International Journal of
High-Rise Buildings
www.ctbuh-korea.org/ijhrb/index.php

International Journal of High-Rise Buildings
March 2023, Vol 12, No 1, 11-18
https://doi.org/10.21022/IJHRB.2023.12.1.11

Research on the Enhancement Trend of the Urbanity of High-rise Buildings

Huiqiong Tian[1], Jiaqi Qu[1,2†], and Zhendong Wang[1]

[1]*College of Architecture and Urban Planning, Tongji University, Shanghai, 200092, China*
[2]*Council on Tall Buildings and Urban Habitat, Shanghai, 200092, China*

Abstract The urbanity of high-rise buildings does not simply reference their physical characteristics but also encompasses their impact on the overall urban environment and the daily lives of citizens. This involves the economic benefits, social development, urban culture and public activities that high-rise buildings bring to a city. High-rise buildings are an important aspect of urban development and play a crucial role in providing public services in high-density urban habitats. However, to ensure that their contribution to the city is positive, it is essential to take into account their impact on surrounding buildings and the built environment. This paper analyzes their urban attributes and value system and summarizes their current development status. In short, as the demand for public services continues to evolve, it is necessary for high-rise buildings to keep up with these changes by continuously enhancing their urbanity.

Keywords High-rise buildings, urbanity, urban space, public service, enhancement trend

†Corresponding author:
Jiaqi Qu
Tel: +86-18917600302
E-mail: Jqu@ctbuh.org

1. Introduction

Urbanization is an unstoppable global trend, but there are imbalances to its progress. As urbanization accelerates and greater numbers of people flock to cities, the strain on resources such as housing, employment, education, and medical care increases, putting tremendous pressure on the environment, resources, and energy. The growing conflict between people and land significantly hinders the sustainable development of cities. The best way to efficiently utilize limited land resources to meet the urban living needs of a heavily concentrated population has always been a focus of urban development research. High-rise buildings, which serve as symbols of urban space, have a significant role to play in this regard, given their ability to make the most of limited land resources. High-rise buildings are a natural response to insufficient land area, a rapidly expanding population, and expensive land prices. Behind the height of these building is the dream of a city. The urbanity of high-rise buildings should be a symbol leading the city forward.

Cities enhance our lives by making them richer, smarter, greener, healthier, and happier. In the process of development, cities have gradually formed their own unique characteristics, which are collectively referred to as urbanity. Urbanity is not only an objective attribute of a city but also reflects its individuality. As an important urban development model and public service provider in high-density urban habitats, high-rise buildings insert themselves into the existing urban fabric with their massive volume and strong regional presence, influencing the surrounding buildings, the overall urban environment, and public life, altering the original urban environment pattern and guiding urban development. High-rise buildings should not only be seen as buildings but should also be recognized and considered a part of the urban environment. As noted in the CTBUH Awards, a good project should make a positive contribution to the surrounding environment, add to the social sustainability of both the immediate and wider settings, and represent design as influenced by context, both environmentally and culturally. High-rise buildings never exist in isolation. They enable a high concentration of economic density and material space, which has a key significance in improving the energy level of the city as a whole and plays a decisive role in leading the development of the city.

2. Urbanity

Urbanity is viewed as an indicator of a “continuous rural-to-urban gradient” (Oliveira, 2013). The study of urbanity has its roots in sociology. From a sociological perspective, Wirth posits that “urbanism is a way of life and a social and cultural trait different from the countryside”

(Wirth, 1938) and defines the characteristics of urbanism through four indicators: population, residential density, residents and heterogeneity, and urban lifestyle. This is the earliest definition of urbanity.

Wirth's definition of urbanism, i.e., social life supported by the gathering of "population, density, and heterogeneity of people," posits that the nature of urbanity should be based on a social construct following population density. Following Wirth's work on how people live, Henri Lefebvre uses the term "urban" in his book "Notes on the New Towns" (1995, originally published in 1962) to express the meaning of what we later came to call "urbanity" (Lefebvre, 1962).

