

# Expressions and Psychology of Exposure in Contemporary Architecture

## รูปแบบการแสดงออกและจิตวิทยาของแนวคิดเรื่องการเปิดเผยพื้นที่ภายใน ในสถาปัตยกรรมร่วมสมัย

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### Abstract

The topic of exposure has long been part of the architectural discourse, and how it is interpreted and demonstrated in architecture is continuously evolving. This paper explores the trends in how exposure has been understood and exploited in architectural design, discussing the varying degrees to which architects expose certain components of their buildings--or even the occupants themselves in certain cases--that would typically be internally hidden. The subjects of this comparative study include works by practitioners from both inside and outside of the discipline of architecture, such as Mies van der Rohe, Herzog & de Meuron, Richard Rogers and Renzo Piano, Rem Koolhaas, Shigeru Ban and SANAA Kazuyo Sejima and Ryue Nishizawa and the fashion designer Hussein Chalayan. The findings reveal that these designers have strategically manipulated the idea of exposure to evoke emotional and psychological responses that are far superior in their complexity and ambiguity than what has previously existed.

### บทคัดย่อ

แนวคิดเรื่องการเปิดเผยพื้นที่ภายใน (exposure) ในทางสถาปัตยกรรมนั้น เป็นประเด็นการอภิปรายในแวดวงสถาปัตยกรรมมาเป็นเวลานานและยังคงมีการพัฒนาถึงวิธีการตีความและการแสดงออกทางสถาปัตยกรรมอย่างต่อเนื่องซึ่งบทความนี้ได้มุ่งเน้นการวิเคราะห์แนวทางความเข้าใจ และการใช้ประโยชน์ของแนวความคิดเกี่ยวกับการเปิดเผยในเรื่องของการออกแบบ สถาปัตยกรรมตั้งแต่ช่วงกลางศตวรรษที่ 20 โดยอภิปรายลักษณะและขอบเขตที่สถาปนิกจงใจเปิดเผยถึงองค์ประกอบบางอย่างของอาคาร หรือแม้กระทั่งตัวผู้อยู่อาศัยที่ปกติแล้วมักถูกซ่อนอยู่ภายใน โดยการศึกษาเชิงเปรียบเทียบในบทความนี้ได้ศึกษาผลงานของผู้ประกอบวิชาชีพทั้งในและนอกรวงการสถาปัตยกรรม เช่น Mies van der Rohe, Herzog & de Meuron, Richard Rogers & Renzo Piano, Rem Koolhaas, Shigeru Ban & SANAA Kazuyo, Sejima & Ryue Nishizawa และนักออกแบบแฟชั่น Hussein Chalayan ผลของการศึกษา พบว่า นักออกแบบเหล่านี้ได้นำแนวความคิดเกี่ยวกับการเผยมาใช้เป็นยุทธวิธีในการออกแบบเพื่อทำให้เกิดการตอบสนองเชิงอารมณ์และเชิงจิตวิทยา ซึ่งเป็นรูปแบบที่มีความซับซ้อนและกำกวมมากกว่าที่เคยมีมา

**Keywords**

Exposure (การเปิดเผยพื้นที่ภายใน)

Psychology (จิตวิทยา)

Transparency (ความโปร่งใส)

*"[I believe that] architecture has little or nothing to do with the invention of interesting forms or with personal inclinations. True architecture is always objective and is the expression of the inner structure of our time from which it springs."*

--Mies van der Rohe

## 1. Introduction

As a general discussion of the application of the term 'exposed' in the literature of contemporary architecture, the common approximate definition perhaps points to the direction of analyses of visible structures or truthful rendition of materials. Yet the meanings with which the concept of exposure has become endowed appear incomprehensive. In an attempt to make inclusive and efficient critical investigation into the phenomenon of exposure in architecture, it is necessary to consider exposure's other synonyms: reveal, disclosure, advertisement, manifestation or even exhibition. These words and others like them not only express visibility or bareness but also imply exchangeability, nakedness, vulnerability and nonetheless susceptibility.

