

Research on Cultural Heritage Buildings Based on Symbiosis Theory: The State Library of Victoria as an Example

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Abstract:

The paper analyses the symbiosis between cultural heritage buildings and modern design concepts, and put forward new ideas on the symbiosis between heritage buildings and multicultural construction. Based on the “symbiosis idea”, we analyse the State Library of Victoria, a typical multicultural heritage building, and study the internal spatial structure of the building through the three levels of symbiosis unit, symbiosis environment, and symbiosis mode, so as to refine the symbols and symbols inside the building, to excavate the metaphorical spirit of the spatial structure, and to summarise the symbiosis system formed by the State Library. The internal spatial structure and symbolic language of the State Library make the building a living historical text in the scene, culture and spiritual landscape, activating the vitality of the surrounding scene and the symbiosis of multiple cultures in the architectural space. As a container of urban memory and a carrier of culture, through exploring the “symbiosis theory” and the symbiosis of multiculturalism in the spatial structure of cultural heritage, we propose a symbiosis system between cultural heritage buildings and modern urban planning, providing a new path for the optimisation of the space of cultural heritage buildings and multicultural symbiosis and inheritance.

Keywords:

Symbiosis Theory, Heritage Buildings, Multiculturalism, Library

1. Introduction

Cultural heritage buildings are buildings with unique historical, cultural and artistic values, covering palaces, churches, houses, etc., built by mankind in various periods of history, which represent the history and culture of a certain country or region [1]. Cultural heritage buildings have irreplaceable value in urban planning, are an important cultural resource for urban development, and are an important carrier for upgrading the cultural image of cities. In the past, the protection of cultural heritage buildings in China was often in an unhealthy state of “renewal and destruction”, but nowadays, it is mainly transformed in three directions, namely, public places (plazas), symbolic spiritual places (memorials) and cultural places (exhibitions). However,

these transformations are mainly focused on interior spaces and facades, with a low degree of compatibility with urban themes and street plans, and fewer transformations with a high degree of maturity and integrity. The State Library of Victoria, Australia's oldest public library, has been refurbished and upgraded through the Vision 2020 redevelopment, embracing heritage spaces using new modern materials and technologies to respond to the library's vision for the future, to meet the needs of a multicultural community, and to reinforce Melbourne's reputation as a world-class centre for arts and cultural activity. Taking symbiosis as the theoretical starting point, this paper analyses the internal spatial construction methods of the State Library and the spatial symbols of cultural heritage buildings, and explores the strategy of symbiosis between cultural heritage buildings and the city, in order to provide ideas for the multicultural preservation and inheritance of cultural heritage.

2. Symbiosis Theory and Cultural Heritage Architectural Space

The concept of symbiosis, first introduced by ecologist Anton de Bary in 1879, refers to a state in which two or more organisms are physiologically interdependent and evolve with each other through some kind of mediated or mutually beneficial relationship [2]. In the 1970s, the Japanese architect Kisho Kurokawa proposed the concept of intercultural Architecture in response to the diversified characteristics of the upcoming "Era of Life", in order to deform and adjust the construction technology for different regional environments and cultural backgrounds, and at the same time, to introduce the concept of symbiosis to the development and circulation within the city. At the same time, the concept of symbiosis is introduced into the development and circulation within the city, exploring how to combine national, historical and linguistic multiculturalism, and searching for a symbiosis model between architecture and history and culture, where architectural space can live in symbiosis with cultural and spiritual space [3]. The core of symbiosis theory is to consider the interactions within a unit as a symbiotic system and to explore the "relationships" between different things. A symbiotic system (Figure 1) consists of three major components: symbiotic environment, symbiotic units and symbiotic patterns [4]. Symbiotic unit is the basis for constituting the system unit, is the specific role of the object; Symbiotic mode is the middle of the composition of the system to import the function of the two or more competing, hostile attributes to achieve a balanced transition of an important part of the main based on the existence of the physical space, social, scene symbols, is whether to form a symbiotic relationship of the important factors; Symbiotic environment is the system's external and internal influencing factors, the three under the common rules Maintain a competitive, antagonistic relationship and seek a consensus stable state, thus making the stable operation of the symbiotic system. In 1994, the World Heritage Committee stated in the Nara Document that the design and practice of cultural heritage conservation must reflect both the physical and spiritual dimensions of cultural heritage, and that one cannot be achieved without the other [5]. The protection of cultural heritage buildings is a dynamic development, is a different historical period through the original concept and design style of continuous adjustment, and gradually from the protection of the building body gradually developed to the adaptive transformation of the surrounding scene, and its formation of the historical atmosphere and the surrounding field of the unit environment as a whole, which pay attention to the cultural heritage of the building surrounding the function of the supporting units, explore the building monolithic and the environment as a whole, history and culture. The co-existence of history and culture, architecture and time. Therefore, the preservation of cultural heritage buildings is essentially the

