Facing Mud.
On Matter-Informational Building and Writing

SELENA SAVIĆ

This text postulates mud as a host and a source of three architectonic thoughts. Suspending immediate judgment about the value and potentiality of muddy matter, these architectonic thoughts offer figurations of mud that slip between inappropriate and necessary, between generosity and exploitation. The three aspects of mud depicted in the figurations characterize different informational processes: standardization, communication, and augmenting. Informational processes encoded in mud traverse dichotomies such as discreet-continuous, soft-hard but also dirty-clean. In terms of the communication theory of the French philosopher Michel Serres, this text offers an account of mud as a noisy matter, at once the channel and a part of the message, host and parasite, a capacious potentiality that circulates through

https://doi.org/10.34727/2024/isbn.978-3-85448-062-4_4

and even determines urban infrastructures and architecture. The treatment of mud, therefore, aspires to be inventive of images and techniques to work with its noisy composition.

Mud is a mixture of inorganic and organic matter, such as sand, clay, microorganisms and decaying plants, and water. The more water, the muddier. Mud can host many things, including living organisms, the growth of plants, walking steps, anthropogenic pollution, or precious stones. We do not have to go far looking for mud: It sticks to the soles of hiking shoes and wheels of bicycles riding off-road, it coats riverbanks and flows when moved by abundant rainfall. Mud forms wherever water dissolves soil.

Mud and water are easily formed into media for writing and building.[1] Mud is shapeless, wet, and uncountable. This mixed matter is molded and baked into bricks to construct buildings and bridges. Mud hosts different forms of life but also pollutes and makes dirty. Mud-like substance thickens and transforms into nacre, the mother-of-pearl. These figurations will be depicted in detail in this text, weaving in the aspects of mud that characterize its potentiality, instrumentality, and objectivity. The figurations extend far back in time to saturate the view with artifacts and practices of the past and tease out specificities of informational processes traceable in mud. Other depictions of mud are possible. The three selected aspects—construction, mediation, and adornment—form a contingent setup that extend

1 While I discuss mud and clay here, more specifically, as a material for the construction of buildings, we should not forget that writing and symbolization manifested in its early form as clay tokens and clay tablets, such as in Sumerian civilization. On early symbolization and the invention of writing, see, for example, Denise Schmandt-Besserat, *How Writing Came About* (Austin: University of Texas Press, 1996).

the reflection on mud into three dimensions. Building and writing are continuously considered modes of leaving traces in and with mud.

Constructing with Mud: Standard Bricks

In the myth of the foundation of Rome, "the burning and cutting of trees was the first and decisive inscription of history in the landscape, the inaugural act in the construction of human institutions."[2] The fire of burning wood heated the kilns, in which mud was baked into durable and solid bricks.

Bricks are mud formed into a replicable shape; they are dry and countable. Many of the earliest known cities along river valleys of ancient Egypt and Mesopotamia were built with air-dried bricks made from mud. The technique dates to the building of the Neolithic city at Jericho through to Sumerian cities. Fired bricks, massively produced a few thousand years later in Ancient Rome, proved to be more robust and adaptable to construction techniques. Bricks were a dominant construction material in much of the Roman Empire, either alone or in combination with stone. The Roman Empire spread city-ness and bricks across a wide range of climates.

Archaeological research on Roman bricks is rich and conclusive, suggesting that bricks were manually produced, inform of near-square plates, 30 by 30 or 40 cm and in thickness of 2.5 to 6 cube centimeters. Roman bricks were porous and rough, and they were often strengthened with additives such as fiber or coarse aggregates. Water could percolate through their cracks,

2 Paulo Tavares, "Forest," in *Posthuman Glossary*, ed. Rosi Braidotti, Maria Hlavajova (London, Oxford, New York, New Delhi, Sydney: Bloomsbury Academic, 2018), 162–67.

but they adhered well to the lime mortar used to fix one to the other.

Following the fall of the Roman Empire, brick use in Europe faded. Fired bricks continued to be central to Byzantine masonry as well as on the territory of today's Italy. While brick was in use in much of Europe during the Middle Ages and Renaissance, it was the Industrial Revolution that brought bricks again back to their full capacity as a popular, efficient, and economical choice for construction.

