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Moldy Assumptions

A thesis submitted in partial satisfaction
of the requirements for the degree
Master of Arts in Architecture

by

Gustave P. Heully

2012

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ABSTRACT OF THE THESIS

Moldy Assumptions

by

Gustave P. Heully

Master of Arts in Architecture

University of California, Los Angeles, 2012

Professor Sylvia Lavin, Chair

Mediating humanity's degree of linkage to nature has been one of architecture's long time roles, one that intensified over the 20th century as it became increasingly difficult to deny the concrete effects man has on the natural world. This created a new baseline for contemporary architectural debate, one focused on human responsibility for nature's processes. This paper will show that using human responsibility as a baseline for architecture may reinforce and recycle a retrograde framework for human agency which is often (though at times productively) little more than a fiction. To this end I cut across three episodes, each exploring—with a pair of examples, one historical, one contemporary—architecture's tenuous relationship with mold, (the fungus,) a figure present architecture across the historical record. Ubiquitous, contentious and diverse, mold suggests that nature be seen in an array of contiguous terms—good, bad, ugly and beautiful. This disruption of the expected intersections of man and nature highlights the direct effect our conception of nature has on the tectonic, interpretive and experiential possibilities of architecture.

The thesis of Gustave P. Heully is approved.

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University of California, Los Angeles
2012

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Moldy Assumptions

Mediating humanity's degree of linkage to nature—be it sun rays or mold spores—has been one of architecture's long time roles, one that intensified over the course of the 20th century as it became increasingly difficult to deny the irreversible and concrete effects of man's actions on the natural world.[1] This loss of innocence prompted architects—who both create and imagine the possibilities of the built world—to react, bringing man's desire for expanded responsibility, understanding and control of the world's systems front and center. These desires can be seen as having cultivated a new baseline for contemporary architectural debate and having shaped the pertinence of the architectural field to larger cultural conditions: such as the sequential development of the conservation, environmental, ecological and sustainability movements.[2] Despite these noble intentions, using human responsibility as a base for architecture may in fact reinforce a retrograde idea of human agency. Blindly recycling a framework of assumptions that is, paradoxically, the root cause of many issues that contemporary practitioners are attempting to tackle. Architecture, a prosthetic construct of nature, culture and fictions combined is, I intend to show, quite indifferent to human cries of exceptionalism and need—while still formative of human life.

In this explication, three short episodes explore divergent approaches to the establishment of nature's qualities as a baseline for architectural inquiry and the continued use of this baseline in contemporary works. To this end, each episode addresses architecture's tenuous relationship with mold, (the fungus,) a figure present in nearly all architectural situations and one that spans the

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[1] Leon Marx, "American Institutions and the Ecological Ideal," in *Arts of the Environment* (New York: George Braziller, 1972) pp.78-97.

[2] Reinhold Martin, "Environment, c. 1973," *Grey Room*, No. 14 (Winter, 2004): 78-101.
While this particular paper does not cover all of the movements I have listed, it does give a very well researched take on a period when many of these ideas were being not only developed, but brought into mainstream thought and connected to each other.

historical record. Mold, seen on pairs of examples, provides the opportunity for nature to be read in an array of terms—the good, the bad and the beautiful—disrupting and expanding expected readings through variety, conflict and comparison. Lingering in the air all around us, mold spores tie architecture's tectonics and technologies to the natural world—regardless of whether this connection is desired or not. Additionally, mold is spectacular in its ability to provoke man's fear of nature and yet can be found shaping the most common of contexts, be that the design of tectonics that provide natural ventilation, air conditioning systems, the preservation of historic buildings, or even the practice of ancient rituals.[3] Of the forms of nature with which humans have long lived, be it in the city or the country, mold may be the least relatable to our experience as human beings. With no eyes or face, a body not bound by clear limits or outlines and a problematic relation to autonomy, mold is ambiguous—materially and metaphorically fuzzy.[4]

My first pairing deals with an explicit threat to introduce wild molds by the artist Hundertwasser and the similarly violent techniques of contemporary architect Francois Roche. The second pair explores attempts to control and maintain conditions in which mold is prevented from growing. A vision manifest in both the mid-century technological fantasies of Reyner Banham and the obsession with closed environmental systems that can be seen in contemporary Swiss architect Philippe Rahm. My final pairing highlights those who have taken up molds (and related entropic events) as a source of beauty and inspiration in their own right. In the 19th century, John Ruskin waxed poetic on the beauty of stone's return to dust and today, artist, architect and preservationist Jorge Otero-Pailos expands on Ruskin's thinking to include a wider range of dusts.

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[3] The first mention of mold in an architectural context is in the Old Testament, Leviticus chapter 14, starting on line 33, where the conditions that make ones home 'unclean' and the rituals needed to remedy the situation are described. These range from replacing bricks and re-plastering to total demolition, also described are the sacrifices necessary (typically two birds are involved) to complete the ritual.

[4] For an introduction to both the science and history—their world travels alongside mankind and importance to many discoveries—behind molds and fungi in general, see: G.C. Ainsworth, *Introduction to the history of MYCOLOGY* (Cambridge: Cambridge University Press, 1976).

Fast, Cheap and Out of Control

In July 1958 Austrian artist Friedensreich Hundertwasser delivered his "Mould Manifesto Against Rationalism in Architecture," an aggressive and generally unwelcome declaration against Modernism. Speaking at *The International Art Debates* at Galerie St. Stepan in Vienna, Hundertwasser addressed a receptive gathering of artists, with a speech that was destined for general condemnation by the architectural community. It was an unsettling and violent call which prescribed—if demolition was not an option—the pouring of a "decomposing solution" on the buildings of Adolf Loos and other modernist architects: including Le Corbusier, Richard Neutra and the Bauhaus. This decomposing solution would, he proposed, allow mold and moss to grow at the points of intersection between wall, floor and ceiling; blurring and gnarling the modern architecture's oppressive straight line geometry. This was an act that would simultaneously allow life, (literally) fungi and (metaphorically) people that had been tyrannized by modern design, into space that had previously been "uninhabitable."[5]

Figure 1: Hundertwasser delivering Mould Manifesto

"Uninhabitable" was both a moral and practical term for Hundertwasser. He saw modern architecture, design and mechanical production as criminally deficient in their ability to nurture man's individual expression and well-being. Additionally, in his "Mould Manifesto" the word *uninhabitable* can be taken at face value, as mold
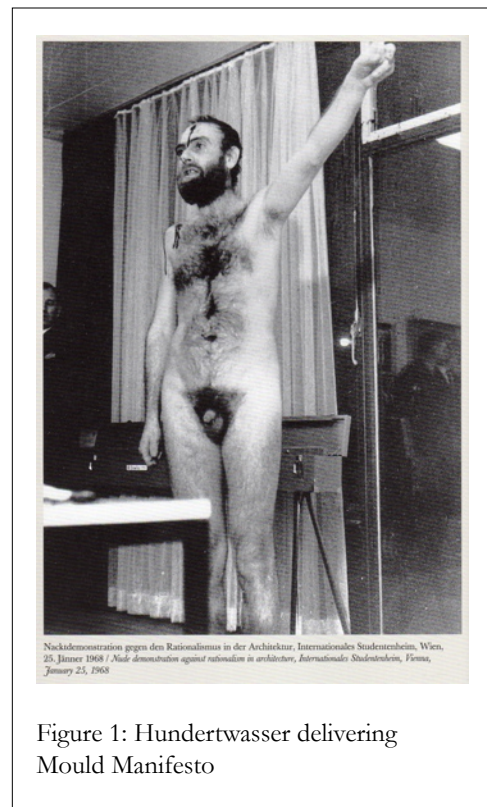
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[5] Hundertwasser*,* "Mould Manifesto Against Rationalism in Architecture" in *Hundertwasser Architecture: For a More Human Architecture in Harmony with Nature,* Angelika Taschen ed. (New York: Taschen, 1997), 46-49.

creates an environment people can not inhabit without becoming ill. Moving mold inside and melting modern forms was a way for the Austrian artist to both develop a rhetoric concerned with integrating man and nature, while intentionally making unlivable (and thus up for demolition) those works he felt were immoral.

The "Mould Manifesto" was an artistic provocation calculated to sensationalize the breaking of taboos concerning both architectural and human propriety, accompanied by an 'on the spot' transgression (many of his speeches were given in the nude, his body dripping with paint) as proof of concept. By cultivating people's anxiety in the presence of molding and melting forms, and bringing too close a dangerous and uncontrolled nature, the practices of producing fear and showing disdain for taboos had, in Hundertwasser's hands, become tools of urban and architectural transformation.

Taboos, put simply, are a culture's system of rules which elicit a punishment if broken—they help to maintain a culture's integrity and structure. With the goal of leaving those things he touched in an irreparable state of transgression, Hundertwasser intentionally broke the rules governing the separation of human beings and dangerous forms of nature, such as mold—transitioning what was once a defined cultural and literal material 'form' (a clearly articulated and understandable structure) into a state of 'non-form,' of formlessness. What can be learned from this play of form and non-form is that power over people's comfort and fear exists in both states: in cultural rules and what is seen as outside of those same rules. Bringing to light this structure of taboos was the project of anthropologist Mary Douglas. In her seminal 1966 book *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*, she states: "many ideas about power are based on an idea of society as a series of forms contrasted with surrounding non-form. There is power in the forms and other power in the

inarticulate area, margins, confused lines, and beyond the external boundaries.["6] Douglas was, with fellow anthropologist Claude Levi-Strauss, a Structuralist thinker near the end of Structuralism. Her book, which references peoples and practices from across the world, including Africa, South America and perhaps most importantly, the West, focused on the relativity of purity, danger, dirtiness, and sacredness. Ultimately, Douglas notes, what may be dirty for one person may not be so for another. The existence of this system of rules and symbols (which are embedded in practices and language) is required for taboos to exist; even when these structuring rules are not always fully explicit, nor necessarily grounded in *actual* danger—they nonetheless put limits on certain kinds of actions with a threat of penalty. Without these systems of symbols and rules there is no power to be gained from their provocation—taboos are only as powerful as the devoutness of their adherents and their entrenchment in culture.

