

# Re-Framing Urban Space

Urban Design for Emerging Hybrid  
and High-Density Conditions

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# Prologue

Places that evoke long-lasting memories for their visitors are often found in the accessible urban spaces of the city, since these spaces exude their individual charm and endow the city with a collective sense of character. One remembers with fondness the plaza mayors of Spanish cities, the canal streets of many a Dutch city, the sidewalk cafés in Paris and the arcades in Milan, the night markets of Taipei, the *shotengai* or covered shopping streets in Japanese cities, and the *xiangs* and *hutongs* of Chinese cities. More specifically, one recalls place-specific sites like Piazza San Marco in Venice, Times Square in New York, Quiapo in Manila, the Bund in Shanghai, the banks of Kamogawa River in Kyoto, and Insadong in Seoul. Descending deeper into the memory bank, one might recollect particular urban encounters such as a brief afternoon respite reading a guidebook on a bench in a pocket park in Paris or an evening stroll along the quays of Singapore River. Although seemingly generic, these public spaces play a significant role in our experience of the city.

Urban spaces made memorable by the visitor hold even more importance for inhabitants and citizens of the city. These arenas where civic lives intersect not only encapsulate the collective memories of its people but also the stories told by one generation to the next, the hopes and aspirations of the city and its constituents, and the tender moments shared by couples and families. It is in these crucibles that urban identities and social cohesion are forged and the resilience of a city tested. Needless to say, if the urban spaces of a city are successful in achieving these aims, then the city, too, succeeds.

Cities with long histories have a range of such public spaces that, over time, are shaped by and adapted to the different needs of its inhabitants; in this respect, newer urban developments that sprout overnight from speculative real estate play often lack the treasured traits of established public spaces. The beloved spaces of a city take generations to be nurtured into substantial places that are valued by the communities around it, and so the seeds which bear such fruits need to be planted together with the planning and provision of fertile spaces for its growth. In traditional towns and cities, a defined open space, a few benches, a favorite corner café, a water fountain, an old tree, a few raised steps, a thoughtful piece of public art and so on can evolve into the nucleus within or around which meaningful public space forms.

Casual observers familiar with the Western urban paradigm have the misconception that traditional Asian cities—which evolved over millennia under contrastingly different power structures and belief systems—enjoy few, if any, public spaces. (East) Asian cities, founded and transformed through various religious and political ideologies, have formulated their own logic toward the treatment of urban spaces: at bridgeheads, along river banks, around wells, in front of temples, within temple compounds, before administrative buildings and the like.

In the past few decades, the traditional urban tissue of many matured Asian cities has been reworked by rapid urbanization. The hybrid conditions that emerge from these fast-changing cities provide, in some instances, great opportunities for public space creation while, in other circumstances, causing irreversible consequences for the grain and texture of age-old urban districts. In many cases, swaths of existing urban fabric along with their multifarious public spaces have been erased to make way for extensive high-density real estate developments driven by expedience and the maximization of profit. While there are successful examples of new public space created in this dynamic context—a number of which are featured in this volume—the outcome, more often than not, is the proliferation of generic gated communities and the replacement of veritable public domains by exclusive private open spaces. Fortunately, in recent years, forward-looking city managers, developers and architects have collectively produced new typologies of public spaces that are open to the wider community amidst such high-density residential developments. Notable examples are Central Park Beijing apartments (Xincheng gouji) and the Linked Hybrid in Beijing<sup>1</sup> or the private residential developments along Robertson Quay and in One North Residences at Biopolis in Singapore, to name a few.

Commercial retail developments are more concerned than gated residential ones with creating public spaces, if nothing else, to attract the public to frequent their shops. Many such spaces, unfortunately, are privately owned public spaces or pseudo-public spaces operating under a set of motivations that emphasize individualism and consumption over civic interests and collective rewards. This disparity between the private provider and public user of urban open spaces, particularly within the premises of



commercial retail developments, can create real barriers in terms of accessibility and inclusiveness. The display of blatant signage warning users of the types of activities that are prohibited and the expression of non-verbal cues, such as indicators of dress code and affordability, impose controls that may make certain public spaces inviting to some but perhaps not to others. In this respect, city governments can contribute (directly and indirectly) to the protection of quality public spaces, since it is at this level of urban planning where complex decisions are made pertaining to land use, by-laws and incentives on development issues. Several examples such as Roppongi Hills<sup>2</sup> and Tokyo Midtown<sup>3</sup> in Tokyo and Ion Orchard<sup>4</sup> in Singapore featured in this volume show the insertion of such facilities and the creation of urban space often near transport nodes.

At the periphery of existing cities, unshackled by historical constraints, new urban forms flourish with mixed results. Particularly in East Asia, these fringe areas are often met with high-density developments. Occasionally, well-conceived master plans give rise to new memorable urban spaces well loved by their users. The lakeside promenade in Suzhou Industrial Park, Treelodge@Punggol<sup>5</sup> in Singapore and Shinonome Codan Court<sup>6</sup> in Tokyo are examples that come to mind.

Equally creditable are the conversions of old industrial buildings and dilapidated production facilities such as 798 Art Zone in Beijing and the old log pond in Yilan. Meanwhile, in other cities, existing infrastructures are improved and provide the city with surprising encounters. New York's High Line Park<sup>7</sup> and Singapore's Kallang River in Bishan Park are noteworthy examples; they are the pride of the city in general, while also serving as an immense resource for local residents who use them on a regular if not daily basis.

The world has undergone rapid changes in the past few decades: the rising middle class and transformed lifestyles in Asia, the emerging complex hybrid urban conditions in dense Asian cities, the processes of globalization and neo-liberalism that are not only dominating much of the developed world but are also eroding the quality of public space, and the list goes on. These changes have both enriched as well as undermined our urban experience. Although there are instances where the urban fabric and spaces of traditional cities have had to give way to modern developments, new typologies have also emerged in the process. Past research has primarily focused on familiar models of urban space, such as squares, plazas, streets, parks and arcades; this volume extends the repertoire to include the expanding typologies of urban spaces emerging today.

These emerging contemporary spaces are shaped by a dynamic process which aims to synergize the various aspects of urban design from spatial configuration and programming to utilization and management. At the same time, however, the hybrid spaces

produced are often complicated by tensions and negotiations among diverse users and agencies. The ever-evolving urban conditions of high-density cities call for the re-conceptualization of conventional modes of understanding urban design and public space. *Re-Framing Urban Space* presents an innovative research framework for inciting new knowledge on the complex relationship between density and quality of public space. By re-examining the characteristics and performances of public space, we gain an enriched understanding of how enduring qualities are expressed and negotiated through design and other measures in the increasingly hybrid and high-density urban context. With this broad intention, *Re-Framing Urban Space* aims to achieve three objectives.

First, as the title implies, re-framing urban space is an attempt at rethinking and re-conceptualizing the role and meaning of public spaces within the current global trends and challenges accompanying contemporary urban development. In doing so, the book addresses emerging hybrid urban space typologies in high-density contexts that fall outside conventional notions of public space. Second, this volume aims to demonstrate the application of the Urban Space Framework and Instrument for: (1) the systematic categorization of hybrid conditions and new urban space typologies, and (2) the evaluation and analysis of urban space performance. In this way, the book serves as a guide to assess, plan, design (and redesign) urban spaces at various stages of the decision-making process. Third, with over 50 urban spaces explored through best practice case studies, the book adds practical value to our knowledge of public space in an insightful and visually compelling format.

While the geographic focus of this volume draws attention to (East) Asian cities—in which Asia's rapid pace of urbanization and, hence, potential to exhibit new models of urban space was discussed—the learning points gleaned from such a study also correspond to the experiences of other cities, for example, in Latin America and Africa, with comparatively high-density urban development. Globalization, after all, has enabled the exchange of ideologies and cultures across borders such that urban phenomena once thought to be unique to a particular region are transposed, thus implicating cities on a worldwide scale. Likewise, the scope of the research framework and tools introduced in this book are not city- or region-specific but, rather, holistic and adaptable in their application capabilities to assess and analyze various urban spaces in high-density environments.

With an intention to guide different phases in urban space design, the structure of *Re-Framing Urban Space* reflects the main stages of the design process, namely: *Review, Understanding, Assessment and Analysis, and Application*. Chapter 1, "Review: Urban Space and Current Tendencies in Urban Development," guides the reader through key theoretical and design concepts



currently dominating the discourse on public space. The chapter also discusses current trends and challenges in contemporary urban development (such as densification, intensification, hybridization and sustainability), cross-referenced to a number of recent urban design projects in high-density contexts globally. Building on the literature review of relevant urban design theories, concepts, guidelines and practices, Chapter 2, "Understanding: Quality of Urban Space and Design Principles," develops an integrated urban space research framework by which to identify the critical properties and design principles that shape new and emerging quality public spaces in high-density urban environments. Chapter 3, "Assessment and Analysis: Assessing the Quality of Urban Space," offers practical tools to capture, assess and analyze urban space performance based on the systematic framework established in Chapter 2. In closing, Chapter 4, "Application: Guide to Design Actions," suggests practical means of applying the systematic framework and instrument to different design purposes to facilitate optimum design actions to enhance the urban space design quality that is relevant and of interest to urban planners, urban designers, architects and developers.