The design of the brick helps to standardize buildings and labor. Ernst Neufert, known for the influential handbook on measures and standards in architectural design, first published in 1936 the *Bauentwurfslehre* (English translation is titled *Architect's Data*), and he was active throughout the 1930s, 40s, and 50s designing ways to render architectural design and building more efficient, and more systematic. Architecture historians Nader Vossoughian and Anna-Maria Meister compared Neufert's work on the standard brick with the successful efforts of the German *DIN* to standardize paper in 1922, drawing on the work of the group *Die Brücke*, most notably Wilhelm Ostwald's research assistant, Walter Porstmann.[3] The *DIN A* format became a standard to regulate a wide bureaucratic system, from paper size to books, to bookshelves, as well as files and filing cabinets, extending to desks and the office itself. Neufert's work on brick standardization had similar ambitions, partly realized through his Octametric system, propagating back to

3 Anna-Maria Meister, "Ernst Neufert's 'Lebensgestaltungslehre': Formatting Life beyond the Built," in *BJHS Themes* 5, (2020): 167–85; Nader Vossoughian, "Standardization Reconsidered: Normierung in and after Ernst Neufert's Bauentwurfslehre (1936)," in *Grey Room*, nr. 54 (January 1, 2014): 34–55.

updated editions of his handbook, termed "The Neufert," which is still widely in use in architecture offices today.

Neufert studied architecture with Walter Gropius and later taught the Rapid Design course at the *Bauhochschule* Weimar.[4] In line with the efforts of his contemporaries, such as The Bridge Institute (*Die Brücke – Internationales Institut zur Organisierung der geistigen Arbeit*), the German Institute for Standardisation (*Deutsches Institut für Normung*, or *DIN*), as well as the Bauhaus school, Neufert was fascinated with industrialization and the potential of standardization to improve industrial processes.[5]

During World War II, Neufert worked for Albert Speer, architect and Minister of Armaments and War Production during the Third Reich as an expert on standardization. Based on this work, Neufert published with Speer a second "Lehre" compendium: the *Bauordnungslehre*, in 1943. Around the same time, Neufert started working on his grand standardization project, the Octametric system for bricks. Although Neufert did not draw a specific parallel to standard paper formats in his own writing, there is evidence that he was inspired by the *DIN* A paper series that starts with A0, one square meter in surface, and produces smaller formats of equal proportions as half-folds of larger ones.[6] He intended the Octametric brick to be similarly deducible from a 1-meter measure: The width of the brick would fit eight times in one meter, the height sixteen times, and the length four. This gives a brick of nominal dimensions: 24 x 11.5 x 5.2cm to fit into a matrix, with separations of approximately 1cm filled with mortar. Although the Octametric brick was developed during WWII, it was

4 Meister, "Ernst Neufert's 'Lebensgestaltungslehre.'"

5 Vossoughian, "Standardization Reconsidered."

6 Ibid.

propelled to massive use by the Allied forces during the European-wide reconstruction effort. Neufert was hired as a Professor at the University of Darmstadt to chair design and standardization in the building industry and urban planning. Octametric proved to be such a convenient system that over time, Vossoughian observed, editions of "the Neufert" adapted bodily measurements to fit the brick size, notably across 1956 and 1978 editions.[7] Octametric brick is truly generic and communicative: "it permits one to estimate the dimensions of a given space by counting the number of bricks that run vertically or horizontally across it,"[8] providing precision and synchronization with outer systems (furniture, extensions). Vossoughian emphasizes the mediality of bricks: "Neufert's hope was that octametric bricks would become the preeminent 'medium' of design and construction."[9]

Neufert's work on standardization, Vossoughian claimed, has a profound, two-fold effect on the architectural profession: It normalized the use of standards in design practice, and it helped advance the practice of rapid design—relying on a catalog of standards in a design process. In teaching and in design, Neufert's interest was to make architectural practice both more routine and more accessible through his studio methods (Rapid Design) and learning resources (*Bauentwurfslehre*). "The Neufert" advances standardization of architectural knowledge more broadly: "Its coverage of building types is encyclopedic, which simplifies the research process. [...] Its contents are classified typologically, which eases the task of translating the program into form."[10]

7 Ibid.

8 Ibid., 47.

9 Ibid., 48.

10 Ibid., 43.

Vossoughian went as far as relating it to Vitruvius's "art of building" in its ability to "compute" or calculate and organize the components of the building process. Anna-Maria Meister studied Neufert's work as a life-formatting effort and generalized this gesture across the three "Lehre" projects: The already discussed *Bauentwurfslehre* and *Bauordnungslehre* and an unpublished treatise *Lebensgestaltungslehre*, a collection of indexed entries of Neufert's thoughts in diary form. Meister suggested that we should understand this work as that of formatting: "What produced Neufert's Lehren (both published and not) was the very act of formatting itself: of paper, of architecture and of subjects."[11]

According to architecture historians, Neufert's efforts in standardization can be read in a continuum with contemporary phenomena of digital design—algorithmic design processes mediated by computation and communication technologies. Vossoughian considers the gesture of standardization intimately tied to what Michael Hardt and Antonio Negri termed "informatization."[12] Hardt and Negri discussed informatization interchangeably with post-modernization as a new mode of becoming human: The role of industrial machines in people's lives is replaced with cybernetic intelligence of information and communication technologies.[13] Domination of industry has not replaced agriculture; it had industrialized it.