Urbanity can be summarized as population aggregation, and it is a complex aspect of city life that is both growing and dynamic. This theory has influenced many scholars. Fisher further developed the concept of urbanity from the perspective of "population aggregation," believing that the main characteristic of a city is the formation of subcultural groups of a certain strength after reaching a certain population scale (Fischer, 1973). A city is a settlement of relatively large, dense, and heterogeneous individuals. People flow into cities from rural areas, other cities, and even other countries. They also bring different regional cultures to a city, making them heterogeneous. Many sociologists continue to apply urbanity as a sociological theory for the enhancement of urban life. For example, Durth directly describes urbanity as "a cultural quality that comes into being out of heterogeneity" (Durth, 1987). Alternatively, Zijderveld explores the concept of urbanity as dynamic social life (Zijderveld, 1998), diverging from the many definitions that simply regard urbanity as population concentration. Kevin Lynch also contributes to the urbanity issue; urbanity for him is a kind of pleasant "image" based on physical entities, where "mobile elements and especially people, and their activities" emerge from "the physical stationary parts" (Lynch, 1960). It is worth mentioning that the "city" referred to is not the preindustrial city, since although the preindustrial city has characteristics of dense population and heterogeneity, its social structure is closer to that of a rural society connected by family and kinship. Under natural economic conditions, the preindustrial city is still a rural society.

Research on urbanity can be divided into three periods: 1. From 1938 to 1950, following Wirth's first proposal of the concept of urbanity, other sociologists understood urbanity as an urban lifestyle different from that of the countryside. During this period, Western sociologists attempted to find the unique cultural characteristics of cities relative to the countryside when conducting research on "urbanity," as well as trying to deconstruct the unique lifestyle of the city. 2. From the 1950s to the end of the 1990s, the main focus of scholars on this period placed a greater emphasis on the heterogeneity of cities. For example, Fisher believes that urbanity is the accumulation of urban culture and contains the characteristics of heterogeneity (Fischer, 1995). 3. In addition to integrating previous studies, research on urbanity since the 21st century has also begun to emphasize the complex and unique behaviors of people and diverse public activities. It has become people-oriented, paying more attention to citizens' feelings of utility and recognizing that people can constantly create urbanity in the process of building cities.

People are the origin of urbanity, and ultimately, urbanity is measured by whether citizens are satisfied with the built environment and whether they can lead a happy and comfortable life within it. High-rise buildings, as an important component of urban development, should also be considered in terms of urbanity. High-rise buildings can provide a large number of public spaces and play a significant role in promoting the economic development of cities. However, in the process of construction and use, attention should also be paid to the relationship between high-rise buildings and the surrounding environment and the urbanity of the entire city should be accounted for. By optimizing the design and use of high-rise buildings, we can enhance the urbanity of the city, promote its sustainable development, and provide better living conditions for its citizens.

3. The Urbanity of High-rise Buildings

High-rise buildings combine human social needs, scientific and technological progress, and economic development. They embody environmental values, a spirit of technological exploration, economic drive, and artistic aesthetics and are considered to be the epitome of urban aesthetics. High-rise buildings are like a basic form of culture that represents human spirit and creative aspirations, and our buildings today reflect our civilization and the importance that we place on time and money. As humans continue to strive for taller structures, high-rise buildings will always have a strong attraction. It is clear that high-rise buildings are not only a necessity for social and economic development but also a symbol of city spirit. High-rise buildings are a driving force behind urban development, and their essential attribute is to effectively improve the quality of life of urban residents.

3.1 Interacting with the spatial dynamic

When the term "urbanity" entered the field of architecture, it was interpreted in various ways. Broadly speaking, urbanity encompasses the shared characteristics of urban areas that distinguish them from rural areas and the unique characteristics of a city that differentiate it from other cities, as well as the combination of these shared and unique characteristics. In a narrower sense, the urbanity of high-rise buildings focuses on the relationship between architecture and the city, specifically on the impact of architecture on the characteristics and quality of urban public space beyond simply the space that it encloses. Urbanity concerns the posture of buildings facing the city

and the interaction between the physical entity of buildings and the outer space of the city. It is a social construct characterized by its high correlation with spatial entities.

The nature of urbanity should be considered a parameter that contributes to the socioeconomic performance of high-rise buildings. As both a social and built environmental construct, urbanity is greatly impacted by high-rise buildings. Furthermore, as an important parameter in the assessment of place quality, urbanity is a goal of urban design (Ye, 2015). In short, urbanity is a social construct, but it also highly interacts with spatial entities and is the product of spatial organization on a large scale.

