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Centenary paper

Urban planning in Southeast Asia: perspective from Singapore

Southeast Asia is one of the world's fastest-growing regions in terms of population and urban growth. The economic and physical landscapes of its cities continue to change with globalisation and transnationalism, requiring update and development of new urban and spatial practices. The aim of this paper is to reflect and review the state of urban planning and policy in Southeast Asia, focusing in particular on the roots of urban planning from European colonial planning, their inherent ideas and principles. Using the case study of Singapore, the intention is to drill down and examine the products of the first modernity represented by British colonial modernist planning, and discuss how largely Eurocentric planning models have shaped and impacted on the present urban structure and development, and are intersecting with the second wave of modernity brought on by globalisation and the new economic growth of the twenty-first century, especially in terms of addressing urban liveability and sustainability.

Geopolitically, Southeast Asia occupies a land area of 5 million sq km that is located south of China and east of India, extending more than 3,300 km from north to south and 5,600 km from east to west. There are 11 countries in Southeast Asia. All with the exception of Timor-Leste are members of the regional economic organization, the Association of Southeast Asian Nations (ASEAN). Economically, most of Southeast Asia is low income despite economic growth in recent decades. Only two countries, Brunei Darussalam and Singapore, are high-income economies. A third (38.6%) of the Southeast Asian population lives with less than US\$2 a day. Southeast Asia has some of the world's poorest countries – Myanmar and Lao PDR. Demographically, Southeast Asia's population has more than trebled from 178 million in 1950 to 590 million in 2009. According to a United Nations estimate, 38% of this population lives in urban areas and expanding fast (UN-HABITAT, 2009). How these cities are planned and developed has major implications for poverty reduction, urban problems and their solutions.

To put this in perspective, while Southeast Asia is one of the world's least urbanised regions, its urban population is growing at an unprecedented rate: 1.75 times faster than the world's urban population. Its urban population is anticipated to increase to 56.5% by 2030 (United Nations, 2004). In some countries, for example Brunei, Indonesia, Malaysia and the Philippines, the urban proportion may rise beyond 60%. Singapore is 100% urbanised. Southeast Asian countries, in general, are experiencing

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a shift from traditional agriculture-based economies to urban economies where income from agricultural activities contributes decreasingly to overall gross domestic product as the non-agricultural sector growth strengthens.

In the process, villages have become towns, and in some cases mega-cities, the size of which will 'take us, in planning terms, far beyond anything the world has yet seen and hence into realms of great uncertainty' (Jones, 1983, 3). The populations of Jakarta, Manila and Bangkok each exceed 10 million and are growing. Jones (2002) has estimated that about 11% of Southeast Asian population lives in mega-urban regions. Based on population projections, these mega-urban regions are likely to grow demographically until 2030 (McGee and Robinson, 1995). The coming decades will be years of immense challenge for Southeast Asia as it becomes a critical site of unprecedented urbanism. There are profound questions about the planning needs, future growth and development patterns of its cities.

Yet, despite the growing importance of Asian urbanisation, there is fragmented research on its urban development planning (Webster, 2004). As Roberts and Kanaley (2006, 3) state, 'Managing the urbanisation process and its consequences has not, to date, gained a central position in national policy debate in Asian countries'. Increasingly, the policy advocacy of international organisations has been to re-examine urban planning and reinforce the need for more effective urban planning and management to ensure that urbanisation supports economic development and poverty reduction (Asian Development Bank, 2008; UN-HABITAT, 2009; World Bank, 2009a). There is increasing realisation that if urban planning is to play a role in addressing the major development issues, then in many parts of the world, planning systems and current approaches to planning will have to change (UN-HABITAT, 2009). Southeast Asia is no exception.

This paper aims to review the state of urban planning in Southeast Asia. The next section begins with a historical overview of the emergence of modernist urban planning in Southeast Asia gleaned from a review of archival and documentary resources. At the risk of a cliché, there is a need to explore and appreciate the past to understand the present and shape the future of our cities. The section titled 'Present transformation, urban liveability' makes a more grounded place-specific study by examining how Singapore has built on its first wave of modernity by using the past colonial legacy of urban planning to develop an urban agenda that addresses present urban liveability and future sustainability. All of this comes in the wake of the current second modernity, marked by globalisation and new economic growth that is reimagining entrenched practices and evolving new attitudes and policies. The final section summarises some key lessons from the analysis and general narrative of how a planner's city has developed, hegemonised and incorporated local conditions within the imported British town planning discourse.

Past legacy and colonial patterns

The urban landscape of Southeast Asia is complex. There are huge variations between Southeast Asian countries in terms of land and population size, economic performance, governance practices, cultural traditions, ethnic groups, religions and languages. Indonesia is the largest country in the region, in terms of land area and population (see Table 1). It ranks fifth in world population. Singapore is the smallest nation-state in Southeast Asia in terms of land area (700 sq km) while Brunei Darussalam is the region's smallest country in terms of population (330,000 people).

Even though Southeast Asia has been influenced by ancient China, India and Muslim empires, from an urban history perspective Southeast Asian countries only began to develop independently of each other after European colonisation in the sixteenth century (Shaffer, 1996; Barwise and White, 2002). Motivated by trade and imperialism, Portugal, Netherlands, Spain, Britain, France and the United States at various times have occupied and ruled Southeast Asia with the exception of Thailand. Colonisation by European powers was interrupted during World War II by the Japanese invasion, which eventually ended in the post-war period by decolonisation and the nationalist independence movement. While these countries are now independent, many of the cities, institutions and challenges are rooted and shaped by their colonial past.

Although experiences vary, in many countries colonisation has led to immigration

Table 1 Southeast Asia population and land area

	Population estimates and projections		Land area (km ²)
	2000	2010	
Earth	6,085,572,000	6,842,923,000	148,940,000
Southeast Asia	518,865,000	591,021,000	4,561,622
Brunei Darussalam	333,000	414,000	5,765
Cambodia	12,744,000	15,530,000	181,035
Indonesia	209,174,000	235,755,000	1,890,754
Lao PDR	5,279,000	6,604,000	236,800
Malaysia	22,997,000	27,532,000	330,257
Myanmar	47,724,000	52,801,000	676,577
Philippines	75,766,000	90,048,000	300,000
Singapore	4,017,000	4,590,000	697
Thailand	61,438,000	66,785,000	513,254
Timor-Leste	722,000	1,244,000	96,120
Vietnam	78,671,000	89,718,000	330,363

Source: UN-HABITAT (2007), 344. Country land area data are from ASEAN website, <http://www.aseansec.org>, except for Timor-Leste which is from its government website, <http://www.timor-leste.gov.tl>.

and population growth, expansion of human settlements and the introduction of Western town planning ideas, modernity and new townscapes, among others. Foucault (1969) has argued that the constitution of knowledge is inseparable from the exercise of power. Similarly, King (1991) in his seminal analysis of the cultural productions of capitalism (and spatial transformations) has observed that Western town planning has been an integral part of colonial domination, fuelling the notion of dependent urbanism. In addition, Lefebvre (1991) has argued that the spread of capitalisation globally has engendered similarities while differences of local culture, history and natural landscape are suppressed. As Lefebvre suggests, the history of space is 'produced and reproduced in connection with the forces of production (and with the relations of production)' (77) in what he terms 'spatial practice, representations of space, and representational spaces' (33).

