

The Ghostless Garden City: Evaluating the Clean and Green Movement in Singapore

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ABSTRACT

The Garden City image of Singapore is visually projected through roadside tree-planting, parks and nature reserves. This image has been promoted by the Clean and Green Movement, which broadly refers to government policies that enforce regulations in relation to cleaning and greening. So far, literature concerning the Movement has focused on promoting the Garden City. On the contrary, this paper argues that the lack of the original sense of place through constructed greenery has led to the Ghostless Garden City, which can also be seen as being authentic to Singapore.

Keywords: *Clean, Green, Garden City, Ghostless*

1. INTRODUCTION

The Garden City concept has contributed to the environmental, economic and social aspects of nation building in Singapore. In Singapore, the Garden City concept is part of a “Clean and Green Movement” that seeks to improve the social living environment with the planting of trees within the urban landscape. The ordered Clean and Green Garden City portrays an image of political and hence economic stability. This paper will first present the benefits of the Singapore Clean and Green Garden City concept through data from the media, government’s reports and research literature. Secondly, the paper will argue that there exist contradictions in the clean and green formulation, producing what I call the ‘Ghostless Garden City’, in which homogenizes the urban landscape, which comes to lack both cultural identity and biodiversity.

The origins of Singapore as a Garden City can be traced back to its significant Western influence, starting with the period of British colonial rule from 1819 to 1942. During colonial times, interest in

planted greenery could be seen especially within the British residential areas. The British surrendered Singapore to the Japanese in 1942 during World War II, but Singapore did not become an independent country until 1965. The continued interest in planted greenery since colonial times has resulted in a green urban brand for the twenty-first century, depicted as the Singapore Clean and Green Garden City.

The first Prime Minister of Singapore, Lee Kuan Yew identified a Clean and Green Garden City of Singapore as a vital competitive factor to attract foreign investments to the country (Kachingwe, 2007). He envisioned the stability of the country portrayed through cleanliness and greenery all across the city, leading to an increase in foreign interest and economic growth in Singapore. The term ‘Clean and Green’ is a phrase widely used by the Singapore government and media today to encourage people to keep the city true to the label. Although the word ‘Clean’ refers mainly to the aspect of hygiene, it also embodies a sense of orderliness, exemplified by the way greenery is planted. The word ‘Green’ refers to the cultivation of vegetation.

Clearly, Lee also recognized that cleanliness and greenery are visually comforting, pleasing, and environmentally beneficial, especially in the tropical equatorial climate of Singapore (Lee, 2000). Lee's far-sightedness in this aspect has led to the high economic standing of Singapore today.

This paper will first discuss the environmental, economic and social benefits of the 'Clean and Green' Movement in achieving the Singapore Garden City vision. Secondly, this paper argues that homogeneity of the urban landscape has removed the possible existence of 'ghosts', resulting in the "Ghostless Garden City." For Singapore, due to scarcity of land, the vision of achieving a Garden City environment involves not just the planting of constructed greenery but also the removal of original natural greenery in order for urbanization to occur. The Garden City was therefore formed at the expense of the 'ghostly' or spiritual aspect of nature, which can be considered a cultural cost of the Movement.

2. ENVIRONMENTAL VALUE BY REDUCING THE URBAN HEAT ISLAND EFFECT

The Clean and Green Movement advocated a number of natural environments to be conserved and planned to allow easier access and greater comfort for locals as well as tourists. According to the 2001 Concept Plan, Singapore's tropical parks and nature reserves cover almost 50 square km (5,000 hectares) out of a land area of 699 square km (69,900 hectares) (Tan, 2010). This amounts to about 0.008 square km of green space for every 1,000 persons, a visible rise from 0.0067 square km of green space for every 1,000 persons in 1967 (Tan, 2010). In addition, as part of the measures implemented by the Clean and Green Movement, tree-lined roads and landscape design surrounding buildings and park connectors not only improves the quality of the environment, but also add to the visual greenery of Singapore that attracts tourists and investors, as well as contribute to a better social living environment.

