If spirits are experienced in absence (we sense them as essence but never see them as substance), ghosts are always terrifyingly present. To be haunted by a ghost is to be tormented by an entity that, while eerily other-worldly, occupies worldly space. Having lived a previous life, ghosts live simultaneously in the present and in an afterlife, both over there and right here spatially and temporally. They are both real and imagined, dead and alive, intimately present yet strangely withdrawn. Isn’t “nature” - that empty signifier that stands as a placeholder for a long metonymic list of “natural things,” i.e the sun, heat, trees, wood, birds, wings, ozone, radiation, your body, your thoughts, your DNA, etc. - a ghost par excellence? If so, why can’t we see right through it?

A powerful entity in limbo, Nature - from here on capitalized and exposed as an ideology of the singular and all-encompassing - gives environmental and architectural discourse the slip, haunting them to the point of ecological paralysis. Sliding magically between essence and substance, it is both immanent and transcendent, universal and emergent, system and process. It can be defended against the social or dissolved into it through endless linguistic play. While terrifyingly present (global climate change is overwhelmingly real) it is also strangely detached (but those polar ice caps are thousands of miles away). In its worldly other-worldliness, Nature demads the artificial - and by extension, the architectural - even as it embodies it (machines for living in). Politically motivated, Nature can justify both groovy feel-good environmentalism (e.g. acid droppers and tree-huggers) and authoritative force-good progressivism (e.g. experimental biodynamic farms placed next to concentration camps in Nazi Germany). À la Descartes, Nature handicaps a properly ecological view of the world by maintaining “the environment” at a distance, as something out there.

Yet the problem is not environmentalism per se but rather that Nature is not environmental enough - it does architecture (which is all about environment production) ecological injustice. By demonizing artificiality, technology, and representation as “unnatural,” Nature - under the guise of various Naturalisms (e.g. deep ecology, postmodernism, or worse, sustainability) - distances architecture from the environment by limiting its ability to produce new subjectivities, which as N. Katherine Hayles and Todd Gannon remind us in Virtual Architecture, Actual Media, is not about expressing interiority through language but “about manipulating information (read: an artificial environment) so that it forms a pervasive real-time experience with everyday life (read: a natural environment).”¹ Productively ecological architectures, on the other hand, have the capacity not only to reach out and make connections but also, and more significantly, to close in and disrupt distance (between Nature and society, Nature and body, Nature and language, etc.), to make new environments by revealing repressed ones, to produce new subjectivities through environmental aesthetics.

In what follows, I argue that any truly environmental project in architecture must shed the paralysing ideologies of Nature altogether; that is, it must seek ecology without naturalism. Once we drop Nature - and its less potent counterpart “sustainability” - we can refocus architecture’s ecological ambitions from “holistic” technono-optimization as an end in itself (LEED certification as the ultimate endgame) to aesthetic performance as a means to produce new environments and subjectivities. In other words, rather than flexing its technological muscles for fun, a truly environmental architecture uses technology to enable a fuller engagement with multiple
environments, “natural” and/or otherwise. Accepting that it is always an intervention, such an architecture asks not how it can be least environmentally disruptive but rather how it can use its performative capacities as a formal, aesthetic, and technological object to disrupt environments more productively.

That said, it should be made clear that to drop Nature is not to deny that architecture engages a presocial and prediscursive biophysical reality but rather to challenge the ideological conception of that reality as the pristine zero-sum total of what we have come to understand as “the environment” itself. In this sense, rather than subsume a singular and all-encompassing environment into Nature, I see the natural as being one of many possible environments, environments that are both inhabited and produced, given and constructed, natural and artificial. What is at stake for architecture then, is a third way out of the tired environment/autonomy divide; a moment in which architecture is neither formed exclusively by its environment(s) nor against it but rather formed as both object and environment simultaneously. With this in mind, this paper analyzes various strands of Nature discourse in order to unpack ways in which such conceptualizations have not only historically haunted architectural theory and practice, but have actually inhibited so-called sustainable practices. It then posits ideas and strategies for an environmental architecture that looks beyond Nature as a legitimation force, critically discussing key contemporary architectural projects along the way.

