

Digital Integration in Architecture of Space and Perception: A Book Review of *Flesh: Architectural Probes*

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Abstract: Diller and Scofidio's book "*The Body: Exploring Architecture*" explores the integration of digital transformation in architectural spaces. It explores how contemporary architecture manipulates spatial configurations and visual elements to challenge human perception and notions of space. The review involves how surveillance technologies and their impact on visibility and privacy within architectural designs, as well as the psychological effects of these spatial operations. The paper aims to elucidate the interplay between virtual space, architecture, and human sensorial experience.

Keywords: Body; Perception; Spatial Manipulation; Virtual Space

1. Introduction

In the 1970s, a global economic crisis led to a significant downturn in the architectural industry, creating limited opportunities for emerging architects. Elizabeth Diller and Ricardo Scofidio emerged during this period, engaging in performance art, visual arts, installations, and site-specific artworks. Through interdisciplinary practice, they expanded the boundaries of architectural practices. Their book *Flesh: Architectural Probes* compiles projects that reflect their diverse experiences, blending architectural thinking with societal, cultural, and historical analysis.

This article aims to explore the following questions: First, how is the concept of "flesh" construed in the book, and by what means is it deconstructed? Second, how do the case studies use an architectural perspective to translate the human body, including individual identification and socialization? How do the authors compile and summarize these complex processes and diverse projects in the book?

Third, with the advent of the digital age, the digital turn has become an unstoppable force, altering design methods, media, processes and cognition. Reflecting on early designers' thoughts on digital technology, the book constructs an appropriate context.

2. Body Perspective

Diller and Scofidio's work demonstrate that the human body serves as a medium connecting individuals with the broader world. The body is influenced and reshaped by political, cultural, and technological forces, acting as "folds" on its surface. The book cover itself reflects these ideas, with the word "flesh" embossed on it and transitioning from a female butt on the front cover to a male butt on the back cover. Additionally, through the act of reading, the 'flesh' is touched by the readers' hand. This tangible presence is why physical books are not entirely replaced by e-books. This duality represents societal integration of gender dynamics, a central theme triggers the social system.

In the project "Bad Press" [1] Diller and Scofidio describe the process of ironing, emphasizing the shape, edging, and pointing of a uniform, hinting at strike rules. The uniform, symbolizing "flesh," is subjected to the force of a hot iron, inflating it temporarily. This analysis connects efficiency, body and labor, highlighting gendered aspects of labor. Uniforms, like "flesh," represent societal forces such as police, school and military regulations.

Furthermore, clothing, especially uniforms, can be seen as analogous to the "flesh" of the body. Uniforms, worn by police, students, and military personnel result from deliberate or incidental forces acting upon the body. They act as a layer that separates the individual from direct interaction with the world, serving as a surface through which these forces are expressed. Diller and Scofidio explore this

concept using various surfaces to illustrate the idea of ‘fold’. They also discuss the distinction between private and public spaces, understood in terms of control or force exerted, essentially the constraints of ownership and accessibility. However, a blurred boundary exists between these two types of spaces, creating opportunities for inter-conversion. This ambiguity suggests that “flesh” acts as an intermediary medium, mediating the individual’s perception of the world through these forces. Thus, people’s understanding and identification of the world are mediated via this conceptual “flesh”.

Additionally, Diller and Scofidio often incorporate prosthetic elements in their projects. An example is the project “Line of Accordance [1]”. In this work, they conceptualize the bride as a ‘physical specimen’ dissected over time. This approach reveals parts of her body at any given moment. In an interview with “Eyebeam,” Diller cited human anatomy as an inspiration, comparing Leonardo da Vinci’s comprehensive anatomical drawings with Andrea Vesalius’s segmented studies. Marcus Vitruvius Pollio in *The Ten Books on Architecture* suggested that if nature constructs the human body with proportionate limbs, architectural details should similarly maintain proportional accuracy. Inspired by Vitruvius, Leonardo da Vinci combined geometry, biology, semiotics, and anatomy to create the Vitruvian Man. This method of using human proportions to measure architectural scale established a visual standard for architectural form and laid the foundation for the discipline. This concept of “divine symmetry” gained acceptance between the 14th and 16th centuries, becoming a paradigm of classical architecture. Unlike da Vinci, who depicted the human body, Vesalius dissected it into separate elements and organs, studying each independently. This method of separating the body and examining its systems highlights the body as a connected bridge and reflective medium, emphasizing its role in mediating our understanding of physical and conceptual space.