Hundertwasser's material and cultural transgressions were designed to directly attack some of the modern movement's core principles, which themselves were based on ideas that had, gradually over the 19th century, become firmly held European cultural norms. These included a focus on cleanliness, minimal ornament and well-defined, rational, straight line geometric form.[7] The postwar period was one when significant energy, skill and ideas were needed in the realms of architecture and urban planning. Groups like CIAM, Team X, and others were at the ready with ideas and projects both architectural and urban and were making headway—experiencing a heretofore unknown degree of acceptance and influence. As an emerging artist in postwar Vienna, Hundertwasser was critical of the role Modernism was playing in the reconstruction of Europe—having a particular revulsion for

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[7] Adrian Forty, "Hygiene and Cleanliness," in *Objects of Desire* (New York: Pantheon Books, 1986) pp.156-181.
Anything which was thought to collect dust, or make the cleanliness of a surface harder to maintain was deemed a threat to one's health and up for removal.

the ubiquitous high density housing block. In a brief manifesto titled "My Eyes Are Tired, 1957" he expresses this frustration:

> Following [the bombing out of Europe], normally a transautomatism should have set in: it is neither stucco nor flat, neither incidental nor drunk, nor dissolution, but quite simply like the true order which continues to form and exists everywhere where right angled or drunken man doesn't thwart it. As erosion has become controllable through transautomatism and everything that has been done up to now was wrong, anyway, the only right thing that can be done now with any feeling of responsibility is to engage in critical weathering: then spiraloid and fluidoid activity exercises and creative moulding would be the next things to be done. For after geometry comes the rapid explosion, followed by the slow explosion, then weathering and then moulding.[8]
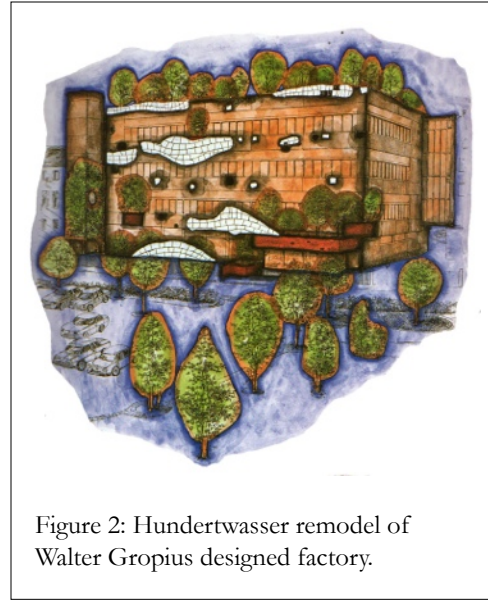

Figure 2: Hundertwasser remodel of Walter Gropius designed factory.

Hundertwasser, in this confident statement, sees the destruction wrought by the war as an opportunity being missed. The war had created a blank slate, getting rid of the preceding built world, one composed of architecture that was, to Hundertwasser, flat out "wrong."[9] He proposes instead *transautomatism*, a kind of abstract surrealism in which interpretation and reaction is left open to the viewer—a painting and artistic style Hundertwasser developed himself. The 'auto' component of *transautomatism* is in practice, the method by which man, working through uninhibited instinct,

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[8] Hundertwasser, "My Eyes Are Tired, 1957" in *Hundertwasser Architecture: For a More Human Architecture in Harmony with Nature,* Angelika Taschen ed. (New York: Taschen, 1997), pp. 45.

[9] Groups like CIAM and Team X were locked in Hundertwasser's cross hairs, but closer to home for him, the Austrian Adolf Loos drew his most fevered hatred, specifically Loos's essay "Ornament and Crime" which Hundertwasser saw as one of the most damaging and evil pieces of writing ever put to paper.

manifests nature's patterns in his works—thus reconnecting man to nature, having become one with it instinctually.[10]

     Transautomatism as an approach can be seen in projects like Hundertwasser's 'window rights' proposals, in which a tenant's window is decorated (with paint, tile or plaster) as far as their—or usually Hundertwasser's—arm could reach. *Transautomatism* can also be seen in his larger scale undertakings, which included entire apartment buildings, complete with scabby surfaces, few straight lines, colorful ceramic coated columns, and undulating floors.

Figure 3: Example of Hundertwasser "window rights" project.

These projects hinge not only on Hundertwasser's hand in the design and direction, but on the myriad imperfections and deviations he asks the brick and tile layers to introduce into their work by following their own instincts and whims. It was through this letting run free of workmen, tenants, materials, and nature that the true order of the world could show through architecture and create environments fit for human occupation. By linking man's well-being—physical, mental and cultural —as well as his creative potential to his degree of connection with nature, Hundertwasser saw man as part of an organic natural whole, a true order of nature, with architecture being one of the most important (and potentially guilty, as in the case of repetitive and identical modernist blocks) mediators of that connection.

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[10] Hundertwasser was a child of Montessori teachings and their focus on individuality and personal agency come through strongly in his thinking. For more information on Montessori teaching strategies and philosophies see: Association Montessori Internationale <http://www.montessori-ami.org/>

To describe Hundertwasser's goal in another way, one could say that he attempted to bring out the wild and uncontrollable elements of human nature that are kept subdued by taboos against the introduction of dirt and disorder—man's wild side. As a quality, wildness implies something natural that is uncontrollable, dangerous, untouchable, threatening and overwhelming. Sanford Kwinter, a writer on architecture's connection to philosophy, technology and science, describes "wildness" as "the logic of animal societies (packs, flocks, and swarms), of the immixings and inadvertecies of the natural world (storms, quakes, abundance, extinctions), and of complex adaptive systems in general, even those of an entirely artificial kind."[11] In this sense, wild things are of a system totally other to human systems of rational thinking and are often, like a storm or earthquake, completely indifferent to both the established notions of the exceptionalism of human beings and their typically fore-fronted needs. As such, wild systems and things provoke in human beings a great deal of fear and anxiety.

Kwinter's examples begin divided in two directions and return to a single architectural concept. His first example references a New York Times story which utilized the term "wilding" to describe a roving gang that, while not following the established grids or paths of central park— instead following their own system—committed a series of crimes, including a violent rape. On the other hand, he relates the idea of wildness to the work being done at the Santa Fe Institute for the Study of Complexity and their work with wild systems created, or more accurately coaxed into existence by artificial means, namely a computer. These scientists and designers of systems have taken on the unofficial slogan, "fast, cheap, and out of control," a reference to what they have found to be the most effective way to cajole complex systems into existence. A process done "...messily, in steps and layers, from approximate rather than finished and perfect parts, and incrementally over

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[11] Sanford Kwinter, "Wildness: Prolegomena to a New Urbanism," in *Far from Equilibrium: Essays on Technology and Design Culture* (Barcelona: Actar, 2008) pp. 186-191.

time..."[12] Kwinter sees in the combination of these examples the potential for architects and others who shape the built environment to get a more nuanced and influential degree of understanding about the built world and how it comes into being. For Kwinter, wildness represents a form of knowledge that has always existed as part of the organic whole of life, with parts of it waiting to be understood.

Hundertwasser attempted, with similar though non-digital means, to highlight man's own wild patterns within the larger organic world. Hundertwasser saw the potential of man's wildness when setting loose residents with gnarling globs of plaster, tile, paint and the deviations in construction created by workmen not controlled with stringent tolerances—creating constructions that were, like the computer systems in Santa Fe, fast, cheap and out of control. Producing habitable space and freeing people from tyrannical Modern architecture in this way creates, despite Hundertwasser's intentions, a paradoxical situation; the ability of this strategy to provide for human need hinges on strategies in which fear, anxiety and their contrast to larger cultural structures is not only cultivated, but required. This seems to indicate that Hundertwasser's goal was not the specific or individual works he produced, but the manipulation of larger cultural structures and ultimately the transition of what was once taboo into a new norm that would correspond to the fictional human nature that Hundertwasser had produced.[13] Many contemporary architects, such as French architect Francois Roche, have also taken seriously the power of fiction to shape the perception of an architectural speculation.

From within a house designed for an art collector in Trinidad (2003), one can hear mosquitos audibly buzzing just outside the walls. Drawn inside by a sleeve of netting continuous

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[12] ibid.

[13] Robert Fleck, "The Topicality of Hundertwasser's Paintings," in *der Unberkannte Hundertwasser The Yet Unknown,* Andrea C. Fürst and Doris Truppe, ed. (Munich: Prestel, 2008), pp.14-38.

with the roof, the mosquitos are led down to the floor and drown in pools of poison. Rendered in intentionally (one can assume) rough and amateurish computer images, the exterior of the house is a blobby and dimpled form of semitransparent plastic and netting held up by chunky tubes placed in a haphazard spiral, the whole beast depressed into the surrounding soil.

Figure 4: R&Sie, *Mosquito Bottleneck*, exterior rendering.

Characteristic of French architect Francois Roche's designs, *Mosquito Bottleneck* makes blurry the line between spaces of nature (particularly dangerous forms of nature) and spaces for human beings—cultivating a general sense of paranoia. Generating this kind of fear and anxiety has become Roche's stock in trade. As in Kwinter's description of wildness, Roche's projects appear to be built up in layers, with a messy, approximate, unfinished, quickly made and out of control appearance—rare qualities in architecture and especially in digitally produced work. Despite the similarities Roche, unlike Hundertwasser, is not interested in man's own wildness, but instead in those wild patterns in the world which come into view through the project he is investigating at the time. Roche searches for algorithms, for processes in nature that while not necessarily formally mimetic, come out of natural systems. As Roche states:

> Reintroducing wildness within this ideology of control is of interest for me. For example the nature of Bangkok is something without prediction. It's something without control, it is wild in a biological way. I'm interested when patterns, algorithms are invisible, where there is a
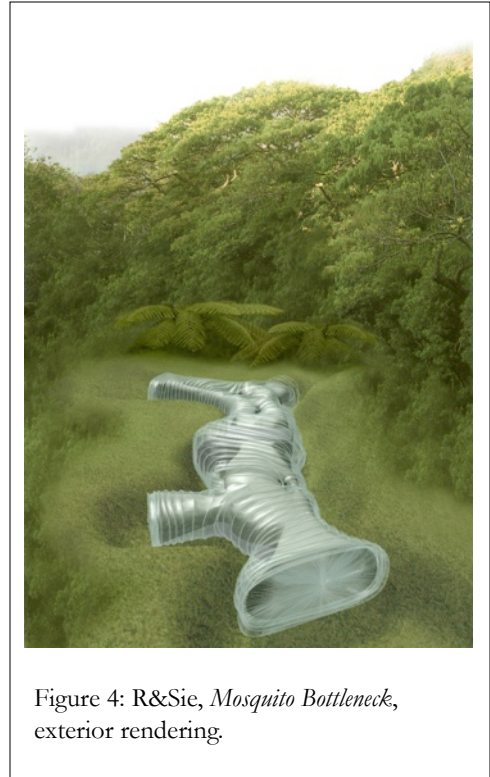
hidden order. It has the possibility to react, to deform itself, and to develop its own singularity when confronted with a situation.[14]

Figure 5: R&Sie, *Mosquito Bottleneck*, interior rendering.

These discovered algorithms, much like the layers of complex systems studied at the Santa Fe Institute, help describe one way of understanding the larger environment as things layered on top of each other, with the site and the program all strung into a larger narrative.[15] As with Hundertwasser's use of mold, Roche's wild actors are brought too close for comfort, transgressing boundaries of cultural purity, acceptable thresholds of danger, and taboo limits. Regardless of the source of wildness—be that man's inner wildness or wild outer nature—the goal is to draw a strong reaction. Threatening to cross acceptable limits and play nature and culture off one another in order to cultivate an environment of fear is, for both of these designers, seen as a catalyst of productive change.

While Hundertwasser was not explicit about his intention to use mold to produce a strong fear reaction, Roche is clear that he intends to manipulate the responses his projects stir up. In Roche's words:

> I use 'corruption' as a provocation. It's more that I am affected by the biotope and I corrupt a situation through my job as an architect, by modifying the situation. So I both dominate and am dominated. Both movements are interesting. But the use of the word 'corruption' is also in the sense that when steel becomes rusty, it corrupts itself. How a material changes by it's own mutation and it corrupts its own integrity. I am speaking about the naivety of integrity.

