

A Metate, Micaceous Clay Pottery, and the ATLAS-1 Trestle: Mining the Interior Structures of Objects to Build Architectural Theory

NORA WENDL

University of New Mexico

JULIAN MALTBY

University of New Mexico

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In this graduate architectural theory course, students are asked to select an object (not a building) that brings together the environment and humans. First, they write observations of it—answering questions about its materiality, authorship, use, and lifespan, tracing its materiality back to its origins. This is a study of what Elaine Scarry refers to as the “interior structure” of objects: how objects “internalize within their design an active ‘awareness’ of human beings...that is not limited to their use.” Students then write a thesis statement connecting the interior structure of this object to a larger question within the theory of the built environment—examining architecture as related cultural object.

The thesis statement is explored in a paper, and the paper is supplemented by a 3-minute film which seeks to reveal a tangible connection to the object and the theory underpinning it. For a student who chose to study an inherited metate, he observed the materiality of this tool for grinding corn—volcanic stone—proposing that “notions of time that are embedded in the cosmic scale of a metate can provide valuable insight into the way we design and construct buildings,” connecting the physicality of the metate to his own family’s origins, modernism’s avoidance of time, and the “dormant tectonics” of building with volcanic rock, which he’d learned during an internship in Mexico City. The companion film used footage of volcanic eruptions in Mexico, and the student using the metate, combining source and tool across time.

For this session, we propose presenting the structure of this course, and three architectural theory papers it produced: papers whose origins were found in a metate, in the micaceous clay pottery of indigenous Taos Pueblo people, and in the ATLAS-1 Trestle at Kirtland Air Force Base, all objects specific to cultures within this region, and containing within their interior structures—as the students prove—theories applicable to the built environment.

ARCHITECTURAL THEORY AND THE INTERIOR STRUCTURES OF OBJECTS

A recent turn in architectural theory curricula toward the critical syllabus as the defining structure of a theory course—an intentional turn away from the architectural theory anthology as its defining structure, as seen in the 2019 e-flux project, “Theory’s Curriculum”—reveals a broad re-thinking of the event of architecture. In that project’s proposed syllabi, non-canonical architectures are presented as productive sites of discourse—including factories, campuses, and free economic zones—and nature, science, and modernity are taken as tropes to be interrogated.

Sylvia Lavin predicted this turn away from the anthology in “Theory into History: Or, the Will to Anthology,” published at the turn of the 21st century. Lavin identifies two types of anthologies that do not offer productive models for organizing architectural theory—first, the common approach, which prioritizes the voices of (white, male) architectural icons, making architectural theory the “purview of the architect and his milieu.”¹ The second is any anthology in the vein of Neil Leach’s *Rethinking Architecture*, comprised of texts by thinkers from outside architecture who, she argues, limit the potential of architecture to “operate in any capacity beyond that of a metaphor staged by philosophy.”² The failure of all anthologies, she argues, is that they do not consider “architecture as event.”³

Lavin proposes that the next stage of architectural theory will be the “long-awaited radicalization of history, as well as the reemergence of the design project as a distinct and distinguished theoretical event.”⁴ In this statement, she has predicted contemporary practices such as Brennan Gerard & Ryan Kelly’s, whose *Modern Living* (2016 - present) project bodily and vocally animates the history of architecture through performative choreography, focusing on the particularities of clients’ and architects’ desires to produce architectural forms that could respond to new social and familial formations. In this radical engagement of architectural history, the architectural object becomes the actual, physical site of the new, socially-oriented, bodily animation of history. (Fig. 1)

In “The Interior Structure of the Artifact,” the final chapter of Elaine Scarry’s *The Body in Pain: The Making and Unmaking of the World*, she writes that all made objects are attempts at making the world sentient. Being bodily projections, she argues,



Figure 1. Figure 1: Gerard & Kelly, *Modern Living*, 2017. Performance view: Farnsworth House, Plano, Illinois, presented by the 2017 Chicago Architecture Biennial. Pictured: Julia Eichten.

