

## Banal by Design: Silicone Joint Sealant and the Supply Chain of Architectural Production

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Historically, environmental mediation and its relation to cultural production found a broad audience in Superstudio's iconic project, *The Continuous Monument*. As is well known, *The Continuous Monument* proposes a global infrastructure of uniformly structured and conditioned interior space as a polemical response to largely unchecked suburban growth that was widespread in 1960s Italy. According to Aldo Natalini, however, the proposal "should not be understood in its physical sense, but as a visual and verbal metaphor for a rational and orderly distribution of resources." While not intended as a literal material proposition, considering *The Continuous Monument* as such reveals strong resonances with much contemporary development. Consisting of nothing more than a mirrored surface and a uniform grid, both *The Continuous Monument* and many new constructions rely on the utter banality of architecture in achieving their goals. These utterly banal buildings, in turn, rely on equally banal technology; in this case, silicone joint sealant. Simply acknowledging this resemblance, however, fails to elucidate anything unique about the present moment in architecture and urbanism. Looking with a more critical eye attuned to contemporary political, economic, and cultural phenomena opens the door for new interpretations. In this paper, the assumed materiality of *The Continuous Monument* is used as a point of departure to consider the contemporary built environment as a complex assemblage of social and environmental relations mobilized by design decisions.

### INTRODUCTION

Since the mid-twentieth century, silicone joint sealant has become increasingly popular in large-scale construction projects. Prior to its widespread use, joints largely relied on mechanical fasteners and narrow material tolerances, but with the rising use of silicone, design details began to rely on its plasticity.<sup>1</sup> In these applications, silicone joint sealant acts as a mediator. Given the ubiquity of this product in the built environment, my purpose here is to examine the supply chain of silicone joint sealant to enroll seemingly disparate landscapes into the same architectural system. Like the product itself, this paper seeks to establish relations between unlike parts in the supply chain of construction, acting as a mediator between building material, labor conditions, environmental regulations, and capital flows.

Here, my interest is specifically rooted in the banal, considered both aesthetically and technologically. Aesthetically, banality can take many forms, but in this case, a uniform grid of

reflective surfaces constitutes what I consider to be "lacking originality, freshness, or novelty," as the definition suggests.<sup>2</sup> Technologically, banality resides in the unseen and unnoticed processes or products that remain fundamental to a building's existence. In this case, silicone joint sealant. To examine these characteristics, the following narrative features two built projects—one ordinary and the other extraordinary—to make claims about the utility of banality in both architecture and capitalism, citing an influential moment in architectural history and theory along the way.

### DRAWING BANALITY

For the ordinary building under examination, the key point of departure lies buried in construction documents, which outline the material assemblies required to execute the design.<sup>3</sup> The curtain wall elevations, in particular, reveal the ambition of a largely homogenous glazing strategy that somehow strives for banality in its gridded reflectivity. (Figure 1) Technologically, it falls to another drawing type to reveal the function of silicone joint sealant, the detailed wall section. In the detailed wall section, the architects delineate precisely how the material assembly will perform its duties, namely acting as a thermal barrier.<sup>4</sup> Whether interior or exterior, these wall sections rely on the invisible work done by silicone joint sealant, specified by its material identification number annotated in the drawing. Regardless of the particular material properties of the assembly, silicone joint sealant is often required to compensate for the tolerances that inevitably appear in construction, making its presence in the built environment pervasive. Zooming into the most detailed drawing in the construction document set shows how critical this material technology is to the performance of the building and, by extension, cities at large.

With so many applications throughout the building, the quantity of silicone joint sealant required for the 225,000-square-foot project is staggering. For the interior finishes alone, nearly 70,000 square feet of surface to be sealed at \$0.61 per square foot, one of the cheapest building products per unit, adding nearly \$43,000 to the total building cost. For the exterior walls, another 37,000 square feet of material requires sealing for a total of \$22,000. And if that was not enough, the builders added another \$13,000 lump sum for more sealant, bringing the total budget for silicone joint sealant to \$77,715.<sup>5</sup>

In addition to the typical drawing set, construction documents also require specifications that outline a range of

