This thesis is submitted to the graduate faculty of the Virginia Polytechnic Institute and State University in partial fulfillment for the degree of:

Master of Architecture

Stuart Cullen Sherwood

Approved by:

Mario Cortes - Chair
Dr. Humberto Camilloni-Rodriguez
Donna Dunay

July, 2006
Blacksburg, Virginia
To be natural is such a very hard pose to keep up.

Oscar Wilde

So, first learn to think, then, learn to act.

Louis Sullivan
This thesis attempts to establish a first design philosophy by proposing nature and architecture as mutually interactive conceits within the scope of the design process. Positing that our conceptions of "green" design are rightfully influenced by the various and often highly metaphorical social constructions of nature that precede them, an architectural exercise is then explored as a similarly constructed response. After assembling a definition of nature based in part on the climate, terrain and traditional building practices of rural western North Carolina, a house is then posed for its site on the border of the Pisgah National Forest.
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Preface

Despite the comfort found in details, the work of the architecture student is that of a generalist: in order to see the connections between one’s work and the world, the gaze must be periodically lifted from particulars to the broader field that contains them. In this sense the “big picture”—provided one has made the effort to make it out—supplies a vital horizon by which to interpret the many flows of information that now comprise architectural study. Following this, I believe the objective of the graduate thesis is not to launch into wholly new territory, but to construct a sound basis for one’s interests, particularly as they relate to the core of the field. It is a project better suited to the filling of blanks than the creation of new ones.

In most respects, I believe good architecture to be like good writing. Both pursuits rise and fall on their legibility, cohesion and ability to engage the observer. For each, a commitment to concision and articulation is half the battle. In this first attempt to create a unified viewpoint, a vast array of components converges. Language and architecture are but two. In that a first theory is usually assembled from familiar components, this thesis is part investigative essay, part design exercise, with both parts drawn within the essay’s time-tested practice of using broad strokes.

As with any qualitative study, it was necessary here to use words that operate within a range of applications and meanings. Dealing with such multivalent terms as nature and organic, it becomes critical to declare one’s operative definitions at the outset. Beginning with the term nature, two binary situations immediately arise. The first concerns the qualification of humans as members of the category. Understanding its most conventional usage in English to be the inverse of “culture,” I intend the term to refer to material reality in its totality minus humans and their deliberate products. However, when considering nature in relation to architecture, I define it not in a quantitative manner, but more as ordinary sensory experience does: as the spatial, object-rich realm into which buildings and other acts of artifice are inserted and of which wilderness is considered the purest form. Accordingly, I also use “nature” to connote the broadest range of the material concept, much in the same way we use cosmos or reality. Ultimately, however, I view one’s conceptualization of nature as a personal event, the creation of a world-view of the non-human segment of the world.

Whenever speaking of nature as a disembodied concept, as an idea which may or may not correspond with physical reality, I have placed the term in quotation marks. Additionally, I have tried to limit confusion by originating my own arguments from the naturalist position. Seeking still more clarity, I objectify each observer’s complete view of the matter with what I call a nature-concept, which I define as one’s overall opinion of nature as it either includes or excludes humanity and human production. For example, the nature-concept of one who accepts the theory of evolution differs significantly from one who favors creationism. Throughout the text, I use this term and idea of nature interchangeably.

When we refer to something as organic we undertake a broad and truly interdisciplinary expression. As one of the central ideas of my investigation, the basis of its utility and therefore an understanding of its use within the organic analogy lies in distinguishing its earlier instrumental meaning from its more recent descriptive one. Though I engage the term in order to eventually define it for my own purposes, I have proceeded with an awareness that it is often confused between descriptions of organization and the more current practice of invoking biomorphic form. In this regard I am hopeful that context makes the distinction clear.

Concerning the term natural, particularly as it pertains to human acts and artifacts, I have taken the liberty of constructing my own definition. Based on my own observations, I believe that the unnecessary destruction of life and resources in nature is quite rare and most often confined to human agency. Therefore, human actions can reasonably be described as natural (in the sense of following biology) so long as they pursue some provision of utility at a ecosystemic level. For example, I suppose that the destruction
of a forest by human action may be considered natural provided its replacement either takes up the vacated ecological niches or re-orient the immediate ecosystem in a direction ultimately yielding comparable biological vitality. What we do with the timber is less important. In that sense, to replace a forest with an asphalt parking lot fails the natural test.

Unfortunately, the human settlements that achieve this on a broad scale are either deep in the past or assumedly far in the future. Therefore, interim constructions which are outside of or destructive to basic ecological activity cannot satisfy this definition, no matter how vigilant we are with our use of recycled or other low-impact materials. We simply represent a different category of life when we build this way. Though I have not attempted a minimally invasive design here *per se*, I believe it is vital that we begin the sustainability discourse by recognizing our tendency to be incompatible with the rest of nature. Once a matter of self-defense, we are now in a position to attain alignment between culture and nature—not only within the bio-sphere, but in the human mind as well.

Lastly, there is a frequent need within such an exercise to refer to the various schools of architecture that intentionally reference nature. For example, directed towards a somewhat different end from the expressionistic and heavily biomorphic character of recent “organic” architecture, the ecological or “green” school views nature through the lens of science and refers to it as “environment.” Both labels, though they are also used to describe buildings with a spiritual impetus, primarily reflect a rational conception that marries science to economics, politics and ethics.

For clarity then, I use the term *ecological* to refer only to buildings that attempt to enter natural energy and material flows—such as we see with the work of John Todd. Believing that in an ecologically-informed age any attempt to reference nature—be it from a mechanistic or Romantic position—is now inflected by the presence of ecological science, I employ the term *nature-interested* design as a catch-all when it is necessary to indicate all current shades of the larger issue—the “organic” included. As for my own work, I resist these labels. I am simply trying to envision and propose meaningful, relevant and beautiful architecture grounded in an ecological world view.
“Animals are wholly absorbed into those niches in which they have such satisfactory fitness, but humans can stand apart from the world and consider themselves in relation to it. Humans are, in this sense, eccentric to the world—in it, but standouts. Humans are part of the world in biological and ecological senses, but they are the only part of the world that can orient itself with respect to a theory of it. So humans can begin to comprehend what comprehends them; in this lies their paradox and responsibility. They have a distinct metaphysical status because they alone can do metaphysics. The metaphysics they do may lead them to an experience of unity with nature, to responsible care for other species, but such unity paradoxically puts them beyond nature, where nothing else is capable of such experience and caring.”
Traffic mirror outside Bolzano, Italy
Introduction

We have long used nature to think about architecture, as a guide for beauty and stability in our structures. But as industrial civilization alters the familiar characteristics of the natures our cultural traditions have used to understand themselves and their role in the world, we find ourselves increasingly called upon to reverse these elements, to now use architecture to think about nature, as a means to restore and stabilize what we bring to imbalance. That Western architecture has only recently been asked to assume this unfamiliar role should come as no surprise. Throughout most of its history its task has been clear: to supplant natural landscapes with bold statements of the human “exception.” Whereas large-scale matters have been abandoned to the provinces of the engineer, the planner, the industrialist and, ultimately, the consumer, one of the unfortunate consequences of architecture’s early reluctance to lead in this area has been that we remain somewhat unprepared for a discussion of aesthetics from an ecological perspective. Therefore, what is required now, and critically so, is that we not only absorb the challenges of environmentally-intelligent design, but that we resume the search for an iconography that honors not just our moment, but our role as earthbound narrators of that moment. For us, this challenge seems unusually daunting, for it involves not only the development of a declarative aesthetic, but also the validation of that aesthetic by an underpinning ethic. Joining the Beautiful, the Sublime and the Picturesque may eventually be something we are likely to call the Ecological.

