Unclear Vision: Architectures of Surveillance
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The relationship between glass and technologies of communication has been an ongoing inspiration in my research. The history of the modern window is a history of communication: Le Corbusier’s horizontal window is unthinkable outside of cinema. The Eames House is unthinkable outside of the color slide. And the picture window at midcentury is unthinkable outside of television.

In each case, the ambition of modern architecture to dissolve the line between inside and outside is realized by absorbing the latest realities of communication.

If communication is basically about bringing the outside in (as when reading a newspaper to bring world events into your life) and getting the inside out (as when sending a letter), then glass unambiguously represents the act of communication. It is as if glass literally takes over more and more of a building as the systems of communication become more and more fluid. Having dissolved the walls into glass, the question has become how to dissolve glass itself, the last delicate line between inside and outside. The relentless quest for greater fluidity between inside and outside is no longer simply a drive toward transparency. The glass box has become something else altogether.

SANAA’s Glass Pavilion in the Toledo Museum of Art is symptomatic of this dissolution. At first, the building appears as the perfect example of transparency: an all-glass pavilion, for all-glass objects, in the glass city. In this sense, SANAA has inherited the Miesian tradition of radical transparency. In the standard publicity image of the project, the white-trimmed pavilion sits in the park, uncannily echoing some of Ludwig Mies van der Rohe’s canonic projects, particularly the Farnsworth House and the Fifty by Fifty-Feet House.

Mies famously deployed sheer glass walls to radically expose the interior. My interest in this phenomenon has been to explore the possibility that transparency in modern architecture was directly related to advances in medical imaging technologies for the human body. From that point of view, the logic of sheer glass walls is exactly like that of the X-ray; the inner structure is revealed by a new technology that allows you to look through the outer skin of the body. Mies himself even described his work as “skin and bones” architecture, referring to the structure of his Glass Skyscraper of 1922 as “the skeleton,” rendering the project as if seen under X-rays.

Mies was not alone. Books on modern architecture are filled with images of glowing glass skins, revealing inner bones and organs. Consider, for example,
Le Corbusier's project for a glass skyscraper in 1925; Walter Gropius's Werkbund Exhibition in Cologne in 1914; Erich Mendelsohn's Schocken Department Store in Stuttgart, Germany, from 1926 to 1928; Frits Peutz's Schunck Glass Palace in Heerlen, the Netherlands, in 1935; George Fred Keck's Crystal House for the Chicago World's Fair in 1933; and Paul Nelson's Suspended House in 1935.

These experimental designs from the early decades of the twentieth century formed the basis of everyday building by midcentury, when the see-through house had become a mass phenomenon just as the X-ray itself had. Screening the body for tuberculosis meant gazing into previously invisible areas of the body. X-ray technology had been available in sanatoriums since the beginning of the century. Only by midcentury did mass x-raying of citizens begin on a regular basis. With the spread of this technology, the newly visible interior of the body became not just a tool for diagnosis but the site of a new form of public surveillance. Policing the population by scrutinizing their insides, public institutions such as schools and the military began to manage the most private spaces of the body. Over a half-century period, an experimental medical tool transformed into a mechanism of surveillance for the entire population.

By midcentury, the association between X-rays and glass houses became commonplace in popular culture. For example, in Highlights and Shadows, a 1937 Kodak Research Laboratories film on the virtues of X-rays for disease prevention, a woman wearing a swimming suit is strapped to a laboratory table while her body is subjected to X-rays. As her photographic image gives way to that of her X-rayed body, the narrator declares: "This young lady, to whom henceforth a glass house should hold no terrors, will, after an examination of her radiographs, be reassured that she is indeed physically fit." In this context, the glass house symbolized both the new form of surveillance and good health.

A similar set of associations can be found in the discourse surrounding canonic works of modern architecture. In an interview in House Beautiful, Edith Farnsworth, a successful doctor in Chicago, compared her famous weekend house, designed by Mies in 1949, to an X-ray:

I don't keep a garbage can under my sink. Do you know why? Because you can see the whole "kitchen" from the road on the way in there and the can would spoil the appearance of the whole house. So I hide it in the closest further down from the sink. Mies talks about "free space": but his space is very fixed. I can't even put a clothes hanger in my house without considering how it affects everything from the outside. Any arrangement of furniture becomes a major problem, because the house is transparent, like an X-ray.\textsuperscript{3}
The use of the metaphor of the X-ray was not accidental. Modern architecture cannot be understood outside of tuberculosis. It is not by chance that Farnsworth goes on to say of her house, "There is already the local rumor that it's a tuberculosis sanatorium." The development of the X-ray and modern architecture coincide. Just as the X-ray exposes the inside of the body to the public eye, the modern building exposes its interior. That which was private became the subject of public scrutiny. A new clarity of vision—the penetrating gaze of medicine—liberated the new architecture, whose structure was meant to be as clear as the gaze looking into it, or so the story went.

What really fascinated architects, such as Mies and Philip Johnson, was not the way the gaze passed through the glass but the way it seemed to get caught in the layers of reflection. In canonic photographs, the Glass House becomes opaque, clad in what Philip Johnson described as wallpaper. In a television program, Johnson said the Glass House "works very well for the simple reason that the wallpaper is so handsome. It is perhaps a very expensive wallpaper, but you have wallpaper that changes every five minutes throughout the day and surrounds you with the beautiful nature that sometimes, not this year, Connecticut gives us." For Mies and Johnson, reflections consolidate the wall's plane. Complex lines of trees become like the veins of marble in Mies's buildings. When explaining his house, Johnson cites Mies from twenty-five years earlier, when he said: "I discovered by working with actual glass models that the important thing is the play of reflections and not the effect of light and shadow, as in ordinary buildings." Mies may have been referring to the models of his Glass Skyscraper that he had repeatedly photographed in a garden, before arriving at the few canonic images released in 1922.