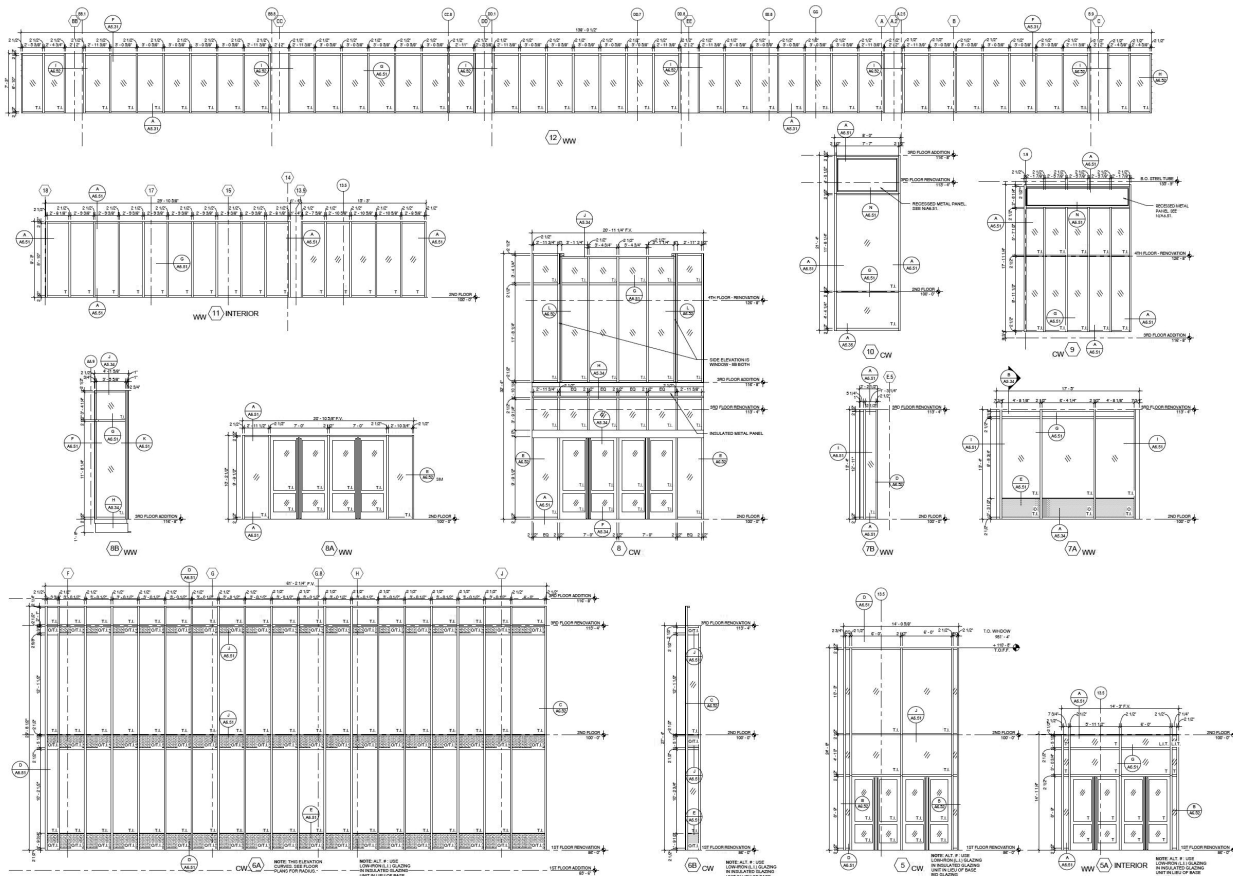


Figure 1: Curtain wall elevations illustrating designed banality.

building products that can be used to make the building as designed. In this case, the specification for the joint sealant indicated in the drawings points to a range of manufacturers, the first of which is Dow Corning, headquartered in Midland, Michigan with a branch plant in Carrollton, Kentucky. Building on theories developed in science and technology studies and heeding Marx’s guidance to venture into the “hidden abode of production,” as recently pointed out by geographer Matt Huber, the narrative now travels up the supply chain to the sites of manufacture and extraction in an attempt to enroll more effects and more consequences into the system, something typically avoided by architects and designers who seek to limit the input variables in order to make achieving sustainability more likely.<sup>6</sup>