3. Psychological Effects

Diller and Scofidio explore the psychological effects of spatial manipulations through conversations rather than theatrical expressions. They chose to depict serious

discussions and everyday situations to convey their ideas. Each context is named after different types of individuals, representing specific projects. The book’s table of contents, titled ‘Transfers,’ signifies the transformation of the human body into architecture. The book includes eight chapters: “deviants, neurotics, neighbors, sinners, custodians, tourists, homebodies, insomniacs,” with these social identities embedded in bold and enlarged text, deconstructing the concept of the individual.

In works like “Vanity Chair”, [1] space operates as prosthetics. This dramatic spatial representation of the body prompts a rethinking of domestic habits and challenges traditional architectural constructs. The chair is modified by removing its two rear legs, leaving the two wooden front legs. A metal support leg with an adjustable mirror is added to the top.

According to Diller and Scofidio, “at an extreme scale, the chair equipped with a third leg, which passes between the sitter’s legs, brings their face into direct confrontation with the mirror. The space between the face and the mirror becomes the most private place.” [2] This interaction transforms sitting, observing, and reflecting into a complete spatial experience. Additionally, surrounding observers create a secondary spatial layer, enhancing the interactive dynamic.

Diller and Scofidio place the sitter in a confrontational gaze with themselves. Diana Agres views this observer’s gaze as a “framework,” suggesting that “architecture is written into the space of the conflict between the eye and the gaze.” [3] Stephen Willats defines creating installations from everyday objects as “transformation.” [4] He posits that transformation is a fundamental creative act, essential for expression and survival. In this context, transformation involves taking an object and altering its function, meaning, and characteristics, effectively converting it into something else. “The ultimate development of an object’s existence is a product of transformation.” [5] The mirror connects the self, internal, and external spaces. The architects view the chair, much like the human body, as a center of power and discipline, embodying social phenomena related to etiquette and self-expression. The mirror highlights the intimate internal space of the self and the surrounding public environment,

clarifying the relationship between the body and objects in terms of social norms.

The exploration of psychological effects is presented through conversations rather than theatrical expressions. Diller and Scofidio chose to depict serious discussions and everyday situations to convey their ideas. Extensive dialogues create the atmosphere and context. One perplexing project is the “Drawing Room,” [1] summarized as follows:

-The couple faces marital issues, including trust and confidence problems.

-Communication is necessary.

-The wife cannot see her husband naked and prefers watching others’ intimate lives on TV, though she can view it through a mirror.

The question arises: Is it real or fake?

Through conversations among the husband, wife, and therapist, Diller and Scofidio explore how people feel more at ease communicating through a medium, even if it’s a mirror reflecting their situation. For attendees such as deviants, neurotics, neighbors, sinners, custodians, tourists, homebodies, and insomniacs, Diller and Scofidio offer various media to help them ‘feel’ the elements. As Culler argues [1], and Diller and Scofidio echo, “things are never expected to be real; instead, they are read as signs of themselves, idealized and often frustrated.” Everything people absorb is edited by themselves or others before it enters their minds. What if the seeing process had been edited beforehand? Diller and Scofidio’s study of media observes the body from different perspectives and broadens the understanding of its definition. The mixture of virtual and real, displayed via media, is recurring theme in the book.