A further level of interpretation--that of exposure as a condition where an interiority is revealed through an aperture on the exteriority--implies more than just structural or surface characteristics, but also a profound spatial order and complex psychological interplay. Exposure allows a simultaneous perception of different spatial locations. The exterior surface opens up to reveal another space beneath and thus destabilizes the understanding of this spatial relationship. As it is exposed through an opening, the position of the interior space becomes equivocal as its status fluctuates between interiority and exteriority. By this incidence, the relationship between the interior and exterior space ceases to be that which is perfectly normative, and becomes instead that which is ambiguous and unsettling. The optical perception of the spaces shifts and the

relationship between the two transcends insignificant singularity into ambiguous complexity.

The main objective of this study is to attempt to understand the varying degrees to which architects expose certain components of their buildings--or even the occupants themselves in certain cases--that would typically be internally hidden. Therefore, at the very beginning of this enquiry into 'exposure,' a basic distinction between different types of exposure that have been appropriated in architecture must be established. Exposure may be a frank display of materials or construction logics; or it may be a moment of a veritable exchangeability between interior and exterior spaces.

## 2. Redefining Exposure

In representing an architectural polemic, exposure has generally been explored by architects in three distinct ways. The first and the oldest notion is the idea of exposure as an expression of truthful articulation of structure and materials. The second is propelled by a Modernist obsession with transparency so as to convey the value of 'sincerity' and 'democracy'. The final approach is not so much physical as phenomenal and experiential. In this instance, exposure has come to define perceptual accessibility into a space and imply a bipartisan psychological complexity occurring in the spatial relationship between exterior and interior, individual and community, public and private, insulation and buffer. This kind of ambiguity fosters a dynamic relationship between the various states of being connected and separated.

## 3. Structural Exposure

That architects interpret structural exposure as honesty in construction and fabrication is not a new idea. In fact, it is an ancient concept that can be dated back to antiquity. Carved into the entablature of the Parthenon as an abstract representation of the

ends of roof beams, triglyphs refer to the original structural system of the classical wooden Greek temple (Figure 1) (Davies, 2011, p. 15). The French architect Viollet le Duc reintroduced this passion for structural articulation into the architectural discourse in the nineteenth century. Inspired by the articulated structure of the Gothic cathedrals, Le Duc, together with many of his contemporaries, advocated for structural ‘frankness’ in order to imply honesty and integrity in architecture.



Source: Davies, 2011, p. 15.

**Figure 1.** Phidias, Ictinos and Callicrates, Parthenon, 447-432 BC, Athens, Greece. The striated rectangular shape of the triglyphs on the West Façade of the Parthenon represents the ends of roof beams, referring to the original wooden system of the classical Greek temples.

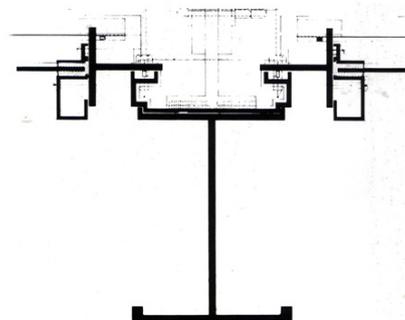
Modern architecture inherited the idea of exposed structure, which culminated in the mid-twentieth century. Believing that it was possible to transform naked construction into the most basic underlying form, the Modernist architect Mies van der Rohe experimented effectively with the articulation of exposed structural systems. His quest for an idealistic abstraction of architecture enabled the steel frame with glass infill or glazed curtain wall to support a wide range of functions, philosophies and forms (Curtis, 1996, p. 405). In the Seagram Building on Park Avenue in New York, designed between 1954

and 1958, Mies used exposed I-beams to express the construction method as well as the logic of the building’s monolithic mass (Figure 2 and 3). The I-beams, attached at regular intervals, introduced visual subtleties to an otherwise regular and symmetrical glass box. Similar to the triglyphs of the Parthenon, they had little practical structural function yet they served as the ‘visual’ structure of the building. The I-beams emphasized verticality and weightlessness, maintaining a uniform rhythm and texture of façade fabric over a variety of interior structural realities (Curtis, 1996, p. 406).



Source: Curtis, 1996, p. 408.

**Figure 2.** Mies van der Rohe, Seagram Building, 1954-8, New York. The quasi-structural steel mullions were left exposed in order to ‘tell the truth about the steel frame construction.’