The sea change in which we now find ourselves I believe urges us to re-examine not only these biases within our field, but the conceptualizations of nature that helped produced them. Stepping across the threshold from modernity to the beginning of an ecological age, we pause to reconsider the value of symbolically engaging nature with our buildings and whether the lenses of the past have much to offer us now. Coaxing our profession toward a revised moral imperative regarding the environment, we are challenged to translate the latest findings of environmental study (such as global warming) into a tradition perpetually distracted by its human-centered view of the world. Revisiting the origins of this tradition has produced brilliant results in the past, the most recent case being Modernism. But if the major chapters of architecture’s history have been written from a mindset which sees nature as infinitely resilient and therefore an optional design consideration, then we must approach the core with caution as we develop the aesthetic that the revolution of eco-logically-intelligent architecture will ultimately require.

The subject of this thesis is the observation that, as considered from the perspective of the architect, our buildings and the definitions of nature we use to shape them are reciprocal constructs. One’s nature-concept can certainly be communicated verbally, even poetically so. Likewise, it can be utterly inaccurate from the standpoint of what our best science indicates. What we tend to overlook, then, is that our architecture speaks with equal clarity. In that sense, the view put forth here recognizes what I feel is an important transformation: that "nature" is now undergoing yet another drastic re-evaluation within Western societies, and that this has, once again, significant implications for building as a critical practice.

Therefore, before the “how” must come the “why,” and in the journey between the two, the work of forging an individual reading. Thus I have chosen to use the thesis to focus on a conceptual framework by which to reconcile my own inherited preservationist image of nature with the more instrumental version that is now taking shape within our current society. In that sense, this project represents a record of my thoughts concerning the fundamental relationship between architecture and nature not as contending forces but as the reciprocally conceived creative ideas they ultimately are. Believing we run the risk of diminished meaning and relevancy when we allow our environmental concerns to develop as strategies of radical efficiency or acts of groundless mimesis, I propose that in an age of environmental sensitivity, this view applies in the fullest sense of the term to all architecture.
nature as idea
The House in Nature

Although the urban condition has become the more active location for the environmentalist's efforts, the romance of the isolated dwelling continues to exert powerful influence on our desire for nature-interested architecture. Compared to the city, the relative blankness of wild or pastoral nature offers a more neutral backdrop against which our lines and forms stand out with greater clarity.

Throughout the history of the West, the house as a distinct intervention into nature's fabric has served as a critical origin for the values and vocabularies claimed by various building traditions. Extending from Vitruvius (c. 90 B.C.-c. 20 B.C.), the "primitive hut" was an idealized intersection between building and nature that enabled reciprocal thoughts on each. For example, in order to assert classicism's importance to post-revolution France, Marc-Antoine Laugier (1713-1769) employed nature to suggest an arboreal origin for the column, architrave, and pediment. A century later, Gottfried Semper (1803-1879) rejected natural form in favor of human craft, a claim that perhaps reflects the naturalism of his age. And with Frank Lloyd Wright's "sonianian" houses of the mid-twentieth century, the isolated dwelling underwent a whole new approach, its role as the protective boundary between inside and outside revised in order to encourage greater interaction between inhabitant and environment.

As for the nature or natures that served as the basis for these speculations, the need to explain their origins went from the unquestionable to matters of pure poetry. Viewed as the creation of an eternal divinity, the mystery of nature was considered as inscrutable and infinite in first century Italy as it was in eighteenth-century France. But as science began to assemble credible connections between ourselves and the world, it became desirable to allow both greater access to the outdoors and for the building itself to explain or reflect the new thinking which saw its surroundings as something to be nurtured and enjoyed rather than defeated.
More comfortable with nature as chaotic and yet self-directed, American naturalism has often been shaped as a deliberate reaction to the European predisposition toward order. As a new society with delicate ties to its European traditions, speculation of origin has taken a different path here, our closeness to nature (and distance from European discourses) often demanding that we follow a more pragmatic approach. Thus from Transcendentalism to current environmentalism, a tradition has arisen in this country that explores our relationship to nature by taking our assumptions and questions and putting them into play directly within the rawness of our landscapes. Thomas Jefferson did this with Monticello in the Piedmont of Virginia, Thoreau with his cabin in the woods of Concord, Massachusetts and Frank Lloyd Wright with Taliesin on the prairie of southwestern Wisconsin. Whereas Vitruvius and Laugier made claims for universality, these individuals questioned the possibility as well as the plausibility of universals, at least of any human making. More laboratories than villas, these experiments claimed no distinct origin save for the indispensability of the physical world itself.
1-2 Siofok Lutheran Church, Imre Makovecz (1987)
3 Temple Sinai, Jim Johnson (1967)
4 Plan of Skilken Residence, Bart Prince (1997)
basic program:
- a weekend house for two college professors (no children)
- primary interests: archaeology, anthropology, hiking, boating, music

required spaces:
- two offices (to be used primarily in summer)
- ample storage space for outdoor equipment
- master bedroom
- two guest rooms (converted from offices)
- kitchen
- dining area
- sitting area with hearth
- outdoor seating/work areas

Project Overview

The topic of this thesis took shape in the spring of 1998 when I was approached by a couple that was interested in generating ideas for a moderately-sized house (1500 to 2000 square feet) that they hoped to eventually build in the mountains of western North Carolina. Being of the mind that any architectural undertaking—hypothetical or otherwise—benefits from the presence of a client, I made the early suggestion that our explorations become the subject of my thesis. As academics, they welcomed this dimension for the kind of documentation and inquiry it might bring.

The house was to be built on roughly one acre of sloped woodland adjacent to the Pisgah National Forest and serve mainly as a summer residence and weekend retreat during the rest of the year. Owning the land for several years, they had regularly enjoyed it as a base for fishing and hiking in the eastern Great Smoky Mountains and the decision to build on their property had not come easily.