Similarly, Hardt and Negri observe that today, all economic activities are affected by informatization. Their post-Marxist critique of imperialism engages with the

11 Meister, "Ernst Neufert's 'Lebensgestaltungslehre,'" 172.

12 Vossoughian, "Standardization Reconsidered."

13 Michael Hardt and Antonio Negri, *Empire* (Cambridge, Massachusetts: Harvard University Press, 2003).

mediacy of matter such as bricks in an absolute fashion: "Having achieved the global level, capitalist development is faced directly with the multitude, without mediation [...] Capital and labour are opposed in a directly antagonistic form."[14] Their view on technology is principally economic, encoded in terms of labor. Information and communication technologies are understood in terms of the market, addressing the problem of demand and supply. Most problematically, computing and computation are discussed as cases of immaterial labor, propagating the myth of immateriality while simultaneously falling into the trap of comparing the Internet to roads. This focus on human labor cannot bring clarity to the materiality and mediacy of Neufert's standard brick, which in their theory can only matter as part of an imaginary information highway. If we were to take informatization seriously, we would have to focus on the way in which the act of giving form to matter is indeed informational. Bricks baked from mud are a regularity in communication, perhaps even communication channels themselves, communicating optimization of a construction process that works equally well across different ideologies, materials, and construction experiences. This process, however, is not completely universal, as bricks always bring along the muddy contingency of matter they are made of and the material intentionality of the building process.

Octameric bricks, as well as bricks more generally, are essentially about compatibility. The brick is a generic informational unit with which architecture can be expressed. In Michel Serres's philosophy of natural communication, information is encoded differently from simple circulation through human networks. In her extensive engagement with Serres's philosophy, Vera

14 Ibid., 237.

Bühlmann demonstrates the peculiar way in which it is relevant for architecture: "Serres' philosophy is animated by a particular maxim: It is the demand that philosophy must be capable of factoring in state-of-the-art science and mathematics, as a real and factual, material as well as formal '*puissance*' with which it must come to terms."[15] She puts emphasis on the capacity of this communication philosophy to distinguish architecture from any form of dogma. Mastering compatibility, Neufert aspired to encode architecture as a method and mediate it through simple means of forming noisy matter like mud. The informatization that Neufert's brick propagates should not be only read in terms of standards and norms that claim universality. The novelty of this work should be appreciated in terms of its capacity to propagate information in space and time and not in the simple process of optimizing labor. For this, Assyrian architecture already had some interesting solutions to encode information in bricks in the form of stamps that instructed workers on their placement in complex constructions.[16]

I propose a different reading of Neufert's contribution: To read the spectrality of this system in terms of information and natural communication rather than informatization. While Hardt and Negri's informatization flattens the notion of brick's application to labor and thus only gives us the possibility to appreciate its

15 Vera Bühlmann, "Vicarious Architectonics, Strange Objects. Chance-Bound: Michel Serres' Exodus from Methodical Reason," in *Architectural Materialisms: Nonhuman Creativity*, ed. Maria Voyatzaki (Edinburgh: Edinburgh University Press, 2018), 267.

16 Pierre Chabat, *La brique et la terre cuite : Etude historique de l'emploi de ces materiaux, fabrication et usages ; Motics de construction et de décoration choisis dans l'architecture des diférents peuples* (Paris: Ve A. Morel et Cie Libraires-Editeurs, 1881).

efficiency, the brick also gives rise to a limited but generative language of construction, which should actually be the focus of more severe criticism: The oppressiveness of the Octametric system is precisely in the minimalist suggestion to articulate architecture within the three dimensions of the brick. Mud can have much more to say. But in order to speak, it has to be decoded, and the Octametric brick is but one way of doing that.

Mediating Mud: Sticky Nature of Dirt

The increase in the concentration of carbon dioxide (CO_2) in the atmosphere due to fossil fuel emissions constitutes anthropogenic pollution and contributes to global warming. Many have suggested ways to measure the levels of pollution and equate them with a tax or monetary investment. The proposition of a Global Carbon Budget[17] is described and discussed each year at different national and international levels, from local policies to the United Nations Climate Change Conferences (COP). Subscribing to an economic metaphor of budgeting, an accounting system for anthropogenic fossil fuel emissions was developed and proposed since the 1980s. The concept of the global carbon budget is a way of mediating between scientific knowledge and policymaking.[18] That the budget is global is important: It paints the world united and cumulatively measures emissions. But the global budget is not directly equitable to the temperature increase, and climate scientists challenged this direct translation in the 1990s. One decade

17 Pierre Friedlingstein et al., "Global Carbon Budget 2021," preprint (Antroposphere—Energy and Emissions, November 4, 2021), https://doi.org/10.5194/essd-2021-386 (accessed February 24, 2024).