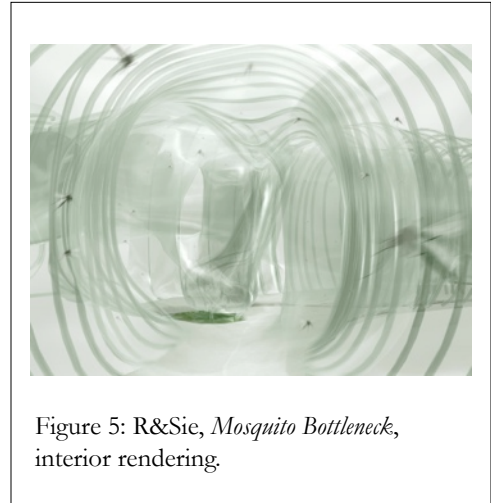[14] Francois Roche interview with Jeffrey Inaba and Benedict Clouette. *Volume 10: Agitation!*. New York. <http://www.new-territories.com/columbia%20interview.htm>

[15] Francois Roche was himself trained in mathematics and worked as a mathematician before becoming an architect.

In any situation, you could avoid seeing reality, as a pure strategy of naivety, or you could deny reality, or you could also dramatize reality by using fear. Our work tries to make the context visible, to make visible the materiality of the situation. In doing so, we are also corrupting the situation.[16]

Roche skirts the lines of habitability, cleanliness and propriety that are typical in Western culture and uses the resulting anxiety caused by proximity to that line as a productive fiction. Like a lizard unfolding his frills to make himself appear larger in order to scare off an intruder or impress a mate, the fiction of fear works to expand and inflate the limited physicality of Roche's architecture —Roche's work is often either unbuilt and speculative or exhibition installations—to sensational proportion.

While Roche's goal is one of inflation through fiction, Hundertwasser's is the total collapse of the separation between man and nature—everyone and everything together, swimming in the same slime. Hundertwasser romanticizes the natural world and its aesthetic properties, which he attempts to recreate in his art with intentional messiness and irregularity, a strategy which ends up being little more than his personal style, uniformly applied, regardless of the situation. His artistic interventions, such as the "window rights" projects—intended as statements of individuality— created awkward and unintended ramifications.[17] On one occasion Hundertwasser had produced a paint and plaster relief around an apartment window for the German TV show "Make a Wish." A year later the owner of the building decided to replace the relief with mosaic, without informing the artist. An indignant Hundertwasser rushed at the last minute to choose the mosaic tile for the replacement and a legal question reared its head. Whose window rights were being expressed here?

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[16] Francois Roche interview with Jeffrey Inaba and Benedict Clouette. *Volume 10: Agitation!*. New York. <http://www.new-territories.com/columbia%20interview.htm>

[17] Hundertwasser*, " The Window Right, Seckau, 1958" in *Hundertwasser Architecture: For a More Human Architecture in Harmony with Nature,* Angelika Taschen ed. (New York: Taschen, 1997), pp. 46-49.

The family in the apartment, the artist, the owner of the building, or the TV network who had commissioned the piece?[18]

Hundertwasser's attempt to give individuality to an apartment window had instead created a commodity which imposed not only its own aesthetic, but the legal ramifications of an official artwork. It could not be changed without the input of the artist, an unfortunate hypocrisy that pointed out Hundertwasser's naiveté towards the effects of his own touch, and resulted in a conceptual conflict with respect to attempting the display of one's individuality through another person's work.

Roche in contrast is fully aware of the author function of the architect and all the baggage that comes along with it—including celebrity status and becoming locked into narrow stylistic expectations. To avoid these problems, at least for the time being, he attempts to both shield and manipulate his identity, avoiding as much as possible any photographs or video of himself and constantly changing the name of his office.[19] Despite these attempts, should he expand the physicality of his practice (constructing a building in the public realm for example) it is very likely that the anonymity of his authorship will be more difficult to maintain. Already, Roche himself is the face (without showing his face) of the R&Sie(n) office, with the other partners remaining nearly invisible and fully silent. To utilize strategies of wildness and maintain their mystique, demands one constantly balance on a razor's edge, one side being a fall into obscurity and the other, absorption into those power structures that are being resisted.

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[18] Hundertwasser, "Make a Wish, 1972" in *Hundertwasser Architecture: For a More Human Architecture in Harmony with Nature,* Angelika Taschen ed. (New York: Taschen, 1997), pp. 76-77.

[19] Francois Roche interview with Jeffrey Inaba and Benedict Clouette. *Volume 10: Agitation!.* New York. <http://www.new-territories.com/columbia%20interview.htm>
This particular interview, while video recorded, did not move the camera's view from Roche's hands.

Somewhat paradoxically, one of the problems that comes when designing alongside or utilizing wild, messy and uncontrolled systems becomes precisely one of balancing authorship with anonymity and formlessness within a larger system that necessarily contains both form and non-form. As Douglas suggests:

> the contrast between form and surrounding non-form accounts for the distribution of symbolic and psychic powers: external symbolism upholds the explicit social structure and internal, unformed psychic powers threaten it from the non-structure...

> [Douglas later, on the topic of social consciousness, suggests that there] are no items of clothing or of food or of other practical use which we do not seize upon as theatrical props to dramatize the way we want to present our roles and the scene we are playing in. Everything we do is significant, nothing is without its conscious symbolic load. Moreover, nothing is lost on the audience.[20]

The project of Mary Douglas was to bring to light the structures and systems that brought power, danger and taboos into existence, while Hundertwasser, Roche and Kwinter attempt to speculate on strategies that could create, or at the least invoke, patterns of wildness. While all are interested in underlying systems, Kwinter does not have a preference for wild systems over non-wild ones, noting that (as in Douglas's discussion of form and formless) both are needed and play off each other. Hundertwasser and Roche on the other hand share a clear preference for the power of the formless, but diverge on the need for any manifestation of form at all. What Hundertwasser did not understand was that without those rules and taboos that he so reviled, the contrasting wildness, fear, and instability he wanted to create could not exist. Driving each of these works are underlying systems—natural, material and cultural—that tip the balance of power shaping the built world and how it is perceived. While these systems are not necessarily all known, knowable, or even fixed, they are believed to be what creates the structures and symbols of power in the world—structures in

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[20] Mary Douglas, "Powers and Dangers," in *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (London: Routledge & Kegan Paul, 1966) pp.94-113.

which man is not always at the center. Those who attempt to manipulate the balance of these systems, through the introduction of what has been variously called: "creative moulding," formlessness or "productive contamination," highlight the power of wildness to affect the built world.[21] Some are able to maintain their place on the tightrope, continually manipulating cultural taboos and others fall to their death, in the form of either fame or obscurity.

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[21] Kwinter sees abominations, manipulations, transgressions and the like as profoundly productive. For his examples see: Sanford Kwinter, "Notes on Abominable Things," *Log.* No. 10 (Summer / Fall, 2007): 41-44.

Proper, Controlled and Well Maintained

The year was 1964, the month of June, and Reyner Banham, the British historian of architecture and technology had waded out till chest deep in a lake (chlorinated,) from a beach (artificial,) holding a video camera. He was filming nuclear American families barbecuing in Southern Illinois while a nearby lifeguard kept watch from a chair (Eames) and overhead was a (possibly imagined) Buckminster Fuller geodesic dome, maintaining the whole scene with reliable weather. While taking in this plastic picturesque, the convergence and reliability of all these technologies became significant to Banham, he had an epiphany, he saw what could possibility be the end of architecture and building as we know it.[22]

Banham was discussing man-made environments that were about as far as one could get from "fast, cheap and out of control," he was half submerged in a sphere that was proper, absolutely controlled and constantly maintained by some very expensive technologies. No mold in there, nothing in fact was allowed inside that was not accounted for and designed. This was an architecture that provided reliable habitability and did so without architecture's traditional tectonics: walls, roof, mouldings, and windows were nowhere to be seen. From this vantage Banham saw two divergent conceptions of how architecture could be made habitable using a simple hypothetical: given a pile of wood and the need to stay warm, does one burn the wood in a camp fire, or use it to
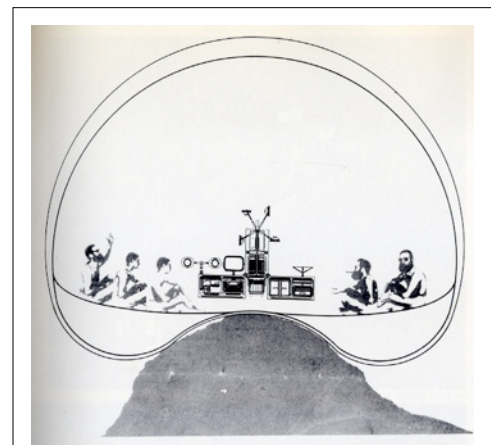

Figure 6: Reyner Banham in mylar bubble with "living package."

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[22] Reyner Banham, "A Home Is Not A House," *Art in America*, No. 2 (1965): 70-80.

build a shelter? The mode chosen would, Banham postulated, change the way that space was conceptualized for those living with that choice.[23]

Habitable space in a culture focused on building shelters (as Eurocentric culture has been till only recently) has been concerned with controlling a building's degree of enclosure and orientation to provide wind, sun and humidity sufficient to maintain a comfortable interior temperature and protection from harm. While the provision of habitable space was considered by Banham as among the "prime human responsibilities of architects," the means by which it could be created was no longer limited to the building of shelters. Within what he was to call a "well tempered environment," wind, sun, orientation, location and enclosure became moot. The ability to keep "dirty ol' nature" in check—to borrow Banham's phrase—required changing the environment under discussion, specifically by limiting it. A Buckminster Fuller dome, sealed envelope, or delimited boundary has an interior that, when considered independently of its surrounding context, defines an area of form carved out and isolated within the general wildness and non-form of the world—the converse of the transgressions of taboos discussed earlier by Mary Douglas.[24] Reducing the amount of world being considered limits the number of possible variables and the amount of complexity that must be manipulated to maintain control and full knowledge of the bounded space. Unlike the fast, messy and out of control architectures of Hunderwasser and Roche, the creative unpredictability of wildness is here traded for increased control and knowledge over an environment that requires a high degree of care, energy, technical skill and maintenance to make it possible—the comfort of predictability.

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[23] Reyner Banham, "Environmental Management," in *The Architecture of the Well-Tempered Environment* (London, The Architectural Press, 1969), pp.18-28.

[24] Mary Douglas, "Powers and Dangers," in *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (London: Routledge & Kegan Paul, 1966), pp.94-113.