**PRODUCING NATURE**

“It is not language that has a hole in its ozone layer; and the ‘real’ thing continues to be polluted and degraded even as we refine our deconstructive insights at the level of the signifier.”—Kate Soper

Nature is trapped in a catch-22. On the one hand, it is seen as eternal and transcendent, a substance outside of culture. On the other, it is the immanent essence of humanity; humans are indeed natural beings. Whereas the former conception differentiates humanity from Nature in *kind* (as cultured human beings), the latter conception differentiates it in *degrees* (as biologically evolved homo-sapiens). And whereas the former sees Nature as a thing to be processed (or in Marxian terms, produced), the latter sees such productions as natural extensions of human culture. In short, Nature is simultaneously inside and outside of us, subject and object, cultural and natural.

This Culture/Nature dialectic can be traced back to the Enlightenment philosophy of Rene Descartes, who in his *Discourse on Method* (1637) proposed that the mind and body were separate, that we can only prove our existence through our ability to think. Seeking absolute knowledge, Descartes reasoned that because he can doubt everything except that he was thinking (doing so, of course, would be thinking about his inability to think), the true measure of reality (Read: Nature) must be subjectivity; anything outside of the thinking subject might be, for all we know, illusions performed by powerful and supernatural demons. Yet, as Timothy Morton reminds us in *Ecology Without Nature*, even when Descartes said “I think, therefore I am,” he said it within an environment, within a particular cultural and philosophical space. In other words, Descartes paradoxically demonized the outside world from within that world. The environment, then, is not only a moral, ethical, and scientific problem, but also a profoundly philosophical one with deep formal, spatial, and aesthetic implications that are worth theorizing.

Yet it seems that theory is counterproductive in a world plagued by environmental crises. Soper’s statement above, for example, captures the sentiments of many environmentalists today: less talk, more action; less thinking, more doing. In an age of science, theorizing the environment only precludes calculated and verifiable action; to debate global climate change, pollution, natural resource depletion, and fossil fuel consumption is to spin our linguistic wheels self-servingly while the planet spins to ecological destruction. Theory, critics argue, is too slow, too distant, too alienating to have any real effect on environmental problems. After all, what good does environmental discourse do when confined to the white walls of the academy?

I argue that it does a lot. Theory helps us think slowly *through* (and not just about) an issue, to engage it reflexively, and to speculate its long-term consequences and implications in a world dominated by short-term and market-driven interests. To be sure, environmental degradation is real, radically and urgently REAL. But just as real is the fact that the so-called “green” or “sustainability” movement is failing miserably to affect any meaningful change in our perception of the environment, much less our desire to “sustain” it. Simply put, current sustainability discourse - and with it,
so-called sustainable architecture - is doubly compromised: first, by the market, and second, by ideology. In other words, in its quest (explicitly or implicitly) for capital and/or political gain, it flickers back and forth at will between “scientific” and “romantic” conceptions of Nature, conceptions that are either religiously defended as intrinsic truth (from the Right) or relentlessly dismantled through radical critique (from the Left). If architecture is to have a stake in a truly ecological future, it must not only navigate this political web but must also use its disciplinary and theoretical tools to question its very terms of engagement. We’ll begin with the most basic, yet most complex question of all: What is nature?

In “After Nature: Steps to an Antiessentialist Political Ecology,” Colombian-American anthropologist and University of North Carolina Professor Arturo Escobar argues that the “crisis of nature” is but a crisis of nature’s identity, an identity constructed and bound by human ideas about nature. For the very idea, he claims, that nature is separate from, subordinate to, and/or produced by humans (through labor, commodification, and indeed through architecture and urbanism) is a fundamentally humanist product of capitalism and modernity. Naturalism - that is, the belief in a pristine nature outside of historical and socio-cultural contexts and influences - does not hold up in the wake of unprecedented intervention into nature across scales - ranging from the molecular via nanotechnology and the biological sciences to the global via digitalization and urbanization.

