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Building the Garden City:
The Clean and Green Movement
in Singapore, 1965-2010

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A thesis submitted in fulfillment of the
requirements for the degree of

Doctor of Philosophy

Faculty of Architecture, Design & Planning
The University of Sydney

2016



Declaration

This is to certify that:

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- II. due acknowledgement has been made in the text to all other material used.
- III. the thesis does not exceed the word length for this degree.
- IV. no part of this work has been used for the award of another degree.

JUN YI ONG

Abstract

This thesis examines the history and mechanism of building Singapore as a Garden City through a strategy termed in this thesis as the ‘Clean and Green Movement’, from the years 1965 to 2010. The thesis will reveal the role of the Clean and Green Movement in the nation building of Singapore. It explores the politics of greening and attempts to explain the various roles of the governmental agencies involved in promoting the Clean and Green Movement, which can be considered a unique innovation of Singapore. The study presents an alternative perspective to the existing literature on Singapore as a Garden City, which largely describes the political processes involved.

The thesis addresses a gap in the literature by analyzing how the Clean and Green Movement shifted historically through three different emphases towards realizing the vision of the Garden City of Singapore. From the 1960s to the 1990s, the Clean and Green Movement had a primarily social emphasis, building basic infrastructure and managing hygiene, while simultaneously ensuring the planting of trees across Singapore to create a livable environment. It will be argued that one negative social outcome of the movement was that it led to the creation of a ‘ghostless’ Garden City where the homogeneity of the developed urban landscape lacked cultural diversity and biodiversity. In the 1990s, there was a shift in emphasis towards the economy, aiming to achieve an appealing ‘clean and green’ image in order to enhance the nation’s attractiveness, particularly to the overseas creative class, investors and tourists. The thesis will argue that this image is a ‘green spectacle’, which accentuates the ‘green experience economy’ and is representative of the Clean and Green Movement’s emphasis on branding. By the later 2000s up until today (2014), influenced by climate-change concerns, the Clean and Green Movement shifted towards an environmental emphasis. The Movement’s transition towards emphasizing the natural environment

exposes a conflict with the urban expansion of Singapore. The views, responses and proposals from the media as well as from non-government organizations such as Nature Society Singapore, are evaluated in order to reveal the contradictions of the Movement in relation to its attitude towards the environment, particularly the compromises necessary between economic and environmental concerns.

The Clean and Green Movement, which refers to a series of measures taken by the government to achieve the vision of Singapore as a Garden City, has contributed to the urban transformation of Singapore since its independence. Documenting the role of the Clean and Green Movement in nation building allows for a new understanding of Singapore's urban transformation.

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Chapter 1

Introduction

This research into Singapore as a Garden City aims to examine the development, policies and implementation of Singapore's 'Clean and Green Movement' from 1965 to 2010. The Clean and Green Movement consists of a series of systematic policies, aimed at achieving the vision of a Garden City. The research will investigate the role of the Clean and Green Movement and the contributions made by the social, economic and environmental emphases of the movement to the process of nation building in Singapore.

This first chapter will provide a background to Singapore as a Garden City. Additionally, it will situate the clean and green Garden City concept in a global context with respect to the current discourse on nation building. The chapter will also detail the research methodology used and provide an outline of the thesis.

Singapore as a Garden City: Background

Singapore is a small, densely populated country. As Singapore is both a city and a nation at the same time, it is perhaps best conceptualized as a city-state, with a land area of about 700 square kilometers and a population of about 5.2 million as of 2011 (Department of Statistics Singapore, 2011; Land Transport Authority, 2008). The local climate forms a significant natural advantage in the 'greening' of Singapore. Singapore is close to the equator and the naturally wet tropical climate enables lush greenery to grow all year round. In Singapore, the temperature range from about 25°C at night to about 30°C during the day. Average rainfall each year is 2,333 mm. The warm and humid tropical climate of Singapore influences the motivations and impacts of the

Clean and Green Movement to be discussed in this thesis. The plentiful rainfall and favorable climate conditions allow tropical plants to thrive (Soderstrom, 2006), and play a significant role in keeping Singapore ever green.

Land scarcity has led to the removal of original natural greenery (and consequent loss of biodiversity) to make way for urbanization in order to encourage economic growth in the country. In comparison to the population density of the United States, Singapore has 183 times more people per given amount of space. The population density increased from 3,400 people per square kilometer in 1967 to 4,500 people per square kilometer in 1990 to 7,300 people per square kilometer in 2010 and will continue to increase (Savage & Kong, 1993, pp. 16-17; Trading Economics, 2015).

Despite the increase in the population and the economic necessity of urban density, meticulous green planting has still led to close to half of Singapore being covered by planted greenery and nature reserves as of 2009 (IMCSD, 2009). Statistics show that, between 1986 and 2007, the area covered by greenery in Singapore increased from 36 percent to 47 percent, despite a 68 percent growth in population (IMCSD, 2009). This can partly be attributed to the fact that economic wealth has accompanied this increase in population, with an average GDP growth of 7.7 percent per year in the decade prior to 2006 (Tortajada, 2006). The growth in the economy has meant that Singapore could afford to invest in green urban planning. The ‘clean and green’ Garden City has been the focus of development even as economic growth is being sought.

Singapore could be argued to have achieved improved livability since its Independence in 1965. In an article published in a European lifestyle magazine, *Monocle*, in 2007, Singapore was ranked 17th amongst the world’s most livable cities (Tan, 2010). It was rated the most livable city in Asia according to the Worldwide Quality of Living Survey, an annual list published by human resource consultancy firm Mercer (Chan, 2010).

Livability is important to retain citizens. This is especially true in Singapore, where the citizenry is the key resource. The scarcity of land and natural resources means that Singapore depends largely on its people for economic growth. Providing a clean and green environment for people to live, work and play contributes to livability in Singapore. The clean and green Garden City of Singapore thus aimed to provide a comfortable environment for its people. Livability is also important to attract foreigners for better economic growth through tourism and foreign investment.

In Singapore, it could be observed that the population, green urban planning and economic growth are strongly linked. Green urban planning resulting in increased livability is associated with the increased population density, which in turn is linked to economic growth and which itself makes green urban planning affordable.

The systematic development of parks across Singapore and the sense of order depicted in ‘clean and green’ projects such as the Singapore River Clean-up reflect not only ‘cleanliness’ and ‘greenery’, but also the systematicity or in other words the order, that is inherent in most political decisions in Singapore. This systematicity can be seen as creating an identity for Singapore, which makes it competitive and encourages economic growth through attraction of tourists and investors.

Influence of the West

While the stereotypical image of Singapore as a ‘clean and green’ Garden City is associated with its post-colonial growth, the origins of the concept of Singapore as a clean and green Garden City can be traced back to significant Western initiatives, arguably starting with the period of British colonial rule. The British initiated the Singapore Botanic Gardens in 1819 (Yeo, 2004). During colonial times (1819-1942), interest in planted greenery was evident, especially within the British residential areas. In significant planted areas such as Bukit Timah, the planted greenery, along with

British black and white colonial bungalows, remain to this day. The interest in planted greenery since colonial times eventually led to the creation of Singapore's green urban branding in the 21st century, portraying Singapore as a Garden City.

The concept of Singapore as a Garden City, which came about as a result of the Clean and Green Movement, evidences aspects of the late 19th century and early 20th century ideas of city planning, represented for example by Ebenezer Howard (the English Garden City) and Le Corbusier (*La Ville Radieuse*). These will be further discussed in Chapter 2.

After Independence: Lee Kuan Yew's Vision

In 1942, during WWII, the British surrendered Singapore to the Japanese. WWII ended in 1945, but Singapore did not become an independent country until 1965. Prior to this, Singapore became self governing in 1959 and became part of the Federation of Malaysia in 1963 (Tan, 2006). The emergence of Singapore as a nation-state will be further discussed in Chapter 3.

The first Prime Minister of Singapore after Independence was Lee Kuan Yew. Lee claimed that he was determined to set Singapore apart from the rest of Southeast Asia:

After Independence, I searched for some dramatic way to distinguish ourselves from other Third World countries. I settled for a clean and green Singapore. One aim of my strategy was to make Singapore an oasis in Southeast Asia. (Lee, 2000, pp. 173-174).

The current manifestation of the Garden City of Singapore can be considered a result of Lee's vision of the city becoming 'clean and green'. Lee had envisaged the extension of cleanliness and greenery all across the city, which became a demonstration of the nation's stability. The stability of the country would lead to an increase in foreign

interest in Singapore, and hence promote economic growth. Lee identified the clean and green Garden City image as a vital competitive factor to attract foreign investment to the country (Kachingwe, 2007). It can be argued that Lee's vision has led to the economic standing of Singapore today (2014). Lee also recognized the fact that cleanliness and greenery are visually comforting, pleasing, and environmentally beneficial, especially in the tropical and equatorial climate (Lee, 2000). The Garden City concept was pursued by Lee and has developed into a 'comprehensive programme' for 'the greening of Singapore', which is executed through the Clean and Green Movement (Lee, 2008, p. 119; Yeh, 1989, p. 831). The aim of the clean and green Garden City of Singapore was first officially documented within the second reading of the Environmental Public Health Bill of 1968, where it was stated that the goal of the government was to improve the quality of the urban environment as well as to change Singapore into a Garden City (Waller, 2001):

The improvement in the quality of our urban environment and transformation of Singapore into a garden city — a clean and green city — is the declared objective of the government (Environment [Public Health] Act, 1968, cited in Waller, 2001, p. 10).

The Clean and Green Movement and its Governance

The Clean and Green Movement is a term that broadly refers to a set of government policies that enforce rules and regulations in relation to cleanliness and greenery of Singapore. The Movement is both a social and an urban planning movement (Ooi, 2005). It includes campaigns such as 'Keep Your City Clean' and 'Tree Planting Day', to educate the public about the importance of keeping the environment clean and green. These campaigns will be further discussed in Chapter 2. In the context of Singapore, a national campaign can be defined as 'a government initiated and inspired movement

which has an organized and formal course of action, used with the intent of arousing public awareness and influencing public behavior' (Tham, 1986, p. 41). For the purpose of this thesis, the term 'Clean and Green Movement' describes the unity of pluralistic Singapore striving towards a collective body dedicated to the 'Green Movement', as the global environmental movement is commonly referred to (Teo, 2004, p. 493). The Clean and Green Movement aimed to achieve cleanliness and attractive greenery across Singapore; and contribute to the realization of the vision of Singapore as a Garden City.

We have built. We have progressed. But there is no hallmark of our success more distinctive and more meaningful than achieving the position as the cleanest and greenest city in South-east Asia. (Lee, 1968).

The term 'clean and green' is a phrase widely used by the Singapore government and media. The word 'clean' has two connotations. Although it refers mainly to hygiene, it also embodies a sense of orderliness – exemplified by the way greenery is planted. The word 'green' mainly refers to the cultivation of greenery in Singapore to enhance the environment for social, economic and ecological purposes. True to Lee Kuan Yew's vision, Singapore as a Garden City – with its original biodiversity found in nature reserves alongside planted greenery such as roadside tree-plantings, neighborhood parks and park connectors – became a visual representation of the orderly and systematic urban planning of the government. This in turn reflected the political stability of Singapore. The government of Singapore has made a tremendous administrative and financial commitment over many decades in order to build and maintain this 'clean and green' image of Singapore. This can be seen in the annual 'clean and green' campaigns consisting of 'cleaning' and 'greening' programs and public education, which will be further discussed in Chapter 2.

The thesis aims to address the gap on the discourse on the 'politics of greening' by focusing on the case of Singapore. Green parties, especially in Europe, have become a common trait of party politics (Carter, 2001, p. 1). Established parties have also adopted greener policies, as every government is obliged to address a vast range of environmental problems. The environment has become an important political agenda in most industrialized countries (Carter, 2001, p. 1). In Singapore, the politics of greening revolves around the Clean and Green Movement. The politics of greening in land scarce Singapore differs from other countries in that it concentrates on nature conservation issues (to be discussed in Chapter 6) instead of environmental degradation issues (Goh, 2001, p. 10).

In Singapore, there are numerous government bodies engaged in building and maintaining the 'clean and green' environment. The Ministry of the Environment and Water Resources (MEWR) and the Ministry of National Development (MND) are the main government authorities that govern the creation of Singapore as a Garden City. Other agencies involved include the National Parks Board (NParks), the Urban Redevelopment Authority (URA) and the Building and Construction Authority (BCA) (Figures 1.1 and 1.2). The Inter-Ministerial Committee on Sustainable Development (IMCSD), set up in January 2008, implemented a national strategy for Singapore's sustainable development (IMCSD, 2009). Enhancing the urban environment is a stated part of the strategy. The implementation of measures to achieve the Garden City of Singapore concept through the Clean and Green Movement was directed by the Garden City Action Committee. This committee was chaired by the Permanent Secretary of the Ministry of National Development and included representatives from the Ministry of National Development, the then Public Works Department, the Housing Development Board (HDB), the then Primary Production Department and the Parks and Recreation Department, which later became known as NParks. The fact that the Garden City

Action Committee was composed of the top leaders in government attests to the great importance placed on environmental matters and on the formation of Singapore as a Garden City (Waller, 2001; Yeh, 1989). Within the Garden City Action Committee, the planning and development of green spaces in the residential estates were managed by agencies such as the HDB, the URA and the Town Council of each particular planning unit. NParks was in charge of the greenery around the rest of Singapore, outside the residential estates (Wong, 1969).

A strong and ordered institutional structure is considered important for the quality of management and design of the urban environment (Neuman & Gavinha, 2005). In Singapore, this can be seen in the actions implemented by the various institutional structures of the Clean and Green Movement in building the Garden City vision. The Clean and Green Movement in Singapore began before the emergence internationally of increased concerns about green issues such as global warming, carbon pollution, and the depletion of natural resources and biodiversity (Fischer & Black, 1995). Singapore recognized these issues early and was one of the first countries in the world to set up a Ministry of the Environment in 1972. Until the 1980s, 'Singapore was the only ASEAN country with a full Ministry of the Environment' (Briffett & Sim, 1993, p. 14). This reflected the strong political will of the government towards the vision of a clean and green Garden City of Singapore and has distinguished the country from the rest of the region.

MINISTRY OF THE ENVIRONMENT AND WATER RESOURCES (MEWR)

(role: to deliver & sustain a clean & healthy environment
& water resources for all in Singapore)

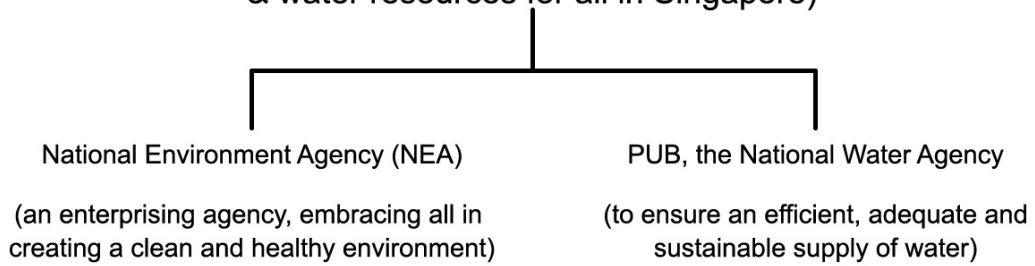


Figure 1.1 Organizational structure of Singapore's Ministry of the Environment and Water Resources
Source: Diagram drawn by the author, adapted from *Singapore Government Directory 2010* (Ministry of Information and the Arts, 2010)

