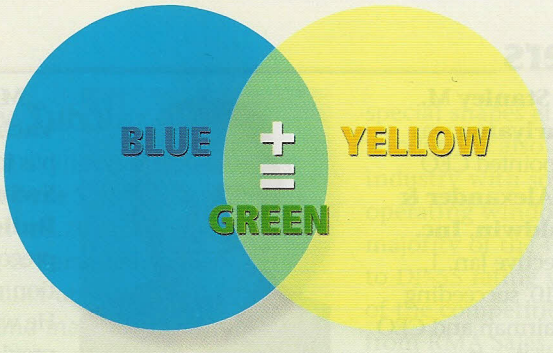
Harvesting Water: The Fresh Take



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The title of this article matches a seminar presented by Hawaii-based Lauren Carter Roth Venu of Roth Ecological Design International, LLC at the recent Pacific Building Trade Expo. Roth Venu is a protégé of Vermont professor and "Living (natural bio-phys-chem-istry systems) Technologies TM" prototypical inventor Dr. John Todd, who is the recipient of the first Buckminster Fuller Challenge Award.

Roth Venu's ecological-technological-economically balanced display of flora and fauna in a model "Wetland Restorer™" at the Group 70 International Sustainable Design Center

Her first slide was captioned "Sustainability: The 'Blue' Edge," with conceptual references beyond the 'Blue Revolution' to a revitalized, less mechanized but more productive and efficient, agricultural 'Green Revolution' – that is primarily dependent on natural principles and domestically commercialized environmental systems. She creatively concluded her timely presentation with "blue + yellow = green" with a flashback reference to Earth: The Water Planet.

For decades, NASA and other international space agencies and related scientists have spent trillions of dollars searching for water, oil and other mineral resources within our "yellow" solar system and in astronomical deep black outer space, while 'Bucky' Fuller insisted that "Spaceship Earth" is the only real viable one that humanity has and therefore, we need to recycle more and waste less – as Nature clearly demonstrates.

Living Technologies TM

As man digressed from nomadic temporary land dwellings to more or less permanent structures in urbanized human settlements – that quite often exceed nature's carrying capacities and ecological footprints – mankind achieved certain human health, safety and welfare goals in civilized societies via legally codified city planning and architectural design standards and processes.

As wastewater Civil engineers historically progressed in ancient and modern times from designing open street-level Grecian sewers with crosswalk stepping stones to conversions of underground streams into masonry-lined unsanitary sewer tunnel transports creating plagues and fouling rivers and seas in and around Rome, Paris, London and Venice, etc. Therein lies the current realization: that municipally piped sanitary sewer lines conveying toxic waste to wastewater treatment plants (WWTP) with much too frequently diverted sewage spills and outfall pipes, that dump primary, secondary or tertiary treated hazardous chemical residues into our food-supplying oceans, ocean bays and streams … cannot continue indefinitely.

Professor Todd asserts, "Ecological design goes way beyond any other field of design. It taps deep into Nature's operating instructions. It provides a road map and a set of blueprints for the redesign of the infrastructures that sustain the human enterprise…" (BI Sept. '08)

Alternative Systems

Wherever possible and appropriate, the Technology Innovation Office (TIO) of the U.S. Environmental Protection Agency (EPA) has been promulgating the use of natural and constructed wetlands as well as certain species of mangrove lagoons, combined soils, trees and tree roots bioremediation and (blue + yellow = green) phytoremediation, as a viable alternative to less successful and more costly conventional WWTP systems.

However, U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) credit rating systems have not yet sufficiently recognized the magnitude of thoughtlessly flushing the toilet or using the garbage disposal in collectively discharging effluent off-site.

Decades ago, Frank Lloyd Wright's grandson, Los Angeles architect Eric Lloyd Wright exclaimed, "Water is more precious than oil." When we consider that less than half of the world's population of 6 billion people have access to potable water and further consider climate change, global warming, loss of Arctic and Antarctic ice as well as decreasing biodiversity, ecological design gains further prominence.

AIA Gold Medalist 'Bucky' Fuller, FAIA calculated that if a person were to hold a 4-foot chrome plated ball and breathe their hot air onto its surface, that is the only comparable quantity of precious water in Earth's biosphere that mankind and all other living organisms have to share!

Cutaway section of tree and tree roots structure used in bio and phytoremediation