Thus, in British colonial Malaysia and Singapore, for example, for much of the colonial period the administration attitude was largely *laissez-faire* as the concern was trade development (Bristow, 2000). However, as the population in the colonies grew to a million or more people, the British 1947 development plan and development control system was introduced into the colonial settlements to shape and guide development. The new city planning vocabulary was underpinned by master plans prepared by British master planners of the time (for example, Sir Patrick Abercrombie), reflecting the prevalent British town planning notions of growth containment and new town development. Improvement trusts embodying municipal governance structures based on British administrative philosophy were also introduced. An example is the Singapore Improvement Trust (SIT) established in 1927 for the city of Singapore. The SIT was assigned the crucial role of improving the city and housing the homeless. It was empowered to draft and implement urban development schemes – housing, roads, sanitation and land acquisition – within its area of jurisdiction. Another was the formalisation of public control of land use and planning as a professional activity. This involved several aspects including the introduction of the following:

- Written planning permission by requiring that those wishing to undertake any form of land development pay for and obtain authorisation before embarking on such a process;
- Zoning as an instrument for controlling land use activities. It was introduced to colonial Malay Peninsula in 1801 and Singapore in 1822 to regulate segregated settlements;
- Map-based master development plan following the 1947 development plan system;
- A system for cataloguing and storing data on land, land uses and users. With the basic intention of providing the colonial rulers with information necessary for surveillance and tax/revenue collection, the system continues to provide useful data such as census statistics, cadastral maps and housing conditions necessary as input into the urban planning and development process.

What emerged is a similarity in the urban planning approach and system among the British colonial settlements. Aside from modernist town planning ideas, another prominent colonial influence is in defining the spatial elements of urban settlements, in particular the development of entire port cities, hill stations, churches, schools, public buildings, warehouses, government residences, forts and even cemeteries. The colonial authorities variously introduced urban forms that were previously unknown in the region. Places of worship were crucial to the European communities in the colonies. Missionaries followed the colonists to help the Europeans with their religious duties and daily life. Thus, they brought new religion and western education, churches and school buildings to the region.

The British-built government houses, forts, schools and Anglican churches in their colonies. Examples include Government House (1804), Fort Cornwallis (1793), Penang Free School built by Anglican missionaries (1816), St Xavier's Institution established by the Jesuit Order (1787) and St George's Cathedral (1817) in Penang, Malaysia. While some of these continue to function to the present day (such as a number of the schools) and have been conserved (for example, the Old Protestant Cemetery in Penang, 1789–1892 which was restored by Penang Heritage Trust in 1994), others have been abandoned, demolished or are at risk of demolition with rapid urban development. An example is Raffles Institution in Singapore, the oldest public school (established in 1823) which was demolished in the late 1970s to make way for a 73-storey (226 m) hotel/office/retail development designed by I. M. Pei. It is one of Southeast Asia's tallest hotels.

The Jesuits, Franciscans and Spanish conquistadores similarly brought Spanish fortifications and colonial layouts to the Philippines in the form of grid patterns, squares, city walls and Spanish-style churches. In several parts of the Philippines, such as Luzon and Visayas, the Spanish colonial government imposed land tenure arrangements, making local people tenants on lands their ancestors had tilled, creating new land tenure and ownership arrangements that resulted in involuntary landlessness and marginalisation of some local communities. As Benevolo (1993) points out, many of the colonial cities in Asia were fortresses built according to the rules of European military architecture that took little regard of existing urban settlements; often, the European cities existed separately from the previously existing local settlements.

Because of an emphasis on trade, the British dictated a need to concentrate their colonial urban development projects in port cities. In this regard, Singapore (1819), Penang (1786) and Malacca (1825), Malaysia, are leading examples. They also developed hill stations – for example Cameron Highlands (1885, also for growing tea) and Fraser's Hill (1890s, tin ore trading post) – in Malaysia to get reprieve from the tropical heat. These hill stations can be found throughout the British colonial empire and mirror somewhat the eighteenth- and nineteenth-century development

of seaside resorts and mountain lodges in Europe – for example Blackpool, Brighton and Scarborough, England (Walton, 2000; Durie, 2003).

Other colonial rulers in Myanmar, Cambodia, Philippines, Vietnam and Indonesia also founded hill stations for the European population. The United States, for example, during its control of the Philippines from 1898 to 1946, developed Baguio as a hill station and summer capital of the Philippines. In 1904, Daniel Burnham, the father of the City Beautiful movement, prepared the plan of Baguio and set the development standard for parks, roads and the future development of the city. The bulk of the French Indochina population was in Vietnam and Cambodia, where the French colonial government systematically remodelled the major Vietnamese and Cambodian cities according to European specifications. A typical French colonial city grid was superimposed over these cities, serving primarily commerce rather than social factors. The preference for a gridiron street pattern was rationalised by its ease of security control (Njoh, 2009). It represented a means to regulate activities, separate the population and establish planned, modernist urban cores for aesthetics, development and economic–political interests. The desire to impose a specific spatial order was almost paramount.

Crucial in this respect was the philosophy of racial segregation, which sought to spatially separate Europeans from other races, including the indigenous population. The Europeans were generally given the best land, location and infrastructure in the city. In Singapore, for example, Sir Stamford Raffles, a representative of the British East India Company, through the Jackson Plan of 1822 not only laid out the urban centre in a grid pattern but also divided the city into ethnic functional districts that effectively went beyond the ‘whites’ versus ‘others’ nomenclature that was a standard feature in British colonial town planning elsewhere. The grid street pattern of Singapore city centre is evidence of this colonial legacy.

Equally, central to the French urbanists’ plans was the notion of segregating the colonial cities into quarters based primarily on the ethnicity of residents. In the European quarters, wide boulevards were lined with spacious residential villas. Many important public buildings were constructed in Parisian neo-classical style. In the ethnic quarters, accommodation was less generous. As Dovey (1999) and Njoh (2009) argue, the notion of segregation is a form of ‘power over’ – spatial domination in built form. Others such as Foucault (1969) have described the monumental public-building construction as the ‘spectacle of architecture’ that is aimed at inspiring the larger population by controlling it through spectacular events.

