

SUSTAINABLE DEVELOPMENT AND  
LANDSCAPE ECOLOGY

Doina Mira Dascălu

*Faculty of Architecture "G. M. Cantacuzino", Technical University of Iasi – Romania*

## Summary

*The adaptability of human beings, with all their limits and their possibilities, shows in time that there are many limits of the resistance capacity of human species. Therefore, the technological development should be compatible with the human health, giving survival possibilities, enhancing the quality of life. As more communities experienced the effects of urban sprawl, traffic congestion, polluted rivers, streams and lakes, loss of forests and open space, local citizens became concerned about their quality of life and loss of community. These concerns led to an outburst of projects throughout the nation to stop uncontrolled growth and start planning for a more viable and liveable future. Efforts of sustainable development soon became a local issue more than a global or regional issue.*

*As a vanguard, in the 1960's, Ian McHarg defined what is called sustainable development in his book, *Design with Nature*. That time, he was far before his time when he wrote: "Where you find a people who believe that man and nature are indivisible, and that survival and health are contingent upon an understanding of nature and her processes, these societies will be very different from ours, as will be their towns, cities and landscapes."*

*Two landscape ecological approaches succeed to find judicious ways, through such research and studies which have been conducted to find the best design, integrating man and nature. In order to create sustainable communities, these studies were conducted to find some alternative design to the traditional and conventional urban and territorial design.*

Keywords: sustainable development, landscape ecology, traditional design, conservation design, network of open spaces, quality of life.

## 1. INTRODUCTION

The adaptability of human beings, with all their limits and their possibilities, shows in time that there are many limits of the resistance capacity of human species. Therefore, the technological development should be compatible with the human health, giving survival possibilities, enhancing the quality of life.



D.M. Dascalu

As more communities experienced the effects of urban sprawl, traffic congestion, polluted rivers, streams and lakes, loss of forests and open space, local citizens became concerned about their quality of life and loss of community. These concerns led to an outburst of projects throughout the nation to stop uncontrolled growth and start planning for a more viable and liveable future. Efforts of sustainable development soon became a local issue more than a global or regional issue.

The concept of sustainable development emerged on a global scale when the United Nations proposed for cities and counties to strive towards sustainability in 1992. The United Nations created a definition for sustainable development at the UN's Commission on Environment and Development Conference in Rio de Janeiro, Brazil. They defined it broadly as "development that meets the needs of those present without compromising the ability of future generations to meet their own needs." The goal of sustainable development is to attain social equity, economic prosperity and environmental enhancement.

As a vanguard, in the 1960's, Ian McHarg defined what is called sustainable development in his book, *Design with Nature*. That time, he was far before his time when he wrote: "Where you find a people who believe that man and nature are indivisible, and that survival and health are contingent upon an understanding of nature and her processes, these societies will be very different from ours, as will be their towns, cities and landscapes." [1] His book underline the need to balance a community's physiographic resources and social values to determine the areas within a community where both benefit and one does not harm the other. This approach is what communities today are challenged with in attaining sustainability.

## 2. SUSTAINABLE DEVELOPMENT AND LANDSCAPE ECOLOGY

Two landscape ecological approaches succeed to find judicious ways, through such research and studies which have been conducted to find the best design, integrating man and nature. The first approach expresses the communities need to inventory their natural resources and social values to protect their environmentally special areas from the degrading kind of development, population growth, and irresponsible planning. The second approach aim is the neighborhood planning and the need to create a sense of community within these neighborhoods. These approaches want to give the possibility of integrating landscape ecology and land-use planning among willing communities, who demand new policies and demand alternative approaches to community planning.

In order to create sustainable communities, these studies was conducted to find some alternative design to the traditional and conventional urban and territorial design.



*SUSTAINABLE DEVELOPMENT AND LANDSCAPE ECOLOGY*

One of these alternatives is the concept of “Conservation Design”, which remind us the green settlements proposals from the beginning work of Frank Lloyd Wright.

That means a type of design in which developers set aside part of their land for open space and build at their maximum density on smaller lot sizes in a "less land-consumptive manner [2]. This design manner will provide a network of open space throughout a community - open space which can be in the form of agricultural lands, native forests, managed forests, greenways, linear hydrologic systems, and other undeveloped land with harmonious qualities.

The most important research is how to obtain this network of green space. Two studies of Arendt Randall - from Natural Lands Trust, “*Conservation Design for Subdivisions: A practical guide to creating open space networks*” and “*Growing Greener: Putting conservation into local codes*”, propose some tools: creating a vision project, protecting open space networks in the existent plans, developing zonal options, and creating design standards.

The Natural Lands Trust proposes that developers/designers first identify land of primary and secondary conservation needs and map these areas on their land-use maps. [3] These conservation areas will include endangered/threatened species, native or rare habitat, unique land features, wetlands, aquifer recharge areas, floodplain areas and other environmentally sensitive/in danger areas, that need protection. Then, the other step should be the identification of areas that are suitable for development. This concept encourages developers to preserve also the conservation areas that have potential for connectivity with other conservation areas within the community, in order to create a network of open space throughout the region. Only after these special areas are identified, the developer can design the streets and trails around the conservation areas and the development areas. And the last thing that should be done is to draw the lot lines. This kind of project seems to be the reversal of conventional/traditional design.

Another alternative approach is the “Traditional Neighborhood Design”, which focuses on some other important community needs: economic prosperity and social equity. Traditional Neighborhood Design wants to reintroduce the true definition of a neighborhood: an identifiable place where neighbors live in harmony, near each other. [4] This approach tries to restore a community dignity and establish a good sense of appropriating the place. This design tries, in a harmonious, resource-efficient and effective way, to link the home to the place where inhabitants work, shop, learns, play, and relax.



D.M. Dascalu

### 3. CONCLUSIONS

This kind of design should be integrated with the "Conservation Design Concept" in order to attain the best environmental issue of sustainable development, in order to create sustainable communities. The fast paced changes occurring today created an increasing need to provide areas for the public to relax and slow down and enjoy their surrounding environment. A combination of these two approaches results in a community that can function somewhat independently from the larger region on a small scale. How well the community functions is contingent upon whether the residents utilize these resources to their maximum potential.

The most important aim is to bring people and nature together, to live in a harmonious way, enhancing the quality of life while benefiting nature. A true ecological neighborhood creates neighbors who socialize, work, and learn together, as a harmonious community. That means creating a true neighborhood where the residents' can identify with and take pride in, that means creating a new awareness, an ecological consciousness [4].

#### References:

1. McHarg, Ian. *Design with Nature*, John Wiley and Sons, Inc., New York, 1992.
2. Arendt, Randall. *Growing Greener: Putting conservation into local code*, Draft booklet, Island Press, California, 1997.
3. Arendt, Randall. *Conservation Design for Subdivisions: A practical guide to creating open space networks*, Island Press, California, 1996.
4. Shri Mataji Nirmala Devi, *Meta Modern Era*, Computex Graphics, Bombay, India, 1995