Source: Colquhoun, 2002, p. 245.

**Figure 3.** Mies van der Rohe, Seagram Building (attached I-beam detail), 1954-8, New York. The exposed attached I-beams on the Façade give an appearance to express an idea of steel frame structure.

The idea of exposed structural elements has since evolved. While still playing a major role in the aesthetics of a building, the exposed structural framework no longer only strengthens the glass façades. Rather, contemporary architecture has expanded on this idea by fusing structural elements and the skin of the building to create a structural building envelope. Compared to the didactic exposure of structural systems in Modernist architecture, the newly developed exoskeletal frameworks of contemporary practice further explore the possibility of integration between building envelope and structural support in order to allow the exterior skin to play a greater part in carrying the load of the building. Relying on the load-bearing facade, architects have been able to experiment with complex geometries and to minimize or even eliminate internal structural supports.

Completed in 2003, Herzog & de Meuron's Prada Aoyama Epicenter, located in the commercial heart of Tokyo is a case in point (Figure 4). The five-sided store, whose pointed roof was conceived to resemble a giant crystal, is only supported by the steel diagrid on the exterior skin and the circulation core at the center of the building mass (Hodge, Mears, Sidlauskas, 2006, p. 211). It is clad with diamond-



Source: Robert Baum, photographer

**Figure 4.** Herzog & de Meuron, Prada Aoyama Epicenter, completed in 2003, Tokyo. The three-dimensional glass panels set into the structural steel frame of the Façade offer a variety of optical perceptions.

shaped glass panels set in a steel frame. The three different types of glass panes-flat, concave or convex - are encrusted alternately into a steel setting in order to enliven the multifaceted building envelope with a three-dimensional quilted effect (Moussavi & Kubo 2006, pp. 11-12). The diamond-shaped glass panels, which either protrude or recede depending on the observer's standpoint, interact differently with light and thus distort the view into and out of the building.

#### 4. Total Exposure: The Myth of Transparency

The minimal structural steel frame not only established order and generated forms; it also defined a new type of relationship between interior and exterior. The advancement in technology of the curtain wall allowed the Modernist architects to dematerialize almost all of the solid mass of the building envelope. Exterior walls were reduced to a mere system of slender steel frames with expansive glass infill. The transparency of the Modernist architecture hence allowed a veritable exchangeability between the interior and exterior. Modernism used transparency to represent architectural elements of space, structure and function. Through the glass facade, these elements were no longer supposed to be disguised but rather instantly visible to spectators viewing the exterior (Moussavi & Kubo, 2006, p. 6).

To use another of Mies's seminal works as an example, Farnsworth House (1945-51), the essential architectural elements of the house are immediately apparent. The architect applied floor-to-ceiling glass panels on all four walls, exposing the interior to its surroundings to an extreme degree. The slim exposed steel columns were rhythmically placed to carry the main horizontal vessel and simultaneously imply architectural parameters. The exposed structure provides a framework that reduces opaque exterior walls to a minimum, allowing the glass walls to fully expose the open interior space and the life of the inhabitant. The interminable transparency of the house unquestionably must have confronted the in-



Source: Paul Clerkin, photographer.

**Figure 5.** Mies van der Rohe, Farnsworth House, 1945-51, Plano, Illinois. The glass box, suspended by exposed steel columns around the perimeter, visually exposes the interior space and programs to the domain of exterior and intensifies the psychological connection between the indoor and outdoor.

habitant with an intense voyeuristic experience through its almost seamless connection with the outdoor environment. Conceiving the building as an indoor-outdoor architectural interplay, Mies subverted a general understanding of the house as a safe haven. Instead he architecturalized the psychological dilemma of being simultaneously independent of and exposed to the agency of exterior.

In the Centre Georges Pompidou (1971-7) in the Place Beaubourg, Paris, Richard Rogers and Renzo Piano took the idea of exposure to the extreme (Figure 6). An exposed megastructural tube space frame supports the building, which consists of Musée d'Art Moderne, a public library, an audio-visual center and large exhibition space. Visible mechanical systems, ducts and pipes as well as long transparent canisters enclosing escalators and passageways attached to the facades provide the exaggerated expression of openness. For practical reasons as well as decorative desire, all of the elements are color-coded according to their use: blue for air, green for fluids, yellow for electricity cables and red for movement and circulation.



