

Is transparent approach suitable for museums?——Take Kroller Muller Museum as an example

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Abstract. This paper embarks on a detailed exploration of the integration of glass as a pivotal architectural element within museum structures, with a specific focus on the renowned Kroller Muller Museum as a prominent case study. The Kroller Muller Museum stands as a beacon of a transformative shift in museum architecture, boldly veering away from conventional reinforced concrete edifices to embrace a contemporary architectural approach predominantly anchored in glass. The deliberate use of glass in its design symbolizes an alignment with the tenets of modernity, reflecting the museum's evolution in harmony with societal progress and contemporary architectural trends. In line with the philosophy of renowned architect Le Corbusier, who emphasized the necessity of architectural adaptation to cater to evolving societal needs, this study argues that maintaining synchrony with the contemporary era is vital not just for museums but also for the broader realm of architecture and urban planning. Drawing from these principles, this research critically scrutinizes whether the prevalent shift towards transparency, particularly in the form of glass integration, truly aligns with the specific and nuanced requirements of museums within their contextual milieu. By thoroughly analyzing this aspect, the research is to offer beneficial perspectives on the efficiency and suitability of incorporating glass elements in modern museum architecture.

Keywords: Kroller Muller Museum, Glass, Transparent, Contemporary, Museum.

1. Introduction

In this paper, the main ideas and architectural expressions of the Kroller Muller Museum are thoroughly described to ascertain the appropriateness of using glass in museums.

The Kroller Muller Museum is presented to the audience in a large transparent way, which is undoubtedly a way to keep up with The Times, breaking the old reinforced concrete museum and replacing it with a modern glass material. In this way, it shows a new definition of a modern museum that is museums evolves alongside human and follow the existing era.

Keeping up with the times is what a museum and even architecture and city need, just as Le Corbusier mentioned in his book: "The City of Towers" was a term introduced by Auguste Perret, urging a departure from the current urban arrangement typified by escalating clusters of structures intertwined with cramped streets engulfed in noise, vehicle emissions, and dust, where every floor's windows connect openly to this chaotic environment [1].

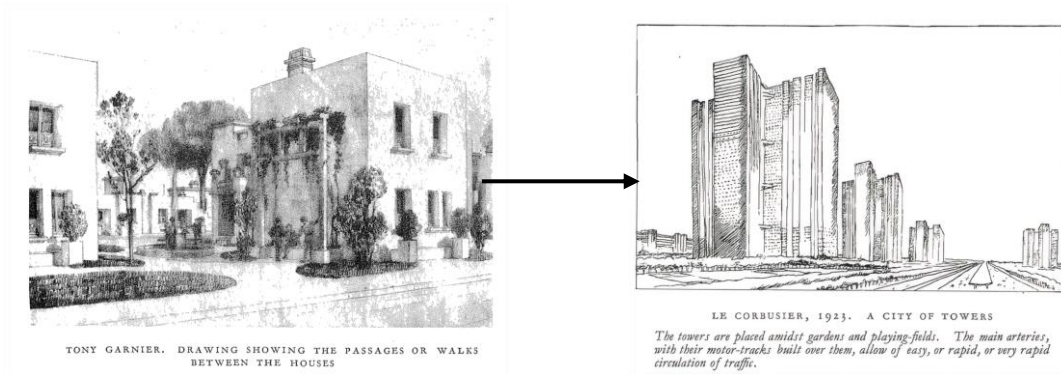


Figure 1. Development of urban planning [1].

However, is transparency really the appropriate approach for museums? This will be explored throughout this article.

2. Introduction of The Kroller Muller Museum

The Kroller Muller Museum was designed by Henry Van de Velde to display the private collectible of Helene Kroller Muller, which she donated to Dutch government in 1935 [2].

The Kroller Muller Museum, dedicated to exhibiting visual art in a serene and natural setting, was met with immediate success upon its inauguration in 1938. This success can be attributed to the meticulous attention given to three fundamental aspects: visual arts, architecture, and the surrounding natural environment. This triad of elements not only characterized the museum's inception but continues to be the hallmark of its distinctive identity today. The museum remains committed to nurturing and enhancing the interconnectedness of these vital components, recognizing their indispensable role in shaping its future trajectory.