18 Bård Lahn, "A History of the Global Carbon Budget," in *WIREs Climate Change* 11, nr. 3 (May 2020): 1–9.

later, scientists began to consider budgeting the most robust and scientifically constrained measure of permissible emissions. Finally, in the most recent shift, political aspects of the global carbon budget have received more attention, renewing the image of carbon budgeting as a way to speak truth to power and reaffirming a strong boundary between science and policy spheres.

What might we learn by relating worldly pollution with mud? Any act of polluting is, at the same time, an act of appropriation. Michel Serres wrote about the co-incidence of polluting and appropriation in his book *Malfeasance*,[19] which demonstrates different ways anthropogenic pollution communicates power and hegemony. Speaking on the contemporary ecological crisis Martin Savransky uses another image put forward by Michel Serres as the opening of his *Natural Contract*: Two duelists with cudgels plunged in quicksand.[20] The image is Serres's reading of a painting by Francisco Goya, "Fighting with Cudgels," from the 1820s, with which Serres began his treatise on our always parasitic relationship to Earth and the world. He proposed to consider a "natural contract" with the world as a synthesis of the social contract and natural laws.[21] *Natural Contract* follows Serres's trilogy of the beginnings of all things, starting with *Rome. The First Book of Foundations,* in which he examines the movement from war and violence that shadows Roman history from its mythic beginnings to a

19 Michel Serres, *Malfeasance: Appropriation through Pollution?*, trans. Anne-Marie Feenberg-Dibon (Stanford, California: Stanford University Press, 2011).

20 Martin Savransky, "After Progress: Notes for an Ecology of Perhaps," in *Ephemera: Theory & Politics in Organization*, nr. 1 (2021): 267–81.

21 Michel Serres, *The Natural Contract* (Ann Arbor: University of Michigan Press, 1995).

democracy of thought and action.[22] In *Rome* as well as in *Natural Contract*, Serres recounts how Rome and civilization, more generally, are founded on violence that is in human "nature," while civilization requires "leaving the state of nature to form society."[23] The social contract is our capacity to establish peace as well as economy across humanity. Natural laws are outside human formulation yet always articulated through reason, reducing nature itself to either history or reason. But the world is always our host: Instead of placing ourselves at the center just like we used to place Earth at the center of the Universe, we should reserve the center for things:

> The Earth existed without our unimaginable ancestors, could well exist today without us, and will exist tomorrow or later still, without any of our possible descendants, whereas we cannot exist without it. Thus, we must indeed place things in the center and us at the periphery, or better still, things all around and us within them like parasites.[24]

In the characteristic gesture of suspending judgment, Serres proposes to articulate a natural contract and to transform the relationship to the world from master–slave to symbiont: an organism in a symbiotic relationship with the world. The worlding with, or as Dona Haraway suggested in *Staying with the Trouble*,[25] "sympoiesis," is a way to extend this gesture in action. The natural contract should add to the exclusively social contract an attention and sensitivity towards reciprocity:

> our relationship to things would set aside mastery and possession in favor of admiring attention, reciprocity, contemplation,

22 Michel Serres, *Rome: The First Book of Foundations* (London, New Delhi, New York, Sydney: Bloomsbury Academic, 2015).

23 Serres, *The Natural Contract,* 34.

24 Ibid., 95.

25 Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016).

> and respect; where knowledge would no longer imply property, nor action mastery, nor would property and mastery imply their excremental results and origins.[26]

In Serres's proposition, the establishment of reciprocity would require humans to give back to nature however much nature gives to humans. Nature would, by this contract, become a legal subject in a more-than-human society. For Serres, communication is a contract: A preliminary contract, spoken or unspoken, stipulating the use of a common code. The quicksand in Goya's painting is the "third," which has to be excluded. It swallows us: It is the pollution, the common enemy we are ignorant of while fighting each other. When Martin Savransky revisits Michel Serres's proposal for a natural contract, he notices that "what renders abstract the space in which the duelists fight is not their ignorance [...nor] their desire for victory [... but] the progress they are making with every step they take."[27] Savransky intentionally uses the term "progress" to articulate it in two directions, as development and as sinking further down. Entangled with colonialism, extractivism, and complicit in the devastation of people and environments around the world, progress is more than an idea; it has the character of quicksand. It compares to a world-plowing machine. This corresponds to the way Michel Serres speaks of polluting: We dominate and appropriate the world in this way, colonizing the planet with dirt: "such is the shared philosophy underlying industrial enterprise as well as so-called disinterested science [...] Our fundamental relationship with objects comes down to war and property ".[28] We appropriate through polluting,

26 Serres, *The Natural Contract*, 38.

27 Savransky, "After Progress: Notes for an Ecology of Perhaps," 270.

28 Serres, *The Natural Contract*, 32.

with own dirt, or "mal propre."[29] We burn fossil fuels, release toxins in the water, and saturate markets with products we do not need at below-manufacturing prices, commercial brand-appropriate objects they sell us with their logos. We make the world "human" by polluting it with anthropogenic mass.