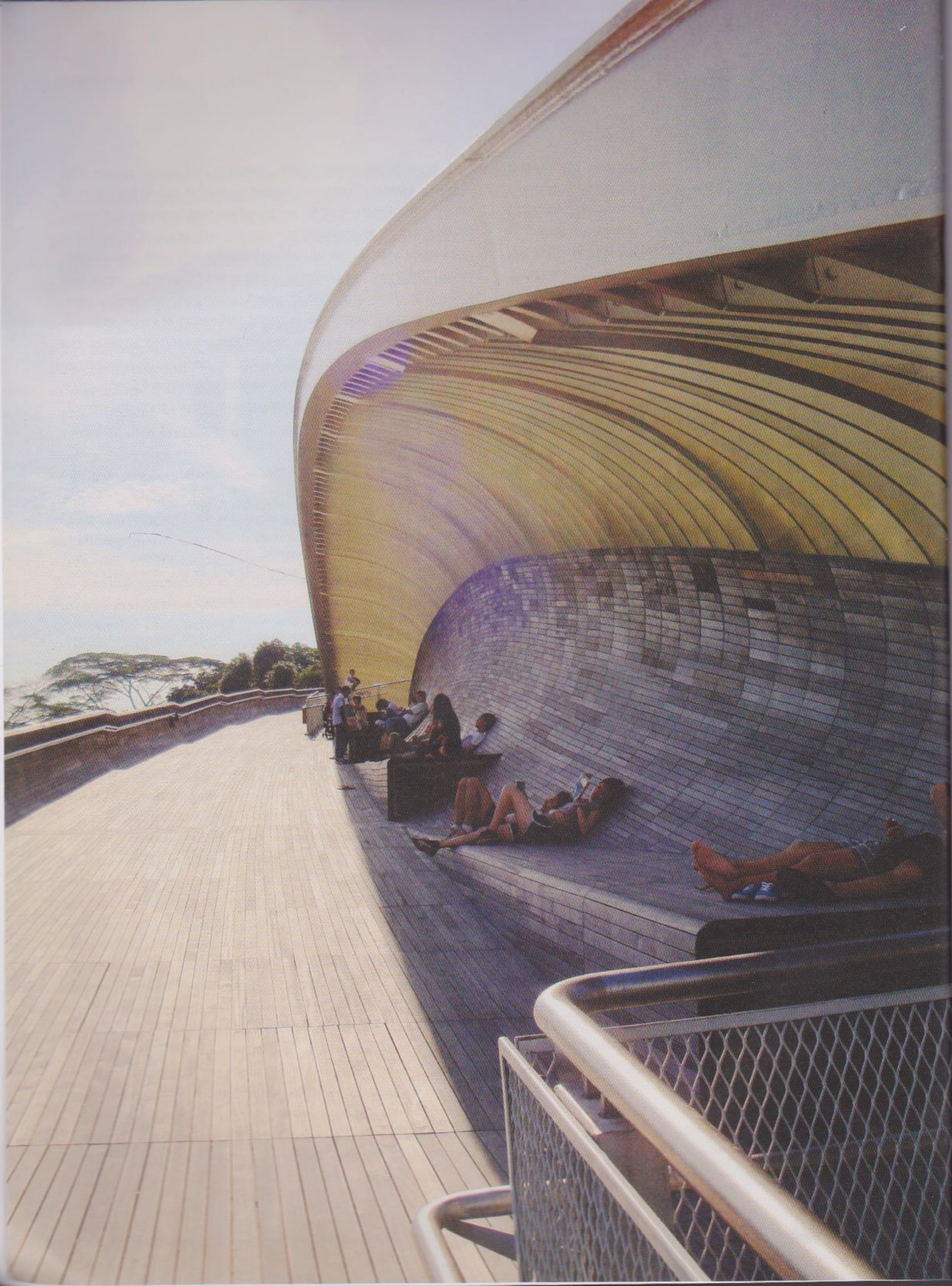
*Re-Framing Urban Space* confronts the very real urban conditions of densification and hybridity that are playing out in some cities today, and which are sure to appear in many more cities in the near future. The process of framing the notion of urban space within the context of these emerging conditions, indeed, has created (necessary) conceptual demands for this volume. First, can certain valued qualities of public space be regarded as "timeless"? If so, can these timeless characteristics be achieved under evolving conditions found in hybridized high-density urban environments?

The book is premised on the assertion that public spaces with timeless appeal do and can indeed prosper in hybrid high-density cities; yet, second, how do we move beyond conventional means of studying these emerging typologies of urban space? Third, what innovative approaches in applied research can yield new insights about the timeless qualities of public space? Our initial discussions of framing urban space within today's hybrid and high-density urban contexts consequently led us to the *re-framing* of urban space. In re-framing urban space, we see an opportunity to advance the frontier of knowledge on urban space by opening up possibilities in research and practice for the inclusion of emergent public space typologies where hybrid and high-density urban conditions prevail.

## NOTES

- 1 See Chapter 2, "Urban Space Quality," 15 and 42, and section entitled "Orgware Qualities of Urban Space: An Example" for more details about Dangdai Moma (Linked Hybrid) in Beijing.
- 2 See Chapter 2, "Urban Space Quality," 12, 20, 27 and 35 for more details about Roppongi Hills in Tokyo.
- 3 See Chapter 1, section entitled "Mixed-use Developments," and Chapter 2, "Urban Space Quality," 22 and 36 for more details about Tokyo Midtown in Tokyo.
- 4 See Chapter 2, "Urban Space Quality," 2, 9, 29 and 38 for more details about Ion Orchard in Singapore.
- 5 See Chapter 2, "Urban Space Quality," 1 and 10, and section entitled "Qualities of Urban Space: An Example of Full Analysis" for more details about Treelodge@Punggol in Singapore.
- 6 See Chapter 2, "Urban Space Quality," 6, 38, 39 and 40, and section entitled "Hardware Qualities of Urban Space: An Example" for more details about Shinonome Codan Court in Tokyo.
- 7 See Chapter 1, section entitled "Recreational Green Hybrids," and Chapter 2, "Urban Space Quality," 15, 16, 29, 34, 37, 43 and 45 for more details about the High Line Park in New York.







# Urban Space and Current Tendencies in Urban Development

This chapter outlines the contemporary challenges posed for urban design in light of the ongoing debate addressing sustainable urban development, as well as the emergence and criticism of increasingly hybrid urban space typologies in high-density environments. A number of relevant concepts, terms and definitions are critically revisited, such as density, intensity, sustainability, hybrid space and urban space. In reference to emerging hybrid and new urban space configurations in high-density and high-intensity contexts globally, this chapter introduces a number of recent urban design projects, with an aim to outline global contemporary urban development trends, while gradually shifting the focus toward similar trends in Asian cities.

## CONTEMPORARY URBAN CONDITIONS

### Challenges of Urbanization

The beginning of this century is characterized by the dramatic rise of urban population and urban development globally.<sup>1</sup> For the first time in history, since 2007, more than half of the world's population lives in cities. According to the recently updated United Nations' *World Urbanization Prospects* (2014), currently 54 percent of the world's population resides in urban areas and it is predicted that such a number will increase up to 66 percent by 2050, or more than six billion people living in cities.

While Africa and Asia are currently the least urbanized regions of the world, with urban populations of 40 percent and 48 percent, respectively, it is expected that the fastest and the highest concentration of the world's urban growth would occur in these regions, with 56 percent and 64 percent of their population becoming urban, respectively, by 2050. The majority of the current mega-cities (cities with more than ten million inhabitants)—16 out of 28—are situated in Asia (United Nations, 2014). However, the urbanization process spreads beyond the mega-cities, being even more rapid in smaller cities and towns, bringing dramatic and unprecedented changes. In fact, over the past three decades Asian cities have already experienced the most dramatic urban transformations, characterized by (but not limited to) rapid built and population densification, intensity and diversity of uses and

users, increased mobility and other modes of exchange, and overall complexity of urban living conditions. Such a magnitude of urban development and transformation may be comparable to what the Western world has experienced over the past two centuries.

Such a rapid rise of urban development and urban population globally has inevitably led to higher demands for environmentally, economically and socially sustainable planning. As part of such demands, the provision of "high-quality public spaces" is increasingly seen as one of the key means for fostering environmental and social sustainability, and improving the quality of life in contemporary urban environments (Amin, 2006).

It is now widely accepted that quality public spaces are vital assets for a city's livability and sustainable development, providing social, health, environmental and economic short- and long-term benefits (CABE, 2004; Carmona, 2010a, 2010b; McIndoe et al., 2005). Well designed and managed, public spaces bring communities together, shape the cultural identity of an area, provide meeting places and foster social ties that have been disappearing in many urban areas due to rapid urban transformations. Investment in public space also contributes to environmental sustainability by employing energy-efficient and less polluting design strategies, promoting greenery and biodiversity, delivering developments that are sensitive to their contexts and encouraging walking and cycling, among others. Finally, the presence of good urban design potentially attracts other investments, strengthens the local economy, and is thus a vital business and marketing tool. Such a recent shift in understanding the role of urban design in sustainable urban development goes beyond the beautification of the built environment and marks the beginning of the "new urban revolution," as pointed out by Ali Madanipour (2006).

The main challenge of urban design today is thus to create (and re-create) good urban spaces with the ability to accommodate and respond to diverse, intense, hybrid, dynamic, contested and often unprecedented urban conditions. Consequently, the ways we understand, analyze, design, redesign and utilize urban spaces require both quantitative and qualitative re-conceptualizations. This includes challenging and reassessing the existing notions of



density, space, typology and "publicness," among others, in the context of high-density, high-intensity urban environments.

The role of quality public space in sustainable urban development becomes particularly critical in high-density contexts, and especially in those cities for which due to scarcity of land (such as Tokyo or Singapore, among others) densification may not be a matter of conscious or desirable choice, but rather an inevitable challenge. The specific governmental, spatial, economic and socio-cultural conditions of many East Asian cities have over time formed a unique platform for the high-density urban form explorations with the primary aim of optimizing the available space by maximizing capacity, while challenging the possibilities of retaining or enhancing the quality and livability in such environments. Various challenges and limitations led these cities to accept and embrace new hybrid modes of living and management, spatial and functional organization that differ considerably from the conventional urban development typologies.

Accordingly, this book aims to challenge the limits of high-density, high-intensity hybrid and dynamic development up to which the performance and vitality of urban space would remain satisfactory or even improved. Consequently, the broader aim is to explore ways of how to assure a holistic approach to environmental, social and economic sustainability, while not losing one to the other in the process of urban space development.

### What is Density?

Common approaches to understanding, measuring and investigating the density of urban environments are mainly focused on built structures and capacities, with a set of objective indexes that express the concentration of built structures and/or people within a given area. This is physical or built density. Some of the most common measurements of physical density are the ratio of the building footprint to a given site, i.e. site coverage or building coverage ratio (BCR) and the ratio of building area to a given site area, such as gross plot ratio (GPR) or floor area ratio (FAR). In addition, human density refers to the concentration of people in a particular space and is typically expressed by the number of people living in the area and the number of dwelling units in the area, often in reference to age, gender, ethnicity, education and other demographic differentiators.

