

Perceptions of building professionals on sustainable development: A comparative study between Hong Kong and Shenyang

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Abstract

It is logical to believe that the building professionals (architect, structural engineers, building services engineers, etc.) are the relevant persons that may influence the decision-making process on a real estate development process. Accordingly, the attitudes and perception of building professionals should have a significant influence on sustainable development. This article describes a survey concerning the perceptions of different building professionals, which include architects, construction engineers and building services engineers, on the environment, resource sustainability, and green consumerism in two major cities in China: Hong Kong and Shenyang. It is recognized that energy is central to sustainable development and in 2006/2007, the United Nation Commission on Sustainable Development will focus on energy issue. The discussion in this article will concentrate on the building professionals' perception on energy related issues. Nevertheless, the findings in respect of their awareness of the environment, resources sustainability and other related issues are also summarized. At global level, apart from the need to preserve historical buildings, the professionals in Shenyang feel that 'exhaustion of natural resources' is of major concern and energy preservation is significant. However, the Hong Kong professionals do not consider energy resource sustainability is of urgency.

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1. Introduction

It seems that there are numerous reports of climate change, of rising sea levels, of the depletion of our natural resources and the contamination of our land and water. Sustainable development is a major national policy in many countries in the recent years. The United Nations World Commission on Environment and Development has defined that sustainable development is the development which meets the needs of the present without compromising the ability of future generations to meet their own needs (the Bruntland definition [1]). This indicates that development needs to consider the long-term carrying capacity of the Earth, the equitability between people and the relationships between the economic, the environmental and social [2]. In other words, the decision to develop a land and to design buildings should account for sustainability.

Numerous studies, in particular surveys for the public and leaders' opinion on sustainability have been carried out by different organizations in the recent decade [3–6]. Environics

International conducted an on-line survey [6] of business executives to explore the adoption of sustainable development in their companies. In general, business leaders would have positive attitude on sustainable development. We understand that a building professional plays a major role in the decision-making process for the design and development of buildings. Accordingly, the attitudes and perception of building professionals will have a significant effect in course of sustainable development.

Energy was indeed one of the most intensely debated issues at the World Summit for Sustainable Development (WSSD) in Johannesburg in September 2002 [7,8]. It was agreed that energy should be the main context of sustainable development. The discussion in this article will concentrate on the building professionals' perception on energy related issues as the provision of a comfort environment are recognized to be responsible for a significant portion of energy consumption in our daily life.

This article describes a study concerning the perceptions of building professionals on the environment, resource sustainability, and green consumerism. Building professionals comprising architects, construction engineers, building services engineers and surveyors in two cities: Hong Kong and Shenyang are invited for a structured survey in 2004. The findings in respect of the building professionals' awareness of

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the environment, resources sustainability and other related issues are also summarized.

2. Community strategies

It is a common practice for many governments of modern cities to prepare community strategies for promoting the economic, social and environmental well-being of their areas, and contributing to the achievement of sustainable development. The implementation of these strategies will be closely related to the actions of the ‘directors’ in the government and the ‘actors’ in the executing entities. Williams [9] has argued that a grand plan may not be appropriate to a turbulent and complex world. An alternative paradigm should be developed to include the whole range of actors in an organization. This implies that even though structured strategies have been formulated by the government for sustainable building development, the professionals involving in the design and construction process may contribute to the success of the strategies. Their attitudes towards sustainable development may influence the implementation process.

3. The survey

Surveys have been performed in two major cities: Hong Kong and Shenyang in China. Hong Kong, following 155 years of British colonial rule, has about seven million people and is located at the Southern part of China. Shenyang is the largest city at the Northeastern part of China. Its population is similar to that of Hong Kong. Although the development of the two cities in the past century is different, they are comparable in that they are the ‘centre’ of development in their respective region in the past decades. However, the cities have obvious difference in many other aspects such as environmental conditions, cultural background, government policies, and etc. Accordingly, comparative studies may provide information to ascertain how the building professionals’ view be influenced. Fig. 1 shows the locations of the two cities and Table 1 shows a brief comparison of some economic indicators of the two cities.

Building professionals of the building and construction industry with substantial practical experience were identified. Face-to-face interview was performed and the professionals were requested to reply structured questions which were modified on the basis of the questions established in a research for Taiwan [10]. The use of face-to-face interview to collect the data was to ensure the respondents understand the questions. Fifty interviews to different building professionals including architects, structural engineers, surveyors and building services engineers were carried out in Hong Kong and 254 similar building professionals in Shenyang were interviewed.¹ All the

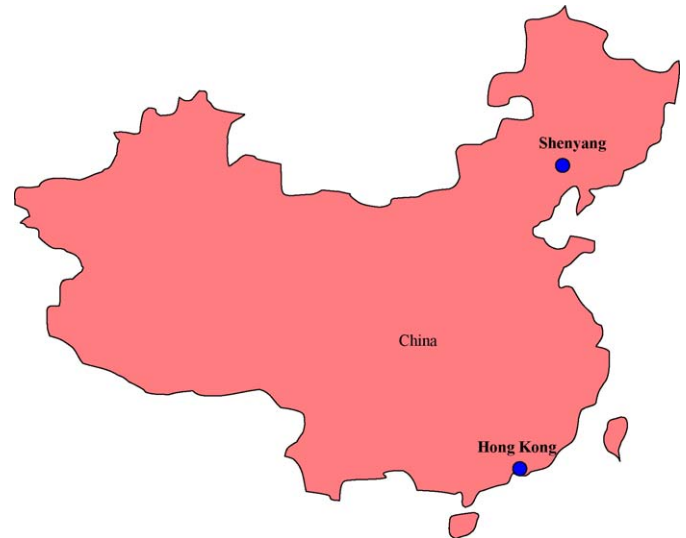


Fig. 1. Map showing the locations of the two cities.

respondents are qualified professionals and have at least 3 years of working experience. For the Hong Kong survey, over 90% of the respondents were borne in Hong Kong and over 85% came from better-off family. About 70% of Shenyang’s respondents were borne in the city and the rest came from low income families resided in the rural areas.

The respondents replied to the force-choice structured questions which include questions to elicit their perception on local and global environmental issues and level of sustainability of major resources respectively in Hong Kong and Shenyang. As a large number of attributes are required to be assessed, a Reliability Interval Method (RIM) [11,12] has been adopted to establish the ranking of various issues. Table 2 shows a sample of the RIM approach.

4. The results

4.1. Local sustainable issues

Initially, the building professionals were asked to provide their perception on the urgency of a list of environmental and cultural issues at local level. A comparative summary is shown at Table 3.

For the Hong Kong study, amongst the local environmental/sustainable issues, air pollution was ranked the most urgent item that immediate action is expected. The result is not surprising as the air pollution issue has been raised frequently in

Table 1
Comparison of economic indicators between Hong Kong and Shenyang

	Hong Kong	Shenyang
Total GDP	234 billion US\$	140 billion US\$
GDP per capita	US\$ 34200	US\$ 2454
Fixed capital investment (percentage of GDP)	22.7%	32.8%

Information based on Hong Kong Statistics (2002) and Shenyang Statistics (2000–2002).

¹ ‘Interview’ was carried out after a registration examination for the local building professional held in Autumn 2004 in Shenyang. Questionnaires were distributed to the practicing professional immediately after the examination in the examination hall. Explanations were given to the respondents to ensure that they understood the meaning of each question. The respondents were practicing construction engineers, civil engineers and architects.

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