

## *Original Paper*

# The Bauhaus Concept and Its Influence on Contemporary Architectural Design in China

Anran Liu<sup>1\*</sup>

<sup>1</sup> Hong Kong Baptist University, Kowloon, Hong Kong, China

\* Anran Liu, E-mail: anranliu832@gmail.com

Received: September 5, 2023 Accepted: September 25, 2023 Online Published: September 26, 2023

doi:10.22158/sss.v4n4p1

URL: <http://dx.doi.org/10.22158/sss.v4n4p1>

### ***Abstract***

*This study employs the iconic modernist architectural landmark, the Dessau Bauhaus school building, as a case study. By scrutinizing the distinctive creative attributes of this architectural masterpiece, the study delves into the design tenets of Bauhaus ideology. Additionally, it conducts an analysis of the resonance between Bauhaus principles and the landscape of modern design in China. Building upon this foundation, the study embarks on a dialectical exploration, leveraging representative instances of contemporary Chinese architectural design, to meticulously examine the impact of Bauhaus on modern Chinese design, with a specific focus on the domain of architectural design.*

### ***Keywords***

*Bauhaus, Dessau Bauhaus School Building, modern Chinese design, architectural design*

## **1. Introduction**

In 1919, against the backdrop of a society profoundly influenced by the Industrial Revolution, the Bauhaus School was founded in Weimar, Germany. It sought to rekindle the fusion of art and daily existence, thus giving rise to a gradual emergence of distinctive modernist architectural paradigms within Germany. These paradigms championed an architecture attuned to the demands of contemporary industrial production and the pragmatic requisites of human life. The emphasis lay squarely on architectural functionality and cost-effectiveness.

In the antecedent European context, the contours of classical architectural compositions were typically defined by spires, columns, archways, and domes, characterized by intricate and ornate designs driven by religious and mythological inspirations. Walter Gropius, an emblematic figure representing the Bauhaus, introduced an entirely novel design philosophy. He advocated for designs that were “simultaneously artistic and scientific, creative and utilitarian, capable of large-scale production within

factory assembly lines”. It was during a significant exhibition held by the Bauhaus in 1923 that Gropius introduced the rallying cry of “a new synthesis of art and technology,” an utterance that would stand as a pivotal milestone in the crystallization of modern design thought. The design ethos encapsulated within the Dessau Bauhaus edifice, emblematic of modernism, eloquently embodied the foundational tenets and aspirations of the Bauhaus design philosophy.

## **2. The Creative Techniques and Significance of the Dessau Bauhaus School Building**

### *2.1 The Historical Context of the Bauhaus School Building*

In 1925, in response to a shifting political landscape within Germany, the “Bauhaus School”, initially situated in Weimar, underwent relocation to Dessau. The construction of the Dessau Bauhaus building was concluded in 1926. Positioned on the outskirts of Dessau in Germany, the creative mind behind this architectural endeavor was none other than Walter Gropius, the school’s director at the time and a seminal figure within the Bauhaus movement. Gropius, assuming the mantle of directorship, pursued the transformation of the Bauhaus School into a specialized institution dedicated to nurturing design acumen. Consequently, the Dessau Bauhaus edifice bears an emblematic significance within the annals of Bauhaus’s educational legacy.

This Bauhaus edifice stands as a comprehensive architectural ensemble, encompassing several functionally distinct zones. Spanning a footprint of approximately 2,630 square meters and boasting a built-up area of nearly 10,000 square meters, the design is an embodiment of Gropius’s architectural vision. Notably, it embodies principles such as functional design, judicious utilization of materials for economic efficiency, and the harmonious amalgamation of artistry and technological innovation. It emerges as a quintessential embodiment of Bauhaus design tenets, serving as a paradigmatic exemplar of these ideologies. Its spatial configuration and architectural techniques not only provide a blueprint for subsequent modernist architectural undertakings but also furnish invaluable insights into compositional strategies and construction methodologies.

### *2.2 Characteristics of the Bauhaus School Building*

#### *2.2.1 Holistic Structure: Practicality and Functionality*

The Bauhaus school building is a composite structure comprised of three wings. Its design employs a flexible and asymmetrical compositional technique, achieving a harmonious unity within irregular contrasts. This approach allows for both architectural form and spatial arrangement to manifest with a sense of freedom. The selection of distinct architectural structural forms corresponds to the specific functionalities of individual sections, resulting in a meticulous integration of materials and structure.