A review of postcolonial theory would indicate that the colonial experience was far from singular or unidimensional and had transformative effects on both the colonised and coloniser (Said, 1993; King, 2003). The colonies presented an opportunity to experiment new urban planning approaches and concepts, which were then exported to the mother country. An example is Karsten’s work in Indonesia. In contrast to

the British and French city design, Dutch engineer H. Thomas Karsten (1885–1945), while richly imbued with elements of Western culture and urban concepts, rejected the segregation ideology and adopted a radical approach to spatial organisation in which colonial urban planning principles were integrated with indigenous elements (Cobban, 1992; Coté, 2004). He expressed a concern for the preservation of native culture that was unusual among colonial authorities at that time. Karsten was engaged as a consultant in many urban plans throughout Indonesia during the Dutch colonial period. An example was the ‘New Candi’ Plan (1917) for Semarang, which proposed to accommodate all ethnic groups on the basis of their habits rather than their ethnicity. Karsten’s planning principles of ordering urban space based on ‘cultural pedagogy’ were widely accepted in colonial Indonesia as well as the Netherlands.

Aside from physical building and planning, a vast part of the colonial influence is in European cultural hegemony and the Western worldview being emphasised through education. Many planners in Southeast Asian cities continue to look to Western cities for urban planning education (UN-HABITAT, 2009). The influence of education remains a continuing force in the making of localised globalities. Important as the colonial past may be, there is not a common set of principles to account for all cases of postcolonial urban development. As many postcolonial scholars would point out, the postcolonial development agenda is being driven by the ‘situation on the ground’ in postcolonial countries themselves and also by new forces that relate to the system of knowledge production, education and, most importantly, the production of space (see, for example, Mongia, 1996; Kusno, 2000).

As Yuen (2009a) posits, urban planning during the colonial period was for a different set of priorities that often did not foresee the rapid post-independence changes in economic, political and social expectations. The colonial institutions and plans were often designed to manage steady growth, not rapid growth cities. Yet, many of the planning legislation, zoning, master plans and land management tools developed in Britain or Europe during the 1930s and 1940s and subsequently enforced under colonial rule still persist. For instance, Singapore’s planning legislation based on the British Town and Country Planning Act 1947 has been revised only marginally (Motha and Yuen, 1999; Yuen, 2009b). Notwithstanding, Singapore seems to have developed the city well and has been consistently ranked as Asia’s most liveable city in recent (2009, 2010) Mercer Worldwide Quality of Living Survey. The transformation of Singapore offers rich ground for analysis. The next section shifts the vantage point to Singapore, and examines how the past colonial urban planning legacy has been built upon, especially in terms of spatial processes to produce the modern Singapore, and now interfaces with the new economic growth, proliferation of media technologies and globalisation to address the city’s present urban liveability and future challenges.

Present transformation, urban liveability

Many studies have emphasised the successful transformation of Singapore (Perry, Kong and Yeoh, 1997; UN-HABITAT, 2008/2009; World Bank, 2009b). Key to this is the role of long-term urban planning (Rashiwala, 2005; Celik, Zyman and Mahdi, 2009). The root of Singapore's largely successful urban planning phenomenon could be traced to the British town planning policies started during the colonial period, which set in motion the current practice of comprehensive long-term planning. In 1959, at the culmination of efforts to address the needs of the city, whose population had expanded from 10,863 in 1824 (Singapore was established as a British colony in 1819) to 1 million residents, the British colonial government introduced comprehensive planning by way of the master plan and development control as well as planning legislation to ensure implementation. Styled after the British development plans of 1947, the Singapore Master Plan was detailed and precise.

As set out in the 1959 Planning Ordinance, the Singapore Master Plan was a statutory plan governing the use of land for a period of 20 years with provision for 5-yearly reviews. The primary objective was to control urban growth and implement spatial improvements. The Master Plan contained several planning advances of the time. It introduced land use regulation through zoning, new towns and urban containment. For the first time in Singapore, there was an island-wide land use plan, and land was designated for housing, schools, open spaces, infrastructural facilities, etc. There was also the statutory requirement to obtain written planning permission before development can proceed, which until then had largely proceeded on an ad hoc manner governed at best by building by-laws.

The inevitable result of unplanned growth had been the expansion of unauthorised squatter settlements on the margin of Singapore city where private building contractors and communities built (usually without official approval), freely sublet, and rented their wooden houses on previously vacant hills, disused cemeteries and over swamps (van Grunsven, 1983). As the Singapore Improvement Trust (SIT, 1947) reported, 'Huts were erected with astonishing rapidity and ... it was difficult to get them demolished.... The situation changed almost from day to day and was very difficult to control' (17). The squatter population grew rapidly, from 127,000 in 1947 to 246,000 in the mid 1950s (Singapore, 1956). Within the city centre, in Chinatown, the population lived in overcrowded shophouses (an adaptation of southern China building architecture), sub-divided into shared cubicles used by different people by day and night at densities of over 1,000 persons per acre (Kaye, 1960).

In seeking to restore and control the enlarging squattered city margin, the solution, as outlined in the 1947 Housing Committee Report, was for the Singapore Improvement Trust to be given 'proper zoning powers and powers to plan ahead of development' (SIT 475/47, 1947). Thus, in 1955, the colonial government completed a long-

range development plan, the Master Plan, which was eventually approved in 1958 to guide the city's physical development. The 1958 Master Plan aimed to resettle (and clear) two-thirds of the squatter population in permanent housing over a 20-year period with the remaining one-third allowed to exist temporarily in 16 controlled 'tolerated attap¹ areas' (Singapore, 1955).

In 1965, the post-independence government declared that it would clear all squatter settlements, which constituted a fire hazard following the fire of 1961 in the squatter settlement of Bukit Ho Swee (24 ha), the biggest fire in Singapore's history, which left 4 people dead, 85 injured, 2833 families (15,694 people) homeless and more than 2,200 attap houses destroyed (HDB, 1965). The Housing and Development Board (HDB) was established in 1960 to replace the Singapore Improvement Trust. It was invested with expanded powers to build housing, thus putting in place the beginning of Singapore's large-scale public housing, which now housed 80% of Singapore's resident population (Wong and Yeh, 1985; Yuen, 2005).

Under the 1958 Master Plan, three new towns were to be built outside the city area. However, the 1958 Master Plan was based on a scenario of steady growth and the physical, blueprint planning model was not prepared for rapidly changing circumstances, high growth and challenges of post-independence, which included a growing population and limited land (by 1967, Singapore's population had grown to 2 million); rapid development; high land-value; and high-density, massive high-rise buildings. Historically, master planning has tended to stress compliance with the legal requirement to update the city's physical development plan at specified intervals without much consideration to the infrastructure, notably land-use transport implications. The problem with this and the overall effectiveness of master plans has been increasingly debated in planning theory, including the need to consider alternative planning models for better outcomes (Stiffel, 2000; Faludi, 1973; Davidoff, 1965; Lindblom, 1959).

The need to find a new planning approach has become increasingly apparent and urgent in the post-independence years. As Motha and Yuen (1999) recount, public sector development had to be freed from the constraints of the Master Plan for the better part of the 1960s. With UNDP technical assistance, the Singapore Master Plan was eventually supplemented by a new planning instrument – the non-statutory, strategic planning framework of the Concept Plan in 1971. At the same time, effort was made to expand the local planning capacity and profession to support plan implementation. In April 1971, the Singapore Institute of Planners, a professional body for town planners in Singapore, was established to promote the advancement of urban planning and planning practice as a profession.