reconstruction of symbiotic relationship, which is essentially the protection of the division of street space, cultural space, service space and other functions, i.e., the inter-temporal symbiosis of the physical architectural space, historical and cultural space, and spiritual field space.

The State Library of Victoria, established in the mid-nineteenth century, is one of Melbourne's major cultural institutions, one of the original government functions, a library building created specifically for the multicultural unity that existed at the time, and capable of greatly demonstrating the history and development of the city. Since its construction, the State Library has had a dual identity, firstly, as a library serving its essential function, and secondly, as a symbol of Melbourne's cultural city, hosting the original famous cultural practices and knowledge systems, and preserving the collection of historically and culturally significant items collected over the centuries for future generations [6]. In order to facilitate the realisation of a unified and consensual mindset for the city of Melbourne, where multiple types of residents can coexist with various types of heterogeneous cultures. Nowadays, the State Library's inclusion in the Twenty Minute Neighbourhood Living Area Plan, Vision 2020, Vision 2020-2024 and other plans are all in the external environment to ensure that the State Library is moving towards self-representation and self-determination of the Aboriginal community, so that the focus of the State Library's architecture is better shifted to the link between people and the earth, and to be a place where the traditional cultural knowledge of the Aboriginal community in Victoria and the country can co-exist with the cultural themed spaces where modern cultural pluralism coexists [7].

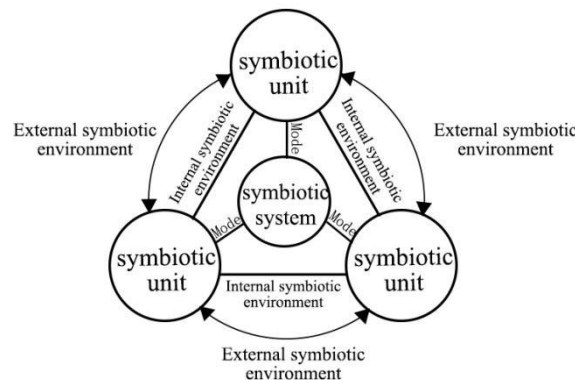


Figure 1. Symbiotic system relationship diagram.

3. State Library Spatial Structure Symbiosis

Cultural space is the place where meaning and value are embodied, and the place is co-constituted with symbols of meaning and value carriers. The symbiotic environment is the sum of internal and external factors that influence the development of the symbiotic body in the changing external conditions of the symbiotic relationship [8]. Any symbiosis and its symbiotic relationship are generated and evolved under certain spatial and temporal conditions, and the construction of any spatial scenario of symbiosis has to rely on the environment evolved under certain conditions in order to prompt the symbiotic environment and symbiotic units to empower each other. The State Library is located in the centre of Melbourne city. Due to the national nature of the colonial area, the government believes that a public library building not only needs to serve the people, but also needs to be able to display various regional collections from the national collection, just like the British Museum,

in order to occupy the centre from both cultural and material perspectives. Therefore, the government decided to build a large volume library space in a rectangular street space to highlight the cultural identity of the state. The State Library has co-existed with the Museum of Industrial Technology, the Museum of Natural History, and the National Gallery of Victoria, among other state institutions, in a single building space, and each of these venues has left a distinctive memory in the spatial structure and decorative details of the building for different purposes, making it a multicultural and intertwined interior space scene. Therefore, the State Library is a building in which more than twenty individual buildings are gradually connected as a whole (Figure 2).

