



Organic Renewal and Cultural Inheritance of Chinese Modern Campuses: The Place-Making of Yan Yuan, Peking University

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Citation: Zhang Q, 2020, Organic Renewal and Cultural Inheritance of Chinese Modern Campuses: The Place-Making of Yan Yuan, Peking University. *Journal of Chinese Architecture and Urbanism*, 2(2): 75. <http://dx.doi.org/10.36922/jcau.v2i2.75>

ABSTRACT

In recent years, with a continuous increase in the number of college students in China, the limits to the campus land use and the needs for improved functions have become more and more paradoxical, especially for traditional campuses. The problems caused by this issue are acute. The research and practice of campus renewal for time-honoured campuses, such as Peking University (PKU), are of great significance for both its renewal and reconstruction. In this report, the creation of a pleasant learning environment in a traditional Chinese campus was theoretically and practically explored through the two real projects of the Centennial Memorial Hall and the Humanities Buildings in Yan Yuan of Peking University. Multiple possibilities of organic upgrades and cultural inheritance of the campus were sought by offering open spaces, and indoor and outdoor spaces, to meet the functional requirements, meanwhile, creating a growth-based campus environment and continuing cultural inheritance in the hope of inspiring the creation of contemporary campus environment based on tradition.

Keywords: modern campus, space design, Peking University, organic renewal, cultural inheritance

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1. INTRODUCTION

Statistics showed that by 2020, the number of people receiving a higher education in China reached 38.5 million [Table 1]. However, the

scale of existing campuses can hardly meet the demands of such a huge population, and Peking University (PKU) is also faced with such insufficient construction [Table 2].

Table 1. Main development targets of education and human resource sectors in China's 13th Five-Year Plan

	Factor	2015	2020	Nature
	People receiving higher education	36.47 million	38.5 million	Anticipated
Higher education				
	Students on campus	35.11 million	36.8 million	Anticipated
	Gross enrolment ratio	40%	50%	Anticipated

Source: Outline of the 13th Five-year Plan for National Education Development

Table 2. The campus scale of Peking University in various phases

Year	Total number of students	Total number of faculty	Total land area (hectare)
1926	813	108	104.14
1957	8,924	4,090	145
1987	12,711	7,451	168.3
2004	26,215	6,284	183.3
2016	29,584	13,373	2,925

Source: The Study of Strategies of the Renewal and Development of Traditional University Campus (Master's Thesis of Shi Shaofeng)

Peking University (PKU), founded in 1898 and located on the former site of Yanjing University, is one of the most renowned universities in China^[1]. After more than 100 years of development, PKU evolved into an urban campus with an area of 339 hectares (in 2011). The pattern of the campus has been shifted from a mono-axis style to a multi-core one. The large-scale construction in the 1950s and the construction of the library and scientific buildings in the 1970s

and 1980s have greatly improved the functionality of the campus. Around the year of 2000, a series of new projects at PKU, including a new library and the Centennial Memorial Hall were completed, marking a new upsurge in campus construction.

As the shortage of campus land is increasingly serious, renovation and renewal within the campus has become the priority of campus construction. The restoration and reconstruction work in the preserved

historical areas of PKU have promoted the development of the campus. In the evolution of the PKU campus [Figure 1], the buildings reflected both the pursuit of cultural resilience and the perseverance of design philosophy by architects in various periods.

Since 1998, we have designed six groups of buildings in succession in Peking University [Figure 2], which have gone through the important stages of campus construction at PKU. We made massive preparations in the early stage of design. Through literature retrieval, field survey, and other methods, we gained an overview of PKU campuses. At the same time, we collected information and summarized synchronously, organized related materials, and sorted out subsequent research-based design strategies. On this basis, the research and design of different functions and spots of the campus, as well as the feedback from occupants and managers after the completion of the project, gave us a new insight into the design of organic upgrades and cultural protection of traditional Chinese campuses. Next, we present two cases combined together to demonstrate our arguments.



