

Regenerative Development

New approach to reversing ecological degradation offers opportunity for developers and builders

By Ben Haggard, Bill Reed, and Pamela Mang

A sea change is happening in the field of green development. More and more designers and builders are realizing that, in spite of numerous technological advances and growing market demand, solutions to the real problems of development continue to elude us. Today's green projects conserve energy, reduce wastes, and improve the quality of life. Yet these improvements only slow the degradation of planetary ecosystems. In a world of accelerating deterioration to nature's infrastructure and growing pressures on dwindling resources, slowing degradation will not be enough. Development, with its high impacts on the planet, needs to become a source of ecological health.

How can the earth be healed through development? Through a comprehensive approach that starts from a radically different perspective—an approach called “regenerative development.”

An engine for evolutionary change

Regenerative development conceptualizes projects as engines of positive or evolutionary change for the systems into which they are built. Rather than looking at how to minimize the impact on wildlife habitat and corridors, for example, regenerative designs look at how to increase habitat quality. Similarly, regenerative development takes into account the importance of delivering new capability into the communities that surround a project. And it recognizes the need to integrate the economic activities associated with development into the ongoing economic health and stability of local communities. When these larger concerns are integrated from the outset, they can lead to increasingly innovative, holistic, and successful projects.

Learning how to apply a regenerative approach begins not with a change of techniques but rather with a change of mind—a new way of thinking about how we plan, design, construct, and operate our built environment. Regenerative development recognizes that the site into which a building is embedded is a complex and dynamic system of systems. Each site has a distinctive character arising from its underlying landform and the climatic, ecological, historical, and social

forces that have shaped it. Taken together, these influences give a site its sense of place and a way of assessing its inherent potential. Understanding this dynamic picture enables us to match human activities and aspirations to the land, integrating what we build into the living fabric of a site to create a successful marriage of built and natural systems.

Concepts behind regenerative development

To illustrate, here are four concepts and examples taken from the work of Regenesi Group, a pioneer in the field of regenerative development.

1. ***Flip Your Paradigm*** – Regenerative development derives creative power from a fundamental shift of focus, a flipping of paradigms. Rather than seeing a site or project as a collection of things (slopes, drainages, roads, buildings, etc.), a regenerative designer cultivates the ability to see them as energy systems—webs of interconnected dynamic processes continually structuring and restructuring the site.

For example, at the Hubbell Trading Post in northern Arizona, Regenesi was asked to create a design for redeveloping the historic farm. The original National Park Service program called for basic infrastructure as a basis for recruiting a local farmer to lease the farm. However, given both the ecological context (the harsh climate making conventional farming marginal) and the cultural context (a Native American community with agricultural traditions incompatible with the National Park Service model), it became quickly apparent that the farm would need to be re-imagined.

The result was a farm conceived as a potentiator of existing community initiatives, including a program for growing traditional Navajo foods to combat diabetes, a 4H program for working with youth to bring back the endangered variety of sheep traditionally raised by the Navajo, and programs to revitalize the shepherding way of life. The farm is organized to grow perennial pasture, with sheep grazing used as a tool for managing and improving soils. Thus, the farm becomes a learning center for teaching how to engage in traditional lifeways while using new methods that heal local grasslands rather than depleting them. Arriving at this result required seeing beyond the collection of “things” that are usually contained in a farm design.

2. ***Go to the Core*** – Being able to discern the core of a given place is essential to engaging in regeneration. The core organizes all of the dynamics that make up a place, giving it a recognizable character and nature. Without this understanding, the complexities of a site can

overwhelm us. Failure to take core processes into account makes any development susceptible to ongoing problems, and even failure. On the other hand, organizing the patterns of development to align with and enhance these processes creates the basis for a truly successful and mutually beneficial relationship between people and place.

Currently, Regeneration is working with the Pojoaque Tribe of northern New Mexico to develop a plan for regenerating the forests that line the banks of the Pojoaque River. Assessment of the land revealed that the health of the forest was in decline because the health of the river was in decline. And the health of the river was compromised in part because the traditional relationship of reverence for the river had died out in many of the communities along its length. The result was a broad, dried-up sandy stream bed used by local off-road enthusiasts as a recreational area. To restore the forest would require restoring the hydrology of the stream, but efforts to do this would be quickly undermined by off-road vehicle use.