Photo: Bradley Glanzrock, LStopMedia.com. Courtesy of the artists.

these objects have the reciprocal effect of “remaking” those who make and use them. Every made object is thus a lever, as artist and educator Mitchell Squire has said, a fulcrum around which our transformation takes place.⁵ If we can imagine a chair to be such a lever, we can certainly imagine architecture to be, as well.

TOWARD AN OBJECT- AND EVENT-BASED ARCHITECTURAL THEORY

To better embrace this concept of the lever as a mode of re-thinking architectural theory--and of positioning the assignment as being equally as critical as the syllabus--requires an investigation into how theorizing in architecture became an insular and image-based practice, rather than object and event-based. Architectural theory occupies a unique position within the broader field of architecture because of the field’s resounding standard for applicability, especially in some sort of built, physical form. And yet, theorizing in any field is a practice that is often done solely through the cognitive faculties. There is, therefore, a need to clarify the relationship between the field’s theory and its practice or application, especially as it relates to the curricula of architectural theory courses at the university level. Is theorizing meant to be instructive, as the foundation

of a design based off of principles such as sustainability, structuralism, or other concepts? Questions such as this become especially relevant for architecture students, as they spend time tracing the histories and trends of architectural theory—writing papers and crafting arguments—before, during, and after their studio classes in which they’re asked to design architecture.

Derived from this chasm between theory and practice is an over-reliance on the image; to articulate a relationship between the two, to reflect concepts of theory onto the built environment, images and abstractions representing those ideas have been used frequently, as they are more easily translated to buildings than words. This is often meant to trace or map abstractions of theories so that they may be realized in the physical world as physical representations of ideas, grafted onto the built environment as “realizations” of arguments. After all, what is more real than a building?

In his 1981 treatise *Simulacra and Simulation*, French philosopher Jean Baudrillard describes this over-dependence on the image. He cautions readers about the world becoming so obscured by its representation that it is lost, that it is “no longer that of a territory, a referential being or a substance... it is the



Figure 2. Adrian Piper, *Catalysis III*: Documentation of performance, 1970.

map that precedes the territory... it is the map that engenders the territory..."⁶

The image creates a disembodied relationship to architectural theory, where representations of things procure arguments not based on objects' ontological existences but on their phenomenological expressions. The burden is then placed on the entities derived from this narrow projection of theoretical concepts; buildings, rather than representing the many facets of their existences—within their environments, through material, in spatial and temporal capacities—are in a trap of solely representing their image.

MINING THE OBJECT AND THE SELF

In this course, students are introduced to architectural theory sponsored by a set of events that have taken place—the rise of industrialization, the emergence of feminism, the removal of confederate monuments, the invention of photography, the emergence of social media—events that have arguably shaped how we view, discuss, theorize, and practice architecture. Alongside readings that situate these events and their relationship to architectural theory, students are given a first assignment to choose an object, and write its material, cultural, social and political history. Having done this, they're then asked to determine what question this object inspires them to ask about the built environment—typically, this is driven by the question, what does this object offer or make present that the built environment rarely does? Mining the interior structure of these objects presents students with opportunities to develop

their own interpersonal theories based on their perspectives, and unique ones inherent in the objects. This, ultimately, we argue, will yield a wider and more diverse architectural theory with, undoubtedly, more room for applicability.