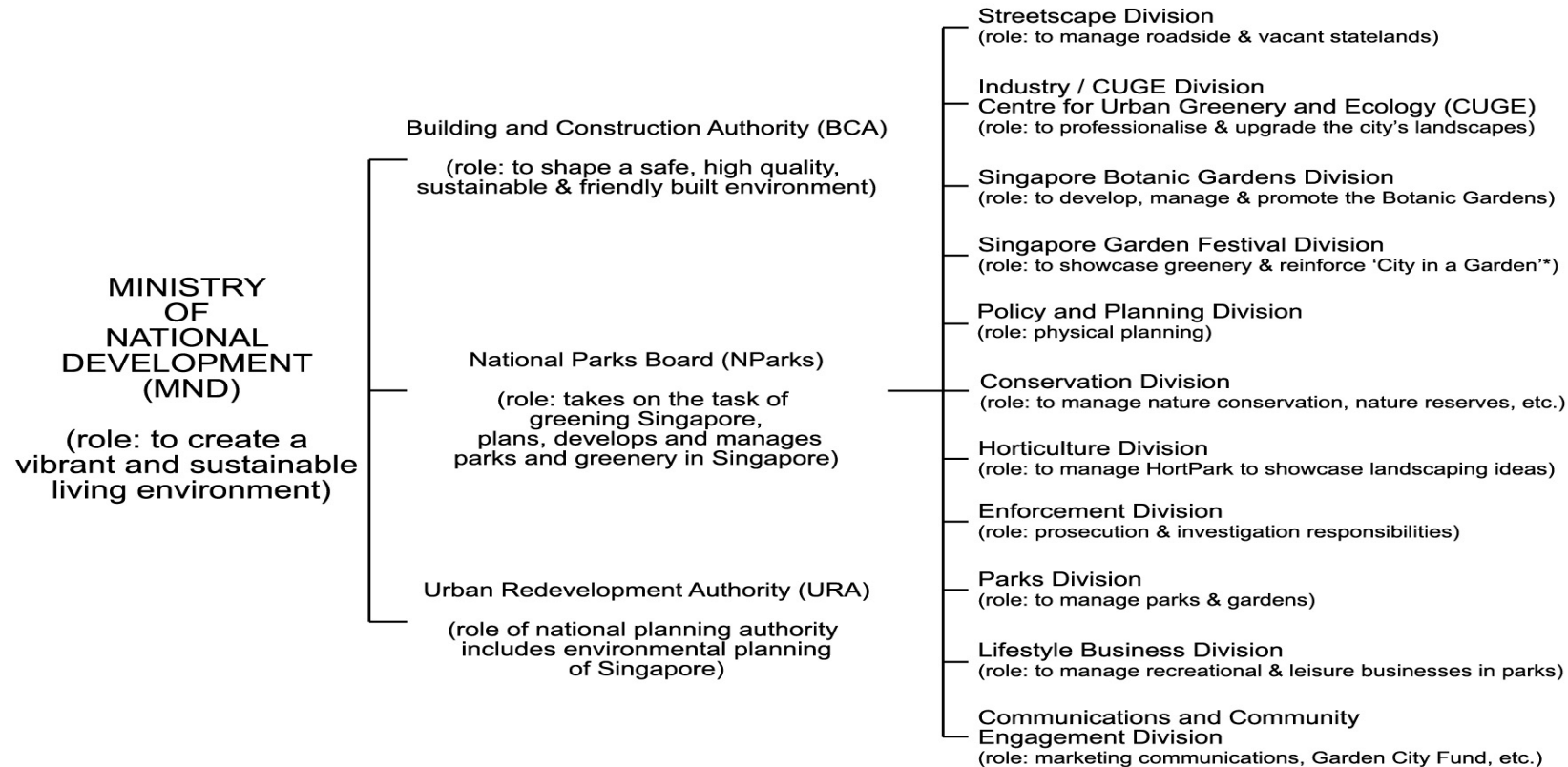


Figure 1.2 Organizational structure of Singapore's Ministry of National Development

Source: Diagram drawn by the author, adapted from *Singapore Government Directory 2010* (Ministry of Information and the Arts, 2010)

*Note: 'City in a Garden' became a branding slogan for the concept of Singapore as a Garden City around 2008 when 'Gardens by the Bay' was developed in the central business district (to be discussed in Chapter 5)

Situating Singapore's 'Clean and Green' Garden City as a Nation Building Strategy

In this thesis, the Singapore Garden City concept will be analyzed using the international discourse of nation building. The Singapore as a Garden City concept is introduced in the book, *Sustainable Built Environment: The Singapore Experience* by Singaporean scholar Tan Eng Khiam (2010, pp. 24-25). Further developments such as the water gardens in Marina Bay and the park connectors as well as other aspects such as water and waste management are also mentioned in Tan's book (2010, pp. 332, 337). This thesis extends the observations that Tan has made of these developments and introduces the new analytical lens of nation building. Through the research for this thesis, it will be shown that the Singapore as a Garden City concept was a key component of nation building in the context of the political, social, cultural, economic and environmental issues of the city-state.

Upon Independence, the primary emphasis of the Clean and Green Movement was associated with resolving the social issues of scattered housing especially along the riverbanks of the Singapore River, as well as improving hygiene. According to Tan, this was similar to what occurred in the industrial cities era of the 19th century in America and Europe when the park movement started as a result of increased 'recognition that parks are essential for the health and vitality of city dwellers' (2010, p. 343). The Clean and Green Movement then shifted from a social emphasis towards an emphasis on the 'clean and green' Garden City idea to attract visitors to the city, which further improved economic growth. During the early 21st century, increased global concern regarding climate change led the Clean and Green Movement to place an emphasis on protecting the natural environment. Tan identifies the following succession of periods in the development of Singapore from Independence to Metropolis: 1960s-1990s, Built for

Needs and Growth; 1990s-2000s, Built to Compete; and 2000s and beyond, Built for Vision (Tan, 2010, p. 11). This periodization coincides with the research findings of this thesis in relation to the changes in the focus of the Clean and Green Movement. ‘Built for Needs and Growth’ correlates to the social emphasis of the movement, argued in this thesis as having greatest emphasis during the early period of Independence, ‘Built to Compete’ correlates to the economic emphasis of the Clean and Green Movement, and ‘Built for Vision’ correlates to the Clean and Green Movement’s environmental vision of creating a more livable city for people to ‘work, live and play’ in (J.E., 2008). The thesis will investigate the role of the designed environment within the Clean and Green Movement (particularly in the development of Singapore Garden City) and the contributions made by the social, economic and environmental emphases of the movement to the process of nation building in Singapore.

Nation building, which will be discussed into detail in Chapter 3, can be defined as the formation and development of a nation. Since its Independence in 1965, nation building in Singapore has been closely associated with the social, economic and environmental development of Singapore as a Garden City. Brenda Yeoh’s book *Contesting Spaces* (1996) outlines the power relations that shaped the building of the urban environment in colonial Singapore between 1880 and 1930. This thesis focuses on nation building after Singapore’s Independence from 1965, and analyzes the contributions that the Singapore as a Garden City concept has made towards this nation building process.

In *Sustainable Built Environment: The Singapore Experience*, the process of the evolution of the built environment of Singapore is discussed by organizing the history of Singapore into separate periods, ‘first under the British rule, followed by self-government after World War II, and in its pursuit of orderly development, independence and nation building’ (Tan, 2010, p. 11). This thesis concentrates on the period after

Independence and takes a step further by discussing nation building in relation to the significant contribution made by the Clean and Green Movement.

Methodology

According to philosopher Colin Gordon in 'Governmental Rationality: An Introduction', the study of history allows the identification of reasons behind certain 'positions and visions' of the future (1991, p. 10). History also reveals 'political rationality', in this case that of the Clean and Green Movement, in the nation building of Singapore as a Garden City (Gordon, 1991, p. 10). The methodology used in this thesis is an architectural history strategy that creates a contextualized history to examine not only the built environment but also the cultural and political landscape of a given place. This study will concentrate more on what architectural historian Upton refers to as 'the human experience of its own landscape, rather than the relationship of the maker and object' (1991, p. 198). One method of critiquing architecture is to use ideas, values and images of the time to reveal the perception of society at a particular time (Ockman, 1985). The analysis of the Clean and Green Movement in this thesis will concentrate on the change in emphasis of the Movement over time. By discussing the process of the transformation of the Singapore as a Garden City vision, the changes in emphasis of Singapore's Clean and Green Movement from its inception to 2010 and the implications of these changes on nation building are revealed.

In *Contesting Space*, Yeoh (1996) discusses the conflict between Singapore's colonial authorities and Singapore's Asian communities as well as the environment created as a result. Her analysis focuses on the tensions within municipal efforts to control and improve sanitary conditions in the city through a variety of strategies, which included the modification of built spatial forms and the production of a public landscape which was orderly and disciplined for better efficiency within the urban environment (Yeoh,

1996). This thesis aims to use a similar methodology in examining the conflicts and tensions of the Clean and Green Movement in nation building and in the production of the 'clean and green' space.

In this thesis, examination of the Clean and Green Movement in Singapore from 1965 to 2010 draws upon David Harvey's book *Justice, Nature and the Geography of Difference* in defining a 'set of workable foundational concepts for understanding space-time, place, and environment (nature)' (1996, p. 2). Harvey also suggests that there is a need to find methods to consider 'how differences in ecological, cultural, economic, political, and social conditions get produced', especially through monitoring and evaluating human activities (1996, p. 5). This study of Singapore aims to analyze the Garden City, i.e. the production of a particular urban form, through discussion of the change in focus of the Clean and Green Movement socially, economically and environmentally over time.

As well as an extensive literature review, data was collected from three main sources: the media, including *The Straits Times* newspaper; government documents such as master plans and concept plans; and documented proposals to conserve nature and wildlife generated by non-government organizations such as Nature Society Singapore (NSS). This thesis is thus based on historical and archival research. The research involves the collating of existing data on and views and critiques of Singapore as a Garden City for the period 1965 to 2010. Much of the data collected are primary sources and have not previously been used in existing studies. The body of archival data was collected from the National Library Board of Singapore as well as resource centers of the Ministry of the Environment and Water Resources (MEWR), the Urban Redevelopment Authority (URA) and the National Parks Board (NParks). Selected projects and developments that evidence the influence of the Clean and Green Movement are used to analyze the building of Singapore as a Garden City. These

include the Singapore River Clean-Up and the refurbishment of the Boat Quay conservation area, as well as the Gardens by the Bay development. The issues raised by NSS are used as evidence of the contradictions inherent within the Garden City concept. The contradictions occur as a result of the tension between urban development and the desire to retain nature.

It has been argued that architectural historians act as the ‘public relations’ voice of the architectural profession, where the record of architecture is seen as a description of the forming of the human landscape (Upton, 1991). This thesis intends to record the clean and green urban landscape environment through an analysis of the building of Singapore as a Garden City. As a Singaporean, I can attest to how the ideals of the Clean and Green Movement have influenced the urban landscape of Singapore as well as the mentality of its citizens. Through education and the strict enforcement of laws, it has become a habit, even a way of life, for most Singaporeans to keep the city clean and green. The subjectivity of this position with regards to writing about the Garden City of Singapore is undeniable. I have attempted to achieve certain objectivity through the use of evidence found in the existing literature and the media. It is also worthy of note that first Prime Minister Lee asserted that the mass media should ‘reinforce, not undermine, the cultural values and social attitudes being inculcated in our schools and universities’ (Lee, 1971). As a result, the controlled media’s main focus was to ‘create social and political stability’ as well as ‘advocate government policy’ (Ortmann, 2009, p. 29). Thus, the thesis has had to be careful to understand the potential lack of criticality of the Singaporean media in dealing with government initiatives.

According to British historian John Tosh:

It can be argued that scholars today are too close to the events of [contemporary history] to achieve sufficient detachment, and that they are further handicapped

by their limited access to confidential records. But although the job cannot be done as well as historians would like, it is important that they do it to the best of their ability (2002, p. 49).

While I also conducted several interviews for this thesis, many requests for interviews were either met with no response after repeated emails, or the interview was allowed but the interviewee did not permit recording. The responses from the interviewees were often predictable as Singaporeans are often reserved and protective about their views of Singapore. The guarded responses revealed the strict nature of the political system and the sensitivity of the people towards controversial governmental issues such as for example, whether Singapore is truly 'green', if that is taken to mean that it implements policies for its urban environment that are environmentally sustainable.

Thesis Outline

This chapter has introduced the thesis and discussed the background of Singapore as a Garden City. The role of the Clean and Green Movement in nation building through the production of a designed environment is the main focus of the thesis. The methodology used to carry out this research was also discussed.

Chapter 2 sets out the roots of Singapore as a garden city in British colonial rule, and traces the implementation of the Clean and Green Movement from the time of Independence. The resemblance of the Movement to the concepts of the English Garden City as envisioned by Ebenezer Howard, Olmsted's Park System, Le Corbusier's *La Ville Radieuse* of the 19th century and the English New Towns are noted with respect to their potential influence on Singapore's urban form. This chapter also discusses the urban transformation of Singapore by focusing on the Master Plans and Concept Plans that incorporated the changing emphasis of the 'clean and green' vision.

Chapter 3 frames the key argument of the thesis by defining nation building and providing the ground for later discussions of the deployment of visions for the built environment of Singapore in the project of nation building. Post-colonial nation-states in Southeast Asia are shown to have developed a distinctive character of nation building. The chapter concludes with a brief history of the emergence of Singapore from British colonial rule, which provides a background for subsequent chapters that present Singapore's process of nation building in relation to the Clean and Green Movement.

Chapter 4 introduces the role of the Clean and Green Movement in the nation building of Singapore through the temporal shifts in the three main emphases of the Movement. The changes in the aims of the Movement from social, economic to environmental emphases are depicted in a timeline of key events. The Movement is shown to have begun in association with attempts to solve social housing and hygiene issues (building for needs and growth) and moved towards economic concerns in order to attract foreign human and economic resources to the country through the Garden City image (building to compete). The global concern with environmental issues such as climate change led to the shift towards an environmental emphasis (building for an environmental vision). The chapter then discusses the social beginnings of the Clean and Green Movement as part of the formation of the Garden City of Singapore. The chapter particularly focuses on the social emphasis in the development of the Movement since the 1960s. Two examples representative of the start of the Clean and Green Movement are presented: Tree Planting and the Singapore River Clean-Up. While the Garden City was formed at the expense of cultural memory, which can be considered a cultural cost of the Movement, it also cleared away obstacles by overcoming racial and social inequity to achieve a shared national identity, which is that of being 'clean and green', and which can be seen as being an authentic uniting vision for the nation of Singapore. This chapter argues that homogeneity of the urban landscape has removed the possible

existence of ‘ghosts’ from the urban memory of Singapore, resulting in a ‘ghostless’ Garden City.

Chapter 5 uses green urban branding discourse to examine the deployment of cleanliness and greenery to strategically brand Singapore. This will form the basis of a discussion of the economic emphasis of the Clean and Green Movement from the 1990s onwards. The chapter argues that the use of the ‘green spectacle’ portrayed an image of political and economic stability, which has attracted tourists and investors, including the creative class, and thus led to the economic growth of the city. Examples of developments, which focused on economic interest, include the refurbishment of the Boat Quay conservation area along the riverbanks of the Singapore River and the Gardens by the Bay development.

Chapter 6 examines the environmental emphasis of the Clean and Green Movement and the idea of ecological modernization as a nation building strategy. It argues that a tension exists between economists, who see the environment as an economic product, and defenders of the environment. Moreover, ecological modernization in itself contradicts the environmental vision of preserving nature, as the removal of nature is often necessary in order for modernization to occur. This chapter highlights the environmental emphasis of the Clean and Green Movement in nation building especially since the 2000s, through the creation of planted greenery and protection of original biodiversity. The two readings of the Clean and Green Movement: one of ecological conservation and the other of economic growth result in a unified image of a clean and green, economically prosperous and ecologically aware country. This national symbol binds the citizens together as one nation.

Chapter 7 concludes the thesis by summarizing the overall argument of the thesis. The chapter then considers the nation building strategies inherent in the Clean and Green

Movement. It discusses the ambivalences of the Clean and Green Movement, including the contradiction of the ‘ghostless’ urban landscape and the tension between the economists and the defenders of the environment. The chapter finally suggests the potential for applying this research into the production of Singapore as a Garden City as a case study for further research on nation building and the creation of future garden cities.

Chapter 2

Creating the Clean and Green Garden City

This chapter provides a background for later chapters discussing the Clean and Green Movement's role in Singapore's urban transformation and nation building. The chapter will begin by discussing Singapore's urban form during colonial rule. This will be followed by a discussion of the characteristics of post-Independence Singapore, which had visible similarities to some iconic images of the modern city that emerged in the late 19th and early 20th century: the English Garden City proposed by Ebenezer Howard (1898), Frederick Law Olmsted's Park System (late 1800s) and Le Corbusier's *La Ville Radieuse* (1924). The distinctive characteristics of Singapore's urban form, which include the public Housing Development Board (HDB) residential blocks of flats set amidst trees, the vehicular roads with roadside tree planting and the Mass Rapid Transit (MRT) train lines, will be discussed. These characteristics demonstrate the visible outcome of the urban transformation of Singapore through the Master Plans and Concept Plans that incorporate the Clean and Green vision.

Singapore's Urban Form during Colonial Rule

The British founder of Singapore, Sir Stamford Raffles, devised a settlement pattern documented by Lieutenant P. Jackson in the 1822 Plan of the Town of Singapore (Figure 2.1). The plan allocates different races, dialect groups and trades to different zones or districts (Yeoh, 1996, p. 42). These districts had been established as a result of following the gravitation of many migrants towards districts where 'institutional support structures such as clan-based welfare and religious institutions' or opportunities for 'control of particular occupational niches' existed (Yeoh, 1996, p. 42).