Mud can be a host, or it can be polluting. Shannon Mattern engages with this in her book *Code + Clay... Data + Dirt*,[30] specifically the polluting capacity of mud as floods and mudslides, which might be preserved in the ancient name for the city of Paris, Lutetia, most likely derived its name from *lutum,* the Latin term for mud. In the chapter on Mud, Media, and the Metropolis, in which she also revisits Neufert's bricks, Mattern discusses mud and its transformation from pollution that has to be drained to a construction material that can be formed to a writing medium that can receive inscription. In a sweeping gesture over wall-writing historical transformations, Mattern shows how writing on walls is a legal and extra-legal activity that is always political. She recounts how walls were used for writing, to make public the juridical order in Mesoamerican cultures as well as in Ancient Greece; for spiritual Buddhist inscriptions in India; and as integral part of political processes and religious services in Ancient Rome, extending to colonial practices of Iberian monarchs in the New World, appropriated by Peruvian villagers, percolating into contemporary graffiti practices.

29 "Propre" in French refers to property, being one's own, as well as to the state of being clean; Serres uses this wordplay in the original French title of his book on *Malfeasance*: Michel Serres, *Le mal propre: polluer pour s'approprier ?* (Paris: Édition le Pommier, 2012).

30 Shannon Mattern, *Code + Clay... Data + Dirt: Five Thousand Years of Urban Media* (Minneapolis; London: University of Minnesota Press, 2017).

Macs Smith also discussed how walls in Paris, made of bricks or concrete, become host to different practices of parasitic inscription.[31] In *Paris and the Parasite*, Smith focused on Paris because of his situated interest in the linguistic specificity of the term "parasite," which can be explored through pathologizing urban planning approaches historically traced, as well as the noisiness of the term preserved in the French language. Smith picked up Serres's concept of the parasite and its three avatars: the disease, the noise, and the other, and located them in Paris. From Hausmann to Corbusier, "The task of the architect was clearly defined as the task of keeping out parasites, whatever form they might take,"[32] part of an ideology of immediacy, which identifies transparency in architecture with a moral good. Smith's interest in the mediacy of the city is not a negation nor an affirmation of immediacy but a way to show what it means to require immediate communication. Smith points out how the city is always mediated, and there can be no direct knowledge of it—contrary to how the anti-parasitic, "informatic urbanism" attempts to eliminate noise from the networks, conceiving the media city along the

31 Macs Smith, *Paris and the Parasite: Noise, Health, and Politics in the Media City* (Cambridge, Massachusetts: MIT Press, 2021).

32 Smith, *Paris and the Parasite: Noise, Health, and Politics in the Media City*, 42.

lines of Claude Shannon's theory of communication.[33] Smith proposes *literarity* as "a conceptual framework for an urbanism that does not distinguish between hosts and parasites,"[34] which erodes the distinction between meaning and noise.

This brings us to the fundamental paradox of what Smith discusses as anti-parasitic architecture: "to create a wall is also to create a writing surface."[35] In the chapter on the "Wall," Smith focuses on the *mediaticity* of the façade. Attempting to refute narratives of revolutionary discoveries of architecture as a medium, such as in critiques of 1940s wall inscription activities in Paris or Victor Hugo's contrary claim that the book would kill the cathedral, Smith showed how different practices of writing on walls allowed us to see the *mediaticity* of the wall. This, Smith continues, is a state of hypermediacy: "Whereas in the logic of immediacy mediation effaces itself, so that we feel that we are in direct contact with the message, in hypermediacy multiple media clash and become layered."[36] Street art is a parasite, and it creates "a kind of visual static that allows the viewer to see the wall not as a container or support for other media, but as

33 Claude Shannon's theory of communication is foundational for information theory which informs the operation of contemporary information and networking technologies. It was first published in the article: Claude E. Shannon, "A Mathematical Theory of Communication," in *The Bell System Technical Journal* 27, (October 1948): 379–423, 623–56. It treats noise in a significantly different way from Michel Serre's information theory, namely, it postulates it as a possibly corrupting element of the communication channel, while for Serres, noise, in a way, is the channel, or at least it is a part of the message. See, for example N. Katherine Hayles, "Two Voices, One Channel: Equivocation in Michel Serres," in *SubStance* 17, nr. 3 (1988): 3–12.