Figure 1. The evolution of Peking University. Source: Qi Zhang Architectural Design Studio

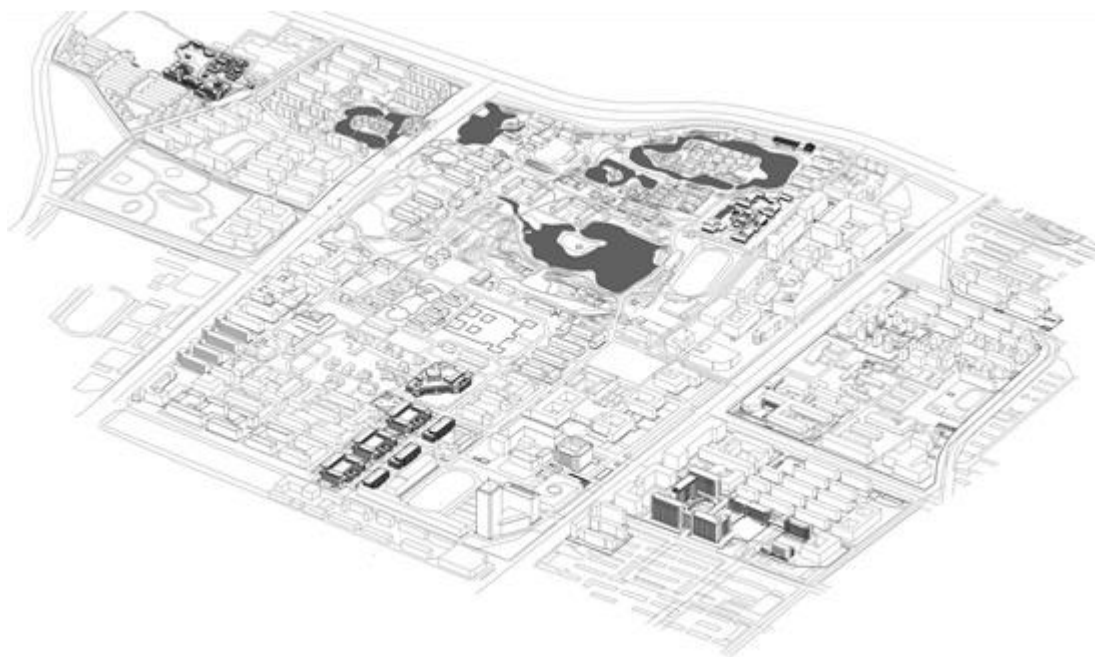


Figure 2. Aerial view of Peking University. Source: Qi Zhang Architectural Design Studio

2. THE CENTENNIAL MEMORIAL HALL OF PEKING UNIVERSITY

The year of 1998 marked the 100th anniversary of PKU, and the university had been preparing for the construction of the

Centennial Memorial Hall [Figures 3 and 4] since 1996. The University held a design contest, which involved several design organizations from China and abroad, and our design scheme was chosen and implemented.



Figure 3. Centennial Memorial Hall of Peking University. Source: Guangyuan Zhang



Figure 4. Aerial view of Centennial Memorial Hall. Source: Guangyuan Zhang

To the north of the well-known “triangle land” of PKU, the Centennial Memorial Hall was located on the former site of PKU Auditorium. The site conditions were not ideal: to the east of the site was an electrified teaching building; to the south was a to-be-reconstructed activity area for the dormitories; a students’ canteen blocked the way of a

possible site expansion. Taking all these factors into consideration, we put forth our design scheme with great respect for the surroundings. A memorial square [Figures 5 and 6] facing southeast was designed as the center of the site, with buildings around the square. In this way, the problem of people and the traffic stream going in opposite directions was solved, and the volume of the building was harmonized with the surroundings, having improved the planning of the area.



Figure 5. Behaviors in the Square. Source: Guangyuan Zhang



Figure 6. Behaviors in the Square. Source: Guangyuan Zhang

The main part of the Centennial Memorial Hall was set back from the square with a 45-degree rotation. This approach allowed the 2,220-seat theater to be of an appropriate height for the stage area while harmonizing with its surroundings. The southeast square serves as a buffer zone for the Hall and its surrounding buildings, while accommodating the former “persimmon woods.” Encompassing the square, the Hall extends its wings on both sides, making the original scale of the “triangle land” unchanged. Moreover, special construction treatments were made at the parts facing the “triangle land” to maintain the functions of the “triangle land,” where people have regularly posted information and communicated.

2.1 The integration of forms and functions

The plans of the Memorial Hall made the stage as the center, connecting the side stage, backstage, auditorium, and memorial hall, shortening the route for people and integrating various functions within the spaces. The concept of the arena stage has both improved the building’s functionality and met the university’s demands.