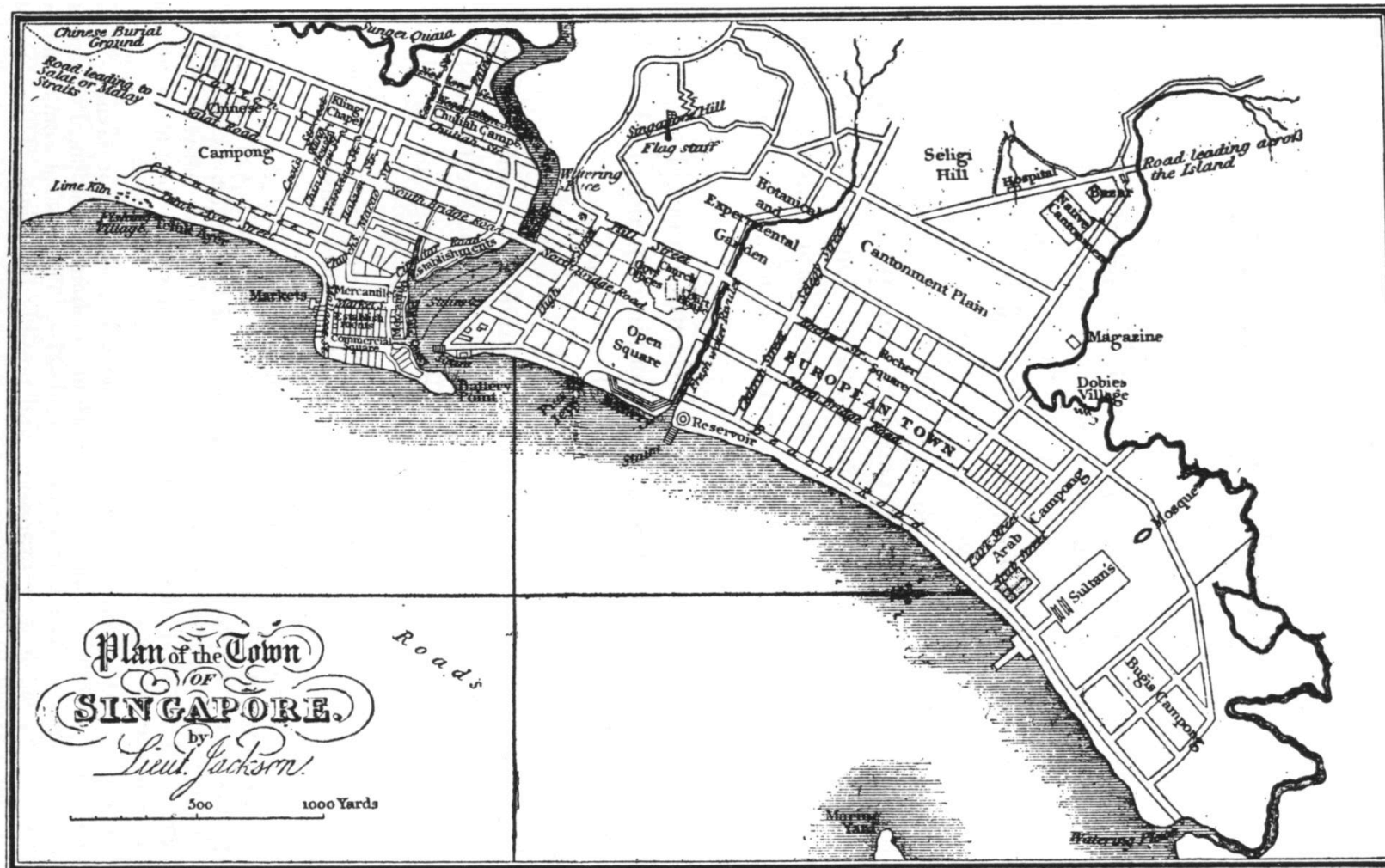


Figure 2.1 Plan of Singapore, 1822
Source: (Pearson, 1969, p. 162)

According to historic population statistics, the Singapore population in 1901 consisted of 74 percent Chinese, 14 percent natives of the Malay Archipelago, 8 percent Indians, 2 percent Eurasians, 1 percent European and 1 percent of other races that included mainly Arabs, Jews, Sinhalese, and Japanese (Yeoh, 1996, p. 38). The Asian districts were ‘complicated mosaics of specialized trade areas, bazaars, densely packed tenement housing, and concentrations of eating houses, theatres, and brothels’ (Yeoh, 1996, p. 48). These high-density localities had mixed commercial and residential land use. By contrast, the European districts consisted of distinctive suburban bungalow-type residences (Yeoh, 1996, p. 48).

The Europeans in Singapore appeared to enjoy living amidst lush greenery. Most lived outside of the Civic District in areas such as Bukit Timah, in large bungalows, with spacious verandahs and surrounding gardens. In the mid-1880s, the gardens around these bungalows were described as being filled ‘with an abundance of fruit trees’ (Warren & Tettoni, 2000, p. 21). The colonial black and white bungalow houses within the boundaries of Bukit Timah Road, Stevens Road and Nassim Road had trees planted along the roads and around the vicinity, and these trees remain today (2014) (Figure 2.2).



Figure 2.2 Atbara House along Gallop Road in Singapore, built in 1898: typical colonial black and white bungalow amidst greenery
Source: Retrieved 18th December 2012 from <http://remembersingapore.wordpress.com/2012/02/08/grand-mansions-bungalows-villas-of-the-past/>

By the 1900s, the main aspects of colonial urban morphology were ‘clearly imprinted’ in the urban built form of the central business district (Yeoh, 1996, p. 46). The Western-style central business district included a Commercial Square with banks, trading agencies, post office and shipping office on one side of the Singapore River; on the opposite side of the river was the government administrative quarter, the Town Hall, the cathedrals, hotels and schools (Yeoh, 1996, p. 46) (Figures 2.3 and 2.4). This urban form was ‘symbolic of British commercial capital and government’ (Yeoh, 1996, p. 46).



Figure 2.3 Plan of Singapore River in 1869
Source: (Dobbs, 2003)



Figure 2.4 An aerial view of the Singapore River in the 1950s
Source: (Yeoh & Wong, 2007)

The colonial rulers also established a few public parks and preserved some forest areas in reserves. A visitor to Singapore in 1873 described the streets of the Orchard Road residential area as ‘very pretty, being lined by tall bamboo hedges and trees which, uniting above, form a complete shade’ (Warren & Tettoni, 2000, p. 14) (Figure 2.5).



Figure 2.5 Tree-lined Orchard Road in Singapore, before 1900

Source: Image courtesy of Singapore Philatelic Museum, retrieved 20th December 2012 from <http://socialchangesinsingaporeorchard-sspt.blogspot.com.au/p/about-its-history.html>

The Singapore Botanic Gardens, originally established by the British colonial rulers in 1819, are located within the Bukit Timah district. However, they have changed and evolved since their establishment. Raffles saw Singapore not only as a profitable port but also as a place of botanic economic potential. However, the Botanic Gardens, set up in 1819, failed to live up to expectations. They were intended as experimental gardens, focusing on scientific research and on testing the viability of crops for cultivation in Singapore (Yeo, 2004) but due to monetary problems, they closed in 1829. In 1836 the Botanic Gardens were re-opened but again closed in 1846 (Yeo, 2004). The Singapore Botanic Gardens were officially re-established in 1859 (Figure 2.6). Little has changed

since then in terms of their configuration, although the gardens have grown to 0.47 square kilometers (de Koninck, Drolet, & Girard, 2008).

The British colonial rulers favored lush greenery as can be observed from the parks they designed as well as their living districts. The inclusion of planted green landscaping in the actual planning of the city was instituted upon Independence through the Clean and Green Movement, as will be discussed later in this chapter.



Figure 2.6 The Bandstand Hill at Singapore Botanic Gardens around 1877
Source: Image courtesy of National Library Board Singapore, retrieved 15th July 2013 from <http://mygreenspace.nparks.gov.sg/did-you-know-little-known-facts-on-singapore-botanic-gardens/>

Power Relations in Colonial Singapore

Modes of governance often have a strong influence on urban design and planning. The change in power relations following Independence had an effect on urban form. Building on the British system, the Planning Act set out by the Singapore government

upon Independence controlled the development of land (Khublall & Yuen, 1991). In Singapore, the main difference between the systems of governance during colonial rule and after Independence was the change in power relations. According to Alan Sheridan, author of *Michel Foucault: The Will to Truth*, ‘power relations’ refers to the extent to which political power interferes with social relationships (1981, p. 218). In other words, ‘power relations’ refers to the extent of political influence over the local communities. During colonial times, the city was under the authority of the colonial power, but this power was occasionally contested by some Asian community groups that had ideas at odds with the colonial government (Yeoh, 1996, p. 18). The Asian community, migrants who worked in Singapore, largely consisted of Chinese, Malays and Indians, as well as the Eurasians. These racial groups were further divided into a number of sub-groups or communities, based on links to home locations such as in China or India (Yeoh, 1996). The Chinese communities revolved mainly around the ‘family clan organizations’ that were formed for mutual protection and benefit, ‘triad societies’ based on secret rules, and ‘industrial guilds’ that revolved around specific trades and occupations (Yeoh, 1996, p. 46). Conflict and negotiation between the colonial institutions of control and the Asian community groups shaped the urban built environment of colonial Singapore between 1880 and 1930 (Yeoh, 1996, p. 18). An example of resistance to colonial control by the Asian property owners and tenants was their response against the March 1888 ordinance that changed the system of payment of rates, thereby potentially causing hardship to the poorer classes who, due to their ignorance of the English language, might not know the timing of their assessment (Yeoh, 1996, pp. 52-53). Resistance such as speaking up against the March 1888 ordinance could prove effective, as the basis of resistance often ‘drew upon coherent ideologies, institutional structures, and schemes of legitimation’, which the colonial rulers had difficulties disrupting and had finally to capitulate (Yeoh, 1996, p. 315).

Hence, power did not fully belong to the colonial rulers during colonial times (Yeoh, 1996, p. 125). This was reflected in the urban form during colonial rule. As explained earlier, in the allocation by the 1822 Town Plan of different races, dialect groups and trades to different zones or districts, resulting in a more segregated urban form, an arrangement that stands in contrast to post-Independence Singapore, where a homogeneous ‘clean and green’ urban landscape was achieved. Despite this sharing of power during colonial times, the Asian communities were ‘intermediate in status and power’ when compared to the colonial rulers and their authority (Yeoh, 1996, p. 2). Although the Asian communities had some say in the governing of the city, Singapore was largely governed and molded upon British principles (Yeoh, 1996, p. 3). The priority for the colonial rulers in planning the city was to generate wealth through trading and extracting resources for the benefit of their home country, Britain. The rulers set up a system of planning and control, which the Master Plans and Concept Plans were later based upon (Yuen, 2004). The difference was in that the system of planning and control of post-Independence Singapore instead benefited the nation.

Independent Singapore’s Urban Form and its Western Influences

The distinctive characteristics of Singapore’s post-Independence urban form include the public Housing Development Board (HDB) residential blocks of flats set amidst trees, the vehicular roads with roadside tree planting and the Mass Rapid Transit (MRT) train lines. All of these characteristics were developed mainly during the early periods of nation building between the 1960s and the 1980s. The construction of high-rise buildings for commercial, industrial and residential purposes, the building of infrastructure such as roads and expressways, and the development of transport systems to serve the urbanized city and its people are physical manifestations of urbanization during this period. This development was carried out in an orderly manner via

systematic planning as part of the independent government's agenda of creating a cohesive nation.

These characteristics can be observed in both the schematic image and the actual image of a typical neighborhood of Singapore (Figures 2.7 and 2.8). These characteristics form 'pragmatic identities' that distinguish Singapore's urban form (Chan & Evers, 1973). Pragmatic identities refer to the unique identities within a particular built environment, created through distinctive urban forms or urban planning approaches. In Singapore, the 'pragmatic identity' portrays an image of 'development and economic success' (Chan & Evers, 1973, p. 315) . This image is physically constructed through an ordered and structured 'clean and green' urban built environment, which has become part of the national identity. The 'clean and green' urban built environment can be considered to reflect an 'orderly and well-organized society', which would in turn boost the morale of Singaporeans that would raise their standards of 'economic performance' and at the same time help attract foreign investors to Singapore (Teo, 2004, p. 496).



Figure 2.7 Sketch of a typical neighborhood of Singapore, showing urban characteristics such as HDB residential blocks of flats set amidst trees, roadside tree planting and the MRT train line
Source: (URA, 2012)



Figure 2.8 Aerial view of Bukit Batok, a typical neighborhood of Singapore, showing urban characteristics that reflect the sketch shown in Figure 2.7

Source: Image taken by Mailer Diablo, retrieved 11th October 2012 from <http://en.wikipedia.org/wiki/File:BukitBatok.JPG>

Singapore's urban form also comprises of expressways that ring the island and provide direct connectivity across the country (Figure 2.9). Tree planting along the vehicular roads is common all across Singapore.

The MRT train lines radiate from the city center in the south of Singapore (Figure 2.9). This enables easy and fast access to many parts of the island. The proximity of the stations to public housing estates encourages greater use of the MRT train system, which tends to reduce the use of motor vehicles for public transportation as well as the air pollution they generate.

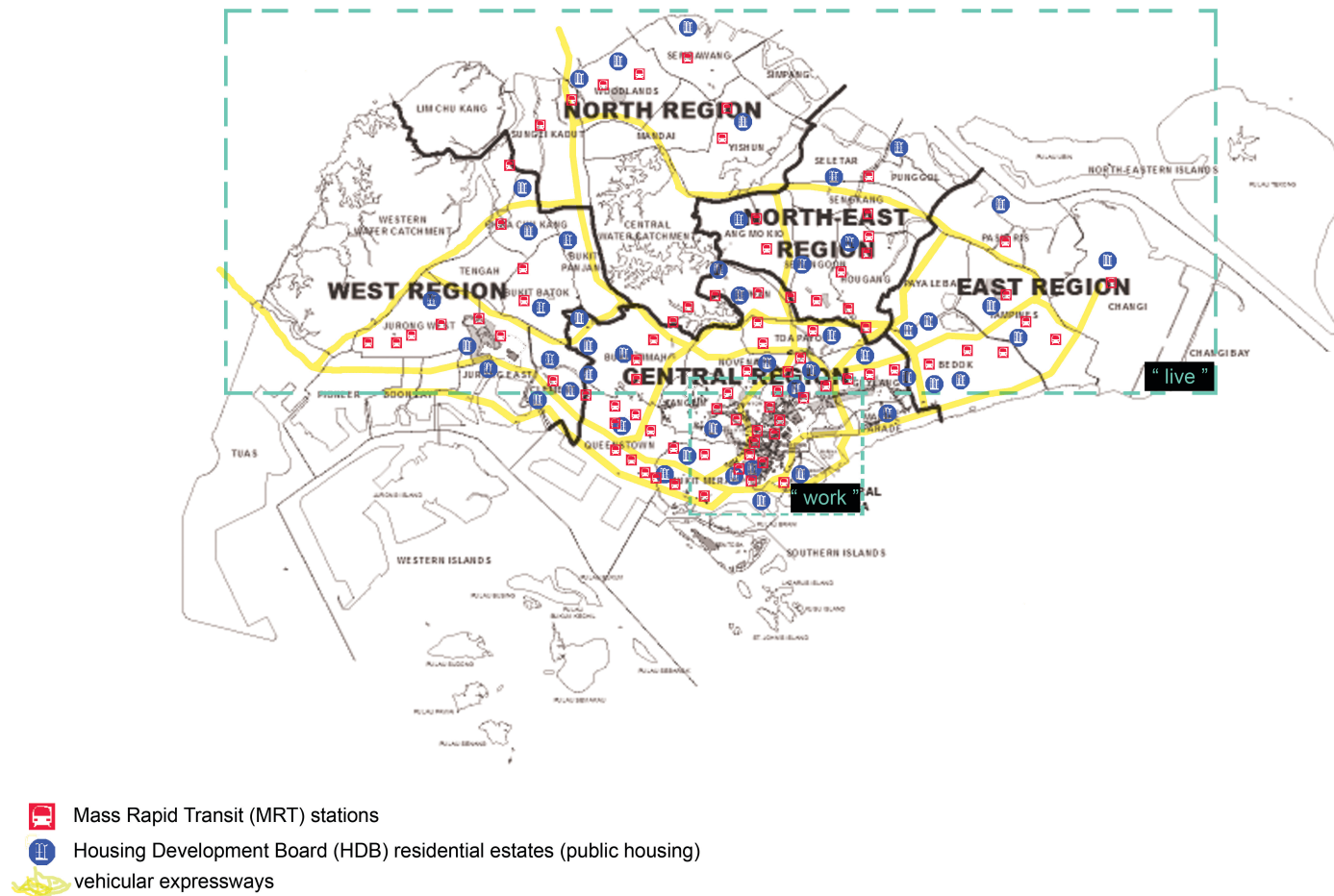


Figure 2.9 Map of Singapore showing HDB blocks of flats in 55 new towns, vehicular expressways and the MRT stations, which exemplify systematic and orderly governance
Source: Drawn by author, base map taken from (URA, 1995)

The visual image of the urban form of Singapore is largely framed around HDB blocks of flats in 55 new towns, tree planting along vehicular expressways and roads, as well as the MRT transportation system. A socially and economically well-governed stable state is considered especially necessary in a multi-ethnic Singapore where there is scarcity of land (Tortajada, 2006). The systematicity and orderliness as portrayed from the structured urban form can be seen as contributing to Singapore's social stability that in turn contributes to economic advances (to be further discussed in Chapter 5).