This is a narrow and slightly dour reading of Banham, who is far more optimistic and less didactic concerning architecture's potentially productive interactions with nature, but it does have recourse to a development from near his same period—systems theory. With its origin in the Macy conferences on cybernetics from 1946 to 1953, systems theory was developed, as philosopher of science Cary Wolfe puts it, as "a new theoretical model for biological, mechanical, and communicational processes that removed the human and *Homo Sapiens* from any particularly privileged position in relation to matters of meaning, information, and cognition."[25] Information and data in systems theory is an objective commodity, independent of human perception; the more data that a system is able to precisely process the more accurately it is able to understand the environment associated with that system. If the environment is considered to be both its own closed world and in a one to one relationship with data, it enables the anticipation, control, and provision of specific conditions or outcomes within that environment—provided one has enough data and the technology to manipulate it. A key change enacted by systems theory that, while not critical for Banham when he wrote "A Home Is Not A House," but was critical for mid-century cybernetics and the military industrial complex, was the replacement of the relationship of nature and culture (open terms) with one of system and environment (closed terms.) A closed world discourse. Described by Paul Edwards a closed world discourse is:

> characterized by tools, techniques, practices and language which embody an approach to the world as composed of interlocking systems amenable to formal mathematical analysis. As one of its exponents describes it, systems sciences allow their practitioners to 'discern systems of organized complexity wherever [they] look'. As they are engineering approaches designed to solve real-world problems, systems theories tend in practice to assume the closure of the systems they analyze.[26]

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[25] Cary Wolfe, "Introduction," in *What is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010), pp. xi-xxxiv

[26] Paul N. Edwards, "The Closed World: Systems discourse, military policy and post-World War II US historical consciousness," *Cyborg Worlds: The Military Information Society* (London: Free Association Books, 1989), pp. 135-158.

Applied to architecture, closed systems produce a concept of space that is not quite either the shelter or the campfire, but instead closer kin to the domed and chlorinated lake, where data could relate one for one to each element and architectural feature of that delimited environment.

While Banham's musings in "A Home Is Not A House" and examples in *Architecture of the Well Tempered Environment* are not concerned with fully closing themselves off from the outside world, they do highlight the ability of newly developed technologies to guarantee specific environmental conditions—as Willis Carrier did for the first time in 1907 with his early air conditioners—an important prerequisite for systems theory to become operative.[27] This direction in Banham's study has found a contemporary resurgence as computer technology has become increasingly sophisticated and accessible. Contemporary architect Philippe Rahm has, in the vein of Carrier's guarantees, focused his practice not on the mechanical technology itself, but instead on the provision, maintenance and guarantee of specific environmental characteristics. Rahm attempts, with the use of mechanical controls (air conditioners, heaters, humidifiers, and measuring instruments) to index (one to one) his minimal architectural forms to precise measurements and diagrams of environmental conditions—creating enclosed architectures that he can ideally measure and tune with exacting precision.[28]

Rahm's Mollier House, like the dome that covered Banham's beach, is just such an architectural system. Floating on the surface of a lake, the cubic volumes and curved corners of the house reveal little of its interior composition or use. Interior renderings disclose few additional clues: a wet floor, some plumbing fixtures and walls covered with uniformly dimpled and hard plastic surfaces curving the interior corners. For this house Rahm put aside explicit programmatic

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[27] Reyner Banham, "Towards full control," in *The Architecture of the Well-Tempered Environment* (London, The Architectural Press, 1969), pp.171-194.

[28] Philippe Rahm, "Meteorological Architecture," *Architectural Design*, Vol. 79, No. 3 (May/June, 2009): 30-41.

designations and in their place created zones of a specific humidity. These zones, which in plan and section conform to the curve of a house sized Mollier diagram (from which the house gets its name) each index the amount of moisture produced by a human being performing a specific kind of action: for example sleeping, cooking, or bathing.[29] These moisture outputs, presumably pulled from a plot of standards, inform the specific environmental conditions cultivated in the various zones of the house. Programs, as they are typically designated—living, dining, kitchen, bathroom—instead are presumed to occur where it is more comfortable to undertake those same activities.[30]
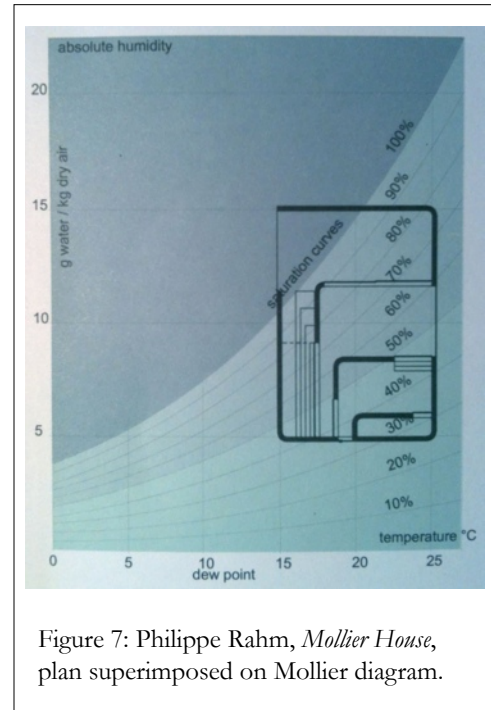

Figure 7: Philippe Rahm, *Mollier House*, plan superimposed on Mollier diagram.

The key to the success of Rahm's proposition is the limited number of the variables allowed into his closed system, he avoids at all costs unpredicted variables that could compromise his control, for example, an unexpected bloom of mold. Rahm mentions in a discussion of his proposal for a new national museum in Estonia, the specific relative humidity (RH) at which mold will bloom in an interior—approximately 70% RH according to Rahm.[31] Yet zones of the Mollier house, despite his knowledge of relative humidity, are designated to be well above the threshold for mold cultivation. This would be a problem if, and only if, mold were a variable included in the Mollier house system, which it is not. Only the variables Rahm wishes the house to be shaped by are

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[29] A Mollier diagram is also known as a psychrometric chart, a tool used by engineers to determine the gas-vapor mixture of air which will produce human comfort. As comfort is determined not only by temperature, but also in great part by humidity.

[30] Philippe Rahm, "Form and Function Follow Climate," *AA files 55*, No. 55 (Summer, 2007): 2-11.

[31] Philippe Rahm, "Lowering Climates, 2005," Giovanna Borasi, ed., *Gilles Clément / Philippe Rahm: environ(ne)ment: maniéres d'agir pour demain = approaches for tomorrow* (Milan: Skira, 2006), pp. 138-139.

considered and not acknowledging anything else allows its environment to be maintained. The reality that this house would, if built, have its slick surfaces made slimy by swelling spores is an example not only of Rahm's replacement of an expansive idea of nature with a focus on a system, but also of the risks inherent in believing that one's closed world has recourse to anything outside of itself.

This all means that Rahm must carefully curate the measurements and variables he wishes to include. He cannot afford to, like Banham, envision ad-hoc solutions to each issue that comes up in turn, details be damned.[32] Instead, to gain additional vision of the world and robustness within a closed system requires the use of a concept that seems, at first, quite paradoxical—that an increased separation from nature in fact makes for a stronger connection. This non-intuitive concept is summarized by Cary Wolfe thusly:

> [T]he very thing that separates us from the world *connects* us to the world, and self-referential, autopoietic closure, far from indicating a kind of solipsistic neo-Kantian idealism, actually is generative of openness to the environment. As [Niklas] Luhmann succinctly puts it, self-referential closure "does not contradict the system's openness to the environment. Instead, in the self-referential mode of operation, closure is a form of broadening possible environmental contacts; closure increases, by constituting elements more capable of being determined, the complexity of the environment that is possible for the system."[33]

In short, the more precisely you are able to determine your knowledge of a closed system to be and the more complex that system becomes, the more is known about the environment to which it is connected. This renders the potentially infinite complexity of the environment increasingly

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[32] Reyner Banham, "A Home Is Not A House," *Art in America*, No. 2 (1965): 70-80.
Banham's example home in this piece is built up, element by element over the course of the essay. Each piece being added to address an added issue.

[33] Cary Wolfe, "Introduction," in *What is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010), pp.xxi.

legible as the system gains in complexity itself.[34] Or, in the words of Humberto Maturana and

Francisco Varela, "every act of knowing brings forth world."[35]

A closed world systems strategy is what enables Rahm to make very specific environmental claims—that a room will be exactly 78 degrees or that the moisture in a house will be a gradient from 30% to 100% relative humidity—these numbers are not stand-ins for some average, they have been mathematically determined with highly sophisticated data, algorithms and computer power. Where the systems that Rahm creates differ from those discussed by scholars like Cary Wolfe or Humberto Maturana is that Rahm—in the interest of maintaining control of his creations—utilizes the idea of openness through closure in the opposite direction. Anxious when faced with the conundrum that as an architect he has on numerous occasions been brought on to construct some of his idealized systems, Rahm purposefully reduces the complexity of the system he is working with to assure his ability to know and control the possible outcomes—with only limited terms, he can produce projects that he knows will work:

> For us it is important to be in a potential reality of the project we are setting up. We are certainly not looking for fiction—maybe that is one difference between artists and architects —we always remain faithful to a reality principle, we always look for things that are possible or feasible. All our projects are on the frontier of the probable. We don't go in for condemnations or screwball projects or the narrative transformation of something.[36]

Through this intentional self-blinding, Rahm limits the amount of environment under

consideration and thus opens up additional ways to represent his system—utilizing all of the

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[34] Katherine Hayles uses the examples of virtual reality and the study of frogs undertaken by Maturana and Varela to talk about the wide reaching pertinence of a discussion of closed systems. See: N. Katherine Hayles, "Simulated Nature and Natural Simulations: Rethinking the Relation between the Beholder and the World," in *Uncommon Ground: Rethinking the Human Place in Nature*, Edited by William Cronon, (New York, W.W. Norton & Company, Inc.: 1996), pp.409-425.

[35] Cary Wolfe, "Introduction," in *What is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010), pp. xxii. Wolfe quoting Maturana and Varela in "In the Shadow of Wittgenstein's Lion".

[36] Rédaction, ed., *Decosterd & Rahm: physiological architecture* (Basel: Birkhäuser, 2002), pp. 205

techniques that he claims to dismiss, including images and descriptions, fiction and narrative. To begin, Rahm has adopted a minimalist aesthetic that is thought to reduce the risk of introducing unwanted variables—both material and symbolic—but minimalism also invokes two disparate readings. Many of his projects are presented as white boxes of the modern movement, in which the most 'free' plan was a gridded rectangle, which offered the delimited, clean and smooth sterility needed for a closed system—allowing his projects to be read as both closed and open simultaneously. Despite the groomed modernist face, to look at the images he has created to present these blank boxes, one would not imagine them as fully sealed systems as most of the images give the opposite impression. Idyllic forest glades, freely floating and flowing water, and meandering mists all lend the appearance of total, or near total, permeability.

To illustrate his "Digestible Gulf Stream" project, bare breasted women, softly shaded in colored pencil, rub pepper scented ointment on one another while figures in various states of undress lounge nearby, reading instructions on how to comfortably occupy the heated metal plate they sit upon in a forest clearing. Each scene is framed and organized in a comic strip like sequence, a strange choice of imagery and medium for an architect who professes to have no interest in or use for narrative and representation.[37]

Figure 8: Philippe Rahm, *Digestible Gulf Stream*, hand rendered comic.