On the first floor of the building [Figure 7], its facade is lined with pillars. At the front side of the building is a memorial hall, with staircases on both sides leading to the multi-functional rehearsal rooms and audience lounge on the second floor [Figures 8 and 9]. The glass exterior wall of the memorial hall offers a clear view of the exterior of the memorial square and the distant memorial pavilion [Figures 10–13], bringing natural scenes into the hall. The interior walls are

decorated with stone carvings to highlight the theme of commemoration. The details of walls and floors manifest the campus’s features with emphasis on its remembrance and culture.

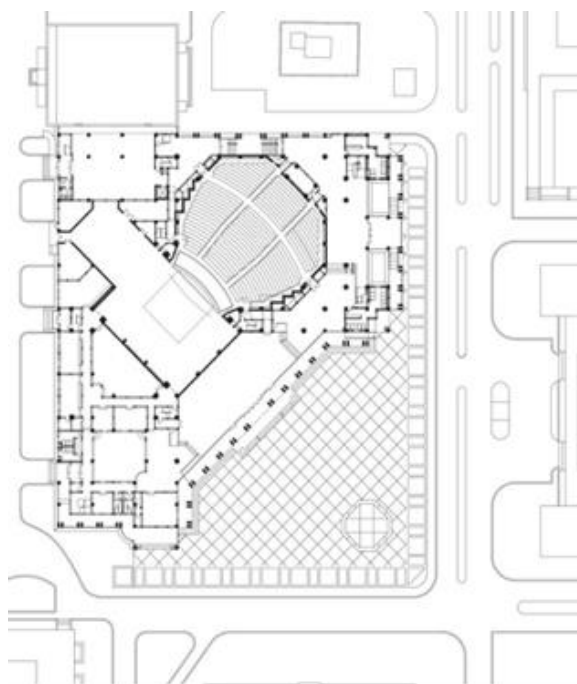


Figure 7. First floor plan of the Centennial Memorial Hall. Source: Qi Zhang Architectural Design Studio

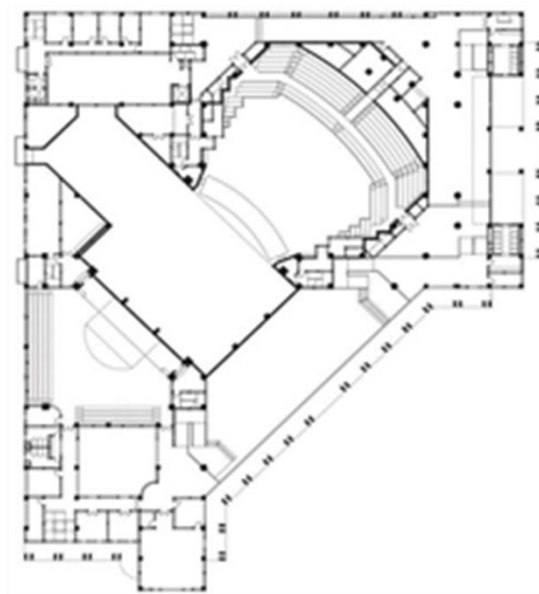


Figure 8. Second floor plan of the Centennial Memorial Hall. Source: Qi Zhang Architectural Design Studio

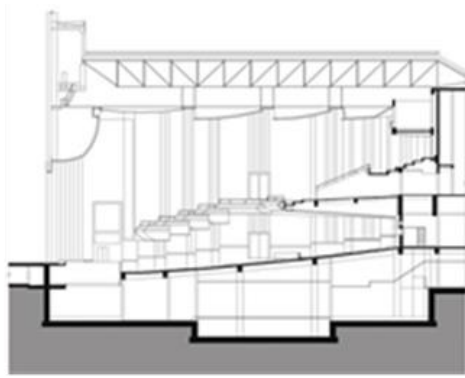


Figure 9. Section of the Centennial Memorial Hall after retrofit. Source: Qi Zhang Architectural Design Studio



Figure 10. The Concert Hall. Source: Guangyuan Zhang



Figure 11. Interior of the Centennial Memorial Hall. Source: Guangyuan Zhang



Figure 12. Exterior detail of the Centennial Memorial Hall. Source: Guangyuan Zhang



Figure 13. Main square in front of the Centennial Memorial Hall. Source: Guangyuan Zhang

2.2 Integration of traditional architectural philosophy with innovation of contemporary architectural designs

In traditional Chinese architectural culture, “pagoda (tower)” is a systematic landmark, sometimes even a center for emotional connection. The design for the form of the whole building conforms to this traditional

wisdom. The location of the stage determines the highest point of the building, while other parts on both sides step down, so that the whole building is dominated by the highest space where the stage sits. Moreover, the centripetal square serves as the psychological and spiritual focus of the students and faculty, as well as a communication hub for people from all walks of life.