During the course of our discussions it became clear that they wanted the house to convey a rather specific message through its architecture. With a popular hiking trail bordering their property along the banks of a broad creek, they were interested in the idea that the house somehow serve as an indication to hikers that they were entering a designated natural area. Their way of blending with the land, they asked that the house read as a “natural” and benign presence, a symbol of human sensitivity towards wilderness. How that symbol was translated architecturally would become the essence of the project. To demonstrate their view, they referenced the free and evocative forms of recent “organic” architecture as found in the work of Bart Prince, Imre Makovecz and James Hubbell.

Yet in that they wished to exhibit a human presence, their suggestions seemed to me excessively metaphorical—in a word, unnatural. As they spoke I began to envision an act of disguise rather than the statement of self-assured stewardship they expressed otherwise. Despite these initial misgivings, I made several visits with them to the site, after which we talked about what we were most drawn to on the property and while hiking through the area. It was at this point that I realized we were not only at odds regarding our views on form and design—I the rationalist, they more inclined toward artistic formalism—we were basing our ideas on different conceptions of nature.

At first I was puzzled by how contemporaries and holders of the same general set of social, religious and scientific beliefs could conceive of something so fundamental so differently, and by extension, an architecture that in the end was to serve as an illustration of such views. It was as if we worked the same equation only to reach different solutions. Although they shared my essential position that humans were part of nature—however predisposed to abstraction and rational methods we may be—there was a clear disinterest in articulating such a presence in this house. In other words, there seemed to be little correspondence between their definitions of architecture and nature. I eventually put this to them as a matter of making allowances for architecture, which I reminded them was a purely human activity. Where in their conception, I asked, was evidence of the designer, the dweller, the indications of necessity and inherent process one observes as the signatures of nature’s other builders?

Ultimately, I saw their project as an ideal foil by which to broaden and strengthen my own views on architecture within an environmental perspective. From there on the project became an attempt to provide an answer to a relatively simple question: Given the current state of the world, how are we to be ‘natural’ in this place?
Two Natures - Two Architectures

My friends saw their presence in the forest as distinct and temporary, whereas my view held that humans were merely a poorly integrated part of the larger whole. Their perspective, though certainly legitimate and commendable, here seemed out-modeled based on their request that the structure convey a "message" of informed stewardship. My response that theirs' would be an act of camouflage rather than meaningful integration, and as such was dubious in terms of its architectural merit (particularly within a traditionally "organic" approach), was based on my own assumptions of what makes good architecture. For instance, beyond "truth to materials" was there not also a "truth to maker," as John Ruskin and others have suggested? Furthermore, if we build with the same sort of authenticity that nature does, are we not likely to eventually find her same rhythms and processes?

Their concerns became more interesting as we discussed the more "rationalist," material-driven presence I was proposing. In short, they were convinced that once one aligns his or her approach with logic and efficiency, the slope becomes slippery and a point is quickly reached wherein everything falls under the control of reductivism or some other self-imposed means of maximization. The only possible result, according to them, was an oppressively alien presence and a minimized sense of human creativity. In their view, "green" design's priority of efficiency eventually leads to an ecologically-determined style where all forms converge by region, and ultimately, super-region. Better to do as nature does and leave mechanistic thinking and other such human signatures behind, they said. This was to be a retreat after all.

Laid out before us, then, was not only the spectrum of nature-interested architecture, but a summary of the current debate regarding the way we use natural areas. Breaking down our competing views into more descriptive language, we exaggerated them to produce clearer arguments. On one hand was the mythic nature of the "contemporary organic" where growth metaphors trump rational processes. Within such a construct, the ideal of biomorphic unity between site and building tends to be measured through a purely visual comparison. On the other was my view of the house as optimal machine and indicator of our own unique faculties of reason and efficiency.

Ironically, though each view would appear to merge the house into nature, both on some level declare that we are separate from it. Where one direction would have us "creating" nature through some timeless, poetic lens, the other appears to imply that the material world, as a resource to be maximized, leads us to in effect apologize for our presence. The biomorphic approach my clients envisioned also seemed to propose that human acts can occur independent of cultural contexts, that we can step into wilderness and thrive without the benefit of past experience or knowledge. The actual message here, as I saw it, is that we are interlopers, visitors from another realm, sensitive but disconnected and, therefore, without the responsibilities or experience of an invested culture.

Entering nature "naturally" would prove more difficult than first imagined. As both metaphor and maximization were values common to both our respective viewpoints, we would need to find a middle-ground in order to place the house and its inhabitants in an agreed upon version of nature rather than outside it. The challenge, then,
would be to accomplished this without stripping ourselves of the technology that we have assumedly come by through natural measures and revert to a primitive state.

The juxtapositions above indicate four basic categories of organic form-making I set up as a framework and vocabulary with which to orient and guide our discussions. Many combinations exist and there are no pure types, yet it was helpful to draw borders in order to distinguish between such binaries as the ecological/non-ecological, mimetic/non-mimetic, and so forth. The main distinction I wished to make was the limit to which such structures express their function or engage in mimesis: are they primarily referential and honorific, or do they actually enter the natural system and conduct various tasks of exchange just as organisms and natural land features do?
Nature as Idea and Architectural Expression

As my reading progressed, I found that we begin to dissolve the paradox of our disconnection from the environment by first examining nature as a descriptive term. In his book Second Nature, Michael Pollan relates a story about a tornado that destroyed a historic forest near his home in Connecticut in 1989. “Cathedral Pines” was a 250 year-old stand of white pine that had come to represent a popular, if not definitive, standard of nature to the residents of the town. In the wake of the event, a discussion formed as to how to deal with the downed trees. From its inception, the debate included a range of arguments shaped by several different presumptions of what was “natural”—both in terms of the forest and the reaction of optimizing the resource towards human ends. While one position urged that the trees should be left where they fell, others claimed that the wood should at least be harvested and the land either left open or re-planted with another stand of the same species. Still another saw greater value in clearing the site and claiming it for human habitation.

The debate regarding ecological restoration is interesting not only for the way it reveals the different categories we create to define nature, but also in how these categories demonstrate in tangible terms our tendency to reject the human variable when seeking laissez-faire solutions. Those who wished for the processes already surrounding Cathedral Pines to proceed unhindered were ignoring the fact that the forest was a product of early colonial activity. This was supported by the fact that the land had been cleared more than once before the destroyed trees even appeared—most likely through a sequence of clearing and cultivation. They were also likely incorrect in their charge that events follow a natural plan of succession, as contemporary branches of ecology hold that opportunity in the face of contingency is nature’s only true method. In other words, there is likely no one natural state of nature we can point to and use as a standard.