While such quantitative measures establish common and useful language for planners, urban designers and architects, they seem to neglect the qualitative aspects of density and intensity coming from users' perception and multi-sensory facets of urban experience. Density indexes per se are not sufficient to fully define and understand urban density. They are relevant and meaningful only when seen in relation to a specific context. High

density is often defined differently in different cultures. A specific number of dwelling units per hectare might be considered high density in one context, but low or medium in another. Finally, the same values of built and population density indexes can result in a different form and scale of the built environment. The high-rise neighborhoods in Singapore and low-rise urban blocks in Amsterdam, for instance, may have similar FAR values, while being very different in their spatial configuration.

In fact, "soft" information that originates from users' subjective spatial experience and perception of an urban setting is often more evident and more powerful than the underlying density numbers. The human perception of density differs from the scientific one, expressed through space and population density indexes. It refers to a set of bodily and mental mechanisms and processes, which serve to organize, identify and interpret all sensory information available in space. It is thus crucial for understanding, responding to and interacting with the built environment. Accordingly, in addition to the "objective" measures of urban density, the perceived density is expressed in more subjective terms. It refers to an evaluation of spatial conditions, including estimations of the amount of people within a space, space availability and spatial arrangement (Cheng, 2010; Rapoport, 1975), a process molded by users' cognitive abilities, socio-cultural backgrounds, learned experiences and memories (Alexander, 1993; Malnar & Vodvarka, 2004).

Perceived density is related to but also confused with crowding, being described as the negative assessment of density that causes psychological stress in space users (Churchman, 1999). Certain spatial conditions, such as limited space, channeled movement or level of enclosure, could intensify the experience of crowding (Mackintosh et al., 1975; Saegert, 1979). Even though it may be a prerequisite for causing a sense of crowdedness, density by itself is not sufficient to create a crowding experience (Stokols, 1972).

In order to fully understand and enhance the performance and livability of urban spaces in high-density conditions, a more holistic and intuitive approach that would incorporate both "hard" (physical environment) and "soft" (user's perception) information on density and intensity of urban spaces is needed.

### Is the Denser the Better?

Increase in density of urban form and urban population is a worldwide trend and it is thus unsurprising that it has received a considerable amount of attention in contemporary research and academic discussions, especially in reference to its high impact on environmentally and socially sustainable urban development. Yet, in light of the ongoing debate, there is no clear consensus as to whether high density is a good or a bad condition for the city and its dwellers.



The majority of continuously growing recent literature advocates for high-density, high-intensity, compact, mixed-use and pedestrian-oriented urban development as the desired strategies for sustainable urban growth, as opposed to unsustainable sprawl development (see, e.g., Chan & Lee, 2007, 2009; Ewing et al., 2008; Jenks et al., 1996; Newman & Kenworthy, 2006; Sabaté Bel, 2011). In line with such an understanding, it is often argued that the cities of today should be compact and densely populated with people, activities and movement, while maintaining the right balance to ensure non-oppressive conditions for their inhabitants (see, e.g., Jenks & Dempsey, 2005; Mehaffy & Salingaros, 2011; Uytengaak, 2008). However, the attempts to define such a "right balance" in more specific terms, such as the "optimum" levels of density or mixes of uses that a more sustainable urban form necessitates, are rare (Talen, 2011).

One of the key arguments in favor of the high-density compact urban development refers to its positive environmental and economic impacts in comparison to low-density sprawl development. It is claimed that high-density compact urban models tend to lower the consumption of energy and other resources (Speir & Stephenson, 2002), decrease ecological footprint and air pollution (Stone Jr., 2008), as well as reduce transportation and infrastructure costs, construction and management expenses, and are thus considered economically more viable (Bramley & Morgan, 2003; Bunker, 1985; Burton, 2000a; Collie, 1990; Glynn, 1981; Newman & Kenworthy, 2006). Among other positive social impacts, studies argue that higher density eases the access to services and facilities and, in such a way, enables higher walkability and active living (see, e.g., Forsyth et al., 2008; Greenwald & Boarnet, 2001; Heath et al., 2006; Moudon & Lee, 2003; Norman et al., 2006; Talen, 1999, 2011). Higher density increases proximity and enhances mix, diversity, social interaction, community well-being and overall quality of life (Dittmar & Ohland, 2003; Duany & Plater-Zyberk, 2001; Ewing et al., 2008; Gehl, 2010; Hillier & Hanson, 1984; Jacobs, 1961; Newman & Kenworthy, 2006; Popkin et al., 2009; Salingaros, 1998; Song & Knaap, 2004; Turner & Berube, 2009). However, there is no axiomatic relationship between social mix and use mix (Bramley & Power, 2009).

Such a favorable understanding of high-density conditions is, however, relatively recent. Negative experiences in the nineteenth century's industrial cities, when high concentrations of people were associated with poor hygiene, disease, fire hazards and deaths, led to favoring low-density urban development. Some sociological and psychological research suggests that increasing urban density causes greater physiological and psychological stress, social disorder (increasing violence, crime, suicide rates and drug addiction), ill-health conditions and violation of personal

space (Evans et al., 2002; Gómez-Jacinto & Hombrados-Mendieta, 2002; Newman & Hogan, 1981; Regoeczi, 2003). Other studies claim that the modern, highly dense residential areas considerably reduce the level of spontaneous interaction among residents, as they create a condition that is stressful and that violates their personal space. As a result, the increased need for privacy encourages people to maintain their distance and withdraw from social contact (Bridge, 2002; Freeman, 2001; Madanipour, 2003; Nasar & Julian, 1995; Simmel, 1995; Tonkiss, 2005).

Finally, recent studies continue to report that, given the choice, people generally prefer low-density suburban living (Chatterjee, 2009; Gordon & Richardson, 1997). Living in high-density public housing is still often associated with the socio-cultural stigma of poverty (Harper, 2014; Seo & Chiu, 2014). However, in their recent research conducted in Singapore, Hong Kong and Australia, Yuen and colleagues (2006) argue that high-rise, high-density living is not only a dominant and inevitable model in many Asian cities that cope with land scarcity, rapid urban growth, population growth and housing shortage, such as Hong Kong, Singapore or Tokyo, among others, but is also an accepted and sometimes even favored lifestyle. According to them, many of the problems that have long been associated with the early types of high-rise housing are now increasingly being seen as a result of the lack of neighborhood facilities, poor maintenance and management (e.g., lift breakdowns, fire risks or crime in the lifts) and non-strategic selection of residents.

#### **Intensity—Complexity—Urbanity**

The density of an urban environment is clearly not the only and sufficient measure of good performance, sustainability and quality of urban living. Density per se is a neutral condition that has neither positive nor negative value, yet considerably affects physical, functional and operational complexities of urban spaces, both positively and negatively.

In *Cities Full of Space*, Uytengaak (2008) states that an overall sense of density results from the number, diversity, proximity and intensity of people, structures and infrastructures, movements and urban activities. Urban density is thus understood as a relational and dynamic phenomenon. It is the proximity that is one of the main attractors of the city; the closeness to others stimulates higher opportunities for communication, cooperation and influence. Accordingly, denser city environments tend to generate higher levels of interaction among people, establishments and institutions than sparser city environments (Salmon, 2012). But density alone is insufficient to warrant desirable interactions for living, working and recreation. It is often the subtle differences in the quality, not the quantity, of interactions, which make one city or neighborhood more attractive than another.



While urban density is a quantitative category, urban intensity is a more qualitative expression of density, characterized by the volume of spatial interactions that occur to accommodate various activities, both currently and in the future. As Issarathumnoon (2013) describes in her study of Bangkok, "vivid and fluid public/private interfaces—the ambiguous territories between public spaces and private spaces ... the soft boundaries contributed by cloud-liked informal features ... to temporarily occupy space, and multi-layered spatial usages" suggest how the urban space and its perimeters can "provide good opportunities for constructing urban intensity" (pp. 22–23) that leads to the multi-functional use (i.e., the plurality) of urban space.

According to the renowned and one of the most influential urban geographers, Jane Jacobs (1961), one of the essential qualities of livable cities is a high degree of consciously organized complexity. Cities are composed by spatial segments, which are interrelated and form an organic whole. According to Hillier (2007), cities are "stocks of buildings which are linked by space and infrastructure"; yet this physical structure hosts complex economic, social, cultural and environmental processes. In the context of higher density these processes are further challenged, while intensifying the level of urban complexities and potentially leading to new spatial, programmatic and organizational manifestations of urban space relationships.

The concept of urban space as a complex system has been well established within academia over the past few decades, drawing its foundation mostly from mathematics, fractal and informational theories, such as the extensive work on urban complexity by Michael Batty (2005) or Nikos A. Salingaros (1999, 2000, 2011), among many others. For Salingaros, urban space is not merely an empty open space, but rather a raft of information that arises from the available physical structures, surfaces and activities (building façades, the pavement and local nodes, such as trees and urban furniture) and interacts with human consciousness. While the spatial plan arrangement is important, the way users build conscious connections with the surroundings is a more critical aspect.

However, complexity should not be mistaken for "complicatedness." Complexity cannot be generated solely by erecting complex structures or adding disintegrated fragments, as has been attempted in many contemporary urban space projects. According to Salingaros and Mehaffy (2012), the "complicatedness" is the mere result of an irrelevant and unconnected complexity. In contrast, like nature, complexity evolves in time through the process of organizing different and often conflicting elements and cycles into an integrated system.

