

# The Eco-Knowledge City Theory and its Practice in Shenzhen of China

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## ABSTRACT

*Eco-knowledge city is a new concept for the world's urban studies, an all-new urban form, and concept of urban development and strategy. The core of eco-knowledge city is to surpass the traditional urban development model of industrial society strategically, to purposely encourage citizens to learn and share knowledge equally, and to enhance creativity through the cultivation of knowledge, technological innovation, and scientific research, sequentially to reduce material consumption and pollution, and to achieve cooperative development of urban economy, society, and environment. Shenzhen would not only pay attention to elements of ecological knowledge in the industrial field, but also would like to embody the characteristics of emphasis on ecology and respect for knowledge in all aspects of city life. Ecological knowledge has become the source of power for the city to continue moving forward.*

*Keywords: China, Eco-Knowledge City, Ecological Knowledge, Stratagem, Urban Development and Strategy, Urban Development Model*

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## 1. INTRODUCTION

As a new concept, eco-knowledge city build the concept of "Knowledge City" into the construction of eco-city, and proposed the urban development concept which "ecology" and "knowledge" are developed simultaneously. Eco-knowledge city is mainly to use modern knowledge for scientific research and innova-

tion, and to apply it to the society, in order to let the city take a new look, meanwhile to focus on ecological construction and environmental protection. As China's window, Shenzhen's performance of the construction of eco-knowledge city is particularly prominent. Shenzhen is an emerging eco-town, which focuses on the cultivation and dissemination of modern knowledge, and where material and cultural knowledge results emerge in an endless stream.

DOI: 10.4018/jabim.2012070106

## 2. THEORY OF ECO-KNOWLEDGE CITY

Eco-knowledge city is not only a city which cultivates modern knowledge-intensive industries, but also a city which breeds and develops knowledge among citizens, and pays attention to the living environment of citizens. Its idea is that modern knowledge is used for scientific research and innovation, and is applied to the ecological environment, in order to create new material goods and spiritual products, which will eventually change the city's look, but also examine the accuracy and usefulness of knowledge, the impact of knowledge in this way is continuous, and low-carbon. As a result, eco-knowledge city is a city which focuses on the cultivation and dissemination of modern knowledge, and exerts its influence on the ecological environment of the city.

### 2.1. The Theory of Ecology City

The concept of eco-city was firstly introduced in the 1970s, together with the study "human and biosphere" by UNESCO which put forward five principles of eco-city, becoming the foundation of the development of the eco-city theory. The Soviet scholar Yanitsky (1984) thinks ecological city is a kind of ideal city model, which technology and nature fully mix together; creativity and productivity gets the maximum protection; material, energy and information is fully used, and ecology is in a virtuous cycle. The United States ecologist Rechester (1987) thinks that an ecological city is a settlement which is compact and full of energy, and contains harmonious coexistence of energy-saving and nature. Huang and Yuan (2001) think that an ecological city is a sustainable subsystem of the global regional ecological system. It is a compound system including harmonious nature, fair society, and effective economy, and is constructed based on the ecology principle. In 2002, the fifth International Ecological-City Conference held in Shenzhen, China, passed the *Shenzhen Declaration on Eco-city Construction*, and proposed that the construction of eco-city should be carried out

from five dimensions, including eco-safety, eco-health, eco-industry metabolism, improvement of ecological landscape, and cultivation of ecological cultural awareness.

### 2.2. The Theory of Knowledge City

The term "Knowledge City" is a new concept that has risen with the development of knowledge economy. The father of Knowledge Management Movement, one of the founders of Intellectual Capital Theory, Professor Leif Edvinsson, Lund University, Sweden, when mentioned the definition of Knowledge City at Henley Knowledge Management Conference in 2003, pointed out that a knowledge city as a city intentionally designed to encourage the nurturing of knowledge. Haines (2004) who is an expert in Knowledge Management in the UK, described a 'knowledge city' as a city that has strategically embarked on a mission to purposefully encourage the nurturing of knowledge, innovation, science and creativity within the context of an expanding knowledge-based economy and society. E100 Roundtable Forum published *Knowledge City Manifesto* in 2004, and proposed a new urban development strategy in an all-around way, aiming at promoting urban transformation and upgrading of industrial restructuring, in order to win core competencies of future urban development. Greece scholars Ergazakis Kostas (2004) defined that "A knowledge city is a city that aims at a knowledge based development, by continuously encouraging people to create, share, evaluate, and update knowledge. This can be achieved through the continuous interaction between its knowledge agents themselves and at the same time between them and other cities' knowledge agents." Ergazakis et al. (2007) summarized various scholars' view points and come up with four main requirements for the successful design and development of KCs, including contributions to the challenges of KBD strategies, increasing of knowledge intensity in the region, securing sustainability of the whole effort and equal participation of citizens and all important stakeholders.

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