

10 Principles for Liveable High-Density Cities

LESSONS FROM SINGAPORE

Singapore is among the few high-density cities that has performed well in global liveability rankings. Are there lessons others can learn from it? The **Centre for Liveable Cities** and the **Urban Land Institute** initiated a joint study to answer this question. As part of this research, a series of workshops were conducted to engage experts from the public and private sectors, as well as academic and professional institutions in Singapore. This essay summarises the findings published in the book *10 Principles for Liveable High-Density Cities: Lessons from Singapore*¹.

A general sentiment exists that high density spells the end for the liveability of a city. Density is often blamed for accentuating problems like overcrowding, crime, disease, pollution, poverty and high living costs. In its 2012 Global Liveability Survey, the Economist Intelligence Unit observed that the top-ranked cities tended to have a relatively low density.

Although considered a high-density city with over 7,000 persons per square kilometre, Singapore has clinched top positions in liveability rankings. It is an outlier that combines high density with high liveability. This suggests the intriguing possibility that high density need not compromise people's quality of life. Based on the findings from a series of expert workshops, this essay distils 10 principles from Singapore's experience. We argue that, with thoughtful planning and effective governance, a city can mitigate the negative externalities of high-density living, while exploiting special opportunities to improve liveability, competitiveness and sustainability.

¹ Download the e-version of this book at www.clc.gov.sg/documents/books/10PrinciplesforLiveableHighDensityCitiesLessonsfromSingapore.pdf

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Plan for Long-term Growth and Renewal

Continuous efforts to optimise land use can help dense cities overcome the constraints posed by past developments. Through land value creation, regulations, rights of use and limited lease tenures, Singapore's land policies encourage the best use of land, proper maintenance and optimal development cycles. City planners review Singapore's Master Plan every decade, and they may boost land value and density in existing properties by raising plot ratios, subject to a charge levied on developers. Another strategy is the designation of 'white sites'. Developers may propose their preferred land-use, provided a minimum quantum mix is achieved, so as to meet market demands, encourage a range of investment strategies and boost urban growth.



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Through systematic upgrading programmes, older public housing flats are enlarged and improved, while new lifts, covered walkways and better landscaping improve the public areas. This maintains good living standards for all, despite the age of homes and neighbourhoods. To optimise land use, the Selective En Bloc Redevelopment Scheme lets the government demolish some older apartment blocks, so as to rebuild them to a higher density. By encouraging affected residents to relocate to nearby flats, this scheme facilitates renewal and growth without dispersing established communities.

01 The different 'urban layers' of redevelopment in the Tanjong Pagar district – conserved shophouses, public housing and offices.



01 The Southern Ridges is a 10-kilometre trail composed of treetop walkways, pedestrian bridges and town parks passing through residential areas.

02 Clementi Mall is an example where a mass transit station, bus interchange, retail outlets and public residential housing are seamlessly integrated.

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Embrace Diversity, Foster Inclusiveness

People from diverse regions often live next to each other in dense cities, which can be a source of tension sometimes. But when embraced, demographic diversity can culturally enrich a city, and boost its competitiveness. Singapore's urban conservation districts of Chinatown, Little India and Kampong Glam let people easily enjoy varied environments and lifestyles. Comfort with cultural differences, capabilities in diverse languages and connections to diasporic networks, also bolster Singapore's global competitiveness.

Amidst diversity, inclusiveness is needed to maintain social harmony. Among Singapore's most powerful tools in this regard is its public housing. In particular, the Ethnic

Integration Policy defines quotas that guide housing allocation, so that different groups share the same neighbourhoods. Planners also integrate public and private housing for different income groups in suburban towns. This nurtures familiarity, cohesion and trust across diverse groups.

Density supports interaction through shared activities. Proximity, convenience and the need to share scarce land, encourage people to engage in hobbies, like community gardening or soccer, with other enthusiasts nearby. Local interest groups related to sports and the arts are commonplace in Singapore.

Well-designed local spaces can foster a sense of inclusiveness and community by omitting walls and other barriers to movement and interaction. In Singapore's public housing estates, people traverse multiple thresholds and differentiated spaces, from ground level public 'void decks', through semi-public corridors linking high-rise apartments, and then to the privacy of the home, without sacrificing security or privacy.



Draw Nature Closer to People

Greenery softens a densely built-up city, and makes it more liveable. Satellite photographs show that, despite sustained urbanisation from 1986 to 2007, Singapore's green cover grew from 36% to 47%. Tree-lined roads, parks and nature areas are the foundations of Singapore's Garden City reputation. Incentives also encourage building owners to invest in greenery, producing vertical green walls, sky gardens, and lushly landscaped atriums and plazas.

Under the Active Beautiful Clean Waters programme, Singapore is transforming its functional concrete drains and canals, and restricted-access reservoirs, into naturalised and bio-diverse streams, rivers and lakes that are open to public recreation. These new landscapes, like the Alexandra Canal wetlands, have drawn people closer to water, and improved their quality of life and environment.

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Develop Affordable Mixed-use Neighbourhoods

Easy access to good facilities is essential to high liveability, and one of the advantages of high urban density is that it supports the provision of varied commercial, civic and transport amenities in convenient proximity to homes. Singapore’s suburban public housing towns are seen as good quality residential environments, with amenities planned within easy reach of most homes. Networks of walkways and bicycle lanes improve mobility and the accessibility of homes and amenities within towns, while promoting sustainable and affordable transport.

Housing policies, land use planning and financial incentives are crafted to deliver a variety of housing and amenities for people from different income groups. The density and population of these towns generates economies of scale, which helps moderate living costs. Facilities that require larger catchment populations, such as cineplexes and shopping malls, are clustered in town centres, while more localised amenities, like convenience stores, coffeeshops, playgrounds and kindergartens, are closer to homes, in the smaller neighbourhoods and precincts that make up each town.