There is much that can be learned by slipping this trap of the image and mining the interior structures of objects—and not only with buildings and objects. W.E.B Du Bois wrote about a reality based off of representation and reductive imagery in 1897 with *Strivings of the Negro People*. To better understand his place in the United States and the struggle of his fellow African-Americans, Du Bois turned inward to reflect on his hardships and the burden of having a double consciousness: "The Negro is a sort of seventh son...[in] a world which yields him no self-consciousness, but only lets him see himself through the revelation of the other world...It is a peculiar sensation, this double-consciousness, this sense of always looking at one's self through the eyes of others"⁷

Speaking about the difficulty of operating within this reality, Du Bois' conclusion is not that double consciousness ought to be eradicated, but celebrated. He rejoices in the possibility of self-development without the representations of a falsified reality writing his fate, claiming that "...the ideal of fostering the traits and talents of the Negro, not in opposition to, but in conformity with, the greater ideals of the American republic, in order that... two world races may give each to each those characteristics which both so sadly lack."⁸ Unwilling to compromise his own being—his ontology, separate from the structural racism of the U.S.—it can be argued that he declares a hybrid-being, strengthened by the phenomenological encumbrance bestowed by his country. Refusing the preciousness of the image insinuated a mining of the interior of self and allowed for the possibility of self-development.

Artist and philosopher Adrian Piper, too, was keenly aware of the image-veiling nuances of reality. Writing, performing, and creating since the 1960s, her work in part elaborates on ideas that Du Bois wrote about more than 60 years earlier. In response to the explosion of public civil discourse taking place in the late 1960s, Piper began to address her work as an artist differently. She felt that her work, previously a part of the conceptual movement, was only read as a product of her being an African American woman.⁹ To this, she began more directly addressing in her works her simultaneous identity as an individual existing in the world and as a person who exists through the eyes of others—conceding the phenomenological restraints to which she felt burdened, but insisting on an ontological presence, too.

In her *Catalysis* series from 1970, Piper began documenting herself performing socially abnormal acts in New York City. (Fig. 2) Riding the D subway train having soaked her clothes in vinegar, milk, cod liver oil, and eggs, for example, she rid herself of the discreteness that beseeched the work of conceptual artists of the decade and obliged the public around her to take notice. About this performance, she wrote that "[the] process/product is in a sense internalized in me, because I exist simultaneously

as the artist and the work.”¹⁰ In another example, she walked around popular department stores wearing a sign that read “WET PAINT”, and observed as people around her became visibly perplexed. In this series, her body became the art object. By performing her art in public rather than in a gallery, she turned the societal mirror outward, insisting that those she encountered react to her as representation and as object. This was both a personal dissolution of the subject-object dichotomy and an effort to undermine the image bestowed upon her by others. In a sense, this created a confrontation of perspectives from which her art could be understood: through her own being, through representation, and as an isolated art object/performance.

Diverging from the external provocations of *Catalysis*, Piper completed what would become *Food for Spirit* the following summer in her New York City apartment. At the time, she was writing a paper for a graduate course on Immanuel Kant’s *Critique of Pure Reason*, a famously complex 18th century philosophy text that argues that human understanding is the source of the general laws of nature that structure all human experience. Fasting, practicing yoga, and isolating herself from the rest of the world, Piper photographed herself, both to document her experience and to remind herself that she was a body in space. As she slipped into a Kantian state of “pure reason,” she sought to reassure herself of her corporeal existence, stating “[I rigged] up a camera and tape recorder next to [a] mirror...so that every time the fear of losing myself overtook me and drove me to the ‘reality check’ of the mirror, I was able to both record my physical appearance objectively and also record myself on tape repeating the passage in *Critique* that was currently driving me to self-transcendence.”¹¹ It is through works like these that Piper questioned the reductive nature of representation in art, and mined the interior structure of herself. She demanded of herself and others to confront the simultaneity of being in ontological, phenomenological, and symbolical senses.

BUILDING ARCHITECTURAL THEORY

A re-positioning of self in relation to objects and their representations in the world is a crucial next step in the development of architectural theory. Evaluating objects as entities with their own existence entirely separate from humans is a worthwhile exercise because of what American political theorist and philosopher Jane Bennet calls objects’ “vital materialism.” In *Vibrant Matter*, Bennett attempts to “give voice to a thing-power... to a vitality intrinsic to materiality.”¹² Students of this theory course become, in Bennet’s words, “[v]ital materialists... [who] will thus try to linger in those moments during which they find themselves fascinated by objects, taking them as clues to the material vitality that they share with them. This sense of a strange and incomplete commonality with the out-side may induce vital materialists to treat non-humans-animals, plants, earth, even artifacts and commodities-more carefully, more strategically, more ecologically”.¹³ It is within this relationship, in place and in time, not by undermining and assuming

representation but by mining the interior structures of objects, that the student can discover what fascinates them about architecture and architectural theory.