Yet, while Escobar denies “nature as an essential principle and foundational category, a ground for both being and society, (nature) as ‘an independent domain of intrinsic value, truth, or authenticity’, ” he acknowledges that such an assertion does not deny the existence of a prediscursive and presocial biophysical reality. Rather, he argues that while such a reality exists, our perception of it is always, at some level, socio-cultural; a Latourian nature-culture hybrid that is “simultaneously real, collective, and discursive - fact, power, and discourse.” There is no singular undisturbed Nature out there but rather a plurality of natures undergoing constant (re)naturalization, (re)socialization, and (re)artificialization.

Similarly, in Denaturalizing Ecological Politics, Andrew Biro—Professor of Environmental Politics at Acadia University—argues for an ecological ethic that sheds the politically impotent concept of Nature as the sum total of natural processes that excludes humans and compels them to affect it as little as possible. For him, the problem is that Nature is predominantly conceptualized from either ecocentrist or postmodernist positions and is hence, albeit paradoxically, rendered either external to social processes or dissolved into them; that is, Nature is often either elevated to an autonomous environment or “constructed” as pure linguistic play in the realm of social subjectivity. Hence whereas ecocentrism maintains that the world might be more Natural without human intervention, postmodernism (or, perhaps more properly, poststructuralism) nihilistically conflates the Culture/Nature divide to the point of unrecognition. By maintaining a strict object/environment duality, however, both positions overlook possible pluralities of nature as both prediscursive and socially produced.

The (idea of the) production of Nature, of course, is not new. A fundamentally Marxist position, social theorist and geographer Neil Smith sees production - that is, the process by which the form of nature is altered - as the most basic material relationship between humans and nature, particularly in a capitalist society where use-value is often transformed into exchange-value. Like Escobar, Smith argues that despite immediate appearances, Nature is produced and differentiated along biological, material, and historical axes. He writes:

Nature is generally seen as precisely that which cannot be produced; it is an antithesis of human productive activity. It its most immediate appearance, the natural landscape presents itself to us as the material substratum of daily life, the realm of use-values [usefulness of something] rather than exchange-values [the value derived from the market sale of something]. As such it is highly differentiated along any number of axes. But with the progress of capital accumulation and the expansion of economic development, this material substratum is more and more the product of social production, and the dominant axes of differentiation are increasingly societal in origin. In short, when this immediate appearance of nature is placed in historical context, the development of the material landscape presents itself as a process of the production of nature.
There are two points here worth inferring: 1) as a product, Nature—like architecture—is always filtered, processed, and artificialized through an environment only to reproduce that environment, it always appears to us disrupted and transformed and never in its pure state, and 2) capitalist production processes relegate Nature to the realms of either use-value or exchange-value, suppressing the potential value of the “useless” (the aesthetic) and/or the “non-commodified” (critical politics). As both a product and a production process, then, a truly environmental architecture is as political as it gets. For such an architecture would produce and reproduce multiple natures and environments through its formal, aesthetic, and technological apparatuses; and in doing so, it would confront and cultivate non-use and non-exchange value as equal design opportunities.

**SUPERNATURE / NATURE / SUBNATURE**

In “Urban Intrusions: A Reflection on Subnature,” David Gissen—Associate Professor of Architecture and Visual Studies at the California College of the Arts—claims that architectural and urban theory has historically evoked at least three iterations of nature: the supernatural, the natural, and the subnatural. He traces these iterations in writings ranging from surviving medieval texts through Renaissance architectural theories, 18th century Romanticist and Picturesque writings and paintings, and Modern/Late-Modern architectural theories, manifestoes, and photographs (in other words, in authors ranging from Vitruvius and Leon Battista Alberti to Le Corbusier and Frank Lloyd Wright). While both the supernatural—“the superhuman world of miracles; a world that we cannot know or see...”—and the natural—“an external ideal that represented geometric perfection and the perfection of god”—have historically legitimized architecture through various reification strategies, the subnatural remains, for Gissen, the most underrepresented and potentially most potent possibility for an architecture concerned with the production of environments.

