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Editorial

The evolving urban realm: Critical options, alternative futures

1. Introduction

Our global society is about to be confronted with a series of problems that will result in a different way of life for us all. The issues of global warming and climate change, our dependency on fossil energy and dwindling supplies of oil, population growth and faltering economies will force us to face them. The challenge is as difficult as anything faced by our global collection of societies in times past. The following editorial is offered as a means of bringing some kind of positive perspective to the pending crises we all will struggle with.

Scientists have offered up their interpretation of the problem. Politicians have written their responses for alternative action plans. All have one common denominator in their message. These problems cannot be solved simply, in a shortened time frame. Its going to be a long, difficult struggle. Our capacity to resolve them is limited to our intellectual, technical and behavioral ability to adapt ourselves to the realities of this crisis. The problems we suffer from are, in part, the result of making political accommodations between environments and society at too low a conceptual level to give significant weight to the scientific knowledge that explains their presence. Herein lies the first condition that will have to change.

The question of why contemporary society has not dealt more effectively with its environmental problems is a question of separating the ends from the means. (Caldwell, 1971). Caldwell claims that humans and society require an integration in orientation toward the world and life that conventional education has not provided.

John Cairn's paper entitled, "Preparing for the Post-Industrial Age," addresses the conditions we shall face in a world without the support of a fossil energy economy (Cairns, 2008). He describes our cities and suburbs as less than viable habitats where refugees will gather to find whatever food stores may arrive. He casts doubt upon the ability of big government to meet the challenges.

He describes the three biggest threats to human security to be (1) overpopulation, (2) global-heating and climate change and (3) human kind's addiction to fossil energy. He attributes these three problems to our collective inability to see what the Industrial Era of the twentieth century has produced. His paper is perhaps based on facts but it does lack one element we all search for. It speaks only by way of implication to a hopeful, positive alternative to this projected catastrophe.

1.1. Critical options

The problems outlined by Cairns are global in scale. All societies, all economies and most cultures will suffer under the resolution to these problems. It is true that throughout the twentieth century we as a race have demonstrated we can change the way we live. During that time however we have not changed the fundamental way we behave. Our behavior is economically driven or so it would seem. Under this morality we have devised a value system that allows us to use the planet as we see fit.

We need to sophisticate our collective thinking in one big hurry. We have run up against an ecological imperative. That imperative suggests that if one interferes with the operational course of natural systems one is destined to forever be responsible for its management. We are simply not capable of doing that. We lack the technology, the knowledge and the resources to do so.

2. Future outcomes

2.1. Energy

Obviously a transition away from fossil fuel dependency is needed. We must develop a strategy of securing a multi-tiered supply of alternative energy sources. We must employ our technological talents to translate these energies into functional adaptations to support our systems of production. This must be at least a national priority of our governments. It must be engaged at levels of commitment that will tax our current economic system and our society's ability to support such efforts.

2.2. Global-heating

Global-heating is most likely a byproduct of fossil fuel emissions. There are other causes as well. Al Gore's peace prize lecture in 2007 (Gore, 2007) speaks to these causes and the need to address the issues of their resolution. We must contribute to the reduction of CO_2 emissions. If not, if we fail to act, we will be at best the survivors of a natural resolution to the problem.

2.3. Population growth

Population growth will be managed by a combination of human resolve to be less prolific in the production of humans and the failure of our support systems to maintain such large numbers of

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people on the planet. Ecologists have revealed to us the countless examples of the boom and bust of populations. Now it is apparent, we can manage ourselves or pay an ever increasing toll in the form of human tragedy.

2.4. Urban growth

The issue of urban growth and our ability to modify it will demonstrate just how well we can adjust our economic behavior as a society to alter the negative out comes we have imparted to our urban realm. Our cities are our most precious resource. They can continue to be the source of positive resolution to our dilemma if we chose to make them so.

Urban centers dominate modern industrialized economies. Their structure and function has been economically and politically driven. Almost half the world's population live there. Urban centers, urban regions and the urban realm get their purpose defined by the people who live here. If this is true then it is here where the conversion to a wiser more rational decision making process can have the best chance for origination and application.