The questions that Pollan’s account encouraged eventually persuaded me to look at the designated forest that surrounded our building site in a much different light. Established in 1964 as an original element of the National Wilderness System, the Pisgah National Forest of western North Carolina is a landscape that is also very much an implemented idea. A critical milepost of the environmental movement, the philosophy of the Wilderness Act was based on the belief that we must save nature from human wrecklessness. The new yardstick defined wilderness as those areas “where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain.”

Although my clients’ property and the wilderness area it bordered would appear to be a good example of pristine nature within the region, the fact is that nearly all of the area was cultivated by opportunistic farmers up until the recent establishment of the park and in many of the border area beyond. In essence, people have been as instrumental in shaping the nature of Pisgah as any other biological entity. Thus, with no difference between their property and the forest.
across the boundary (as far as nature could tell), should such a boundary exist at all? If this is so and we would do well to see and treat all as natural territory, then where do we “dwell”? What’s more, should there be a marked difference between how we build in nature and how we build in the human realm that we refer to as a categorically separate entity?

Just as any theory of architecture must accept the subjective nature of its construction, so too with a corresponding theory of nature. Limited by our individual perspective, we are coerced to work through one or another socially or culturally constructed views of nature whenever we engage it. Even science with its central assertion of disinterestedness now accepts at least some measure of bias to its enterprise. By insisting that culture and its products represent a different category, a duality has formed in modern societies wherein non-human entities have been objectified and frame nature as other. Architecture clearly has a long history of reinforcing this duality, asserting that human constructions are of a different order from natural constructions.

A product of the distance our consciousness places between us and the world, the dilemma this has created—labeled the “subject-object” problem by philosophy—has led to a long series of mobile perspectives on nature and to a condition in which our main interpretive context is a culturally-constructed lens through which we see a separate whole. By its various conceptual manifestations, nature has progressed from anima to raw material, from the incarnation of the Divine to, ultimately, modernity’s doctrine of “resourcism.” This duality, while it has given us existential shelter in the form of a sense of identity, has also provided scientific thought with a separate region at which to direct itself.

Turning the act of analysis on ourselves has produced observations that have questioned this duality, such as the theory of evolution and the fields of genetics—both of which create powerful arguments for our own natural citizenship. As a consequence, however, we are now faced with the reality of regarding ourselves as an undifferentiated (albeit extraordinary) part of the greater fabric of life, a development that gives us pause as we begin to view the connections between our actions and the world more holistically.

In the face of our environment’s immense complexity, we are rarely consistent in our qualitative summations of it—particularly within the discourse of architecture. Our buildings are more than statements or reflections of our views on nature—they are recordings of the duality we perceive there. Ebbing and flowing throughout our history, our use of architecture as a reflection of our prevailing ideas of nature has created the opportunity to see these various conceptualizations in contrast to one another. Examining some of these major themes, the following brief descriptions are an attempt to illustrate two things: one, that nature has always been an evolving concept in West societies; and two, that their architecture, in addition to their own internal referral, is in large part a response to this.
The ancient Greeks represent a break with Neolithic peoples in that they moved beyond passive mytho-poetic explanations of the world in order to impose a reality-based sense of order. After several centuries of demythologizing its thought, Hellenic culture reached its intellectual apex in the third and fourth centuries B.C., a period which saw intense advancements in the areas of politics, philosophy and the arts. Summiting the period was the pre-Socratic philosopher Protagoras (481-420 BC) who said, “Man is the measure of all things: of things that are, that they are so, and of things which are not, that they are not so.”

In a simplified version of their predominant world-view, *physis* (nature) was deemed the natural condition of the earth and the state of chaos preceding the arrival of the gods who brought *nomos* (order). Infused with animism—the perspective which perceives natural entities as having their own *anima*, or soul—the Greeks maintained that humans are products of nature, yet are also in possession of faculties which give us special access to the transcendent realm of universal definitions—Plato’s realm of the Forms, for example. The duality this established gave rise to the two primary strands of western philosophy—Platonic idealism and its counterpart, Aristotelian empiricism. Intensely anthropocentric, classical reflection conceived of nature as analogous to the human mind, itself a reflector of the natural order of *Logos*. In this sense, an overall bias tended to favor *idea* as a source of order that supercedes matter, the essence of the logocentrism that has shaped much of western culture up to the present.

Perhaps the first paradigmatic architecture of the West, the Greek temple and its orders were in many ways the embodiment of their designers' logocentric worldview. Recorded as a gift from the god Apollo, the temple was part sculpture and part sanctuary for religious and civic rituals. After the accommodation of the human body, the structure’s primary function was to inspire the visual contemplation of its form, a combination Leland Roth describes as “the synthesis of essence and substance.” A rationally conceived framework for this intersection of reason and materiality, the temple radiated for its builders a statement of balance and order out into the surrounding chaos. Weaving together their values of excellence in craftsmanship, proportion, balance and iconography, the temple was the West’s first complete statement of human distinction from the cosmos.

*Theatre plan. Epidauros.*

In the modern era, many of these historical associations have been reevaluated for their value in understanding our own culture. The ancient Greeks represent a break with Neolithic peoples in that they moved beyond passive mytho-poetic explanations of the world in order to impose a reality-based sense of order. After several centuries of demythologizing its thought, Hellenic culture reached its intellectual apex in the third and fourth centuries B.C., a period which saw intense advancements in the areas of politics, philosophy and the arts. Summiting the period was the pre-Socratic philosopher Protagoras (481-420 BC) who said, “Man is the measure of all things: of things that are, that they are so, and of things which are not, that they are not so.”

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The ancient Greeks represent a break with Neolithic peoples in that they moved beyond passive mytho-poetic explanations of the world in order to impose a reality-based sense of order. After several centuries of demythologizing its thought, Hellenic culture reached its intellectual apex in the third and fourth centuries B.C., a period which saw intense advancements in the areas of politics, philosophy and the arts. Summiting the period was the pre-Socratic philosopher Protagoras (481-420 BC) who said, “Man is the measure of all things: of things that are, that they are so, and of things which are not, that they are not so.”

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Perhaps the first paradigmatic architecture of the West, the Greek temple and its orders were in many ways the embodiment of their designers' logocentric worldview. Recorded as a gift from the god Apollo, the temple was part sculpture and part sanctuary for religious and civic rituals. After the accommodation of the human body, the structure’s primary function was to inspire the visual contemplation of its form, a combination Leland Roth describes as “the synthesis of essence and substance.” A rationally conceived framework for this intersection of reason and materiality, the temple radiated for its builders a statement of balance and order out into the surrounding chaos. Weaving together their values of excellence in craftsmanship, proportion, balance and iconography, the temple was the West’s first complete statement of human distinction from the cosmos.