The planning and construction of campuses, especially the expansion and renovation of campuses with a long history, should focus on self-regeneration and redevelopment. It means to improve the inadequate educational environment and organize the spatial layers and integrated functions. On the basis of studying the campus' evolution, our clear priorities were to effectively conserve PKU's characteristic buildings of various periods, to integrate, renovate, and reconstruct buildings that were less symbolic of PKU culture, and to improve the increasingly diversified functionality of the campus. The change in the building's capacity and the increase of its volume posed

strict restrictions to our design, but also brought new opportunities to the design.

3. THE HUMANITIES BUILDINGS OF PEKING UNIVERSITY

The Academy of Humanities¹ at Peking University consists of three long established departments: Department of Chinese Language and Literature, Department of History, and Department of Philosophy² [Figures 14 and 15]. In 2006, Jingchun Garden in the northeast side of Weiming Lake, formerly an emperor-granted garden in the Qing dynasty (1644–1911), was designated as the construction site of the Humanities Buildings (now renamed as the Lee Shau-kee Humanities Academy)^[2]. With a total area of 2.53 hectare, the construction site borders Minghe Garden in the west and Langrun Garden in the north^[3]. The adjacency of three gardens dating back to the Qing dynasty inspired our design with rich scenic views and cultural images^[4] [Figures 16 and 17].



Figure 14. General site plan of the Humanities Buildings. Source: Painting by the author

¹ Behind the emergence of a Faculty of Arts, here the Humanities Court should be entirely of Peking University.

² Mr. Yuanliang Cai, an architect from Taiwan, China.



Figure 15. The Humanities Buildings of Peking University. Source: Guangyuan Zhang



Figure 16. Distribution of Haidian Gardens, Qing Dynasty. Source: Lost another city—Beijing west suburb of the Royal Garden Cluster, the declination of Three mountains and Five gardens in the process of urbanization. Decoration, 2007(11)

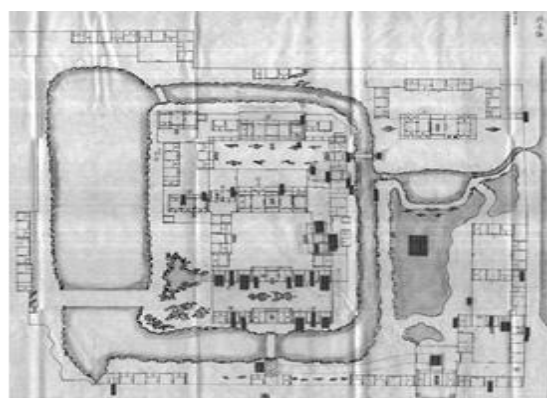


Figure 17. Yangshi Lei Archives. Source: Yangshi Lei Archives of Chinese National Library³

³ Graphic files of Yang-Shi-Lei

⁴ Lei style: more than 200 years in the Qing dynasty (1644–1911), the Lei Family controlled all the royal architectural designs.

3.1 The campus area

In an ancient temple near Danlengpan (Danleng Waterfront) in Haidian District of Beijing, which was part of the western suburbs of Yuan Dadu (“Grand Capital of Yuan”), tablet inscriptions by Duo Lizhen, an official of the Yuan dynasty (1271–1368), can be found. It indicates that as early as the Yuan dynasty, Danlengpan was already a scenic spot for the local people^[5]. In the Ming dynasty (1368–1644) that followed, private gardens began to prevail in the northwest suburbs of the city because of its rich water resources and fine landscapes^[6].