**SOURCING BANALITY**

Carrollton, Kentucky is located on the northern border of the state along the Ohio River. The Dow Corning plant in Carrollton began operating in 1965 and is responsible for the manufacture of the company’s silicone material portfolio. In August 2017, Dow Chemical and DuPont merged to become the world’s largest chemical company; this merger builds on

the legacy of another historic merger from 2001 when Dow Chemical purchased Union Carbide, made famous after Dow refused to take responsibility for the continued devastation caused by the Bhopal disaster many years earlier.<sup>7</sup> On the ground, the plant is surrounded by a large berm that offers only fleeting glimpses into the facility, creating yet another instance of designed banality.

Since 2000, DowDuPont has been fined more than \$200,000,000 for environmental, antitrust, and labor violations, and in August 2016 the Carrollton plant was the subject of a \$100,000 civil penalty for air quality infractions.<sup>8</sup> The Carrollton plant is one of many manufacturing sites along the Ohio River that enjoy Foreign-Trade Zone (FTZ) status, a designation that many have yoked to the rise of neoliberalism.<sup>9</sup> Other building products manufacturers with FTZ status include CertainTeed Gypsum, PMC Organometallix, North American Stainless, Nucor Steel, among others, making the industrial corridor a model of neoliberal practices in the construction industry.<sup>10</sup> Importantly, much of the labor and resources that make these processes possible derive from a landscape synonymous with exploitation and neglect, made visible in mountaintop removal sites in eastern Kentucky. (Figure 2) These landscapes, when drawn together through their supply chain of a ubiquitous building product, begin



Figure 2: Mountaintop removal site in Letcher County (Mountaintop Removal Road Show)

to reveal a more complex understanding of sustainability in design.

### THEORIZING BANALITY

Theories of the banal in architectural history are not new, but they have generally gravitated toward the everyday spaces of contemporary life. Robert Venturi and Denise Scott Brown made the quotidian artifacts of Las Vegas the subject of their now-famous design studio at Yale, as documented in the book *Learning from Las Vegas*. Bernard Rudofsky's *Architecture without Architects* and Margaret Crawford's *Everyday Urbanism* contribute to the genre that might trace its intellectual origins to Henri Lefebvre's series, *Critique of Everyday Life*, as recently pointed out by Deborah Fausch in her essay on the ordinary.<sup>11</sup> These studies, however, stray from how I'm treating the ordinary and the everyday, which is less visible. More aligned with how I'm using it is the provocations put forward by Superstudio. Most emblematic of the presence of banality in architecture is their project for The Continuous Monument.

While their catalog of built work is slim, Superstudio's contributions to critical practices in architecture are significant. The phenomenon against which they staged their most iconic intervention was the suburbanization of much of the Italian landscape.<sup>12</sup> The Continuous Monument, called a "negative utopia" by its authors, proposes a global infrastructure of uniformly structured and conditioned interior space as a polemical response to the largely unchecked suburban growth that was widespread in 1960s Italy and elsewhere. Consisting of a series of collages, the project existed only in the imagination, aided by the graphically compelling images that depicted the omnipresence of the object. (Figure 3) The project pressed on mounting issues of environmental degradation that were becoming mainstream at that time, depicting The Continuous Monument towering over an otherwise untrammelled landscape. In each collage, the unrelenting grid exists in sharp contrast with its immediate surroundings, as one historian recounts, "cleared and rendered homogeneous by the political and cultural processes of second capitalism."<sup>13</sup>

The grid, according to Adolfo Natalini, was not to be taken literally. Rather, it was “a visual and verbal metaphor for a rational and orderly distribution of resources.”<sup>14</sup> Nevertheless, the banality of the system remains intact while achieving monumentality through its scale. The grid was later taken up as a device to symbolize the theory of minimum effort in design that became one of Superstudio’s legacies. In the years following *The Continuous Monument*, the furniture and fabric series called *Quaderna* illustrates the manifestation of this technique. In another catalogue image, the furniture series quite closely resembles the juxtapositions first proposed in *The Continuous Monument*, as a sort of suspended competition between the natural and the artificial.