The phenomenon whereby temperatures in the city are higher than in the suburban rural areas is known as the Urban Heat Island (UHI) effect. The causes include absorption of solar radiation by building materials that is subsequently re-radiated to the surroundings, heat generated from combustion

processes, air-conditioning, and greenhouse effects due to pollutants in the atmosphere (Bay & Ong, 2006). The negative impacts of excessive heat in the urban environment include increased human stress due to the heat and higher energy use because of the need for air-conditioning (Bay & Ong, 2006). According to Bay and Ong, with rapid urbanization in Singapore, the UHI effect has become an 'unavoidable issue' (2006, p. 181). Greening the urban area is one of the main strategies for reducing the UHI effect since vegetation plays a vital role in controlling the urban temperature. At the micro-level, vegetation around buildings can reduce the energy balance and the cooling energy requirements of particular buildings through sheltering from solar radiation and radiation reflected from the surrounding buildings. At the macro-level, the energy balance of the entire city can be altered. This can be done by adding evaporating surfaces, 'in the forms of natural reserves, urban parks, neighborhood parks, and rooftop gardens' (Bay & Ong, 2006, p. 189). These 'provide sources of moisture for evapotranspiration and more absorbed radiation can be dissipated' (Bay & Ong, 2006, p. 189).

The Clean and Green Movement plays an important role for the environment through planned air temperature reduction, not only through evaporative cooling but also through the shading provided by the trees. The green park spaces, park connectors, sky-rise greenery and roadside plantings lead to a significant drop in the urban temperature of Singapore (Bay & Ong, 2006). According to Akbari, Davis, Dorasano, Huang, & Winnett (1992), large numbers of trees and urban parks reduce local air temperature by 0.5 °C to 5 °C. In an experiment comparing two residential areas in Singapore, the temperature surrounding a residential area near the park was 1.3 °C lower than a residential area without a park (Bay & Ong, 2006). According to Bay and Ong, 'historical analysis of long-term climatic data of Singapore indicates that raise of temperature is associated with the land uses' (2006, p. 197). Temperature mapping surveys in Singapore show that 'implementing greening of Singapore and minimizing the release of anthropogenic heat can mitigate the UHI effect at macro-level' (Bay & Ong, 2006, p. 197). Moreover, trees that provide shade create a more comfortable environment for outdoor activities and a better setting for urban living. Thus, the Clean and Green Movement enhances the environment and works towards a city that has 'nature, water bodies and urban development weaved together' (Malone-Lee, 1993, p. 5).

Thus, the Garden City is also a solution to reduce the harmful environmental effects of climate change. According to Warrick, Barrow and Wigley (1993), climate change occurs as a consequence of human activities such as the burning of fossil fuels and deforestation. Global temperatures and mean sea levels have risen significantly in recent times, resulting in cities experiencing extreme temperatures, heat waves and heavy rainfall. Many countries have reacted by reducing the emission of greenhouse gases and fighting against climate change (IMCSD, 2009). The vision of achieving a Garden City through the Clean and Green Movement reflects the response of the government to climate change, which at the same time envisions a better living environment for the people.

3. THE IMAGE OF POLITICAL AND ECONOMIC STABILITY

The same political ruling party has controlled Singapore since gaining independence. There is an intimate relationship between the Clean and Green Movement, formed as a series of strong policies and public campaigns, and the government's promotion of the Garden City. As a result, the principal motivation behind the Movement could be viewed as a politico-economic one. This is visible from the government's willingness to invest in landscaping, large scale tree planting and street design across the country (Conceicao, 1969). Money invested in the Clean and Green Movement has resulted in a high standard of living and improved working environment through the planting of trees. In return, economic stability and growth will enable an even higher standard of living and an improved working environment. Hence, there is a complex circular relationship between the Clean and Green Movement and the economy. The Clean and Green Movement has thus allowed the Singapore government to display an image of political and economic stability through the image of the Garden City. Although the word 'image' is used, the reality of political and economic stability is also apparent.