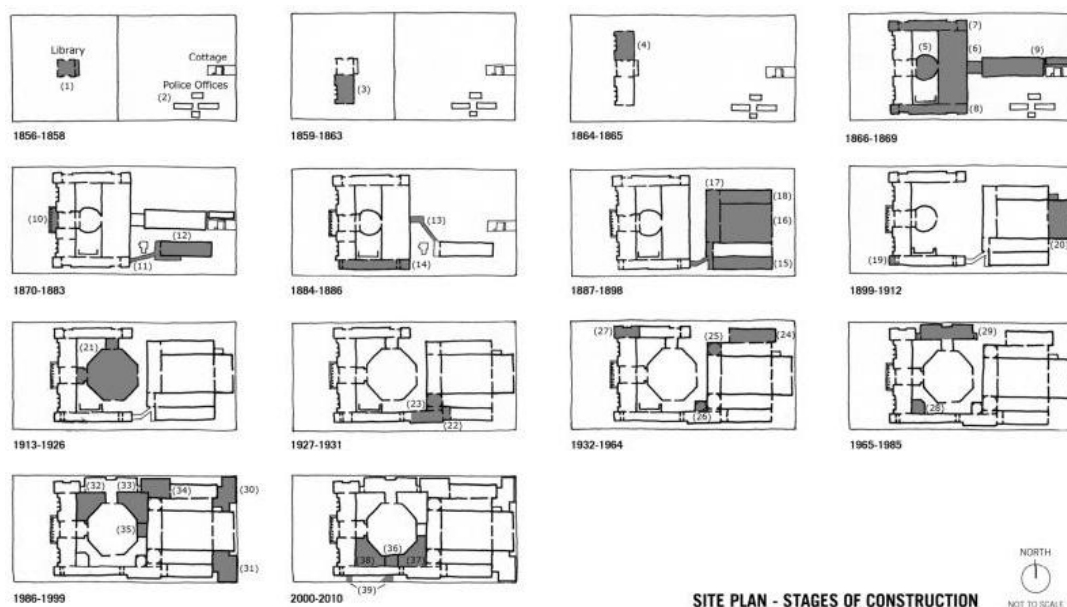


Figure 2. State Library Construction History.

Figure Source: State Library of Victoria, 328 Swanston Street, Melbourne, Conservation Management Plan. (2011). Melbourne, Victoria: State Library of Victoria / Lovell Chen. P51

Yuan Chunqing has suggested that “symbiotic units constitute a collection of symbiotic relationships according to a certain symbiotic pattern and type of symbiosis, and the hierarchical manifestation varies in different symbiotic forms” [8]. The State Library is divided into three main units according to the needs of diverse community planning: the Welcome Unit, the Reading Unit and the Interpretation Unit, and the spatial linkage path is divided into horizontal space and vertical space, and the horizontal space mainly contains two main spatial structures (Figure 3), from the entrance of the building inward, the ground floor is the Swanston Street Welcome Zone - The Quad - Cowen Gallery - Redmond Barry Reading Room; the second floor is the ‘The Ian Potter Queen’ -The Quad - Cowen Gallery - Redmond Barry Reading Room; the second level is The Ian Potter Queen’s Hall - La Trobe Reading Room. From the horizontal perspective, the entrance unit of Swanston Street Welcome Zone is in the form of a square central hall, flanked by rectangular side halls, and the symmetrical spatial form of the central axis is a conveyance of orderly space, which produces a smooth streamlined spatial dynamic line, urging the crowd to quickly transition from the reception unit to the next spatial unit. The Quad space is the result of the expansion of the roof of the original building façade into the present indoor space, which is responsible for the four modern functions of information processing, discussion, lecture and meeting based on the building structure. The Quad space is expanded from the roof of the most original