Density, intensity, complexity, as well as diversity and flexibility, are terms that are often associated with urbanity. Pont and Haupt

(2009: 165) point out various studies which have recognized urbanity as a concept that is frequently used to describe a human condition of plurality, difference, interaction and communication (Hajer, 1989; Heeling et al., 2002: 101; Jacobs, 1961; Meyer et al., 2006; Urhahn Urban Design, 2000; Van der Wouden, 1999; Zijderveld, 1983). Radović (2013) states that "many manifestations of intensity are closely related to urbanity" and "its various definitions can be qualified by degrees of intensity, as expressed in diverse spatial and/or temporal urban situations." According to Lozano (1990), urbanity, as the potential for inhabitants and institutions in a town or city to interact, is partly created by density and, in turn, encourages higher density. A dense concentration of people is, according to both Jacobs and Lozano, one of the prerequisites for a flourishing and diverse city: "The other factors that influence how much diversity is generated, and where, will have nothing much to influence if enough people are not there" (Jacobs, 1961: 205, cited in Pont & Haupt, 2009).

## REDEFINING URBAN SPACE

### Public Space—Urban Space—Hybrid Space

In high-density conditions, space becomes not only a precious commodity but also a place of complex and dynamic spatial and programmatic transformations, confrontations and dialogues. In this light, the common definitions of public and private space and their physical, functional and operational properties need to be reassessed.

### Public Space: Definitions

Public space is a multi-dimensional concept and has multiple and sometimes contradictory definitions (Kohn, 2004). Yet, the ease with which the term "public space" is commonly used contrasts sharply with its growing complexity, including typology, use, ownership and management aspects. Influenced by the idea of the "entrepreneurial city" and neo-liberal theories (Brenner & Theodore, 2002; Harvey, 1989; MacLeod, 2002), city authorities and developers, even planners and designers, commonly use the term "public space" in an intuitive and taken-for-granted fashion, while barely being concerned with the nuances of the level of the "publicness" of public spaces.

Public space is typically defined as an accessible physical space for all citizens, regardless of age, gender, race, ethnicity or socio-economic status with free circulations of people and goods at all times (Carmona et al., 2003; Shaftoe, 2008). It is also described as a symbol of democracy and sociability, of resistance against the aggressive processes of commercialization and globalization (Mitrassinovic, 2006), a space of debate and negotiation, of protest



and expression of the interests of minorities (Watson, 2006), with diversity and difference as its major elements (Young, 1990). In its broadest sense, the public space concept does not necessarily imply physical space, but rather includes physical, symbolic and procedural facets (Iverson, 2007). According to some authors (see, e.g., Ellin, 1996; Watson, 2006), it even refers to all communal and non-private arenas of social life, including all media and, more recently, the internet.

Recent academic debates on contemporary public spaces range from the negative and pessimistic to the more positive and optimistic. The pessimistic view, however, prevails, emphasizing the erosion of the essential characteristics of public space due to various social, political and economic factors, especially commercialization, commodification, the intrusion of the private market into the realm of public culture, and over-control (see, e.g., Carmona, 2010a, 2010b; Crawford, 1992; Dovey, 1999, 2010; Kohn, 2004; Low & Smith, 2006; Pimlott, 2008/2009; Zukin, 1995, 2000). As a result, these factors have led to the "end of public culture" (Sennett, 1977), the play of neo-liberal forces over the public realm (Brenner & Theodore, 2002; MacLeod, 2002), the erosion of community (Kohn, 2004; Low and Smith, 2006; Putnam, 2000; Watson, 2006), a public lulled by the "cappuccino" culture (Atkinson, 2003; Jackson, 1998; Smith, 1996; Zukin, 1995, 2000); and over-emphasis on safety issues, maintenance and control (Davis, 1998; Loukaitou-Sideris & Banerjee, 1998; Mitchell, 1995; Sorkin, 1992).

Such a critique, however, tends to idealize the notion of public space, emphasizing traditional and somewhat nostalgic dialectics which oppose the private and the public, true and false publicness, space and place, aesthetics and ethics.<sup>2</sup> In this view, the emerging hybrid forms of urban spaces are often ignored or rejected. They are categorized as the "PROPAST" (privately owned publicly accessible spaces) category (Mitrasinovic, 2006) and thus are often regarded as "quasi-public" (Dovey, 1999, 2010; Pimlott, 2008/2009) or even "non-places" since they have no roots in tradition, history and culture (Augé, 1995). For Kohn (2004), for instance, public spaces are only those that are owned by the government, have no restricted access and foster interaction. Such a traditional attitude toward the public realm seems to be somewhat problematic and insufficient for understanding the contemporary contexts of emerging new hybrid urbanities and modes of publicness.

The unstable definition of both public and private spheres creates a weak edge on both territories, as their complexities are intertwined and affect each other. The borders between the public and the private have recently been increasingly blurred, and both spheres have gradually acquired some characteristics of the other. Madanipour (2003, 2006) also notes that as much

as the private realm influences the public, society is also the realm of the private, pointing out that there is no clear-cut separation between public and private. Publicness depends on how people characterize the private, and thus there are many shades of publicness and privacy creating a fluctuating, often tense, semi-public-private or "neo-public" continuum (Dimmer et al., 2005; Nielsen, 2004; ZUS, 2006). Due to the hybridization of the public and the private, it is necessary to re-conceptualize the notion and definition of public space in a more flexible and inclusive manner.

### Urban Space

More optimistic interpretations of the current state of contemporary public spaces argue that the perception of the decline of the public realm is largely based on a construction of the ideal of public spaces, which is falsely equated with absolute democracy, classlessness and diversity (see, e.g., Banerjee, 2001; Brill, 1989a, 1989b; Carr et al., 1992; Goss, 1996; Jackson, 1998; Loukaitou-Sideris & Banerjee, 1998; Worpole & Knox, 2007). A mono-dimensional view of publicness is also largely influenced by the emphasis on ownership over space (Carmona & De Magalhães, 2008; De Magalhães, 2010; Hajer & Reijndorp, 2001), which is one of the reasons why we still know too little about the expanding and increasingly hybrid urban space typologies in highly dense contexts emerging today.

According to Habermas (1989), the notion of public space is a historical product, which originated from the differentiation between the state, civil society and the market, as well as the consolidation of modern notions of private property. The relationship between public space and public life has always been dynamic and reciprocal, leading to new forms of publicness that often require new types of spaces. In this more optimistic view, publicly accessible spaces are often defended, as they represent essential components of economic growth and development, affecting the surrounding property values and attracting local retail development (Feehan & Heit, 2006; Nielsen, 2004). Moreover, publicly accessible spaces have also been described as having the ability to serve social ends (Miller, 2007), connect neighborhoods and even promote democracy and civic virtue (Benhabib, 1996; Habermas, 1984). A number of research studies have shown that the contemporary trend toward urban space design with elements of retail, leisure and tourism contribute to the intensification of both individual hedonism and friendship or public respect (Binnie et al., 2006; Gregson et al., 2002; Miller, 2001).

In this view, it may be equally valid to argue that public space is not necessarily declining but rather expanding, offering new modes of "publicness" due to increased opportunities for various forms of exchange (see, e.g., Carr et al., 1992; Coleman, 2006;



Hertzberger, 2005; Nielsen, 2004; Solà-Morales, 1992; Worpole & Knox, 2007).

Political and economic shifts, globalization and technological changes (most importantly in transport and communication) in the second half of the twentieth century, have accelerated changes in the ways public spaces are provided and managed (Schmidt & Németh, 2010). New public space provision and management mechanisms increasingly involve a bigger role of other (non-public) social agents, especially in the private and voluntary sectors (De Magalhães, 2010), and such a trend is likely to continue in the future. Regardless of the position in debates on contemporary public spaces, be it "erosion of the public character" of public space and public sphere, or a "new mode of publicness," conceptual and empirical explorations of the emerging types of public spaces, regarding both the risks and the potentials, are relevant and needed. As people seek both shared space and privacy, finding a "right balance" between the two in planning public spaces in a high-density context is critical. Moreover, rather than holding firmly to past and existing public spheres as a reference to ideal publicness, one needs to consider the ongoing production of "counter-public spheres" which have capacities to develop new public scenes (Iveson, 2007).

Accordingly, instead of adopting classical definitions of public space, the term "urban space" takes into account emerging types of spaces that may not be publicly owned or managed yet increasingly act as public spaces. Urban space is closer to the notion of "collective space," suggested by Spanish architect Manuel de Solà-Morales (1992), where different groups coexist and interact on a competitive basis. Van Alen Institute's exhibition "OPEN: New Designs for Public Space" held in New York in 2003 showcased this recent trend of hybrid urban space development across the world, exploring their typological, morphological, infrastructural, programmatic and operational complexities (Gastil & Ryan, 2004). According to Ellin (1996) and Worpole and Knox (2007), among others, public spaces should in fact include all physical spaces that are not strictly private, but in which social and civic functions of a public character are performed. This even includes spaces of cafés, bars or bookstores (Banerjee, 2001; Oldenburg, 1999). In fact, many of today's public spaces emerged from private squares, such as Georgian and Victorian squares in London (De Magalhães, 2010).

In his research, Francis (2003) introduced the term "urban open space" as publicly accessible open spaces which are designed and built for activity and enjoyment. The word "open" is used in Lynch's (1981) interpretation of it, which relates primarily to the accessibility of space. He mentions that public access is a critical factor for the quality of open space. Accessibility opens up all sorts of interactions with and within the space, including conflicts;

it fosters the diversity of user groups in terms of age, sex, social status or cultural background. The lack of access enhanced by strict management or over-design may considerably reduce the quality of public space. Privately owned open space, however, can increase the level of "publicness" by allowing people to freely dwell, express and act in space, as well as to utilize, appropriate and modify it (Francis, 2003; Lynch, 1981).

Finally, one may need to notice that the boundaries between the public and the private have always been blurry in the context of Asian cities, forming a fluctuating continuum of negotiated semi-public and semi-private spaces. With increased density and rise of the economy (as well as specific climate, as in the case of tropical cities like Singapore), such a condition has created a logical ground for new hybrid urban developments to emerge and be accepted as the extension of the public sphere.