Compared to the Master Plan, the Concept Plan embodies a planning approach that is more agile and collaborative across all urban aspects. Reflecting goal-oriented

1 Named after the attap palm (*Nyssa fruticans*), from which materials were used to construct the houses.

strategic urban planning, its emphasis is on defining the emergent vision of the city and strategies to effect flexibility and responsive shifts to solve big urban problems and meet growing needs, changing circumstances and available opportunities as they arise. The approach is influenced by pro-growth politics, seeking to describe what a city should have rather than what a city can have. It plays a major role in making the urban landscape liveable and sustainable. It should be mentioned that Singapore's present planning circumstance is somewhat unique in that it has consolidated its multi-tier colonial administrative structure to a single layer of government comprising government departments and statutory authorities since the 1960s, thereby promoting coordination and integration among agencies that has been the hallmark of its comprehensive planning (Lim, 2000). In consequence, its planning process has become highly integrated where all agencies involved in economic, social, environment and infrastructure development would come together to resolve competing needs and tradeoffs through the framework of the Concept Plan.

The Concept Plan

The 1971 Concept Plan for a population scenario of 4 million visualised the development of a ring of high-density new towns and industries around the central water catchment area, which served as the green lung of the city. The new towns would be linked to each other, industries (i.e., employment) and the central business district by a network of expressways and a proposed mass rapid transit system. Like many plans of its era, a significant aspect of the Concept Plan is its land-use–transportation–planning integration. The 1971 Concept Plan has in due course been reviewed in 1991 and 2001 and will be reviewed on a 10-yearly cycle.

The biggest difference between the 1971 and 1991 Concept Plans is the latter's focus on not only economic performance but also quality of life. The earlier growth ethos is now eclipsed by the dynamics of twenty-first-century globalisation, and the vision to transform Singapore into a 'tropical city of excellence'. The drivers included Singapore's growing aspiration to become a global city; the need to maintain economic competitiveness; and attract investments, visitors and residents to remain in Singapore in the emerging economic globalisation and international mobility of capital and labour. The strategies included the expansion of connectivity in land transport (especially mass rapid transit) and urban greenery (through a park connector network); and the development of a wider variety of housing, parks, leisure facilities, business parks and new regional centres. The regional centres are designed with an emphasis on high-density land usage to promote public-transport use and to bring jobs closer to homes. One of the more significant strategies is heritage conservation, following the amendment of the Planning Act in 1989 to protect historic areas, which until then had received little consideration in urban planning.

Compared to Western cities, heritage conservation is a relatively new concept for Southeast Asian cities. Like many other newly independent cities, the postcolonial government in Singapore has regarded conservation as an impediment to economic and social progress, an attitude that is also faced by the Western conservation movement (Freestone, 1995). Economic development, large-scale public housing, infrastructure and urban renewal have been the all-consuming priorities in Singapore's immediate post-independence years. Interconnected with this is the problem of weak and inadequate legal protection for historic neighbourhoods. Much of this ambiguity is, however, removed as the current wave of globalisation has thrust to the foreground the dynamics of a new urbanism and interface between the global and local as the city looks to localism in remaking the city's image and identity. A key lesson for other rapidly urbanising Southeast Asian cities is that heritage conservation and urban development are not contradictory but rather complementary terms. Urban (re)development that does not consider heritage conservation is somehow place-less and incomplete.

Since 2005, the number of non-residents in its population has grown sharply, from an average annual growth rate of 9% in 1990 to 19% in 2008. Currently, one in four of the population is a non-resident. By contrast, the average annual growth rate of Singapore residents (composed of Singapore citizens and permanent residents) over the same period is 1.7% (Singapore Department of Statistics, 2009). More significantly, from a spatial perspective, globalisation is fast adding another layer of Western planning and growth models and challenges to Southeast Asian cities. In particular, globalisation is catalysing a post-industrial consumer landscape, including mega-projects aimed to enhance the investment appeal of cities in the global economic environment (Jones and Douglass, 2008).

Examination of the Downtown@Marina Bay plan indicates that Singapore is developing a new downtown on 360 hectares of reclaimed land at Marina Bay with a contemporary repertoire of mega-projects, including an integrated resort and casino, theatres, exhibition centres, an art-science museum, a financial centre and luxurious high-rise apartments to be built over the next 15–20 years. In its vision to become a world-class city, Singapore has turned urban development into a future-making project, a 'growth machine' for export, and portrayed itself as a promoter of culture, environment and quality of life for its residents. What Singapore lacks in land area, it tries to compensate by enhancing urban liveability, in terms of creating a high-quality living environment and fostering a strong sense of place and belonging.

A key planning emphasis of the Downtown@Marina Bay is to remake Singapore's image as a 'fun', '24-hour city' with a comprehensive range of world-class amenities and infrastructure. In focusing on local identity, the common approach – reflecting prevalent Western practices of urban entrepreneurialism – is for planning a 'post-metropolitan' landscape based on collective consumption (Harvey, 1989; Soja, 2000).

It primarily integrates the themes of downtown reinvention, place-marketing and urban entrepreneurialism characterised by de-regulatory shifts towards market-based approaches in choreographing the contemporary built environment, including the use of new spatial instruments such as performance zoning and flexible land uses where they previously did not exist. Singapore's planning is increasingly being remade by rising attitudinal shifts away from the early top-down planning position towards a more place-based and participatory planning in the current matrix of global–local exchanges.

It would appear that learning of modern Western planning models continues unabated, albeit through the renewed processes of globalisation (Ramsaran and Price, 2003; Appadurai, 1997; Featherstone, 1990). It is important not to overstate the notion that Singapore has developed the perfect solution. It has not. It remains, as the Singapore minister for finance acknowledged, a city in the making: 'We are not a model of something that has reached perfection. We are merely a model of constant learning and adaptation and trying to make the best use of the ideas that we find in the world around us' (Ryntjes, 2010).

At issue is how Singapore can continue to be an attraction pole to its own and global talent and foreign investments. Singapore's prominence and visibility in the global marketplace has been increasingly recognised. Singapore has been progressively rated among the world's top cities. Singapore is ranked Asia's most liveable city by *Bloomberg Businessweek* (Lim, 2010), and the world's easiest city to do business continually for the past five years (World Bank, 2010). The changing role of urban agglomerations in the global economy and the rise of other Asian cities are strong motivations for Singapore to re-invent itself. For economic survival it has to get ahead of the pack, offering relevant urban infrastructure and services and being responsive to market demands or risk economic decline. At the same time, as more and more people move into the city, it has to ensure that population growth does not strain existing resources and make the city unattractive and congested. In other words, it has to remain in balance with its environment and arrive at a feasible plan that seeks to implement an improved city with population growth.