34 Smith, *Paris and the Parasite*, 18.

35 Smith, *Paris and the Parasite*, 59.

36 Ibid., 77.

a medium in its own right."[37] The political capaciousness of parasitic inscriptions on street walls is in the expropriation of the façade as a popular forum rather than its appropriation as a channel for personal expression.

Appreciating Mud: Decorative Augmentation

Mud is present in the etymology of the word mother, in its meaning of concreted, thickened scum. The name refers to a now obsolete meaning of "mother" as "dirt" or "filth," from PIE *meu- which designates concreted scum and is still present in the Dutch word for mud: *modder*. In the English language dictionary by Noah Webster, published in 1832, he wondered whether the name of a female parent originated in a word expressing matter, mold.[38] Webster speculated on the connection between the soil of the earth, as the producer, and the process of shaping, fitting as a mold for castings. He suggested that the name could also be connected with the opinion that the earth is the mother of all productions.

The double meaning is preserved in the term mother-of-pearl and the associated practice of making jewelry and decorative objects from the nacreous inner layer of the shell of some species from the gastropod and bivalve families. The moist, soft mud-like substance is secreted by a mollusk and thickens to form the nacre, the inner layer of the shell. The nacre is continuously deposited onto the inner surface of the shell, the iridescent nacreous layer. The nacre is part of the armor system mineralized by the mollusk as a way to protect its soft tissues from predators and other mechanical aggres-

37 Ibid., 85.

38 Noah Webster, *A Dictionary of the English Language* (London: Black, Young and Young, 1832).

sions. Nacre's strength and toughness are far superior to the ceramic it is made of, which can be of interest to material scientists who study the mechanical properties of this solid material.[39] From the architecture of the composite, engineers aspire to learn how nature builds. They take natural patterns as an instruction to come up with design guidelines for composites mimicking nacre so as to synthesize matter in certain ways, mimicking nature. Nature is addressed as a book of techniques to read and reproduce.

In addition to the claim of constructive strength, nacre is visually very attractive. This has been addressed by historians of art in different ways. The shimmering "mother-of-pearl" quality of skin in 17th-century paintings by Peter Paul Rubens remains controversial for the aesthetic judgment it puts forward. According to Shawon Kinew, an art historian researching the Baroque (itself thought to owe its name to the pearl, an irregular or a flawed one), Rubens's paintings establish a clear hierarchy of beauty that is color coded:

> Pale flesh [...] is "universal" in its pantochromatic ontology, and therefore constitutes the nucleus of this heliocentrism. Browns are middle colors, secondary, forming a second circle. These colors include brown flesh tones. [...] The outer circle, a third sphere, is reserved for "the colors of magnificence"—the red, blue, yellow, and so on of magnificent draperies and some birds.[40]

Such treatment is clearly problematic for its pretext of skin-color hierarchization, white skin having superior quality in the artist's rendering of it. White skin was ingrained in the painterly technique of Rubens, while

39 Barthelat et al., "On the Mechanics of Mother-of-Pearl."

40 Shawon Kinew, "Sedlmayr's Mother-of-Pearl: Further Notes on Rubens and Flesh Color," in *Selva*, nr. 2: Reactionary Art Histories (December 3, 2020).

Black subjects posed a challenge to the artist. Kinew measured this against the work of art historian Hans Sedlmayer, known for his work on Rubens, as well as for his support of the Nazi regime. "The especial beauty of Rubens's rendering of white skin is treated by Sedlmayr as if the artist's handling of paint somehow undergirds the superiority of white skin, laying bear a racist Kunstwollen."[41] Sedlmayer evoked mother-of-pearl as a metaphor for white bodies and wrote on the shimmering mother-of-pearl quality of Rubens's treatment of pale flesh. Kinew offered a critique of Sedlmayer and his racism, by extension, for having: "a predilection for the round, for order, for the bureaucratic administration of figures passed for facts, for a neat hierarchy that radiates outward, the periphery cushioning the interior goo."[42] Kinew also questioned how color names (black, white, red) as words are imprecise for "a concept as ineffable as skin color in language."[43]

The color brown in Rubens's paintings is also a base color, like the brown of the earth and of creatures who have brown fur. Brown is the color of mud. The process of secreting minerals in self-defense gives rise to a shiny, radiant surface that concretes from scum from the organism's mud.

What is the mediacy of this scrotum, and in what ways it augments the mollusk and our understanding of mud? It is about secretion, or as Vera Bühlmann proposed: "We should use 'secrete' as the verb for this fourfold and universal activity: nature *is* the activity of secretion, of something setting itself apart from itself,

41 Ibid., 91.

42 Ibid., 92.

43 Ibid., 89.

from *cernere*."[44] When observed as informational, this is a constructive process: Simple sedimentation, without disturbance, is just the layering of matter on top of an existing layer; form is determined by the shell and its sediments that sediment. Writing with the sedimentation of pearl-like matter is either about this precious material or what stories it tells. What is in the beauty that we can articulate as an architectonic case, to stand up and out of the background of filth: The secretion or filth of the slimy mollusk transforms into sedef. Everything can be seen as productive in its reproductive transformation of matter and life liquors.