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[37] "I have the impression that since the start of our work there has been a very great need to redefine the vocabulary we are using. Since we reject any kind of representation—maybe it is the heaviness of our work too—we are obliged each time to re-invent the elements of the work that we are installing."
ibid, pp. 206

The majority of Rahm's other projects, such as the Mollier Houses, Canadian Houses, and Archimedes Houses share representation techniques that support Rahm's attempt to carve out an environment from nature at large and at the same time are represented in ways that reinforce an aesthetics of control and precision. Rendered with rounded corners, plastic materials and glass barriers his projects have the appearance of hospital like maintenance, hygiene and sterility. Furniture and people are rarely included in these interiors and little more than a few plumbing fixtures occupy them otherwise. Plants that are within or connected directly to the architecture are potted and all other signs of nature visible from the interior are obviously outside. On the exterior corners are typically rounded and their materiality is either down played or plasticized, lending the buildings significant contrast to their bucolic settings. Doors and windows are typically token and either not included, or obviously sealed. Represented as fully independent, even when physically open, these buildings are focused entirely on their contained individual environments. As Rahm succinctly states, "In our work there is no question of context, except on a physical or chemical level."[38]

The ability of Rahm to so confidently call out specific temperatures, humidity levels, and other environmental parameters—regardless of representation—plays with one of architecture's most significant abilities, the proper naming of spaces. As an additional technique for producing form and order, Rahm utilizes meteorological in addition to typological naming conventions for architectural spaces. Though his meteorological distinctions are confusingly based on traditional architectural typologies, begging the question of why he names spaces with any kind of designation at all? The reason for this may be, as Catherine Ingraham notes, that:

> One of the most powerful forces that architecture exerts on culture is the maintenance of certain proprieties: how space is lived in and named; what type of building is most

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[38] ibid, pp. 206

appropriate to what use; what materials belong to the exterior, what to the interior; and so on. These proprieties and typologies change gradually over time—what used to be the parlor is now the living room, what used to be wood is now steel—but some typological paradigm is always in force. The familiarity of the terms of discussion, as in, say, the *master bedroom*, is a familiarity that is not given or natural but is proper to particular moments in architectural history and culture. ...

"Typically, architecture picked a site in nature and transferred it to the political realm by means of a symbolic mediation ... A sanctified inwardness set itself up in opposition to the outwardness of nature."[39]

By naming rooms, or at least associating uses with specific temperature or humidity levels (while stating the desire for occupants to populate his buildings as they wish,) Rahm is capitalizing on the pre-existing formal, spatial and use expectations of these typologies. An attempt on his part to color the spatial invisibility and programmatic blankness of his architecture and provide reassurance that the expected spaces of a 'house' are present, usable and reliable. Without these designations his buildings become undifferentiated gradients and run the risk of loosing their defined form, becoming blurry and ceasing to provide assurance that they can handle human need —the environment he created would begin to break down, as if dowsed with Hundertwasser's

melting molds. Banham in contrast, while shaping an environment with technology, does not address program, but is instead more concerned with generally how a space provided shelter and comfort. The difference in the severity of approach to spatial categorization between the two is effectively shown in their use of nudity:

Figure 9: Philippe Rahm, *Digestible Gulf Stream*, installation.

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[39] Catherine Ingraham and Ingraham quoting Henri Lefebvre, "What is Proper to Architecture" in *Architecture and the Burdens of Linearity* (New Haven: Yale University Press, 1998), pp.30-61.

Banham in his mylar bubble *wanted* to take his clothes off, his environment being sufficiently comfortable and safe; while Rahm *insists* that one disrobe in order to comfortably and properly occupy his hygienic heated plates.

In similar ways Rahm and Banham re-fashion architecture into an apparatus of environmental control and attempt a return to Humanist values. This includes the assumption that the provision of habitable and recognizable space for human need (named rooms) is architecture's primary, or even sole assignment. Humanism appeals to what are seen as universal human qualities (such as rationality) and looks for truths and moral positions by focusing on distinctly human interests. Banham was concerned that architects had become nothing more than the "creators of inefficient environmental sculpture,"[40] and in Rahm's view, "after decades devoted to the visible, in which a subjective approach and 'storytelling' shamelessly replaced the progressive and moral programs of Modernity, we are now in a new and extremely interesting period. ... a new humanist landscape."[41] Each hopes that, by refocusing the discipline they can revive in architecture a moral and ethical charge, one that brings with it the cultural pertinence that is associated with such responsibility.

Humanist strategies though, while respectable in intention, tend to repeat the reductive normalizations of the past: over rationalization, the reduction of diverse complexity to dull data, thinking only of human need at the expense of the needs of non-humans and nature and faith in the ability of man to know all and solve all problems, among others. The source of such repetition becomes Humanist rationality itself, which according to Foucault is not, "as it were, rational enough,

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[40] Reyner Banham, "A range of methods," in *The Architecture of the Well-Tempered Environment* (London, The Architectural Press, 1969), pp.265-289.

[41] Philippe Rahm, "Meteorological Architecture," *Architectural Design*, Vol. 79, No. 3 (May/June, 2009): 30-41.

because it stops short of applying its own protocols and commitments to *itself*."[42] A single minded and perfectly rational focus on human comfort can, in this way, end up a detriment. With too narrow a focus, systems end up insufficiently complex, with simplicity limiting their ability to address anything but themselves and closed systems in particular always requiring more data and more complexity to achieve more access to the environment and relevance.

Architecture, the built construct itself, provides little specific assistance to its being put to proper use. As Catherine Ingraham has pointed out: while architecture is "the exact artistic and technical discipline for which human biological and psychological life are a necessary precondition, [it] must always be, at some level, indifferent to the life within it."[43] Architecture's indifference to human need shows as soon as its stones have been set and regardless of how it has been rationalized, all attempts at vindication are revealed to be nothing more than a fiction—the kind of storytelling architecture that Rahm saw as shameful—as stones are not themselves alive and responsive. Space as such is not tied to the proper functions it is designated or designed for, it changes over time. Life, in the context of architecture does not linger, it comes, goes and changes as the ways in which it is defined shift around and through it. This indifference reveals the always already fictional quality of architectural systems and their associated environments. Banham capitalized upon this, creating propositions that would generate his desire for a range of newly possible fantastical environments—from chlorinated beaches to mylar bubbles with a fully stocked bar. Rahm struggles against this characterization of his work and while there is a place for precision and control in architecture, when an architect rejects all representation and becomes a pseudo scientist they risk finding themselves caught by their own reductionism. This tension between

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[42] Cary Wolfe quoting Foucault, "Introduction," in *What is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010), pp.xx.

[43] Catherine Ingraham, "Introduction" in *Architecture, Animal, Human: The Asymmetrical Condition* (London, New York: Routledge, 2006), pp.1.

science and fiction drives an anxiety that flares in the face of indeterminate spaces, non-form, and uncontrolled nature—it is incapable of taking shape in the same world as mold.

The middle ground, perhaps, is not to throw out humanism altogether—the desire for a comfortable and safe place to live is too obvious—but to instead keep in mind how these kinds of aspirations can be severely undercut by the philosophical and ethical frameworks used to conceptualize them in the first place. One could say that, in the best of ways, all architecture is a form of science-fiction.

Beautiful Moulding

In March of 2009 a little seen wall of Doge's Palace, one of the most recognizable buildings in Venice Italy (a city of famous buildings) was being slathered in liquid latex. Like a chemical peel on the face of an Italian socialite, layers of age were trapped in the applied solution and sloughed off in one large piece, leaving a youthful appearance, all without scarring. For the Palace, artist, theorist and expert in architectural preservation Jorge Otero-Pailos was the dermatologist in charge, though there was a key difference in the procedure he performed. Instead of discarding the scar tissue, excess pigment, oils and dead skin trapped in the applied layer, Otero-Pailos kept it for analysis and display, as a work of art and a record of history in its own right. Working on one of the last uncleaned walls of the Palace, hidden from the eyes of tourists behind the iconic quatrefoil loggia, the pollution extracted contained one of the only remaining records of the chemical history of Venice that had not previously been washed away.[44] With this operation, dirt had gone from abject to asset, crud to creator of cultural value.

Figure 10: Jorge Otero-Pailos, *The Ethics of Dust*, hanging latex.

Undertaken for the 53rd Venice Biennale, "The Ethics of Dust" (the title of Otero-Pailos' piece) has been described variously as a cast or photograph— historically two of the most common forms of architectural record keeping. But the latex, unlike either of these, models the relief of the wall on which it has been applied and pulls
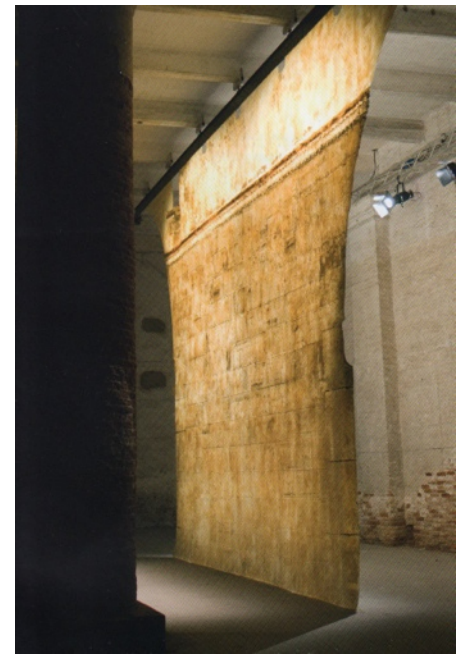
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[44] Eva Ebersberger and Daniela Zyman, "The Ethics of Dust Series," in *Jorge Otero-Pailos: The Ethics of Dust, Thyssen-Bornemisza Art Contemporary*, eds. Eva Ebersberger and Daniela Zyman (Köln: Verlag, 2009), pp. 21-22.

away the physical dust from within its crannies. This dust, while typically undesirable, can after analysis provide a history of the architecture it was attached to. Doing this without being either an image of the building, nor the architecture itself, produces a profound and new record for a building that is one of the most recorded and re-recorded in the world.[45] In addition to being an object that dances the line between physical and ephemeral, art, architecture and preservation, "The Ethics of Dust" is, with its diaphanous derma, undeniably beautiful. Hanging in the *Corderie* of the Arsenale, artfully lit, it is an engaging object. Not surprising then that this stunning object has garnered the majority of the attention. What has been left as a footnote, despite being the heart of and justification for the project in the first place, is the report (unpublished) of the content of the dust pulled from the wall.[46]

Dust, the focus and namesake of Otero-Pailos' project, is what was entombed within the layers of liquid latex, but what exactly is 'dust?' Its definition is more grainy than one might expect. Etymologically the word dust is quite ancient, appearing in Old English and most of the proto-European languages. Dust often (as a noun) referred to a storm, breath, mist, vapor or smoke that blocks one's perception. It is also the material into which living matter decays, this root lending us phrases like "ashes to ashes, dust to dust," and "bite the dust"—references to the
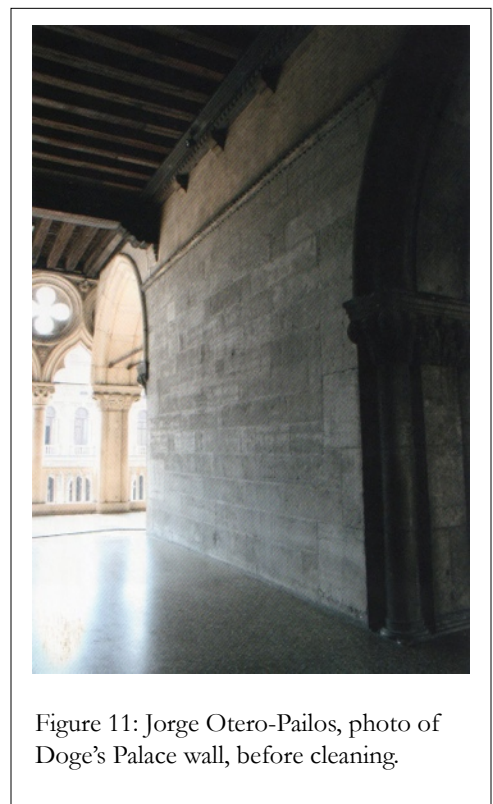
Figure 11: Jorge Otero-Pailos, photo of Doge's Palace wall, before cleaning.