In order to enhance connectivity between functional zones, pedestrian bridges have been incorporated between the two floors, thereby establishing a seamless continuum throughout the diverse spaces. Furthermore, to prevent fragmentation of the site by the edifice, the ground level has been elevated, facilitating vehicular and pedestrian circulation. Such pragmatic design not only optimizes spatial utilization but also preserves the permeability of the ground plane. Despite the divergence in functions

across various areas, they remain interlinked, aligning with Gropius's conviction that "architecture can mold patterns of living". The Bauhaus school building's varied architectural forms encompass a juxtaposition of vertical and horizontal volumes, as well as anterior-posterior and lateral orientations, ultimately resulting in a composition that exudes harmony and cohesion. The primary embodiment of the "new architecture" lies in the unique equilibrium between horizontal and vertical dimensions, diverging from the conventional practice of unifying diverse elements within a singular facade.

In the initial design of the Dessau Bauhaus, practical functionality was paramount. For instance, each dormitory room boasts an individual balcony, affording unobtrusive privacy. The roofs no longer feature traditional domes; they are entirely flat, allowing for uninhibited rooftop activities, thus optimizing rooftop space. In contrast to the conventional tenet of "form follows function", wherein external aesthetics precede internal functional considerations, Gropius championed an approach whereby function dictates form, culminating in an external appearance that faithfully mirrors the internal programmatic arrangement. Gropius elucidated his design ethos as an organic response to contemporary lifestyle norms, eschewing ornamental and capricious embellishments. Instead, he judiciously employed archetypal, universally recognized foundational configurations and hues, yielding richness through austerity. This approach enabled an economical and effective utilization of space, materials, time, and finances, with the aim of scrutinizing and revealing the inherent functions of distinct components through varied materiality and design paradigms.

#### 2.2.2 Architectural Materials: Extensive use of Glass Curtain Walls

The fundamental structure of the Bauhaus school edifice is characterized by a reinforced concrete frame. Predominantly, contemporary commonplace materials such as reinforced concrete and glass find application. The external facade is distinguished by capacious four-tier glass curtain walls, facilitating an unobstructed influx of daylight. These voluminous glass walls juxtapose effectively against solid partitions, generating a nuanced visual interplay.

The substantial integration of glass panels signifies an architectural paradigm shift towards industrial design aesthetics. The strategic incorporation of pioneering materials, including steel, reinforced concrete, and glass, accentuates the innate visual allure of these constituents. The Bauhaus school building adeptly amalgamates utility, materiality, structural integrity, and aesthetic considerations, tailored to the idiosyncratic attributes of the architectural materials in use. This synthesis optimally harnesses the inherent visual qualities of these materials to realize architectural compositions of artistic merit, concurrently curbing expenses associated with ostentatious ornamentation, in this way, this approach tangibly embodies the ethos of "the harmonization of artistry and technological ingenuity".

#### 2.2.3 Decorative Approach: Minimalist Facades

The facades of the Bauhaus school building are characterized by an extreme simplicity, eschewing the intricate ornamentation of the past. Traditional features such as columns and projecting eaves are discarded in favor of clean surfaces and unadorned eaves. This architectural approach yields a form that exudes a minimalistic and invigorating aesthetic, while also reflecting the ethos of industrialization.

The design thoughtfully maximizes the intrinsic attributes of contemporary building materials to attain aesthetic excellence. In a certain sense, the facades of modernist architecture harmonize with the realm of modern abstract painting. Similarly, the interior design employs solid color, imbuing spaces with a distinctly modern ambiance.

Comparatively, when contrasted with the intricate façade forms and sculptures of classical architecture, modernist architecture radiates an inherent simplicity. The trajectory from complexity to simplicity is not solely a manifestation of modernist ideology and the industrial necessities of modern architectural practices but also signifies an elevation of aesthetic sensibilities. Prior to the establishment of the Bauhaus school building, traditional architecture predominantly leaned on classical styles and conventional materials, utilizing intricate and elaborate patterns to convey architectural artistry. However, the design philosophy of the Bauhaus shattered the confines of conventional architectural conventions, forging a novel synthesis between artistic expression and functional utility that harmonized with the evolving demands of the era.