The fundamental concept of urbanity in high-rise buildings is the generation of interaction between high-rise buildings and cities, stimulation of urban vitality, and provisioning of high-quality living spaces for city residents. The extent to which architecture affects its surrounding space and the emotional response that it elicits are direct reflections of the urban characteristics of architecture. All buildings existing in the city possess some degree of urbanity, and that degree varies. The pursuit of urbanity is a requirement for the development of high-rise buildings at this stage. The urbanity of high-rise buildings is mainly reflected in the dimensions of economy, society, and culture.

3.2 The dimension of economy

Modern cities are a social form that emerged along with the industrial revolution and modern economics. The relation among these factors ultimately determines the nature and characteristics of cities. From an economic perspective, high-rise buildings are commercial, and they are a product of standardized markets and specific urban environments. The emergence of high-rise buildings is directly related to the size of the urban population and the scale of the economy. The urban distribution of high-rise buildings in China corresponds to the population scale of urban areas and reflects the development of urbanization in China (see Figure 1 and Figure 2). Urbanization is not only an expansion of urban space but also represents a historical change process of social forms based on economic transformation. Therefore, the interpretation of contemporary "urbanity" must focus on the broader economic background underpinning it as well as on spatial morphological features.

Modern high-rise buildings are concentrated in the city's business center, where various kinds of capital, information, resources, technology and talent efficiently accumulate. These buildings also have great advantages in terms of information concentration and resource sharing, and they have exerted a significant wealth effect. Building height is positively correlated with GDP, population scale and urban competitiveness. It is economic strength that gives rise to the construction of high-rise buildings, however, which in turn promotes economic development. As Carol Willis, a professor at Columbia University, explores in her book "Form Follows Finance: Skyscrapers and Skylines in New York and Chicago," high-rise buildings in New York and Chicago are affected by laws, regulations, and economic principles. One of her main assertions is that high-rise buildings must create economic value; otherwise, it becomes difficult for investors to fund them. In the USA, 87% of large publicly traded companies position their headquarters in the top 50 metro areas. (Klier, 2002) The development of high-rise buildings is an important way to expand the space of urban economic development

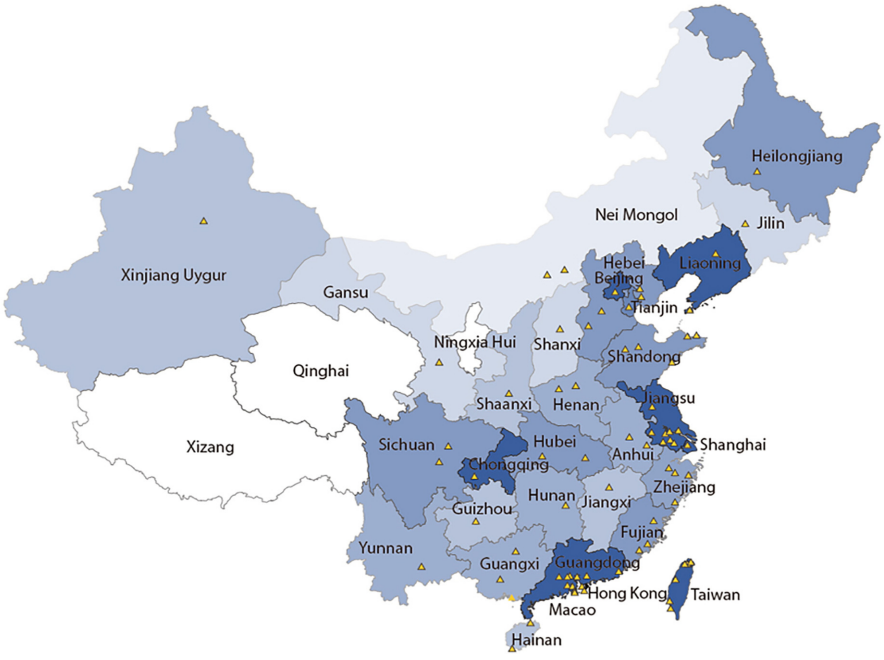


Figure 1. Cities with more than 100 meters of high-rise buildings in China (Source: CTBUH).