Synthesis: Noisy Images

The treatment of mud as a concept and matter articulates a way to extend thinking into opposing polarities, mud as dirt and fertile, mud as formless and form. The three images of different notions of mud: The brick-making mud, the polluting mud, and the concreting, precious mud of the nacre proceed in transformative schematics of informational processes in matter and in human mastership (brick-making or polluting) of matter. The images and their stories propose to find back our face in the dirt, through dirt, rather than attempting to remove it. They are an effort and method to foreground the mud and bring it to our attention.

This text has aimed to position mud as a source or a host to different architectonic thoughts. I am interested in articulating growth and sedimentation as informational processes that render visible the form and urban social relations through ceaseless attempts to exclude

44 Bühlmann, "Vicarious Architectonics, Strange Objects. Chance-Bound: Michel Serres' Exodus from Methodical Reason."

noise and dirt; these attempts are never fully successful; our cities are alloys of mud and reason.

While mud on Earth can lend itself to the three figurations discussed here, the concept of mud is still difficult to appreciate unless we imagine not having it. In the video footage NASA released in February 2021, we see the view from the cameras of its robot rover, Perseverance, approaching the ground of planet Mars.[45] Different from Earth's surface, which appears blue from afar and is largely covered by water, the surface of Mars appears red due to the prevalence of iron oxide in its ground. It looks like mud, but it is not. No water exists in a liquid state on Mars's surface due to atmospheric pressure a hundred times lower than on Earth, but its two polar caps are covered in ice. The rocky surface of Mars can, therefore, hardly host life. This imaginary trip to Mars serves to take distance and appreciate Earthly conditions.

Another detail worth disclosing in consideration of the lack of mud is that the quicksand in Goya's painting discussed by Michel Serres and Martin Savransky might actually be an artifact of restoration, and it was not of the painter's original intention to depict the "third" which swallows us while we focus on conflict.[46] There is one important way in which the difference between grass and sand matter to this text. Grass grows out of the soil, while sand that sinks swallows life, infertile as the soil on Mars. Martin Savransky emphasized the insufficiency

45 Perseverance Rover's Descent and Touchdown on Mars (Official NASA Video), https://mars.nasa.gov/mars2020/multimedia/videos/?v=461 https://www.youtube.com/watch?v=4czjS9h4Fpg (accessed May 18, 2022).

46 González de la Fuente and Santiago Sevilla Vallejo, "Tres hipótesis de 'Duelo a garrotazos', de Francisco de Goya. Acercamiento político, etnológico y mitológico," in *Revista de Folklore*, nr. 457 (March 2020): 71–89.

of the model of transparency to deal with mud or pollution: "Knowledge alone won't clean the mud off our bodies."[47] The problem, he stressed, is not the lack of knowledge on mud but that we cannot stop making progress. This text suggests pausing and considering mud architectonically, beyond its mechanical or biological properties, mud as an image, as a host, and as a world on its own.

47 Savransky, "After Progress: Notes for an Ecology of Perhaps," 269.

BIBLIOGRAPHY

Barthelat, Francois, H Tang, Pablo D. Zavattieri, C Li, and Horacio D. Espinosa. "On the Mechanics of Mother-of-Pearl: A Key Feature in the Material Hierarchical Structure." In *Journal of the Mechanics and Physics of Solids* 55, nr. 2 (February 2007): 306–37.

Bühlmann, Vera. "Vicarious Architectonics, Strange Objects. Chance-Bound: Michel Serres's Exodus from Methodical Reason." In *Architectural Materialisms: Nonhuman Creativity*. Edited by Maria Voyatzaki, 267–92. Edinburgh: Edinburgh University Press, 2018.

Chabat, Pierre. *La brique et la terre cuite: Etude historique de l'emploi de ces materiaux, fabrication et usages; Motics de construction et de décoration choisis dans l'architecture des diférents peuples*. Paris: Ve A. Morel et Cie Libraires-Editeurs, 1881.

Friedlingstein, Pierre, Matthew W. Jones, Michael O'Sullivan, Robbie M. Andrew, Dorothee C. E. Bakker, Judith Hauck, Corinne Le Quéré, et al.. "Global Carbon Budget 2021." Preprint. Antroposphere—Energy and Emissions, Discussion started: November 4, 2021. https://doi.org/10.5194/essd-2021-386.