*Theatre plan. Epidauros.*

In the modern era, many of these historical associations have been reevaluated for their value in understanding our own culture. The ancient Greeks represent a break with Neolithic peoples in that they moved beyond passive mytho-poetic explanations of the world in order to impose a reality-based sense of order. After several centuries of demythologizing its thought, Hellenic culture reached its intellectual apex in the third and fourth centuries B.C., a period which saw intense advancements in the areas of politics, philosophy and the arts. Summiting the period was the pre-Socratic philosopher Protagoras (481-420 BC) who said, “Man is the measure of all things: of things that are, that they are so, and of things which are not, that they are not so.”

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Renaissance Nature

As the masterwork of the period, the Gothic cathedral stood astride two co-existent realms of medieval space: the worldly and the transcendent. Bridging this divide were sacred geometry and the complex metaphysics of light. Luminosity, particularly within sacred space, played a role in the medieval world-view that is difficult to grasp for those with today's more secular and materialist perspective. Within the hierarchy of beings, corporeal light was of the highest order and a quasi-manifestation of the Divine itself. Making use of its metaphorical value, medieval builders converted the opaque mass of the Romanesque church wall into the translucent windows of the Gothic. Itself a synthesis of Plato and biblical cosmology, Neoplatonism was particularly influential with its affirmation of a hierarchy in which the material world, represented by humanity, was to vigilantly focus on the metaphysical reality of Nous, or “spirit,” and beyond that, the One, the wellspring of the Divine for which light was posited as the ultimate symbol.\textsuperscript{11}

The late fourteenth century in Italy issued the beginning of the modern transformation from “Natural Philosophy” to modern science. As this occurred, the relationship between humans and the cosmos further solidified around the Pythagorean vision of a universe imbued with supernatural intellect “whose language was number and geometry.”\textsuperscript{12} The critique of medieval limitations that followed returned attention to the classical interest in man himself, now reconciled as not only the reader of the cosmic structure but an integral example of its code. The re-discovery of classical thought and its terrestrial preoccupations also led to a new interest in sensory matters such as art and architecture. Recovered in 1414, the writings of the first century B.C. Roman architect Vitruvius were hugely influential, not only for their explicit instructions and explanations of the classical orders, but for their descriptions of cultural matters as well.

Seeking to move beyond the supernatural obstacles proposed by the Church, the first scientists of modernity began to view nature for its ability to give up the mathematical structure of its own fabric. If the universe was the creation of a rational being, then so too was nature—and by extension, humans and their productions. Confident that a mathematical model of reality would encourage a new reason-based aesthetic, geometry was for Renaissance architects both sacred and beautiful. Meditating on the circle and square as units with symbolic and constructional value alike, architecture became an ideal medium with which to concretize a new, geometric cosmology.\textsuperscript{13}

With his notion of “purposive unity,” Leon Battista Alberti encapsulated the aspirations of his age by re-emphasizing the classical organic analogy, wherein the relationship between artifice and beauty was compared to the interrelatedness demonstrated in nature.

1 "God as Architect/Builder," Frontispiece of the Biblia Moralisées (13th C.)
2 Ripon Cathedral, North Yorkshire, England

Vitruvian Man, Leonardo Da Vinci (c. 1492)
Referring to them both as manifestations of a perfect Deity, Alberti saw beauty at the hands of humanity and nature as evidence of the rule of "concinnitas," a universal "law" of beauty which demands "sympathy and consonance of the parts within a body according to definite number, outline, and position."^{15} Ultimately, this concept became the basis on which the later theories of the *Sublime* and *Picturesque* were partly constructed.

Delving further into antiquity, Alberti was also one of the first to combine a revived secular interest in nature with the medieval practice of the landscape garden. Primarily a French practice during the centuries just preceding the Renaissance, the garden as an isolated version of Eden was developed in fifteenth century Italy to include a much broader range of literary and early artistic references.^{15}

According to Alberti, the ideal garden was constructed on a slope so as to afford one a means of comparing the utilitarian landscape outside its walls to the "perfected" nature within them. Drawing on Pliny and the Greek philosopher Xenophon, the well-ordered geometric scheme of the Italian garden had another, less appreciated function: it was also a model of the objective universe, not just Eden.^{16} Moreover, as they were embraced as means of "competing with nature on nature's terms," formal gardens also served as horticultural encyclopedias *in vivo*, where native and exotic plants alike were studied but also enjoyed for their beauty and "moral" facility to co-exist with one another. In these ways, the Renaissance garden developed as a means of controlling nature to the point of making it habitable according to the desires of highest culture.

Whereas the medieval garden was usually kept separate from the living quarters and under lock and key, the Renaissance began to absorb the landscape and use it to accentuate the axis of the major structure it adorned. In that sense the major transformation was not in the garden itself, but in its relationship with the landscape and the architecture it served.^{17}

**Baroque Nature**

Europe’s Baroque period in the arts (1500-1650) was in several respects a response to the scientific discoveries of the era. Fueled by the return to reason initiated by the Renaissance, the coalescing Modern epoch gained momentum with the spawning of two newly articulated views of nature, each drawn in many respects in contrast to the other. The foremost of the two pursued description via a mechanistic reductionism that saw the world as an inert assembly of parts and whose aim was to unite nature and cosmos within an absolute system. A second, largely subordinate view attempted reconciliation brought on by the disruptions such analysis caused regarding matters of the spirit. Each would overturn the Aristotelian paradigm where nature was based on the workings of verbal logic and the observation of the unaided human eye.^{18}

Central to the analytical thrust was the replacement of the geocentric system of classical astronomy with a heliocentric version. At first little more than an unpopular guess, the findings of Nicolaus Copernicus (1473-1543), followed by Galileo (1564-1642) and Johannes Kepler (1571-1630), indicated that not only was earth not the center of the cosmos, but that humans could, through reason, eventually determine every facet of the cosmic scheme. Of particular interest was their replacement of concentric, circular orbits for the planets with what would eventually be a random collection of distinct, oval paths.

By the late Baroque, the products of scientific thought were inspiring artist and architects to convert sacred geometries and even precepts like Blaise Pascal's mathematical implication of infinity into built form. At the Chateau Vaux-le-Vicomte and later Versailles, for example, Andre
The Enlightenment

With the fruits of scientific study now appearing in nearly all regions of thought, the first half of the 17th century in Europe saw the idea of nature shift further from extant symbolic readings toward the more focused metaphor of a grand mechanism imposed on dead matter. Concentrating on the fragment, attempts to describe reality as a total system were generally left to art and religion. This growing empirical view was evidenced by France’s *L’architecture parlent*, which sought to express or “speak” the function of the building by semantically isolating function and expressing this through emerging typology.

