

Regenerative Design: Sustainable Design's Coming Revolution

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Over the last decade the concept of sustainability within design and construction has moved from virtual invisibility to an industry-wide dialogue in which the questions are more and more how to achieve it, not whether. This shift has produced a proliferation of terms applied to describe and advocate different sustainability oriented design and development methodologies and philosophies. A scan of the literature yields a range of descriptors: sustainable, green, whole systems, integrative, ecological and regenerative. While this proliferation reflects the breadth of activity, it also makes it harder to see how the whole field is evolving and therefore where to position oneself within it.

One of these terms, Regenerative Design is the proposed design approach that best reflects the thinking that will shape the next phase of development within the field of sustainable design. The full significance of this approach to sustainable design is best grasped however in the context of its relationship to how the field as a whole is evolving.

The trajectory of this evolution is based on seeing the pattern behind the field's ongoing shifts in thinking and practices. By seeing it as a trajectory, we can better prepare ourselves and our firms for future viability within this growing and essential field. Used as a map, it can assist designers in marking their current position and charting a developmental path that integrates their unique skills and aspirations with the emerging understanding of what successful sustainable design entails. Five design approaches depict the trajectory. While Regenerative Design introduces just the added dimensions that distinguish it from other design approaches, it should be understood as encompassing all of the other four.

Design in the Industrial Age.“Readily manageable uniformity” was how John Lyle described the pattern that shaped design and construction prior to the rise of sustainability concerns. This pattern, fed by the assumption of unlimited material resources, emphasized maximum efficiency in use of human resources and created distinctiveness primarily by surface aesthetic features.

Design decisions were increasingly severed from their ecological consequences and designers were seen, in Sym Van der Ryn’s words, “as either artists or technicians, each role insulated...from everyday life.” The destructive impacts to the planet and to the human spirit have been widely studied and discussed—setting the stage for the current interest in sustainability.

Evolution and Sustainable Design. The overall pattern of biological evolution is almost the exact opposite of the above, moving over millennia toward increasingly complex networks of unique ecosystems, each adapted for reciprocal existence within local conditions. If we view sustainability oriented design as delineating a new design era, the pattern it seeks to express is much more akin to that of nature. It continually expands the levels of wholeness it can effectively encompass—moving from elements to systems to wholes to ecologies or networks of wholes and beyond.

This evolution in design thinking arises whenever we encounter the limits of a level of wholeness to deliver sustainability. Encountering these limits sets in motion the development of the next level, each level encompassing more complex, varied and rich interconnections and dynamics and each offering greater potential for sustainability. From the designer’s standpoint, each extension to a more comprehensive whole raises the bar for defining a “successful” project and, concomitantly, the definition of design intelligence.

In building design we can trace this pattern in the way Green Building’s focus on sustainable building components evolved to take into account the systems that governed flows within a building—energy, waste, etc. Integrative Design then refocused on the building as a whole, weaving elements and systems into a richer, more complex whole. Meanwhile the same pattern was unfolding in design fields related to the environment and human communities, but until recently these three aspects of design remained relatively isolated.

As pioneers like Bill Reed and Bob Berkebile began to push against the limits of Integrative Design, it became apparent that the building and its site—formerly dealt with as two essentially separate entities—needed to be understood as a comprehensive whole to better realize a design’s sustainability potential. Ecological Design was the natural succession, for the first time integrating buildings, land, and community within the context of ecological science.

Van der Ryn defined Ecological Design as “any form of design that minimize(s) environmentally destructive impacts by integrating itself with living processes.” Ecological designs, like nature, grow from and reflect the natural systems of a particular place. As David Ord said, their standard is “neither efficiency nor productivity, but health, beginning with that of the soil and extending upward through plants, animals, and people.”

The limits of Ecological Design that gave rise to Regenerative Design are found in Van der Ryn’s implicit acceptance that this approach only slows the rate of destruction. As designers in the field are increasingly prepared to acknowledge, our design *practices* not only need to do no harm, they must *initiate* regenerative processes to replace the degeneration resulting from past practices.

