Architecture Is Dead: A Renewed Organic Aesthetic for Ecological Design

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"There, in the physical realm of the built world, we seem to be presented with dramatic proof... that language, far from being the servant of man, is all too often his master." Kenneth Frampton

LIVING AND DEAD METAPHORS

An organic metaphor in ecological design has a need to standout as offering something new in order to be an effective and a provocative metaphor.¹ It must address the historical organic emergence, its transition to a modern machine aesthetic and then its appropriation into an ecological movement. One way to investigate the relevance of today's organic metaphors is to provide a comprehensive definition of nature, to locate and identify an ecological emphasis and to reveal ecological functions that can help to inspire creative applications while providing direct ecological engagement. Accomplishing this will require folding in new concepts and expanding an interpretation of the traditional organic metaphor without destroying its useful intended applications.

An Organic Paradox to Disequilibrium

The primary use of the term "organic" arose as early as the 19th century. Organic metaphors consist of varying interpretations as to how it is applied, but it also shares a clear focus on "life" and "vitality." The architectural historian Vittoria Di Palma describes what is generally understood about the primary focus of organic metaphors as follows: The modern use of organic metaphors, which the architectural historian Mari Havattum refers to as, "one of the most commonly used metaphors in the history of modern architecture," continues to imply the preference for the quality of life and I will therefore refer to this conditional use as a *living metaphor.*³ It will also help to delineate an alternative construct I will make in a moment.

The case for an alternative begins with an intuitive question about whether a building as a living organism really fulfills the complexity and dynamism of nature. Di Palma points out that the organic metaphor's specificity to "create and sustain life" intersects the human dream to "recapture a prelapsarian state of harmony and grace."4 Architects like Walter Gropius would echo this notion through organic design as "breathing soul into the life of a building."5 Nature in this sense, is a primary model of good, but has little reference to the destructive qualities that also clearly characterize it, to which Di Palma calls a "paradox." Ecologists, historians and philosophers have a direct response to nature's paradox by formulating a new model for nature based on recognition of a world in flux. The architectural historian Amy Kulper refers to a shift in interest from "'what' nature and culture produce, to the 'how' of natural and cultural production."6

The living metaphor was largely established by findings of the late nineteenth and twentieth century scientists, naturalists and thinkers like the Ernst Haeckel, Georges Cuvier, and August Wilhelm Schlegel among many others.⁷ During the early twentieth century the ecologist Frederic Clements and Eugene Odum helped to codify a theory of the

[&]quot;...to focus on the organic metaphor entails, necessarily, privileging questions that concern architecture's relationship to life, to nature in its creative role, and to species that exhibit processes of growth, development, and change."²

ecosystem in equilibrium and balance.⁸ However, as early as 1926 another prominent ecologist Henry Gleason challenged the notion unsuccessfully with a theory that put forth a controversial "individualistic concept" of nature, where "each migrating body acts for itself and moves by itself almost always completely independent of other species." ⁹ This was later revalidated by scientists in the late seventies. This more recent understanding of the ecosystem is characterized by ecologists and landscape architect Ronald Pulliam and Bart Johnson and other growing number academics. They explain two shifts toward a new understanding of disequilibrium science as follows:

"...(1) a shift from an equilibrium point of view where local populations and ecosystems are viewed as in balance with local resources and conditions, to a disequilibrium point of view where history matters and populations and ecosystems are continually being influenced by disturbances...(2) a shift from considering populations and ecosystems as relatively closed or autonomous systems independent of their surroundings to considering both populations and ecosystems as 'open' and strongly influenced by the input and output or 'flux' of material and individuals across system borders."^{10}

This disequilibrium view comes at time when the architectural world is blind to many important social and health issues plaguing communities. A significant blight is the phenomenon of waste, like material waste in our landfills, which in 2007 represented two-thirds of all non-industrial solid waste generation in the US.¹¹ Design philosophies of William Mcdonough and Michael Braungarts' "Cradle to Cradle," John Lyle's "Regenerative Designs," and Stephen Moore's "Non-modern thesis" all offer a new way to rethink the fundamentals of ecological design that are more inline with a disequilibrium model of the world. Following in the same vein, an alternative metaphor representing a disequilibrium view, which I refer to as a dead metaphor, could assist in confronting a death paradox by inspiring architects to directly address issues like waste in terms of a comprehensive ecological design construct.12