Also, the increase in the number of visitors including investors and tourists to Singapore leads to economic growth helping to fulfill the Singapore government's determination to double the number of visitors to 17 million per year by 2015 (Tan, 2007). The increase in number of visitors arguably

represents increased economic stability of the country and is a consequence of careful green urban planning directed by the Clean and Green Movement. This can be seen in the growth in GDP with the increase in green spaces. From 1996 to 2006, the average GDP growth was 7.7% per year (Tortajada, 2006). At the same time, the land area covered by planted and natural greenery had risen from 36% in 1986 to 47% in 2007 (Mulchand, 2008). Furthermore, economic growth as a result of an increased population in order to build up human workforce is essential in land scarce Singapore. A productive human workforce helps to ensure the continued prosperity of the country. According to Yuen, the increase in population, together with the increase in greenery from 1986 to 2007, has proven that Singapore's economic growth can be achieved without sacrificing the entire environment (2006). This is especially so if green urban plans are taken into consideration. The land area covered by planted and natural greenery had risen from 36% in 1986 to 47% in 2007 despite an increase in population from 2.7 million to 4.6 million during the same period (Mulchand, 2008). This was among the findings of a study by the Centre for Remote Imaging, Sensing and Processing (CRISP), the National University of Singapore and the NParks (Mulchand, 2008).

The image of political and economic stability in the country has been made possible by three key factors: visionary green urban planning, Singapore's high standards of living, and the government's investments in public infrastructure. The Singapore Garden City image of stability in turn attracts people to the country. A large population is an important resource for economic growth, which maintains economic sustainability. Moreover, the successes or failures of cities according to Bell and Jayne, are often measured according to 'population size and the presence of particular types of economic activity', including financial services, law and accountancy or on airport connectivity (2009, p. 685). In contrast, Singapore with a population of more than 5 million people, is a living example that highlights the importance of green urban planning not only for environmental benefits, but also for better economic and population growth (Bell & Jayne, 2009). The concentration for greater prosperity on economic and cultural activities is greater as natural resources are limited in Singapore. The 'Clean and Green' stable image can be seen as a 'powerhouse of the global economy', which strengthens the economy (Bell & Jayne, 2009, p. 688).

4. ENHANCING SOCIAL LIVING ENVIRONMENT

The Clean and Green Movement forms the basis of infrastructure development and environmental sustainability, which according to Ooi and Yuen (2010) are key issues, especially in developing cities in Asia. In addition, a 'Clean and Green' environment makes it easier to address other social issues such as poverty, housing and financial problems. In their book *The Economics of Amenity*, McNulty, Jacobsen and Penne (1985) argue that there is a close link between the quality of life and the economic success of cities. Cities that are not livable have a lower ability to be successful economically. This can be seen in Mercer Human Resource Consulting who ranked Singapore 1st in Asia and 8th in the Asia Pacific region in terms of quality of life, in its 2007/2008 Quality of Living Survey. This, together with the average GDP growth of 7.7% per year in the last decade prior to 2006 (Tortajada, 2006), show how the Clean and Green Movement has benefited both the social quality of life and the economy concurrently

In Singapore, parks have been created as a response to social needs in order to fulfill the aesthetic, educational, recreational and cultural use of public spaces amidst the built-up surroundings (Tan, 2010; Yuen, 1996). According to Lusk (2006, p. 87), an important element of a 'humane metropolis' is to relieve personal discomfort, depression, and poor health through promoting outdoor physical activities within the urban environment. The 'Clean and Green' Garden City environment provides green spaces, which encourage the occurrence of outdoor events (Figure 1). The involvement of the government and its citizens in the Clean and Green Movement through the creation and maintenance of green spaces along with the provision of hygienic housing and secure surroundings contributes to optimum results in terms of human health (Girardet, 1996). For example, health problems and the quick spread of diseases such as tuberculosis and malaria due to poor hygiene of Singapore in the 1950s and 1960s came under control in the well-planned and managed 'Clean and Green' urban environment. Parks where people can relax are of benefit to social



Figure 1:
Enhancing the social living urban environment through the 'Clean and Green' city centre
Source: (de Souza, 2008)

health. Moreover, people with access to parks are less prone to diseases, crime and discontentment with society (Girardet, 1996).

The vision of Singapore as a model Green City by year 2000 as stated in the Singapore Green Plan of 1993 has been largely achieved (The Singapore Business Charter for Sustainable Development, 1994). Minister Mah Bow Tan revealed in 2008 that the remaining farms left in areas such as Lim Chu Kang and Kranji have been set aside as retreats from the busy urban conditions (Tan, 2010). The use of parks to improve and maintain public health is not a new idea. In the past, the Greeks, Egyptians and Romans all planted medicinal gardens to benefit the health of the people (Cranz & Boland, 2004). Singapore's large ageing population means that the number of geriatric persons in need of medical care will increase. The use of parks might be effective in terms of cost and to improve the medical conditions of the unwell (Tan, E.K., 2010).