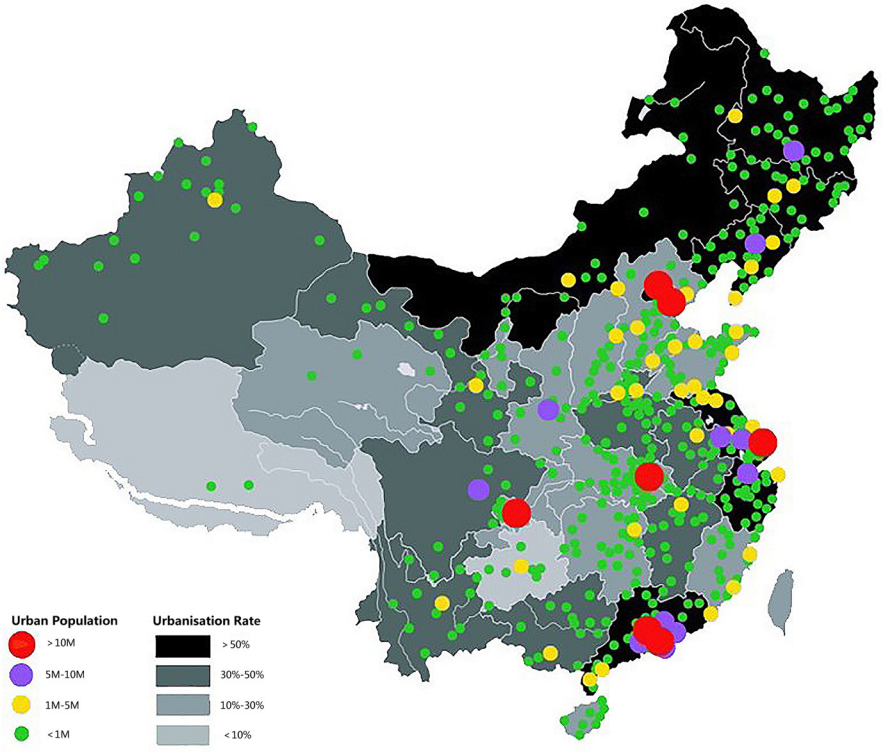


Figure 2. Overview of China's urbanization in 2022 (Source: Aedas).

and to accelerate the basic trend of urban economic development. With the rapid development of urbanization, land in mega-cities is the scarcest spatial resource, and it has become inevitable that these spaces are developed into three-dimensional space.

3.3 The dimension of society

Urbanity is the characteristic of a city that combines physical and intangible environmental spaces. The existence of urbanity causes heterogeneity and high density differences among different cities. Symbolic meaning has always been an integral part of urban construction practice.

From the perspective of social attributes, high-rise buildings are driven by multiple factors, such as economic growth, technological progress, leadership performance, and a city's sense of honor. They have gradually become an important aspect of city competition and have even come to serve as city business cards and powerful props to highlight local performance. High-rise buildings represent the modernization of the city and are a tangible representation of its wealth and strength on a more visually impactful and eye-catching level than any other such achievements.

High-rise buildings in China are steeped in social and psychological complexity and influenced by factors such as the symbolic aspects of their height and shape, as well as their geomantic principles. The Shanghai Tower, the Global Financial Center, and the Jinmao Tower are notable examples of these landmarks in the Lujiazui (Figure 3). When the Jinmao Tower was first constructed, prior to the other two high-rise buildings being proposed, it faced challenges related to geomancy, such as determining the optimal height and shape that would not overwhelm observers or be perceived as aggressive or destructive. Ultimately, an actively defensive approach was taken, resulting in its silver-flashing, pointed-nosed, and barbed design reflecting the traditional customs and social psychology of China.

3.4. The dimension of culture

From a cultural perspective, the height of high-rise buildings serves as a symbol of confidence and ambition. This can be seen in the ongoing competition among cities to construct the tallest buildings, which reflects not only the physical building phenomenon but also the cultural and psychological state of society in a particular period. Research has found that smaller Chinese cities tend to build taller structures than would be expected on the basis of their population and GDP. (Barr, 2017) This is partly due to their desire to stand out in the skyline and promote themselves within the crowded urban landscape of China. High-rise buildings also play a significant role in shaping the culture of a city and are a powerful driving force behind their development.