This emulates the positionality that studio offers—and suggests that writing architectural theory, too, is about a set of relations. What is the relationship between how we teach architectural theory, and the students that fill our classrooms, students whose ambition is to produce architecture, whose means of communication are verbal, but also and importantly non-verbal—the translation of space into drawing and drawing into space?

DUAL PROJECTIONS: PAPER AND FILM

The American Southwest is a region defined by centuries of inhabitation, and New Mexico is home to the oldest continuously inhabited architecture in North America, Taos Pueblo. It is also a region that is home to several communities considered indigenous--both Mexican and Native American--as well as home to the descendants of colonizers who arrived centuries ago, both Spanish and Anglo. It is the birthplace of atomic testing and therefore highly militarized. As a threshold from one national boundary to the next, it is necessarily a space of migration. All of this, and more, is embodied in the university students who, perhaps especially in today’s political climate, are made aware every day of the politicized nature of their very being. In this context, the following architectural theory assignments propose to begin their theorizing of the built environment with an object--one they are very familiar with. Doing so is a way of registering as real and unassailable the values, aesthetics, materialities, rituals, and inhabited spaces that are otherwise in perpetual danger of being erased, and beginning to imagine what an architectural theory that extends from these objects might be.¹⁴

A clay pot, or a metate, is something you can trace. Students choose an object, and write its material reality, its history, its specific culture and its specific use, meditating on the way it is an extension of the body—as Elaine Scarry has argued, each object is designed in response to human need, i.e. the way a chair relieves the pain of standing—and why they chose it. These object studies then sponsor the writing of a question which extends the study of the object to the scale of architecture—for instance, a metate, which is made of volcanic rock and is used daily to make tortillas is embedded with questions of time, from the cosmic to the human. These questions inevitably lengthen the students’ initial inquiries to realms outside of the objects’ uses to humans. What does this object’s relationship to time suggest, question, or acknowledge about architecture’s relationship to time? With a question in mind, students construct a bibliography of sources to support their investigation—keeping the object central, and extending questions about it to the scale of the built environment.

Alongside this paper, students are asked to make a 3-minute film. Both the paper and the film are semester-long projects. In the film, the author is in the position of communicating the material reality of their chosen object, as a way for the viewer to inhabit that object through an immersive visual and auditory



Figure 3. Still from Maltby's film, "Una Pausa," showing textures and forces inherent in the metate.

document that indicates how the author is viewing that object. What can be expressed in a film through sound, image, and time that can't be expressed in writing, and yet conveys the qualities of the object that the author is studying? Because the making of the paper and film are simultaneous and ongoing throughout the semester, what qualities can be found in the making of the film that can then, possibly, be articulated in the paper? As it is immersive, film also suspends scale—giving us the opportunity to travel to the very surface of even a small object, and experience it as massive, and view every detail of it. The film also allows students to subvert the static still image, which is our typical mode of experiencing architecture. For students, who may not have traveled to the buildings they are reading about, the static image of architecture becomes infallible, iconic, beyond reproach. Here, in the film, the image of the object in situ, in use, never stops moving. Rather than using theory to prop up architecture—what Lavin points out is often the marginalized status of theory in architecture curriculums, placing it in the position of abetting or even claiming status as the “origin of radical design”—the film helps claim the status of the object as the origin of the students' writing, their theorizing of architecture.