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Make Public Spaces Work Harder

Land is scarce in dense cities, and this calls for innovative solutions to make spaces work harder and produce synergies. For example, Singapore transformed slivers of underused land, along roads and canals or under elevated railway tracks, into ‘Park Connectors’. These are landscaped jogging and cycling tracks that link parks and let people exercise, play, socialise, commute and enjoy nature closer to home. The island-wide Park Connector Network is a comprehensive matrix of green spaces that promotes a healthy lifestyle, social interaction, sustainable transport and even biodiversity.

In dense cities, public spaces need not be limited to the ground level. In Singapore, many underground public passages are linked to transport nodes like train stations and bus interchanges. Beyond funnelling people, these ‘nodes and channels’ are activated public spaces lined with shops and cafes. Skyscrapers like Marina Bay Sands or Pinnacle@Duxton have roof top gardens that enrich residents’ recreational experiences and shape the city’s identity.





Prioritise Green Transport and Building Options

Dense cities are better able to support public transport. Singapore invested in an extensive, integrated and affordable public transport network. Comprising buses, light rail and a mass rapid transit system, it offers good connectivity to most of the island. High-density transit-oriented development has resulted in the proximity of many homes to public transport and the viability of these systems. Meanwhile,

policies such as congestion and fuel pricing and a cap-and-trade system to limit car ownership, help discourage the use of private vehicles. This reduces congestion, as well as noise and air pollution. Covered walkways, Park Connectors and intra-town cycling networks also make walking and cycling viable low-energy transport options.

To mitigate the urban heat island effect common to dense cities, Singapore tries to reduce the energy consumed by buildings, by promoting

green buildings through its Green Mark Incentive Scheme. The city also invested in a District Cooling System at Marina Bay, where centrally chilled water is piped to multiple buildings for air-conditioning. This system is suited to high-density districts, and it generates energy, water and cost savings, besides freeing rooftop space for other uses. All new developments in Marina Bay now need to meet higher Platinum or Gold Green Mark standards, and must provide sky-rise greenery and communal landscaped areas equivalent to their site areas.



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01 Bishan-Ang Mo Kio Park.

Relieve Density with Variety and Add Green Boundaries

One remedy to the effect of a concrete jungle in dense cities is the ‘checkerboard’ urban planning principle, which mixes high- and low-rise developments to create variety and physical relief. Singapore has created varied residential environments by interspersing high- and low-rise developments. Even though the city’s overall density is high, the spatial quality of

specific places is therefore not unpleasant or overwhelming. Such distinctions and attention to design at the local scale also helps create place identities. For instance, Bishan-Ang Mo Kio Park, which separates Bishan and Ang Mo Kio towns, supplies a recreational amenity to residents in both towns and provides a breather from their high-rise environments. As a strong green boundary, it also allows both towns to retain distinct identities, despite their close proximity.

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01 Residential blocks surround shared playgrounds, event areas and sports facilities, enabling residents to see what is going on from their apartments.

02 Orchard Road is lined with trees, street furniture and thematic decorations.



Promote Innovative and Nonconventional Solutions

Dense, resource-scarce cities need to foster innovations so as to overcome constraints and improve their liveability and competitiveness. Singapore has turned its shortcomings to its advantage through a culture of systematic innovation. Indeed, the 2011 Innovation Cities Index ranked it among the world's 30 most innovative cities. In one-north, people can work, live, learn or play in a 200-hectare development designed to nurture research and innovation. With reduced commuting needs, researchers can focus on work, yet easily recharge or exchange ideas at nearby gyms, cafes and parks.

Singapore has also relied on innovations to overcome its water scarcity and develop a sustainable water supply. Water reclamation was made possible by methodically rationalising the city's drainage and sewerage systems and then being alert to and adopting relevant technologies when these became viable. NEWater, the product of this reclamation, is now pure enough to be used for wafer fabrication factories and drinking.



Activate Spaces for Greater Safety

Dense cities are sometimes seen as less safe. This can be mitigated using the idea, taken from urban design and space management, of 'activating' spaces to make them safer. This involves encouraging some people to linger and participate in activities in a space, and not just move through it. Spaces in Singapore's suburban towns are designed as a system of channels and nodes, with thoroughfares punctuated by activities at the nodes, like playgrounds or seniors' corners. Having activities at different times, and the presence of the community on the ground level, keeps these spaces safe.

10 3P

Forge 3P Partnerships

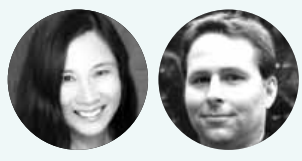
New developments often force dense cities to make tough land use trade-offs. The interests of residents, businesses and other groups are at stake in the development and management of places. Consulting and collaborating across groups can improve development strategies and even produce win-win solutions that enjoy smoother implementation. Singapore River One began as a project to get stakeholders to champion place management at the Singapore River. It is now becoming instrumental in the successful development of leisure and commercial spaces there.

The Orchard Road mall enhancement initiative is driven by an inter-agency taskforce led by the Singapore Tourism Board, along with the Urban Redevelopment Authority, Land Transport Authority and National Parks Board. These agencies worked with private design consultants and consulted Orchard Road stakeholders to implement improvements, like new street furniture. Planning incentives encouraged landlords to improve their façades, which also contributed to a more vibrant street.



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The UN projects the world’s urban population will grow to five billion by 2030, and it seems inevitable that most cities will grow larger and denser. These 10 principles can be a starting point for planners, developers and citizens to think about how cities can support more people without sacrificing quality of life. Creating a highly dense yet liveable city is not easy, but we hope our report shows it is possible – and that it has been done successfully before.



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