

# Regulation, Profit and Power: The Transversal Relationships of Aluminum Cladding Production

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**Scholars have explained mid-century modern architecture as a manifestation of public regulation, private enterprise, or an engagement between the public and the private spheres. Taking this engagement within a mixed economy as a contextual underpinning, and with a particular focus on the economic context of twentieth-century aluminum cladding, this paper suggests the *transversal relationship* as a framework to understand the development of modern architecture in the United States. Such relationships operate as dislocated, distributed and countervailing interactions that can be simultaneously competitive and collaborative, disabling and enabling of goals and outcomes.**

In 2018, the Trump administration imposed tariffs on aluminum imports. This fact has been contextualized by debates about the limits and ambitions of government regulation, nationalism, and globalism. Soon after the implementation of tariffs, aluminum industry executives variously announced their support or carefully articulated opposing positions.<sup>1</sup> Tariffs are just one example of a tenuous relationship between the aluminum industry and government regulators that has extended over decades. Government regulations have empowered the spread of commercial aluminum cladding as a ubiquitous material of twentieth-century architecture. For instance, patents on aluminum production and manufacturing processes, enforced by US patent law, protected and enabled the aluminum panels on the icon of twentieth-century aluminum architecture, the Alcoa Building (1953, Harrison and Abramovitz.)<sup>2</sup>

On the other hand, regulators sometimes entangled with and disabled the growth of the aluminum industry. For much of the first-half of the twentieth century, Alcoa was the target of anti-monopoly legislation leading to the near dissolution of the company by government regulators in the 1950s.<sup>3</sup> Simultaneously, US law protected patented processes underlying Alcoa's expertise in aluminum in the years surrounding World War II, deployed to build and operate a significant manufacturing enterprise with government funding to produce aluminum in great quantities for the war effort. Such transversal relationships characterize the interaction between the producers of aluminum cladding and regulators, competitors like Alcoa and Reynolds Metals, and the relationships between designers inside the manufacturing enterprise and architects outside the enterprise.

Taking the production and spread of aluminum cladding as a point of departure for study, this paper suggests the

*transversal relationship* as a framework to understand the development of modern architecture in the United States. Instead of modern architecture explained as an outcome of government policy or an outcome of corporate ambitions for profit and power, this paper suggests architecture labeled as *modern* is productively studied through the framework of transversal relationships.

What are the characteristics of these relationships? These are relationships that reinforce the commitments and goals of the parties involved but also interact in tension. Studying the production of aluminum cladding, I define three main categories of transversal relationships.

1) manufacturer ~ regulator; 2) manufacturer ~ manufacturer; 3) manufacturer ~ designer. Alcoa's interaction with regulators was previously discussed, therefore I now turn to the second transversal relationship – the interaction between manufacturers.

## MANUFACTURER ~ MANUFACTURER

Manufacturers of aluminum cladding were both competitors and collaborators, often simultaneously. For instance, Alcoa supplied aluminum to Kawneer, a noted manufacturer of aluminum storefronts and cladding products, but Alcoa also manufactured their own competing products. This relationship might be compared to the competition between Samsung and Apple, wherein Samsung has supplied the screen and certain chips for the Apple iPhone, but also remained in fierce competition for larger, more profitable shares of the cell-phone market. To understand the success and spread of the iPhone, one must also study the transversal relationship between these two competitors.

Another way aluminum producers held a transversal relationship was in the way they publicized noteworthy architecture. Reynolds Metals held a long-running competition to promote the use of aluminum in architecture called the Reynolds Prize, a \$25,000 purse awarded to architects who employed aluminum in their built designs. Reynolds was keen to associate their shiny metal with icons of modern architecture as a way of promoting the spread of aluminum and associating aluminum with modernity. Yet, some projects were specifically supplied with aluminum from rivals. The US Air Force Academy Cadet Chapel (1962, Walter Netsch, Jr. and SOM) was built with Alcoa-supplied aluminum and celebrated by Alcoa in promotional material.<sup>4</sup> Yet, Reynolds awarded this

