

## THE SUSTAINABLE ECO-LITERATE ARCHITECT By Revathi Kamath

The architectural construct in my universe is the expression of an event in an ecological continuum.

Human patterns and forms in space can be characterized as harmonious, destructive, colonizing or evolutionary, in the context of nature and its dynamic repose as it continuously seeks equilibrium and sustains life purposefully.

As we witness the evolution of human culture and civilization through time, we can trace a movement towards equity and natural justice, continuously surfacing and expressing itself in human consciousness. I believe that the purpose of human culture is to accord dignity to all forms of life and to recognize the holistic nature of the environment and value its regenerative and self-organizing capabilities.

Architecture perforce assumes the characteristics of enhancing the harmony of the human ecological niches in the overall natural dynamic of the total ecological universe.

The equilibrium of resource base and resource consumption in human history from the times of the hunter-gatherer, shifting cultivator, nomadic pastoral and even the settled cultivator has been by and large sustained. At times, despite the phases of excessive destruction, the fluctuations in the balance have been within the self-healing capacities of the natural resource base. It is the phases of industry and fossil fuel based agriculture with a substantial intensification in the use and scale of the resource base, that have almost irreparably damaged the self-healing capacity of the natural systems that the human species is part of.

In short it is unsustainable as a paradigm for a living planet.

The material reality of the industrial or post-industrial consumer society in global economic space despite expanding its resource base is unable to equitably fulfill human needs globally. Ecological values may be part of human consciousness in contemporary times but the ecological hardware, tools and techniques are only at a nascent stage of evolution. " The prevalent system for the pursuit of daily life results in four categories of human beings- the 'biosphere people', of the developed world, who enjoy the produce of the entire biosphere, the 'omnivores', the 'ecosystem people' and the ecological refugees.

The heroic individual in that society vying for a larger share of the pie enhancing self-worth is seen as a human characteristic that is on the wane. Instead the ecologically conscious human collective is continuously eroding, through awareness, the almost invincible edifices of global consumer civilization in almost every corner of the planet.

The human civilization is now reestablishing its links with natural systems in an evolutionary progression. It is this process that architectural consciousness is beginning to recognize and express. A few architects are actively working towards the evolution of an ecological architectural vocabulary, to enable the human habitat to reestablish the quality of beauty and harmony.

Assuming that the socio-political and economic ideologies would be put in place by policies, laws, taxes and other necessary institutions and infrastructures, the individual who is mentally and

spiritually ecological is helplessly trapped and unable to effect any transformation in the material sphere. It is time for the eco-literate individual to assert themselves and their skills in all walks of life.

Some of the principles of ecology are interdependence, recycling, democracy, partnership, flexibility, diversity and as a consequence of all those- sustainability. "During more than three billion years of evolution, the planet's ecosystems have organized themselves in subtle and complex ways so as to maximize sustainability. This wisdom is the essence of eco-literacy." It is the eco-literate architect who can rebuild the human habitat sustainably.

Conceptualization of space and the order within, articulating and delineating a relationship with the boundaries and establishing larger forces encompassing the space need mathematical tools and intuitive abilities far removed from linear Cartesian systems and simplistic Euclidean geometries that are presently in use. The architectural mind needs to be aware of the mathematics of complexity and geometries of nature- Mandelbrot sets, Julia sets, Berkhoff's bagel, Koch curves, Buddhist and Hindu Manadas- the list is constantly growing. The immense beauty that is latent in the use of these conceptual tools needs to be appreciated and replace the simplistic dogmas of the "clean-lineists", the functional packaging of commercial space in boxes, the squares and rectangles on Vaastu and Feng-shui pandits, layouts of military camps and cantonments, imperial palaces, administrative centres and corporate parks.

Biomass based materials need to be the bulk of the built mass, laced with a minimum judicious use of non-renewable, non-biodegradable and fossil resources, such as metals, stone and plastics but ensuring that these are in a recyclable in a longer time frame. Materials that dissipate these resources into fragments, create wastes and toxins which pollute the air, earth and water during production, processing and disposing need to be discarded from an ecological space.

Solar energy in its many forms needs to be the prime energy source of human habitat- solar heating, cooking, photovoltaic cells, etc. Every building needs inevitably to absorb some energy but must produce energy as well. The architects and users need to take responsibility for streamlining energy consumptions and opting for a lifestyle that can regenerate clean water, create nutrients to replenish the soil and not produce waste that needs to be dumped. Dumped where? How?? That is the question.

Urban ecosystems need to be self conscious about occupying the forest. The two need to be symbiotic as never before. The human population is so vast and ever increasing and it is imperative that its habitat, whatever the scale, does not colonize the earth and the prime elements. There is no option but to be synchronous with natural systems and cycles.