The 2001 Concept Plan with a revised population scenario of 5.5 million reiterated the city's aspiration to become a world-class global city, more specifically, a city that is dynamic, distinctive and delightful. The plan's key proposals focused on three main areas of urban living to make Singapore a great place to live, work and play, with proposals to provide a wider range of housing and choice for leisure and recreation activities, flexibility for businesses, a more extensive rail network and a focus on place identity. The aim is to improve quality of life through comprehensive long-term planning and implementation. The challenge is to ensure that there will not just be sufficient land to meet anticipated population and economic growth but also to optimise land use and continue to provide a good living environment.

The Master Plan remains as a critical instrument of land use control but has evolved over the years within the framework of the Concept Plan to become more participatory and place-oriented as a short-term development guide plan. Since the 2001 Concept Plan preparation, an extensive public consultation has been started early in the plan-making process to engage community groups and individuals, especially on planning challenges and options (Soh and Yuen, 2006). Against the greater mobility afforded by globalisation, Singapore's development plan is no longer just about developing an efficient city but also building 'a home to cherish' (2008 Master Plan). New business zones centred on an impact-based approach have been created since the 2003 Master Plan to provide mixed-use arrangement of industries and utilities (such mixed-use arrangement was previously not allowed), enabling greater flexibility for business. As demonstrated by the British development plan trajectory (Cullingworth, 1999), retooling is necessary to staying relevant and ahead of challenges.

The trend toward retooling has manifested in other Southeast Asian cities. As older master planning models of growth control proved ineffective, there is a shift to new planning and management tools that strategically promote economic growth, performance-based and community participation principles. A quick scan of Southeast Asian cities indicates that with increasing decentralisation, local NGOs, community groups and the private sector are increasingly being called upon to participate in the planning process. The prevailing attitude is that development plans should be supported by those affected by them. The Philippines and Indonesia, for example, have launched a number of community-driven programmes, while Vietnam has set up People's Councils that are consulted during the planning process. Indonesia has implemented the Kecamatan Development Programme and, in 2007, the National Community Empowerment Programme as well as community-driven programmes in post-disaster areas such as Yogyakarta after the 2006 earthquake (Roberts and Kanaley, 2006). These programmes involved local community members in every step of the process and were responsible for reconstructing vital infrastructure and housing in disaster-struck areas.

Increasingly, government institutions are beginning to acknowledge their role as enablers of development as opposed to mere service providers. In consequence, inter-department collaboration is becoming more widespread. However, problems still remain as authorities and responsibilities between government departments and agencies are often vague and bureaucratic. For example, in Vietnam any amendments to the master plan would involve a lengthy bureaucratic process involving many authorities and the dispersion of responsibilities, a lack of clear hierarchy in decision-making authority and a tendency to function autonomously without relation to other authorities involved that would impact on planning efficiency and accentuate the need to synchronise varying views.

Future challenges, urban sustainability

As with many other cities in Southeast Asia and around the world, planning for sustainable growth and climate resilience is critical to Singapore's urban future, especially in view of its island state and limited resources. Singapore faces risks from rising sea levels. Its highest point is 165 m above sea level while most of its business spaces – airports, ports and the business district are less than 2 m above sea level. Southeast Asia is possibly one of the most vulnerable areas in the global climate-change scenarios (Global Leaders of Tomorrow Environment Task Force, 2002; Yuen and Kong, 2009). In the future, urban planning is expected to become more not less important to cities. UN-HABITAT has reiterated that urban planning is important in managing climate change because well-planned cities provide a better foundation for sustainable development (Tibaijuka, 2007).

For Singapore, the key guiding principles for sustainable development as evidenced in the Concept Plan are to plan long term to ensure sufficiency of land, take an integrated approach to land use planning, optimise land use, allow for flexibility and contingency needs and plan for implementation. The emphasis is on an environmentally responsible and sustainable approach to development where future development balances economic growth with environmental stewardship and social harmony. The target as articulated in the 2008 Master Plan is to build Singapore into a home of choice, a global city, a vibrant playground and an endearing home. This is reiterated in the present 2011 Concept Plan review, where focus is on planning for a sustainable Singapore. To be completed by the end of 2011, the 2011 Concept Plan review began with a public consultation process in January 2010 with four thematic issue questions:

- quality of life – How we can maintain and enhance our quality of life even as we continue to plan for future growth?;
- ageing – How we can provide for the needs of an ageing population?;
- identity – How we can nurture and retain our unique identity to make Singapore an endearing home?;
- sustainability – How we can all contribute to create a sustainable Singapore, which balances growth with responsible environmental management?

The need to plan for a socially inclusive and environmentally responsible city and to trade off between different objectives is encapsulated in the minister for national development's speech during the launch of the 2011 Concept Plan review public consultation exercise (23 January 2010). As the minister states, 'Planning is a necessity for Singapore. It is not a choice'. As with many cities around the world, the clarion call is for planning to facilitate a lower-carbon lifestyle. In this regard, Singapore has started actively seeking to reduce its carbon footprint. It is preserving and intensifying greenery in the city. Between 1986 and 2007, despite a 68% population increase from 2.7 million to 4.6 million, Singapore's green cover has expanded from 35.7% to

46.6%. As demonstrated in the wider literature, urban greening can help to lower ambient temperatures and redress the urban heat island effect as well as provide a more pleasant urban environment (see, for example, Ewing et al., 2008).

Against the limitation of horizontal expansion and spurred on by cultural imperialism of globalisation, Singapore's urban form has become more compact and high-rise in architectural style. Created as a Western-engineered solution to economic and spatial pressures in Chicago and New York, the modernist tower will likely remain the dominant building form in Singapore for the foreseeable future, especially in light of the emerging worldview on the role of tall-building typology in future sustainable cities, and the dramatic and continuing movement to build tall buildings in Asia and the Middle East by international 'star' architects (Abel, 2003; Church and Gale, 2000). A similar picture seems to prevail in Southeast Asia (see Table 3). In Jakarta, Indonesia, for example, from almost no presence in the 1970s, there are now more than 130 buildings higher than 30 storeys (tallest 250 m), mostly since the 1990s. In Bangkok, Thailand, more than 60 buildings higher than 30 storeys (tallest 304 m) were built during the period 1990–1997, an average of almost 10 per year and at an accelerating pace since.