Singapore as a Garden City has similarities to some iconic images of the modern city that emerged in the late 19th and early 20th century: the English Garden City proposed by Ebenezer Howard (1898); Frederick Law Olmsted's Park System (late 1800s); and Le Corbusier's *La Ville Radieuse* (1924). These iconic images of modern cities presented built form in green landscapes in contrast to the old and 'often dirty' industrial city in the late 19th and early 20th century (Mallett, 1994, p. 276). Singapore adopted a similar approach with a slight difference in that the planted green landscape was central to constructing a 'clean and green' industrial city since its Independence. Moreover, the political context of independent Singapore, which will be discussed in Chapter 3, differed from the industrial city of the early 20th century. Singapore also bears similarities to more contemporaneous city forms such as the 1950s-1960s English 'new towns', themselves influenced by the iconic images of the modern city of the West, as mentioned earlier. The British terminology of 'new town' is also used in Singapore to refer to a planning area. Although the Singapore Garden City has resemblances to these iconic images of the modern city of the late 19th and early 20th century, this thesis does not claim any direct influence. The emphasis of this thesis is rather to focus on the visual planned similarities of the Singapore Garden City to these iconic city forms and focus on discussing the formation of the clean and green Singapore Garden City's urban form.

As several of the key political leaders of independent Singapore, including first Prime Minister Lee Kuan Yew, were educated at universities in the UK (Ortmann, 2009, p. 30), it is likely that they were exposed to Western urban planning ideas, which might have resonated in some aspects of planning Singapore as a ‘Garden City’. As discussed in Chapter 1, these political leaders take on various roles and responsibilities in various institutional structures of the Clean and Green Movement in building the Garden City vision. Tellingly, the period where the first political leaders of Singapore were being educated in Britain coincides with the peak of the English ‘new town’ movement of the 1950s, just before Singapore gained Independence in 1965.

The next sections discuss significant Western Urban precedents, which appear to have visual similarities to aspects of Singapore’s urban form. Ultimately however the differing political, social, economic and climatic conditions of Singapore resulted in the uniqueness of the Singapore Garden City.

Singapore as a Garden City and the English Garden City

Colonial Singapore had similarities to Ebenezer Howard’s English Garden City in terms of zoning of residential estates. Howard first published *Garden Cities of Tomorrow* in 1898 (Howard, 1902). He envisioned English garden cities featuring parks, tree-lined avenues, and public gardens, with a population size of around 30,000 people per urban area (Ward, 1992) (Figure 2.10). The towns were to incorporate manufacturing, retail and outdoor exercise facilities, and were to be surrounded by ‘greenbelts’ reserved for agriculture and forestland.

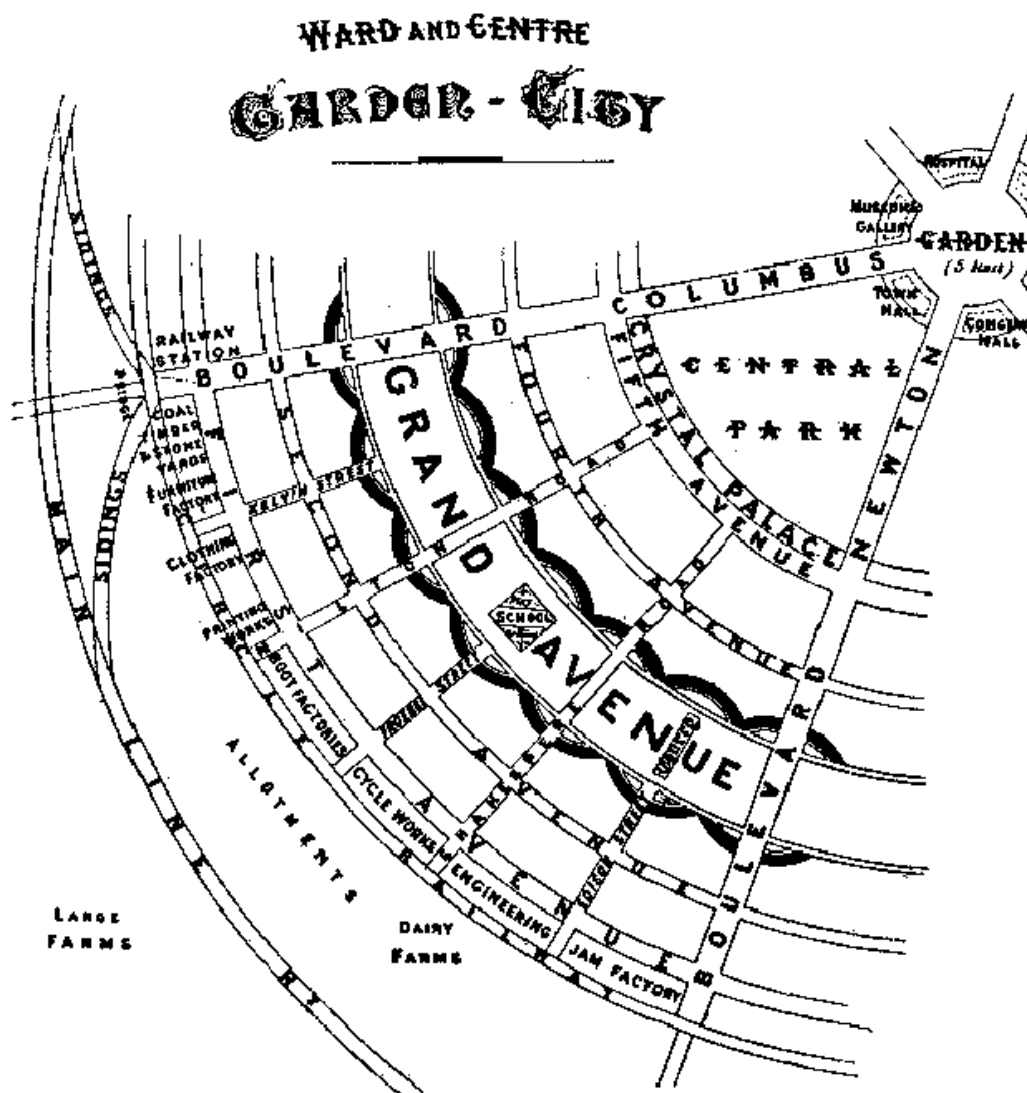


Figure 2.10 Plan of Ebenezer Howard's English Garden City (1898), with spaces allocated for parks, tree-lined avenues, and public gardens
 Source: (Howard, 1902).

The basic unit in Ebenezer Howard's English Garden City was the family in its individual home. The houses of the English Garden City were to be planned along well-planted streets, converging gradually upon the broad communal green and civic buildings towards the center (Curtis, 1996). This model of buildings and roads integrated with planted greenery is analogous to the new towns of post-Independence Singapore where, within a particular planning area, residential blocks (though not individual homes) have been linked by rows of neatly planted trees along pedestrian paths and vehicular roads leading to the town center. Broad communal greens in

Singapore, also known as neighborhood parks or green open spaces, are comparable to central parks of the English Garden City, though they are of a smaller scale. The broad communal greens have been designed within each planning area with a town center incorporating a market that caters for the basic needs of residents (Figure 2.11).

Howard also preferred ‘clean streets’ surrounded by fine gardens and orchards so that fresh air, greenery and the distant horizon are visible from everywhere in the city (Curtis, 1996, p. 243). The Singapore Garden City idea has aimed to provide fresh air and greenery for the live-work-play of communities and thus for a more livable city (J.E., 2008). The Garden City environment has been designed to encourage participation in activities, thereby increasing social interaction and building a strong community spirit among the residents (Beatley, 2004). According to Singaporean researcher Tan Eng Khiam, the creation of green spaces ‘encourage residents to interact, bond and connect’ (Tan, E.K., 2010, p. 385).

While the initial idea of Howard’s English Garden City was also concerned with the relationship between the expansion of the city and the countryside, the transformation of the Garden City in Singapore, according to sociologist Ooi Giok Ling (2005, p. 89), focused primarily on the ‘greening’ of the built environment. The English Garden City was based on greenery amidst individual low-rise housing within a suburban setting, whereas the Garden City of Singapore is based on greenery within a more dense high-rise urban setting throughout the city-state.

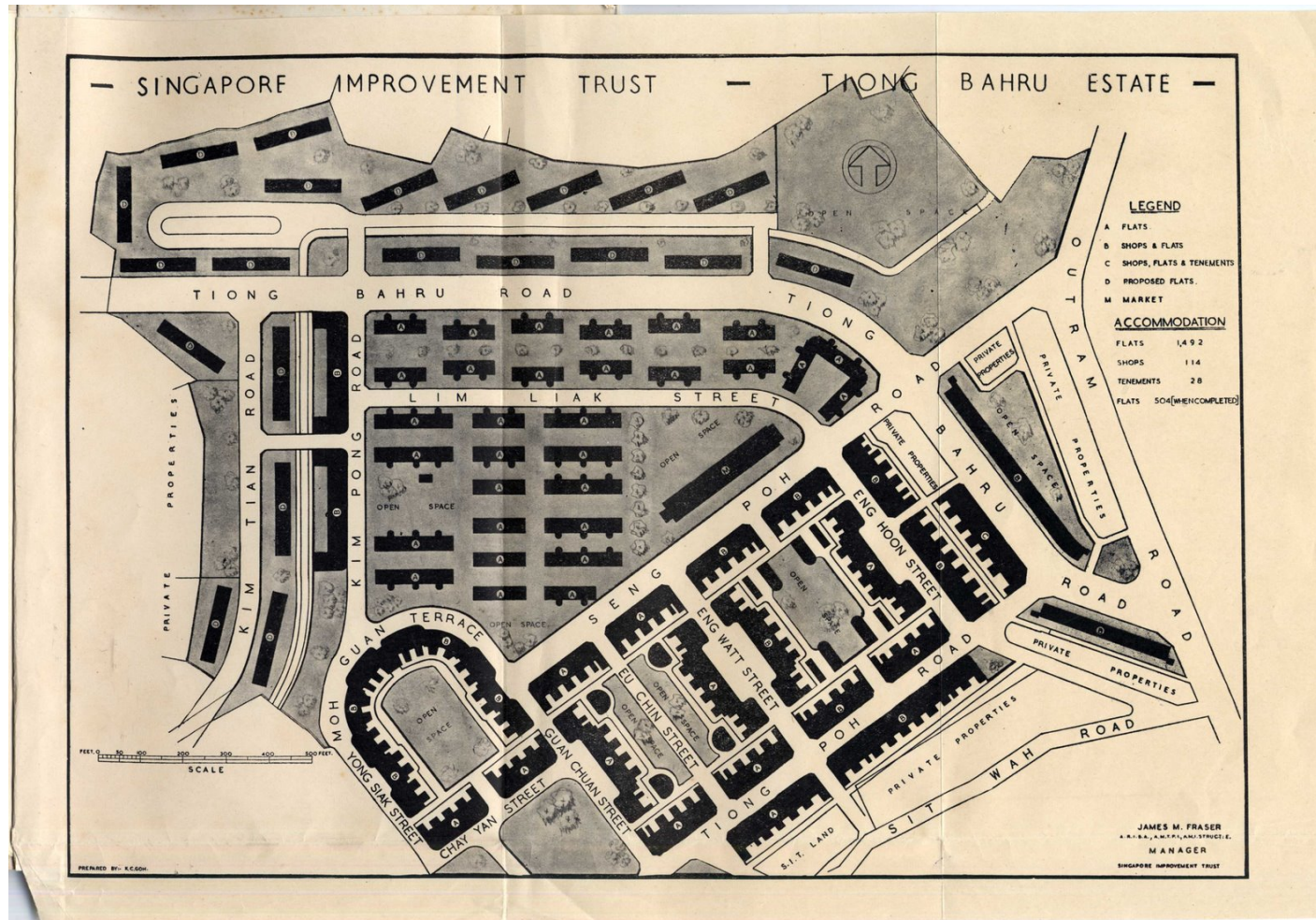


Figure 2.11 Plan of Tiong Bahru HDB residential estate built in the 1930s, an example of a residential planning area in Singapore with communal greens and a town center incorporating a market

Source: Retrieved 17th March 2013 from <http://14jsc.wordpress.com/2013/03/12/hdb-history-photos-and-floor-plans-1930s-to-2010>

Singapore's Urban Landscape and Olmsted's Park System

Singapore as a Garden City shares similar characteristics with landscape architect Frederick Law Olmsted's proposals for urban parks and park systems in North America. His vision, proposed in the latter half of the 19th century, recognized North America's urban and industrial future, and aimed to reduce the 'social and physical stresses' of the modern city (Conn & Page, 2003, p. 94). Olmsted believed that 'naturalistically designed parks' were important to counteract the 'debilitating aspects' of dense city living. As a result, parks were created in order to address aesthetic, educational, recreational and cultural needs in the urban built environment (Tan, 2010; Yuen, 1996).

Olmsted focused on a meticulously planned balance of lawns and parks, tree-lined streets and fast linkages to the city (Conn & Page, 2003, p. 95). The Garden City of Singapore similarly incorporates green spaces, roadside tree plantings and transport systems that connect parts of the city-state. Olmsted's emphasis on the physical built environment or urban form can be considered the start of the American 'suburban home and lawn' landscape of the 20th century (Conn & Page, 2003, p. 95) and indeed Olmsted is often credited as the founder of American landscape architecture (Larice & Macdonald, 2013, p. 36). With his partner Calvert Vaux, Olmsted made a distinct mark by designing New York City's Central Park after winning the 843-acre open park space design competition project in 1858 (Larice & Macdonald, 2013, p. 36) (Figure 2.12). In Singapore, neighborhood parks are planned in significant HDB residential estates. These neighborhood parks, such as Bishan Park, bear significant resemblance to Olmsted and Vaux's Central Park as can be observed from the photographs below (Figures 2.12 and 2.13). The major difference is the scale on which the parks are being designed, with Central Park at a larger city scale compared to Bishan Park at a neighborhood scale. However, both projects achieve a major open green space amidst a dense high-rise urban environment, which contributes significantly to the urban image.



Figure 2.12 An aerial view of New York City's Central Park
Source: Retrieved 17th December 2012 from
<http://scoaladeblog.ro/wp-content/uploads/2012/03/CentralPark2.jpg>



Figure 2.13 An aerial view of Bishan Park, a neighborhood park set within Bishan HDB residential estate in Singapore
Source: Image owned by Atelier Dreiseitl, retrieved 22nd September 2012 from
<http://www.treehugger.com/urban-design/bishan-park-kallang-river-restoration-singapore.html>

Another example of Olmsted's influence on North America's urban form can be seen in Boston and its 'emerald necklace' of parks (Conn & Page, 2003, p. 189). Following Olmsted's proposals, the World's Columbian Exposition in Chicago in 1893 also embodied the city planners' aspiration of a planned, orderly and clean 'White City', where the tensions of the industrial city are reduced through 'beautiful surroundings', including better housing, schools, and parks (Hunt, 1984, p. 189). The 1893 White City vision had a significant impact on the future of architecture and city planning (Conn & Page, 2003, p. 206). The contribution of Olmsted and the 'White City' vision to the urban landscape of North America is also evident in cities such as Boston and Buffalo. The idea of a planned, orderly and clean 'White City' prefigures Singapore as a 'clean and green' Garden City.

HDB Residential Estates amongst Trees and *La Ville Radieuse*

The Swiss architect Le Corbusier's proposals for *La Ville Radieuse* (1924) were developed as a city plan. They were proposed to decongest the human and vehicular traffic at the city center, increase population density, use transport systems and free-up the ground for nature, sports and agriculture (Woudstra, 2000, p. 140). The proposals supported the socialist criticism of the city center as a capitalist displacement of the administrative center from its rightfully central position (Feferman, 2012). In terms of scale and density, the idea of Singapore as a Garden City has similarities to Le Corbusier's *La Ville Radieuse*. In Singapore, the removal of scattered housing and the building of HDB residential estates away from the city center resemble *La Ville Radieuse*.