High-rise buildings express cultural values through both their exterior shape and the organization of their internal space. First, as the most dominant of the entity elements of high-rise buildings and the most intuitive, the exterior shape of high-rise buildings is key to the city's image. Second, in the expression of spatial organization, the



Figure 3. Shanghai Tower and Jinmao Tower in the Lujiazui. (Source: http://baijiahao.baidu.com/s?id=1661649187006652357)



Figure 4. Pangu Plaza, located beside the Beijing Olympic Sports Center. (Source: www.skyscrapercenter.com)

deconstruction and stripping of the traditional architectural style and a new interpretation of the current development environment are deep expressions of cultural connotation. For example, the Pangu Plaza beside the Beijing Olympic Sports Center (Figure 4), which incorporates the imagery of the dragon and other Chinese traditional symbols, has sparked public discourse and imagination. Similarly, the shape of the Shanghai Global Financial Center has been the subject of political discussion and design revisions.

High-rise buildings are a reflection of the rapid changes of the times, and their cultural strategies should also be constantly evolving. To some extent, it is not that high-

rise buildings change the orientation of a city's cultural values but rather that a city chooses high-rise buildings to update the spirit and culture of the city.

In general, high-rise buildings need to be compatible with the historical context and human temperament of the host city. Only buildings that are based on the social environment and can integrate design elements into the surrounding environment in such a way that the whole urban culture can be accepted by history. Against the background of the modern era, both the goal and value orientation of the cultural development engendered by high-rise buildings should be completely interpreted. The landmark of a city is vital and spiritual, and, like historical figures, it should be kept in the hearts of the people to withstand the test of the times.

4. The enhancement trend of urbanity

Urbanity is primarily expressed through public space, which is considered to be the container or key component of urbanity. Since the 21st century, an increasing number of high-rise buildings have begun to focus on improving the urbanity of high-rise buildings by enhancing the quality of public space. By doing so, a positive impact is being made to the urban living within the city and the promotion of sustainable development. Based on an analysis of the winning projects of the CTBUH Awards, it can be found that the world's tallest high-rise buildings are increasingly incorporating public space. The majority of the awarded projects design public spaces in nearby regions, achieving interaction with the surrounding environment; adopt vertical greening technology, introducing the natural environment into the high space; and set up public spaces and public service facilities in the high area to enhance the vitality of that area. This trend is reflected in the following four aspects:

First, high-rise buildings exhibit the trend of openness. High-rise buildings are organically connected to the urban public transport system through the vertical transportation system to bring the public into the air. The Salesforce Transit Center in San Francisco is a multifunctional urban transportation hub that connects three supertall buildings. In consideration of the needs of passengers who board different means of public transportation at different locations, the transit center includes multiple vertical channels, enabling passengers to enter the station through the shortest distance. The rooftop sky garden of the transit center has passageways that connect with the lobbies of the surrounding three high-rise buildings, allowing users to quickly reach the transportation hub and obtain comfortable and convenient service from the supertall buildings. (Figure 5)

Second, high-rise buildings exhibit an ornamental trend. The sky viewing deck of the Salesforce Transit Center provides visitors with the opportunity to view the overall image of the city and is often used as an iconic tourist attraction. MahaNakhon is a supertall building



Figure 5. Salesforce Transit Center in San Francisco (Source: www.skyscrapercenter.com)

located in the heart of Bangkok's central business district, with cascading terraces in which landscape and retail functions are curated spiraling up along the main building, giving guests access to the sky. The three levels at the top of the building are the indoor viewing area, glass walkway and bar, and rooftop observation deck. On the observation deck, visitors can overlook the beauty of the Chao Phraya River and the bustling city. (Figure 6)

Third, high-rise buildings exhibit a leisure trend. High-rise buildings provide public places and services that are available to the public for recreation. The top floor of One Shenzhen Bay has the world's highest music hall, which can accommodate 200 people at once. The surrounding floor-to-ceiling windows provide an excellent view of Shenzhen's bay for the audience. If necessary, curtains can also be used to shield natural light to create lighting effects and meet the requirements of different cultural and artistic events. (Figure 7)

Finally, and most important, high-rise buildings exhibit a living trend. High-rise buildings provide living space vertically through the air for public use and communication. The 300 m long enclosed sky corridor of Chongqing Raffle City spans four towers and is accessible to both



Figure 6. The sky viewing deck in MahaNakhon, Bangkok. (Source: www.skyscrapercenter.com)

residents and the public, featuring a west-facing garden terrace. Part of the terrace overhangs the sky and has a glass floor, adding a sense of excitement for visitors as they enjoy the view of the confluence of the Jialing River and the Yangtze River. Connected to the terrace is a private infinity swimming pool for residents, surrounded by lush greenery. The open and diverse functions combined with rich landscape resources create a vibrant urban sky garden. (Figure 8)