building facade to the present indoor space, assuming the dome structure in the building, setting up four modern functional places according to the building structure, mainly responsible for information processing in the modern reading room, acting as a multifunctional space for discussions, lectures, and meetings, and becoming an important activity unit of the State Library. The Cowen Gallery serves as an exhibition space for art and exhibits historical and contemporary works, in order to connect history and culture with temporal clues. Culture with temporal threads to make connections and tell new stories. The Redmond Barry Reading Room, one of the State Library's notable heritage spaces, is lined with towering aligned columns and the interior is illuminated by modern chandeliers in the form of botanical chandeliers and natural light from the skylights, creating a reading space that combines the historical and the futuristic. From the State Library's lateral path, the Square Court, which serves the library's primary function, and the Redmond Barry Reading Room are flanked by functional spaces that have the attributes of a "middle ground". The so-called intermediate field is that the two sides that form a symbiotic relationship, while maintaining antagonism and competition, mostly delay the conflict in time and set up a buffer zone in space; the delay and buffer here is the intermediate field, which contains ambiguity and multiplicity [3]. It is the function of the medium of transition in the creation of spatial order. The transition from the busy modern city of Swanston Street Welcome Zone into the quiet cultural heritage building of the library requires a transitional unit that transforms the atmosphere between the internal unit and the external unit, in order to dissolve the competition between the internal and external units and enable them to achieve a balanced transition into a symbiotic space. Arranged in the middle of The Quad and Redmond Barry Reading Room, Cowen Gallery arranges the art collection in accordance with the temporal order, so that the crowd slows down the pace to stay and stop, and transitions the indoor space from a modern and busy functional place for information to an elegant and quiet place for reading room, and through the ways of static and dynamic, display and interaction, viewing and feeling, etc., the library can disseminate and pass on its heritage. Through static and dynamic, display and interaction, viewing and feeling, etc., it carries out dissemination and inheritance, and thus assumes the interpretation unit space for converting the two [9]. The Queen's Hall on the first floor serves as an intermediate space, adopting a modern information reading space pattern in its layout, but retaining classical colours and components in its decorative details, with modern elements nested in classical elements, so that the space transitions more harmoniously to the grandest dome unit of the architectural space - the La Trobe Reading Room. While the internal and external units of the building independently carry out their functions, they constantly convey historical information and realise the exchange of energy. From the longitudinal viewpoint, the spatial structure follows the route of The Quad - La Trobe Reading Room - Dome Gallery - Dome Viewing balcony. The dome unit of the longitudinal space is the most significant art unit of the State Library is the state library's most notable artistic qualities, space by the dome octagonal, in the fourth and fifth floor with a ring-shaped gallery composition, the building's less decorative details, through the ring structure will be the entire library around the space of the single building connected to the whole building as a whole building rising spatial structure, is the space of the "theme" and "story" of the space. This is the centralised expression of the "theme" and "story" of the space. The State Library presents a narrative structure of "Overture - Prelude - Climax - Epilogue" both horizontally and vertically in the spatial perspective. As a cultural heritage building, it does not use the conventional single time narrative structure, but adopts a multi-structure, multi-

4. Symbiosis of Abstraction and Symbolism at the State Library

“Abstractness” itself has multiple meanings with various interpretations, and it is not an abstract decoration or pattern, but is deformed and fragmented through set procedures and artefacts, and then recombined through abstract relations to produce multiple meanings and two meanings. On the other hand, “symbolism” can produce unexpected associations due to the conscious taking of meaning, changing the original meaning of symbolism and producing new meanings and effects [3]. A stately architectural space can symbolise the crowd’s need for culture. The State Library’s architectural entrance façade is a combination of two modules, the prominent foyer and the setback pilasters, which emphasise the entrance foyer structure to create a visual focal point. And the columns of the entrance foyer are arranged as in the Parthenon (Figure 4), which is similar to that of the British Museum’s entrance foyer, both of which use the technique of mental suppression to subliminally Melbourne’s colonial culture into the centre of the city where people come and go. The upper space of the building consists of, and the lower space is set up with a huge base, together with the arrangement of the columns in order to create a strong unity, which can make the framework of the building obtain a strong symmetry. The upper and lower levels of the building will be in order to bring out a very strong momentum, and to regulate people’s behaviours with abstract spiritual intentions, in order to embody the pursuit of intellectual and moral enlightenment.

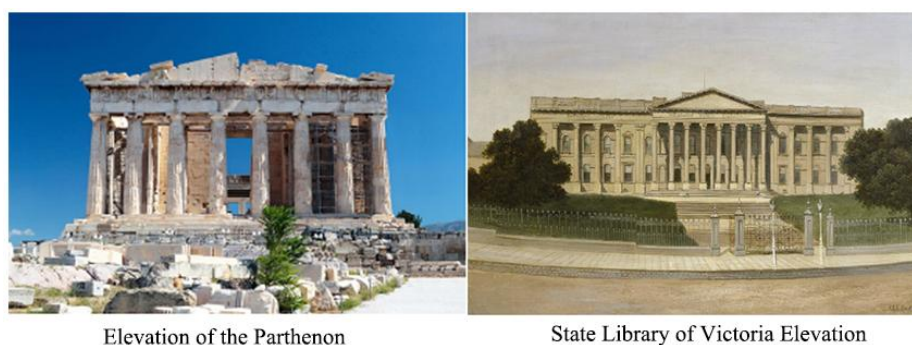


Figure 4. Comparison of the Parthenon and State Library Building Elevations.