3.2 Conservation of historic sites

With its special location and cultural significance, buildings in Yan Yuan of PKU were in urgent need of conservation. Since the 1990s, PKU has consecutively completed the planning of cultural relics protection areas and was identified as a national heritage conservation unit. In July 2001, the State Council of China announced the 5th batch of national key cultural relics conservation units, in which “Yan Yuan Buildings along Weiming Lake” were listed in the category of “important historic sites and symbolic buildings of modern times,” and the former “Weiming Lake Area of the former Yanjing University” was renamed as “Yan Yuan Buildings along Weiming Lake.”

Through the study of texts and images in Yangshi Lei⁴ Archives, we figured out the original layout of Jingchun Garden. In the middle of the garden was a multi-tier courtyard. On the site, a ditch was surrounded by water. Several old trees and a conserved building offered the initial information of the site. As a former garden granted by the emperor, this place has endowed the University with rich landscape and cultural connotation. As an appropriately renovated ancient garden that was once forgotten, this place will play an increasingly important role in the renewal of the campus.

3.3 Place making

The land for the Humanities Buildings was located on the former site of Jingchun Garden to the northeast of Weiming Lake. On the basis of confirming the locations of old trees and central stream, we rebuilt the courtyard in the middle of the library, and three groups of teaching buildings and reception centers, all of which were constructed around the library, with two above-ground floors and one basement for classrooms. Vertical design was emphasized in the functional plan of each building, in contrast to the horizontal pattern of the former Jingchun Garden, reflecting features of contemporary teaching facilities.

Strict height restrictions were imposed on the Weiming Lake area, where building heights should be no more than 9 m. As a result, we adopted an eave height of 7.5 m for most parts of the buildings, while the eave height of the central parts of each building was restricted to 9 m. The height of the ridge was adjusted in accordance with the depth of the buildings, and the adaption of both traditional Xuanshan (the overhanging gable roof) and Xieshan (the hip and gable roof) styles on the roofs formed a group that was both diversified and elegant. Moreover, entrances for buildings and vehicle ramps were also designed in accordance with its surroundings. All these design approaches created a place with an orderly manner with diversified spatial features, in harmony with the existing environment [Figures 18–21].

Our design for the facades drew lessons from building systems and scales in both Ming (1368–1644) and Qing (1644–1911)

dynasties. Except for the sized roof tiles, all details were designed with various degrees of modification. Stones were used on eaves, windowsills, and wall corners to form a contrast of different materials. Besides the traditional horizontal expansion of space, the interior of the building was also vertically connected at each unit.

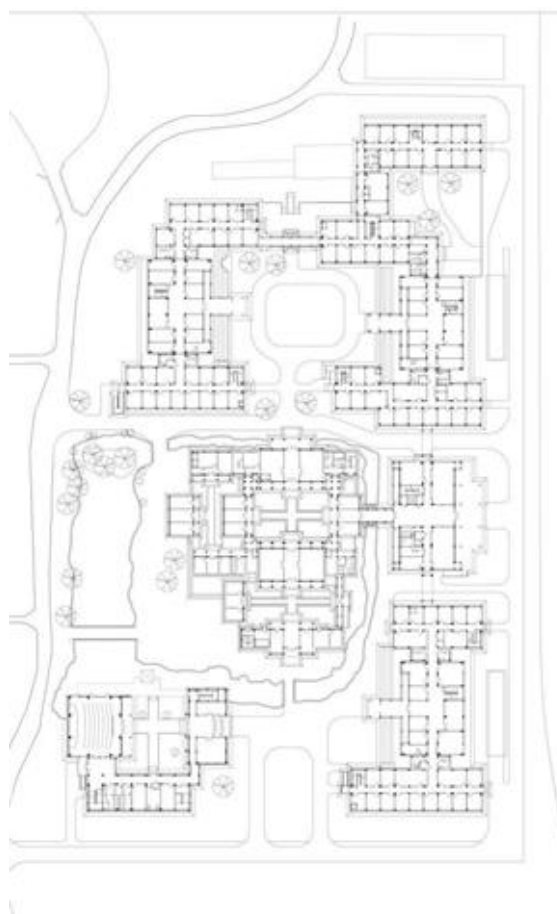


Figure 18. The first-floor plan of the Humanities Buildings. Source: Qi Zhang Architectural Design Studio



Figure 19. The east elevation of the Humanities Buildings. Source: Qi Zhang Architectural Design Studio.