	ORGANIC METAPHOR	
	LIVING METAPHOR (ex. Flower)	DEAD METAPHOR (ex. Deadwood)
	DEFINITION	
	A living metaphor utilizes a simplified understanding of nature and looses it "metaphorical tension." It ultimately offers nothing new to inspire the mind.	A dead metaphor offers an alternative perspective of the ecological landscape by challenging presumptions about the human aesthetic relationship with its context.
П.	EMPHASIS	
	A living metaphor emphasizes the building-object for a solution for ecological issues. The machine aesthetic that preceded it still manifests itself in the organic metaphor by functionally turning organisms into machines or vice versa.	A dead metaphor offers an emphasis based on the literal understandings making it a "strong metaphor." The process of decomposition in particular redirects an emphasis about the referent object to its surroundings and to dynamic temporal states, which leads to open- ended goals.
	A living metaphor relies on common and vague ecological reasons to apply functional metaphors, which make them uninspiring.	A dead metaphor offers unfamiliar, but inspiring literal ecological associations that allow for a direct application of ecological functions to a building.

Table 1. Questions for an Organic Metaphor

CLARIFYING QUESTIONS

A dead metaphor is largely a response to a living metaphor's inadequacy to illuminate a clear ecological purpose. The topics of definition, emphasis and function will be used to clarify the current shortcomings of a living metaphor and provide a case for a more robust interpretation of an organic metaphor. I use deadwood, also known as Coarse Woody Debris (CWD) by ecologists, as a dead metaphor to investigate the complexity of a disequilibrium model in design. The living metaphor has a variety of existing uses, however I will primarily focus on the Living Building Challenge's use of flower as a generic but clear contemporary example of a living metaphor applied to ecological design. Table 1 lays out a summary of both the living and dead metaphor responses to the three selected topics. The following are the questions used to begin an inquiry into each topic.

Can an organic metaphor convey...

- a contemporary ecological definition of `nature' for design?
- 2. a clear ecological emphasis for design?
- 3. a direct ecological function for design?

Definition

Can the organic metaphor convey a comprehensive ecological definition of nature for design?

At the heart of this argument is a possible misunderstanding of the term "nature." Raymond Williams describes this term as "perhaps the most complex word in the language."¹³ A singular clear answer may be impossible, but providing a more complex understanding supported by landscape historians, ecologists and other academics can better contextualize a more affective ecological approach.

A Living Metaphor: Simply Nature

The following are a few examples of architects who have used an organic based metaphor to make the case for a more balanced and natural world. The modern architects like Le Corbusier in order to overcome society's ills, found organic "harmony" by looking to the machine aesthetic of the automobile.¹⁴ He also referred "to make architecture is to make a creature."¹⁵ Frank Lloyd Wright's definition of "Organic Architecture," utilized the "harmonious grace of a wild flower" to describe a politically focused natural architecture where "form and function are one" and "beauty is alive."¹⁶ More recently the Living Building Challenge (LBC) uses a "flower" with a claim to establish a more holistic approach to green design than USGBC's LEED program.¹⁷ The author Jason Mclennan extracts from the flower an array of functional biological processes to apply to building design to meet his metaphorical "Living Building" status.¹⁸ Finally in Cradle to Cradle the authors William Mcdonough and Michael Braungart use a tree to describe the creation of energy production, so that "buildings... like trees, (could) produce more energy than they consume."¹⁹

The *nature* implied by the examples above share a vague understanding of the term and does little to challenge new conceptions about the ecological world. The historian Amy Kulper, in echoing Paul Ricoeur's definition of a metaphor to 'tell us something new about reality,' advocates for a restoration of "metaphorical tension" in order to avoid tautological analogies between building styles and organic species.²⁰ In the case of species-styles metaphor that favors similarities over their respective difference Kulper explains the following issues.