[45] Valeria Burgio, "The Vera Icon of Venice," in *Jorge Otero-Pailos: The Ethics of Dust, Thyssen-Bornemisza Art Contemporary*, eds. Eva Ebersberger and Daniela Zyman (Köln: Verlag, 2009), pp. 42-45.

[46] The report of the chemical analysis of the dust pulled from the wall, the chemical history of Venice, has to my knowledge never been published and is not readily available.

figurative role of dust in ideas of mortality.[47] Mary Douglas' definition of dirt as "material out of

place" extends easily to dust, which like dirt provokes "reflection on the relation of order to

disorder, being to non-being, form to formlessness, life to death."[48] Dust is what is left of a live

thing, a whole thing, that has been ground down into its most basic, dead, components.

Dust also shares etymological roots with the word mold. Mold (mould in the British spelling)

itself has both French and English etymologies and multiple meanings.[49] The Old English and

Norse etymology describe mold as loose and crumbling soil or earth (*molde*) as well as the grinding

down of stone into dust (*molta, mulda,*) also a reference to the earth of a grave. Old English and

Norse also begin to define mold as a fungus beginning in the early 13th century. This meaning stems

from the Old Norse *mygla, moulde* and *moulen,* all refer to 'growing moldy,' and the Old English roots

connect its meaning again to dust, dirt and the grave—a description of the visible appearance of the

fungus, its location and its ability to slowly turn materials, including stone, into dust.[50]

The thought of appreciating a whole thing being reduced to its particulate echoes the words

of a source key to Otero-Pailos' work, 19th century writer John Ruskin. Ruskin, a son of Victorian

England, wrote widely on the arts and architecture, penning a number of books on the subject and

one in particular that has become the namesake for Otero-Pailos own work in Venice. Published in

1865, *The Ethics of The Dust* was a fictional transcript of lessons in mineralogy taught to a group of

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[47] Online etymology dictionary, accessed Feb 18, 2012. <http://www.etymonline.com>

[48] Mary Douglas*,* "Introduction," in *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (London: Routledge & Kegan Paul, 1966), pp.5.

[49] From French comes, in the 12th century, the use of a mold as a hollow negative form into which another material is poured to form a positive. This origin in the Old French word *modle* and the Latin root *modulus,* connect mold to an idea of measurement and order. It is also from this root that clay is molded and one can "break the mold," making it impossible to create another copy of a previously cast object—a phrase from the middle of the 16th century. The French root is also the one from which the architectural moulding (the decorative piece of wood or stone covering a joint) comes, this usage developing in the middle of the 17th century.

[50] Online etymology dictionary, accessed Feb 18, 2012. <http://www.etymonline.com>

schoolgirls. Ruskin, through the character of 'Old Lecturer,' conducted a series of fireside ramblings, full of question and answer, to reveal his philosophical approach to the natural world generally and dust in particular. Dust, as he described it to the girls, is the molecule, the atom, the most basic block which—following its various characters and moods—attempts to form into its proper structure, grouping
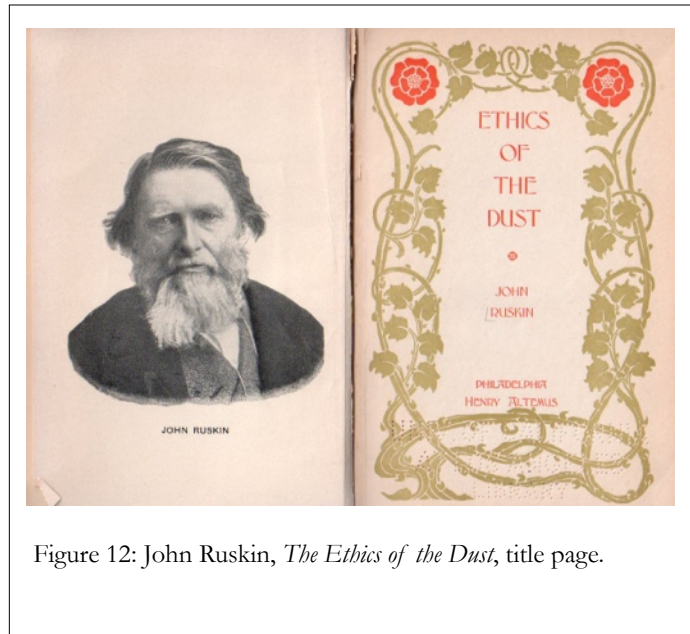

Figure 12: John Ruskin, *The Ethics of the Dust*, title page.

together with like molecules, becoming crystalline and forming the stones we all know. Yet despite this desire for structure and pattern, dust, much like his school girls, "ever gets out of order."[51]

Natural materials and their makeup were key to Ruskin's concept of architectural beauty and any architect attempting to follow Ruskin's tenets needed, ideally, to utilize stone—the most important of natural materials according to Ruskin. Stone, as Ruskin explained to his schoolgirls, began as dust, was formed into a crystalline structure by the interlacing of patterns inherent in that particular type of stone and was made unique by having this pattern skewed by its 'moods' and the 'moods' of other mineral and environmental agents surrounding it. After forming, the stone would then begin to return to dust, a cycle that when played out in the surface of a building, served as physical proof of architecture's connection to nature and to the history of the surrounding environment. This revelatory process—getting ever closer to nature itself—was for Ruskin the art

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[51] John Ruskin, "The Pyramid Builders," in *The Ethics of the Dust* (Philadelphia: Henry Altemus Publications, 1865), pp. 22-23.

and beauty of architecture. Stones and thus buildings, were seen to have a life cycle and historical record within their material structure. Ruskin provides the following example:

> There is a single sarcophagus in the British Museum, covered with grand sculpture of the 18th dynasty, which contains in magnificent breccia (agates and jaspers imbedded in porphyry), out of which it is hewn, material for the thought of years; and record of the earth-sorrow of ages in comparison with the duration of which, the Egyptian letters tell us but the history of the evening and morning of a day.
> Agates, I think, of all stones, confess most of their past history; but all crystallization goes on under, and partly records, circumstances of this kind—circumstances of infinite variety, but always involving difficulty, interruption, and change of condition at different times.[52]

Considering the breadth of possible dusts—when even a single molecule not in order can qualify—and the vast historical knowledge that dust is claimed to contain, the desire to see Otero-Pailos' report of what is trapped in the latex becomes all the stronger. While this report is at the moment not easily available (if it is indeed more than just a fiction) some of the substances contained therein can be speculated upon. The usual suspects, such as chimney soot, engine exhaust and other such materials can be expected, but there were also, no doubt, numerous living organisms removed from the surface of Doge's Palace. Organisms that appear on nearly all aging buildings and which contribute paradoxically to both the beauty of those buildings and their decay, lichens.

The seemingly innocuous lichens which adorn so many buildings can, in fact, not only be considered a form of dust in their own right, but are themselves responsible for the creation of much dust.[53] Lichens, according to mycologist Clyde N. Christensen, "are almost the only plants that

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[52] John Ruskin, "Crystal Sorrows," *The Ethics of the Dust* (Philadelphia: Henry Altemus Publications, 1865), pp. 183-204.

[53] David Gissen defines and discusses weeds as plants out of place, piggybacking on the definition of dust as material out of place. Weeds are plants whose status is culturally determined, for example: dandelions are the bane of the American lawn, yet they are cultivated for consumption in many parts of the world, often with great effort. See: David Gissen, "Weeds," in *Subnature: Architecture's Other Environments* (New York: Princeton Architectural Press, 2009), pp. 150-167.

grow upon bare and barren rock, certainly the only visible ones, and they slowly convert the rock into soil. They literally decay it."[54] They turn stone into dust. For a lichen to survive on barren stone and live long enough to turn it to dust it has evolved a useful trait. Lichens, it turns out, are not one but two organisms living together in a symbiotic relationship, part mold, part plant. In this partnership the mold helps the plant (an algae) survive for long periods of time without water and under very harsh climatic conditions: it calls the arctic, antarctic, deserts and nearly all climates around the world home. The mold is also able to leech healthful minerals from the stones the duo settle upon. In return, the plant provides food for the pair through photosynthesis, a process the mold is not capable of on its own. Together they are a highly successful 'compound organism,' capable of living and growing for centuries.[55]

Spending centuries on a surface, lichens record in the patterns of their growth and their consumption of stone, historical hints as to the status of the environment at various times. Along with the buildup of various other dusts this combination of materials trace a story of the environment that has swirled and shifted around a piece of architecture. They make accessible knowledge of the local changes in industry, technology and life styles and remain visible (albeit technologically augmented visibility is needed to render them legible) in the particular patterns of the particulate deposited. It is the ability to see and appreciate (though not necessarily read) this deposited history that drives Ruskin's concept of beauty and nobility in architecture. Architectural beauty was, for Ruskin, completely tied up in a notion of the surrounding environment and its visible effects on the life cycle of materials. Or, in Ruskin's flowery prose: "things in other respects alike, as in their substance, or uses, or outward forms, are noble or ignoble in proportion to the fulness of the life which either they themselves enjoy, or of whose action they bear the evidence, as

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[54] Clyde N. Christensen, *The Molds and Man* (Minneapolis: University of Minnesota Press, 1965), pp. 45.

[55] ibid. pp. 38-39.

sea sands are made beautiful by their bearing the seal of the motion of the waters."[56] Considering

the value placed on natural weathering and on the dust a building collects, it is not surprising that

Ruskin fought against attempts to clean dust away.

Doge's palace, despite Ruskin's words and efforts, has been cleaned and repaired many times

—long before Otero-Pailos ever arrived on the scene. The most notable cleaning was perhaps that

undertaken during one of architect and preservationist Camillo Boito's Venice cleaning campaigns

which (in the face of Ruskin's outrage) had become a normalized institution by the 1880s. Boito, in

reference to the dust that Ruskin so cherished, was concerned by its connection to the new industrial

environment, commenting that: "We must scrupulously and religiously respect the color of time,"

but it must not be confused with "extrinsic, superficial and casual soot."[57] Boito was referring to the

products of the Industrial Revolution, which by this time was in full swing. New forms of entropic

breakdown, such as: acidic soots, choking smogs, and artificially weathered and self-cleaning man-

made materials meant that entropy had ceased to be a solely natural process. These same industrial

developments left Ruskin absolutely indignant, as they distorted, masked, muddied and subverted

natural entropic processes, threatening that from which architecture's beauty arrived.[58]

It is at Ruskin's point of exasperation in the face of man-made pollution and materials that

Jorge Otero-Pailos steps in. Pushing past Ruskin's pollution block, Otero-Pailos accepts pollution,

not differentiating it from other dusts, materials, forms, or their development and at the same time

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[56] John Ruskin, "The Lamp of Life," in *The Seven Lamps of Architecture* (London: The Waverley Book Company, 1849), pp.154.