Moreover, meaningful and happy lives require connections with nature and the physical surroundings humans live in. People need contact with nature as, according to Beatley, nature is 'essential to our well-being, and to our emotional health, to a deep sense of who we are' (2004, p. 9). There are demonstrable physiological and emotional benefits from exposure to nature (Frumkin, 2001). Modern urban lifestyles and the 'concrete jungle', which decrease the interaction between people, can result in the alienation of the urban population from nature and natural processes. Parks can restore the residents' lost connections and allow them to be reintroduced to nature (Tan, 2010). Moreover, the greenery within the built environment of Singapore, especially the nature areas, creates interest in the young and stimulates their curiosity about the natural world (Briffett & Chew, 2002).

The 'Garden City' of Singapore fulfils some of the qualities of what Timothy Beatley referred to as a 'genuine community' (2004, p. 23), which refers to understanding and conserving as much as the natural environment of the community. Health and wellbeing are positively affected by nature in many ways. The trees planted along roads and paths, the neighborhood parks and gardens and nature reserves, serve to moderate urban temperatures to a comfortable level, reduce harmful air pollutants, and help control dangerous storm water runoff (Beatley,

2004). In addition, inner-city vegetation has other advantages in that it reduces noise levels (Girardet, 1996). These benefits lead to an enhanced living environment that improves the social wellbeing of the people.

Within the Central Business District, green landscaped pedestrian promenades have been planned to link one end of the central area with the next without having to cross vehicular roads (Tan, 2010). The aim according to Tan (2010) is to turn Singapore into a huge network of interconnected parks and play areas. It is also envisioned by the government that the length of the park connectors will be increased 'from 100 km in 2007 to 360 km by 2020' (IMCSD, 2009, p. 35). The lining of trees along roads and highways as well as the designed greenery that filled the outdoor spaces in between buildings, together with the neighborhood parks and green attractions, which include nature reserves, combine to form the 'Clean and Green' Garden City of Singapore. This greenery represents what Kong and Yeo (1996) refer to as 'managed' nature, which enhances the social living environment of the people.

5. CULTURAL COST: THE GHOSTLESS GARDEN CITY

In contrast to the economic benefits of the Clean and Green Movement on the environment across Singapore as discussed, the homogeneity of the urban landscape can have a negative social connotation where the cultural identity of places seem to be lost in the process. This will be discussed from a newly developed metaphorical perspective termed as the Ghostless Garden City.

The 'Clean and Green' image constructed as a result of 'cleaning' and 'greening' the city has arguably removed the original sense of mystery in some locations as well as the intriguing idea of the existence of ghosts in most parts of the city. The newly created term 'ghostless' can be used to describe the Garden City as being too ordered. From this perspective, the Garden City can be considered to have neglected small yet important intangibles such as traditional culture, greater creativity and freedom of expression. This results from a homogeneous urban landscape that has lost the rich heritage and original sense of place that includes the natural greenery of Singapore.

5a. Lacking Authenticity

This paper argues that the Ghostless Garden City of Singapore has created an ordered urban environment deprived of variation. The word 'ghostless' here refers to the noticeable lack of spaces of interest for ghosts to roam about and hence the absence of ghosts. It is a serious omission, which has been criticized as having deprived the city of the authentic forms of life and vibrancy. This is evident in comments about Singapore as being over-westernized and about Singaporeans as having 'nothing to do apart from shopping' (Travel Trade Gazette Europa, 1994, p. 15). Authenticity is comparatively more common and widespread in other less developed cities in Asia. Singapore is criticized as being insufficiently Asian given the absence of 'traffic jams', 'smelly sewers' and 'dirty streets', which can be seen as being part of the identity lost to rapid modernization (Travel Trade Gazette Europa, 1994, p. 15). The visible differences between Singapore and other Asian cities is seen in the rigidity and orderliness found in the 'clean and green' environment and also in the lack of chaos within the structured urban environment of Singapore, especially as compared to the chaos in terms of traffic jams and abandoned streets found in other Asian cities.