First used to describe the “dirty” nature—the abject sense of natural collapse, heaps of mud, barren trees, etc.—of Samuel Beckett’s plays and sets, Gissen describes the subnatural as that part of the environment that traditional environmentalism shuns as filthy, fearsome, primitive, and uncontrollable (smoke, dust, exhaust, sewage, excrement, disease, gas, debris, mud, darkness, humidity, weeds, insects, pigeons, etc.) in favor of clean and more desirable natures (wind, natural light, air, clouds, grass, butterflies, flowers, trees, light blue, etc.). These latter forms of non-disruptive nature are the ones sought out by so-called sustainable architecture. And yet, it is architecture’s engagement with the subnatural that provides the most significant opportunities for environmental innovation. Gissen writes, ultimately, a concept of subnature promotes a concept of nature within architecture that lacks the passivity and asocial qualities often attributed to architecture’s “natural” environment; it might challenge the reductive and naturalistic aspects of contemporary environmentalist spatial aesthetics; such aesthetics imagine buildings as sites of natural flux—simple conduits of air, sun, and water; finally, a concept of subnature might help us understand any concept of nature as historically driven, especially how certain ideas about nature appear to be produced through the history of architecture. Ultimately, subnature is not about what is natural to architecture, but about the natures that we produce through our most radical concepts of architecture.

It is important to note that understanding Nature as “historically driven” and “produced through the history of architecture” does little to dismantle its slippery status in between the ideal and the material (architecture, of course, has historically produced and has been the product of different concepts of Nature). Yet the power of Gissen’s statement is in his recognition of aesthetics as a means to produce new environments by foregrounding repressed ones. Because subnature—understood literally as that which is “beneath” or “subordinate” to Nature—does not sustain nor provide any material benefits to society, any architectural engagement with it that seeks to use it productively or elevate it to consciousness operates at the level of excess and hence is always an aesthetic act.

An example can be seen in *The Ethics of Dust*—an experimental preservation project by architect, theorist, and historic preservationist Jorge Otero-Pailos. Rather than “cleanse” the environment, *The Ethics of Dust* is part of a series of projects that elevate, preserve, and archive the world’s pollution, a material that Otero-Pailos sees as “emblematic of modernity, but which we know only obliquely through its effects on
other objects.” Using Mussolini’s famous 1937 Almuni
x Factory, Otero-Pailos painted its interior surfaces
with latex in order to extract and isolate layers of indus-
trial pollution. The pollution-infused latex is then dried,
delaminated, and (re)layered as a physically thin yet
conceptually/historically thick secondary skin - a new
architectural surface that simultaneously conceals and
reveals microscopic layers of (“useless” and “non-com-
modified”) political and industrial histories. A critique of
the indiscriminate cleansing of so-called “eco-friendly”
building culture, Otero-Pailos not only acknowledges
pollution as natural but engages it aesthetically in order
to reveal repressed social, cultural, and industrial his-
tories, histories that are blatantly erased when pollution
is “cleansed” in the name of sustainability.

A second example can be seen in the integration of
the virtual and the physical in Diller, Scofidio, + Ren-
fro’s (DS+R) Blur Building at Yverdon-les-Bains, Swit-
zerland (2002), a project which - as its name implies
- blurs the boundaries between the natural and artificial
in order to provoke new, hybrid environmental experi-
ences. While it is well known that DS+R used digitally
controlled weather sensors to create and regulate an
artificial mist-cloud “skin,” it is the unrealized technolo-
gies of the project (which unfortunately did not meet
“exchange-value” criteria and were “value engineered”
away) that most intensely fuse virtual and material en-
vironments. For how does one navigate a public space
when all depth cues and visual sensibilities are disrupt-
ed by a moist ubiquitous mist? To compensate for their
environmental disruptions, DS+R proposed a series
of protocols and prosthetic media components that

Figure 1: The Ethics of Dust by Jorge Otero-Pailos.