Core to the project was building strong local advocacy, particularly among youth, for the health of the river. Currently, a Youth Conservation Corps team, with adult supervision, is cutting invasive tree species and fashioning the trunks into poles. The poles are then set into the stream bed to create baffles and induce meandering. The newly defined streambanks become ideal sites for recruitment of new cottonwood and willow seedlings. Most important, the sense of pride and of making a meaningful contribution is palpable among participating young people.

3. *Learn from the Master* – Nature is the master developer, continuously at work developing a site in harmony with its unique character to create optimum conditions for generating and sustaining life. For example, through understanding how nature manages and processes water as a source of life, we gain insight into how to organize our human developments around water to achieve the same purpose.

In Loreto Bay, on the coast of Baja, Mexico, a major development project is under way. Initiated decades ago by the Mexican government, and now being completed by a Canadian-American developer, the project was organized around the principles of new urbanism and aspired to be exemplary in its ecological sensitivity. The initial government planning, however, failed to adequately understand the intrinsic dynamics of the landscape, making it vulnerable to tidal surge and further decreasing the available water supply.

Close study revealed that, until it had been disrupted, a significant portion of the site had organized itself as an estuary—a membrane maintained by mangroves and other species where

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the meeting of land and water is buffered and converted into an extraordinarily rich nursery for fish and countless other species. In addition, it was discovered that the upland area was originally a landscape that supported a diversity of more temperate plant life. Once these underlying patterns were understood, it became possible for the developer to redesign the community to integrate the critical function of water regeneration and estuarine systems into every aspect of the urban footprint, landscaping, and overall land management. Now, the project will actually contribute to the diversity and productivity of both the terrestrial and marine environment (the primary source of its value to the market it seeks to serve) while greatly reducing its vulnerability.

4. ***Build to Place, Not Formula*** – Infrastructure is usually a product of engineering formulas adapted to specific site conditions. In starting with formulas, however, we tend to miss creative opportunities to use natural infrastructure. Regenerative development starts from the belief that we can achieve continuous improvement of living conditions on Earth by developing in harmony with nature. Regenerative development uses the particularities of a given place as parameters for determining the kind of engineering and design solutions that are appropriate.

At Three Canyons, a residential conservation development project located adjacent to the small southern Arizona town of Patagonia, the developers have a background in using ecological strategies for managing ranches. So it has been second nature to engage in planning that is dictated by the site. Homes will be located on level ground at the foot of ridges, making construction both less expensive and less destructive while preserving ridgelines for hiking and animal corridors. Roads and driveways are laid out in relationship to contour and drainages so that runoff water can be harvested and used to reverse erosion and grow trees. Reticulated water systems will deliver water not only to homes but also to small seeps where they can greatly increase the number and diversity of wildlife that the land can support. Waste water from the central village will be collected in a constructed wetlands to be biologically purified and used to irrigate orchards.

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Sustaining this way of working

Regeneration of land through development ultimately depends on the regeneration of spirit within those who have a stake in the development. In the end, we protect the things we really care about and are inspired by. Luckily, the process of regenerative development itself

both generates and demands creativity and deep engagement by all involved. By starting a development with a learning process about how one's land works as a living system, we lay the basis for reawakening the connection people experience between themselves and the place they inhabit. Thus even in the early stages of construction and development, the project galvanizes interest and support from neighbors, friends, subcontractors, and county officials. One of the hallmarks of a regenerative project is the buzz that surrounds it, as people find themselves inspired and stimulated by 1) freeing themselves from old mental models; 2) working from and to place rather than from formula; 3) going to the core or heart of what a project and a place are all about; 4) learning to appreciate Nature's genius; and, above all, 5) seeing themselves as playing a meaningful and significant role.

Ben Haggard, Bill Reed, and Pamela Mang all work with Regenesi Group, a consultancy that helps developers create positive change through successfully integrating their projects with place. For more information, please visit www.regenesigroup.com.