Moreover, the word 'ghosts' here can be said to refer to the presence of life and vibrancy in a place rather than to the cultural enchantment derived from 'ghosts' (McEwan, 2007) through religious interest and activities. Enchantment is often portrayed surrounding fear and born of unresolved anxieties (McEwan, 2007). The Clean and Green Movement has reduced most of the anxiety and fear in the city. This analogy closely describes the loss of contexts for ghost stories to exist or to find residence in the 'Clean and Green' Garden City of Singapore. The ghost stories of other places came as a form of resistance towards varying negative conditions, such as poor working conditions in South Africa as recounted by McEwan (2007). The places associated with ghosts are often old, dilapidated and disordered. These places tend to convey a sense of mystery and darkness that is difficult to find in 'Clean and Green' Singapore. Ghost stories seem to be irrelevant or non-existent in the 'Clean and Green' environment of Singapore. Places with strong associations among the older generation such as the Albert Street hawker center, where food stalls used to be located along the street, have lost their sense of place through modernization and cleaning and greening of the city. In the case of Singapore,

modern-day needs and functions plus the orderly surrounding greenery, can be considered to have removed the original essence of these places.

Although ghost narratives can be created from aspects that might never have occurred, their meaning, power, and the passion with which they are withheld are significant (White, 1993). The minimal association of Singapore with ghost stories can be said to have led to the lack of significance, identity and authenticity of place. The process of modernization with particular focus on green urban development can be seen as to have removed the 'ghosts' of Singapore. The orderly environment has removed the 'inexplicable presences, feelings or events' that might have once existed (McEwan, 2007, p. 29). The 'ghosts' that are usually associated with the past seem to be unable to dwell in this modern 'clean and green' environment. The rush to achieve the physical and economic developmental objectives of Singapore has potentially led to the neglect of most of its original natural or traditional environment, resulting in the condition of the city being 'ghostless' (Lim, 1979).

Moreover, the idea of the Ghostless Garden City discusses the loss of original nature and original essence and vibrancy of place, upon 'cleaning' and 'greening' the environment. Nature as mentioned by Harvey, defines 'a future for humanity in which self-realization could only be achieved by liberating the human senses to the sublime and transcendental experience of being at one with the world' (1996, p. 128). The 'sublime and transcendental experience' provided by nature can be contrasted to the idea of 'ghostless', where the sense of place and the original nature has been removed. The loss of the natural biodiversity, arguably leads to a more rigid and constructed natural environment. The constructed nature results in a much more homogeneous and controlled greenery that adds to the 'ghostlessness' of the Garden City that lacked authenticity.

5b Homogeneity in the Urban Landscape becomes its Identity

The Ghostless Garden City describes the homogeneity in the urban landscape of Singapore. Many Singaporeans and tourists only realized in the 1980s that modernization has led to the loss of traditional cultural elements as a result of the highly sanitized cityscape (Askew & Logan, 1994).

In contrast, when seen from a positive perspective, this homogeneity can be viewed as a form of identity that has become authentic to Singapore.

Singapore faces a similar situation to other modern cities where urban centers have experienced fast growth and are led by 'international images', which can be considered to have wiped off the rich cultural traditions of the cities (Askew & Logan, 1994, p. 8). These images form the Spectacle, defined as a social linkage between people 'mediated by images' (Debord, 1967, p. 7). The 'Clean and Green' vision of Singapore can be said to have initiated the process of homogenization, which destroyed the distinctiveness of places (Stilwell, 2000). Due to globalization, new ideas from developed countries in the West have often been directly applied to many Southeast Asian countries including Singapore, causing 'divisions, fragmentations, conflicts, tensions, confusions, and loss of identity' (Widodo, 2004, p. 195). The Garden City idea has resulted in the homogeneity and 'ghostlessness' of the urban landscape.

Singapore can be described as being less 'intense' as compared to other ASEAN cities such as Jakarta, Indonesia or Kuala Lumpur, Malaysia. This might be due to its lack of historical structures or original natural scenery. Also, there seems to be no unique form of culture, unlike Japan or India with its own single set of traditional culture, because Singapore is a multiracial society consisting of four different ethnic traditions: Chinese, Malays, Indians and the Eurasians (Tan, 2002). On the contrary, a common impression of Singapore among foreigners is that the country has 'remarkably clean streets lined with remarkably kept trees' (Guevara, 1997). Being 'clean' and 'green' can be considered distinctive of Singapore, and can become a national identity for this multi-cultural country. Thus the idea of 'ghostlessness' as mentioned earlier, can be seen as an identity, which in contrast, can be considered of benefit to Singapore.

