



A_Formless_Ecology



“Global warming is making hot days hotter, rainfall and flooding heavier, hurricanes stronger and droughts more severe. This intensification of weather and climate extremes will be the most visible impact of global warming in our everyday lives. It is also causing dangerous changes to the landscape of our world.”

-National Wildlife Federation, 2015 Report

The Earth, our home, is beginning to look more and more like an immense pile of filth.

-Pope Francis, *Encyclical Letter on Care for Our Common Home*

“Formless is not only an adjective having such and such a meaning, but a term serving to declassify.”

-George Bataille, *Critical Dictionary*

Fig. #1: The Sand Engine (also called the Sand Motor). South Holland in the Netherlands, 2015.



Advanced Studio VI

Instructors: Julian Rose & Garrett Ricciardi

Travel: North Sea, Neatherlands / Sand Engine



The Climate Accord reached last month in Paris marked a historical turning point, both as an international recognition that climate change is among the most urgent problems of our era and as a crucial first step toward achieving a political resolution of this crisis. Yet the Paris talks also underscored the limitations of a political approach to the current state of global ecological emergency. Even when they have the best of intentions, politicians tend to favor incremental

adjustment, moving too slowly to keep pace with the increasingly sudden fluctuations of an ever-more volatile environment—the agreement doesn’t even take effect until 2020, and the environmental performance of participating nations will only be evaluated twice a decade. Political solutions, too, are inevitably as much about diplomacy and rhetoric as concrete results. The Paris Accord has already come under fire for containing more symbolic promises than policy prescriptions—the accord embraces the goal of limiting the total global temperature increase to under two degrees Celsius (the widely accepted tipping point for irreversible environmental damage), for example, while the national plans actually submitted are projected to lead to an increase of over three degrees unless they are soon revised to reduce emissions further.

Yet the limitations of politics may create opportunities for architecture. Where politics can address environmental issues only indirectly through negotiation and regulation, architecture is poised for direct action. This is true in the obvious sense that buildings are one of the leading sources of emissions today—it is by now something of a platitude that more efficient buildings are good for the planet—but also in the more fundamental sense that architecture is still the best means

available to mediate between humankind and the environment we inhabit. Architecture, then, has a critical role to play not only in reducing future climate change, but in helping us cope with the profound effects of climate change that has already taken place. It is clear that these effects play out in concrete spatial and material terms (with implications for everything from the composition of a building’s envelope to the distribution of its program and its relationship to relationship to its site), but many of the results of climate change are also being recognized as equally social and cultural (affecting

everything from techniques of food production to methods of transportation and models of urbanization), altering not just the physical organization of our environment but what it means and how it is possible to live, work, and interact within it. Ecological crisis, in other words, presents a full spectrum of architectural problems.

In order to offer viable solutions to these problems, we will have to fundamentally rethink architecture’s relationship to nature. So far, most conversations about architecture and the environment have been dominated by the rhetoric of sustainability, which—however worthy its goals—tends to encourage an aesthetic or stylistic approach, representing environmental concerns through formal gestures as much as delivering effective performance. Adherents of sustainability, too, tend to promote a false dichotomy between architecture and the environment, assuming that nature exists in an ideal, independent state and that so-called “green design” is only approach that connects architecture to the environment.

But for better or worse, all architecture—green or not—is already inextricably intertwined with the environment; in a rapidly urbanizing world, architecture increasingly is the environment. And climate change, by definition, means that nature isn’t what it used to be. Architecture has long treated nature as cyclical but stable: a matter of predictable sun angles, reassuringly regular annual rainfalls, or steady diurnal temperature fluctuations. Sustainability wants to preserve or restore this stability, as indicated by its frequent use of terms such as balance or stabilize, and even the root term sustain itself. In the meantime, scientific study suggests that the world we live in has already been profoundly altered, and that the main effects of climate change are in making the environment more extreme and unpredictable. Nature today is anything but stable; it is chaotic, precarious, and unhinged. We will need to reinvent architecture so that it (and we) can exist in this brave new world. A building may soon need to accommodate harsh temperatures, toxic air, sporadic flooding, or even a condition as literally and profoundly destabilizing as a ground that constantly shifts underneath it.



Concept (Cont.)