"The conflation of species and style is due to the historical process of immanentisation in which style loses its rhetorical connotation as the internal coherence of nature and comes to be understood as the internal coherence of human inner nature. This shift renders style a contingency of personal preference and individual taste. Simultaneously, style lost the ethical content of its rhetorical meaning, in which acting in accordance with nature meant possessing the knowledge to act appropriately in a given situation."²¹

A living metaphor that is easily conceivable beckons a designer's intuitive experience about "nature" – rather than challenging the concept – and may contributes to a metaphor's wide acceptance. But it ultimately relies on a limited exposure a typical architectural designer has about an ecological environment. How can one set up or achieve an ecological goal without challenging the cultural conceptions about the "nature" that explains the environmental predicament we are in today?

A Dead Metaphor: Changing Nature Aesthetics

Traditional aesthetics about nature have contributed to the removal of deadwood from landscapes due to the myth of its perceived threat as a carrier of disease, fuel for forest fires, and its inherent messiness indicating poor management.²² Overcoming these myths will require a more studied understanding of the term "nature" and what the role of both a designer and occupant is.

Investigating a complex understanding of nature as ecological designers is crucial so as not to presuppose meanings that are implied by culture. The landscape historian John Dixon Hunt offers a classical understanding about the different forms of nature and suggests a historical precedent as to the way to proceed. He explains historical understandings through the "three natures," where the first two are described by a Roman writer Cicero and the third is credited to two Italian humanists named Bartolomeo Taegio (1559) and Jacopo Bonfadio (1541).²³ First nature is about the "natural world," "unmediated nature" or what we might call "wild" or "untouched" wilderness. The second is the "the cultural landscape: agriculture, urban developments, roads, bridges, ports, and other infrastructure."24 The third is in between the first and second and is characterized by the role of the garden:

"...in a scale or hierarchy of human intervention into the physical world: gardens become more sophisticated, more deliberate, and more complex in their mixture of culture and nature than agricultural land..."²⁵

Nature as a "garden" or an idealized human construct changes the source of authority. The historian William Cronon also offers an alternative understanding of traditional nature; from one that is sacred and independent of human creation to a radical notion that nature is "quite profoundly a human creation."²⁶ Cronon describes terms like "wilderness" and "nature" as follows,

"As we gaze into the mirror (wilderness) holds up for us, we too easily imagine that what we behold is Nature when in fact we see the reflection of our own unexamined longings and desires."²⁷

Nature that is in the image of human ideals is relatively easy to design for, but a nature of disequilibrium is unpredictable and raises the importance of redundancy in design rather than efficiency. The historian Donald Worster describes the new chaotic understanding of nature as a "landscape of patches" where "stiches in that quilt never hold for long."²⁸ Practices like the field of ecological restoration are consumed by arguments about which kind and at what point of nature to restore to.²⁹ Contributing to an ecological argument will mean going beyond a simple or assumed understanding of nature to one that offers contributions that are sympathetic to the struggles of this debate.

Emphasis

Can the organic metaphor convey a clear ecological emphasis for design?

Organic metaphors rely on concepts like emergence, which lead to primarily inward looking solutions. Figurative applications alone provide little ecological justification between building and organism. A literal application could codify a purpose and reason for the using a dead metaphor for ecological design.

Living Metaphor: Inward Emphasis

Buildings play an intermediate role between two subjects, human who consume and a contextual world containing the environmental issues. The architectural historian Paul Emmons describes an organic metaphor he calls the "body-building-cosmos" metaphor to describe the historical architectural emergence of bubble diagrams.³⁰ A building as mediator emphasizes a focus on the object to answer questions. A search for a purpose outside of a human conception, like a building, is a shared hope that is somewhat veiled, but is also an important value of an organic metaphor. An eighteenth century writer and biologist Johann Wolfgang von Goethe points out an advantage to the term "morphology," which he is credited with coining, looks to nature independently in order to find a purpose of 'a larger concept of nature than of himself.'31 An organic design can endeavor to look to an organic object to reveal a discovery about a natural world, which helps to prevent regurgitating familiar ideals, but this is different from looking inwardly at an object, like a machine, to supply ecological solutions.