The process of implementing the Clean and Green Movement resulting in the homogeneity of its urban landscape was executed without much resistance. This is due to fines implemented to prevent people from littering and spitting as well as the insistence on high standards of living (Guevara, 1997). The banning of chewing gum showed the level of intolerance with regards to cleanliness in Singapore. Much of Singapore's negative profile is due to such strict government rules. The Ministry of

the Environment and Water Resources (MEWR), the Urban Redevelopment Authority (URA) and the NParks are the government agencies involved in the building of the Garden City. The inclusion of the private sector in the green urban landscape has arguably expanded the variety of possibilities in 'cleaning' and 'greening' the city. An example of the inclusion of the private sector is the organization of competitions for open design ideas, which encourage local architects and practitioners to contribute thoughts and ideas to the design of the green urban landscape of Singapore. This creates variation in spaces and hence results in a decrease in homogeneity within the urban environment.

5c The Extent of 'Order' versus 'Disorder'

'Order' is usually associated with developed conditions, while 'disorder' is most often linked with underdeveloped conditions. Singapore can be considered to have achieved fast modernization in its urban environment. This led to the loss of the villages, also known as *kampongs*, which consists of timber houses on stilts. As mentioned, these villages were replaced with high-rise Housing Development Board (HDB) residential blocks that were, in contrast, highly ordered. These villages can still be found in Malaysia or Indonesia and are seen as a symbol of 'underdevelopment' and representative of the 'chaos' of the past (Bay & Ong, 2006, p. 281). As a result, there is a need to balance development with the desire to retain familiar places. A report from a public consultation exercise in Singapore, which would help devise the Urban Redevelopment Authority's Concept Plan 2011, noted that a possible approach is to preserve the culture of streets, which are rich in heritage and art (Teo & Ang, 2010). It is part of the government's strategy to protect and preserve the environment while reducing the impact of development on that environment (MEWR, 1992). In other words, interventions into the natural environments of Singapore should be carefully thought through, so as to achieve a balance between rural and urban conditions (Briffett & Sim, 1993).

In Singapore, the value of land and the economic gains from land use can be considered of greater importance as compared to other values such as heritage. The efforts and emphasis involved in creating a 'Clean and Green' Garden City with efficient transport systems and vibrant commercial

centers further led to the neglect of the rich historical elements of the past, which are present in the built environment. The historical elements not only refer to the physical dimension, but also to the sense of place. The idea of conservation has increasingly been introduced in many re-development projects, where the physical outlook of the architecture is preserved. However, the refurbishment and restoration of historical buildings and the addition of greenery to the surrounding landscape have created a new sense of place, often removed of the original historical value and purpose. Many of these conservation projects result in a coherent visual image of 'cleanliness' and 'greenery' upon refurbishment. 'Set amid one huge garden backdrop, the result is a more or less happy mix of striking new architecture and pockets of extensively refurbished areas and monuments that do more than just hint at the island's colorful history' (Travel Trade Gazette Europa, 1994, p. 15). However, the loss of the original sense of place exemplified by the conserved building also implies a loss of heritage.

6. CONCLUDING REMARKS

The unexpected loss of identity and cultural heritage due to homogeneity in the urban environment can be considered the main flaws of the Clean and Green Movement. This phenomenon can be seen as the creation of a Ghostless Garden City. In contrast, the newly formed authenticity by being 'clean' and 'green' can be seen as a distinctive identity for Singapore. In other words, the strict enforcement of laws and the lack of freedom have resulted in a well-managed Garden City. The word 'ghostless' can be taken positively, where everything is in order and well-managed, or negatively, where there is lack of spaces of interest for ghosts to roam about in Singapore, which is deprived of life and vibrancy as compared especially to other cities in Asia. The orderly 'Clean and Green' built environment might deter tourists from visiting due to its lack of authenticity. However, tourism can be linked to an 'inauthentic' re-making of the heritage of the past (Chang & Yeoh, 1999, p. 102), where a Ghostless Garden City can form a new national identity. The unintentional negligence of retaining the original culture and tradition of many places around Singapore has resulted in homogeneity in the urban built environment and in a Ghostless Garden City. Considerations should therefore be taken to ensure that other cities do not re-create this unintended 'ghostlessness', and let it be unique to Singapore.