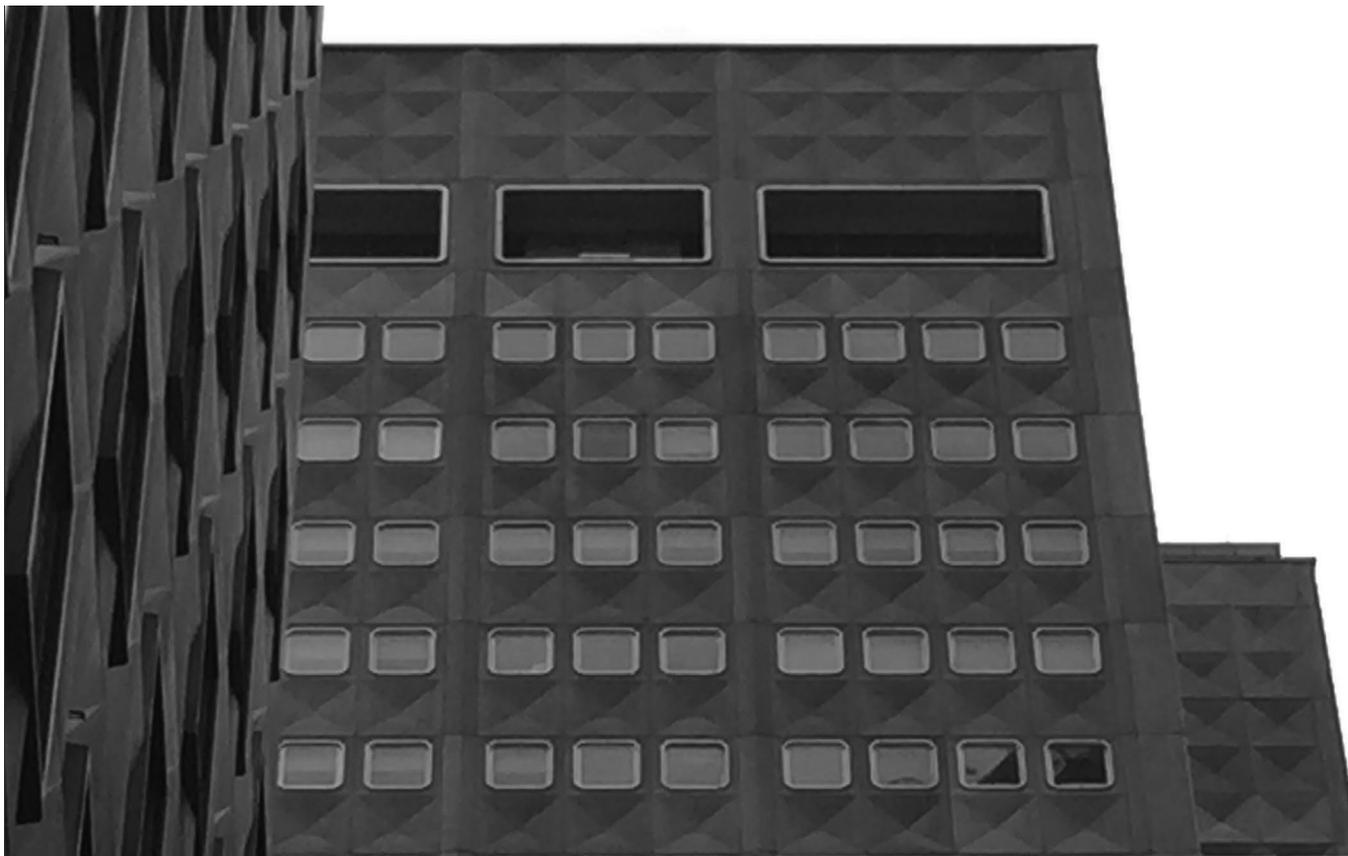


Figure 1: Harrison and Abramovitz, Alcoa Building, 1953, photograph by the author.

project and its designer the \$25,000 Reynolds Prize, and consequently also publicized it in their own marketing campaigns, associating the Reynolds name with the project's fame.<sup>5</sup>

### MANUFACTURER ~ DESIGNER

A third transversal relationship is manufacturer to designer, specifically concerning relationships with architects outside the enterprise with whom these corporations collaborated. Alcoa used the fame of well-known architects as a vehicle to publicize aluminum. In the mid-1940s, near the end of World War II, Alcoa held a meeting to plot the postwar growth of aluminum in architecture.<sup>6</sup> They pined to develop an aluminum wall that would meet stringent building codes for fire protection. They turned to Harrison and Abramovitz to collaborate with their designers and engineers to design the wall, and more broadly, design the administration building for their Davenport, Iowa plant. Alcoa wanted the publicity offered by collaborating with famous architects. The project was published and the trial and error in design, according to *Architectural Forum*, was "Harrison & Abramovitz's venture into prophecy." It was conceived as such because the wall design was envisioned as a system that could be manufactured as a cladding for high-rises all over the country.<sup>7</sup> This relationship, however, was not solely a mode of appropriating architects for their marketing and profit campaign, because

Harrison and Abramovitz held a long relationship with Alcoa, designing several aluminum-clad high-rises with decorative, eye-catching, manufactured panels.