### Hybrid Urban Space

Familiar models of urban space include those predicated on the relationship between the form of urban space and the use and socio-cultural meaning of these spaces in the development of typologies. Commonly addressed types of public space, such as squares, plazas, streets or parks, had not only made the city readable, but also held the meanings and uses that were understood by everyone. Past research has been predominantly focused on such models of urban space, without consistent and clear rules on what constitutes good urban space, let alone what constitutes good urban space in a "high-density context." Consequently, we still know too little about the expanding typologies of urban spaces emerging today, such as mixed transit and commerce-led spaces (e.g., subway stations and airports), multi-leveled and elevated spaces (e.g., roof parks and pedestrian bridges and underpasses), and intensified mixed-use residential developments, among others. Some of these spaces may be found in the existing buildings and infrastructures, whose uses are increasingly being transformed today in such a way that they are acquiring the role of civic places. Childs (2004) calls such spaces the "unsung civic places."

While the conventional types of public spaces and their timeless values remain immensely important, exploring new ways of attaining and sustaining such values, as well as investigating possible new values and modes of publicness, in high-density conditions, is of high relevance and much needed. New urban conditions shaped by rapid urbanization, rise in urban population, densification of urban form, migration and the increasing cultural diversity of cities, among other factors, are leading to a multiplicity of hybrid space typologies. The ways in which public spaces are conventionally understood, designed, utilized and managed necessitate continuous re-conceptualizing.



Rather than reviewing a history and taxonomy of conventional types of public spaces, it is more relevant, and in fact necessary, to acknowledge and examine the shifting meanings and use of places over time, the deformations of typologies of spaces, as well as the importation of new typologies and their reconstitution in high-density contexts.

In an attempt to define the hybridization process in an architectural context, Joseph Fenton (1985) provides the most cited reference. Fenton clearly acknowledges that the fully hybrid architecture in the American context resulted as a response to the increased pressures created by the escalating land values and the constraints of the urban grid in the late nineteenth century.

His concept of architectural hybridization and "hybrid vigor" has originated from genetics, referring to the cross-breeding of different species in order to strengthen particular characteristics of the new hybrid species. Such a process, however, involves both the possibilities and the risks, and mixing for the sake of mixing may engender sterility and fake coexistence, rather than spaces with superior or advanced characteristics.

While focusing primarily on buildings in the context of the American metropolis, Fenton (1985) distinguishes three basic types of hybrids and their combinations, namely: the fabric hybrid, the graft hybrid and the monolith hybrid. The fabric hybrid is derived directly from the structure and measurements of the surrounding urban context; it is a volumetric infill of the grid. The graft hybrid represents a combination of different building forms within an urban block that articulate the different functions they house. The monolith hybrid is often a high-rise structure that merges different programs under a unifying skin. In his *Delirious New York*, Rem Koolhaas (1978) also investigates the hybrid and generic qualities of the skyscrapers of Manhattan, highlighting the countless possibilities for different programs to coexist on different floors and behind a singular envelope. Yet, an architectural hybridization is a process that is manifested beyond the physical complexity and the mere mixing of multiple programs within a single structure. True hybridization requires greater interaction between structural and programmatic pieces, and the mutual intensification and activation of the surrounding context.

Finally, the process of hybridization deeply affects the nature of contemporary urban spaces. While redefining the site, the contemporary hybrid developments redefine the form, the scale, the enclosure and the location of public spaces, the ways they interact with their surroundings and the ways they are used, experienced and managed. In such a way, the urban space becomes fully hybridized with other functions of the development.

Accordingly, we distinguish three mutually overlapping modes of hybridization expressed by the emerging urban

space developments in high-density contexts, namely: spatial, programmatic and/or operational (ownership) hybridization.

#### *Spatial Hybrids*

Spatial hybridization of urban space is reflected through structural complexity and technological innovations and their relationship to the surrounding context, forming new spatial conditions for access, connectivity, physical flexibility and innovative public uses. Complex forms, layouts, hybrid indoor-outdoor interfaces and thresholds, underground, multi-level or elevated public spaces are some of the design manifestations of new hybrid urban space developments. In the context of the design of new spatial hybrids, the plan loses its primacy, and the section and three-dimensional modeling become crucial. In the context of Asian cities, *The Making of Hong Kong* by Shelton et al. (2011) and *Learning from the Japanese City* by Shelton (2012) convincingly explore new models of the compact, high-rise, volumetric, dense and intense urbanism that is emerging, particularly in China and Japan. In these contexts, hybrid development results from the reassessment and redefinition of the site (the ground), as well as of the movements and functions that form the large and highly complex volumetric network of urban spaces.

#### *Programmatic Hybrids*

Programmatic or functional hybrids combine various activities that are mutually synergetic and compatible while suggesting unconventional ways of space usage. Typical contemporary mixed-use developments tend to place "everything under one roof" in order to induce the condition of heterogeneity, diversity and density of "city-like" experiences. However, they often result in creating conditions of co-presence, segregation and conflicts, rather than coexistence, cohabitation, integration and mutual synergy. Flexible and multi-functional design and programming are some of the mechanisms encouraged by the new large-scale developments in order to maximize the use of space and cater to all user groups. Railway stations and other transportation infrastructures are some examples of functional hybridization.

#### *Operational Hybrids*

Urban public space is a human-constructed common that in high-density and high-intensity conditions turns into a congestible good that often generates rivalry and conflicts (Dietz et al., 2002; Neuts, 2011; Poklembová et al., 2012). Operational hybridization refers to new conditions for spatial negotiation, in terms of redefining the conventional notions of boundaries, territoriality and accessibility through negotiated ownership, temporary appropriation, safety optimization, use, time and capacity regulations, and the management of (and over) space.



In contemporary hybrid urban developments the contractual relationships, such as public-private partnerships, play an increasingly important role (De Magalhães, 2010). Although, at present, the predominant ways of public space governance, provision and management may still appear quite traditional, the gradual transfer of responsibilities for public space governance from public to private sectors through various types of contracts is inevitable, changing the very notion of public spaces.

### Emerging Hybrid Urban Space Typologies

Emerging hybrid urban spaces are dynamic and often conflicting systems of synergies between spatial configurations, programs, ways of utilization and management, charged by the intense tensions and negotiations between the diverse users and agencies. In order to understand such complexities we look at over 50 dense, intense, hybrid, complex and dynamic contemporary urban spaces, the majority of which are located in Asia, including cases from Singapore, Tokyo, Osaka, Beijing, Hong Kong and Seoul, but also New York, Melbourne, Berlin, Rotterdam and Copenhagen, among others.

In selecting the case studies, the main focus was on spaces that fulfill at least one of the following criteria:

- space is dense in terms of built density of the site and/or of the immediate surrounding context;
- space is dense in terms of population density or number of users (capacity);
- space is intense in terms of high concentration and diversity of activities and users;
- space is hybrid and complex in form, program and/or governance (ownership and management);
- space represents an emerging typology of public space;
- space offers new programs and/or considerably new ways of utilization in existing typologies of public spaces.

These criteria do not necessarily refer to best practices in terms of quality, performance or success, but rather to good examples of the investigated conditions (built and population density, intensity of use, hybridity and spatial innovation). For example, observed high density of users (crowdedness) does not necessarily relate to high urban performance, although it may be an indicator of its popularity or intensity. Similarly, urban spaces that are less crowded, such as Henderson Waves in Singapore or Dangdai Moma in Beijing, should not be a priori discarded from the selection as potential good practices.

Any attempt to classify contemporary hybrid urban space developments into rigid and static spatial typologies would be an immensely difficult and, perhaps, even unnecessary challenge.

Our initial hybrid typologies are formed in reference to the primary use of urban space. These include *intensified residential developments, mixed-use developments, infrastructural transit-led spaces, recreational green hybrids and hybrid urban voids*. The types proposed are, however, not exhaustive, as most of the spaces investigated are in fact fully eligible for more than one category. Moreover, while some of these descriptive themes used to categorize emerging urban space developments may not be read as hybrid per se, our interest lies in highlighting the most apparent hybrid properties of investigated spaces in reference to high-density and high-intensity conditions. In other words, our attempt is to capture the unique, unconventional, dynamic and often unstable qualities of these typologies that resulted from varied levels of spatial, functional and operational hybridization.

### Intensified Residential Developments

Undoubtedly the most apparent impact of densely built and populated areas on quality of life are found in housing environments. In response, new residential developments and community centers often **oppose conventional housing schemes**. Apart from the "typical" formal play areas (such as playgrounds and sport grounds), open green spaces and other amenities, urban spaces in new residential developments are increasingly adopting various forms and mixed activities (with emphasis on sociability) catering to both residents and general public (visitors), while creating **new conditions for social exchange and negotiation**. Although such a design strategy may not be entirely new, some recent housing developments in high-density contexts showcase considerable levels of innovation and experimentation resulting from spatial, functional and operational hybridization. **Vertical open spaces, elevated and multi-level podiums, roof gardens and sky bridges** are some of the recent re-invented typologies that offer alternative ways of space usage and intensification of usage vertically, while at the same time ensuring the comfort of urban dwellers through alternative amenities and recreational spaces for social interaction (Pomeroy, 2011; Yeh, 2011). Apart from providing multi-level networks of pedestrian spaces, such amenities also offer attractive new ways to perceive and experience the city (from above) and to redefine privacy—qualities that are becoming increasingly valued among high-rise residents (Osmundson, 1999; Yuen et al., 2006).

**Pinnacle@Duxton** (Figure 1.1) is a pioneering high-density public housing model as the result of a response to population growth in Singapore. With the increase of plot ratio—three times that of typical public housing blocks in Singapore, with an average gross plot ratio (GPR) of about 3.00—the Pinnacle@Duxton integrates **elevated public amenities (a public podium and two sky bridges)** as a form of compensation to detachment from the street level. Located at the 26th and the 50th levels, the





1.1 Elevated public space (sky bridge)—Pinnacle@Duxton, Singapore.

bridges act not only as connections between seven residential blocks, but also as public spaces for residents and the general public. While the bridge at the 26th level may be accessed only by the residents, the roof-top sky bridge is accessible by the general public on payment of a small fee. Crowd control measures are also implemented, with the capacity of visitors limited to 200 per day. **Different levels of publicness** were imposed due to various factors, such as the privacy of residents, the maintenance and vertical circulation control, among others. The amenities on the 26th level sky bridge include social services and recreational facilities, such as a Residents' Committee center (RC), a community plaza, a jogging track, an elderly fitness corner, an outdoor gym, a children's playground and two view decks. The main nodes of activities at the roof-top, such as playgrounds and seating areas, are located between the blocks with pathways meandering around the periphery providing great panoramic views of the city center. Although somewhat fragmented, the overall experience within the different segments of the Pinnacle@Duxton is pleasant.