REFERENCES

- Akbari, N., Davis, S., Dorasano, S., Huang, J., & Winnett, S. (Eds.). (1992). *Cooling our communities: A guidebook on tree planting and light-colored surfacing*. Lawrence Berkeley National Laboratory report no. LBL-31587. Washington, DC: USEPA (US Environmental Protection Agency).
- Askew, M., & Logan, W.S. (1994). Introduction: Urban tradition and transformation. M. Askew & Logan, W.S. (Eds.), *Cultural identity and urban change in Southeast Asia: Interpretative essays*. Geelong, Victoria, Australia: Deakin University Press, pp. 1-12.
- Bay, J.-H., & Ong, B.-L. (2006). *Tropical sustainable architecture: Social and environmental dimensions*. Oxford: Architectural Press.
- Beatley, T. (2004). *Native to nowhere: Sustaining home and community in a global age*. Washington, DC: Island Press.
- Bell, D., & Jayne, M. (2009). Small cities? Towards a research agenda. *International Journal of Urban and Regional Research*, 33 (3), 683-699.
- Briffett, C., & Chew, H.H. (Eds.). (2002). *State of the natural environment in Singapore*. Singapore: Nature Society (Singapore).
- Briffett, C., & Sim, L.L. (Eds.). (1993). *Environmental issues in development and conservation: Proceedings and programme of the interfaculty conference on environmental issues in development and conservation held on Friday 12th February 1993 and organised by the School of Building and Estate Management, National University of Singapore*. Singapore: SNP Publishers.
- Chang, T.C., & Yeoh, B.S.A. (1999). "New Asia – Singapore": Communicating local cultures through global tourism. *Geoforum*, 30 (2), 101-115.
- Conceicao, J.F. (Ed.). (1969). *Radio & TV talks series 11: A new environment for Singapore*. Singapore: Lembaga Gerakan Pelajaran Dewasa.
- Cranz, G., & Boland, M. (2004). Defining the sustainable park: A fifth model for urban parks. *Landscape Journal*, 23 (2), 102-120.
- de Souza, G. (2008). Hockey in the heart of Singapore. Singapore: FIH (International Hockey Federation). Retrieved: 2 January 2009, from: <http://www.fihockey.org/vsite/vcontent/content/transnews/0,10869,1181-18543-19728-40507-286081--5039-layout169-19693-news-item,00.html>.
- Debord, G. (1967). *The society of the spectacle*. Cambridge, MA: MIT Press.
- Frumkin, H. (2001). Beyond toxicity: Human health and the natural environment. *American Journal of Preventive Medicine*, 20 (3), 234-240.