Singapore's Garden City configuration includes high-rise residential and commercial buildings, set within planted greenery. This configuration resembles in some respects Le Corbusier's sketches of the proposed high-rise way of living in *La Ville Radieuse*,

where a spacious treed city is made possible by designing residence as large blocks of ‘space-saving’ flats (Girardet, 1996, p. 57). Similar to Singapore’s Garden City, the high-rise apartment blocks of *La Ville Radieuse* were also set in gardens (Soderstrom, 2006, p. 118) (Figure 2.14). Le Corbusier’s drawings of this new typology of urban living were presented as attractive alternatives to the overcrowded slums of the 19th century (Girardet, 1996). However, the apartment block communities built in most cities of the 20th century were not as attractive or successful as those envisioned by Le Corbusier, perhaps with the exception of Singapore, where the residential blocks set in gardens became a reality mainly as a result of the tropical climate lush vegetation, a high level of care and maintenance, and the strong political will mobilized in their support (Soderstrom, 2006). The layout of the HDB residential estates in locations such as Toa Payoh (Figure 2.15) resemble the *Ville Radieuse* model in allowing residents to enjoy views of the ‘park-like landscape below’ from their windows (Girardet, 1996, p. 56).

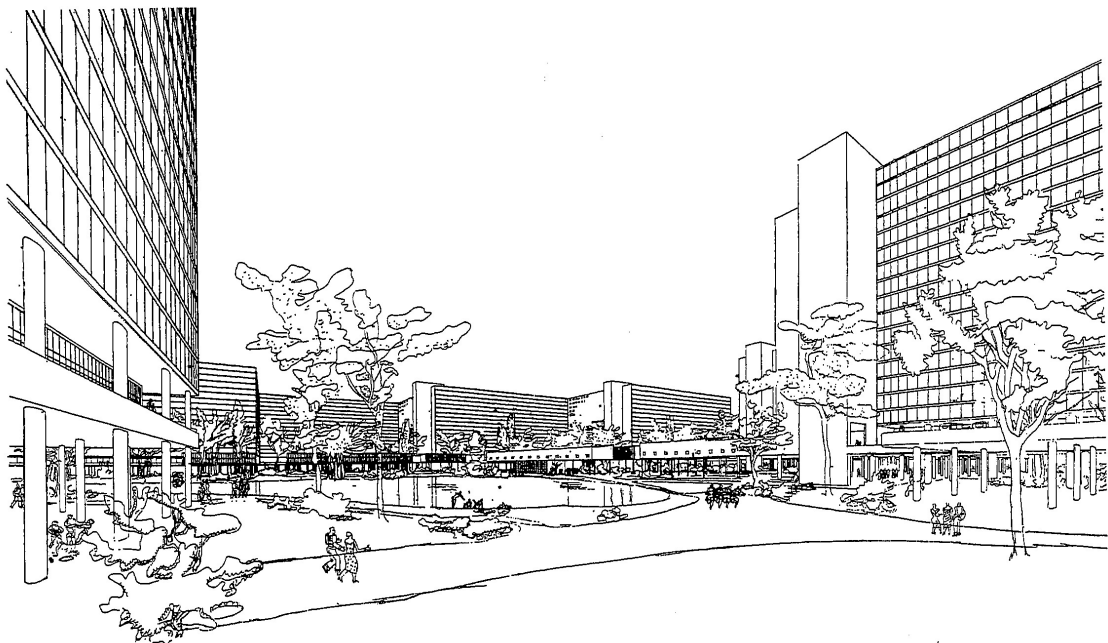


Figure 2.14 Le Corbusier’s perspective sketched view of *La Ville Radieuse* model as applied in Antwerp, Belgium in 1933, where high-rise apartment blocks were set amidst trees
Source: (Dunnett, 2000)



Figure 2.15 View of HDB residential estate at Toa Payoh, Singapore, set amidst trees

Source: Image taken by User:Sengkang, retrieved 16th December 2012 from

http://wpedia.goo.ne.jp/enwiki/Image:Toa_Payoh_New_Town,_Toa_Payoh_Lorong_6_2,_Jan_06.JPG#file

In *La Ville Radieuse*, the green spaces between apartments contained a network of designed pedestrian walks to ‘provide certain charm, an element of pleasure’ and ‘a feeling of being out for a stroll’ (Woudstra, 2000, p. 141). The spaces would also accommodate sports facilities and schools (Figure 2.16). This is comparable to the typical neighborhood in Singapore, where pedestrian pathways and trees are planted between the residential blocks. Sports facilities and schools are also located within some Singapore neighborhoods such as in Jurong West HDB residential estate (Figure 2.17).

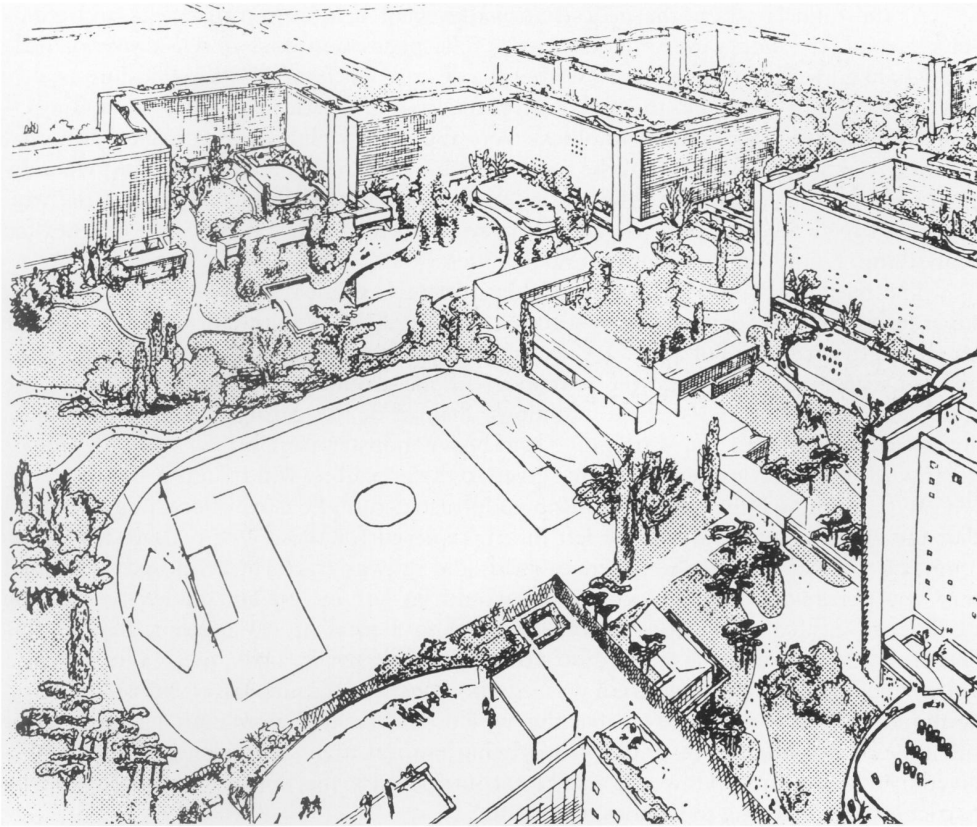


Figure 2.16 Sketch of meandering path system through parks with sports facilities and schools in *La Ville Radieuse* model

Source: Le Corbusier, Paris, *Ilot insalubre*, no. 6, 1936; Plan FLC 22829; © Fondation Le Corbusier



Figure 2.17 Pedestrian pathway cutting through sports facilities in Jurong West HDB residential estate, Singapore

Source: Retrieved 6th January 2013 from <http://en.wikipedia.org/wiki/File:JurongwestHDB.JPG>

Re-housing the population into HDB residential estates surrounded with planted greenery was one of the measures taken as part of the Clean and Green Movement to ‘clean up’ the scattered housing around Singapore (Soderstrom, 2006). These estates resemble Le Corbusier’s sketches of the proposed high-rise way of living set amidst trees in *La Ville Radieuse*.

In *La Ville Radieuse*, a new satellite city was proposed outside the old city, with ‘a grid of different transport systems’ linking the two cities together (Richards, 1969, p. 240). The transport systems proposed included elevated roads for fast-moving vehicular traffic, a ground-level road network for trucks (private cars were still scarce then), trams for the local people and an underground railway for high-speed travel to the old city or factory zones (Richards, 1969, p. 240) (Figure 2.18). Multiple transport systems at various elevations are also used in Singapore. These include the expressways for fast-moving vehicular traffic, the vehicular roads, the Mass Rapid Transit trains that travel above and below ground and the elevated Light Rail Transit train system that facilitates movement within some HDB residential estates (Figure 2.19).

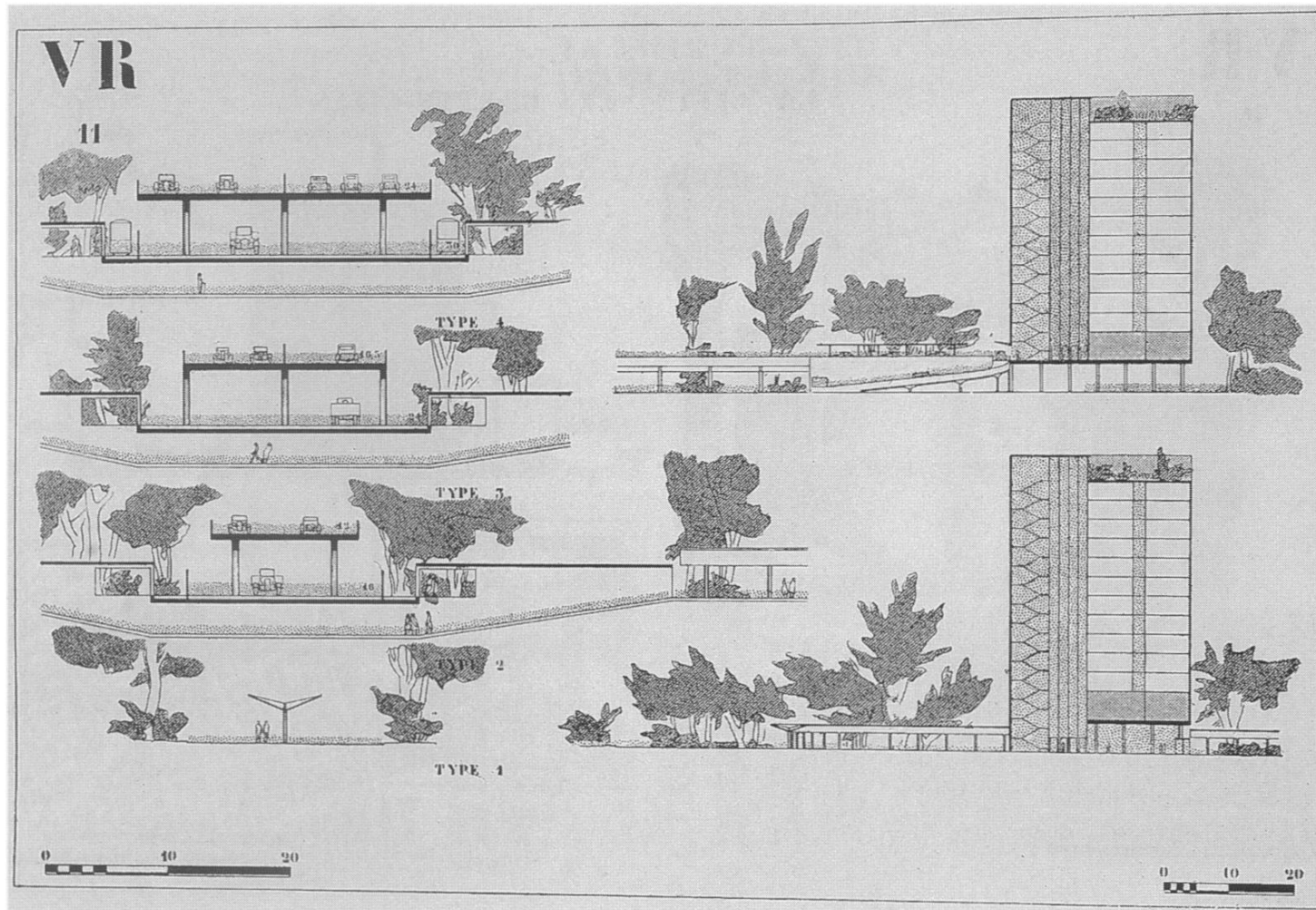


Figure 2.18 Cross-section drawings of *La Ville Radieuse* that emphasize the transport systems of the elevated roads and underpasses
Source: Le Corbusier, *La Ville Radieuse*, 1930; Plan FLC 24909; © Foundation Le Corbusier.



Figure 2.19 Transport systems such as the Mass Rapid Transit train system and vehicular road networks that contribute to Singapore's urban form

Source: Retrieved 15th March 2013 from

http://www.obayashi.co.jp/english/works/detail.php?work_id=2470&location_id=8

New Towns of Singapore and the English New Towns

Beyond their shared name, the typical neighborhood or 'new town' of post-Independence Singapore also bear some of the characteristics of the 1950s-1960s new town planning in Britain. As the post-Independence urban form of Singapore emerged, it took on some of the visual and rhetorical vocabulary of British new towns. The development of new towns in Singapore initiated in the Concept Plan of 1971 (Yuen, 2004, p. 63) will be discussed in detail later in this chapter. The building of 'new towns' began in Britain in the post World War II period of major social and technological change (Anthony, 2009, p. 4). Technological advances such as motorcars changed the way people lived and provided new opportunities for the British economy. The urban development of new towns was a reflection of this period. The new towns came

equipped with roads, water, sewers, electricity and gas networks, as well as housing, commercial and civic buildings (Anthony, 2009, p. 4). The new towns of Singapore, which were first constructed in the 1970s, immediately subsequent to the English new towns of the 1950s-1960s, consisted of similar buildings and infrastructure to those found in the English new towns. The distinctive characteristics of the new towns of Singapore such as the public HDB residential blocks of flats set amidst trees, the vehicular roads with roadside tree planting and the Mass Rapid Transit train lines, have been discussed earlier in the chapter.

The new towns planned in Britain during this era aimed to become a ‘good place to work in, and a grand place to live in’, with open spaces and parks for people to enjoy (Anthony, 2009, p. 17). Similarly, the new towns of Singapore were planned with open green spaces for communities to ‘live-work-play’ (Curtis, 1996, p. 243). Within each new town of Singapore, green spaces were allocated for the amenity of the residents. The insertion of landscaping between the HDB residential blocks of flats provided space for comfortable living and diminishes the feeling of congestion.

Moreover, the English ‘new towns’ such as Milton Keynes built since the 1970s (Bendixson & Platt, 1992) (Figure 2.20), aimed to provide ‘an attractive town center’, with meeting spaces, shops, a theatre, cinemas, a concert hall, and a civic center (Anthony, 2009, p. 17). These facilities are also apparent in the new towns of Singapore. Ultimately, Singapore’s new towns can be considered to have resulted in a comparatively better social and visual outcome than those in Britain as the ‘new town’ model was repeated across Singapore.