Source: Curtis, 1996, p. 600

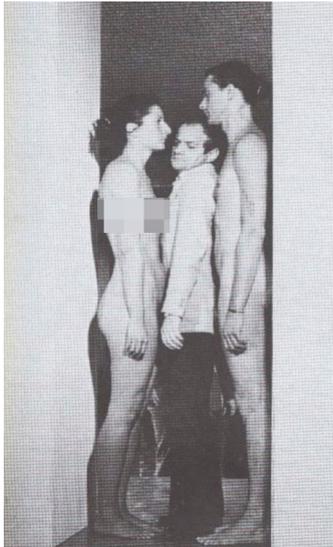
**Figure 6.** Renzo Piano and Richard Rogers. Georges Pompidou Center, 1971-7 Paris, France. The exoskeletal tube frame supports the entire interior space, with the buildings mechanical and circulation systems prominently composing the building envelope.

Composing the building envelope with exposed structural, mechanical and architectural elements, the architects created a radical exhibitionist experience. Surrounded by the somber grey stone façades of the Marais, a medieval quarter in Paris, the exposure of the building becomes something of a spectacle. Evidently, the main façade - originally designed to have a suspended giant movie screen and located on the lower edge of an urban piazza whose slope resembles that of an amphitheater - emphasizes the intention of the architects for this exposed structure to be gazed upon. The Pompidou Center's exposure transcends the original spatial requirement to create an uninterrupted open space for exhibiting large-scale contemporary art. In fact, the building becomes an exhibition itself, a highly sexually charged act to pleasure the gaze of its onlookers.

## 5. Mediated Exposure: Psychology of the Interstice

The final approach to exposure, which explores psychological complexity and the tension between the interior and exterior, appears more phenomenal and experiential. In his 1995 anthology, *S, M, L, XL*,

Rem Koolhaas published multiple images that capture unclothed individuals engaged in various activities. One of the images reveals a man trying to navigate the narrow corridor flanked by a naked man and woman (Figure 7). The man's discomfort, expressed evidently in his facial expression and body language, implies the deeper philosophical inquiry into the spatial psychology of an interstice.



Source: Koolhaas, Mau & Sigler, 1995, p. 920

**Figure 7.** An image of a man attempting to pass two naked figures represents the psychological and spatial ramifications of the intimacy of exposure.

Koolhaas's image proves haunting when one analyzes it as an experience of a passing figure. Imagine drifting through a narrow hallway, and suddenly having to pass through two exposed bodies flanking each side of the way. The psychological and spatial ramifications of the moment when the protagonist squeezes himself between the fully exposed bodies can be interpreted in many architectural forms. The more successful way of exploring the psychological drama of the intimacy of exposure may not be through blatant exhibition of the state of being fully exposed. Perhaps the subtle art of being ambiguous could potentially be a more meaningful mode of titillating human senses.

The London-based Turkish-Cypriot fashion designer Hussein Chalayan investigates a comparable

aspect of exposure and its effect on psychology and the environment. In his Spring/Summer 1998 collection named "Between," Chalayan shows "a group of models dressed in chadors, varying in length of each to progressively reveal their body until only a face of the last model was left veiled, leaving her naked body fully exposed" (Hodge, Mears & Sidlauskas, 2006) (Figure 8). Not unlike the photograph in S, M, L, XL, this tableau vivant evokes discomfort. It induces a provocative uneasiness and caused the audience to reexamine the relationship between covering and exposure, individual and community, public and private, and their own existence amidst it all.



Source: Hodge, Mears & Sidlauskas, 2006, pp. 64-65.

**Figure 8.** Hussein Chalayan. Garment from Between Collection, Spring/Summer 1998, Paris. Chalayan showed a group of models whose bodies were progressively exposed, evoking discomfort and thus forcing the audience to reexamine their own relationship between covering and exposure, individual and community, and public and private.