While not intended as a literal material proposition, considering *The Continuous Monument* as such reveals strong resonances with much contemporary development in how it exploits the banal. Examples of how fragments of *The Continuous Monument* exist in contemporary cities are pervasive, evident in most business districts or office parks.

Consisting of nothing more than a mirrored surface and a uniform grid, both *The Continuous Monument* and many contemporary construction projects rely on the utter banality of architecture in achieving their goals. These utterly banal buildings, in turn, rely on equally banal technology; in this case, silicone joint sealant. Also dependent on banality in delivering political interests are extraordinary buildings that more clearly articulate the relationship between Superstudio’s cautionary tale and the reality of contemporary neoliberal practices in design and construction, more so than the humble project that began the story.<sup>15</sup>

### BUILDING BANALITY

Designed by Rafael Viñoly, the luxury condominium tower sneaks its elitist program into midtown Manhattan with an unpretentious aesthetic and an even more unpretentious name, 432 Park Avenue. The presumptuous part of the building lies in its height, a towering 1,396 feet that relies on a real estate friendly zoning ordinance in New York City that allows for air rights to be transferred between properties.

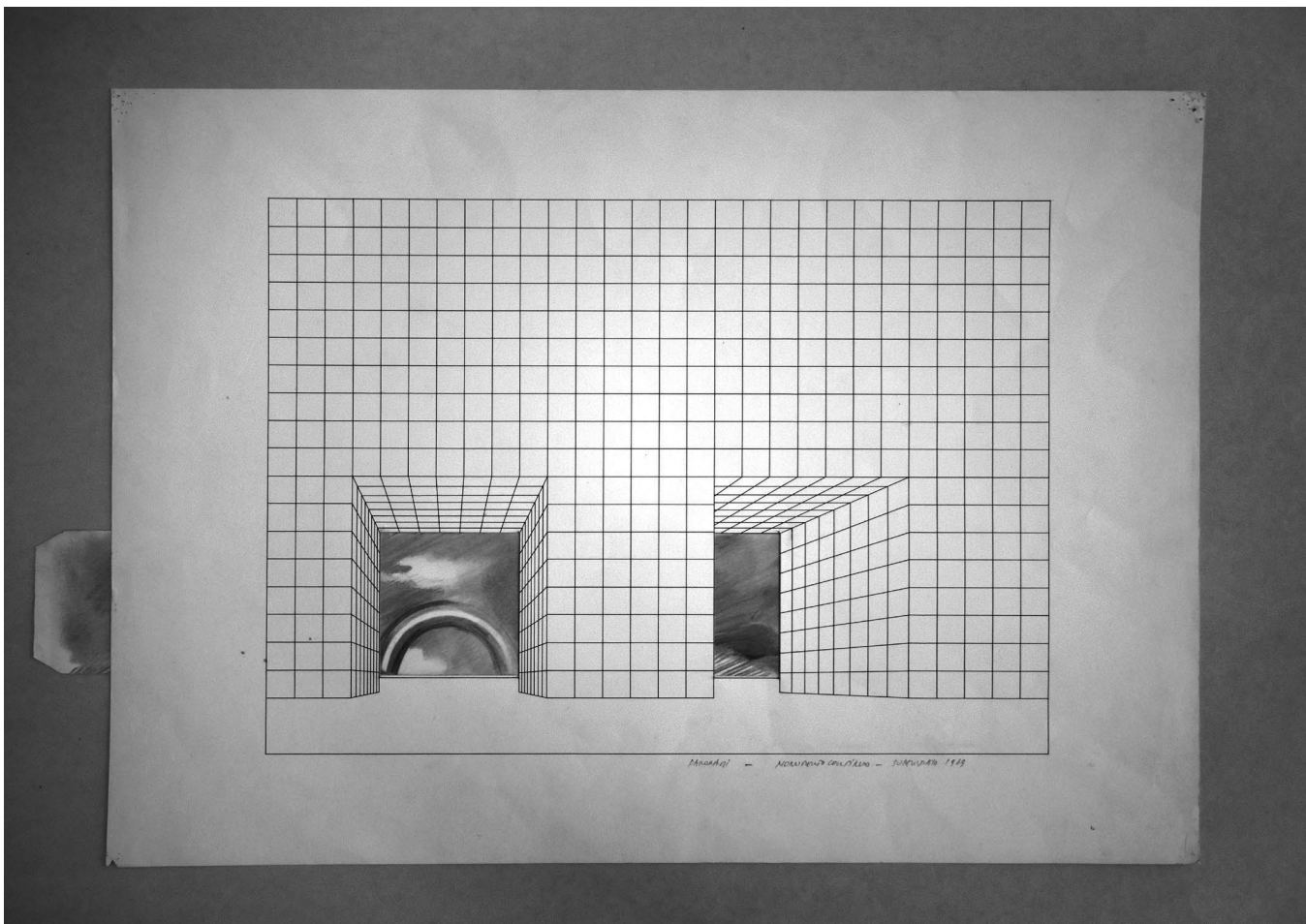


Figure 3: Drawing with movable tab by Adolfo Natalini for *The Continuous Monument* from 1969 (Beinecke Rare Book and Manuscript Library)

Also presumptuous is the fact that the building is seeking a sustainability badge, as it is currently under review for LEED certification.

The interior reeks of abundance in every way. Abundant space with units as large as 8,000 square feet, abundant volume with ceiling heights of 12 feet 6 inches, and abundant views framed by 10 foot square windows that uniformly wrap the exterior. Photographs of 432 Park Avenue as built make for an uncanny resemblance to the megastructure proposed by