By reflecting the materialist perspective of their societies, buildings of the early Industrial Revolution, for example, announced that architecture was not only a means of problem-solving, but capable of positively influencing culture by dedicating its iconography to the cause of reason. Although the reactionary response of Romanticism was also taking shape during this time, the growing sentiment was that society should be free to proceed with the tools of logic toward the goal of defining and eventually improving the human condition.

With their newfound interest in classical culture, the gentry of Europe began to investigate Italy and Greece in growing numbers. For the British, the journey required passage through the Alps and exposure to extreme topography with its impressive examples of natural processes. Contrasting such experience with the serenity of the English and Italian countryside, efforts were made to distinguish a new aesthetic category, the *Sublime*, in order to describe the suspension of reason they found so exhilarating. In the spirit of empirical knowledge, yet representative of a new and more subjective way of knowing, theorists such as Edmund Burke and Immanuel Kant attempted to universalize the impact of objective properties that were now, particularly in Kant’s case, believed to be at the root of the human psyche. Anticipating the Romantic evaluation, nature and its effects were becoming a matter of interpretation in several areas. As the qualities of vastness, darkness and the infinite were deemed to be verifiable as standards of taste, artists began to represent nature’s new majesty in their work according to their own liberated subjectivity.

For architecture, this new access to the fruits of the past and the labors of the current intelligentsia began the multiplication of stylistic choices that would eventually lead to eclecticism as well as revivalism. Of this time, Emil Kaufmann writes:

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1 dome interior of Francesco Borromini’s San Carlo alle Quattro Fontane, Rome, (1634-67)
2 Château Vaux-le-Vicomte, Paris, (1655-61)

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In order to give a picture of architectural development between 1750 and 1800 one might group the architects according to their particular inclinations and distinguish between eclectics, or revivalists, who looked for inspiration from Egypt, classical antiquity, and the Middle Ages; romantics, who wanted to give “atmosphere” and indulged in exaggerated dimensions and bold lighting effects; rationalists, who searched for basic rules, aimed at soundness and consistency, propagated the elementary forms and preached respect for the nature of the materials; reformers, who burned to establish a new order of the constituent parts. They all were fanatics carried away by the common desire of discovering a new means of expression. However, any classification...
would have a distorting effect, as traces of
several or even all of these ideas can be found in
each single work.  

In the fledgling republic of the United States, references to nature were borne out through a struggle between a pragmatic agrarianism and an early Romantic perspective that regarded humanity as the conscience and consciousness of wild nature. As demonstrated by Thomas Jefferson, this view was based on a utilitarian proposal which envisioned a “virtuous citizenry” reinforcing democratic principles through the maintenance of a decentralized, agrarian-based polity. Jefferson’s home at Monticello is less a reflection of classical certainty than one man’s private experience with the study of his surroundings. The combination of site-specificity and decentered hierarchies creates an American departure from the Neoclassical, Palladian schemes of its day.

The Romantic Reaction

Embedded within the Age of Reason’s overall emancipatory project and emerging scientific world-view was a parallel plea to the emotional side of the human psyche and the “truths” that logic seemed incapable of apprehending. Developed through both rational and creative efforts, the Romantic critique (approx. 1750-1850) held that the Platonic or Neoclassical approach to reality was overly dedicated to reason and its insistence on certainty as a basis for knowledge. Questioned by thinkers like Jean-Jacques Rousseau (1712-1778) and Immanuel Kant (1724-1804), the Enlightenment’s classically modeled epistemology was issued challenge according to a new interest in subjectivity and an appreciation for the role of intuition and experience.

With wild nature now upheld as an alternative source of beauty (and even morality) the educated classes were further encouraged by writers such as William Gilpin (1764-1843) and Uvedale Price (1747-1829) to add to their occupation with classical naturalism and aesthetics a new appreciation for their own native landscapes. Joining their pursuit of good taste with previous aesthetic theorizing on the Beautiful (as derived from classical aesthetics) and the Sublime, the synthesized category of the Picturesque put forth an active and accessible idea of nature that encouraged the trained observer to adopt and apply painterly conventions in his or her evaluation of nature. Privileging beauty over authenticity, Picturesque landscapes were either accepted or rejected based on their ability to move the observer in the manner of well-composed works of art.

Somewhat antithetical to the more formal continental schemes, English landscape design became a means of expressing the ideas of Gilpin and Price in three-dimensions. Although highly dependent on numerous associations with classical literature, philosophy and landscape painting, the Picturesque’s Arcadian view of nature filtered its conception through a growing sense that the human-controlled realm was capable of an independent existence, a fact which left nature an isolated entity and, eventually, a subordinate one.

*19th century American landscape painting*
This view urged an architecture fitted to its landscape, yet that landscape was now to be equally well-designed according to a guiding concept. With the ability to control nature seemed to come a sense that a separate human realm was more correct. Yet this was also tempered by a sense that humanity need not do without the benefits of natural beauty—particularly if it could be delivered on our own terms. From this point forward, the West appears to become conscious of landscape as an object of either human artifice, neglect or requiring protection, with our buildings as a prime means of indicating such status.

Turning again to America, its wealth and diversity of open space eventually inspired a preservationist position brought about by the romantic idealism of Transcendentalism, European Romanticism, and a growing nostalgia for the disappearing frontier. With the creation of the first National Park at Yellowstone in 1872, a fragile coalition of preservationists and those interested in developing a tourist trade formed in the cause of protecting the nation’s most striking examples of wilderness from the rapid settlement that was taking place throughout the western states and territories. However, the contribution of the Parks system, though instrumental in fostering national awareness for natural beauty, remains debatable overall. Implemented for primarily symbolic reasons rather than biological prudence, the result has in many ways been the further institution-alization of nature as object, and in most cases, an object sacrificed for detached recreation rather than engaged contemplation.

Frank Lloyd Wright

Of the twentieth-century architects who would make their idea of nature the center of a design theory, Frank Lloyd Wright remains the most salient. Over his sixty-five years of practice, Wright’s dedication to his own reading of nineteenth-century organicism created much of the conceptual groundwork that would inspire subsequent generations to create their own architecturally-mediated positions on nature. A fertile synthesizer, Wright drew from a broad range of philosophical, spiritual, and architectural traditions. Immersed in Unitarianism and Transcendentalism during his youth, the dissent which defined such groups provided Wright with a core from which he drew for his attacks on the status quo of European and American academincerism within the field.

Generally speaking, Wright interpreted nature much as Emerson did, who wrote in 1836 that nature was “like a single sex”—dependent on the involvement of humans to reach its full, poetic potential. Wright’s position that we see nature through a kind of dual lens of both poetic and mechanistic powers locates him within pre-critical traditions, specifically, Romanticism. However, his constant adjustment of his organic “principles” along with a growing emphasis on the sensible treatment of the environment as evidenced in such projects as Broadacre City and the Usonian houses, would by the end of his career make him a proto-environmentalist.

