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Urban planning with respect to environmental quality and human well-being

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ABSTRACT

The cities of today present requirements that are dissimilar to those of the past. There are cities where the industrial and service sectors are in decline, and there are other cities that are just beginning their journey into the technological and industrial sectors. In general, the political and social realms have been restructured in terms of economics, which has resulted in an entirely different shape to the primitive structures of civilization. As people begin to understand the dynamic nature of landscapes, they stop seeing landscapes as a static scene. Sustainable cities must be simultaneously economically viable, socially just, politically well managed and ecologically sustainable to maximize human comfort. The present research suggests a multi-disciplinary approach for attaining a holistic understanding of urban environmental quality and human well-being in relation to sustainable urban development.

1. Introduction

The urban habitat can be aggressive and unnatural for human beings. In many cities, urban green spaces may be missing or poorly distributed. Urban planning must take into account the noise pollution produced by cars and household heating systems. The heat island effect in urban areas and conurbations must also be considered. Socio-spatial variations in urban environmental quality and human well-being are not new subjects; rather, they are an established characteristic of city life (Fig. 1). Cities have always represented a mixed bag of blessings and downfalls for their inhabitants (Pacione, 2003a,b). Other important factors may contribute to quality of life in urban areas, such as accessibility to green areas and whether such destinations can be reached in ways beyond the usual means of transport, namely by bicycle or on foot (Jankovska et al., 2013). Suburban areas, if well designed, may contribute to well-being (Cameron et al., 2012).

Air is among the most important environmental factors in the relationship between environmental quality in inhabited areas and population health and welfare. Green spaces contribute to the quality of the air, which needs to be monitored for pollution. Laws regarding both air pollution control and green space management have to be considered.

Climate change affects cities, which are increasingly recognizing the need to prepare for the impacts on their assets and residents. Some cities have seen notable changes in relation to the frequency and intensity of extreme weather events; other cities have experienced changes in temperatures, while others still have experienced coastal erosions, the disappearance of wetlands and storm surges (Carmin et al., 2012). It is important for stakeholders to know what to expect so that the necessary structures can be developed in the phase of preparation and organization (Karanikola et al., 2014). Many cities are working on adaptation and planning strategies. To this extent, ecosystem services provide a number of mitigation functions. Although it is necessary to share a methodology for and knowledge about different forms of landscapes or a theoretical foundation, the key is a common frame of reference that has a reasonable fit with the range of ways in which disciplines and communities perceive and value landscapes (Stephenson, 2008).

The present research suggests a multi-disciplinary approach for attaining a holistic understanding of urban environmental quality and human well-being in sustainable urban development.

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2. Ecology and biodiversity

2.1. Ecology

The heart of landscape ecology is the evaluation of spatial configuration and temporal sequencing as they affect landscape ecological integrity and aesthetic appeal. We believe it is the logical discipline within which to elaborate the union of these issues. This union has been called 'the landscape ecological aesthetic' (Thorne and Huang, 1991).

Natural sounds, meanwhile, may improve the quality of built-up environments to a certain extent. However, any incongruence between sound and image in a landscape quite clearly diminishes the value assigned it, indicating the need to conserve singular soundscapes. Such cases call for the application of soundscape conservation measures in protected natural spaces, cultural landscapes and parks and green areas (Carles et al., 1999). In landscape architecture, there is an approach where not only the visual element but also the auditory or tactile element is used to inspire participants to recall memories and design an outgoing landscape (Bostenaru, 2010). However, soundscape can also be negatively connoted as sound pollution.

Fragmentation is a research concept properly belonging to the biosciences and agriculture, yet it has application in the planning and design fields. Cultural landscape, in contrast, is a concept uniquely rooted in landscape architecture and resource management. Planners and designers are challenged to consider whether human actions are "natural" actions or they belong in a separate philosophical category (Taylor, 2002).