Left Figure Source: <https://images.app.goo.gl/y5n8HiKUyaEMas4D9> ; Right Figure Source : <https://guides.slv.vic.gov.au/slvhistory>

The same cultural symbols are also present in the interior spaces, especially in the Queen’s Hall and La Trobe Reading Room. The Queen’s Hall (Figure 5) is a metaphor for the Queen’s power from its name, and the space was initially created to create a reading space for women to promote equality and freedom, which at that time was not possible in the social context of women’s reading space. In the social context of the time, the reading space for women needed to be divided into individual semi-enclosed spaces with curtains. In order to better fit the dimensions of the space, the space was set up as a central nave, with a series of soaring Ionic columns supporting the fine columnar tops below the recesses of the ceiling. In order to alleviate the sense of weight of the columns in the interior space, the corridors vertically dominate the horizontal direction of the floor of the gallery. In order to create a kind of illusion of movement in the surrounding space made possible by the columns, and to relieve the weight of the columns in the interior space, the colonnade dominates the horizontal direction of the gallery floor vertically, creating an illusion of movement in the surrounding space due to the columns, and naturally dividing the compartments

through the column structure [10]. Giving the interior a symbolic feminine lightness and elegance creates a functional yet stylish environment in which one can immerse oneself in a unit space of intense intellectual activity. The remodelled Queen's Hall still retains the above elements of decorative symbolism, enabling it to act as a medium of perceivable space-time [11], allowing all visitors equal access to intellectual enrichment.

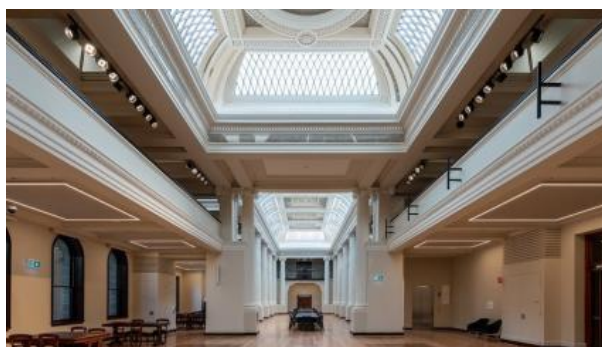


Figure 5. The Ian Potter Queen's Hall.

Figure Source: <https://www.slv.vic.gov.au/visit/our-magnificent-spaces/ian-potter-queens-hall>

The floor plan layout of the La Trobe Reading Room (Figure 6) was designed using Jeremy Bentham's theory of the panoramic prison style i.e. "to keep the prisoner in a state of perpetual unidirectional transparency, so that every prisoner in the prison can be watched by the tower at the centre, where the prisoner is permanently under the watchful eye of the watcher, and where the prisoner cannot see whether or not the watcher is in the tower, and any contact between the prisoners is severed, so that he must be disciplined as if the supervision were uninterrupted, endless and total [12]".

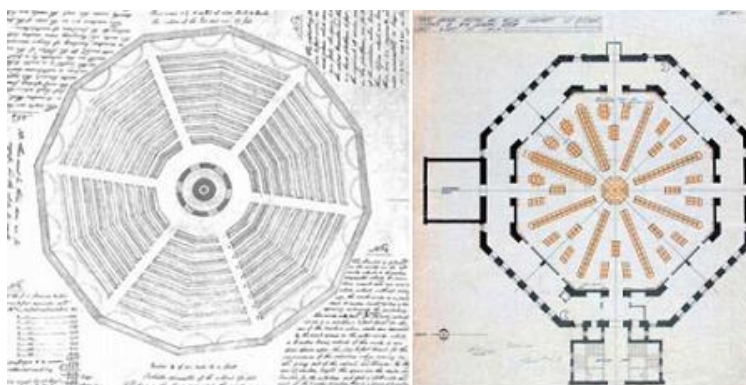


Figure 6. Layout of La Trobe Reading Room floor space.

Left Figure Source: <https://www.archiposition.com/items/20180525103339>; *Right Figure Source:* Lewis, Miles. "Building the Dome: an Illustrated Account." (2013):41.