A METATE, MICACEOUS CLAY POTTERY, AND THE ATLAS-1 TRESTLE

In many instances, these assignments encourage reflection, too, as students, realizing their relationship to the objects they are investigating, acknowledge the effects they have upon it and it upon them. Writing about an inherited metate from his

great-great-grandmother, Julian Maltby recognized the multifaceted history of his object—existing both as a representation of metates in general and as a specific one in his possession. (Fig. 3) Each mode of being that the object occupies has a history, he found, rooted in culture, place, and mythology as well as in familial history and use.

Beginning with the fact that “A metate isn't made once. It's made across time...,” the paper is divided into different aspects of the object's being, all contributing to its presence in his possession.¹⁵ First, in order to write about how he came into possession of the object, Maltby researched the metate through his family's history. He found that his great-great-grandfather was forced to join the Mexican Army during the Mexican Revolution in 1910, leaving the area of Mexico City and going north. “His wife, Concepcion, is who the metate belonged to – my grandmother's grandmother.” He learned that it was such a significant part of life as a Mexican at the time that she carried the heavy object with her north to continue the tradition of making tortillas and moles in their new home.

Researching his familial history began an investigation into the significance of metates on a broader scale, learning that it held great importance for the Mayans and others in Mesoamerica: “As localized embodiments of the sacred world axis, both rulers and temples are frequently portrayed with similar accoutrements and iconography, with three stones or three legs of the metate being present in much of the cultures' visual languages.”¹⁶ Metates, he found, held significance in these

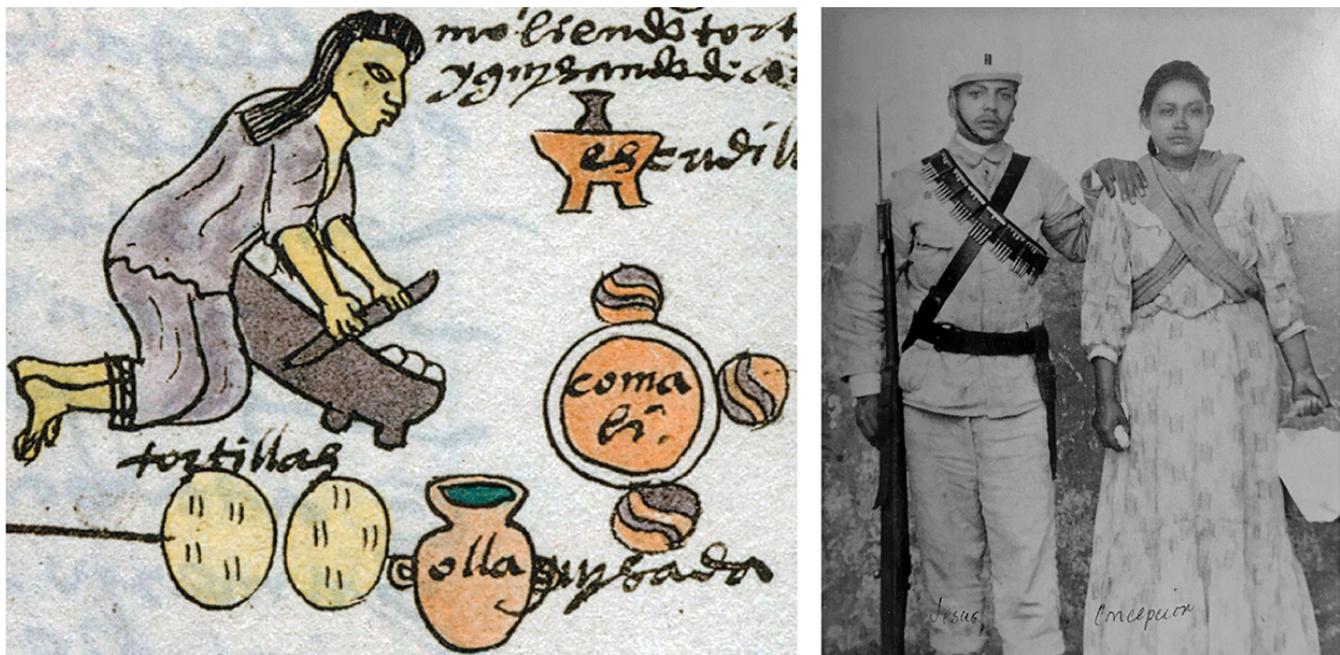


Figure 4: The metate embodies both Mesoamerican iconography and familial inheritance for Julian Maltby.