At its core, museums offer visitors a unique opportunity for intimate engagement with artworks, transforming the act of collecting into a vessel for spiritual experiences. This direct encounter with art provides a tangible link to the continuum of history, unshackled from any dogma or rigid hierarchy that might impede the free flow of artistic expression. This stands in deliberate contrast to prevailing ideologies of the era, aiming to provoke contemplation regarding the profound social significance inherent in the realm of art.



Figure 2. In front of the Kroller Muller Museum [2].

The Kroller Muller Museum stands as a haven for quiet contemplation and genuine appreciation, a sanctuary increasingly scarce in today's bustling world. Our modern lives are often marred by the clamor of everyday existence, the overindulgence, relentless competition, impatience, and the appeal of immediate satisfaction. In a landscape where many museums find themselves swayed by commercial

interests, the Kroller Muller Museum consciously aligned with this trend, placing its faith in art. The aim was clear: to offer solace to those in search of tranquility, authenticity, and a focused exhibition blending art, architecture, and the wonders of nature [3].



Figure 3. Site plan of the Kroller Muller Museum [4].

3. The main theme of museum: transparency

Transparent materials communicate with the outside world, achieving the purpose of art without boundaries. As can be seen from the site plan on the left, the site where the Kroller Muller Museum built is not only appreciated in the museum and Sculpture Garden, but also started to appreciate art in Hoge Veluwe National Park which is the green part on the way to the museum. This is a borderless arrangement of art, which is not restricted to a specific space to appreciate, but widely spread to the masses. At the same time, these sculptures outside the museum also act as a guide for visitors into the museum. On the south side of the big map is the main entrance, where you can choose to enter the museum or enter the sculpture park.

In the gallery, distinct exhibitions are curated for different artworks. Particularly, the Van Gogh gallery occupies a central position, emphasizing the significance and prominence of his works. These are showcased in heart of the building, encircling a small patio within a corridor, underscoring their importance. The museum boasts a welcoming transparent facade, offering a generous view to visitors. Intriguingly, despite this transparency, an admission fee is necessitated. Yet, it allows individuals outside the museum to witness a substantial display. They can perceive the exhibits and appreciate the art without actually entering the museum premises. This aspect prompts contemplation on the distinction between entering a museum and appreciating the artworks. While visitors can engage with art anywhere around the museum, full access to the museum requires the payment of an admission fee.

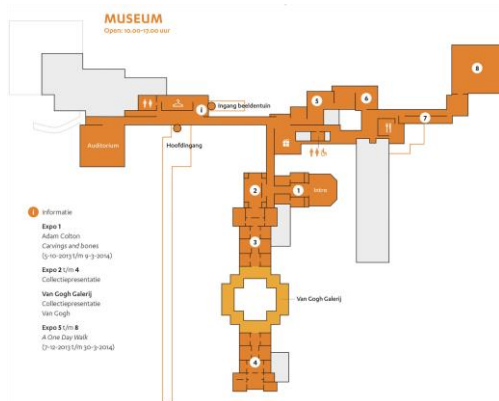


Figure 4. Interior plan of the Kroller Muller Museum [2].



Figure 5. Exterior plan of the Kroller Muller Museum [2].

4. What makes the Van Gogh gallery special

Transparent museums require admission, which is an interesting question, and it's hard not to think that the reason has to do with the internal collection in museum.

The Kroller Muller Museum serves as a second abode for Vincent Van Gogh. Within Anton and Helene Kroller Muller's collectible, his creations hold a distinct and significant position. From 1908 to 1929, they acquired an impressive collection, amassing 91 paintings and over 180 works on paper. Their financial resources seemed boundless for this endeavor. Helene esteemed him as one of the eminent figures of contemporary art." [5].

Van Gogh's collection holds significant importance, given its extensive volume. This is why only this section remains concealed from outside view due to its vastness, necessitating an admission fee for access and enjoyment. The architectural and interior styles distinctly differ between these two segments. Van Gogh's exhibit area embraces a more classical approach, characterized by pure color walls and a traditional display of paintings and sculptures. Moreover, the gallery's design incorporates additional corners, imparting a sense of mystery and underscoring the significance of Van Gogh's work. Within this gallery space, visitors are immersed in the art, shielded from views of the surrounding tree, grass, and national park, as there are no windows. This design choice enables visitors to experience the exhibit within the building's context rather than being influenced by the outdoor scenery. This juxtaposition of a classical presentation for the primary collection and a modern transparent design for the remaining artworks adds an interesting dimension to the museum.