Table 3 Tallest buildings in Southeast Asia

City	Height of tallest building	Year of construction	No. of buildings ≥ 30 storeys
Bandar Seri Begawan, Brunei Darussalam	120 m Ministry of Finance Building	2001	0
Phnom Penh, Cambodia	24 floors OCIC Building	2008	0
Jakarta, Indonesia	250 m Wisma 46	1996 1	> 130
Vientiane, Lao PDR	14 floors Don Chan Palace Hotel	2004	0
Kuala Lumpur, Malaysia	452 m Petronas Tower	1998	> 160
Yangon, Myanmar	22 floors Traders Hotel	1996	0
Manila, Philippines	203 m Golden Empire Tower	2002	10
Singapore	280 m OUB Centre	1988	> 60
Bangkok, Thailand	304 m Baiyoke Tower II	1997	> 320

Source: Compiled from Emporis.com (accessed 3 June 2010)

More than half of all high-rise buildings 200 m or taller completed in the past 12 months are located in Asia, with some 36% in Chinese cities. Since its first high-rise in 1939 (the 17-storey [70 m] Cathay Building), Singapore has completed more than 4,300 high-rise buildings, the majority in the city centre where the tallest commercial building is 66-storey (280 m), the tallest public housing is 50-storey and private housing is 70-storey (215 m). More than 90% of Singapore's population lives in high-rises. Over 80% of Singaporeans live in public housing.

Over the years, Singapore's public housing towers have evolved a style of their own to allow natural light and air into every space – apartments are designed with operable domestic windows, are naturally ventilated, have lit bathrooms and kitchens and laundry areas and clothes are generally left to dry in the sun on long bamboo poles outside kitchen windows. Most Singaporeans in public housing live without air conditioning though many would use air conditioning at night. As the buildings get taller, Singapore has increasingly focused on local identity and diversity of design to avoid its tall public housing becoming faceless. The public housing authority has introduced several upgrading programmes since 1986 to improve the flats and neighbourhoods, and rejuvenate and remake the public housing towns to ensure their long-term sustainability (Lau, 1998).

The approach is primarily two-pronged, comprising upgrading of the physical conditions of precinct, block and interior of flats such as toilets/bathrooms; repairing spalling concrete; lift-upgrading which does not uproot the residents from their flats and familiar environment; and redevelopment (since 1995) where the existing housing precinct is redeveloped and existing flats are demolished and residents relocated to a nearby site. With nearly one-third of the public housing stock of more than 900,000 units built before 1980s, a major renewal programme was initiated in 2007 to 'remake our heartlands', including an international housing-design competition to garner innovative and new design ideas for high-rise public housing. The aim is to totally transform public housing estates over the next 20–30 years with a new generation of distinctive public housing. In this regard, it has also introduced a Design, Build and Sell scheme in 2005 to allow private developers to design and build public housing, thus injecting greater design choices in the development of public housing. Because of their heights, the towers are frequently designed to serve as landmark in the local community. Planning ahead, Singapore has also started to develop an underground land-use master plan to maximise the use of this space, especially since building skywards is constrained by airports and technical height controls.

In an era of global efforts to limit climate change, Singapore has assiduously promoted climate change-related development, especially after signing the Kyoto Accord in late 2006. A multitude of measures are discernible. It has planned the first eco-precinct in its public housing township to promote sustainable green living, which will be built by 2011. It has prepared an inter-ministerial Sustainable Singapore

Blueprint in 2009 with targets to improve resource efficiency and sustainability, for example, to achieve 35% reduction in energy intensity from 2005 levels, 70% of trips during peak hours to be made on public transport by 2020, 80% of its existing buildings to be Green Mark-certified by 2030, 30% of mature public housing estates and 20% of new estates to be fitted with energy-saving devices, among other goals, which in all probability will be reflected in the 2011 Concept Plan. If the 2011 Concept Plan review public discussion in the media is any indication, sustainable urban design is anticipated to become the hallmark of future development.

Aside from learning from Western development models, Singapore in recent decades has begun to export its urban planning and management solutions, explaining its urban solutions and providing expertise to developing countries on how to plan and execute smarter cities, including master planning and developing an entire eco-city in Tianjin, China, in partnership with the Chinese government and private sector. As the Economic Development Board (2009) states, 'Backed by good governance and balanced development, we have developed expertise in several areas such as urban planning, traffic management, public housing, water and environment, which are now exported to other cities'. The culmination is the establishment of the World Bank-Singapore Urban Hub in Singapore in 2009. The intent is to expand cooperation around urban solutions between the World Bank and Singapore. In particular, the Urban Hub aims 'to leverage Singapore's recognised expertise in urban development and the World Bank Group's global development knowledge and operational experience for the benefit of developing countries worldwide' (ACN Newswire, 2009).

Urban planning in Singapore has come full circle. Its development depicts the potential of long-term planning and its implementation in helping to cope with the challenges of urbanisation ensures that the city continues to be a liveable and sustainable city.

Conclusion

Cities learn from other cities. In Southeast Asia during the colonial period, learning as largely through the conduit of colonialism, and city layout and planning from the mother countries were imposed on the colonies to ensure uniform settlement and control of the new land in order to extend the reach of the empire and meet the demands of colonial management. The colonial state was in a position to either found or redesign cities under its administration. Urban planning became a tool for the manipulation of space as a means of segregating the local communities from the European settlers, serving the needs of trade and administration and providing the European settlers with an acceptable living environment. Often, the parameters of colonial planning practice were influenced by ideas dominated by the planning discourses in European cities. Southeast Asian cities are visibly very different places

from the nineteenth-century British industrial towns where urban planning first started. An inevitable consequence is the divergence of the colonial planning approach from the needs of the local city.

However, in some cases, this transformative relationship works both ways. Urban design ideas test-bedded in the colonies can also be exported to the mother countries to create a better vision of the future, as was done by Thomas Karsten. Whatever the motivations might be, the practical outcome of the knowledge transfer has been the transformation of urban space, the installation of infrastructure, urban structure and the foundation for comprehensive planning in some cities. Singapore is a prime example. A review of Singapore's planning history affirms the validity and importance of comprehensive planning. Its development experience suggests how the city has built on the colonial legacy of comprehensive planning for present and future sustainability. The lessons therein should not be ignored. However, impressive as the development experience may be, managing urbanisation, as the Singapore city leaders acknowledged, remains a continuing activity. Addressing the challenges of rapid urbanisation is an ongoing effort. By implication, planning cannot be static.

Rather than be handicapped by the constraints of a master plan that does not meet its needs and circumstances, Singapore in the post-independence years has adopted a more flexible, strategic approach to its long-range planning while holding onto the idea of comprehensive physical planning. This has enabled Singapore to make remarkable gains in terms of economic growth, liveability and sustainability, propelling it to be among the world's most liveable and best cities. The first lesson that the Singapore experience offers is to get the fundamentals of urban planning right. For Singapore, the twin fundamental planning principles that have contributed to the city outcome are long-term, integrated planning and planning for implementation.

A further key lesson from Singapore's planning is its emphasis on not only technical analysis and solutions but also an increasing regard for the human and quality of life aspects of the city, especially in the current era of globalisation. As the former chief executive officer of its planning agency surmises, 'planning is about balance. It's not just about the economic but the social. It's about keeping memories, it's about identities' (Rashiwala, 2005). This sentiment is echoed by others, for example, as the Kenya Minister for Lands observed, '[Singapore has demonstrated] what can be achieved through adopting new approaches to land use planning, urban growth and building up synergy between various sectoral disciplines that impact on urban development' (Orengo, 2010).