2.5. Land use planning options

Scientists, planners and designers, the more upbeat ones, live with the belief that there are always options that might be developed to change or even reverse the outcome of a given situation. In the section that follows two ideas will be outlined. In part I some selected land use planning options will be reviewed. These options could help mitigate some of the effects of changes to our urban economy, urban life styles and urban mobility as we draw closer to the Post-Industrial Era. In part II an attempt at outlining a strategy for reconceptualizing the urban realm to be a more useful framework for modifying our collective urban growth is presented.

The purpose is to bring an alternative option into play that can help us make a transition to the next paradigm in the continuing evolution of the urban realm. There is not doubt there will be one. It is up to all of us to have a positive effect on the image of its architecture.

3. Alternative futures

3.1. Part I. Invigorating our urban centers

Odum (1971) gave us the strategy of ecosystem development and the compartment model. In that model he defined protective environments, productive environments, compromise environments and urban-industrial (non-vital) environments. In explaining his theory further Dr. Odum focused on the conflict of our land use decision making. He described the conflict between our human impulse for maximum production, (trying to obtain the highest production yield) with maximum protection, the ecosystem's strategy to achieve maximum support. Recognizing the ecological basis of this conflict is the first step in establishing a rational land use policy.

In part I an attempt is made to examine useful land use policy for the Post-Industrial era. This era has not yet arrived. We must begin to change our thinking. A good place to start is with our flawed land use policy. Three land use options will be identified as potential alternatives for modifying our land use decisions making process. They are: (1) recognizing valued ecosystem services and bringing their structure and function into consideration on any land use decision, (2) selecting choices for growth within the urban realm that enhances our quality of life and the natural environment, (3) exercising our political options to conserve natural resources through local preservation activities.

3.2. Ecological services

What are ecological services? A reference for getting at the answer to this question is the spring 2008 PNW (Pacific Northeast Research Station) Science Update, issue 16. "Counting All That Matters, Recognizing the Value of Ecosystem Services." (http://www.fs-fed.us/pnw).

In summary it offers the following. Forest and grasslands provide forest and food products. These commodities are well established market value items. There are other benefits and services. These items and services do not have defined economic values but are critical to our survival. Among them are clean air and water, reduced soil erosion and sedimentation in waterways, the production of topsoil, the sequestering of carbon to mitigate climate change and moderate weather, the reduction of flood and droughts and the preservation of habitats for plants and animals. There are in addition to these less tangible services benefits such as aesthetic beauty and cultural and recreational values.

It is important for our ecosystem to be valued by our society in ways that tangibly account for their continued maintenance and protection. As Caldwell notes that has not happened because we have been able to secure our resource needs (ends) through techno-scientific ingenuity without realizing how these resources actually are afforded to us (means). Herein lies the second condition that will have to change. We must devise ways to assign a value to these services. To do that we must communicate their value to the urban public. The first step in communicating their value is to create a tangible link between the resource base of a given urban region and its realized ecological services and values.

The residents of New York City might be more inclined to support the planting of street trees if they knew that Columbia University researchers found that asthma rates among children aged 4–5 fell 25% for every 343 trees per 2 square miles. (Journal of Epidemiology and Community Health, Rachael Davies, rdavies@bma.org.uk)

It has been reported by Iowa State limnologist John Downing that ponds around the globe absorbs as much carbon as the world's oceans. The estimated 304 million natural lakes and ponds in the world cover an area of 4.2 million square kilometers, as many as 90% of these water bodies are two acres or less in area. The urban public might be more inclined to support the preservation and creation of more retention basins if they knew the values these small impoundments have in their environment and to downstream residents. (Science Daily 8 May 2008)

3.3. Growth choices

Coupled with the elevated knowledge levels of how to protect and conserve natural ecosystem services in and around urban areas is the need to develop smart growth choices. A good reference for this work is "Choice for Growth" produced in collaboration by seven environmentally oriented groups. (texasextension.tamu.edu).

A summary of that work starts with the concept that we do have choices to make about our natural areas in and around urban growth sites, our own need for mobility, our sense of community and our health and safety. It begins with a big picture strategy that promotes the preservation of open spaces, the preparation of visionary plans to encourage compact growth and the control of urban storm water runoff.

The obvious benefits of preserving natural areas results in the natural system's ability to produce clean air, clean water and the reduction of downstream flooding. The key elements of