Superstudio nearly 50 years earlier. (Figure 4) The unrelenting grid adorning a pure geometric form in The Continuous Monument was meant to foretell a future of unmitigated growth, and in the case of 432 Park Avenue it manifests a spatial fix that is emblematic of neoliberalism.

At nearly \$100 million dollars, the penthouse units cater to the global elite, serving as both investment and symbol, rarely as housing.<sup>16</sup> And at its core, the building is defined by its window, which, of course, relies on silicone joint sealant, among



Figure 4: Photograph of 432 Park Avenue (432 Park Avenue Sales Office)

other technologies. Like The Continuous Monument, this building exploits the banal to achieve extraordinary effects. In the architect's words, it seeks to be read as "a constant object."<sup>17</sup> For Superstudio, their project was a cautionary tale, but in this case, the effects register in the extreme inequality of spatial dispositions in the city.

## CONCLUSION

By expanding the system boundaries to include the landscapes associated with the supply chain of building products manufacturing, the social, economic, and environmental effects of design decisions and technological developments in architecture become clearer. And if architects and urban designers are sincere about sustainability, narratives that go beyond metrics must be grappled with. From perhaps the most emblematic application of silicone joint sealant and its connection to contemporary economic inequality at 432 Park Avenue to the everyday built environment where the story began, the technologies and aesthetics of banality assemble a host of seemingly disparate actors in seemingly distant landscapes, including those of extraction, production, and social reproduction. As a technology, silicone joint sealant enabled an aesthetic to emerge that represents neutrality and banality. Understanding how silicone joint sealant is produced, however, renders this aesthetic in a new light. What seeks to disappear in the urban environment might also appear loaded with meaning and reflective of not just its immediate surroundings but also the multiple landscapes associated with its production.