Today in the postcolonial period, city-to-city learning continues, albeit under a voluntary-connections basis as cities search for answers to policy and practical questions. Cities are quick to seek out and learn from those who have seemingly succeeded in dealing with urban problems. According to Campbell (2009), learning among cities represents a large and active market of knowledge exchange. In the inter-

national development arena, city-to-city cooperation has become a recognised field of development assistance (UN-HABITAT, 2003; UNDP, 2001). The establishment of the World Bank–Singapore Urban Hub is a case in point. Over the past decade, UNDP (2001) put the number of exchange links between cities in the range of 15,000 to 20,000, not to mention the proliferation of city networks. The number of technical visits to Singapore from developing countries runs into the hundreds each year.

Another important theme in the analysis of Singapore is the increasing role of urban planning in economic development. This phenomenon is not new, as many countries have long embraced planning to promote city growth and prosperity. What is new is the innovation and extent to which Singapore has applied urban planning for sustaining Singapore's economic growth. Learning from the world, Singapore has begun planning ahead to enhance land productivity for a vibrant and distinctive global city, the best place to live, work and visit, and more recently, increasingly engaging the market and community in deciding how best to allocate scarce resources. In the process, Singapore has developed urban planning practices and solutions that it now shares with the rest of the world. As the Singapore minister of finance said of the World Bank–Singapore Urban Hub, 'As a city-state, Singapore has learned many lessons in urban management, often after years of experimentation. This is an exciting partnership with the World Bank, which will allow us to share what we have learned with others at a time of massive urbanisation in Asia' (Ong, 2009).

The final and perhaps most important lesson for fast-growing cities in Southeast Asia and beyond is that it yields to make planning work not just for the traditional good of the city and its residents but also as a generator of wealth. As Singapore demonstrates, urban planning as an activity has become a potential economic sector; Singapore now exports its expertise in urban planning (Kolesnikov-Jessop, 2010). It acknowledges that challenges remain, and continues to seek innovation in development solutions that contribute to Singapore's liveability and sustainability, offering the city as a test-bed for future urban solutions in its latest economic development strategy. In other words, it is important to make the practice of planning work.

References

- ABEL, C. (2003), *Sky High: Vertical Architecture*, London, Royal Academy of Arts.
- ACN NEWSWIRE (2009), 'Launch of World Bank–Singapore Urban Hub', Singapore, 24 June.
- APPADURAI, A. (1997), *Modernity at Large*, Minneapolis, University of Minnesota Press.
- ASIAN DEVELOPMENT BANK (2008), *Managing Asian Cities*, Manila, Asian Development Bank.
- BARWISE, J. M. and WHITE, N. J. (2002), *Traveller's History of Southeast Asia*, Northampton, MA, Interlink Publishing.
- BENEVOLO, L. (1993), *The European City*, Oxford, Blackwell.
- BRISTOW, M. R. (2000), 'Early town planning in British South East Asia: 1910–1939', *Planning Perspectives*, **15**, 139–60.

- CAMPBELL, T. (2009) 'Learning cities: Knowledge, capacity and competitiveness', *Habitat International*, **33**, 195–201.
- CELIK, A. P., ZYMAN, R. and MAHDI, R. (eds) (2009), *Sustainable Urbanisation in the Information Age*, New York, United Nations.
- CHURCH, C. and GALE, T. (2000), *Streets in the Sky, the first report of the National Sustainable Tower Blocks Initiative*, London, NSTBI.
- COBBAN, J. L. (1992), 'Exporting planning: The work of Thomas Karsten in colonial Indonesia', *Planning Perspectives*, **7**, 329–44.
- COTÉ, J. (2004), 'Colonial Designs: Thomas Karsten and the Town Planning of Urban Indonesia'. Paper presented at the Fifteenth Biennial Conference of the Asian Studies Association of Australia, Canberra, Australia, 29 June–2 July 2004.
- CULLINGWORTH, J. B. (ed.) (1999), *British Planning: 50 Years of Urban and Regional Policy*, London, The Athlone Press.
- DAVIDOFF, P. (1965), 'Advocacy and pluralism in planning', *Journal of the American Institute of Planners*, **31**, 331–38.
- DOVEY, K. (1999), *Framing Places: Mediating Power in Built Form*, New York, Routledge.
- DURIE, A. J. (2003), *Scotland for the Holidays: Tourism in Scotland 1780–1939*, East Linton, Tuckwell Press.
- ECONOMIC DEVELOPMENT BOARD (2009), *Urban Solutions Factsheet 2009*, Singapore, Economic Development Board.
- EWING, R., BARTHOLOMEW, K., WINKELMAN, S., WALTERS, J. and CHEN, D. (2008), *Growing Cooler: The Evidence on Urban Development and Climate Change*, Washington, DC, Urban Land Institute.
- FALUDI, A. (1973), *Planning Theory*, Oxford, Pergamon Press.
- FEATHERSTONE, M. (ed.) (1990), *Global Culture: Nationalism, Globalisation and Modernity*, London, Sage.
- FOUCAULT, M. (1969), *The Archaeology of Knowledge*, New York, Pantheon.
- FREESTONE, R. (1995), 'From icons to institutions: Heritage conservation in Sydney', *International Journal of Heritage Studies*, **1**, 79–90.
- GLOBAL LEADERS OF TOMORROW ENVIRONMENT TASK FORCE (2002), *2002 Environmental Sustainability Index*, New Haven, Yale Center for Environmental Law and Policy.
- HARVEY, D. (1989), 'From managerialism to entrepreneurialism: The transformation of urban governance in late capitalism', *Geografiska Annaler*, **71B**, 3–17.
- HOUSING AND DEVELOPMENT BOARD (HDB) (1965), *Housing and Development Board Annual Report*, Singapore, HDB.
- JONES, G. W. (1983), *Structural change and prospects for urbanisation in Asian countries, Papers of the East-West Population Institute No. 88*, Honolulu, East-West Center.
- JONES, G. W. (2002), 'Southeast Asian urbanization and the growth of mega-urban regions', *Journal of Population Research*, **19**, 119–136.
- JONES, G. W. and DOUGLASS, M. (2008), *The Rise of Mega-urban Regions in Pacific Asia: Urban Dynamics in a Global Era*, Singapore, Singapore University Press.
- KAYE, B. (1960), *Upper Nankin Street Singapore: A Sociological Study of Chinese Households Living in a Densely Populated Area, Singapore*, University of Malaya Press.