Urbanity is like an urban adhesive instilling a city with comfortable unity, and, as such, it is of great value to a city. Urbanity is not a luxury but rather a beneficial aspect already at play or needing development in a particular urban society. High-rise buildings play an important role in the urban environment and create a noticeable outline for the city. The essential reason behind the continuous development of high-rise buildings is that they can provide more building area while occupying less land. High-rise buildings are an unavoidable urban form in the future of any city. The urbanity of high-rise buildings originates from considerations of spatial continuity and spatial quality, which should embody the diversity and vitality of a city, accommodate the rich and colorful life of a city and stimulate the potential power of city life.

The urbanity of high-rise buildings represents the spatial component of the sustainable development of high-rise buildings. Pursuing perfection through improvements to



Figure 7. The world's highest music hall in Shenzhen Bay. (Source: www.skyscrapercenter.com)

urbanity helps to reshape a city and support city life through urbanization. In this sense, urbanity represents a guarantee that urban society will keep pace with the times.

5. From private to public

The urbanity of high-rise buildings reflects the culture, economy, and society of a city. The level of urban public services is an important indicator for measuring the livability of a city. This includes social aspects as well as dynamics related to people's livelihood, such as education, culture, art, sports, medical treatment, catering, leisure, and entertainment. Rather than solely focusing on building height and unique forms, which can exacerbate difficulties with construction costs, energy consumption and safety management, it is important to consider the optimal development height that is suitable for the city and its citizens. Otherwise, various problems can arise, such as a high number of vacancies, environmental pollution, and high carbon emissions.

For high-rise buildings to truly contribute to the development of a city, they must be well aligned with the city's natural environment, urban space, and public services. The upgrading of modern scientific and technological prowess and the innovation of design methods are constantly optimizing the traditional issues of building high-rise buildings, which ultimately comprehensively and profoundly changes the overall appearance of the central city.



Figure 8. The 300 m long skybridge of Raffle City, Chongqing. (Source: www.skyscrapercenter.com)

By providing open, ornamental, leisure-oriented living spaces to the public, high-rise buildings play a critical role in the shaping of a city. Rather than only pursuing economic return, high-rise buildings should aim to improve the redundancy of urban public service facilities and increase the level of public services from that of basic satisfaction to that of multiple choice. This will not only enhance the livability of a city but also increase the happiness of its people. High-rise buildings are an important means of solving urban problems, and their success should be evaluated on the basis of their ability to positively impact a city. Therefore, urbanity is the leading step in the development strategy of high-rise building construction, as it is the representation of the city's spirit and values.

Acknowledgement

This research is supported by project of National Social Science Foundation of China (21BGL028)

References

Barr, J & Luo, J. (2017) *Economic Drivers: Skyscrapers in China*. Chicago: Council on Tall Buildings and Urban Habitat.

Oliveira, V. (2013). "*Morpho: a methodology for assessing urban form*." Urban Morphology, Vol. 17, No. 1, pp. 21-33.

Wirth, L. (1938). "*Urbanism as a way of life*." American Journal of Sociology, Vol. 44, No. 1, pp. 1-24.

Klier, T & Testa, W. (2002) *Location trend of large company headquarters during the 1990s*. Economic Perspectives, Vol. 6, Issue 2, pp. 12-26.

Lefebvre, H. (1962). "*Notes on the new town*." *Introduction to Modernity.* London: Verlso, pp. 116-126.

Fischer, C. (1995) *The Subcultural Theory of Urbanism: A Twentieth-Year Assessment.* University of California, Berkeley.

Durth, W. (1987). "*Urbanität und Stadtplanung: Thesen zueinem problematischen Verhältnis.*" in W. Prigge (ed.),Die Materialität des Städtischen. Stadtentwicklung und Urbanität im Gesellschaftlichen Umbruch, Basel, Boston: Birkhäuser, pp. 155-165.

Zijderveld, A. C. (1998) *A Theory of Urbanity: The Economic and Civic Culture of Cities*. New Jersey: Transaction Publishers.

Lynch, K. (1960) *The Image of City.* Cambridge, MA: MIT press.

Ye, Y. (2015) *Urban form index for quantitative urban morphology and urban design analyses*. The University of Hong Kong, Hong Kong.