Figure 6. Interior of the Van Gogh gallery [2].

4.1. *The Kroller Muller Museum do not be achieved artistic equality*

The transparent facade is not conducive to the preservation of the artwork.

The museum displays collectable of Van Gogh's works with closed solid walls, which undoubtedly reflects the preciousness of Van Gogh's works. But it is also unfair to the other works in the window-enclosed gallery.

As mentioned in *Kroller Muller Museum*, these elements serve as the foundation for a dynamic and engaging presentation of the collection. By showcasing historical continuity without imposing rigid hierarchies, viewers are granted the freedom to traverse artistic evolution and witness the interconnectedness of ideas and forms across time. The absence of dogma allows for a more open and inclusive interpretation, inviting diverse perspectives and fostering a sense of inclusivity and diversity.

Moreover, presenting an alternative to the prevailing ideology challenges conventional perspectives and stimulates critical thinking. It prompts viewers to question established norms and ideologies, paving the way for a deeper understanding of art's role in reflecting and shaping society. This alternative viewpoint can act as a catalyst for discussions, debates, and reevaluation of societal values and beliefs. Encouraging contemplation on art's societal significance elevates the purpose of the collection beyond aesthetics. It prompts viewers to consider art's role as a mirror of society, shedding light on societal norms, cultural shifts, and human experiences. This reflection can lead to a heightened awareness of the power of art to inspire change, challenge the status quo, and contribute to a more enlightened and

empathetic society [6]. In this case, there should be no distinction between architectural design and art zoning, which is completely contrary to the breaking down of the hierarchy of museums.



Figure 7. The first view of the Van Gogh gallery [2].



Figure 8. The transparent part of the museum [2].

The focus of the Kroller Muller Museum lies at the intersection of art and nature. Therefore, it should uphold its intrinsic value and resist being reduced to a tool for comparisons or devoid of emotional connection. While supporting the practice of museums charging admission fees to safeguard artworks and honor artists, the insistence of the Kroller Muller Museum on an entrance fee despite its transparent design seems contradictory. This approach implies that only Van Gogh's artworks require protection and appreciation, creating a sense of discrimination. If the Koller Muller Museum is committed to transparency in representing natural art, it should strive for equality. Distinctions between various galleries should be eliminated, and some of Van Gogh's works should be visible directly through the windows. In this perspective, placing works by different artists on an equal platform allows visitors to compare and discuss them in a fair artistic environment, challenging traditional hierarchies and prompting contemplation on society's relationship with art.

4.2. *The challenges and dangers of transparency to collections (artworks)*

As valuable art is exposed to natural light, humidity and temperature requirements become more stringent, which will pose challenges for museums.

Museums, as the protection, storage and dissemination of historical and cultural works, have extremely high requirements for indoor temperature and humidity control. The transparent facade is even more challenging for the storage conditions of the collection. Deterioration of collections is inevitable, but if the environment is properly managed, the rate of change can be slowed in order to keep its state stable [7].

Temperature and humidity, as essential factors in environmental control, play a crucial role in various domains. Their relationship is pivotal in fields ranging from agriculture to industry and from climate control in buildings to the preservation of delicate artifacts in museums. In agriculture, for instance, the right balance of temperature and humidity is vital for crop growth and health. Different plants have specific requirements, and adjusting these parameters can enhance agricultural output and quality. In industrial settings, precise control of temperature and humidity is essential for efficient manufacturing processes, ensuring product quality and safety [8].

In museum climate control systems, striking the right balance between temperature and humidity is critical for creating a comfortable indoor environment.

Relative humidity, in simple terms, refers to the amount of water present in the air compared to the maximum amount it could hold. When the air reaches 100% relative humidity, it's saturated, and any additional moisture causes condensation. Air has the property of holding more water vapor as the temperature rises. Consequently, in winter, when humid outside air enters a heated space like a museum, its relative humidity significantly decreases despite being initially very humid. This shift is demonstrated on a psychrometric chart where cold and humid air (-5°C, 90% RH) becomes quite dry (13% RH) when

heated to 23°C. A current challenge stems from the widespread practice of heating indoor spaces to temperatures that were previously applied only to smaller areas [9].