Le Corbusier similarly noted that people’s evolving perceptions of the Eiffel Tower were influenced more by media representations than by the structure itself. This appears that architects are not dealing with an isolated, abstract reality but are designing within a context of multiple possibilities and a broad cultural environment. Diller echoed this sentiment, emphasizing that architecture has never been an autonomous discipline, especially within contemporary culture, which demands a thick-condition approach [6].

Diller and Scofidio have harnessed cameras and screens to manipulate perceptions of space and time. Early camera technology captured static representations of moments in time. As

technology progressed, recording and manipulating time through moving images opened new possibilities for artists and architects. These devices allowed monitoring movements in one area and displaying them in another, blending real-time footage with virtual representations. This interplay between the real and virtual continually twists, confusing and engaging the audience’s intuition. In projects like “Delay in Glass” and “Slow House,” [1] Diller and Scofidio explored the dynamic nature of spatial relations. They used parallax changes to alter perceptions and perspectives, with cameras and screens capturing motion and creating a sense of frozen time. They attempted to apply similar concepts in the scenic corridor of the Institute of Contemporary Art, but this proposal was not approved [7].

In the project “Delay in Glass,” [1] media acted as a bridge that connecting the stage layout with literary creation, performance, and audience perception of performing arts. The venue was divided into two separate spaces, one for the bachelor and one for the bride. A mirror, rotated at a 45-degree angle, translated the floor plan into an elevation view, offering multiple perspectives of the performance. Using opaque materials, the bachelor could see parts of his body ‘separated’ from himself and eventually witness his own ‘death’ through time. This setup also explored the relationship between male and female, the sexual process, and the intangible media connection between individuals. The spatial arrangement impacted the audience’s perception of reality through the strategic use of mirrors. These movements indicated a shift from mental constructs to tangible physical constructs, identifying real situations.

Additionally, in the “Slow Building,” [1] the media functioned as a viewfinder for space-time. Instead of using traditional perspective or rendering techniques, Diller and Scofidio engaged multiple sections to create a slow-motion visual effect, attempting to capture intangible time. The combined sections quantified the changing space, with the building acting as a twisted camera icon displayed life’s sequence fragments along a curved path. To emphasize the project’s denationalization, Diller and Scofidio incorporated riddles to engage the reader’s attention.

“Q: look through it one way to see all you want; look through it another to see what you shouldn’t. What is it?”

A: A window.” [1]

Diller and Scofidio behaved similar methods to explore psychological effects. They used elements like screens, cameras, glasses, fog, tables, chairs, beds, mirrors, and the human body as symbols to create varied virtual experiences. These elements were strategically combined to evoke different emotional and perceptual responses.

Georges Teyssot [1] provides a useful framework for understanding how these elements impact the body’s physiology. He distinguishes three categories: exteroception, proprioception, and interoception. Exteroception involves the five senses—sight, hearing, smell, taste, and touch—that connect us to the external world. Proprioception refers to our sense of position and movement in space, informed by muscular tensions and balance. Interoception, on the other hand, is the perception of internal bodily sensations, such as stomach pain or an irregular heartbeat. Thus, the body serves as a medium through which individuals interpret their external environment. Diller and Scofidio manipulate these sensory categories to create unique spatial experiences. By engaging exteroception, proprioception, and interoception, their work challenges and expands our understanding of the relationship between the body, space, and perception.

People’s reorganization is based on their beliefs, which can easily change through media. Hence, the study of media continues to be challenged in their projects. The combination of art and technology highlights the connection between the body and social construction. Architecture can inherit cultural practices and serve as a tool for self-examination, challenging conventional understanding of space.

4. Digital Integration

The integration of technology with contemporary architecture represents a profound transformation in architectural form and function [8]. Surveillance technology, emphasized by Diller and Scofidio, redefines privacy, visibility, and control by seamlessly incorporating cameras and sensors into urban landscapes [9]. The “Loophole” [1] project

exemplifies this by transforming a military base into a contemporary art museum using modern media technology to reinterpret traditional surveillance mechanisms.