[57] Jorge Otero-Pailos, "The Ambivalence of Smoke: Pollution and Modern Architectural Historiography," *Gray Room*, No.44 (Summer, 2011): 90-113. Jorge Otero-Pailos translation and quotation of Camillo Boito.

[58] ibid.

retaining the idea that dust, in all its forms, can produce both beauty and historicity. It is for Otero-Pailos as it was for Mary Douglas when she claimed that:

> [When] we can abstract [morality,] pathogenicity and hygiene from our notion of dirt, we are left with the old definition of dirt as matter out of place. This is a very suggestive approach. It implies two conditions: a set of ordered relations and a contravention of that order. Dirt then, is never a unique, isolated event. Where there is dirt there is system. Dirt is the by-product of a systematic ordering and classification of matter, in so far as ordering involves rejecting inappropriate elements.[59]

The system Douglas referred to was a social one. It was this system that during Ruskin's lifetime was in the process of re-classifying his beloved dust as simply "matter out of place," turning it into an element that could be deemed inappropriate and thus removable. The project of Otero-Pailos in "The Ethics of Dust" has been to again re-classify dust, making it no longer a material out of place, bringing it back into the cultural fold. This time dust would be a source of artistic and preservation practice, as well as scientific knowledge.[60]

The definition of dirt and dust that Otero-Pailos attempts to manipulate spawned from the public health movements of the 19th century and the development of germ theory by Louis Pasteur in the 1860s. Dust and dirt were, in the 1800s, thought to carry disease and were thus slated for removal from any place in which human beings might come in contact with them.[61] This included the surfaces of buildings, inside and out and even whole structures or neighborhoods. For architects, who were also part of the public health debate surrounding dust, it became problematic to have the

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[59] Mary Douglas, "Secular Defilement," in *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (London: Routledge & Kegan Paul, 1966), pp. 29-40.

[60] Eva Ebersberger and Daniela Zyman, "The Ethics of Dust Series," in *Jorge Otero-Pailos: The Ethics of Dust, Thyssen-Bornemisza Art Contemporary*, eds. Eva Ebersberger and Daniela Zyman (Köln: Verlag, 2009), pp. 21-22.

[61] The history of civic hygiene and public health informs this shift in social system, but is far too large a topic to handle here. It would include characters ranging from Louis Pasteur to Florence Nightingale, for a brief introduction see: Adrian Forty, "Hygiene and Cleanliness," in *Objects of Desire* (New York: Pantheon Books, 1986), pp.156-181.

entropic decay of buildings occur while they were being inhabited—this was seen as a glaring health hazard and resulted in a spree of cleaning. Ruskin in this scenario, with his desire to save dust was seen as a cultural outlaw, a Hundertwasser like character attempting to bring human beings too close to dirty ol' nature's processes. Processes which would, the thinking of the time went, literally result in illness, or even death.[62] For Ruskin this was an unfortunate development, as playing with the cycle by which materials are formed by and then return to dust was exactly what he wanted artists and architects to showcase. In addition, the idea that dust could be purged entirely was ludicrous, as in his mind as everything was dust at its most basic level.

After a Boito style cleaning and repair, a building would appear as if it had just been finished, as if it were an eternal and unchanging object of objective value, not part of a larger environment and ecology. Cleaning was a way of clearly marking this separation.[63] A lack of clear demarcation (a dirty building) would mean that there was a point of mixture where nature remained active. Jorge Otero-Pailos cites this area of mixing as the progenitor of "unintentional aesthetics," beauty that is a result of the architect's design plus other agents. Alois Riegl, one of the founding thinkers of modern architectural preservation, famously referred to man's easy and uneducated attraction to "unintentional monuments" and the partially eroded as "age-value." As Riegl describes it, age-value is a subjective catalytic quality, one which triggers in the beholder a sense of the passage of a long period of time. Significantly, it is a quality brought on through the senses, meaning that it does not require a knowledge of history or education in aesthetics to make its impact—giving age-value a wide ranging validity. As a catalyst, this also means that age-value places very little value in

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[62] Jorge Otero-Pailos, "The Ambivalence of Smoke: Pollution and Modern Architectural Historiography," *Gray Room*, No.44 (Summer, 2011): 90-113.

[63] Boito's cleaning campaigns included the removal of dirt and dust, the replacement of damaged pieces, the retention and display of the original pieces that are being replaced somewhere within the building, and the inclusion of a plaque or marker of where the work was done and the date it was undertaken. The idea being that, in the future, with better techniques any subpar repair could be undone, returning the building to a more original state.

the object qua object, its material presence only being necessary in as much as it is able to trigger the senses.[64]

Riegl projected (having died in 1905) that the 20th century was to be a conflict between the advocates of age-value (Ruskin's position, without naming him) and the advocates of its converse, "newness-value," which can be seen in Boito's desire to clean and repair—a quality that is also easily appreciated without higher learning. Riegl describes the two sides of the conflict thus:

> In the twentieth century we appreciate particularly the purely natural cycle of becoming and passing away. Every artifact is thereby perceived as a natural entity whose development should not be disturbed, but should be allowed to live itself out with no more interference than necessary to prevent its premature demise. ... [but] ... If a monument which carries the traces of decay is to appeal to the modern *Kunstwollern* ["artistic will" or the force driving the evolution of style], it must be restored in form and color to appear like something newly created. Newness-value can be preserved only at the expense of the cult of age-value[65]

Riegl outlined many different kinds of value—beyond only age and newness value—that monuments could possess and each of which he saw in an evolutionary string of types of value through history. Unlike age and newness, these other kinds of value often required specific knowledge beforehand in order to appreciate them. Despite this, he sees values that require education to appreciate them as evolving into the more commonly and immediately appreciable forms of value over time.

> Historical value, which was tied to particulars, transformed itself slowly into developmental value, for which particulars were ultimately unimportant. This developmental value was none other than the age-value we have encountered before; it was the logical consequence of the historical value that preceded it by four centuries. Without historical value, there could not

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[64] Alois Riegl, "The Modern Cult of Monuments: Its Character and Its Origin," translated by Kurt W. Forster and Diane Ghirardo, *Oppositions*, No.25 (Fall, 1982): 21-51

[65] ibid.

have been an age-value. If the nineteenth century was the age of historical value, then the twentieth century appears to be that of age-value.[66]

Paired with the definitions of dust and dirt—common catalysts of age-value as well as markers, in their absence, of newness—it becomes clear that as the value of monuments becomes increasingly subjective, they are also increasingly shaped by social shifts of categorical definition, as criteria for subjective appreciation and taboos are cultural constructs. Thus revealing the point at which age-value and newness-value see-saw to be a moving target and not commensurable. Quite unlike historical-value and age-value which are able to coexist. This impossible conundrum of balance between newness and age is exactly where Otero-Pailos productively inserts himself—albeit a hundred years later—cleaning a building to regain its newness-value while retaining for study the material that constituted its age-value.

Also at stake in a discussion of the balance between newness and age is the status of nature. Riegl included in his first footnote a premonition of what the 20th century was to hold, noting that within the modern sensibility, age-value is also often extended to the organic: animals, plants and the environment. His footnotes reads:

> Another characteristic trait of modern culture, particularly in Germanic countries, which arises from the same root as the appreciation of age-value, is the protection of animals and of the environment. The notion of preservation extends to individual plants and forested areas and even demands legal protection for "monuments of nature," and thereby raises organic and inorganic materials to the status of entities deserving protection.[67]

It follows from Riegl's note that as nature can have age-value it can not have newness value, thus its preservation in the face of a premature demise is imperative—as it can not be replaced in

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[66] ibid.

[67] ibid. footnote 1.

kind by man. In this way organic material can be seen as the height of age-value: its deterioration is obvious, relatable, relatively quick and its status precarious. If lichens, centuries old, are capable of having age-value independently, when attached to architecture, this symbiosis begins to look like a mutually productive architecture-plant-fungus *ménage á trois*. The age-value of a building, which the lichen helps to maintain, assists the building in avoiding demolition despite possible obsolescence. The lichen paradoxically helps maintain its architectural substrate, even as it actively breaks the building down into dust. Age-value in this case is mixed between architecture and organism—the lichen preserves its life and the life of the architecture, by breaking down the building into dust.

While lichens can be discussed as a form of dirt, a 'plant out of place,' a weed, lichens today are not quite considered dirty any more.[68] While, like dust, lichens are clearly not original to a piece of architecture, with their presence offering age-value, they are also clearly natural—not a form of man-made pollution. As the specificity of a monument's historical event and context disappear with time and age-value takes over as the primary cause for preservation, cultural shifts in the conception of dust and new technological developments offer an evolutionary leap in approaches to the value of art and architecture of the kind Riegl historically outlined. Lichens and pollution today (both natural and man-made materials) offer not only an abstract image of time passing, or an instance of subjective beauty, but can be seen to offer a newfound historical specificity through scientific analysis. A specificity which is at once subjective in its beauty, objective in its historicity and while not directly connected to the architectural object itself, retains part of it as a stratum of record within a larger ecology of historicity. As can be seen in Otero-Pailos' report on the content of his latex (even in the reports absence,) both organic and man-made material are capable, through scientific analysis, of having historical-value, of creating continuity between ages and time periods

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[68] David Gissen, "Weeds," in *Subnature: Architecture's Other Environments* (New York: Princeton Architectural Press, 2009), pp. 150-167.

through the data it supplies. Lichens, in this capacity, help create on architecture a landscape of beauty and historicity through a conflation of nature and culture.

Given value by a socially mediated and shifting system of dirt signifiers, buildings with "age-value" or "unintentional aesthetics" occupy a precarious position. While Riegl and Boito were concerned with these social changes and their effect on the evolution of art and the changing status of architecture, where new definitions could mean either newfound value or the wrecking ball, Ruskin was occupied with an additional kind of system—the crystalline structures and patterns of dust that were the origin of his beloved stones. With his zealous faith in God and a healthy dose of the Romantic, Ruskin saw these crystalline patterns as running beneath any possible social shifts: both as their timeframe long outlasted the lives of men and as they were seen as essentially God given.[69] Ruskin, in a very Victorian turn, attributed to the various materials of the world a degree of moral and ethical charge as regards their 'treatment' of each other, their 'character' and their 'moods.' Stones for Ruskin are discussed as if they have an entire life and social system of their own, independent of and mostly invisible to man. Where Riegl, in the footnote discussed above, raised the organic to the level of the inorganic, affording it protection, Ruskin raises the inorganic to the level of the organic, imbuing it with liveliness. In his chapter titled "Crystal Quarrels," Ruskin reflects on the difficulty of attributing the necessary "volition and choice" to crystals and stones:

> Everything has its own wonders; but, given the nature of the plant, it is easier to understand what a flower will do, and why it does it, than, given anything we as yet know of stone-nature, to understand what a crystal will do, and why it does it. You at once admit a kind of volition and choice, in the flower; but we are not accustomed to attribute anything of the kind to the crystal.[70]

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[69] Jennifer Bloomer, "Ruskin Redux," *Assemblage*, No. 32 (April, 1997): 8-11.

