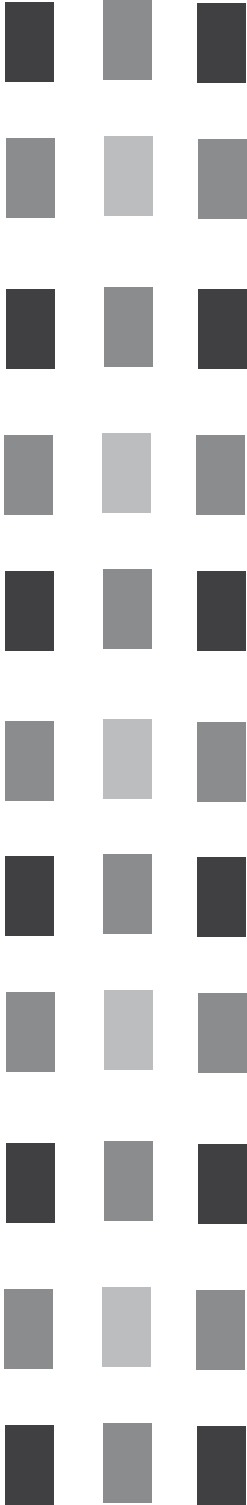


"Skinless Architecture"

Beatriz Colomina



Five points as way of an introduction

1. In a way my work has always been on the virtual. I have concentrated on the construction of architecture in the media, the virtual architecture of photographs, films, exhibitions, publications, etc. My main point has been that buildings are conceived and transformed through media rather than simply represented in the media. Furthermore, architecture is itself from the beginning a form of media.
2. These virtual systems are not simply opposed to the material reality of architectural objects. The objects themselves take on the characteristics of the media in which they are represented.
3. These media are not just the obvious publication systems of the mass media to which I have devoted a lot of attention in the past. There are other ways of making things public, other ways of seeing the world, experimental ways of seeing objects, including ourselves, our own bodies.
4. In fact, the techniques of representation in architecture are specifically related to techniques for representing the body. The relationship between architecture and medical science is much more intimate than we think.
5. So to ask ourselves about virtual architecture here in a conference about architecture and the media, I think we have to look at the media of medical science.

Skinless Architecture

The line between public and private no longer coincides with the outer limit of a building. We might even argue that the envelope is no longer to be found on the outside. It has coiled itself up within an imaginary body.

Architectural envelopes respond to our image of the human body rather than to functional programs. This is an old story. Architecture has always followed medicine. During the Renaissance, for example, when doctors investigated the mysterious interior of the body by cutting into and dissecting it, architects tried to understand the interior of the building by slicing section cuts through it. In the sketchbooks of Leonardo da Vinci, cutaway views of architectural interiors appeared beside anatomical drawings. He understood the interiors of the brain and womb in architectural terms, as enclosures that must be cut through to reveal their secrets. The central reference for architecture was no longer a whole body, but a dissected, fragmented, analyzed body.

As medical representations changed so did architectural representations. In the 20th century,

it was the widespread use of the X-ray that made a new way of thinking about architecture possible. If architectural discourse has from its beginning associated building and body, the body that it describes is the medical body, reconstructed by each new theory of health.

Modern architecture, for example, is unthinkable outside TB. The principles of modern architecture seem to have been taken straight out of a medical text on the disease which in the late 19th century gave as causes of TB "unfavorable climate, sedentary indoor life, defective ventilation and deficiency of light." In response, modern architects offered sun, light, ventilation, exercise, roof terraces, hygiene, and whiteness as means to prevent, if not cure, tuberculosis.

In his book *The Radiant City* of 1935, Le Corbusier dismissed the "natural ground" as a "dispenser of rheumatism and tuberculosis" and declared it to be "the enemy of man." He advocated pilotis to detach buildings from the "wet, humid ground where disease breeds," and roof gardens for sunbathing and exercise. He utilized medical pictures of the lungs and their inner workings as architectural illustrations, and developed a concept of "exact respiration" whereby the indoor air was continually circulated and cleaned, made "dust free, disinfected, ... and ready to be consumed by the lung." One by one, all the characteristic features of modern architecture (pilotis, roof garden, glass walls, and clean air) turn out to be medical devices.

Modern buildings even started to look like medical images. Mies van der Rohe described his Glass Skyscraper of 1922 as skin-and-bones architecture, and rendered it as if seen through an X-ray machine. Mies was not alone. Our slide libraries are filled with images of translucent glass skins that reveal inner bones and organs. Take for example, Le Corbusier's Glass Skyscraper (1925), Walter Gropius's Bauhaus (1926), Brinkman and Van der Vlugt's Van Nelle factory in Rotterdam (1925–27), George Keck's Crystal House in the 1933–34 World's Fair in Chicago, and Paul Nelson's Suspended House (1935). This is more than a dominant aesthetic. It is a symptom of the deep influence of medical discourse on architecture.