cultures not only because of this symbolism and representation of place, but because of their use as a tool to process corn for proper nourishment. (Fig. 4)

This kind of associative logic—creating new research based off of his memories, interest in Mesoamerican art, and an internship he held in Mexico City in which he worked with volcanic rock—continued, as his attention returned to the metate’s physical attributes. Maltby found resonance with the formation of volcanic rock and that of architecture, claiming “the process of the formation of lava rock is similar to that of the production of architecture – it is a rapid, cooled distillation of millennia of forces and processes that have led to its apparent stillness.” The physical structure of volcanic rock, he found, suggests utilization as a lightweight but sturdy tool that improves through its use.

To reassert the materiality of his metate and its changes across time, for his accompanying film Maltby focused on the forces inherent in the object, and how it becomes bodily and inherited in his use of it. Weaving together footage of a volcano erupting in Mexico with sounds and footage of himself grinding corn, Maltby attempts to articulate the object’s significance across time—both to Mesoamerican cultures and to himself.

Of the several regional identities that comprise the American southwest, there are three that stand out: identities of migration, of military, and of indigeneity. If Maltby’s paper takes on the identity of migration, Brandon Adriano Ortiz and Emily Compton take on identities of indigeneity and military, respectively.

The Taos Pueblo has been continuously inhabited for 1,000 years. As such, it predates any notion of the profession of architecture, instead necessarily embracing a social and generational

practice of building. This collective work positions architecture as an event, not an object, and through Adriano Ortiz’s study of this and of the analogous practice of creating micaceous clay pottery, landscape, building, and inhabiting bodies are collapsed into one “taskscape,” in which, as he quotes Tim Ingold, “landscape is constituted as an enduring record of—and testimony to—the lives and works of past generations who have dwelt within it, and in so doing, have left there something of themselves.”¹⁷ These “clay bodies,” in Adriano Ortiz’s words, “carry the history of place, time, and relationships.” Clay, he argues, challenging conventional and Euro-centric theories of the origins of architecture in the tectonics of a woven wall, is a material that is flexible enough to embody its past as well as its future and thus “makes known to us an alternative to linear time... collaboration with the clay enables a manipulation of time into a relational narrative.”¹⁸

New Mexico is the birthplace of atomic weaponry, and the site of numerous nuclear testing facilities. The ATLAS-1 (Air Force Weapons Lab Transmission-Line Aircraft Stimulator) is a monument to this legacy, a 12-story structure designed and built during the Cold War—between 1972 and 1980—to test the radiation hardening of strategic aircraft systems against electromagnetic pulses from nuclear warfare. Built at a cost of \$70 million, it is still the world’s largest structure comprised entirely of wood and glue laminate, as well as a dust-collecting tinderbox in the high desert. In Emily Compton’s analysis, her employment on Kirtland Airforce Base afforded her the opportunity to examine the physicality of this monumental structure, and interview those who had attempted to put it on the National Register for Historic Places, a status incompatible with its ontology as a sensitive military site. This secrecy ensures its obsolescence, an ironic inversion of the relationship between military and desert, in which desert has been coded as “wasteland,” allowing for such experiments. In Compton’s



Figure 5: The ATLAS-1 Trestle, Kirtland Air Force Base (active 1972 – 1991, defunct today), and an adobe construction workshop: two architectures in/of the high desert.

study of this object, the reality of its slow decay in the desert (or potential fast decay, in an act of arson) sponsors a reading of it as disembodied, non-relational, and poses questions about the architectural legacy of military infrastructures, including our very border wall.¹⁹ (Fig. 5)

From this point, students, having looked at their objects' ontological, phenomenological, and symbolic existence across time, attempt to find salient ways to theorize about architecture through their findings. In the end of his paper, Maltby asked: "What's present in the making of a tortilla that isn't present for buildings? What can we learn from a metate?" The process of unraveling this object's being, relating it to time, space, and himself in this paper helped him to form new architectural ideas that were both personal and encompassing.