The state of being exposed and its psychological implication becomes a topic of experimentation in the work of contemporary architects like Shigeru Ban. The Curtain Wall House of 1995 epitomizes his sensitive manipulation of the experience of being exposed (Figure 9). The house provides minimal privacy, and almost completely exposes its occupants to the outside world, as the interior and exterior are merely separated by a billowing white curtain. Situated at a corner of a street intersection,



Source: Hodge, Mears & Sidlauskas, 2006, pp. 64-65.

**Figure 9.** Shigeru Ban. Curtain. Wall House, Tokyo, Japan. 1995. Ban's use of conventionally domestic interior drapery as an exterior envelope of the building suggest the precariousness of the separated between the indoor and outdoor. When drawn shut, the curtain provides the house and its inhabitants protection and privacy. However, the protection and privacy appear transient as the curtain is subject to forces of the elements.

when the curtain is drawn open, the house becomes a proscenium for the passersby to observe the domestic rituals of its inhabitants. When the curtain is closed, however, it remains subject to a force of nature such as wind to blow it open. This uncertain degree of exposure serves to further dramatize the relationship between the lives that exist inside and outside of the curtain. Unlike Mies's glass curtain wall of the Farnsworth House, after which Ban modeled the Curtain Wall House, the curtain façade does not provide the definite, if transparent, boundary created by glass. Similar to what Chalayan intended for his show and the dilemma Koolhaas attempts to express in his book, Ban places both the actors and voyeurs in the same architectural entity, removing what little boundary exists between those same entities in a Miesian environment, replacing reflected and transparent images on glass with open air.

While Ban engages in the psychology of varying degrees of exposure dictated by the movement of a

cloth membrane, SANAA Kazuyo Sejima + Ryue Nishizawa, also Japanese architects, employ exposure as a means of increasing the depth of visual perception into space mediated by interstitial spaces. At Toledo, the intimate relationship between the inside and outside faces a new challenge posed by the interior, which consists of a series of rounded-cornered glass rooms enveloped in a curved double layer glass skin (Figure 10). SANAA's Glass Pavilion defies the preconceived notion of exposure established by Mies in Farnsworth House (Ouroussoff, 2006). Unlike Farnsworth House, the Façade of the Toledo Glass Pavilion does not function as a picture frame, nor does it cast the visitor into the role of the voyeur. Instead, the bubble-like glass galleries create a remarkably layered visual effect that evokes the visitor's awareness of the different degrees of intimacy and isolation, without the self-conscious feeling of looking into a well-curated diorama as an outsider. Although the visitor is still invited to visually caress the exposed spaces, the contrast of the static viewing of the Glass House is contradicted at all times by the awareness of the fluidity of the interstitial spaces between the double layers of glass, emphasizing not only closeness but also reinforcing the distance between the visitor and her observed objects.



Source: Iwan Baan, photographer

**Figure 10.** SANAA Kazuyo Sejima + Ryue Nishizawa. Glass Pavilion Toledo Museum of Art, 2006, Toledo, Ohio. The thickening of the building envelope creates a layered visual effect, implying different degrees of intimacy and isolation.

## 6. Conclusion

Architects have continued to experiment with exposure to effectively express the spatial boundary where the interior meets the exterior. They have constantly tested new options and methods in order to explore other potentials. The cases studied in this paper reveal a sense of the dynamic nature of the threshold that in turn destabilizes our understanding of the spatial relationship between interiority and exteriority. The results of this experimentation have ranged from the mere representation of the building's structural system, a wide variety of apertures to the thickening of the interstitial threshold. In contemporary practice, though, the experimentation of structure, transparency and composition have evolved into a polemic that requires a far more profound inquiry into the discourse of architecture than the skin-deep discussion of building envelope.

Unlike structural and total exposure, mediated exposure concerns itself less with the materiality and physicality of architecture. The focus shifts towards orchestrating an architectural experience out of an internal tension, not to overcome the ambiguity but to spatialize it. The aim is to create a spatial experience that transcends singularity into ambiguous complexity. It helps architects develop the concept of an architectural interstice where the psychological interplay is unfolded. The works of Koolhaas, Ban and SANAA are examples of contemporary architectural projects that have convincingly created a meaningful liminal space at the architectural boundary, separating the interior from exterior. Indeed, they have transcended traditions and defied typical expectation, giving rise to an architectural experience that is psychologically intoxicating, if not erotically provocative.

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