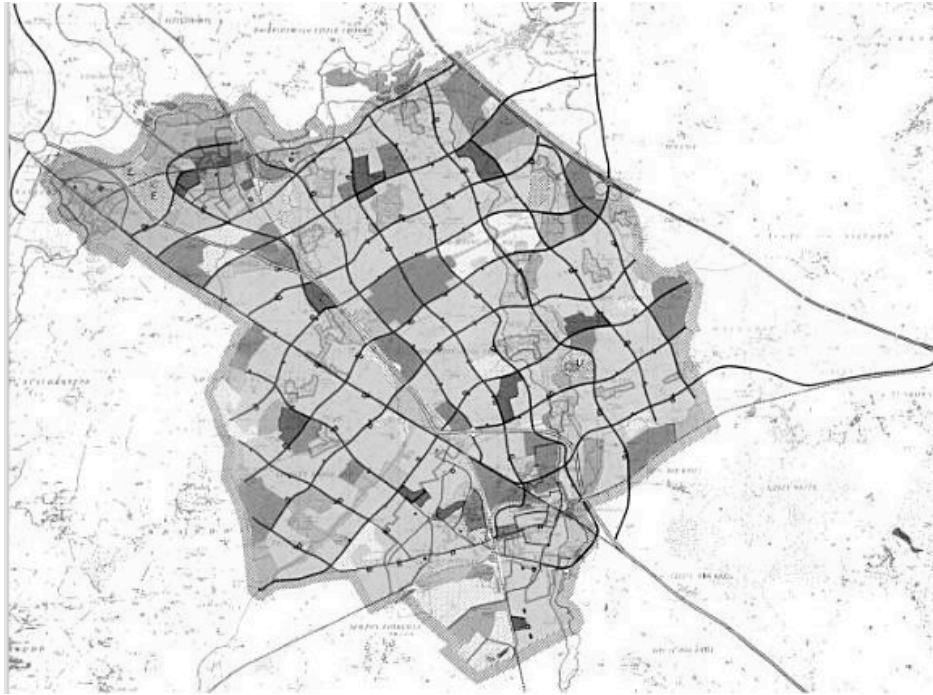


Figure 2.20 The plan for Milton Keynes, built since the 1970s took the principle of decentralized land uses, based on a grid of main roads
Source: (Bendixson & Platt, 1992, p. 56)

Urban Transformation through the Master and Concept Plans Incorporating a Clean and Green Vision

As mentioned in Chapter 1, Singaporean researcher Tan Eng Khiam has identified four stages in the urban transformation of Singapore since Independence: building for needs (1963-1980), building for growth (1980-1990s), building to compete (1990s-2000s) and building for a vision (2000-) (Tan, E.K., 2010, p. 11). Some planning characteristics of colonial rule, including the systematic planning and control as well as the planting and maintenance of the urban landscape, have been retained up to the present day (2014). However, the change in urban form from a more community-segregated urban form – the legacy of district planning during colonial rule – towards a homogeneous ‘clean and green’ urban landscape for a unified Singaporean population upon Independence, is also apparent. The ordered urban planning of Singapore is based on a historical series of Master Plans and Concept Plans, which define each era. The urban transformation of

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Singapore through the Master Plans and Concept Plans, which have formed the guidelines for the government's Clean and Green Movement, will be discussed in this section.

The Master Plans and Concept Plans

Following the pattern of systematic planning and control evidenced during colonial rule, after Independence, Master Plans and Concept Plans proposed directions for future land development. The plans reveal a deliberate attempt to 'direct urbanization pressures towards' a designed urban form to ensure a suitable 'spatial arrangement for urban activities' (Yuen, 2004, p. 58).

The Master Plan forms the basis of Singapore's development control system. The Concept Plan is a compilation of the nation's common goals, which is considered vital as a basis and reference when making decisions that impact the near future (URA, 2013d). The Concept Plan provides a method for 'translating agreed goals into concrete form' (Yuen, 2004, p. 61). The Concept Plan is meant to ensure that there is 'sufficient land to meet long-term population and economic growth needs', while providing a good quality living environment for the people (URA, 2013c). The Master Plans and Concept Plans drawn up for Singapore to date include Master Plan 1958, Concept Plan 1971, Master Plan 1980, Concept Plan 1991, Concept Plan 2001, Master Plan 2003, Master Plan 2008 and Concept Plan 2011 (URA, 2013c, 2013d).

In preparing each Master Plan and Concept Plan, the government had to take into consideration all major land needs in collaboration with various government agencies, particularly the Housing Development Board (HDB) (URA, 2013d). The HDB is responsible for 'the total planning, development and management' of the public housing sector (URA, 2013d). The HDB has had a strong political and financial commitment from the government (Yap, 2007, p. 23). According to the HDB Annual Report

2008/2009, in March 2009 82 percent of the population of Singapore were living in HDB residential estates (HDB, 2009). With the majority of the urban landscape formed by HDB residential estates (Figure 2.21), the history of public housing development can be considered to have significantly contributed to the transformation of Singapore's urban landscape (HDB, 2009).

Building for Needs 1963-1980

According to Singaporean sociologist Belinda Yuen, the first Master Plan of 1958 aimed at providing Singaporeans with infrastructure and a basic standard of living (Yuen, 2004, p. 58). 'Density controls and zoning' were used to ensure rational use of land in land-scarce Singapore (Yuen, 2004, p. 58) (Figure 2.22). The first Master Plan was drawn up for a 20-year period between 1953 and 1972. The Master Plan of 1958 was carried through even after Independence in 1965, as Singapore has been continuously ruled by the same political party (i.e. the People's Action Party (PAP)) since 1959, when Singapore entered a period of self-rule after World War II. The political history of Singapore will be discussed in detail in Chapter 3.

The Singapore Government invited United Nations Town Planning advisor, Professor Erick Lorange to devise the Lorange Plan (Motha & Yuen, 1999, p. 113) in 1962, which is a long-term framework for urban renewal based on dividing the city into precincts (Huang, 2013, p. 87). In 1963, another United Nations Town Planning advisor, Professor Otto Koenigsberger proposed the 'Ring City' plan (Figure 2.23), which is a ring of towns fringing a centrally located catchment area (Huang, 2013, p. 87). The plan suggested fringing this Central Water Catchment Area with a ring of towns (Tan, K.W., 2006, p. 48). The park connector network, to be discussed later in this chapter and in Chapter 6, was built upon the 'Ring City' plan. The plan was also incorporated into the 1971 Concept Plan.

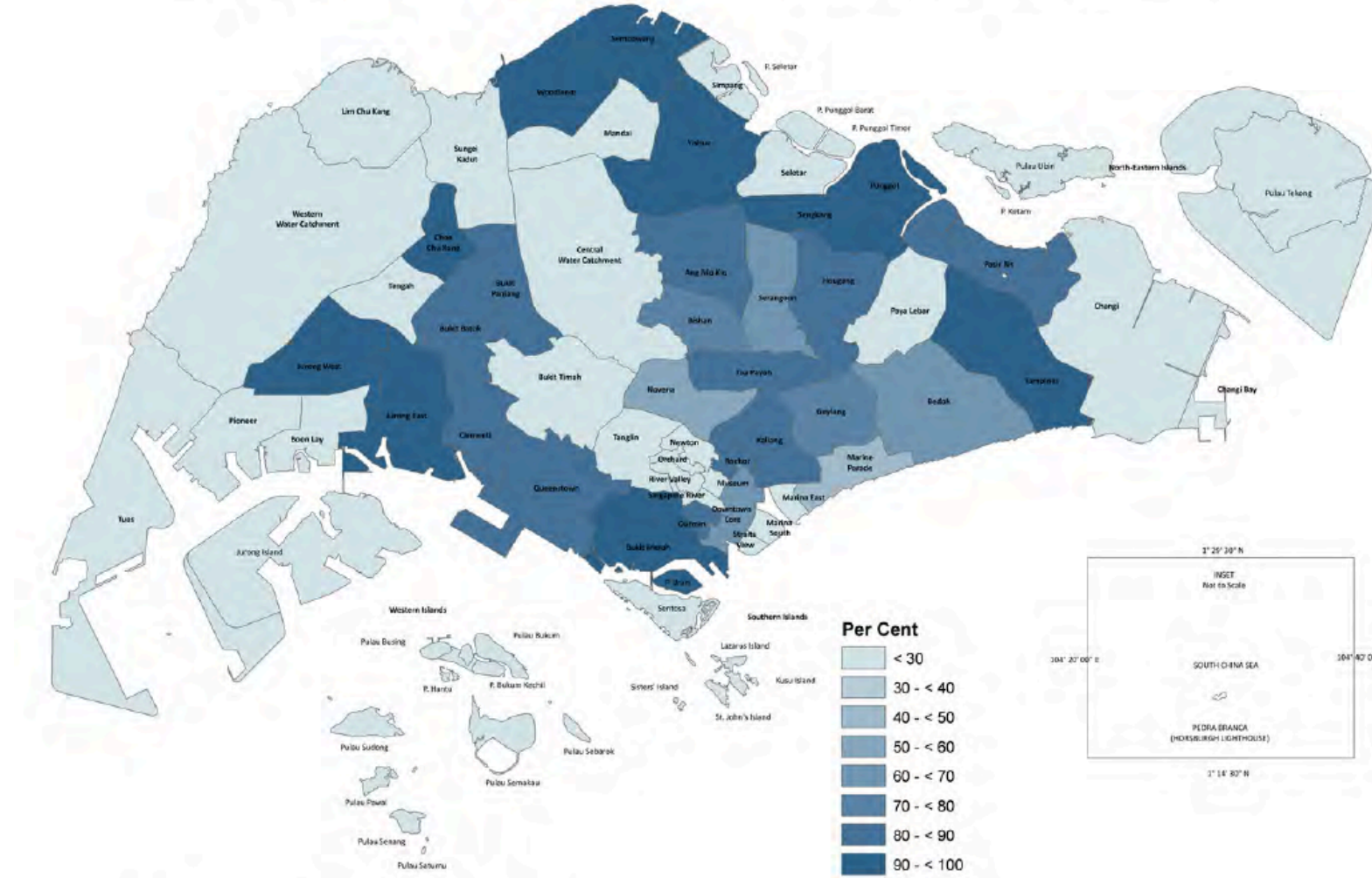


Figure 2.21 Proportion of resident population of Singapore living in HDB flats, by planning area, June 2010
 Source: (Department of Statistics Singapore, September 2010, p. 29)

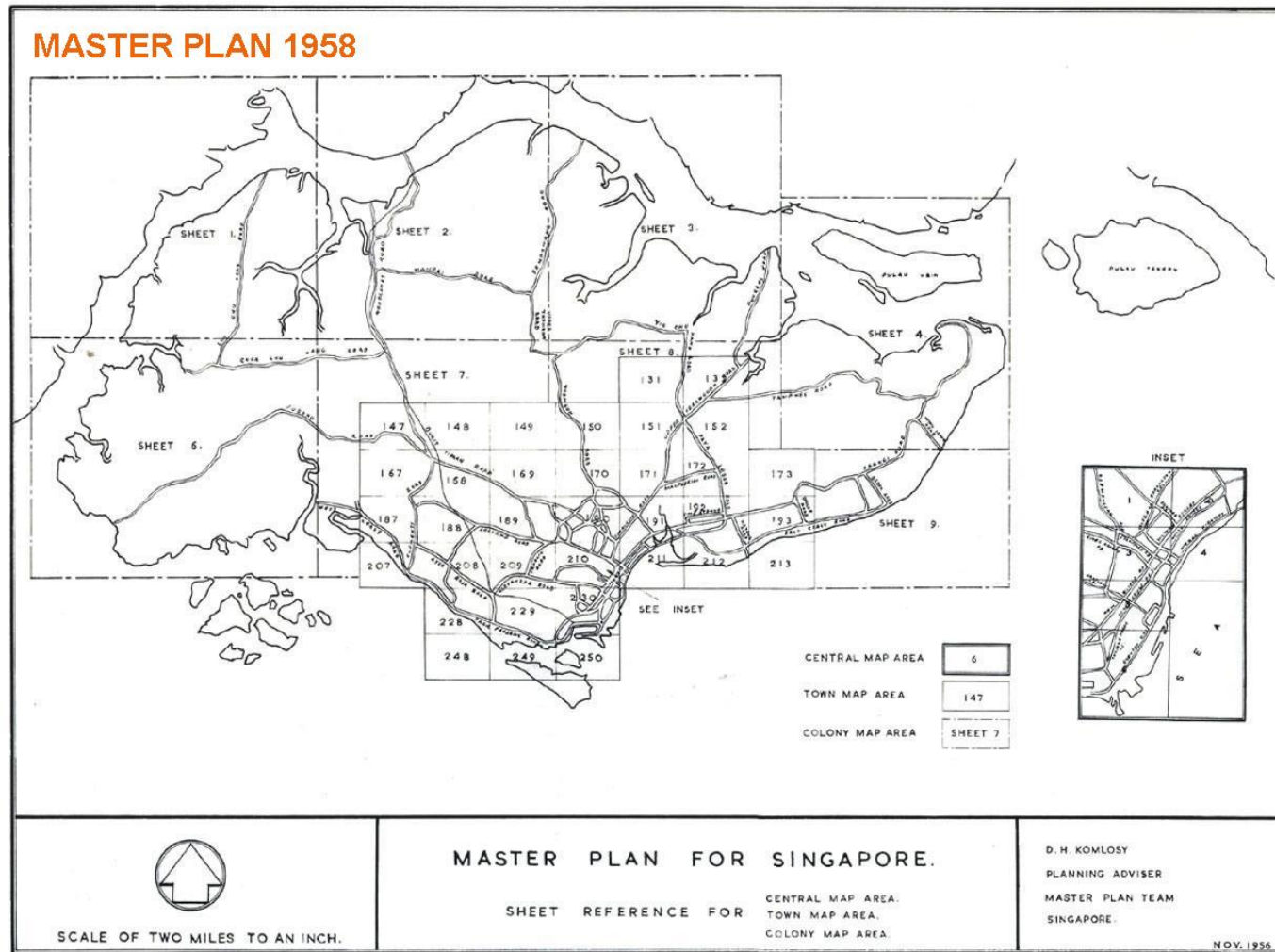


Figure 2.22 Master Plan 1958 for Singapore where land use was first regulated through zoning, density and plot-ratio controls
 Source: Retrieved 12th September 2012 from http://www.ura.gov.sg/dc/mp58/mp58map_index.htm

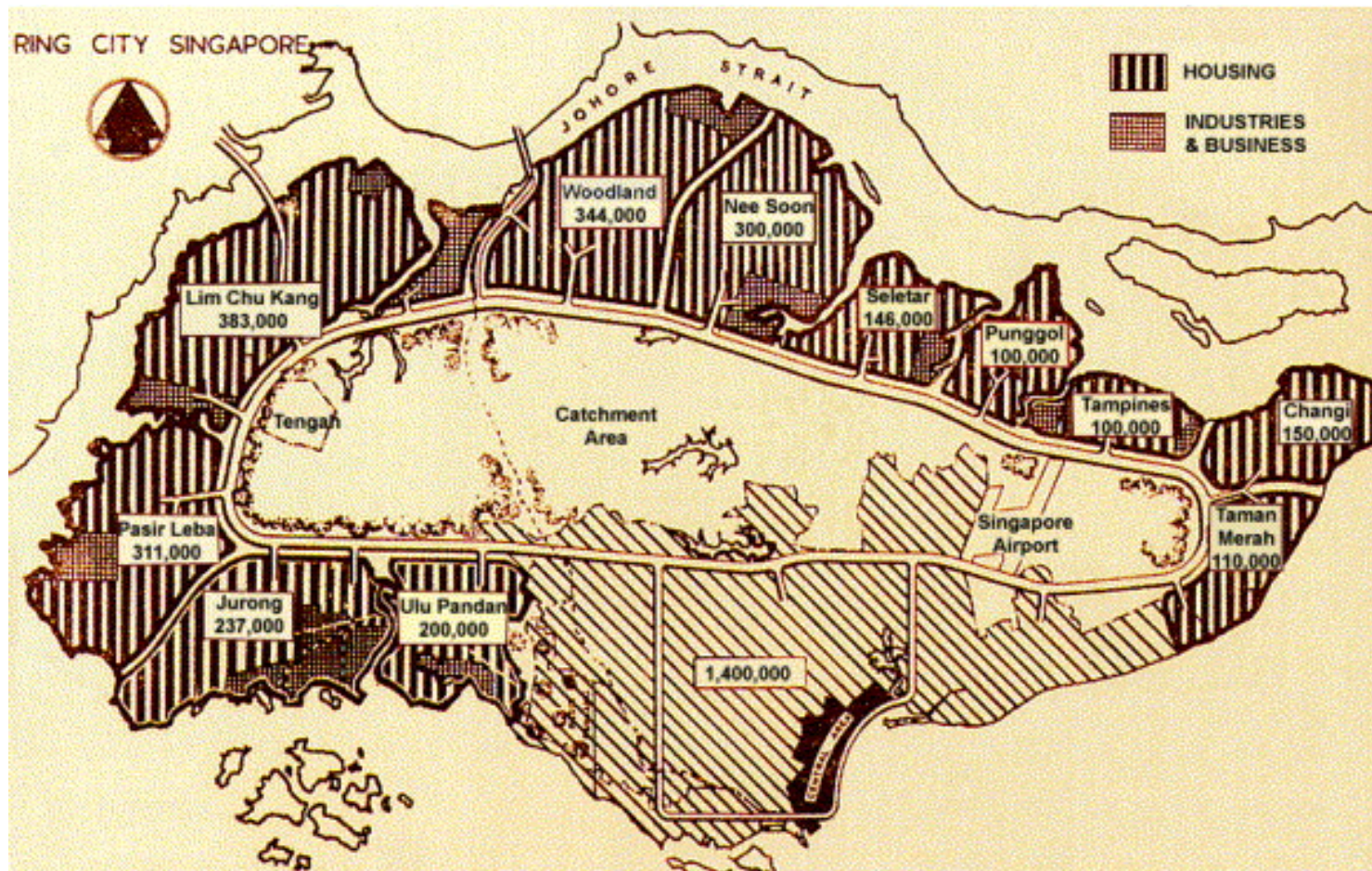


Figure 2.23 'Ring City' Plan proposed by United Nations Town Planning advisor, Professor Otto Koenigsberger in 1963
Source: (Tan, K.W., 2006, p. 49)

In 1971, the first Concept Plan was drawn up for the subsequent 20 years and beyond. It aimed to direct public investment towards national development (Khublall & Yuen, 1991; Motha & Yuen, 1999). The Concept Plan 1971 'laid the foundation for Singapore's growth for a better quality of life with new towns, transport infrastructure and access to recreation' (Figures 2.24 and 2.25).

