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## Urban form gets its roots from nature

***The Puget Sound area can draw on a south Florida project's regional watershed design program to mold future development.***

By **DANIEL WILLIAMS, FAIA**

Daniel Williams ARCHITECT, Seattle, Washington

The future — it's not working! Sprawl and other forms of pollution are the result of millions of small, individual decisions that negatively impact urban neighborhoods, agricultural communities and the region's ecological health.

Within the next decade, the challenge for planning will be on the regional scale and these plans will be essential to providing a higher quality of life, energy efficiency, resource protection, pollution reduction and lower taxes.

Regional resources drive the local economy — think locally, act regionally.

Bioregional forces create regional form. The form and function of a place is a result of many thousands of years of biological and natural forces. These forces are: wind, sun, soil, slope, geo-hydrology and precipitation.

In nature, all form and change-in-form are a result of these forces and the pattern responses to them. All communities of plants and animals work with those forces to supply their daily needs.

Energies and forces such as sunlight, gravity, hydrological cycles, tides, storms, volcanoes, earthquakes and windstorms have created, over a long period of time, the way things are. Some pattern response examples are: water flow creating the Grand Canyon, sunlight — photosynthesis and biomes, wind — sand dunes, tectonics — mountains, volcanoes — new land forms, and so on. The forms and patterns of communities, farms, cities, rock formations, canyons, cars and feet — all are responses to energy flow — energy creates form.

When the energy used is of a non-renewable source, such as fossil fuels or the overuse of a renewable energy such as water for irrigation of deserts or hydroelectric power, the existing form (location, size, pattern and economy) is not a long-term sustainable pattern.

The American Dream?

The reliance on fossil fuels and the over-use of renewable resources have created a series of unsustainable land uses, yet these patterns are revered as "The American Dream." As the reality of accomplishing this dream becomes less affordable, due to costs of energy and environmental degradation, the method to achieve it will change.

One example of a changed method starts by re-employing the natural energies and the reuse of their free work. The value in studying, understanding and applying a biological regionalism — bioregionalism — is that the derived form and pattern are always related to the energy flows and environmental conditions of the place. The pattern is place-based.

Community design and architectural form, up until the advent of fossil fuel-driven forced mechanical space conditioning and millions of miles of roads, was directly connected to comfort and protection by using the energy forces and resources of the region. Some of the most powerful urban and architectural form seen in historic settlements was derived from this common sense approach to incorporating regional forces. These forces were well understood — the architect and builder would not build without proper orientation to breezes or natural light. Even the community squares were warmed by the sunlight in winter and cooled by the shade from the deciduous trees in the summer.

A new agenda:

Regional design

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***The design elements of a self-organized 'smart growth' system incorporate the roles played by water, solar, soil and natural forces.***

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Expanding the scale of problem solving to regional design is an essential step towards sustainability. Understanding the bioregion — all biological flows within a region — is a critical scale. All comprehensive planning starts with the recognition of boundaries. The issue has always been what makes up the boundaries and why are they the logical and measured parameters for study.

The answer is quite simple when it comes to watersheds — a watershed is the area defined by contours where the precipitation falling on the surface is distributed within the area by gravity. An economic value in the watershed is that gravity — free work — is distributing water without taxes. The design elements of a self-organized system incorporate the roles played by water, solar, soil and natural forces.

A south Florida project illustrates the integration of bioregional resources in a manner that establishes both a plan and vision of how a neighborhood, community or region can increase in quality of life, while absorbing additional population and reducing taxes. These examples are initiated by the premise of recharging the regional water system to provide a sustainable potable and natural system water supply, but then also integrate with transit-oriented design standards, smart growth principles, agricultural preservation and ecological protection all while reducing taxes.

The south Florida vision is a compelling one. Located within the coastal corridor, there would be a series of distinct and diverse communities sharing, among other things, commuter rail and a water supply system of regional greenways and blue ways. Within the region, every community would grow “smarter” — becoming more livable/sustainable through integration of transit and alternatives to automobiles. Together, south Floridians would share the combined responsibility for protecting the “future of the future” for the children of their grandchildren — and beyond. This smart growth alternative analyzes, defines, designs and illustrates a future of economic, social and ecologic well-being. This vision will develop through urban and regional design — a sustainable urban, agricultural and natural systems plan within a regional and urban vision. The project size is 120 lineal miles and varies in width from 5 to 20 miles. It encompasses 70 municipalities, 4.5 million people, two railroads and five counties. As a cost versus price comparison, this plan will be accomplished at less of a price than typical technological solutions — which would include pumping and desalinization — and at a much lower “cost” to the whole system.

This process of planning and design will solve the immediate problems of flooding and water supply while providing strong urban and regional edges, preservation of agriculture, and regional natural resource protection. And the savings are real:

- 67,725 acres of developable land
- 13,887 acres of fragile environmental lands
- 52,856 acres of prime farmland
- \$62 million in state road costs
- 108 lane miles of state roads
- \$ 1.54 billion in local road costs
- 4,221 lane-miles of local roads
- \$157 million in water capital costs
- \$135.6 million in sewer capital costs
- An average of \$ 24.25 million per year in public sector service costs.

This process, while providing for a sustainable water storage, also plans for a compatible environmental/economic fit and a considerably higher quality of life. It can be a blue print for a “green plan” for the Seattle region — a plan that maximizes winners by solving three-dimensional problems simultaneously. All critical issues of today are connected to one another. Salmon, transportation, congestion, water supply, stormwater, traffic, neighborhood connections, economic vitality, jobs and yes taxes are positively impacted by the strong comprehensive planning of the whole region — but it is not being done.

A state-wide planning initiative that looks at the issues of today but considers the next hundred years is needed if the region is to find a sustainable path. A multi-county plan based on the watershed principles illustrated here that assures all neighborhoods and people (critters too) a remarkable life while providing and preserving a desirable future for our children's children is also essential.

To leave it to chance and political whim is refusing to see the results that approach has brought and letting go of the opportunity to shape ... a future desired

***Daniel Williams*** is a practicing architect and urban and regional planner in Seattle. He will be the national chair for the American Institute of Architect's Committee on the Environment in 2003 and won the AIA national Honor Award in Urban and Regional Design in 1999 and 2000.