



Ashok B. Lall, B. A. (Hons.) Cambridge; dipl. Arch. AA, is Dean of Studies, TVB School of Habitat Studies, and Principal of Ashok B. Lall Architects in New Delhi, India. The practice has executed projects for educational research institutions in India and specializes in low-energy sustainable architecture. He is engaged in the development of the architectural curricula for the Indian context and contributes regularly to national professional journals for architecture.

On the road to sustainability

# Urbanization of emerging economies

Ashok B. Lall

More than half of the world's population lives in urban communities. Large geographic regions in emerging economies will undergo a rapid shift toward further urbanization in the coming decades. It is presumed that they share attributes that produce equivalent conditions for sustained and fast economic growth, even though they have divergent geographies, political systems, and social histories. There are both euphoria and trepidation concerning such predictions of accelerated and uninterrupted economic development. The euphoria results from an enhanced knowledge base as well as an increased productivity spawned by the integration of institutional infrastructures with global markets. The trepidation is voiced by those who view the present severe disparities of wealth and opportunity being further

exacerbated by the developmental process which is centered largely on those already privileged rather than the majority of citizens.

The city has always been the province of the wealthy and powerful. It is built in their service. The large numbers who migrate to metropolitan areas from rural hinterlands with the hope of securing their livelihood are neither accommodated by the formal systems of city management, nor able to afford the high cost of “legitimate” urban land and conventional urban services. This inequity characterizes contemporary cities within emerging economies and constitutes the most direct social challenge of sustainability.

In emerging economies the overarching force that drives the current process of urban development is globalization. Ushered in are the habits and expectations associated with the highly visible multinational corporation lifestyle promoted as the ubiquitous symbol of progress and success, which precipitates a growing preference for construction materials with high embodied energy – i.e., steel, glass, and aluminum. This increases demand for artificial lighting and air-conditioning in malls, offices and multiplexes. When this culture of images, rather than of substance, is compounded with an unregulated use of energy, *carte blanche* is given for both an explosion and a subsequent bush fire of energy consumption. The proverbial explosion is an immediate result of excessive utilization of high-embodied-energy materials as exacerbated by the sudden construction boom. The verita-

ble bush fire is a consequence of the spiraling demand for energy needed for the operation of buildings and urban infrastructure. To the bush fire is added a drought of water – its increasing pollution and shortage of supply. Consider too the social and ecological pressure throughout the countryside brought about by the increasing demands of urban growth. These factors constitute the most dire environmental challenge of sustainability.

Do we expect the gains of accelerated economic development, centered on cities, to contribute to general social and environmental wellbeing? Yes, but only if the initiative is seized to find alternatives to the negative impacts of urbanization as outlined above. Undoubtedly, conventional models of urban systems and capital-intensive structures are not going to be affordable. Thus, innovation is necessary on many fronts: First, a wealth of locally produced and low-embodied-energy materials – for example, stabilized soil, processed stone, and the use of biomass – can provide most of the resources required for building construction. We must call upon the creative skills and imagination of the design and engineering professions to create a new aesthetic founded on environmental principles pertaining to the intelligent use of material resources. Second, if buildings are designed to moderate unfavorable climatic conditions, then this can significantly reduce the demand for air-conditioning and heating. Third, to build highrise buildings is unwise. Moving goods and people against the force of gravity – while holding them secure up in the sky – is a for-

mula for the highest possible consumption of energy in building construction and operation. Urban planning must seek a balance between horizontal distribution and density, keeping building close to the ground. Fourth, public transportation systems of bus and train combined with pedestrian, bicycle, and small vehicle access routes must be given preference over private automobile transportation. Fifth, decentralized technologies for water and waste management – combined with spatial systems of built-up and natural ground – can provide low-energy and low-cost solutions to environmental upkeep. If the above strategies are coordinated to meet the environmental challenges, then several benefits are foreseeable. A significant benefit: the indigenous creativity and enterprise that is required to bring these strategies about will form the circuit for a wider distribution of wealth and thus respond to the social challenges.

The light that signals the hopeful potential of meeting the social and environmental challenges of rapid urbanization emanates from the combination of two factors. First, emerging economies are youthful societies that form a storehouse of creative energy, never before seen. Second, the information and communication revolution is reaching far and wide, giving these nascent societies access to knowledge and the capability to choose their futures intelligently. Thus the question must be asked: might these factors lead governments and corporate powers on the path toward a vibrant society based on environmental wisdom? Will the opportunity be seized?