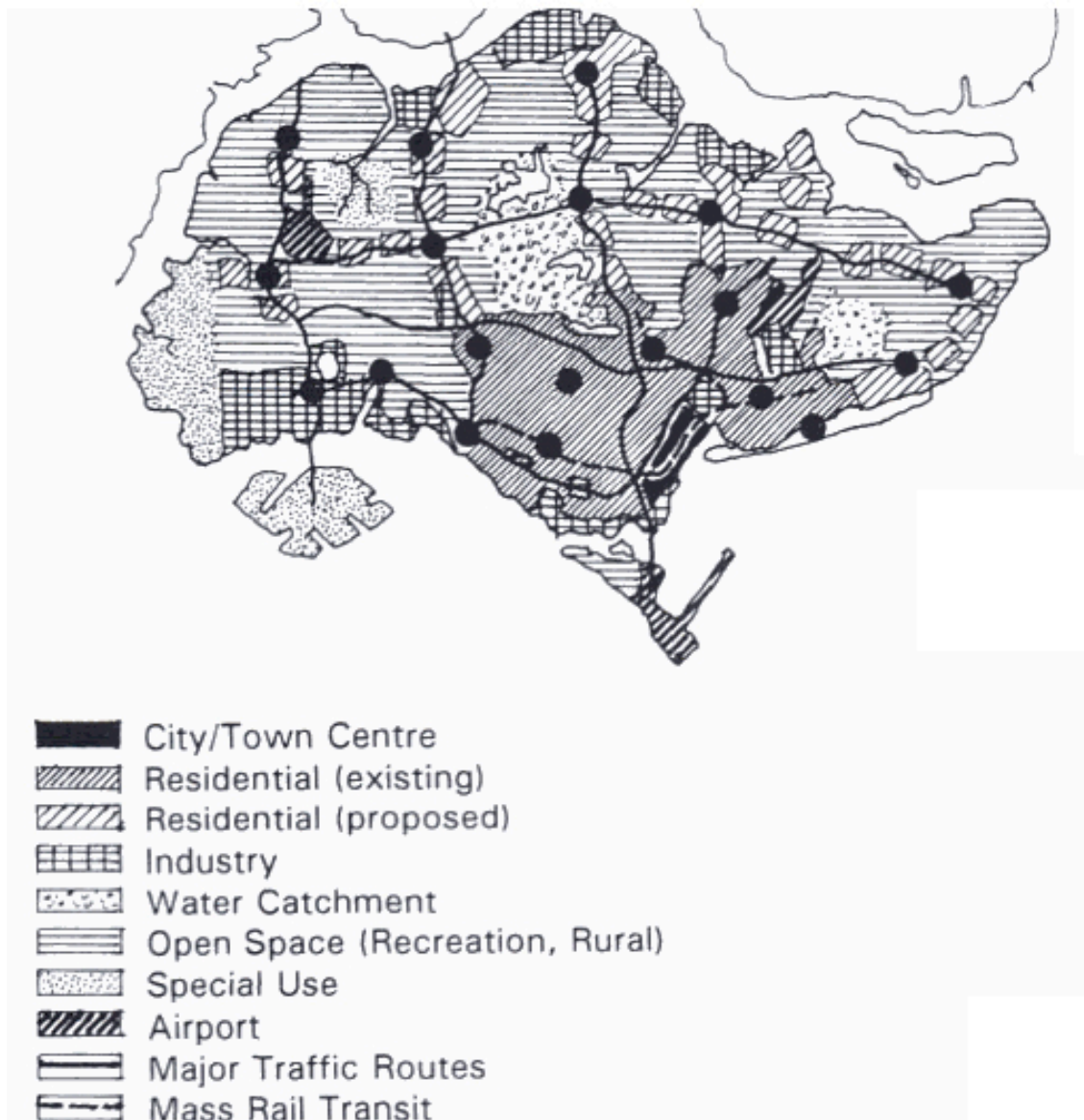


Figure 2.24 Grid plan concept of Singapore, showing new town centers, residential and industrial areas, transport systems and open spaces

Source: Image taken from PO Annual Report 1969/70 (Waller, 2001, p. 68)

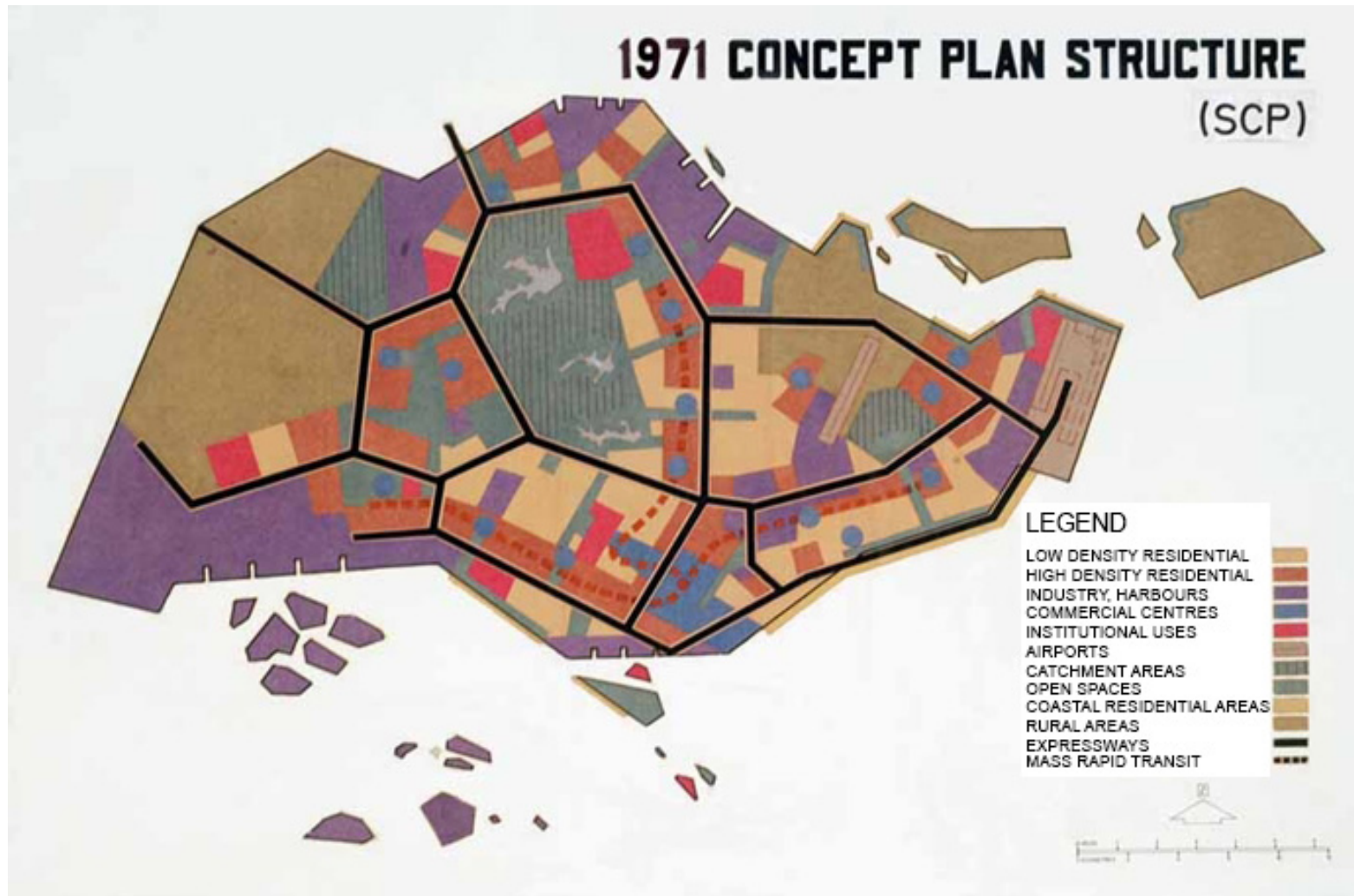


Figure 2.25 Concept Plan 1971 for Singapore, showing commercial centers, residential and industrial areas, transport systems and open spaces
Source: Retrieved 17th September 2012 from <http://www.ur.gov.sg/uol/concept-plan.aspx?p1=View-Concept-Plan&p2=Concept-Plan1971>

As part of the Master Plan 1958 and Concept Plan 1971, which as discussed aimed to improve the standard of living for Singaporeans, the construction of HDB high-rise residential estates began in the 1960s for the resettlement of people from overcrowded slums and squats, especially along the Singapore River (Yuen, 2004, p. 65). According to Tan, the state had to implement forced acquisition under the Land Acquisitions Act, in order to move the squats to the HDB residential estates (2010, p. 19). Although some residents resisted and resented being forced to resettle in high-rise public housing during the early years of the public housing program, these residents eventually began to accept the move on the basis that others in squats all over Singapore were ‘affected equally’ and that it was necessary to free-up land for development (Yuen, 2004, p. 65). Moreover, financial conditions were generous in helping families to settle in the high-rise public housing estates (Chua, 1997; Yuen, 2004). By 1983, more than 80 percent of the people initially designated for resettlement were relocated away from the overcrowded and scattered housing along the riverbanks to the new HDB public housing units, also known as HDB flats (Dobbs, 2002). The resettlement of the people into HDB flats will be further discussed in the context of the Singapore River Clean-Up project in Chapter 4.

The initial emphasis of the HDB public housing program at the beginning of the 1960s was to build as many units as possible to solve housing shortages and overcrowding in slums and squats across Singapore (Yuen, 2004) (Figures 2.26 and 2.27). As a result of pressures to speed up construction of public housing to meet the targets for reducing housing shortages, HDB residential estates in this era were sometimes built at the ‘sacrifice of quality and relative standards’ (Yuen, 2004, p. 65).



Figure 2.26 The first era of Singapore's post-Independence development – Toa Payoh HDB residential estate built in the 1960s: note the lack of parks and limited open space
Source: Retrieved 2nd September 2013 from <http://www.teoalida.com/>

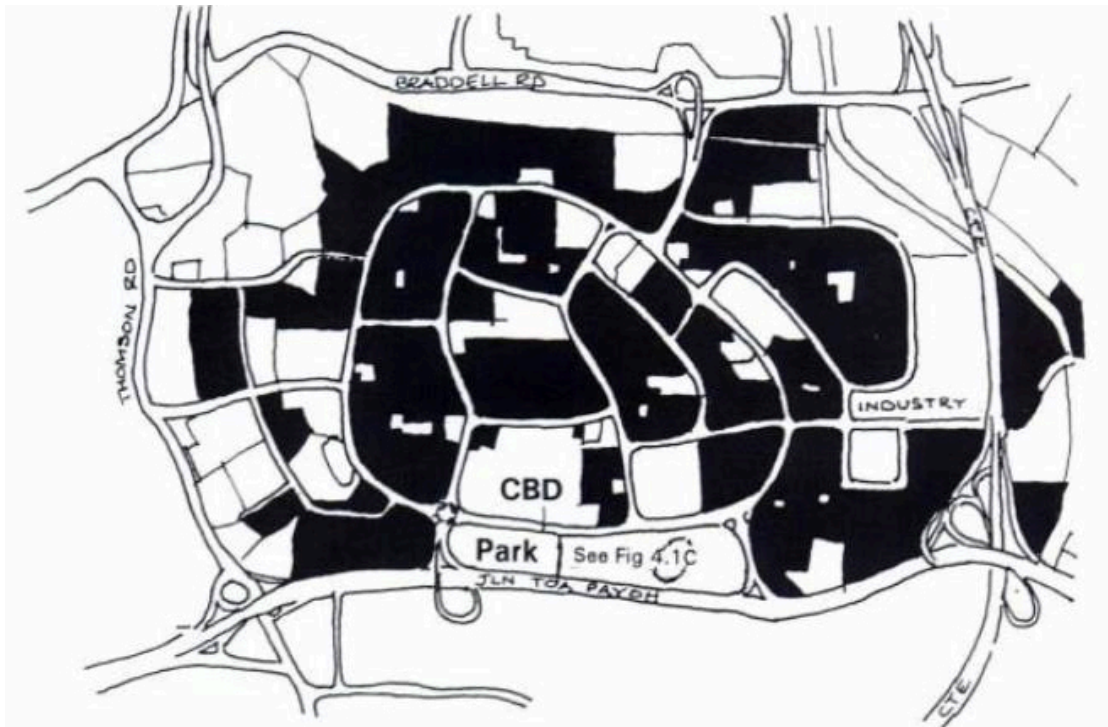


Figure 2.27 Plan of Singapore's Toa Payoh HDB residential estate built in the 1960s, showing the town center (CBD), the only park and HDB residential estate areas marked in black
Source: (Waller, 2001, p. 64)

Building for Growth 1980-1990s

The Master Plan 1958 was superseded by the Master Plan 1980 (URA, 2013e) (Figure 2.28). The Master Plan 1980, in conjunction with Concept Plan 1971, was aimed at creating an efficient city by improving infrastructure such as roads, sewerage and telecommunications (Dale, 1999). This second era of urban development from 1980 to the 1990s was a shift from quantitative building and urban planning in order to alleviate housing shortages towards quality building and urban planning.

Once the housing shortage was addressed, HDB's strategy evolved towards enhancing the living conditions of the residents (Yuen, 2004). Aesthetic detailing of the flats, such as architectural variation, color and character, began to be included in the designs (Yuen, 2004, p. 65). The shift from 'the quantitative to the qualitative' provision of housing by concentrating on 'recreational, commercial, service, transportation and community facilities' was evident (Yuen, 2004, p. 65). This era also marked the beginnings of the 'new town' concept that had some resonances with the English new towns as discussed earlier in the chapter (Figure 2.29).