His articulation of responses to the questions posed in his paper continued in a thesis project, which was a set of theoretical events that respond to the local, ecological problems of potable water shortage in Mexico City. His solutions entailed symbolic, sustainable uses of volcanic rock—both in public and private spheres—to encourage immediate and systemic responses for those affected by the crisis as well as to reconfigure the value systems surrounding water in Mexico City.²⁰

CONCLUSION

In a century in which architecture is our chief political metaphor, and is also synonymous with infrastructure, we must think and theorize not only that which we build, but our position toward it, politically, historically, sensually, verbally. The theory syllabus and readings can do this in part, but it is the theory assignment in which students can practice a position toward architecture--the very thing required to produce a theory. By mining the interior structure of objects, students develop their own interpersonal

theories based on their relationship and understanding of an object, before applying this "mining" to the built environment. This, ultimately, will yield a wider and more diverse architectural theory with, undoubtedly, more room for applicability.

ENDNOTES

1. Sylvia Lavin, "Theory into History; Or, the Will to Anthology," in *JSAH*, Vol. 58, No. 3, Architectural History 1999/2000 (Sep., 1999), 497.
2. *ibid.*, 495.
3. *ibid.*
4. *ibid.*, 498.
5. This concept is a key tenant of the artist's work, in which objects such as anthropomorphized targets for police training, and manipulated, large-scale photographs of nuclear blasts blossoming over the Nevada desert become sites to interrogate what these objects say about their makers, and about American society at large.
6. Jean Baudrillard, *Simulacra and Simulation*, trans. Sheila Fariar Glaser (Ann Arbor: University of Michigan Press, 1994), 1.
7. W.E.B. Du Bois, "Strivings of the Negro People," *The Atlantic*, August, 1897, <https://www.theatlantic.com/magazine/archive/1897/08/strivings-of-the-negro-people/305446/>.
8. Du Bois, "Strivings of the Negro People."
9. Adrian Piper, *Out of Order, Out of Sight: Selected Writings in Meta-Art –1968-1992* (Cambridge: MIT Press, 1996), 62.
10. *ibid.*, 42.
11. *ibid.*, 55.
12. Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010), 2.
13. *ibid.*, 18.
14. This practice strives to be in line with bell hooks' description of critical pedagogical of liberation, embracing experience as a relevant way of knowing, and as an important, vital dimension of learning. From bell hooks, *Teaching to Transgress: Education as the Practice of Freedom* (New York: Routledge, 1994).
15. Julian Maltby, "Dormant Tectonics: Architectural Principles from a Metate," theory paper for Graduate Architectural Theory course, Fall 2018, p. 1.
16. *ibid.*, p. 6.
17. Tim Ingold, "The Temporality of the Landscape", *World Archaeology*, Vol. 25, No. 2, *Conceptions of Time and Ancient Society* (Oct., 1993), 152.
18. Brandon Adriano Ortiz, "Ephemeral Narratives: Design Considerations for a Future Past," theory paper for Graduate Architectural Theory course, Spring 2019.
19. Emily Compton, "ATLAS-1 (The Trestle): A Cold War Relic," theory paper for Graduate Architectural Theory course, Spring 2019.
20. Julian Maltby, "Recinto y Agua: Responses to Mexico City's Water Crisis," M.Arch. Thesis, University of New Mexico, Department of Architecture, May 2019.