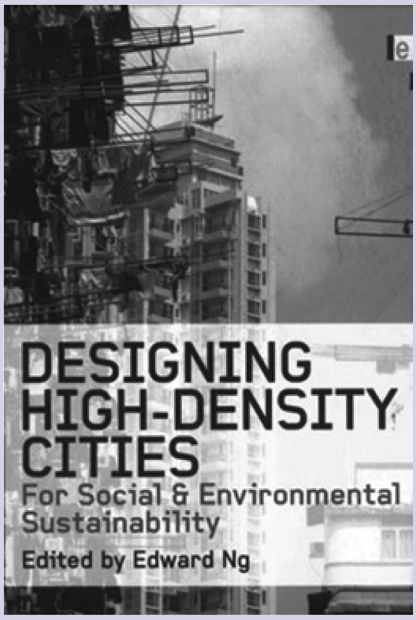
Book Review: Designing High-Density Cities for Social & Environmental Sustainability

Edward Ng (2010)
London, UK: Earthscan
329 pp.

Designing optimization structures in high-density urban areas has many challenges. This book "*Designing High-density Cities for Social and Environmental Sustainability*" contains articles from urban planners and architects that are meeting these challenges head-on for tropical cities, although other aspects for temperate climates can also be applied. The editor is Edward Ng from School of Architecture at the Chinese University of Hong Kong (CUHK). The book attempts to bring together scholars, experts and practitioners of high-density city design to share current experience and knowledge on the subject, which is divided into four parts:



In **Part-I**: **An Understanding of High Density,** Vicky Cheng delineates various ways of looking at density. She argues for a diverse way of looking at perceived density. After all, density is not noticeable unless it is seen. After that, Brenda & Robert Vale cast the discourse on high-density living on a wider and perhaps more holistic basis. A high-density city still need its hinterland to supply it with the required resources. As a result, the equation for efficiency may not be as straightforward as at first perceived. High density may not be the only option. Susan Roaf believes that high density (not high rise) is the inevitable future. One only needs to find ways to cope with it. Roaf looked at high-density living from health, vulnerability, security and equality points of view. She reckons that there is a limit to high density, and one must trying to assess the limit contextually and appropriately. Heng & Malone-Lee also caution how the notion of density should be debated and understood. They reckon it is related to building and urban form, and how uses are mixed. The authors discuss diversity and flexibility, complexity and size, and problems with over-determination as ways to dissect the discourse. Roaf, Heng & Malone-Lee highlight the challenges of the quest towards

high density. One must not be too simplistic about the potential complexity and unknowns facing researchers, designers and planners.

In Part-II: Climate and High Density Design, the climatic considerations of high-density living are the main thesis of Chiu-Ying Lam's and Wing- Mo Leung & Tsz-Cheung Lee's chapters. Urban climate and liveability can be important factors in designing high-density cities. After all, it is people for whom we build our cities, and when failing to provide for inhabitants climatically, high-density cities have no value and little meaning. High-density living, furthermore, has its environmental problems. Urban heat islands (UHI) and hot nights are problematic issues. In particular, vividly argues that the poor and the weak are most in need of our attention when designing high-density cities. The environmental dimensions of high-density cities, especially in tropical and subtropical climatic zones, are important to get right. Lutz Katzschner reckons that urban climate is an important consideration. The use of urban climate maps may allow planners and policy-makers a better and strategic view of urban design.

Part-III (Environmental Aspects of High Density Design) of this book is about various environmental considerations of high-density design. Cities are designed for people. Baruch Givoni argues that, environmentally, the thermal comfort of inhabitants should be a key focus. Givoni stresses the importance of research leading to a better understanding of thermal comfort in high-density cites. It is only with better information about what is needed that designers can design appropriately. Koen Steemers & Marylis Ramos further the thesis, but stress the need to ensure diversity in city design. We are all different. Cities with many people need to provide various kinds of space to address this need for difference. The concept of "choice" is useful.

Edward Ng's chapters on ventilation and daylight highlight important aspects of high-density designs. Light and air are basic human needs. In high-density cities, the provision of light and air can be difficult. Ng argues that there is a need for a complete rethink when designing high-density cities. A paradigm shift of methodology is required. The topic of environmental degradation is echoed by Francis Allard, Christian Ghiaus and Agota Szucs. Ventilation for comfort and the cooling potential of ventilation, both indoor and outdoor, in high-density cities are explained.

Apart from air and light, opponents to high-density living have raised the issue of noise. Close proximity of apartment units exaggerates the problem. Jian Kang explains a method of looking at noise based on urban morphology. The concept of "soundscape" may help us to see problems as opportunities. Another environmental issue of high-density living is waste. Chi-Sun Poon & Lara Jaillon suggest a few ways of minimizing waste production due to development. Low-waste building technology may be a way out. There is also a need for corresponding policy by the government. The risk of fire that comes from living too close together is the focus of Wan-Ki Chow's chapter. Performance-based fire engineering is preferable, and Chow elaborates upon the concept of total fire safety.

Urban greenery to alleviate the adverse effects of high-density cities and UHI is discussed by Nyuk-Hien Wong & Yu Chen. Greenery and green open spaces not only address the thermal comfort problem; they also offer an alternative to city dwellers seeking an outside oasis.

The energy issue of high-density living is addressed by Adrian Pitts, such as how renewable energy can be of meaning in high-density city design. A holistic view based on environmental assessment is further offered by Raymond J. Cole. The need to look beyond a simple building is very important when we are dealing with high-density living. Perhaps it is not the space within building envelopes that matters. It is the spaces in between buildings that test the design of high-density cities.

Apart from environmental considerations, the social aspects of high-density living are dealt with in **Part-IV (High Density Space and Living)** by Bryan Lawson, Sung Woo Shin, John C. Y. Ng and Kam-Sing Wong. Lawson theorizes that the perception and identity of open spaces in high-density cities are particularly important in providing inhabitants with a sense of belonging. Can high-density cities also be eco-cities? Shin reckons that much further research is needed. Is sustainable high rise a solution? Shin has raised more questions than one can easily find answers to. Ng, on the other hand, is much more optimistic. He can afford to be so as he has demonstrated with his high-rise high-density residential housing in Hong Kong that the holy grail of high-density living is a definite possibility. It should, however, be noted that this is not an easy path. Ng argues that social acceptability through participation may offer a way out. Lawson has suggested an evidence-based approach with creativity. Last, but not least, Wong's chapter recaps some of the key views expressed. Quality city living in a high-density context means that there is a need for balance.

High density is not a one-way path, and there is definitely a limit to it. Using the example of wall buildings in Hong Kong, Wong speculates on the idea of eco-density. There is a need for innovation.

There are many more socio-economic issues regarding high-density cities and high-density living than a single volume can hope to embrace. Nonetheless, the 22 chapters have painted a diverse and yet cohesive picture. The fact is that designing for high-density living is not a straightforward extrapolation of our known wisdom and knowledge base. The adventure needs care and sometimes a paradigm shift of thoughts and operations. As such, this book on high-density living and city density only opens a can of worms that requires further efforts to put it back into order. One thing is sure: the subject will continue to haunt us. There's no easy way out and the discourse has just started.

Thus, this book's technical chapters can be used by many researchers and students for various aspects of their work. Professional planners will also benefit. It will remain a valuable reference for sustainable urban planning practices. We have entered a new age and we need to think along new lines of sustainability, for ourselves and for future generations.

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