The modern propensity to perceive the building as machine has influenced a transition to the ecological movement where the machine metaphor still pervades ecological design with strategies like the *Living Machines* and Emmon's refers to modern use of functional networks inspired by biology³² The architectural historian Kate Nesbitt explains,

"Modern architecture embraced the machine analogy instead of the organic analogy. Although machines are often designed on the basis of natural systems, their use a formal model prevented architecture from referring directly to nature. This is problematic because despite technological advances, symbolizing man's position within the natural world remains one of architecture's roles."³³

"STRONG" DEADWOOD METAPHOR DIAGRAM



Figure 1. Strong Deadwood Metaphor Diagram

The U.S. environmental movement that emerged from the sixties and seventies may be identified as an important genesis that stand apart as a separate movement, however it largely folded into it the more influential machine paradigm. Buildings perceived as machines may not necessarily be wrong, but it does represent an inward and indirect focus that relies on the building for solutions. A living metaphor helps to mask an indirect application and overstates the literal capabilities a building-object actually embodies.

LBC provides machine examples like a flower receiving all of its "energy from the sun," and so it follows that if a building capturing all, or at least most, of the consumed energy onsite would satisfy ecological ends.³⁴ Another example states that, "like buildings, (flowers) are literally and figuratively rooted in place, able to draw resources only from the square inches of earth and sky that they inhabit."³⁵ In both examples the actual building conditions of each seem too disparate from the actual flower conditions to make any true literal connections, but they do convey a literal mechanistic quality that makes a figurative application possible. Who performs them is not central to the explanation.

Dead Metaphor: A Strong Metaphor

A deadwood metaphor provides a direct and liter-

al ecological relevance for an architectural condition because architects are the human woodpeckers, transforming deadwood into shelter. A strong case for a literal association comes from forest research revealing that U.S. building construction consumed a majority, sixty-seven percent, or 47.7 billion board feet of lumber, of total timber usage in 2006.³⁶ Bringing together the two kinds of phenomenal use of deadwood and lumber is one association that a metaphor can help to creatively repurpose buildings in the landscape.

The influential philosopher Max Black describes a "strong" metaphor to have the qualities that are both "emphatic" and "resonant" or "literal" and "figurative," respectively. The emphatic quality "is intended to be dwelt upon for the sake of the their unstated implications.... (and) whose occurrence in the literal frame invests the utterance with metaphorical force."³⁷ The resonant quality "prove(s) rich in background implications.... (and) support a high degree of implicative elaboration."³⁸ Figure 1 is a diagram interpreting Black's "strong metaphor" to help visualize the conceptual structure of a deadwood metaphor.

A deadwood metaphor has much conflicting and agreeable figurative and literal juxtapositions that should amply supply Kulper's standard for "metaphorical tension" and Ricoeur's "new reality." A direct literal connection between buildings and deadwood supports a designer's creative opportunities while maintaining ecological relevance. Black writes that emphatic quality requires that "producers need the receiver's (designer utilizing a deadwood metaphor) cooperation in perceiving what lies behind the words used."³⁹ A designer cooperates by searching for other literal benefits of deadwood to then creatively interpret for building design.

If for a living metaphor the process of emergence and growth are central to its grounding, for a dead metaphor, like deadwood, the central process is decomposition, which provides an alternative way to emphasize an object that embraces a disequilibrium state of death. A building that is in decay brings focus on an object, but it does more to reveal the many other external entities and processes that are involved to catalyze decomposition. The decay process is dependent on many contextual factors like, "tree species and cause of death, its condition prior to death, the decay of organisms present, its location, and site conditions."40 A piece of deadwood is surrounded by complex changes that influence its transformation. In ecology, succession is used to describe a "certain pattern, a direction, (imposed) on ecosystems."41 At different successional periods, the organisms that utilize a piece of deadwood, like a snag (a standing dead tree), may treat it differently.