- Girardet, H. (1996). *The Gaia atlas of cities: New directions for sustainable urban living*. London: Gaia Books.
- Guevara, I.P. (1997, 25 March). Anything but business: Singapore soliloquy, World Sources Online, *Business Daily*.
- Harvey, D. (1996). *Justice, nature and the geography of difference*. Oxford: Blackwell.
- IMCSD. (2009). *A lively and liveable Singapore: Strategies for sustainable growth*. Singapore: Inter-Ministerial Committee on Sustainable Development (IMCSD), Ministry of the Environment and Water Resources, Ministry of National Development.
- Kachingwe, K. (2007). Lessons can be drawn from Singapore in the bid to keep the country clean and healthy [Electronic Version]. *Times of Zambia*, (12 July). Retrieved: 3 January 2008 from: <http://www.wildsingapore.com/news/20070708/070712-4.htm>.
- Kong, L., & Yeoh, B.S.A. (1996). Social constructions of nature in urban Singapore. *South East Asian Studies*, 34 (2), 402-423.
- Lee, K.Y. (2000). *From third world to first: The Singapore story 1965-2000: Singapore and the Asian economic boom*. New York: HarperCollins.
- Lim, W.S.W. (1979). *An alternative development strategy for urban centres in the third world: With special reference to ASEAN countries*. Singapore: DP Architects.
- Lusk, A.C. (2006). Promoting health and fitness through urban design. R.H. Platt (Ed.), *The humane metropolis: People and nature in the 21st-century city*. Cambridge, MA: University of Massachusetts Press in association with the Lincoln Institute of Land Policy, pp. 87-101.
- Malone-Lee, L.C. (1993). Action proposals: Environmental planning. C. Briffett & Sim, L.L. (Eds.), *Environmental issues in development and conservation: Proceedings and programme of the interfaculty conference on environmental issues in development and conservation held on Friday 12th February 1993 and organized by the School of Building and Estate Management, National University of Singapore*. Singapore: SNP Publishers, pp. 1-16.
- McEwan, C. (2007). A very modern ghost: Postcolonialism and the politics of enchantment. *Environment and Planning D: Society and Space*, 26 (1), 29-46.
- McNulty, R.H., Jacobsen, D., & Penne, R.L. (1985). *The economics of amenity: Community future and quality of life: A policy guide to urban economic development*. Washington, DC: Partners for Livable Places.
- MEWR. (1992). *The Singapore Green Plan: Towards a model green city*. Singapore: Ministry of the Environment and Water Resources (MEWR).
- Mulchand, A. (2008, 25 June). Singapore is getting greener, *The Straits Times*, Singapore, p. H5. Retrieved: 17 July 2008, from: <http://www.skyscrapercity.com/archive/index.php/t-601855.html>.
- Ooi, G.L. (2005). *Sustainability and cities: Concept and assessment*. Singapore: Institute of Policy Studies.
- Ooi, G.L., & Yuen, B. (2010). Introduction: World cities: Challenges of liveability, sustainability and vibrancy. G.L. Ooi & Yuen, B. (Eds.), *World cities: Achieving liveability and vibrancy*. Singapore: World Scientific, pp. 1-11.
- Stilwell, F.J.B. (2000). *Changing track: A new political economic direction for Australia*. Annandale, NSW, Australia: Pluto Press Australia.
- Tan, E.K. (2010). *Sustainable built environment: The Singapore experience*. Singapore: Pearson Custom Publishing.
- Tan, M.B. (2007). Planning for growth: Investing in our future. *URA Corporate Seminar Speech*. February 9. Singapore: Ministry of National Development. Retrieved: 4 July 2008, from: <http://www.mnd.gov.sg/publications/planningforgrowth/brochure.pdf>.
- Tan, S. (2002, 11 August). What's tops in Singapore?, *The Straits Times*, Singapore, p. 6.
- Teo, E., & Ang, Y. (2010, 20 August). Wanted: A green city that respects its history, *The Straits Times*, Singapore, p. A6. Retrieved: 30 August 2010, from: <http://newshub.nus.edu.sg/news/1008/PDF/GREEN-st-20aug-pA6.pdf>.
- The Singapore Business Charter for Sustainable Development. (1994). The green pledge: Directory of signatories of the Singapore Business Charter for Sustainable Development. pp. 13, 24, 17. Singapore: The Organizing Committee for the Singapore Business Charter for Sustainable Development
- Tortajada, C. (2006). Water management in Singapore. *International Journal of Water Resources Development*, 22 (2), 227-240.
- Travel Trade Gazette Europa. (1994). A clean and green Asian alternative. *Travel Trade Gazette Europa* (570), 15.
- Warrick, R.A., Barrow, E.M., & Wigley, T.M.L. (Eds.). (1993). *Climate and sea level change: Observations, projections and implications*. Cambridge, U.K.: Cambridge University Press.

White, L. (1993). Cars out of place: Vampires, technology, and labour in East and central Africa. *Representations* (43), 27-50.

Widodo, J. (2004). *The boat and the city: Chinese diaspora and the architecture of southeast Asian coastal cities* Singapore: Marshall Cavendish Academic.

Yuen, B. (1996). Creating the garden city: The Singapore experience. *Urban Studies*, 33 (6), 955-970.

Yuen, B. (2006). Innovation: Key to sustainable urban development in Singapore [subsection of Chapter 15: Global good practices in sustainable urban region development by Roberts *et al.* pp. 403-445]. B. Roberts & Kanaley, T. (Eds.), *Urbanization and sustainability in Asia: Case studies of good practice*. Manila, Philippines: Asian Development Bank, pp. 414-418.