The La Trobe Reading Room is situated in a three-storey space, illuminated by domed glass and side windows, with light passing through radially placed bookshelves in a ring of space, where the crowd can move freely, and where the library administration space is arranged on a central platform for management, an abstract and data-driven surveillance that prevents the individual from being aware of the surveillance forces that act on his/her body perception of the surveillance power, which can unconsciously accept the influence of space symbols, invisible and consciously regulate their own behaviour, will be inscribed in this power relationship in their own body, become the source of conquest of their own [12]. The reasonable acceptance of the monitoring of the reading space to maintain a relatively quiet, the

use of the least amount of manpower to manage the space, to accept the knowledge of the space of the baptism of the knowledge of the spirit of the space, the physical space of the building. The physical and mental space to achieve the physical and mental space in this intermingling space in this intermingling, in order to achieve the intention of the builder to build, planning human behaviour multiple spaces in this symbiosis.

The symbiotic system generated by the State Library (Figure 7) is the intertwining of design and planning concepts from different periods in a single building space, built on the original design concept, incorporating the design language of modernity and new symbols, with spatial forms following the conceptual transformations [14]. The construction of a diverse community public space, from a single building through a series of development techniques associated with the original central intention of the cultural institution, in the abstract and symbolic symbiosis.

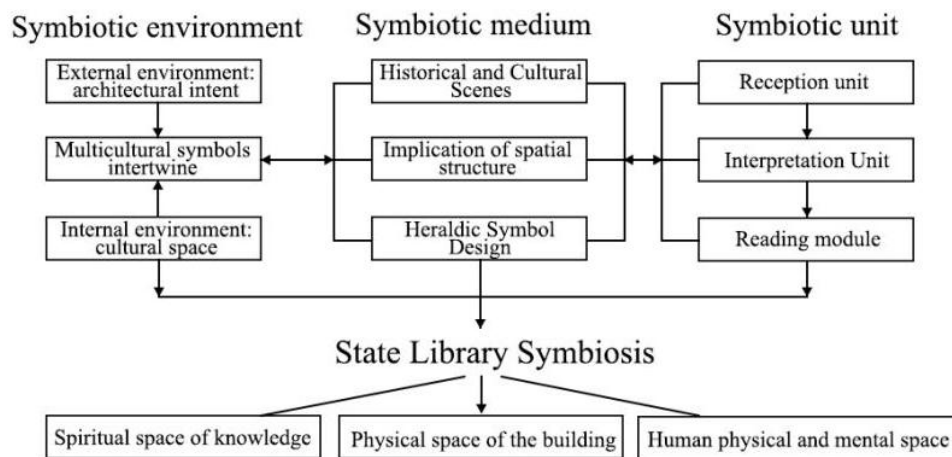


Figure 7. Symbiosis in State Libraries.

5. Conclusions

As a place where different cultures, ideas and social activities are gathered, cultural heritage buildings, by constantly updating their functions and scope of use and flexibly adapting to social and cultural changes, can avoid rigidly sticking to the past. In the renewal, conservation and renovation of cultural heritage buildings, the design principles of flexibility and adaptability need to be followed, which precisely reflects the concept of co-evolution with the environment in symbiosis thinking. Since its construction, the State Library has always maintained respect for the past and openness to the future. Each planning layout and design concept is based on the preservation of and respect for the past, while incorporating contemporary design features needed to adapt to the social development and changing needs of the community. By sorting out the various functional concepts in the architectural history, the spatial atmosphere brought by the original structure of the building is preserved, and the invisible cultural symbols, historical memories, and mental landscapes are excavated from the historical symbols and forms, and expressed by using abstraction and metaphors [3]. The evocation of past scenes is the result of the evolution of history, culture and function. Such preservation not only makes history and culture more vivid, but also reflects the dynamic balance in the idea of symbiosis.

Cultural heritage architecture has a unique significance in culture, architecture as a faithful medium for human beings to provide humanistic samples, carrying a visual symbolic transfer of social ethics, representing the identity and spiritual pursuit of the

nation [15]. Nowadays, some of the cultural heritage buildings still have a practical use function, which can make them symbiotic with the needs and style of modern communities, become regional and urban icons, and increase the sense of cultural identity of the community people. Therefore, a cultural heritage building is not only a functional space, but also a place to gather different cultures, ideas and social activities. This spatial identity makes the building not only a guardian of cultural heritage, but also a dynamic development space for multicultural preservation and development. The symbiotic system (Figure 8) provides a reconciliation between continuity and creation for the preservation of cultural heritage.