Understanding the intricate relationship between temperature, humidity, and the dew point is not only significant for scientific and technical reasons but also for practical applications that directly impact our daily lives and the preservation of our cultural heritage [10].

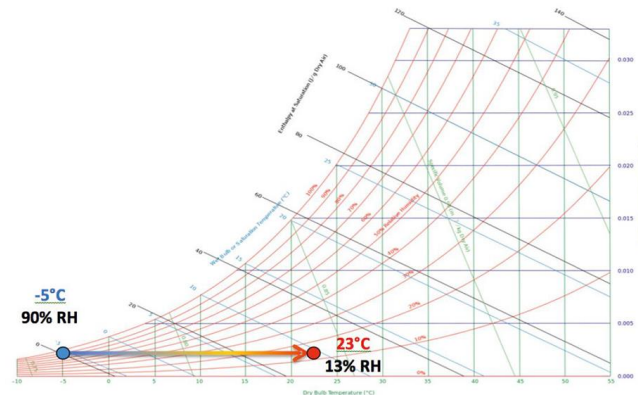


Figure 9. Psychrometric chart [9].

The amount of moisture air can hold, known as humidity, is influenced by its temperature. For instance, when the temperature is at 10°C, a cubic meter of air can retain 10g of water. However, if the temperature increases to 30°C, the same volume of air can hold over 30g of water [10].

In the context of preserving museum items, it is recommended to maintain a temperature range of 16 to 20°C. Temperature fluctuations within 10 to 20°C are generally safe for museum items. Temperatures below 16°C may be uncomfortable for visitors and can lead to condensation and affect relative humidity (RH). It's important to avoid temperatures below 10°C as they can cause condensation and impact RH. On the other hand, temperatures exceeding 20°C can be too hot for both guests and can accelerate the degradation of museum objects. Specifically in museum storage areas, temperatures can be cooler than 16°C since they are not visited frequently by guests. However, it's essential to allow items to acclimate gradually when transitioning between storage and display [11].

Large areas of glass tend to increase the temperature of the museum, thus reducing the life of the collection. Of course, there are plenty of transparent museums, such as Crystal Palace, Le Centre national d'art et de culture Georges-Pompidou (CNAC), Berlin Neue Nationalgalerie and so on. However, the investigation and control of the indoor environment in the construction process is stricter than that of the solid wall, so it needs to spend more time and money to investigate and control [12].

4.3. *The transparent approach lacks immersive appreciation of the collections*

Observing the image on the left, it is apparent that the photograph was taken from within the museum, yet the details of the collection in the foreground appear unclear, providing only a vague outline and an uncertain impression. Conversely, the visual impact is dominated by the solid-colored sculptures outside against the backdrop of the extensive green lawn, diverting attention away from the artworks within. While the Sculpture Garden offers an opportunity to appreciate the sculptures outside, achieving a sense of immersion in art within the museum is less likely. This situation leaves the viewer with a sense of insecurity and confusion regarding where to direct their focus [13].

In contrast, conventional museums with white walls tend to direct visitors' attention towards the collections, enabling a more focused and immersive art appreciation experience.

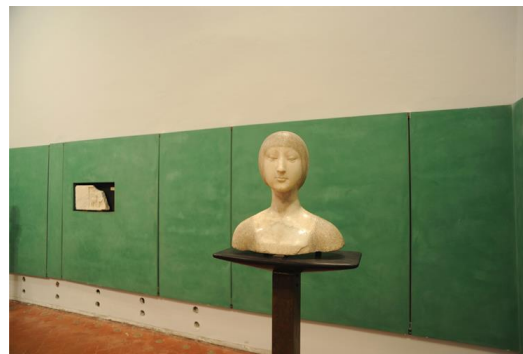


Figure 10. Interior of the Kroller Muller Museum [2]. **Figure 11.** Exhibit in the museum [2].

5. Conclusion

To conclude, the Kroller Muller Museum is indeed progressing with progress of the times and the development of human beings, trying to adapt to this changing era. The museum is a space with higher requirements than other public buildings, so inappropriate development will bring huge challenges and inappropriate responses to the museum. Transparency approach is not entirely appropriate for museums. It will attract visitors to a certain extent, but attracting attention is only a small part of the sustainability of the museum, which ultimately has to give art an equal and natural environment where people can truly enjoy it, rather than being distracted by the environment or the challenges.

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