Figure 20. The west elevation of the Humanities Buildings. Source: Qi Zhang Architectural Design Studio



Figure 21. Interface of the Humanities Buildings. Source: Guangyuan Zhang

3.4 Design strategy

This project has focused on the organization of lakeside space. We studied Yangshi Lei Archives and carried out in-depth research for the layout of landscapes and buildings of Jingchun Garden, so as to restore the original water systems in the Garden to its utmost extent. A large number of old trees miraculously survived several rounds of destruction in history, and our design preserved all the old and rare trees on site.

With respect for traditional styles and features, the historical and cultural characteristics of the Academy of Humanities were highlighted in the planning of the project. To keep the original layout of the Garden, in the architectural design, we focused on the horizontal connection of space, so as to reflect the public and communicative natures of contemporary campus buildings. On the basis of cultural relics preservation, people's memory of buildings in ancient gardens was retained. Appropriate re-utilization of Jingchun Garden and Heming Garden facilitated the gardens' integration into the contemporary campus, prompting the growth, changes, and maturation of buildings and their surroundings. Moreover, the value of the site will be increased as re-utilization attracts more people to visit the historic site.

At present, the Humanities Buildings still serve as a place with particular cultural significance and a distinctive teaching facility. Its design can inspire people's observation of traditional building style, and their practical experience and restructuring of the space [Figures 22–25]. History expresses itself as a relationship between the past and the present. "The significance of campus environment lies in the educational practice, sports activities, and the life that it accommodates, and its resilient capacity as time elapses"⁵. The vitality of a university campus depends on its unique learning environment and the campus culture it generates in the environment.



Figure 22. The Humanities Buildings in winter. Source: Guangyuan Zhang

⁵ Mr. Yuanliang Cai, an architect from Taiwan, China.



Figure 23. The Humanities Buildings in winter. Source: Guangyuan Zhang



Figure 24. The courtyard of the Humanities Buildings in winter. Source: Guangyuan Zhang



Figure 25. The courtyard of the Humanities Buildings in summer. Source: Guangyuan Zhang

4. RECOMMENDATION

As a special place for cultural inheritance in China, university campuses have been passed down from generation to generation. The implanting of modern architectures to a traditional campus will have a great impact on the holistic approach to the improvement of an educational environment. In the process of the research-based design above, the author has adopted and recommend the following

methods in dealing with the contradictions of modern architectures in traditional campus settings:

(1) Optimize and combine functions of different classes and different natural elements to form compound functional space with multiple functions juxtaposed in university buildings that can generate “functional value-added effects” and promote compound and efficient operation of architectures;

(2) Provide open spaces, and indoor and outdoor spaces, to help social exchanges and learning. Consider flexible and sustainable development of space in the long run;

(3) Create growth-based campus environments, foster sustainable development of campuses and interaction and mutual penetration of architectures and their occupants.

History shows a connection between the past and the present. One should continuously think of the past, the present, and the future by comprehending the significance of the past, re-interpreting the past in contemporary architectural design, and seeking the meaning in architecture that should emerge in the years to come.

In the early days, Mr. Yiqiu Wang, a distinguished scholar of PKU, summarized the features of top-quality cultural environments of campuses with four words: culture, elegance, order, and vitality. He also noted that “Anyone stepping into the campus will perceive its culture, and feel the power of science and humanities.” The universities are more cultured and civilized than the society in general. The buildings and landscapes in campuses, and even small things like grass, trees, water, and stones, can enrich people’s minds through their beauty. Culture, elegance, order, and vitality, complementing each other and merging into a whole, have laid the foundation for a top-quality educational environment ^[7].

Every campus varies in its site conditions and user demands; thus, we always seek to offer effective and positive solutions based on the features of each site ^[8]. Our design principles are as follows: providing exterior and interior open space for communication and study; pursuing flexibility and sustainability from a long-term perspective; focusing on renovation and renewal of campuses, especially those with a long history; meeting the functional demands of campuses and improving the comprehensive quality of them. Campus buildings are not just places where functions are fitted in, for their spiritual function of cultivating and influencing people is far more essential and crucial ^[9]. Therefore, the expression of cultural connotation and the pursuit of distinguished spatial features are of great importance.

ACKNOWLEDGMENTS

None.

FUNDING

This research did not receive any specific grant.

CONFLICT OF INTEREST

None.

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