To catalyze this reinvention, architecture needs the formless. The formless was theorized by George Bataille, self-described “anti-philosopher” and one of most radical thinkers of the 20th century. For him, it was less a concept than a process, a means of undermining the abstraction and idealism that shored up traditional western thought—a means of declassifying and degrading lofty ideas, bringing them down to engage with the raw, messy, and often ugly materiality of the world. The formless, then, is a natural fit for recalibrating architecture’s relationship to nature, precisely because the material reality of our world—which Pope Francis recently described as an “immense pile of filth”—is increasingly formless and because it allows us to embrace a wide range of ecological processes—decay, erosion, accumulation, settling, flowing—that have been excluded from architectural thought because they don’t fit into our image of what architecture should be.

The stakes in rethinking architecture in this way are not limited to architecture’s relationship to the external world—they also reach the core of the discipline itself. To the extent that it has become a symbolic language today, sustainability only the latest in a long lineage of formal systems—from the ancient orders to Renaissance systems of proportion, to the complex geometries of computational design—that have suppressed architecture’s material realities in favor of a priori concepts, static formal arrangements, and idealized images. And ironically, today, when architecture is being pushed toward the image and as never before by the pressures of a global economy that sees buildings as branding and spectacle, many architects are voluntarily creating an architecture of the image, embracing a representational (re)turn reminiscent of the paper architecture of historical vanguards, but trading in critical ambitions for an anodyne fascination with amusement and delight. We see this as a capitulation, literally flattening out the field at the very moment that we should be opening it up in all dimensions. A formless approach seeks not only to recalibrate architecture’s relationship to ecology but to reactive is role in the world, to literally make architecture matter.

_Program



The fundamental goal of the studio is for each student is to choose a site of ongoing ecological crisis—whether entirely manmade (decaying garbage fields), primarily natural (costal erosion), or some hybrid of the two (recurring mudslides brought on deforestation or development)—and design an architecture that can dynamically coexist with that condition.

A key precedent for the studio, and the subject of our planned site visit, is the Delfland Sand Engine. The Sand Engine is a massive infrastructure project located along the shoreline of the Netherlands that is an experiment in a radically new approach to costal restoration. The accepted approach has long been frequent, relatively small-scale dumps of sand at precise points that need reinforcement. The Sand Engine is single massive sand dump, which, over the course of the coming decades, will be distributed by ocean currents so that it renders more regular reinforcement unnecessary. In this way, the high initial cost of a massive environmental intervention is surprisingly economical in the long run.

The studio will seek to learn from the Sand Engine approach—building with nature, engineering uncertainty, and embracing alternative understandings of efficiency—in a similar search for unorthodox responses to environmental problems. But we will also push beyond the arena of infrastructure and landscape into architecture itself by addressing a set of specifically architectural problems through a hybrid program that combines two distinctly different but related building types: the research station and the hotel. This program will allow us to consider two user groups who will inhabit and interact with the same site in drastically difference ways and at different scales—from the fine-grained, even microscopic material engagement of the researcher to the broader visual and spatial encounter of the tourist looking for a new kind of experience. In our designs, we will build on recent advances in both programs, looking to move beyond the cliché of the eco-tourism lodge or destination hotel, on the one hand, and, on the other, learning from a number of recent projects that have elevated the research station beyond purely technological achievement to engage some of the world’s best-known architects, including the international design competition for Antarctica’s Haley VI Research Station and Norman Foster’s Mars Habitat proposal.



_Methodology



Our ultimate goal is nothing less than creating a new architectural methodology, allowing a fundamental shift from form to process and understanding design not as a means of producing a final solution but of initiating a dynamic, non-linear, and flexible series of actions and reactions. The basic method will include the following steps:

As Found:

A formless approach must be rooted in existing material and environmental conditions, so the initial phase will include research into site, process, and structural typology, exploring both ecological crises in progress and the kinds of architectural and infrastructural interventions that have been proposed to address them.

Operational Experiments:

We will undertake a series of experiments and simulations, both digital and material, into the interactions between matter, structure, site, and process. This is not a form-finding exercise but instead a way of finding the formless—of identifying the key processes that students wish to engage and of emphasizing iteration over the production of a single design configuration.

Representational Experiments:

Studio production will focus on the combination of and feedback between experimental representational techniques. In particular, video will be used to engage the temporal aspects of ecology, and large scale models will be used to engage with the experiential and material dimensions of each project.

Throughout the studio, there will also be an emphasis on research and dialogue, not as the starting point or foundation for design but as an integral part of the design process. Over the course of the semester, we will hold several informal seminar-style conversations with experts, ranging from ecologists to land artists to architectural historians to environmental engineers. Each student will be expected to articulate a clear argument not just about their project but with their project—just as the notion of a formless ecology suggests that there is no clear line between environment and building, there should be no division between thinking and design.