Regenerative Design, which is still creating itself, introduces into Ecological Design at least two additional streams—the Science or Art of Place, and the science of living systems. Regeneration is far more than simple renewal or restoration. Definitions of the word “regenerate” include three key ideas: a radical change for the better; creation of a new spirit; returning energy to the source. It calls for the integration of aspects of ourselves as designers and as human beings—those of spirit and meaning—that in this era are too often left outside the studio door. It demands that we reunite the art and science of design because we cannot succeed at sustainability if we fail to acknowledge human aspiration and will as the ultimate sustaining source of our activities.

It has been well documented that the scale of change required over the next few decades requires profound changes in how we design, construct and inhabit our environments. We will not sustain the will needed to make and maintain these changes, day after day, without evoking the spirit of caring that comes from a deep connection to place.

Abraham Heschel wrote, we “will not perish for want of information; but only for want of appreciation. . . what we lack is not a will to believe but a will to wonder.” Throughout history, truly great architecture has always evoked this spirit of appreciation and connection. The challenge for designers now is to design ecologically sustainable buildings, landscapes and communities as integrated wholes that reconnect us to a living and beautiful world and awaken an appreciation of what is life-giving.

At the same time that the Art of Place is drawing attention to the inspiriting (or dispiriting) effect of our surroundings, the science of living systems is revealing a world that is not random but purposeful, and, says biologist Elisabet Sahtouris, “an understanding of nature as alive, self-organizing, intelligent, conscious or sentient and participatory at all levels.”

In an intelligent and purposeful world, the Regenerative Designer asks not just how do

we harvest wood sustainably, but how do we live with the forest in a way that enables the forest to evolve. Regenerative Design is thus reframing the purpose of our role as designers and even what it means to be human.

Working from a living systems perspective shifts the focus of everyone's attention from simply solving today's problems to working to realize the upper limits of creative potential a healthy system is capable of manifesting. This focus builds from an understanding of the unique nature of a community and of the inter-reliance of human and natural systems that create that uniqueness. It can awaken a deep and caring sense of place and thus become the source of a new community spirit that reconciles longstanding deep divisions as people work together to create an increasing vitality, viability and capacity for evolution of the whole.

A Regenerative Development in Progress: Willow Springs in Pinal County Arizona, a new community in the planning stages, begins its vision statement with the commitment to "Increase the vitality of the land and support its continuing evolution."

"As Willow Springs takes shape," the developer notes "its patterns of development and the ways of life and livelihood of its people will be improved to simultaneously enhance the health of local communities as well as the natural environment." By declaring its ethics openly and making specific commitments to environmental and community regeneration, this project even at this early stage has already gained significant support among local citizens known for their aggressive opposition to any development in the area.

What's Needed for Regenerative Design Work: First, Regenerative Design—indeed any of the truly sustainability oriented design approaches, always takes place in the context of a collaborative interdisciplinary process. The ability to sustain effective teamwork among diverse disciplines and perspectives is critical. Second, the need to understand the complex dynamics of multiple interacting systems and see the underlying patterns that are structuring them requires the ability to think systemically, to see energy flows not just objects, and discern and interpret patterns. Third, it requires courage and creativity—drawing on what has worked but creating it anew to fit a specific place. Formulaic designs are the enemy of regeneration, but it is never easy to let go of the familiar. Fourth, Regenerative Design is grounded in the faith that the world is not random but purposeful, and in the belief that, as a part of a larger order, we humans must act in harmony with those larger patterns.

A Growing Market: While practicing Regenerative Design has its own internal rewards (new creativity; more meaningful work, etc.), it is gratifying to note well-documented and growing external benefits as well for practitioners of sustainable design in general and Regenerative Design in particular.

For its book, *Green Development*, Rocky Mountain Institute collected extensive data showing a growing market for green developments as well as documenting in case studies the financial benefits (construction, operations and market advantage) that accrue to the developer as well as the inhabitants of such developments. One of the most powerful attractions to developers that we have found in our work is its ability to create community support at a time when more and more communities are organizing to limit or prevent new development.

The EPA effort to fund the ecological and social revitalization of river communities is an example of numerous local, state and national programs being developed to support effective and comprehensive sustainable design efforts.