The military site, with its thick walls and defense towers, symbolizes traditional forms of control and observation. In “Loophole,” Diller and Scofidio used cameras to monitor the interior of staircases, projecting images onto LCD panels that alternated between transparency and opacity. This interaction turned observers into the observed, altering the dynamics of surveillance and privacy.

In the digital age, human interaction with architectural spaces has become increasingly frequent. Surveillance, visibility, and privacy in digitalized spaces have become critical issues. The widespread application of surveillance technology now extends beyond security purposes; it is also used for data collection, behavior analysis, and influencing user experience and social interaction [10]. Advanced graphical and mapping tools now allow architects to better understand crowd flows and social dynamics, enhancing spatial configuration efficiency and comfort [11]. The “Blur Building” at Swiss National Exposition in 2002, creating an immersive environment that blurs the lines between inside and outside, real and virtual. Visitors interact with this mist-covered structure, altering their perceptions and challenging conventional spatial boundaries.

The “Blur Building” is covered in a fine mist, created by over a thousand nozzles spraying water, making the building appear as a cloud floating over the lake. Visitors walk on a ramp that takes them through this cloud, experiencing an ever-changing, immersive environment. As they interact with and observe the building, each visitor, wearing a signal-emitting device, becomes part of the mist of the building. Traditional boundaries between privacy and the public domain are being redefined, with the ubiquitous presence of technology leading to unconscious data collection [12]. As Tschumi stated [13], the use and experience of space are no longer static but have become dynamic and interactive, requiring architectural design to keep pace with evolving technologies.

However, when these data visualization outcomes are used for commercial or governance purposes, there is a risk of over-

generalizing and categorizing individual behaviors. Diller and Scofidio's vision of technology-centric architecture is not merely speculative. It reflects an unfolding reality where the virtual and the physical are becoming inseparable. Digital-twin Technology enables simulating building performance and urban environmental impacts, assisting designers and planners in predicting and refining design solutions before construction within the context of Industry 4.0 [10]. The authors view technology as an omnipresent force, challenging architects to consider not only the utility of technological integration but also its ethics, necessitating thoughtful design of tech-infused spaces.

With the advent of the Internet of Things (IoT) and big data, buildings are becoming "smarter," capable of sensing occupants' behaviors and adjusting environmental parameters accordingly [14]. For example, smart thermostats can save energy based on the number of people in a room and their activity patterns. However, this intelligence often involves continuous monitoring of residents' daily activities, and unauthorized or non-transparent data collection can infringe on personal privacy. This raises significant privacy concerns, highlighting the need for Privacy by Design principles and anonymization techniques to protect individual identities [15,16]. Moreover, deep learning and facial recognition technologies present new challenges, requiring careful consideration of ethical implications [17,9].

Balancing the benefits of surveillance with the need to maintain individual privacy has led to important design principles and techniques. Privacy by Design principles emphasize considering privacy issues at the initial design stages [15]. Additionally, anonymization techniques and differential privacy play crucial roles in protecting individual identities in data usage [16]. In this context, promoting public participation and transparency in digitalized spaces is essential. Effectively regulating facial recognition technology requires distinguishing between semi-open and open public spaces to tailor regulations that address specific ethical and societal risks associated with each context [9].

Overall, integrating technology in contemporary architecture is crucial. It has become key to creating interactive, responsive

environments that cater to and challenge our perceptions. Moving forward, the lessons from Diller and Scofidio's explorations are clear: technology should not just be seen as a tool but as a partner in shaping the future of architectural design.

5. Conclusion

Diller and Scofidio's work in *Flesh: Architectural Probes* exemplifies the innovative integration of art and technology, challenging traditional notions of space and perception. Their projects underscore the importance of considering both the utility and ethics of technological integration in architecture. As technology evolves, their insights remain crucial for shaping a thoughtful and inclusive approach to contemporary architectural design.

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