- KING, A. D. (1991), *Culture, Globalisation and the World System: Contemporary Conditions for the Representation of Identity*, London, Macmillan.
- KING, A. D. (2003), 'Actually existing postcolonialism: Colonial architecture and urbanism after the postcolonial turn', in R. Bishop, J. Phillips and W. W. Yeo (eds), *Postcolonial Urbanism: Southeast Asian Cities and Global Processes*, London, Routledge, 167–86.
- KOLESNIKOV-JESSOP, S. (2010), 'Singapore exports its government expertise in urban planning', *New York Times*, 27 April.
- KUSNO, A. (2000), *Beyond the Postcolonial: Architecture, Urban Space and Political Cultures in Indonesia*, London, Routledge.
- LAU, W. C. (1998), 'Renewal of public housing estates', in B. Yuen (ed.), *Planning Singapore: From Plan to Implementation*, Singapore, Singapore Institute of Planners, 42–53.
- LEFEBVRE, H. (1991), *The Production of Space*, Oxford, Blackwell.
- LIM, L. M. (2010), 'Singapore beats Hong Kong as Asia's most liveable city', *Bloomberg Businessweek*, 26 May.
- LIM, S. P. (2000), *Towards good governance: Promoting operational efficiency and accountability*, paper presented at *East Asia: Urban and city management core course*, May, Singapore, World Bank.
- LINDBLOM, C. (1959), 'The science of muddling through', *Public Administration Review*, **19**, 79–88.
- MCGEE, T. G. and ROBINSON, I. M. (eds) (1995), *The Mega-urban Regions of Southeast Asia*, Vancouver, UBC Press.
- MONGIA, P. (1996), *Contemporary Postcolonial Theory: A Reader*, London, Arnold.
- MOTHA, P. and YUEN, B. (1999), *Singapore Real Property Guide*, Singapore, Singapore University Press.
- NJOH, A. (2009), 'Urban planning as a tool of power and social control in colonial Africa', *Planning Perspectives*, **24**, 301–17.
- ONG, B. P. (2009), 'From Singapore to the world: An urban strategy that sells', *Business Times*, 12 November.
- ORENGO, J. (2010), 'We must plan cities to reduce impact of global warming', *Daily Nation*, 25 August.
- PERRY, M., KONG, L. and YEOH, B. (1997), *Singapore: A Developmental City State*, Chichester, John Wiley and Sons.
- RAMSARAN, D. and PRICE, D. V. (2003), 'Globalisation: A critical framework for understanding contemporary social processes', *Globalisation*, **3**, online at http://globalisation.icaap.org/content/v3.2/02_ramsaran_price.html (accessed 20 October 2010).
- RASHIWALA, K. (2005), 'Balancing Singapore's diverse urban planning needs', *Business Times*, 24 January.
- ROBERTS, B. and KANALEY, T. (2006) *Urbanisation and Sustainability in Asia*, Manila, Asian Development Bank.
- RYNTJES, D. (2010), 'Tharman on "immense challenge" of smart urban planning', *Channel News Asia*, 9 October.
- SAID, E. W. (1993), *Culture and Imperialism*, New York, Alfred A. Knopf.
- SHAFFER, L. N. (1996), *Maritime Southeast Asia 1500*, Armonk, NY, M. E. Sharpe.
- SINGAPORE (1955), *Master Plan: Report of Survey*, Singapore, Government Printing Office.
- SINGAPORE (1956), *Report of the land clearance and resettlement working party*, Singapore, Government Printing Office.

- SINGAPORE DEPARTMENT OF STATISTICS (2009), *Yearbook of Statistics*, Singapore, Department of Statistics.
- SINGAPORE IMPROVEMENT TRUST (SIT) (1947), *The Work of the Singapore Improvement Trust, 1927–1947*, Singapore, Housing Development Board.
- SINGAPORE IMPROVEMENT TRUST (SIT) 475/47 (1947), *Notes for Discussion on Housing by Commissioner of Lands, 13 June 1947*, Singapore.
- SOH, E. Y. S. and YUEN, B. (2006), 'Government-aided participation in planning Singapore', *Cities*, **23**, 30–43.
- SOJA, E. (2000), *Postmetropolis: Critical Studies of Cities and Regions*, Oxford, Blackwell.
- STIFFEL, B. (2000), 'Planning theory', in R. Pelaseyed (ed.), *The National AICP Examination Preparation Course Guidebook*, Washington, DC, American Institute of Certified Planners.
- TIBAIJUKA, A. (2007), 'Climate change mitigation through urban planning and development', speech delivered at a mitigation workshop held during the 26th sessions of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of the United Nations Framework Convention on Climate Change, Bonn, Germany.
- UNITED NATIONS (2004), *World Urbanization Prospects: The 2003 Revision*, New York, United Nations.
- UNDP (2001), *Linkages in Cities: UN Report on City-to-city Cooperation*, New York, UNDP.
- UN-HABITAT (2003), *Partnership for local capacity development: Building on the experiences of city-to-city cooperation*, Nairobi, UN-HABITAT.
- UN-HABITAT (2007), *Enhancing Urban Safety and Security: Global Report on Human Settlements 2007*, London, Earthscan.
- UN-HABITAT (2008/2009), *State of the World's Cities Report: Harmonious Cities*, London, Earthscan.
- UN-HABITAT (2009), *Global Report on Human Settlements 2009: Planning Sustainable Cities*, London, Earthscan.
- VAN GRUNSVEN, L. (1983), *Patterns of housing and intra-urban migration of low-income groups in Singapore, with particular reference to urban kampong dwellers: Part 1 – Background and general analysis*, Utrecht, Geografisch Instituut, Rijksuniversiteit Utrecht.
- WALTON, J. K. (2000), *The British Seaside: Holidays and Resorts in the Twentieth Century*, Manchester, Manchester University Press.
- WEBSTER, D. (2004), *Urbanisation dynamics and policy frameworks in developing East Asia*, discussion paper, the Urban Dynamics of East Asia Project, Stanford, CA, Asia Pacific Research Center.
- WONG, A. and YEH, S. H. K. (1985), *Housing A Nation*, Singapore, Maruzen Asia.
- WORLD BANK (2009a), *Urban Strategy*, Washington, DC, World Bank.
- WORLD BANK (2009b), *World Development Report 2009: Reshaping Economic Geography*, Washington, DC, World Bank.
- WORLD BANK (2010), *Doing Business*, Washington, DC, World Bank.
- YUEN, B. (2005), 'Squatters no more: Singapore social housing', World Bank 3rd Urban Research Symposium, April, Brasilia, Brazil.
- YUEN, B. (2009a), *Revisiting urban planning in East Asia, Southeast Asia and the Pacific*, UN-HABITAT *Global Report on Human Settlements 2009*, online at <http://www.unhabitat.org/grhs/2009> (accessed 21 October 2010).
- YUEN, B. (2009b), 'Guiding spatial changes: Singapore urban planning', in S. Lall, M. Freire,

B. Yuen, R. Rajack and J. J. Helluin (eds), *Urban Land Markets: Improving Land Management for Successful Urbanisation*, New York, Springer.

YUEN, B. and KONG, L. (2009), 'Climate change and urban planning in Southeast Asia', *SAPIENS*, **2**, online at <http://sapiens.revues.org/index881.html> (accessed 21 October 2010).