An influential paper about green walls comes from Francis and Lorimer (2011). In this study, living walls are discussed as an instrument for reconciliation ecology. Another key aspect is the promotion of public participation in urban green spaces and the contribution of green walls in urban sustainability (Bostenaru, 2014). Green walls also help improve urban health in crowded cities. When a space is not sufficient for creating green spaces, even pocket parks, green walls can make use of vertical surfaces. With this method, urban heat islands decrease in the summer, and in the winter, green walls contribute to better insulation and energy savings. In the Art Nouveau movement, architecture and biology found a common point. New developments in biology were of interest for architects, and the ornamentation of buildings was inspired by vegetal models. However, these were drawn or carved, and any combination could exist; that is, the ecological habitat composition was not necessarily followed. Today, green walls have to be grown in accordance with the climate of the city in which they are planted.

Masonry retaining walls together with their vegetative companions constitute a distinctive urban ecology in Hong Kong (Jim and Chena, 2010). Whereas humans have built the artificial cliffs in an apparently inhospitable habitat, it is nature that has provided a generous combination of abiotic and biotic factors in an

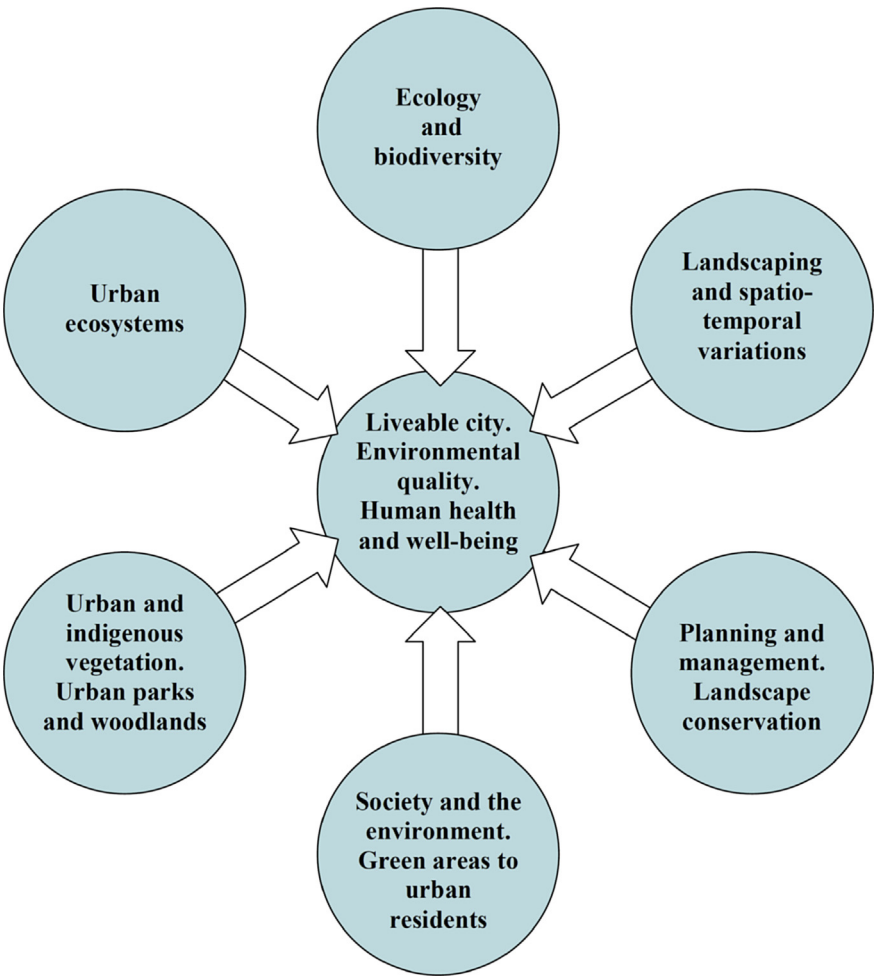

Fig. 1. Livable city and environmental quality relationships with human health and well-being.

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