Figure 2: Jorge Otero-Pailos delaminating the polluted latex.
would not only curate an experience but would also extend the body’s “natural” perceptual abilities, ranging from automated “braincoats” that use its wearer’s responses to a questionnaire to trigger media effects aimed at provoking unexpected spatial/social interactions to scrolling LED text that serve as wayfinding devices.

While sitting comfortably outside of mainstream sustainability discourse, both of these projects challenge conventional conceptions of Nature and “the environment.” But in the process they also provoke us to critically rethink ecology as profoundly architectural.

Figure 3: *Blur Building* by DS+R.

Figure 4: “Braincoats.”
ARCHITECTURAL ECOLOGIES

“To talk about ecology in architecture is not to bring ecological thinking to architecture. Ecology is, from the beginning, a certain kind of thinking about architecture.”_Mark Wigley 14

“Nature is not natural and can never be naturalized.”_Graham Harman 15

As we have seen, Nature becomes denaturalized the moment it comes into contact with - or is processed by - architecture (and never the other way around). This denaturalization is profoundly ecological. Coined in 1866 by German zoologist Ernst Haeckel, ecology has its etymological roots in the Greek oikos (house or household economy) and logos (knowledge). To think ecologically, then, is to seek a deep knowledge of (the economy of) the house. Hence while Haeckel claims that everything in Nature is interrelated holistically (to the delight of deep ecologists), his very definition of ecology binds Nature inextricably to economy - a system of exchange dependent on politics and fluctuating definitions of value - and architecture - a medium that denatures through separation, domestication, and technology. Seen this way, ecology becomes increasingly unstable, formal, and artificial.

Of course, form and ecology are often opposed. Whereas the former is seen as possessing qualities of closure, articulation, and self-referentiality, the latter is often seen as possessing qualities of connectivity, extension, and open-endedness. Yet what connects them is a will toward systemization, resiliency, and internalization (to externalize or “waste,” of course, is seen as bad for the environment). Note, for example, how K. Michael Hays describes formalism in architecture:

_The comparative absence of historical concerns in favor of attention to the autonomous architectural objects and its formal operations - how its parts have been put together, how it is a wholly integrated and equilibrated system that can be understood without external references, and as important, how it may be reused, how its constituent parts and processes may be recombined...architectural operations are imagined to be spontaneous, internalized..._16

Seen this way, there is nothing more ecological than formalism in its systematic integration of parts, nothing more formalist than ecology in its desire for autonomy and equilibrium, and nothing more architectural than form and ecology in their relentless desire for internal organization.

Yet, contra much parametric discourse today, there are significant differences between biological and architectural ecologies. For one, living biological systems strive for homeostasis, they resist and/or neutralize external disruptions. Productive architectural ecologies, on the other hand, produce external disruptions only to internalize and reorganize (produce and reproduce) them as built environments. Despite Patrik Schumacher’s claim of a new world (architectural) order, then, architecture can never be autopoietic because it can never be a pure and resilient (or a purely resilient) living system; it is not biological nor is it exhausted by its parametricism. Rather, one of architecture’s most ecologically productive capacities is to be an affective object-environment, one that, as Jeffrey Kipnis might say, twists the separatrix between the object / environment dialectic, one that uses aesthetics to disrupt distance. For when architecture disrupts distance it makes the environment an aesthetic object.

NOTES


6 Ibid.

7 Ibid.

8 Biro, Andrew. _Denaturalizing ecological politics: alienation from nature from Rousseau to the Frankfurt School and beyond._ University of Toronto Press, 2005.


11 Ibid.

12 Ibid.