X-ray technology and modern architecture were born around the same time and evolved in parallel. By midcentury the see-through house had become a mass phenomenon, just as the mobilization against TB launched programs for the mass X-raying of entire populations. While the X ray exposed the inside of the body to the public eye, the modern building unveiled its interior, subjecting what was previously private to public scrutiny. In an interview published in *House Beautiful*, Edith Farnsworth, a successful Chicago doctor, compared her famous weekend house, designed by Mies

van der Rohe in 1949, to an X ray, and cited a local rumor that the house was a tuberculosis sanatorium. The X-ray aesthetic was inseparable from the discourse about the disease.

The X ray is not simply an image of the body, however. More crucially, it is an image of the body being imaged. The X ray is not just about showing an inside. The exterior envelope remains as a kind of shadow or blur. To look at an X ray is to feel one's eye penetrating the surface of the body and moving through space. The very act of looking is exposed. It is inevitably voyeuristic. Perhaps that was what attracted architects to X rays from the beginning. With Mies, the glass is never completely transparent. Even at night one senses the outer limit of the building and one's eye passing through that limit. Modern architecture exposed itself, but not by revealing everything. Rather, it staged the act of exposure, calling the eye in.

At the turn of the twenty-first century, the CAT scan (Computerized Axial Tomography) may be for us what the basic X ray was for architects early in the twentieth century. In fact, the CAT scan is simply many X-ray images compiled by a computer to generate cross-sectional views and three-dimensional images of the body's internal organs. A typical medical brochure describes it thus: "Imagine the body as a loaf of bread and you are looking at one end of the loaf. As you remove each slice of bread, you can see the entire surface of that slice from the crust to the center." The crust, skin, or envelope becomes an almost invisible line. What matters is the dense interior, which is rendered like a new, more complex kind of facade.

As with the X ray, architects have been quick to respond to the new technology. If architectural publications at the beginning and middle of the century were full of X rays, contemporary architectural publications are full of CAT scan images. For example, on the cover of a 1992 catalogue of an exhibition of his work, Jose Luis Mateo shows a CAT scan of a brain and insists within that "the architect has to act with the callousness of the medic: he cuts, analyses, researches. But he must never mummify an organism that lived once." Likewise, UN Studio shows CAT scans of the brain alongside their projects in their 1999 book *Move*. The Renaissance obsession with the brain continues into the twenty-first century, as does interest in the fetus – as evidenced by the "embryological" work being done by digital architects.

The influence of the CAT scan is reflected in recent architectural envelopes. In the Office for Metropolitan Architecture's Bibliothèque Nationale competition entry, the exposure of a skeleton behind a glass skin gives way to translucent bodies revealing organs. And Foreign Office Architects' Yokohama Port Terminal also seems to follow the logic of the CAT scan: an endless series of section

cuts is used to assemble a three-dimensional body. At Yokohama, there is no simple opposition between the outside and the inside. The building aspires to be a continuously folded surface where structure and skin are one, and there are no bones or discrete organs.

Today, there are new instruments of medical diagnosis, new systems of representation. So if we want to talk about the state of the art in building envelopes, we should look to the very latest techniques of imaging the body and ask ourselves what effects they may have on the way we conceive buildings.

The latest techniques represent yet another radical transformation of our thinking regarding the relationship between inside and outside. For example, the M2A camera that was approved by the FDA in 2001 is a one-inch-long disposable camera that is swallowed as a pill. M2A is short for "mouth to anus. It snaps two color pictures a minute for eight hours as it passes through the 22-foot-long digestive tract. A recorder the size of a walkman collects 57,000 color images while a person goes about normal business. The images are then downloaded on a computer to produce a video of the camera's journey."

Like the 1966 movie *Fantastic Voyage*, in which a team of scientists is shrunk and injected into the body to repair a brain injury, the M2A transforms the body into an occupiable interior. The body is turned inside out, making the skin irrelevant. All that remains is an endless interior, bathed in the light from the capsule video camera. The capsule itself looks like a hybrid of the buildings inspired by X rays and CAT scans. A translucent envelope exposes the outlines of the inner mechanisms while a transparent head serves as the viewing apparatus. This hybrid displaces both the transparent and translucent systems in favor of a skinless body, one no longer even experienced as a body. The architectural analog would be the skinless building, the building turned inside out to such an extent that it may not be clear it is a building.

What this complete loss of the envelope exactly means for architecture is unclear, but in an age in which the public/private distinction is so radically dissolved, an architecture without envelopes may well be upon us.

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