"Bluebirds and house wrens will use cavities in a snag that occurs in the grass-forb stage or shrubseedling stage and will not ordinarily use the same snag if it is surrounded by more advanced successional stages. Pileated woodpecker, however, will nest in a snag surrounded by trees but trends to avoid nesting in snags located in earlier successional stages.⁴²

In other words a designer might concern himself with subject of building decay, but its strong link to the climatic and inhabitants roles also contribute to a decentralized understanding about the object in its place. By associating contextual factors to the referent object the emphasis is less ascension toward a perfected state or an autonomous machine, but an embrace to rely on the dynamic conditions the object is inevitably is a part of.

Function

Can the organic metaphor convey a direct ecological function for design? Finally in this stage of function a literal application begins to bridge the many purposeful connections that a dead metaphor provides. For deadwood and architecture this means a *grounded* source of inspiration that bridge guiding solutions to mimic more closely, if not actually, the ecological functions.

Living Metaphor: Indirect Functional Solutions

A living metaphor primarily reasons a figurative analogy based on an ecological world founded upon equilibrium. It is tightly integrated with religious ideals and aesthetic theories about the sublime and the picturesque and offers little difference from other socially constructed understandings. Therefore, the kinds of functions extracted from this familiar-nature metaphor are those that will inevitably re-emphasize balance and perfected states. Although a living metaphor may provide some answers, they do not share a passion for provocative and drastic changes that represent today's ecological imperative.

Living metaphors offer mundane comparisons like that "flowers are also miniature ecosystems, supporting and sheltering microorganisms and insects like our buildings do for us."⁴³ Or that building design like a flower could "open and close in response to changing conditions, such as the availability of sunlight."⁴⁴ Morpho-ecologists take the living metaphor and tries to flee from the banal by claiming an extreme response to build buildings that are literally alive.

"If the biological paradigm for architectural design outlined (through biochemistry) is expanded, the consequence may be a very literal understanding of the design product as synthetically alive and embedded within generative ecological relations."⁴⁵

Finally, a theorist and author of the Pattern Language Christopher Alexander is compelled to radically re-order an entire world to fit his ideal of nature by redefining "stones...concrete, (and ocean) waves" as having a "degree of life."⁴⁶ The good intentions of these authors do not supersede a nonsequiterian comparison that presumes an ecological solution by default.

Dead Metaphor: Deadwood's Many Roles

Emmons explains that the human-building-cosmos metaphor refutes an older paradigm of nature – one that believed in the linear and hierarchical *Great Chain of Being* – and was thought to be more "faithful" to an emerging understanding of nature at the time.⁴⁷ It was nature that would lead to an interconnected web balanced in equilibrium. Now a new nature of disequilibrium is presented and has an opportunity to inspire designers with fresh ecological and functional comparisons that are foreign and challenging. The following is a brief list of the ecological functions of deadwood that might inspire a designer.

Flow Regimes: Scientists are discovering that it is "critical" to maintain, or in many cases to recreate, the "natural dynamic character" of water systems for ecological integrity, ecosystem function, and native biodiversity.⁴⁸ Deadwood is an essential element that influences river morphology, channel and floodplain morphology and is known to "create new, high quality habitats" by combining with available sediment and other transportable materials.⁴⁹

Nutrient Cycling: Deadwood can supply many nutrients for the new tree sapling. Some of these can include water and nitrogen, which are necessary for the new sapling.⁵⁰ Another interesting phenomenon as part of nutrient cycling is that the location of a new tree is strongly influenced by the location of the dead tree, which it benefits from as a food source.

 $\rm CO_2$ Vessel: Deadwood removes "massive amounts" of carbon from the environment and, although they will eventually release it, "they will do so exceedingly slowly," and act as "giant reservoirs" in the meantime. $^{\rm 51}$

Disaster Benefits: Deadwood is adapted for disaster situations, – scientifically characterized as disturbance – which might include, "natural or man made fires, disease, logging, and chemicals."⁵² For example, a fire can "improve" the longevity of a piece of deadwood, changing the rate of decay by "charring the exterior wood surface," which protects the wood inside.⁵³ It has the ability to store up to two-hundred plus percent of moisture and can help seedlings survive and protect fungi in a disturbance regime.⁵⁴

Complex Habitats: A piece of deadwood, like a log, provides a rich variety of habitats for an array of different species. For example, a top of a downed log can provide "elevated areas used as look outs and feeding sites," and "the spaces between loose bark and wood are used as hiding and thermal cover by invertebrates and small vertebrates, such as the Pacific treefrog."⁵⁵ Deadwood is doing more than just decomposing, but provides a multitude of uses for the surrounding species. For some it is food and for others it is protection and shelter.

