story and builds a common memory between the user and the campus with the final pen. This study will use the spatial narrative theory twice, the first time in reverse, to extract the categories. In the second step, the categories are designed separately, and the product is narrated as a story in the process of use.

#### 3.4.1. Sensory Design

First up is the first design: the Book Coat. The design is based on a spatial narrative, and through the montage of the cover, it expresses the subconscious perception of the campus user. The whole design revolves around the theme of "school story", which conveys the user's feelings and imagination about school life.

On the cover of the book jacket, collage and montage [9] are used to combine different elements, trying to express subconsciousness and perception in the images, and to show the multiple dimensions and storytelling of campus life. In the specific design, the front side expresses the perception of the campus, using a lot of "long slopes", "crowds", "iconic monuments", "yellow handrails" and "yellow handrails", which were mentioned in the interview. "yellow handrail" and "sunset"; on the back is the perception of the outside of the school, also using many of the "yellow railings", "koi" and

"carp" mentioned in the interviews. The back of the book is about the perception of the school inside and outside the school, and also uses many of the "yellow railings", "koi", "sea" and "chairs" mentioned in the interview, and in the cover design, these elements are expressed in an orderly and disorderly way, to express the user's perception in a kind of dream world. At the same time, the book jacket serves as the beginning of the spatial narrative design in the overall design, and through the combination of elements on the cover, it conveys a sense of temporal and spatial narrative. Users can see many elements on the cover, but these elements are not isolated, there exists some kind of relationship and connection between them, and this relationship and connection is generated through the organization of time and space. This sense of narrative allows users to develop a sense of empathy and a deeper understanding of the message and meaning conveyed in the cover design.

In terms of the functionality of the book jacket, a lot of designs have been made to meet the needs of campus users. For example, there is a slot for student ID and pass, a transparent pocket for school calendar and some important documents, as well as organizer pockets and pen slots, and a school logo is also designed on the magnetic closure.



Figure 2. Book Coat Design

### 3.4.2. Specific Elements and Scenic Design

functional and visual: the function-oriented Function Book and the visual-oriented 3D Bookmark.

#### A. Function Book

The function book is designed using a spatial narrative theory, divided into school, self-study and roaming. In these scenarios, different books should contain different functions and features to fulfill the needs of users in different scenarios. Therefore, according to the scenes and events extracted from the interviews, going to school is going to the teaching building, so it is the sketchbook; studying is going to the library, so it is the reading notebook; and roaming is going to the back garden, so it is the sketchbook. The main colors extracted from the interviews were differentiated, with the planner being yellow, the notebook red, and the sketchbook green.

The inner page of the planner is designed in semester format, with a timeline and a task list on each page, so that users can clearly record their study plans and goals at each stage. It also combines the special date of the school calendar with the monthly planner to make it more convenient for users. The inner page design of the reading notes: each page records the basic information, notes and experience of the book based on the title of the book. At the same time, according to the user's needs, you can add tags and indexes to facilitate quick search and organization. Inside page design of the notebook: a blank page with no rules, allowing users to give full play to their imagination and creativity, and record their own inspiration, thoughts and feelings.

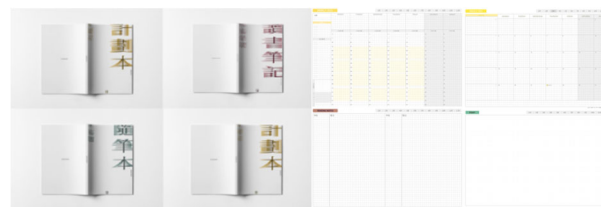


Figure 3. Planner Design

#### B. Three-dimensional bookmarks

The route was analyzed to provide the imagery needed for the next step. The elements that appear on the route were extracted and the most representative elements were identified for the design.

##### (1) Koi Bookmark

The design of this bookmark is based on specific scenes such as "Koi" and "flowers and plants" extracted from the interviews. For example, there are camellias on the hillside, which bloom for a long time depending on the weather. On the other hand, the Koi pond is located on the roadside, where a lot of people pass by, making it more representative of the campus in terms of visibility and culture.



Figure 4. Koi bookmark design

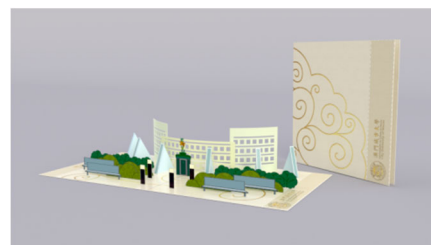


Figure 5. Garden Bookmark Design

##### (2) Garden Bookmark

This bookmark is based on the purpose of coming to the school, which is "roaming", and most of the scenes in the interviews are "back garden". In addition, a lot of activities were held in the school's atrium garden, and the students remembered this place very well. In addition, the garden has a beautiful environment, and there were many "elements" of the garden in the interviews, so the garden was more representative of the route.

The elements of the photographs are extracted, sifted to find the most representative part, cartoon drawing processing, the part of the building is decomposed and processed, and then made into a paper-cut style, to ensure that the color of the bookmarks are uniform, and the color of the main part of the inconvenience. Moreover, this bookmark can be made into a bookmark light, the street lamp part can emit light, more expressive of the image of the campus, reflecting the characteristics of the garden.

### 3.4.3. Creating a Common Memory Design

The colors of the highlighters are also extracted from the spatial narrative interviews. Based on the theory of spatial

narrative, this design analyzes the needs of users in different scenes and creates different colors of highlighters for three scenes: school, study and roaming. The yellow highlighter is for school, for planning and marking key content; the red highlighter is for self-study, for recording reading notes and marking key content; and the green highlighter is for roaming, for doodling and recording inspiration. Each color of highlighter has different functions and features to meet the needs of users in different scenarios, making users more efficient and convenient in learning and working.

In fact, the book jacket, the function book and the bookmark are all the perceptual memories of the school constructed by the designer, but from the beginning of using the pen, the memory and emotion will be changed from being instilled by other people to being built by the user, and from then on, the book will really carry the shared memories of the user and the campus.



Figure 6. Highlighter Design

#### 4. Conclusion

This paper is an approach to campus cultural and creative product design based on spatial narrative perception, and uses the City University of Macau as a case study for design practice. The study describes the current situation and problems of cultural and creative products, and proposes a number of aspects that need to be considered in the development of cultural and creative products. It also introduces the concept and application of spatial narrative theory to the design of cultural and creative products. Finally, this paper extracts and categorizes the interviewed content, reconstructs a new narrative using spatial narrative theory, and designs a handbook product with the common emotional memory of the user and the campus. Therefore, this set of handbook design integrates the design of subconscious perception materialization with the design of figurative memory extraction, and allows the user to use the pen to participate in it and construct a common good memory with CityU. [10]

From theory to practice, this paper details the design method of campus cultural and creative products based on spatial narrative perception, fully considering the elements of culture, creativity and products, and demonstrating the

practicality and feasibility of the design method through practical examples. From the study, it can be seen that the design of campus cultural and creative products should be closely integrated with the cultural background of the school and the life experience of the students, to realize the unique concept and characteristics of the brand in order to attract more consumers. In the era of globalization, school is not only a place for academic research, but also a platform for cultural exchange and display, so this research and design also add some momentum to the broader market prospect of campus cultural and creative products.

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