Charles and Ray Eames also went to considerable trouble to study the reflections in their house. For example, they placed a model of the original project, the Bridge House, on the site and photographed it from all angles. In doing so, they took Mies's experiment a step further. With the Eames house, the plane is broken. Reflections of eucalyptus trees endlessly multiply and relocate. As Ray Eames said after thirteen years of living in the house, "The structure long ago ceased to exist. I am not aware of it." However, in the Glass Pavilion, SANAA goes even further in producing a layering of reflection on the inside as well as the outside. The blurring no longer stops at the space's outside limit; the whole space is the limit. There is no clear-cut boundary between inside and outside. The space is neither in nor out; it seems to extend infinitely. In such a space, walls are not optical barriers, but optical intensifiers. They are exposed along with the people and the objects. The inner and outer edges...
of the wall are revealed, but more importantly, the inaccessible gap between them takes over to become the real space of the project. The double line of the wall establishes and then undoes any sense of solidity. | Fig. 14

SANAA’s vision is far from crystal clear. In fact, the Glass Pavilion appears to be more interested in blurring the view and softening the focus than in sustaining the transparency of early avant-garde architecture. Within SANAA’s architecture, structure is never revealed. Their buildings are not even meant to be looked into or out of. They are optical devices without any visible mechanisms. The real view is not from the outside looking in, or the inside looking out; it is from the inside looking even further inward. Its objective is not for the viewer to discover the inner secret of the building, but to be suspended in the view itself. In Toledo, the visitor is quite literally suspended between the curving walls of glass. What you see through the glass layer in front of you is another layer and then another and then another. Even the objects on display through all of these layers are themselves made of glass. Peering through the layers, vision softens and distorts as the curved glass accentuates the distortion. If Kazuyo Sejima is the inheritor of Miesian transparency, the latest in a long line of experiments, she is the ultimate Miesian, leaping beyond transparency into a whole new kind of mirage effect. After centuries of architecture organized by the straight lines of the viewing eye, we now have an architecture formed by the soft distortions of the gaze—a more tactile experience of vision. To enter a Sejima project is to be caressed by a subtle softening of the territory. Even the reflections of trees in the outer layer of glass have a delicacy that one does not find in Mies’s work, whether in the renderings or the 1:1 scale models. With such a tactile sense of vision, models are crucial. In the studio, countless models are made of every possible solution that the effects can be felt before being fixed in a drawing. Indeed, SANAA seeks variations whose effects are unclear: “We try not to select options for which we can already imagine the outcome.” There is an architecture of deliberately unclear vision.

The modern discourse of X-rays—cutting through the outer layers to reveal secrets—gives way to inner layers, endlessly folded and overlapping fabrics that intensify the mystery rather than remove it. The X-ray logic, as it has been absorbed by modern architecture, culminates in a dense cloud of ghostly shapes. The clearest of glass is now used to undermine clarity.

Today, new forms of advanced surveillance technologies operate in the city, and these models of vision act as the new paradigms for the window. We cannot predict which of these technologies will be absorbed into architecture, but some are already having an impact on the built environment. Handheld scanning devices capable of seeing through clothing, walls, and buildings are already in use.
by the military and, increasingly, by the police. These devices effectively make solid walls behave like glass and they open up the possibility, even inevitability, for new kinds of architectural experiments.

Forward Looking Infrared Radar (FLIR), for example, detects the electromagnetic frequencies at which heat radiates from organisms and structures, exposing heat-emitting bodies inside. [fig. 15] Seemingly solid walls no longer offer privacy. Instead, FLIR scans can reveal activities that have already finished. You can be exposed even after you have left the building, because heat signatures remain for a while. This delay is incorporated into a new kind of vision. Again, bodies are treated the same as buildings. Passive Millimeter Imaging (PMI) is used by the United States Customs Department to detect hidden weapons or contraband in clothing, bags, or vehicles by stripping the outer layer away. [figs. 16 + 17] With the KPF lens, anyone can use a regular camera, even a cell-phone camera, to see through clothing by concentrating on the infrared spectrum. These technologies are controversial. The use of PMI has been restricted due to privacy concerns, and the KPF lens is illegal in the United States and Europe.

The midcentury fear of loss of privacy in the glass house and with the X-ray has reappeared. It seems as if each new technology that exposes something private is perceived as threatening and then quickly absorbed into everyday life. The fear of the glass box or X-ray seems quaint today. Even the grainy images of video surveillance cameras seem already less invasive now, almost reassuring. Perhaps today’s scanning technologies will also seem quaint in the future, as each new technology delves deeper and deeper into the private. With each new invasion, our definition of private changes.

Meanwhile, the original concept of the Glass House has reemerged in mobile form. Consider the protective bunker of the Popemobile, designed with four sides of bulletproof glass after the 1981 assassination attempt on Pope John Paul II. Mies and Johnson on wheels. [fig. 18] More recently, soldiers in Iraq have appropriated this concept, with what they call “Papa glass,” by welding old ballistic-proof windshields to the top of their Humvees for protection against snipers. [figs. 19 + 20]

The point of these quick notes is simply to show that by changing our definitions of public and private, the new surveillance technologies that emerged in the early years of the last century have also changed our understanding of architecture. The question here is not how transparency has been dissociated into other fields, or how architecture affects other fields, but how architecture absorbs the latest communication systems. Architecture is never threatened by these technologies. On the contrary, it feeds on them. Our field is currently digesting new models of vision; new architectures will inevitably emerge.

References

1. Mies van der Rohe, “The Pure Form Is the Natural,” 6, no. 5-6, April 1928.