Book Review

Rethinking Sustainable Development: Urban Management, Engineering, and Design

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Rethinking Sustainable Development: Urban Management, Engineering, and Design
Tan Yigitcanlar (Ed.)
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379 pages
$180
ISBN: 16092022X

The book Rethinking Sustainable Development is a collection of cases and papers of great interest for the economic and social development of cities that need structured mechanisms to continue growing and developing. The editor made a tremendous effort to put together so many authors who are specialists on specific issues of this broad field of knowledge. Case studies from the Australian region may help the reader to obtain a detailed description of how urban development and sustainability must be articulated as a single topic, and how these experiences may be replicated on some other regions under similar circumstances.

The book has concentrated its attention on urban and regional development, including the relationship with sustainability of the regions. It is structured on four sections that are very well managed by each one of the authors: sustainable principles basics; infrastructure planning; engineering the urban development; and finally the managing of resources. Each section has detailed cases where theoretical issues are being described.

The book is an important contribution to the area, and may be used as reference for urban planners, practitioners, and academics, looking for cases of application of urban development following sustainable principles.

In general, the book has a good structure and significant content; it has plenty of examples concerning different subjects relating to sustainable development. However, these examples are both specific and refer to very few systems for sustainable development. It would be of more
impact if it contained cases that focus on other areas of sustainability.

Although it has some international cases, the cases presented are a little biased and concentrated on regional areas of Australia, and they are too much centered on transportation issues which whilst they are important drivers for sustainable regions, are not compared here with other important themes such as regulations and norms that should also be included as important areas of sustainability.

The initial chapters clearly have shown the need to integrate within urban developing processes, the multiple limitations of the regional ecosystems; as well as the importance of joining ecological planning to the urban development, in order to keep the ecological equilibrium and the sustainable development as key drivers for social growth.

Section I and specially Chapters 2, 6 and 7 are well supported and give additional perspectives to the area. They have updated themes, they are well documented and all papers have excellent continuity. One of the chapters shows the influence of Information Technologies on sustainability applications and on ecology with a good description of cases in the region. This is a very educational and comprehensive section of the book. I especially liked it.

However, in Chapter 6 the book talks only about information and communication technologies in urban development, and does not take into account other technologies in this field, an example of this would be eco-technologies in houses and in public places, as well as in planning the development in question. Also the book emphasizes transportation and everything related to it - setting aside other important areas, such as housing, structural planning, etc.

On the same theme, Chapter 8 focuses on communities but is limited to the role of transportation. If there is interest in analyzing communities, then it should be important to add at least another chapter that is at to the same level of analysis but that takes into account other issues like the economic level, the amount of business and potential economic growth of the communities.

Section II is too specific and themes as regulations, certifications, norms, social networks, community planning, etc (all important issues for sustainable housing, communities, green developments, and cities) were left out, and I think they are quite important for understanding the field.

The sections on infrastructure, engineering, and project managing of complex systems explore new concepts and tools that can be used by practitioners and policy makers on urban development projects for regional development of several other locations in the world.

All these tools can be used as decision support systems for the development of projects about urban sustainability, where is clear that environmental issues are not only a political issue or part of an economic plan, and, due to the great variety of legislations, different players (complementary systems to the development, such as electrical issues, water, gas, etc) involved, there are themes that I think could have been approached from a wider scope.

In spite of this, I think the book offers a significant contribution to urban planners, and gives an overview of the main issues, the planning, the engineering, and the management of projects involving urban development under a sustainability approach.

The main limitation of the book is its concentration on a specific geographical region; however, this is a challenging region for sustainable urban development because of its limited natural resources and hostile conditions, and may have diverse lessons to be learned. Other concepts that could be improved would be to reduce some areas as the transportation and the introductory chapters, and to concentrate more on the management and planning of resources.

I think some themes are too general and that sustainability has not been handled properly (as it is in the first Chapters) and I think that the book editor may add (in the Introduction) a broad picture of the Sustainable Urban development field and explain what themes are being detailed on the book. This is because the Title produces too wide expectations on the part of the potential readers - sustainability is a very
wide area, and what is here described is just a small part of it.

The book in general has been well structured, is easy to read, the mathematical section is well described and not too dense, and it shows a wide knowledge of the themes by the authors. The book is well organized in spite of the variety of authors, and the editors made an excellent work of integration of the different styles. The book fulfills an important gap that needs to be redesigned - sustainability is a systemic concept, it must articulate all aspects of human development, the social, economic, and environmental systems, in all it should be considered as a holistic concept.

The main limitation of the book is that it lacks a section/chapter that focuses on the industries’ market environment (extensive, complex and dynamic). This is really important because, depending on the country, each industry is working in different market environments that affect the feasibility of sustainable urbanization implementation in different ways. It will therefore be very interesting to have an idea of the countries that can actually successfully launch this type of projects.

Carlos Scheel is full professor Monterrey Institute of Technology (from Jan 1973) in Mexico. He is currently working on a framework based on "techno-economic-social-environmental Ecosystems" designed from a systemic perspective for wealth creation for regions with scarce resources, hostile conditions and poor associative characteristics, that need to compete on world class environments, maintaining low impact of their ecological life cycle assessment. He is author and co-author of more than 50 papers published in Technical Magazines and/or International refereed reports; and he has written 12 books in diverse areas of Innovation and Technology.