## ENDNOTES

1. While not intended as an analysis of silicone joint sealant in the history of architecture, Jason Young nods to its widespread application, writing, "The caulk joint is not a celebrated architectural detail in any estimation, and it has often been maligned for ruining many illusions architects have about the integrity of their work;" and, "it approaches invisibility through its ubiquitous application;" Jason Young, "POLYSEAMSEAL: Or, How I Learned to Stop Worrying and Love Caulk," *JAE* 67:2 (2013): 288-289.
2. Merriam-Webster.com, s.v. "banal," <https://www.merriam-webster.com/dictionary/banal> (accessed October 23, 2018)
3. To underscore its ordinariness, the building will remain anonymous.
4. Paradoxically, what was intended to control indoor air quality often resulted in sealed environments that contributed to sick building syndrome.
5. These numbers derive from the winning bid from the general contractor, whose name will also remain anonymous.
6. Marx identifies the "hidden abode" of production to be where the secret to profit making resides: "...we therefore take leave for a time of this noisy sphere, where everything takes place on the surface and in view of all men, and follow them both into the hidden abode of production...Here we shall see, not only how capital produces, but how capital is produced. We shall at last force the secret of profit making;" Karl Marx, *Capital I: A Critique of Political Economy* (New York: Dover, 2011[1867]); Matt Huber, "Hidden Abodes: Industrializing Political Ecology," *Annals of the Association of American Geographers* 107(1): 151-166.
7. See Reinhold Martin, "Subjects: Mass Customization," in *Utopia's Ghost: Architecture and Postmodernism, Again* (Minneapolis: University of Minnesota Press, 2010), 123-145.
8. US Securities and Exchange Commission, "The Dow Chemical Company, Form 10-K" (December 31, 2016) <https://www.sec.gov/Archives/edgar/data/29915/000002991517000011/dow201610k.htm> (accessed October 23, 2018); Corporate Research Project of Good Jobs First, "Violation Tracker, DowDuPont" (n.d) <https://violationtracker.goodjobsfirst.org/parent/dowdupont> (accessed October 23, 2018)
9. While Keller Easterling's work largely addresses free-trade zones in an international context, the critical geographer Dara Orenstein documents the history of foreign-trade zones on domestic soil, writing, "A deceptively simple legal fiction, the FTZ and its attendant perks allow state and municipal agencies in places like Ohio and Alabama to attract corporate investment by promising 'the benefits of offshore, onshore;'" Dara Orenstein, "Foreign-Trade Zones and the Cultural Logic of Frictionless Production," *Radical History Review* (Winter 2011), 36-61. See Keller Easterling, "Zone," in *Extrastatecraft: The Power of Infrastructure Space* (New York: Verso, 2014): 25-69
10. Also in the manufacturing corridor around Carrollton is one of the state's largest coal power plants, the Ghent Generating Station, which has its own history of air quality violations. The colocation of the Ghent Generating Station and the other manufacturers further reduces the friction for accumulation, making accessible the coal required for the thermal industrial processes of silica production and making available some of the cheapest electric power in the country. Alongside these material production processes, of course, is the labor of social reproduction, which essentially floats the whole operation.
11. Deborah Fausch, "Can Architecture Be Ordinary?" *MAS Context* 23 (Fall 2014): 16-27
12. While their work used this particular phenomenon as a point of departure, their larger ambition was to decouple design from the capitalist mode of production. This ambition led them to pursue a great variety of work which ultimately concluded in a series of seminars that foregrounded peasant hand tools as the subject of design theory.
13. Cristiano Toraldo di Francia, "Memories of Superstudio," in *Superstudio: Life Without Objects*, eds. Peter Lang, William Menking (New York: Rizzoli, 2003) 70.
14. Aldolfo Natalini, "A History of Exhibitions," *Super Superstudio*, eds. Andreas Angelidakis, Vittorio Pizzigoni, Valter Scelsi (Milan: Silvana Editoriale, 2015) 56
15. In part, this essay draws on what Jacob Moore alluded to in his 2014 review of 432 Park Avenue when writing, "the other myriad criteria by which an architectural object might be addressed—environmental, phenomenological, historical, technological, etc., each of which might provide interesting readings;" Jacob Moore, "432 Park Avenue: Pointing Fingers," *The Avery Review* 4 (December 2014)
16. A clever proposal from Hannah Brash, a student in Matthew Soules' studio, shows how 432 Park Avenue might actually serve as housing; Matthew Soules, "From Sci-Fi to Fi-Fi: Fiction and the Socio-Technologies of Architectural Production," *JAE* 69(2): 220-227
17. Rafael Viñoly as quoted in Margaret Rhodes, "NYC's \$1.3B Supertall Skyscraper Was Inspired by a Trash Can," *Wired* (June 2, 2015) <https://www.wired.com/2015/06/nycs-1-3b-supertall-skyscraper-inspired-trash-can/> (accessed October 23, 2018)