Another example that aims to activate a three-dimensional pedestrian network is *Jianwai SOHO* (Figure 1.2) in the central area of Beijing's CBD. This mega-complex, which includes 20 high-rise towers, four villas with 20 **roof-top gardens** and 16 pedestrian lanes, houses luxury residential, commercial and office functions.

Inspired by the **maze** of alleys in North African Islamic cities, the project attempts to reconstruct, more or less successfully, their rich, diverse and vivid everyday-life settings and ambience, through a **multi-level network** of public spaces, narrow streets, covered passageways, pocket spaces and accessible green roofs. The basement level of the development is reserved for cars, while the landscaped ground level is completely liberated for pedestrians. The apartment towers and low-rise commercial buildings form a loose checkerboard plan at the ground level. Instead of organizing the project around a large park or other focal point, the ground plane is riddled with sunken gardens that knit the two levels together and allow daylight to reach even the lowest levels. This multi-level space between the buildings is the most unique and striking element of the design. The roof of the commercial buildings features green pedestrian walkways that connect all the buildings and allow free movement through the complex.

**Multi-level publicly accessible networks, micro-urbanism and porosity** are some of the major characteristics of the recent intensified housing projects by Steven Holl Architects, including the *Dangdai Moma*<sup>3</sup> (also known as *Linked Hybrid*) in Beijing and *Sliced Porosity Block* (also known as *Raffles City*) in Chengdu, that aim to push the boundaries of the typical residential complexes in China. *Sliced Porosity Block* (Figure 1.3)





1.2 Multi-level network of public spaces—Jianwai SOHO, Beijing, China.



1.3 Open gated community—Sliced Porosity Block, Chengdu, China.





1.4 Mixed-use large-scale development—Tokyo Midtown, Tokyo, Japan.

is a housing complex with five high-rise towers that envelop an elevated public podium situated on top of a shopping mall. This mixed-use housing development, with direct access to a subway line, provides a variety of programs, including offices, serviced apartments, a hotel, cafés and a restaurant. With the provision of diverse activities and ease of accessibility, it is fast becoming one of the most established retail, dining and entertainment centers in Chengdu, with a high frequency of visitors. The large public space of more than 300,000 square meters consists of three valleys with water ponds that also serve as skylights to the six-storey shopping area below. These water gardens reflect three temporal dimensions of the design concept: a Fountain of the Chinese Calendar Year, a Fountain of the Twelve Months and a Fountain of Thirty Days. The voids of the towers at the podium level accommodate three pavilions: a pavilion of history, a light pavilion and a local art pavilion, creating attractive light effects in the evenings.

#### *Mixed-Use Developments*

Characterized by **high diversity and intensity of users and activities** in one place (predominantly commercial), emerging mixed-use mega-complexes often mark the city areas, becoming their new focal points and creating new identities of urban districts. Although heavily criticized for diminishing the public realm, mixed-use developments are seen as one of the dominant models of contemporary urban development and their contribution to the new public realm should not be ignored. Also under pressure of sustainability paradigms, new trends in designing retail-focused spaces show a considerable shift from “conventional shopping mall” developments. With fewer financial constraints, mixed-use complexes are often seen as arenas for **unconventional experimentations** with urban space typologies and innovative uses.

**Tokyo Midtown** (Figure 1.4) is a 569,000-square-meter mixed-use development in Tokyo, comprising office, residential,



commercial, hotel, museum and leisure spaces. The main landmark is the Midtown Tower which is the second-tallest building in Tokyo (53 floors and 248m high) and the fifth tallest in Japan. The project was designed by a number of world-renowned architects. Midtown Tower, Midtown East and Midtown West were designed by the architectural firm Skidmore, Owings & Merrill (SOM) and Nikken Sekkei; landscape design of the Hinokicho park (40,000 square meters) was by EDAW; the Suntory Museum of Art was designed by Kengo Kuma; Sakakura Associates designed the Residential Wing and underground spaces; and Communication Arts was in charge of the design of the retail Galleria. At the edge of Hinokicho Park is Design Sight 21\_21, a 1,700-square-meter design gallery created by fashion designer Issey Miyake and architect Tadao Ando. **Environmental preservation**, environmentally conscious design, and **community participation** are valuable aspects of this mega-complex. With various art and culture programs and contemporary outdoor artwork, Tokyo Midtown is a good example of exploring the **interactive** relationships between site and context, indoor and outdoor environment, users and space, as well as enhancing urban space identity through artistic means.

**Taikoo Li Sanlitun** (Figure 1.5) is another mixed-use mega-complex located in the most mature retail area in Beijing. It comprises five shopping malls, and five office and four residential towers of varying heights, linked by a dynamic **three-dimensional pedestrian network** of sky bridges, alleys, piazzas and a sunken garden, reinterpreting the idea of a compact city and creating a dynamic interplay between various indoor and outdoor spaces and activities.

Relatively simple in form, the **Sony Centre** (Figure 1.6) in Potsdamer Platz area, Berlin is a complex **mixed-use private development**, parts of which are open and accessible to the public. During the 1990s it attracted bitter criticism for drawing its inspiration from the shopping mall and for being heavily **branded**. The central space of the development is the Forum, a circular atrium space covered by a large canopy, which acts as a kind of event and exhibition space, displaying an array of Sony products. Apart from visual technology and entertainment-related facilities, such as an IMAX theater, art and film museums and a Sony-style store, the development also contains a mix of shops and restaurants, apartments and offices, a hotel and a conference center. Free Wi-Fi connections are available for all visitors.

A recently opened building (October 2014), the **Market Hall (Markthal)** (Figure 1.7) in Rotterdam, is one of the latest examples of **intense hybrid urban space** developments. It combines a food market, retail, housing, parking and public space functions (228 apartments, 100 fresh market produce stalls, food-related retail units, preparation and cooling space, a supermarket and 1,200 parking spaces). During the day (from 9 a.m. to 8 p.m.),

the covered square serves as a central market hall, while after business hours the hall becomes an enormous sheltered public space. The result is a covered square which acts as a central market hall during the day, while after business hours it remains lively due to people frequenting the restaurants on its first floor.

**Metropol Parasol** (Figure 1.8) is an **iconic multi-level mixed-use** development located in La Encarnación square, in the old quarter of Seville, Spain. Its major feature is a wooden structure consisting of six parasols in the form of giant mushrooms, one of the largest such constructions in the world. The complex is organized on four levels. The underground level houses the Antiquarium, a museum that displays Roman and Moorish remains discovered on site. The ground street level houses the Central Market, on top of which is an open-air public plaza shaded by the wooden parasols. The roof levels of the structure contain **panoramic ramps and terraces** and a restaurant, offering one of the best views of the city center.

**Insadong Ssamziegil** (Figure 1.9) is a colorful shopping and culture complex in Insadong, Seoul, that features cafés, galleries, and workshops that mix modern and traditional Korean styles. The complex opened in 2004 and is now a destination in itself and an important centerpiece of Insadong. Ssamziegil may be modern, but its construction blends well into the surrounding traditional neighborhood. The whole area takes up 3,967 square meters (42,700 square feet). The 500-meter (1,640-foot) ramp footpath that wraps around the courtyard as it ascends to the roof is the main feature of this complex, which resembles a small Insadong alleyway and **brings the horizontal character of the street to a vertical dimension**. Like a spiral, the ramp envelops the public area and people can see various events on the ramp. There are 70 small shops about 10 square meters (107 square feet) in size along this footpath and 12 of the workshops on the first floor, which were in situ before Ssamziegil was constructed, have since been modernized. The fourth floor features a sky garden, a gallery, a crafts exhibition hall, a book café, and other urban spaces to rest.

#### *Infrastructural Transit-Led Spaces*

New transportation hubs (such as subway and train stations) and bridges, as well as reused dated infrastructural systems, increasingly adopt planning and design strategies that emphasize community, accessibility, pedestrian-friendliness and culture as new, important values. Transportation spaces thus function not only as transit nodes, but as rich, **complex** and **dynamic** spaces with **multiple functions** on **multiple spatial levels**, enhancing the economic viability of the station and its surrounding area. Among the case studies are Shinjuku subway stations in Tokyo; Kyoto Station in Osaka; the Central Mid-levels Escalator in Hong Kong; and A8ernA in Koog aan de Zaan, the Netherlands.





1.5 Mixed-use large-scale development—Taikoo Li Sanlitun, Beijing, China.



1.6 Branded private mixed-use development—Sony Centre, Berlin, Germany.





1.7 Market covered by residential arch—Market Hall (Markthal), Rotterdam, the Netherlands.



1.8 Iconic public space—Metropol Parasol, Seville, Spain.





1.9 Elevated spiral shopping street—Insadong Ssamziegil, Seoul, South Korea.

According to Grossman (2000, p. 2, par. 5),

having [train] stations [in Japan] adopt local community themes requires that the plaza once again be viewed as the focal point of a meaningful urban design (or “machi zukuri”). It is unlikely the station plaza could ever serve demand for open space, due to size restrictions. However, there are strong movements to support the station plaza as the impetus from which integrated plans for pedestrian-oriented designs may originate.

*Kyoto Station* (Figure 1.10) in Osaka designed by Hiroshi Hara marks a new era of high-rise developments in the city, being among the first train stations that have introduced a variety of programs to transit-led facilities under one 15-storey roof.

It contains a shopping mall, cafés and restaurants, museums and exhibition venues, a movie theater, a hotel, a game center, government offices and multi-storey parking garages. With its valley-like hollow space, the station building creates an artificial interior landscape and a composite spatial layout that reflects the complexity of major Japanese cityscapes: vertical dimensions, interlocking networks, fluidity of space and discontinuities of scale. In somewhat theme-park manner, *Kyoto Station* juxtaposes familiar and traditional with novel and high-tech: the atrium of American malls, the traditional public space of Western cities and the transportation hub of Japan. It is possible to move around within this space without seeing or coming into actual contact with the railway.