The positionality of design as a practice both within the corporate structure and outside its structure in the offices of architects or other designers was not a clear boundary. Naming an author is exposed largely as a contractual exercise. While a building is more than its constituent parts - more than just cladding - and the architect rightfully deserves a note of building authorship, manufacturers played a crucial role in the production of modern architecture.

### CONTEXTUALIZING TRANSVERSAL RELATIONSHIPS WITHIN A CONSUMER SOCIETY

Reflecting on these relationships, one might extend the possibility that perhaps they are more imagined and less endemic to twentieth-century architectural production, in much the same way that when one plays the game of spotting a Volkswagen Beetle going down the road, one suddenly finds more Volkswagen Beetles going down the road. That is, does one find transversal relationships because one is looking for them? To answer that, I find it important to examine the context of these relationships. Historians such as Lizabeth Cohen provide this context. In *A Consumers' Republic: The Politics of Mass Consumption*, Cohen argues that in the aftermath of World War II, a foundational shift in the United States took place. Cohen argues that mass consumption developed in the

postwar period through “complex shared commitment(s)” between policymakers, business and labor leaders and civic groups.<sup>8</sup> Thus, the interaction between capitalists and policy-makers worked to give rise to the consumer economy.

## CONCLUSION

The transversal interaction between capitalist aluminum manufacturers, policy makers, and architects worked to give rise to architecture of the twentieth century. Corporate logics, manufacturing processes, and material manufacturers are therefore salient subjects of investigation to explain modern architecture. Such an investigation entails a look beyond the icons, the well-known architects, and the established canon to examine more closely the often-unknown designers within the manufacturing enterprise, the manufacturer’s marketing mechanisms, and the industrial ecologies of production and distribution.

## EXPANDED RESEARCH

What other materials and building components might be scrutinized to discern the way underlying logics of production have shaped modern architecture? The role of materials and components has long been claimed to be among the historical forces underpinning the development of modern architecture. Reductionists might point to steel, or the elevator, or more broad conceptualizations of technology itself as the historical determinants. Instead, this paper advocates spotlighting transversal relationships between the human and material domains where they are dislocated, distributed and countervailing as a productive methodology.

## ENDNOTES

1. Tom Kilgore, “Alcoa CEO Explains Why Aluminum Tariffs Are Hurting, Not Helping,” *MarketWatch*, July 22, 2018.
2. For a history of patents and Alcoa, see Carr, *Alcoa: An American Enterprise* (New York: Rinehart & Co., 1952).
3. A concentrated account of Alcoa’s entanglement with accusations of monopoly is detailed in George David Smith, *From Monopoly to Competition: The Transformation of Alcoa, 1888-1986* (Cambridge: Cambridge University Press, 1988).
4. *Architectural Achievements: U.S. Air Force Academy* (Pittsburgh: Aluminum Company of America, 1956), folder 4, box 127, Records of the Aluminum Company of America.
5. Skidmore, Owings & Merrill was awarded the eighth annual R.S. Reynolds Memorial Award in 1964 and the project was subsequently publicized in numerous brochures and retrospectives.
6. *Summary of the Minutes of the Architectural Sales Meeting* (Pittsburgh: Aluminum Company of America, March 12-14, 1945), pp. 12-13, folder 1, box 117, Records of the Aluminum Company of America.
7. For details about the construction of the Davenport Works facility, see “Aluminum: New ALCOA Administration Building at the Davenport Plant is a Gleaming Package of the Many Mature Uses of This Metal in Building,” *Architectural Forum*, June 1949.
8. Lizabeth Cohen, *A Consumers’ Republic: The Politics of Mass Consumption in Postwar America* (New York: Vintage Books, 2004), 11.