CONCLUSION

The topics of definition, emphasis and function reveal some of the inconsistencies of today's ecological applications as well as the limits of a living metaphor. A proposition for a dead metaphor attempts to reconcile these issues by appropriating a more complex object-context emphasis, one that looks to the process of decomposition as beneficial and necessary. Transforming the current aesthetic is based on a necessary need to make interdisciplinary investigations through fields like forest ecology, environmental philosophy and landscape history and many others. A metaphor for architecture that itself is inspired by its academic context seems appropriately aligned with its intended use.

ENDNOTES

The term "ecological design" for this paper 1 references a broad strategy in architectural design to address an ecological imperative, and is commonly characterized by terms like "sustainable," "green" or "regenerative." Notable designers like Sim Van der Ryn defines ecological design as "any form of design that minimizes environmentally destructive impacts by integrating itself with living processes." Sim Van der Ryn and Stuart Cowan, Ecological Design, 10th anniversary ed. (Washington, DC: Island Press, 2007), 33. Definitions like these have translated into influential prescriptive programs like those set forth by United States Green Building Council's LEED program and the Cascadia Green Building Council's Living Building Challenge (LBC). The popularity of these strategies seem to represent a singular ecological design ethos, - giving strong weight to the issue of energy and material waste - however there are many other applications with contradictory aims and methods. Simon Guy and Graham Farmer, "Reinterpreting Sustainable Architecture: The Place of Technology," Journal of Architectural Education 54(2001). Simon Guy and Graham Farmer caution the search to find a singular construct and enlarge the context by "adopting a social constructivist perspective." Therefore, broader agreeable concepts like an organic metaphor presents flexibilities that can help to bridge and channel shared ecological interpretations.

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4 Vittoria Di Palma, "Architecture and the Organic Metaphor," ibid.: 390.

5 Referenced from Paul Emmons, "Embodying Networks: Bubble Diagrams and the Image of Modern Organicism," ibid.: 450. From Walter Gropius, "Recommendations for the Founding of an Educational Institution as an Artistic Counseling Service for Industry, the Trades, and the Crafts." (1916).

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United States Environmental Protection 11 Agency, "Municipal Solid Waste in the United States: 2007 Facts and Figures," (2007). 12 This usage of the term "dead metaphor" should

not be confused with the literary term that means, "a word or phrase that has lost its metaphoric force through common usage;" in this case it is meant to do quite the opposite. It should also be clarified that a dead metaphor is an attempt to begin rationalizing nature's "paradox" of death with the human aesthetic to prevent it and therefore presents a complimentary description rather than an opposing force to a living one.

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16 Frank Lloyd Wright, The Living City (New York,: Bramhall House, 1958), 23, 26, 27, 87, 142.

17 ILBI International Living Building Institute and Jason F. McLennan, The Living Building Challenge Ver. 2.0: A Visionary Path to a Restorative Future 2.0 ed. (International Living Building Institute, 2009).

18 Jason Mclennan, "Living Buildings," in Sustainable Architecture White Papers, ed. David E. Brown, et al. (New York, NY: Earth Pledge Foundation, 2000), 26-27.

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23 John Dixon Hunt, Greater Perfections : The Practice of Garden Theory, Penn Studies in Landscape Architecture. (Philadelphia: University of Pennsylvania Press, 2000), 32-34.

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38 Ibid., 26-27.

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40 Jack W. Thomas et al., "Snags," in Wildlife Habitats in Managed Forests : The Blue Mountains of Oregon and Washington, ed. J. Louise Parker, et al. (Washington, D.C.: Wildlife Management Institute : U.S. Dept. of Interior For sale by the Supt. of Docs., U.S. G.P.O., 1979), 65.

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- 54 Ibid., 82; Perry, Forest Ecosystems, 158.
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