With 10 platforms serving 20 tracks and 12 train links, and over 200 exits, including the underground arcades, *Shinjuku Station*





1.10 Multi-functional transit hub—Kyoto Station, Osaka, Japan.

(Figure 1.11) is the world's busiest transport hub with an average of 3.64 million people using the station each day. It offers a **vast and complex network** of commercial spaces at various levels, as well as performance spaces for various cultural and social events, making it one of the most common **meeting points** in the city. New modes of publicness are not static, but rather transient and always evolving, seeking flexibility and experimentation. While the cost of building underground structures is very high, due to limited land availability and increasing population, exploring such alternative possibilities for expanding the **underground network** of public spaces while linking it with the existing street level networks is much needed.

*The Central Mid-levels Escalator* (Figure 1.12) in Hong Kong is the longest outdoor covered escalator system in the world, covering over 800 meters in distance and elevating at over 135 meters. It was constructed in 1993 to provide a better

commute by linking areas within the Central and Western District in Hong Kong Island. The project was criticized as being a "white elephant," since it failed to achieve the primary objective of reducing traffic between the Mid-levels and Central areas, as well as overrunning its original budget. However, in spite of such critique, the Central Mid-levels Escalator made a substantial impact on how public facilities and spaces around are used. Since the escalator system opened, most pedestrians started gathering at the elevated level, rather than at the street level (as in the past). This has opened up large tracts of intermediate levels above ("SoHo") and below ("NoHo") Hollywood Road to both pedestrians and commerce. Many restaurants have opened around all the elevated levels, on the first or second floors of the buildings already present. Previously private and exclusive spaces on the upper levels became accessible to the public, creating a **dynamic 3D network of public and semi-public spaces**. The





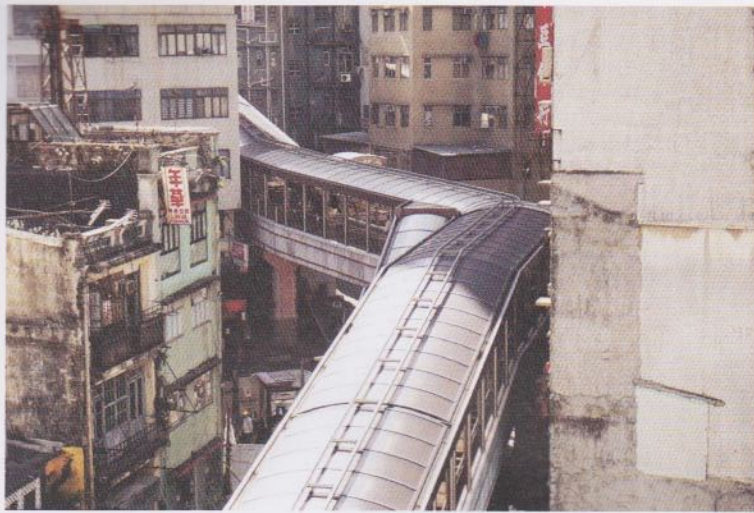
1.11 Multi-level public network—Shinjuku Station, Tokyo, Japan.

Central Mid-levels Escalator is a good example of an innovative and **integrated type of elevated public space**, which is very relevant in highly dense urban conditions.

**A8erna** (Figure 1.13) is an exceptional example of infrastructural space **reuse** and reactivation. Namely, the new public space development in Koog aan de Zaan makes use of the dead space under the A8 motorway bridge that passes through the heart of this small town near Amsterdam, while reconnecting the two parts of the town and providing a better connection to the river. Its program of amenities and activities has been established in a

highly **participatory** fashion, based primarily on citizens' demands. The entire arcade space is divided into three well-differentiated zones. The central square accommodates a supermarket, flower and pet shops, and a light fountain. The eastern end offers a small harbor with panoramic platform, while the western side comprises various spaces for teenagers, such as a graffiti zone (the so-called "graffiti gallery"), a skating rink, a break-dance stage, table-tennis desks, a small football pitch, a basketball court, lovers' corners, as well as a car park for 120 vehicles.





1.12 Elevated public infrastructure—The Central Mid-levels Escalator, Hong Kong.



1.13 Reactivation of dead infrastructural space—A8ernA, Koog aan de Zaan, the Netherlands.





1.14 Elevated parkway that reuses an old railway—the High Line Park, New York, USA.

#### *Recreational Green Hybrids*

Recreational urban spaces primarily include green spaces and, based on urban footprint, may be further classified as parks, green promenades (linear parkways) and park bridges (elevated parks). Green spaces that appear as part of other developments of different primary uses (such as small green areas or community gardens in housing precincts, or commercial and mixed-use developments) are classified only as secondarily recreational.

The **High Line Park** (Figure 1.14) is an **elevated** 1.6-kilometer-long **privately managed parkway system** (the world's longest green roof) in New York. Following the community-led efforts, this development transforms an existing unused infrastructure—an old railway for freight transport on the western side of Manhattan Island—into a public park. With its numerous points of access from street level, and its connections to adjacent buildings, it enriches the public space network of the city, while providing visual relief and new vantage points to the waterfront, the neighborhood and even the Statue of Liberty in the distance. Various tours, lectures, performances and events for the whole family are offered with or without charge, focusing on the High Line Park's design, gardens, history and public art projects.

**Namba Parks** (or **Nankai Namba**) (Figure 1.15) is a **mixed-use large-scale** complex located adjacent to Namba Station, one of the most important transportation hubs in the Osaka region in Japan. The main conceptual premise of Namba Parks is of a canyon coursing through an elevated urban park, while offering a combination of retail, entertainment, cultural, office and residential space. The roof park slopes upward, approximately eight levels from the main entrance, offering a number of green outdoor common areas. Although somewhat island-like and self-centered, Namba Parks represents one of the most successful **privately managed** public spaces adjacent to transportation infrastructure, a **green transit-oriented development**, where economic performance and quality green design emerge as a single objective.

**Henderson Waves** (Figure 1.16) is a segment of the 9-kilometer southern ridge trail, a **green connector** in Singapore. The bridge resides directly above Henderson Road, acting as the main connector between Telok Blangah Hill Park and Mount Faber Park. Spanning 284 meters and reaching a height of 36 meters, it is the highest pedestrian-only bridge in Singapore. An elaborated wave-like form establishes the bridge as a key feature and visual





1.15 Large-scale terraced roof-top park—Namba Parks, Osaka, Japan.





1.16 Green connector, pedestrian bridge as public space—Henderson Waves, Singapore.

landmark within the large recreational infrastructure. While by and large located in a nature park and a relatively low-density setting, as well as being mostly a weekend destination, overseas examples (such as the High Line Park in New York) have shown that the same technique could work equally well in a high-density urban setting, while encouraging more intense everyday usage.

#### *Hybrid Urban Voids*

Although attributed as “conventional” urban space typologies, urban voids retain special attention in high-density contexts. Pedestrian-friendly city zones, emerging from initiatives for the **reclamation of urban streets** and other space often taken over by cars or underused, are essential for making highly dense contemporary cities **more walkable, building better communities**

and improving the overall quality of life. Some such cases include Times Square and Bryant Park in New York; Superkilen in Copenhagen; Clarke Quay in Singapore; and Skatepark @ Westblaak Avenue and Schouwburgplein in Rotterdam.

**Times Square** (Figure 1.17) is a recently **pedestrianized street** in the New York downtown area, with the goal to ease traffic congestion and improve the livability of the area. The reclaiming of the street for pedestrians turned Times Square into an enjoyable and eventful public space, while stitching up the urban fabric and giving the entire downtown a new identity. Pedestrian-friendly features include cycle lanes, clearly marked out pedestrian zones (painted and blocked with potted plants), and sturdy movable tables, chairs and umbrellas that make the space **highly interactive and flexible**. The red steps of the TKTS