### *2.3 The Epochal Significance of the Bauhaus School Building*

The design principles articulated by Gropius find their consummate expression and embodiment in the Dessau Bauhaus School building. This architectural exemplar profoundly disrupts the traditional paradigms of classical architecture, deftly reconciling aesthetics with utilitarian functionality.

Gropius conscientiously endeavored to synthesize architectural practicality with visual aesthetics through meticulous manipulation of materials and structural elements. This pursuit culminates in the Dessau Bauhaus school building's distinction as one of the preeminent architectural achievements of the 20th century. By employing innovative modern architectural design methodologies, Gropius delineated the external forms of various sections in correspondence with their utilitarian functions, thus positioning the structure as a quintessential emblem within the domain of modernist architecture.

Commencing in 1996, the Bauhaus school building was inscribed on the UNESCO World Heritage list, signifying its profound influence on the trajectory of minimalist and functionalist modern architecture.

## **3. Bauhaus' Modern Design Philosophy**

### *3.1 Humanism: A Novel Synthesis of Art and Technology*

Bauhaus presented foundational tenets in design theory that pivoted on the primacy of human endeavor over product creation. Its viewpoint emphasized the essential alignment of design motives and objectives with pragmatic life services. Humanism assumed a pivotal role within the design process, advocating the observance of natural laws and cultivating a harmonious rapport between humanity and the natural world. This paradigm entailed the dual pursuit of fulfilling human life requisites while venerating environmental integrity, discarding romantic design idiosyncrasies in favor of an evolutionary shift from sensualist aesthetics to rationalist design directions. This trajectory accentuated the pivotal role of servicing large-scale industrial production while leveraging the tenets of nature and objective principles to address design challenges.

The 1923 pronouncement by Gropius, articulated as the “unity of art and technology” during an exhibition, fundamentally ruptured the shackles of “art for art’s sake”, thereby inaugurating a design paradigm seamlessly consonant with the contours of modernism. This declaration continues to wield profound influence over industrial product design, earning its distinction as the “incubator of modern design”.

### *3.2 Design Principles: Function Supersedes Form*

Modernist architectural luminary Mies van der Rohe once posited, “Good design is obvious. Great design is transparent”. The tenets of Bauhaus design philosophy markedly diverge from classical paradigms, prioritizing exigencies and utilitarianism as paramount. It asserts that the integrity of content should precede the considerations of form, with functionality assuming precedence within the hierarchy of modern design imperatives. Such principle insists that form ought to organically follow function, eschewing the mere pursuit of aesthetic allure for its own sake while eclipsing the essential core, namely, functionality.

Take, for instance, the paradigm of a chair. Conventional design tenets might commence by exalting aesthetics, and shaping the contours of the seat. However, Bauhaus’s design philosophy asserts that practical utility should claim primacy. In the realm of chairs, this entails the ergonomic comfort of the seated individual, fulfilling its fundamental purpose, without indulging in superfluous external ornamentation. Thus, the Bauhaus movement heralds an epochal transition from design focused on ornate embellishment to one intently centered on functional efficacy.

### *3.3 Design Philosophy: Less is More*

The maxim “Less is more”, a pivotal doctrine of Bauhaus modernism, was coined during Mies van der Rohe’s leadership of the Bauhaus school. This principle advocates stripping away superfluous embellishments to achieve heightened effects through sleek and efficient design. As lines in design become simple and straightforward, the product’s inherent structure and materials are highlighted, akin to eliminating visual complexity, thereby revealing the underlying essence. In architectural contexts, discarding ornate ornamentation amplifies the clarity of texture, structure, and spatial arrangements, culminating in a refined and utilitarian aesthetic. Within Mies van der Rohe’s oeuvre, there’s a deliberate pursuit of distilled essentials. This involves removing extraneous ornamentation, preserving core design elements, and refining them to encapsulate the ethos of minimalism.

## **4. The Influence of Bauhaus on Modern Chinese Architectural Design**

### *4.1 Influence on Modern Architecture in Shanghai*

The rise of the Bauhaus style in China finds its primary impetus in its congruence with the initial phase of China’s rapid industrial development. The Bauhaus ethos left an indelible mark on the trajectory of architectural design in China from the 1930s to the 1960s. A prominent figure in this context was Huang Zuoshen, the inaugural head of the Architecture Department at the former St. John’s University, who had pursued studies under Gropius. Integrating the functional design tenets of Bauhaus, Huang

infused China's contemporary design planning with a fresh perspective. In 1946, a seminal event in Chinese architectural history unfolded as Huang Zuoshen led a team of five professors from St. John's University in collaboration with external professionals to articulate the blueprint of the Greater Shanghai Plan. This pivotal urban planning endeavor embraced the principles of modernism, segmenting the urban road networks along functional lines, and delineating distinct traffic hierarchies including ring roads, arterial routes, and subsidiary streets.

