

SUSTAINABILITY AND ARCHITECTURE

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9 solar houses in the desert Salme and Arie Rahamimoff 1988 - 1995*

Sustainability emerges as one of today's most meaningful ideas in Architecture and Planning. It is based on the understanding that our resources are limited and their reckless usage may lead to environmental and human catastrophe. This recklessness, painful as it is, stimulates research and invention and helps us shape our understanding of Architecture and its role for the future.

The energy crisis of the 70's reshaped building form. Building design became conscious of orientation, size of windows, shading, ventilation, insulation and important building technology. New materials, such as steel, glass and cement reshaped the volume and mass of our contemporary buildings. Indeed this energy crisis reshaped our attitude to modernity. Design elements such as pilotis, glass facades, and flatroofs were critically compared with other important objectives of the time, energy consumption, comfort and adaptation to regional affinities.

The great and renewed interest in the history of Architecture, particularly in connection with passive and low energy architecture, redefined our attitude towards the past and also gave new meaning to the future. If modernity is sometimes criticized as a one-dimensional movement towards a so called "better future", the energy crisis, the growing understanding of our limited resources and some major technological failures (on all continents) required a fresh look at our "Culture of Building".

I use the term "Culture of Building" because we indeed need broader concepts. We are not dealing merely with the art or technology of making buildings, we are also involved in the totality of the "human-nature" relationship. This relationship is needed at all scales.

In the 80's the Human-Environment dialogue occurred in all levels of design, regional, urban and building design scales. Three dominant understandings emerged:

1. Our resources are limited.
2. The impact of our deeds on nature may be irreversible.
3. We have a moral obligation for future generations.

These three understandings had an important impact on the "culture of building" in the 80's. Environment and ecology became important factors in National and International activities; the "Green Politics" in Europe, the "Environmental Consciousness" in the U.S. and Asia, the "Rio Declaration". All became pressing strategies of the decade.

Scarcity of resources became a global issue. In different parts of the world, scarcity takes on a different form as witnessed by the lack of food, water, fresh air, land and time. The deep sense of scarcity becomes "all prevailing". The fear of scarcity moved from the academy, the laboratory and the research institute, to the decision making centers of the nation, the region and the urban centers. The sense of scarcity redefines the Architectural Profession. The concept of "sustainability" emerged as the most relevant design issue of recent years and probably the most important concept for our profession this decade ... century ... millennium.

Sustainability embraces all scales of design, simultaneously. In a large region, for instance, a certain detail may be of crucial importance; i.e. the insulation code which effects the energy basis of a region or the run-off water management in a city, that affects the drainage system of a region. Sustainability uses the lessons from the past as vital factors to shape the future.

As we approach the end of the century, our profession is benefiting more from the past than it did in previous decades. It is neither a denial nor mimicry of the past, but an adaptation of historic lessons to contemporary conditions. We should hope that with careful design and thoughtful research and application, sustainability can furnish the sound "platform" of history as a meaningful guideline for the future.

Sustainability creates an important bridge between disciplinary and inter-disciplinary activities. The complexity of problems that lie ahead of us can only be dealt with by the synergetic effect of interdisciplinary collaboration. Another aspect concerning sustainability, is the "permanence of change". If we analyze the foci of interests and chain of events of the last decades, we can surely state that permanent change has dominated our profession. Changes as seen in the shifting interest of the profession in such design issues as: The solar collectors of the 60's, the zero energy building of the 70's, the search for bioclimatic cities, and the sense of region and spirit of place of the 80's.

Although we remember well Alexander Dumas saying "all generalizations are dangerous, including this one", we can still state that: "all these examples demonstrate the shifting "center of gravity" of our profession. I conclude with two more points on a critical review of sustainability and Architecture. One of the most interesting features of the Architecture of this century is the balance between two opposing trends, "Unity" and "Diversity". We are continuously in search of the universal principles and the unifying factors that direct the essential elements of our profession. At the same time, our profession is constantly searching for response and resonance. The search is for organic diversity, certainly not the idiosyncrasies of fashion or the dangers of artificial originality. Rather, we search for the diversity which responds to the local conditions and regional affinities. Within this context, sustainability can serve as conceptual "Archimedes Lever". Sustainability can mobilize real needs, it can utilize scarcity to create new forms of creativity that can apply to the rich and not so rich countries as scarcity becomes global.

Architecture is confronted by immense challenges; there is an urgent need to solve major problems such as housing for large groups of people, preserving the quality of our environment, creating diversified urban settings and regional contexts, preservation of historic heritage and values, sustainable industry and tourism, to mention but a few. It would seem that our efforts, thus far this century, at solving these problems have been mainly inadequate. The challenge for our generation and the ones that follow, is not only in creative problem solving but in designing a sound arena for the "Creation of a Major New Vision in Architecture".