1.17 Flexible pedestrian space—Times Square, New York, USA.

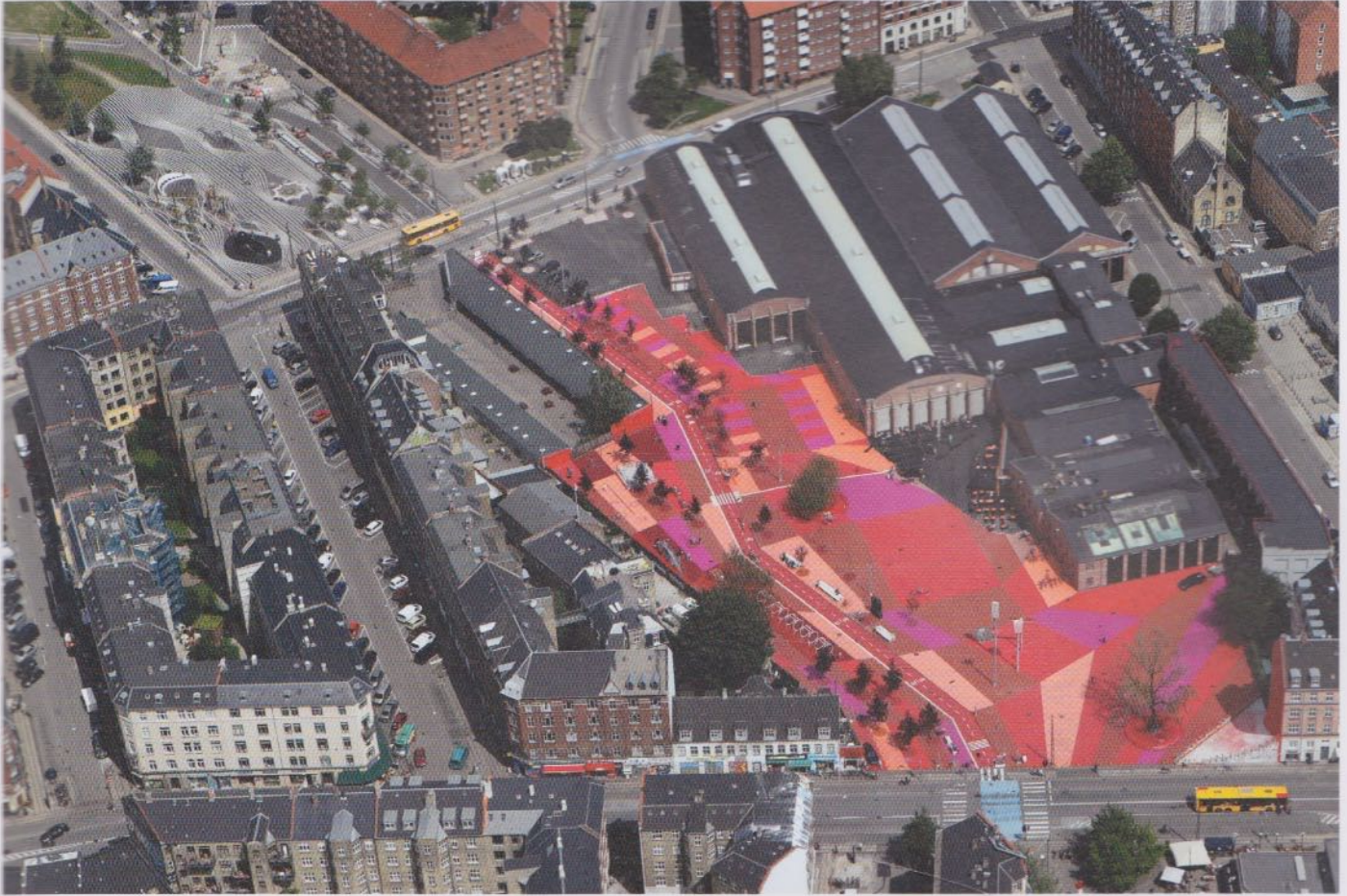
booth represent the main landmark in Times Square, an important point for social interaction, resting and people-watching. In fact, a massive ongoing reconstruction project involves re-paving the pedestrianized streets and replacing aged and cluttered infrastructure with a more modern one, including electrical outlets to eliminate the need for generators at large events and concerts. Reconstruction work is estimated to be completed by 2015. Times Square is one of the most successful redevelopments attracting both local visitors and tourists.

*Superkilen* (Figure 1.18) is a new pedestrian park street in Copenhagen, Denmark that celebrates the **diversity** of more than 60 nationalities living in that city. This colorful and dynamic linear public space is 750 meters long, offering bike lanes, playgrounds, spaces for basketball, football, cultural activities, picnics, socializing and

relaxing. It comprises three main areas: a red square, a black market and a green park. The red square, painted in bright red, orange and pink, serves as an extension to the activities in the nearby sports hall, providing recreational and cultural activities. The black market at the center is a meeting place with dynamic walking surfaces, offering a variety of seating, a Moroccan fountain, barbecue grills, tables for playing backgammon and chess, and a Japanese octopus playground. The green park caters primarily to children, young people and families, providing pitches for hockey and basketball, as well as attracting people for picnics or sunbathing.

*Cheonggyecheon stream* (Figure 1.19), a 5.8-kilometer-long recreational urban space in downtown Seoul, is the result of a massive **urban renewal** project that included demolishing an elevated freeway and reviving a historic Cheonggyecheon stream





1.18 New pedestrian park street—Superkilen, Copenhagen, Denmark.

which once passed beneath it. Such an intervention created a **vibrant sunken ecological corridor** for pedestrians, cyclists and wildlife, offering pockets for play, relaxation, picnics and cultural performances, a number of sculptures and historic artifacts along the way, and, in such a way, reconnecting the once divided northern and southern parts of the city. The design of the stream progressively transforms from the predominant hardscape of Cheonggye Plaza into more landscaped and softer wetland zones before joining the Jungraechon stream which further leads out into the Han River. The result is an interactive yet calm green urban oasis amid the tall cityscape and bustling street traffic that also provides flood protection, increases biodiversity, reduces urban heat, reinforces surrounding businesses and in such a way contributes to **sustainable** urban development.

**Skatepark @ Westblaak Avenue** (Figure 1.20) in Rotterdam is the biggest open-air skating space in the Netherlands resulting from the revitalization of an underused wide traffic island in the middle of the city. Although dominated by the **specific use** and catering to the **specific user groups**, this public space has

proved to be vibrant and well integrated, with almost continuous occupation. One of the essential elements of such integration was the involvement of local skaters throughout the design process, upon whose feedback the entire project has been designed. The central zone offers 11 distinct areas of facilities and equipment for skating, pirouettes and aerial acrobatics, all differentiated by color codes. Next to the skating area stands a café restaurant, also providing various services for skaters and other visitors, including maintenance and event management.

**Clarke Quay** (Figure 1.21) is an attractive tourist and **night-time pedestrian area** characterized by a **mix of modern and traditional values**, as well as **unique design features**. Set against the backdrop of rows of shop fronts, it offers an array of cafés, bars and restaurants, night clubs, entertainment spots and retail shops. Within the internal pedestrianized streets, the threshold between inside and outside is blurred as commercial activities extend onto the streets. A unique spatial feature is a giant canopy made out of connected transparent umbrella-like elements that brings strong





1.19 Sunken parkway—Cheonggyecheon stream, Seoul, South Korea.



1.20 Space for specific use—Skatepark @ Westblaak Avenue, Rotterdam, the Netherlands.





1.21 Night-time pedestrian area—Clarke Quay, Singapore.

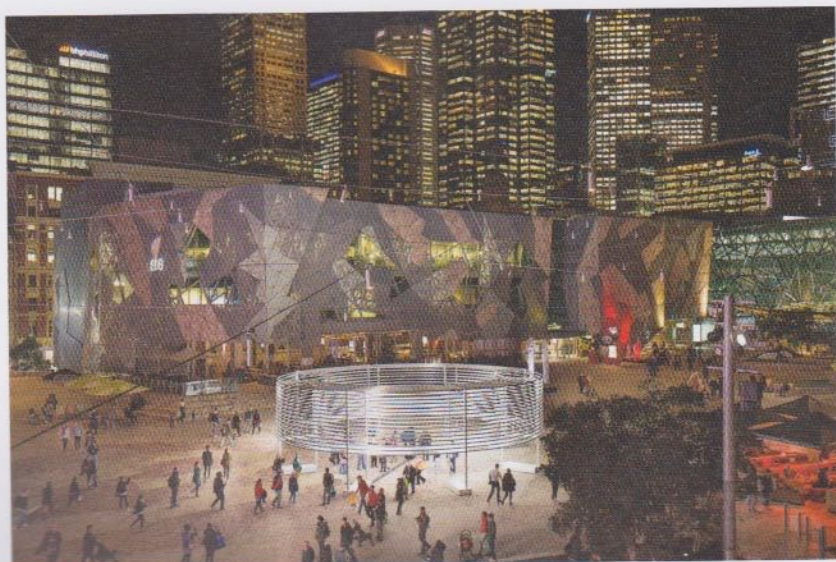


1.22 Exploration of topographic relationship—Ewha Campus Complex, Seoul, South Korea.





1.23 Flexible multi-functional green space—Bryant Park, New York, USA.



1.24 "Fractal" public space—Federation Square, Melbourne, Australia.



visual identity and serves as a micro-climate system, improving users' comfort in the adverse tropical weather conditions.

Located in one of the most popular shopping districts in Seoul, **Ewha Campus Complex (ECC)** at Ewha Womans University (Figure 1.22) offers a new type of public space by exploring the **topographic relationship** between the architecture and the landscape. The new complex, with a library, a bookstore, a gym, a movie theater, cafés and other cultural facilities that are accessible by the general public, resembles a green "hill" split by a 25-meter-wide and 250-meter-long "valley." This monumental **canyon-like space** slopes down in the opposite direction to the topography of the roof and is surrounded by glass walls with entrances to the building at different levels. At the northern end, the ramp turns into stairs forming an outdoor amphitheater. This spatially **dynamic** space provides a new gateway to the university campus and is open to the public, expressing an attempt to reconnect private institutional space with the city.

**Bryant Park** (Figure 1.23) is a 39,000-square-meter privately managed public park in midtown Manhattan. It is known worldwide as one of the most successful restoration projects that involved **public-private partnership** and solving social issues through good design. It is a destination for a large number and a wide range of users. During lunch-hours in the warm weather months, the park typically hosts over 5,000 businesspeople while totaling about 20,000 visitors by the end of the day. Among the amenities available are a French-style Carousel, Citi Pond, the Reading Room (an open-air library), a boule board, chess tables, extensive gardens and seasonal planting displays, table tennis, the Bryant Park Grill, free wireless access, ice-skating rink during the winter, 8-foot-wide umbrellas, as well as 2,000 **movable chairs** to take in the sights. Being the only large-scale public park in midtown Manhattan, Bryant Park is an attractive location for **various public and private events**, such as concerts, performances, exhibitions, fashion shows, literary events and product launches.

**Federation Square** (Figure 1.24) is one of the **new landmarks** of Melbourne famous for its bold fractal architecture and vibrant year-round event calendar. Built above the railway, this complex development provides a **creative mix of activities** and attractions to engage visitors, including art galleries, cinemas, tourist services, retail and dining. With its **diverse network of public spaces**, including the central open square and adjacent covered arcades, Federation Square rapidly became an important meeting place in the heart of the city.

#### NOTES

- 1 In 2010, the world's population reached 6.9 billion people, and it is expected to attain 9.3 billion in 2050 and 10.1 billion by 2100 (United Nations, 2014).

- 2 In her book *The Human Condition* (1958), German-American political theorist Hannah Arendt traces the public versus private space dichotomy back to Greek Polis by juxtaposing its *Oikia* and *Agora*. The *Oikia* was the ideal form of private space—space of production and reproduction, space of necessity, while the *Agora* was the opposite—the ideal form of the public space, space of the freedom of speech and action. While being opposites, the two spaces shared at least one common element: a clear boundary that defined them.
- 3 Detailed information about Dangdai Moma (Linked Hybrid) in Beijing, China may be found in Chapter 2, "Orgware Qualities of Urban Space: An Example."

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