As with Alberti and his concept of concinnitas, Wright derived the most basic elements of his architectural theory from a similar belief in a universal standard of unity, a sense that beauty was ultimately related to the central truth of nature’s strong tendency toward integration and its single set of unified principles. Likewise, he claimed geometry as the interpretive medium between human activity and the rest of nature, qualities he referred to in his work as “continuity,” “plasticity” and “integrity.” Echoing classical Pythagorians, Wright maintained that geometrical abstraction was capable of revealing the underlying essence of nature’s forms, and in so doing, sublimated the raw power of nature to create a higher level of beauty. Convinced of nature’s infallibility yet suspicious of using universals to describe it, Wright stands as a transitional agent between Romantic and ecological readings of nature.

Taliesin

Described by Wright as his first “natural house,” Taliesin, his residence and studio at Spring Green, WI, is his opening attempt to consciously convey his idea of nature through a complete architectural statement. Arguably the most important departure of his career, the compound reflects multiple crossings of the nature/culture boundary (as drawn by the Prairie houses) by establishing numerous physical and metaphorical examples of the union described in his personal philosophy and the parallel of his architectural theory. In the overall project,
Wright appears to make forthcoming and even didactic statements expressing the mutual inclusiveness of human and natural structures. For this reason we may "read" the buildings as an early effort to posit architecture as a legitimate illustration of an environmental ethic.

Approaching Taliesin as a sign with a sophisticated semantic agenda, we can employ historian Erwin Panofsky's interpretive triad of pre-iconographic, conventional, and intrinsic levels of meaning. Beginning with the most fundamental of the three levels, the "pre-iconographic," we observe Taliesin at its most basic: a building and landscape co-conceived as equal parts of a larger whole. Devoid of the ceremonious formalism marking Wright's earlier residences—including his own at Oak Park—the house announces Wright's developing view of nature as an active collaborator that actually replaces culture as the source of his ideas.28

To further the objective of making nature the source of an architectural grammar, Taliesin is stripped bare of the suburban emblems of the Prairie houses. In this respect, Taliesin marks the beginning of a major shift towards the simplicity he would develop in the later Usonians and circular geometries of such projects as the Guggenheim. At this level of meaning, Wright appears to be re-casting the classical view that in light of nature's state of inchoateness, humans, as nature's primary constituents, are responsible for bringing it to completion.

With limited resources, Wright had to make good use of local materials as well as his personal experience within the region. Prone to harsh winters and oppressive summers, the site made a synthetic approach to the elements entirely reasonable. The architect's use of mass and shading features to create both visual impact and enhance building performance reflects his growing understanding of passive energy as a means of communicating his emerging sense of nature as an aesthetic realm. But it is the way he subordinates these elements to the overall composition that gives his ethical and aesthetic drives their internal cohesiveness. Isolation granted yet another benefit. Liberated from suburban opinion, Wright was free to experiment with the house as an entirely new type. This freedom allowed Wright to approach functional forms more poetically, combining local tradition and a super-imposed mythology in order to create new inflections of the region's vernacular. In terms of materials, Wright selected a simple local palette that was directly supportive of his ideas regarding synthesis. For example, with his use of local stone, he developed walls that sought to mimic their placement in their original earth-bound formation. By establishing an aesthetic scheme that allowed for such rough articulation, he not only evoked the geology of the region, he also lessened the cost of construction.

Again using Panofsky, the second level of meaning, that of "convention," leads us into the more recognizable semantic aspects of the scheme—in this case, a sort of narrative positing Wright's understanding of nature as a creative force (natura naturans).29 As a statement about the inclusiveness of humans in nature, Taliesin makes multiple assertions on how the relationship of the two realms exists more as part of a gradation than a duality. Here, the buildings in their relationship to one another create for their inhabitants a sense of Wright's intentional
ambiguity between “inside” and “outside.” By encouraging diagonal site-lines throughout the house, the viewer experiences the interior elements not only as framing devices but as part of a compressed continuum that includes the landscape. Working outward, we find that Wright’s intention was not to order the house according to the hearth, his signature method, but according to the greater spatial references provided by the surrounding topography. In doing so, Wright effectively claimed the landscape by accepting it, a radical departure from the scheme of the typical Western villa, which asserts the house itself as axis mundi.

Whereas Wright’s Prairie houses were composed of self-contained volumes shaped in part by the abstraction of their urban grid, Taliesin shows no such intermediate means of separation from the land, aside from Wright’s own partiality for the Picturesque in his choice of site. In this sense, the hill and the landscape beyond are transformed by the presence of the house, thereby creating a new relationship between natural elements, a quality Martin Heidegger plainly identified in his essay “Building Dwelling Thinking”:

“...The bridge swings over the stream “with ease and power.” It does not just connect banks that are already there. The banks emerge as banks only as the bridge crosses the stream. The bridge expressly causes them to lie across from each other...It brings stream and bank and land into each other’s neighborhood. The bridge gathers the earth as landscape around the stream.”

Turning inward, the hortus conclusus of the house creates a crucial intermediate green space that serves as both courtyard and transition to the more unrefined exterior spaces outside it. Placing the entrance drive between the house and this area of controlled nature, Wright effectively created a separation between the human realm and the beginnings of the non-human with an element that reads as necessary yet lacks the boundary implications of wall or fence. In this way, the house reads as the wall and the drive as a transition zone, a move which makes the relationship between house and hill appear that much more intentional.

At its deepest level, what Panofsky calls the “intrinsic,” Taliesin announces Wright’s intentions for the world beyond. It is, after all, a portrait of not only its makers but of the way in which they wished themselves and others to see them. By co-opting elements of ancient Welsh culture to ostensibly back the claims of his art, Wright completed the final connection between human and land by inventing his own mythological means of connection. Despite a belief in the sanctity of the individual, here he posited nature as primary and universal condition with which humanity must reconcile and seek its accommodation. In that way, it is his revised sentiments on family, grounded by his relationship with Mamah Borthwick and her children, that seems to carry the most nuanced message of the entire composition. In claiming the romanticized “bardic” tradition as his founding inspiration, he granted himself the poet/artist’s elect capability of recognizing the innate beauty of natural things, and in doing so, replaced his earlier pioneer sentiments with a narrative that insinuated a human presence predating the purely utilitarian views that originally brought his family to the region.

1 Taliesin, south elevation
2 Taliesin, “hortus conclusus”
Nature(s) of Environmentalism

With the arrival of ecological science came the suggestion of a standard of health by which biologically distinctive segments of the world (ecological systems or ecosystems) could be measured and judged according to criteria other than utility or attractiveness. Situating ideas such as Darwin's evolutionary theory, and later, the life-unifying field of molecular biology, have called into question many of our assumptions regarding ethical human action. Naturalism, with its search for poetic order in nature, now gives way to more empirical attitudes. In many ways, the framers of ecological thinking echo the earlier Romantics in terms of their efforts to differentiate themselves from the Enlightenment project. Dissimilar, however, is the way in which ecologists recognize empiricism to be the indispensable tool of investigation.