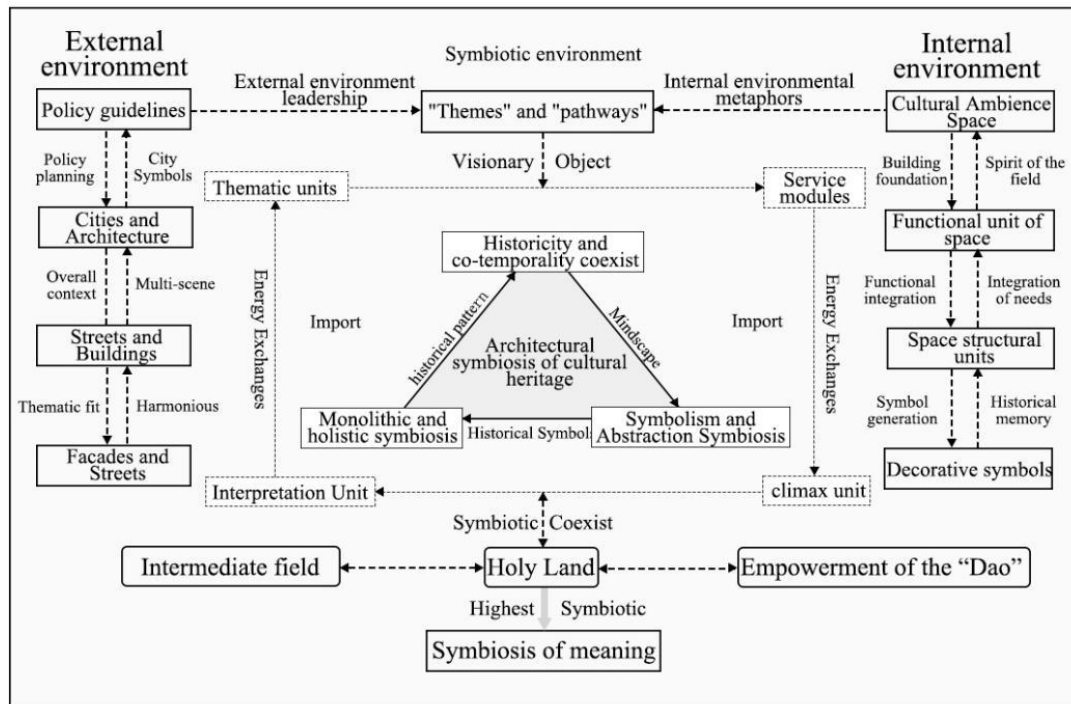


Figure 8. Structure of the cultural heritage symbiosis system.

Through creating adaptable internal and external environmental space, analyzing the surrounding field and internal form of the building, confirming the transformation theme and path of the cultural heritage building, organizing symbiotic units with different functions, freely assembling and rearranging the historical and traditional forms in modern unit modules, skillfully combining the functions of different unit spaces, developing diversified spatial forms, and adopting tolerance and dialogue to adapt the unit spaces to the corresponding symbiotic environment. It uses tolerance and dialogue to adapt each unit space to the corresponding symbiotic environment, explores the connection and inheritance between cultural symbols, realises the idea of symbiosis between the old and the new, absorbs new elements and combines them with new functions, and creates a new symbiotic relationship. The symbiosis system can increase the readability of the cultural heritage building by respecting multiculturalism and mutual respect for individuality, introducing unseen historical memories, and triggering people's associations with past scenes through historical memories, so that the building becomes a space that carries specific urban memories [16]. Memory symbols of the past can be revitalised in architectural space. This combination of history and culture with functional evolution, in response to the changing requirements of development and community vitality, enables traditional spaces to be skilfully nested in modernity, forming a new symbiotic spatial system

adapted to development, and a scenario for harmonious coexistence in the future. Cultural heritage is not only one of the symbols of the city, but also an important part of the city's culture. This kind of transformation can make the cultural heritage better integrated into modern city life and inject more cultural connotation and characteristics into the development of the city.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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