[70] John Ruskin, "Crystal Quarrels," *The Ethics of the Dust* (Philadelphia: Henry Altemus Publications, 1865), pp. 111-129.

Ruskin is quite right to be concerned with the intelligibility of this concept, the attribution of volition to stones is difficult to ponder. Ruskin was attempting to understand the greater variety of and mystery behind formal differences between individual instances of crystals (stones) considered to be of the same type—the difference between two feldspar crystals for instance—compared to those differences between individual plants of the same type. A crystal, such as agate, has a distinct pattern it follows as it puts itself together, but depending on its surroundings and 'mood' (mood being the unique and temporary way its intrinsic pattern reacts to these surroundings) its development is skewed and altered in myriad ways. These patterns are, for Ruskin, a comfort:

> That piece of agate in your hand, Mary, will show you many of the common phenomena of breccias; but you need not knit your brows over it in that way; depend upon it, neither you nor I shall ever know anything about the way it was made, as long as we live.
>
> Dora. That does not seem much to depend upon.
>
> L. Pardon me, puss. When once we gain some real notion of the extend and un-conquerableness of our ignorance, it is a very broad and restful thing to depend upon: you can throw yourself upon it at ease, as on a cloud, to feast with the gods. You do not thenceforward trouble yourself,—nor any one else,—with theories, or the contradiction of theories; you neither get headache nor heart-burning; and you never more waste your poor little store of strength or allowance of time.
>
> However, there are certain facts, about this agate-making, which I can tell you; and then you may look at it in a pleasant wonder as long as you like; pleasant wonder is no loss of time.[71]

The casual comfort taken in "pleasant wonder" and what seems like an 'ignorance is bliss' approach today, can be read in the context of the Victorian era as a way of accepting the bourgeoning importance of the secular sciences within a man whose faith in God was unflinching. The moral and ethical positions of crystalline patterns in stone help Ruskin to frame the underlying patterns of the world in a complex gradient of material-ethical purity (as opposed to Douglas' social system) over which man does not necessarily have any control or even knowledge—God in this case

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[71] ibid, pp. 183-204.

holds all the cards, the best man can do is frame his greatness. Be that in newly carved and assembled stones that reveal their internal patterns and beauty or those appreciated for their disintegration and age.

Focus on the maturation of dust into moody mounds, according to patterns that remain either unseen (because of their place under the surface of the Earth,) or unknown because of their infinite (read: God given) complexity, begins to sound very much like Sanford Kwinter's discussion of complex systems of wildness: "the immixings and inadvertecies of the natural world (storms, quakes, abundance, extinctions), and of complex adaptive systems in general."[72] These wild systems of complexity, as we have seen in the previous two episodes, have a certain indifference to human life and need that, while conflicting with what we assume to know of Ruskin's beliefs, match what he says with his words. Consequently, this is a system that, in its indifference to man, avoids potential obsolescence should the social system defining it change.

In this sense Ruskin had stumbled into a science that, in the 19th century was just beginning to come into existence—identifying and celebrating the beauty of patterns in the world to which man had neither recourse nor vision and certainly not control. These patterns are not always socially contingent, not concerned with human habitation and tend to have a life of their own. As Kwinter states it, "Life was described as "a pattern in time" (Schrödinger), and what made living matter different from that which was not alive was simply organization."[73] These "patterns in time" were, for Ruskin, also what made matter that was not living similar to matter that was alive—a position that identifies him as an Organicist as opposed to a Vitalist. If Hundertwasser was attempting to

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[72] Sanford Kwinter, "Wildness: Prolegomena to a New Urbanism," in *Far from Equilibrium: Essays on Technology and Design Culture* (Barcelona: Actar, 2008) pp. 186-191.

[73] Sanford Kwinter, "Confessions of An Organicist," *Log.* No. 5 (Spring / Summer, 2005): 71-75.

highlight man's 'wild side,' Ruskin's goal was to frame, through architecture, the wild life of materials and their indifference to the human life that frames them.

Continuing to play with and re-define the social position of various 'dirts' has become, for some contemporary practitioners and thinkers like Otero-Pailos, David Gissen and others, a full time architectural project.[74] After decades of striving for dustless interiors and a germ free Lysol soaked society, the definition of dirt has begun to change once again. The constant re-categorization of our cultural ideas concerning dirt and how our architecture is shaped by it depends on the current state of our knowledge, culture and what counts as out of place. Organic foods, farmers markets (where one buys food with dirt still on it,) the use of recycled materials, and operable office or even hospital windows are each reactions to a shift in the definition of dirt.[75] Man-made chemicals, odors and materials, those things which were once used to keep dirty ol'nature in check, have become risky types of dirt themselves; while the 'natural' soil of the garden, a stray caterpillar in ones salad, or even a recycled toilet, are no longer the abject horror they once were. These, like all changes in the registration of dirt, will prompt in architecture, material tectonic adjustments.

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[74] To remain true to Mary Dougals' work I must note that as the definition of dirt is culturally relative, I am speaking specifically of and from, a Euro-centric architectural discourse and culture perspective.

[75] Bruce Barcott, "Earths Last Unexplored Wilderness Is ... Your Living Room: The Science You Don't See," *Discover*, Vol. 33, Issue 6 (Jul/Aug 2012): 34-92.

The Indifference of the Dust

This explication in three episodes—plucked from the larger and longer drama that links architecture, man and nature—highlights methods of explanation, attempts at responsibility, or ways to attempt control of the human effect on the world, be that ecological, aesthetic, or political. These endeavors can also be seen as part of a search for architecture's cultural pertinence in the face of new technological, social and economic developments that threaten to make architecture as it has been known, disappear: a victim to complete environmental destruction, transitioned into a purely technical discipline, subject to the shutdown of the exploration of aesthetics and beauty in the face of economic and political pressure, or all of the above.

Human beings' realization, over the course of the 20th century, of the potentially permanent damage they can wreak on the world, coupled with mans confidence in his knowledge of the worlds workings, has resulted in a newfound feeling of responsibility—which architecture is expected to address. Man's responsibility in the face of his effect on nature and newfound knowledge *can* be seen as the new baseline for contemporary architectural and cultural debate, but perhaps taking man's effects as a datum of discussion is to reinforce an already smug sense of human agency. The exact sense of agency that resulted in many of the problematic issues that artists, architects and writers today seek solutions to.

Hundertwasser and Roche cultivated a fear of nature, utilizing the formlessness and wildness of mold, without acknowledgement of the necessary existence of the contrasting cultural structures that make the provocation of strong reactions possible. Formlessness requires form for it to appear. Hundertwasser and Roche are both manipulators and victims of systems of signification and taboo that, while shaped by man's practices, are outside direct and precise control. Banham and Rahm

deployed technologies to precisely control environments in which the presence of mold signaled a loss of human control. Rahm took this idea to an extreme, closing off his system from the larger environment, learning instead through increases in internal complexity. In his closed systems mold was an indicator, pointing to disjunctions between closed systems, the environment outside the system and the inability of the system to take all possible variables into consideration. Banham pushed these disjunctions to creative ends, while Rahm grasps for leverage as a scientist in a field he can never fully control. For Ruskin and Otero-Pailos, mold (in the form of lichens) hybridize nature and architecture—adding beauty, history and value. Through their gradual destruction of the architecture they occupy, lichens lend it age-value, both in the process of entropy and the presence of nature. Dusts and how they are created, shift in and out of acceptability, registering changes in the cultural understanding of architecture's value and each time prompting in architecture both a material tectonic adjustment and a reevaluation of its beauty.

Each of these approaches are driven by a belief in underlying systems—simultaneously natural, cultural and fictional—that manipulate the balance of creative and structuring power in the world. Regardless of whether or not the system in question is real or fictional, under control or running wild, the resulting effect is often much the same. Architecture's ability to mediate between the natural world, human cultural constructs and these various systems reveals the root of its contemporary pertinence to both its own discipline and larger cultural conversations. Coming into action in a very similar way to the deployment of posthumanism by philosopher of science Cary Wolfe, architecture:

> insists that we attend to the specificity of the human—its way of being in the world, its ways of knowing, observing, and describing—by (paradoxically, for humanism) acknowledging that it is fundamentally a prosthetic creature that has co-evolved with various forms of

technicity and materiality, forms that are radically "non-human" and yet have nevertheless made the human what it is.[76]

Architecture can be seen as one of these prosthetic creations that "attends to the specificity of the human" while remaining necessarily indifferent to human life and need after it is set down. This makes architecture a meeting point at which an understanding of history, technology and material culture is not directly transferred across time, nor offered up easily, but nevertheless shape the lives of human beings and help to make them what they are. In an indirect transfer, subsequent thinking and knowledge is shaped through a reflection on architecture—allowing ideas to flow forward into the folds of contemporary culture. Architecture, in its varying states of wildness and control, openness and closure and newness and decay, is interpreted according the the cultural and political stances of the time and thus both poses the risk that contemporary techniques can, at their seemingly most radical, have the greatest recourse to the orthodox propositions of the past but also that the most stale work of architecture has within it a kernel of possible life if provided a new fiction. A blind reliance on moldy assumptions can often invisibly lend a proposition the gravitas of history, but at the cost of simultaneously undercutting its most progressive of aspirations. Considering this, one can not, when it comes to architecture, overestimate the potential agency of a building over time (be that an evening or eon) nor underestimate the value of the acceptance and constant battle with one's own ignorance. A sleepy spore, once wetted with the proper fiction, can throw into productive crisis entire systems of perceived cultural and natural value.

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[76] Cary Wolfe, "Introduction," in *What is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010), pp.xxv.

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Figure 1: Hundertwasser delivering Mould Manifesto.
Hundertwasser*, Hundertwasser Architecture: For a More Human Architecture in Harmony with Nature,*
Angelika Taschen ed. (New York: Taschen, 1997), 57.

Figure 2: Hundertwasser remodel of Walter Gropius designed factory.
Hundertwasser*, Hundertwasser Architecture: For a More Human Architecture in Harmony with Nature,*
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Figure 3: Example of Hundertwasser "window rights" project.
Hundertwasser*, Hundertwasser Architecture: For a More Human Architecture in Harmony with Nature,*
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Figure 4: R&Sie, *Mosquito Bottleneck*, exterior rendering.
R&Sie. "mosquito." Accessed August 2012. <http://www.new-territories.com/mosquitos.htm>

Figure 5: R&Sie, *Mosquito Bottleneck*, interior rendering.
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Figure 6: Reyner Banham in mylar bubble with "living package."
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Figure 7: Philippe Rahm, *Mollier House*, plan superimposed on Mollier diagram.
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Figure 8: Philippe Rahm, *Digestible Gulf Stream*, hand rendered comic.
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Figure 9: Philippe Rahm, *Digestible Gulf Stream*, installation.
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Figure 10: Jorge Otero-Pailos, *The Ethics of Dust*, hanging latex.
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Figure 11: Jorge Otero-Pailos, photo of Doge's Palace wall, before cleaning.

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Figure 12: John Ruskin, *The Ethics of the Dust*, title page.
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