Where before nature was personified and credited with intentions, good and bad, the scientized perspective of the nineteenth and twentieth centuries claimed to reveal a nature of objective vulnerability and finitude. As a protectionist ethic grew, the first stages of the environmental movement in this country took shape. Since then, the movement has been internally molded by a debate over whom such an ethic should favor—humans or nature. For example, granting ethical status to nature was inconceivable to most of those involved with the formation of the first National Parks in the 1800s. Nature's main proponent in the proceedings, John Muir, had previously shaped his rhetoric around the notion that nature was living and therefore in possession of innate rights. But in order to be effective in his crusade to save wilderness from human presence, Muir had to use inclusive language that spoke of human interests as well.31 The results formed the spine of a conservation ethic, a view that continues to assert nature as an essentially finite resource, but one that is rightfully open to human use. This perspective has been enlarged beyond the causes of basic utility and consumption to include less invasive uses such as recreation, yet it clearly remains human-centered for pragmatic reasons.

The other side of the debate, the so-called "bio-centric" outlook, maintains that nature possesses inherent value and therefore natural rights just as humans do. Summed in his "Land Ethic," Aldo Leopold's 1949 book A Sand County Almanac describes humans as having no superseding claim to exploit nature, but rather the responsibility to safeguard its rights.32 In 1962, the debate underwent something of a synthesis with Rachel Carson's publication of Silent Spring, a work that implicated chemical use in the degradation of a food chain that included humans.33

Generally stated, ecological science would seem to lend proof to evolutionary biology and its implication that nature has intrinsic structures and operations. The biocentric claim that such structures possess inherent value or rights and should be free of human interference is, however, not the primary aim of the field. Rather,
modern ecology sees its overall mission as one of describing the viability of the biospheric whole, not discrete, privileged parts. To advocate deploying resources to save or restore non-human communities as distinct from human ones is to suggest that since we are moral agents, it is our responsibility to protect the entire bio-community. This is the larger question of sustainability, which brings an ethical dimension to the matter by asking how we should build if we subscribe to a unified (human-inclusive) biocentrism. The first modern body of ideas to pose a challenge to the ideas of anthropocentrism, the ecological model of nature has enabled a normative approach which allows our decisions about environmental management room to accommodate the progressions within science and to do so in accordance with parallel developments in ethical and even aesthetic components.

Solar architecture in the seventies presents an interesting illustration of this. Partially rejected on purely aesthetic grounds, it was seen as too remote from established architectural languages. On other levels, it also challenged conventional cultural views of the human presence in nature by implying nature’s finitude. Buckminster Fuller’s domes, for instance, embraced standardized elements and a machine aesthetic, qualities for which they were celebrated by the modern movement. But these same qualities led them to be experienced as a disconnection between the prevailing attitudes toward nature and familiar modes of dwelling for the time. At that point, very few people were aware of ecological concepts, to say little of the limited tolerance most had for the suggestion that nature was in danger.

Today, the various cultural conventions that make up our views and expectations for natural landscapes are greatly informed by the myths that arose during their settlement. The log cabin in Appalachia and the adobe in the southwest are examples of this. Such house types continue as iconic aspects of an American identity that understands the experience of nature according to a limited set of ideas, such as exploration, repose or sanctuary. The house as alien object or machine for harvesting energy was not yet a part of our national consciousness in the 1970's. Although the era was made aware of the importance of the efficient use of energy in multiple ways, these structures were architectonically illegible and therefore outside familiar conceptions of what was aesthetic and what was natural.

Post-modern Nature

By the late 20th century, the charge that we are not only altering earth’s climate and biodiversity, but capable of re-designing life at the genetic level brought on the declaration that "nature," at least the vestigial versions that exist in our collective consciousness, is no more. But for most of us, with the ability to shape and control growing sectors of the environment comes with a sudden inability to always discern wild nature from human-made facsimiles. The ecological world-view, on the other hand, in seeking integration appears to suggest that we have only to blur the boundary between ourselves and rest of reality to achieve integration. But as we re-write our various narratives describing our species' long struggle, the end product is marred by a loss of meaning as well as the loss of direction once provided by our belief in determinism.
With the introduction of verifiable non-linearity as put forth by quantum, Chaos and Complexity theories, a determined “state of nature” or enduring set of metrics for stability at any scale is called into question.\textsuperscript{36} Architecture has approached these ideas according to their ability to support new relationships between its own tradition of reductivism and the opportunities these new narratives provide to free design and construction from geometrically-static frameworks.

Taking its first forms of expression in the “Landform” movement of the 1990’s, architecture’s attempts to demonstrate fragmentation and rupture as some of the basic characteristics of reality came in a moment of multiple and competing perspectives. Here, the element of chance that makes up landscapes is brought into the buildings added to them. Whereas Baroque and Neoclassical designers attempted to reflect the essential qualities of a mathematically elegant, clock-like universe, the new paradigm tries to illustrate nature’s more likely state as an endlessly creative and loosely confederated realm where matter and its “generic properties” are continually re-combined and re-organized according to the instability of the local condition.\textsuperscript{37} Within such a model, nature can no longer be captured by one idea any more than it can be one static thing. Unable to make absolute claims for the rightful direction of its trends and trajectories, architecture’s most powerful response would seem the generation of spontaneous order, where uniqueness and contingency rather than absolutes and universality become the norm. If the absence of determinism is troubling to us, as I believe it must be, the environment understood to be in a perpetual state of becoming rather than arriving, then order and its expression becomes our refuge and an honest expression of human determination. Our challenge, then, is simply to apply it at an appropriate scale.

1 Non-linear formal studies, Gregg Lynn
3 Bilbao Guggenheim, Frank Gehry (1997)
“Humans have little biological role in ecosystems, in the sense that were they subtracted from oak-hickory forests or African savannas or Asian steppes, those ecosystems would not be negatively affected; they would rather be improved. Humans are not important as predators or prey; they play no role in the food chains or in regulating life cycles. They are a late add-on to the system, and their cultural activities (except perhaps for primitive tribes) only degrade the system if considered biologically or cologically. But one human role is to admire and respect the ecosystems they culminate, as environmental ethics urges, and not merely to admire and respect themselves, as traditional ethics does. The human role is ethical, metaphysical, scientific, religious, and in this sense, humans are unique and superior, but their superiority is linked in a feedback loop with the whole.”
Concern for the earth will be the iconography of the future.

James Wines

The human order, quietly implied.

Maya Lin