Beyond the purview of urban planning, a multitude of instances within modern Chinese architectural design found themselves influenced by the ideals of Bauhaus. For instance, during the 1930s in Shanghai, the city witnessed the emergence of modernist architectural landmarks like the Hongqiao Sanatorium, notable for its incorporation of terraces. The underlying rationale of these terraces was to facilitate the mobility of patients from their beds to these open spaces, ensuring direct exposure to sunlight and the intake of fresh air. Inherent in this emphasis on functionality as the guiding principle of design was a conscientious accommodation of regional climate and functional exigencies, imbuing these architectural endeavors with an innate dynamism. Another compelling embodiment of Bauhaus-inspired design is embodied in the Wenyuan Building at Tongji University, erected in 1953. Revered as an exemplary representation of Bauhaus principles in Chinese architecture, this structure seamlessly integrates function-oriented, minimalist design elements. It underscores the ethos of Bauhaus by flexibly organizing its spatial arrangement to align with functional imperatives. Notably, lecture halls, which experience considerable footfall, are strategically positioned near multiple entrances, facilitating effective crowd dispersal in emergencies. Furthermore, the exterior architecture is nuanced, adapting its form to distinct purposes, while the main façade's window configurations mirror the spatial delineation within.

#### *4.2 Impact on Southern "Tropical Architecture"*

Beyond its influence on contemporary architecture in Shanghai, the Bauhaus movement also exerted a profound impact on the development of "Tropical Architecture" in southern China. Architect Xia Shichang, having returned from his studies in Germany, conducted meticulous research on local gardens and architecture in Guangzhou. This research served as the foundation for the cultivation of innovative architectural solutions tailored to the local climatic and environmental conditions. Xia ingeniously translated numerous indigenous features into novel architectural meanings, which encompassed such strategies as employing building facades as solar-shading devices and conceptualizing roofs as functionally vital components. Furthermore, he ingeniously integrated cost-effective design elements into the framework of façade architecture.

#### *4.3 Limitations of Bauhaus' Influence on Modern Design in China*

While the Bauhaus has significantly informed Chinese modern design, it has also catalyzed unique, localized adaptations. Notably, the influence of the Bauhaus on Chinese modern design harbors certain limitations. The Bauhaus movement underscored constructivist theories, emphasizing formal simplicity and accentuating the synergy between functionality and material expression. However, the inherent

abstraction of geometric compositions occasionally engendered a sense of detachment. In doing so, the Bauhaus inadvertently marginalized the rich and diverse ethnic and regional cultures, as well as the distinctive aesthetic of traditional art forms. This tendency consequently fostered a prevailing homogenized internationalist aesthetic, curbing the breadth of artistic design diversity.

As the legacy of the Bauhaus evolved in the course of its global dissemination, its advocacy for standardized design principles aimed to harmonize with the societal production paradigms of its time. Nevertheless, the trajectory of modern design, propelled by changing epochs, necessitates a fluid evolution that accommodates the nuances of varied practical contexts. Consequently, while assimilating the foundational tenets of Bauhaus design, Chinese modern design should embark upon a trajectory of exploration that not only upholds its distinctive character but also harmonizes with the specific contours of Chinese cultural identity and architectural heritage.

## References

- Chen, Y. (2011). A Brief Analysis of Bauhaus' Oriental Origins and Its Impact on Modern Chinese Design. In *International Conference on Made in China and Innovative Design*.
- He, R., & Tang, X. (2011). Bauhaus Ideals in 21st-Century Design. In *International Conference on Made in China and Innovative Design*.
- Li, Z., & Qian, F. (2019). Planting Flowers and Trees, with a Long History: Dezhou Bauhaus School Building and Tongji University Wenyuan Building. *Time Architecture*.
- Tong, H. (2011). Bauhaus - The Spiritual Home of Modern Design. In *International Conference on Made in China and Innovative Design*.
- Yang, Z. (2008). Bauhaus and Chinese Modern Design. *Journal of Guizhou Institute of Technology*.