Fuente González, de la Fuente González de la, and Santiago Sevilla Vallejo. "Tres hipótesis de 'Duelo a garrotazos,' de Francisco de Goya. Acercamiento político, etnológico y mitológico." in *Revista de Folklore*, nr. 457 (March 2020): 71–89.

Haraway, Donna. *Staying with the Trouble: Making Kin in the Chthulucene*. Durham: Duke University Press, 2016.

Hardt, Michael, and Antonio Negri. *Empire* I. Cambridge, Massachusetts: Harvard University Press, 2003.

Hayles, N. Katherine. "Two Voices, One Channel: Equivocation in Michel Serres." *SubStance* 17, nr. 3 (1988): 3–12.

Kinew, Shawon. "Sedlmayr's Mother-of-Pearl: Further Notes on Rubens and Flesh Color." *Selva*, nr. 2, "Reactionary Art Histories" (December 3, 2020).

Lahn, Bård. "A History of the Global Carbon Budget." *WIREs Climate Change* 11, nr. 3 (May 2020): 1–9.

Mattern, Shannon. *Code + Clay... Data + Dirt: Five Thousand Years of Urban Media*. Minneapolis, London: University of Minnesota Press, 2017.

Meister, Anna-Maria. "Ernst Neufert's 'Lebensgestaltungslehre': Formatting Life beyond the Built." *BJHS Themes* 5 (2020): 167–85.

Savransky, Martin. "After Progress: Notes for an Ecology of Perhaps." *Ephemera: Theory & Politics in Organization*, nr. 1 (2021): 267–81.

Schmandt-Besserat, Denise. *How Writing Came About*. Austin: University of Texas Press, 1996.

Serres, Michel. *Le mal propre: polluer pour s'approprier ?* Paris: Édition le Pommier, 2012.

Serres, Michel. *Malfeasance: Appropriation through Pollution?* Translated by Anne-Marie Feenberg-Dibon. Stanford, California: Stanford University Press, 2011.

Serres, Michel. *Rome. The First Book of Foundations*. Translated by Randolph Burks. London, New Delhi, New York, Sydney: Bloomsbury Academic, 2015.

Serres, Michel. *The Natural Contract*. Translated by Elizabeth MacArthur and William Paulson. Ann Arbor: University of Michigan Press, 1995.

Shannon, Claude E. "A Mathematical Theory of Communication." in *The Bell System Technical Journal*, nr. 27 (October 1948): 379–423, 623–56.

Smith, Macs. *Paris and the Parasite: Noise, Health, and Politics in the Media City*. Cambridge, Massachusetts: MIT Press, 2021.

Stefanidou, Maria, Ianna Papayianni, and Vasiliki Pachta. "Analysis and Characterization of Roman and Byzantine Fired Bricks from Greece." in *Materials and Structures* 48, nr. 7 (July 2015): 2251–60.

Tavares, Paulo. "Forest." In *Posthuman Glossary*. Edited by Rosi Braidotti and Maria Hlavajova, 162–67. London, Oxford, New York, New Delhi, Sydney, Bloomsbury Academic, 2018.

Vossoughian, Nader. "Standardization Reconsidered: Normierung in and after Ernst Neufert's Bauentwurfslehre (1936)." In *Grey Room*, nr. 54 (January 1, 2014): 34–55.

Webster, Noah. *A Dictionary of the English Language*, II. London: Black, Young and Young, 1832.

ation of things. So forget the word environment, commonly used in this context. It assumes that we humans are at the center of a system of nature. This idea recalls a bygone era, when the Earth (how can one imagine that it used to represent us?), placed in the center of the world, reflected our narcissism, the humanism that makes of us the exact midpoint or excellent culmination of all things. No. The Earth existed without our unimaginable ancestors, could well exist today without us, will exist tomorrow or later still, without any of our possible descendants, whereas we cannot exist without it. Thus we must indeed place things in the center and us at the periphery, or better still, things all around and us within them like parasites.
— Michel Serres, *The Natural Contract* (1990)

Thus alchemy is involved, more than modern science is, in a system of moral values. It is alchemists' souls that are engaged in the work of alchemy, the object of their meditations receiving every value. One who handles the skimmer must indeed have a moral ideal. By their art, alchemists must separate 'the stains and filth of the three general principles; furnishing them with a matter, a place, or a vessel more fit than is that in which nature operates, which is full of dirt and a myriad kinds of foulness'. Their art takes away 'the dirt and grossest parts from the salt, the superfluous aquosities from the mercury, and the adustive parts from sulphur'. This purification is, as we see, performed with more of a moral than a scientific ideal. Its tone is not that of the purification of substances in modem chemistry. It despises what it rejects. Those handling the skimmer do so with an expression of disgust on their faces.
— Gaston Bachelard, *The Formation of the Scientific Mind* (1938)