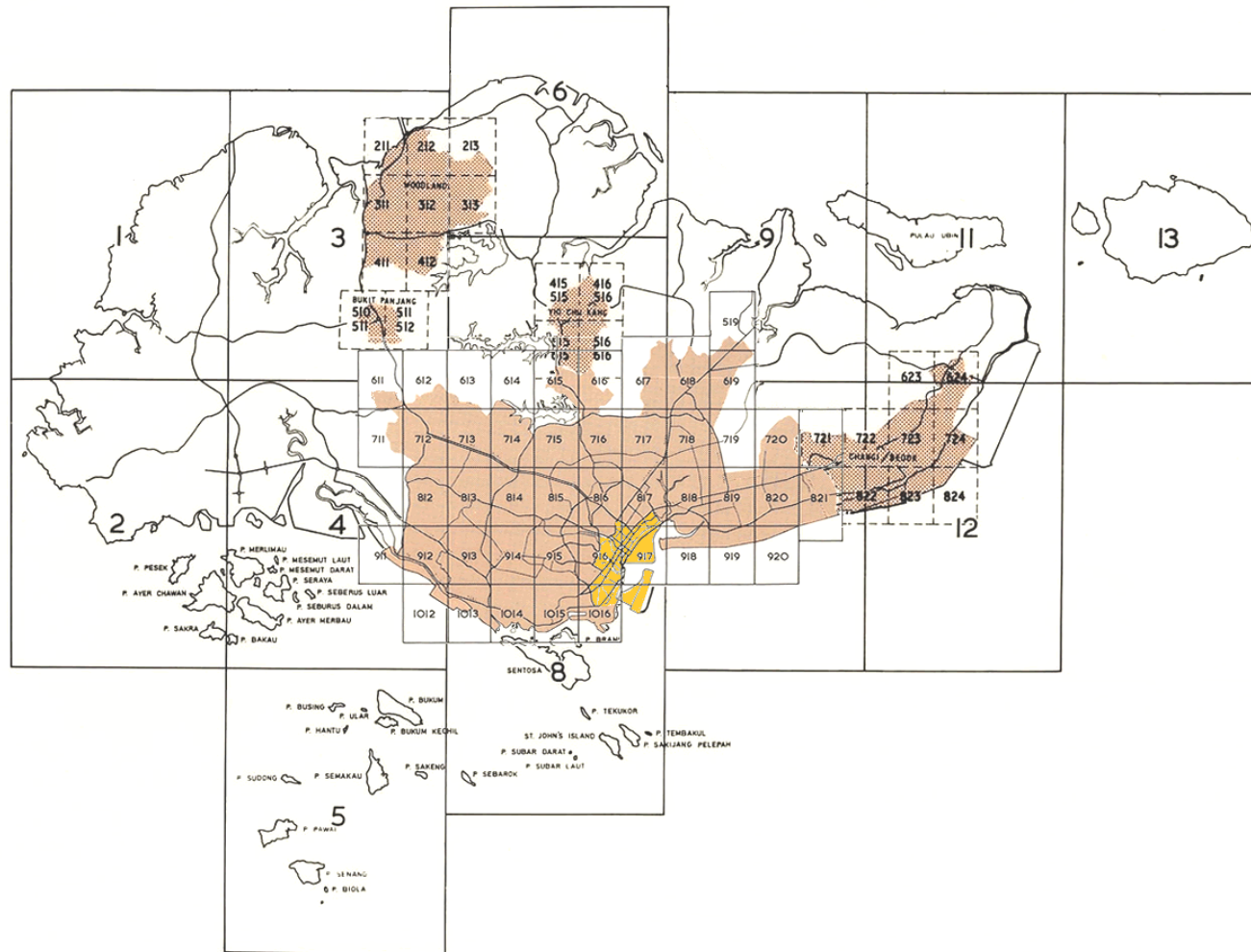


Figure 2.28 Master Plan 1980 for Singapore where a larger area was demarcated for detailed planning as compared to Master Plan 1958 (Figure 2.22)
 Source: Retrieved 17th September 2012 from <http://www.ura.gov.sg/dc/mp80/MP80index.gif>



Figure 2.29 The second era of Singapore's post-Independence development – the HDB new town of Ang Mo Kio, completed in 1980: note the aesthetic detailing of the flats, such as architectural variation, color and character

Source: Retrieved 2nd September, 2013 from <http://www.tealida.com/>

The development of new towns was initiated in the Concept Plan of 1971 to provide new housing for the growing population, housing that was necessary in order to redistribute urban growth across Singapore (Yuen, 2004, p. 63). Following this first Concept Plan, the HDB residential estates were designed based on two main principles: to optimize scarce land resources through high-rise and high-density public housing in order to meet long-term housing demand; and to provide a living environment with educational, social and community facilities in sustainable and self-contained new towns (Yap, 2007, pp. 22-23). Each new town consists of activity nodes such as the town center, neighborhood center and sub-centers (Yuen, 2004, p. 63). The new towns were planned such that each neighborhood had its own smaller neighborhood center with shops, while a larger town center served the whole town (Yap, 2007, p. 24). New towns were designed based on a 'structured spatial framework', in which employment

and amenities are available at the activity nodes (Yuen, 2004, p. 65) (Table 2.1). The development of new towns concentrated not only on the provision of housing units but also on the ‘development of a good housing environment and the promotion of neighborliness and community’ (Yuen, 2004, p. 65). In the development of the Singaporean new towns of the late 1970s, such as Yishun and Bukit Batok, the HDB incorporated more design aspects such as scale, street architecture and planted green landscaping (Yap, 2007, p. 24). Open space guidelines and pedestrian path systems were also introduced (Yap, 2007, p. 24). As a result of the development of these HDB new towns around the 1980s, HDB residential estates became associated with ‘comfortable, middle-income housing’ (Teo, 1986; Yuen, 2004, p. 65).

Table 2.1: Land use of a typical HDB ‘new town’ in Singapore

Land use (60,000 dwelling units)	Land area (ha)	%
residential*	347	53.4
commercial**	30	4.6
industry***	44	6.8
roads	89	13.7
utilities and others	30	4.6
education and institution	77	11.8
parks	26	4
sports	7	1.1
Total	650	100

Notes: * includes private housing within the town boundary
** includes civic, cultural and recreational uses and incidental developments in the town and neighborhood centers
*** non-pollutive industries only.

Source: HDB (2000) Facts on Public Housing in Singapore

Building to Compete 1990s-2000s

The leaders of the Urban Redevelopment Authority (URA) have influenced the urban planning strategies for the city's development (Neo, Gwee, & Mak, 2012, p. 52). From 1989 to 1992, veteran architect-planner Liu Thai Ker, who was also CEO and Chief Planner of the Housing and Development Board (HDB) from 1969 to 1989, became the CEO and Chief Planner of URA. He reviewed Concept Plan 1971 that led to the formulation of Concept Plan 1991. Liu advocates environment amelioration, 'not by counting the size of over-sized parks, but by attractive housing estates, and a clean and green environment' (Neo, Gwee, & Mak, 2012, p. 12).

Concept Plan 1971 was reviewed in 1991 to take into consideration the changes in 'local and global trends' and ensure the plans 'remain relevant to address future challenges and meet needs' (URA, 2013c). The aim of the Concept Plan 1991 was to create an 'island city that balances work and play, culture and commerce; a city of beauty, character and grace, with nature, waterbodies and urban development' (URA, 2013a) (Figure 2.30).

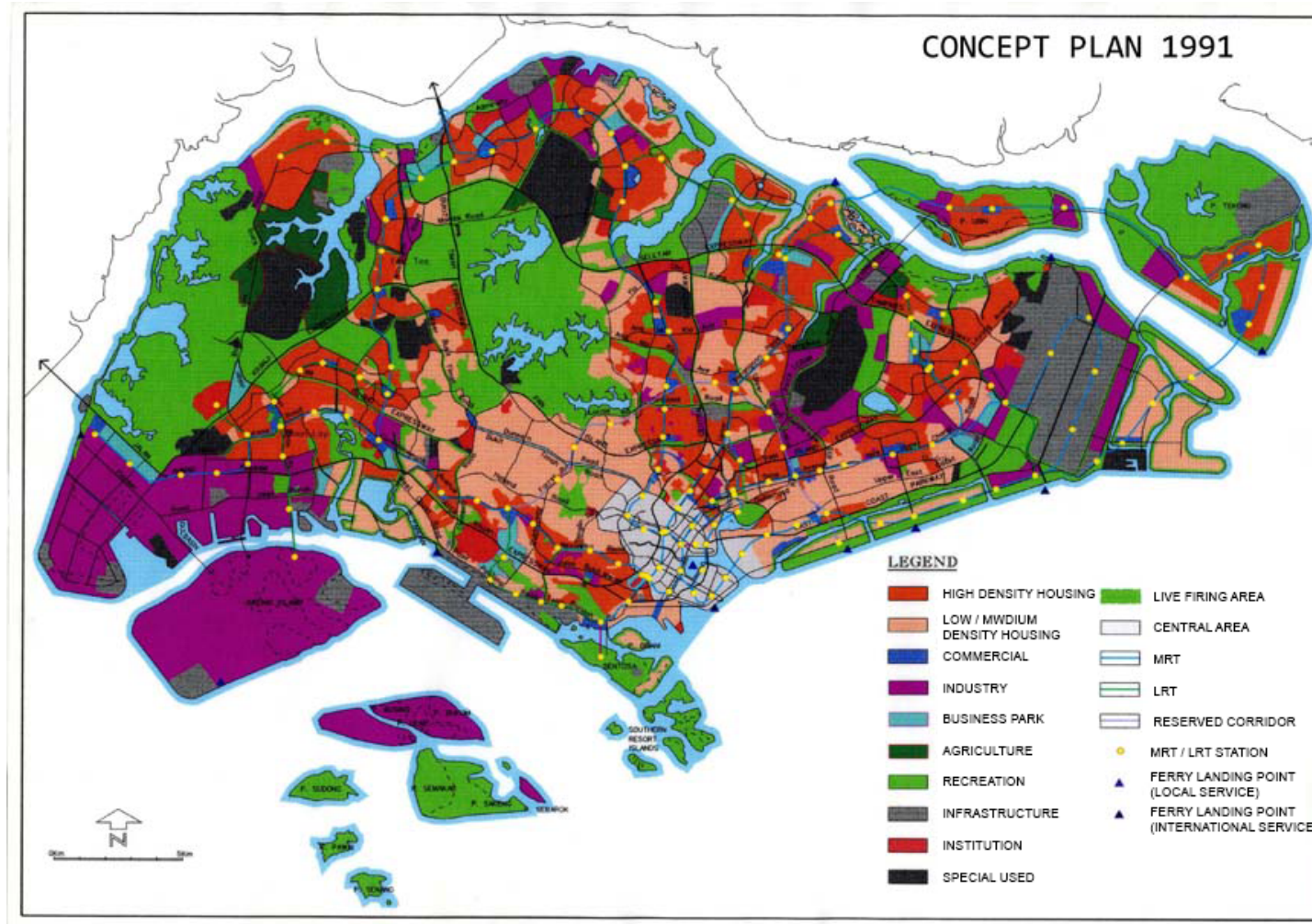


Figure 2.30 Concept Plan 1991 for Singapore, showing the areas allocated for living, working and recreation
 Source: Retrieved 17th September 2012 from <http://www.ura.gov.sg/uol/concept-plan.aspx?p1=View-Concept-Plan&p2=Concept-Plan1991>

This third era in the history of the HDB housing program saw the extension and improvement of the existing new towns in order to continue to progress as a nation and ensure competitiveness within the region and the world at large. In the 1990s, attention was paid to improving the quality and service of the HDB residential estates (Teo & Kong, 1997) (Figure 2.31). The focus was also to provide ‘a more conducive setting for community interaction’ (Yap, 2007, p. 24). Efforts to improve older existing HDB residential estates through upgrading individual units and blocks of flats as well as entire residential estates took place (Teo & Kong, 1997, p. 443). The upgrading included improved amenities such as landscaped gardens, children’s playgrounds, covered walkways between blocks and multi-story car parks for residents (Teo & Kong, 1997, p. 443). Pavilions were also provided in the gardens in order to facilitate community interaction (Teo & Kong, 1997, p. 444).



Figure 2.31 The third era of Singapore’s post-Independence development – the upgraded HDB new town of Bishan in the 1990s: note the increase in landscaped gardens as compared to the second era (Figure 2.28)

Source: Retrieved 2nd September 2013 from <http://www.teoalida.com/>

Besides further emphasis on the quality and service of HDB residential estates, a renewal effort, known as the Selective En Bloc Redevelopment Scheme (SERS), was introduced in 1995 by the HDB to demolish older (usually smaller) blocks of flats and build new taller blocks to optimize land use (Lau, 1998; Yuen, 2005). Moreover, in the 1990s more emphasis was placed on ‘creating a quality living environment and building up the identities of precincts, neighborhoods and towns’ (Teo & Kong, 1997). Landmark buildings, landscaping, open spaces and special architectural features were designed to achieve a strong visual identity for new towns such as Choa Chu Kang (Yap, 2007, p. 24)

Building for a Vision (2000-)

Between 1993 and 1998, the Master Plan 1980 evolved as a 5-year developmental guide plan to translate the broad proposals of Concept Plan 1991 at the local level (Singapore Government, 2003; Yuen, 2004, p. 58). The 5-year developmental guide plan included 55 Development Guide Plans (DGP) for the 55 demarcated new towns (Singapore Government, 2003; Yuen, 2004, p. 58) (Figure 2.32). The whole island of Singapore is divided into 55 demarcated new towns or council-like areas. As discussed earlier, each new town consists of activity nodes such as the town center, neighborhood centers and sub-centers (Khublall & Yuen, 1991; Motha & Yuen, 1999). The new towns were planned in such a way that each neighborhood had its own smaller neighborhood center with shops, while a larger town center served the whole town (Yuen, 2004, p. 65).

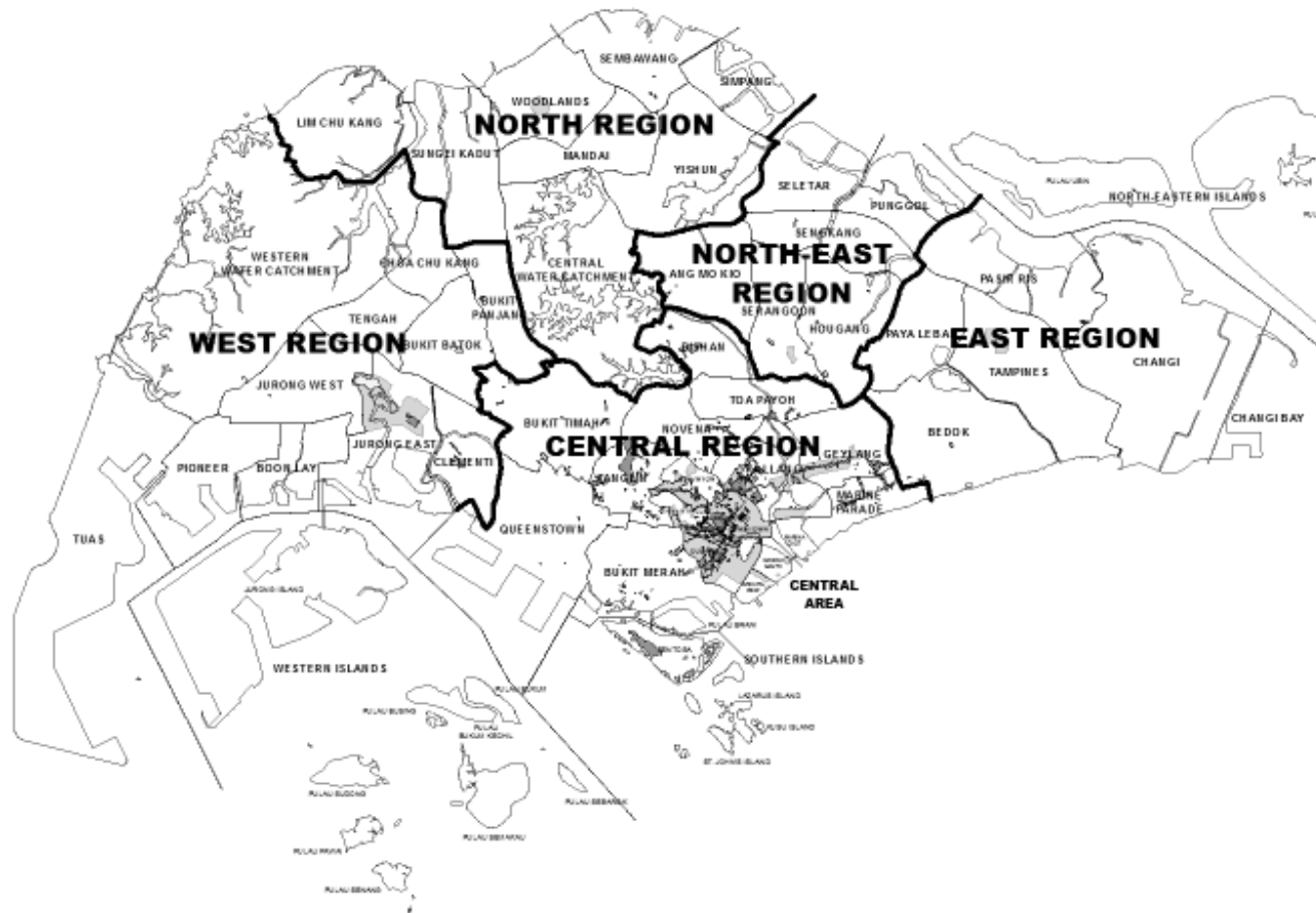


Figure 2.32 The 55 demarcated new towns that divide the land area of Singapore

Source: Retrieved 7th July 2013 from http://www.ura.gov.sg/uramaps/?config=config_preopen.xml&preopen=Planning%20Boundaries&pbIndex=1

The vision of Concept Plan 2001 aimed at progressing ‘towards a thriving world-class city in the 21st century’ (URA, 2013b). It proposed a range of measures to provide a ‘better living and working environment’ for the people. The range of provisions included greater variety of houses, increased facilities and amenities such as schools and hospitals, and a wider range of leisure options for recreation such as sports facilities and theme parks. Heritage conservation was also included in Concept Plan 2001.

After including feedback from public exhibitions, the amended plans were formalized as the Master Plan 2003 (Singapore Government, 2003). The contents and provisions of Master Plan 2003 were applied to ‘guide physical development through development control’ (Singapore Government, 2003). Concept Plan 2001 and Master Plan 2003 also emphasized bringing nature into the urban landscape with the proposed increase of green space from 2500 ha to 4500 ha (Yuen, 2004, p. 61) (Figures 2.33 and 2.34). A network of park connectors linking the parks and coastal areas aimed to ‘realize the vision of developing the whole of Singapore into a garden’ (Yuen, 2004, p. 61). These proposals to further enhance the urban environment with greenery aimed to achieve ‘the illusion of being a city that has sprung out of a garden’ (Yuen, 1996), in other words to achieve the ‘City in a Garden’ (further discussed in Chapter 5).

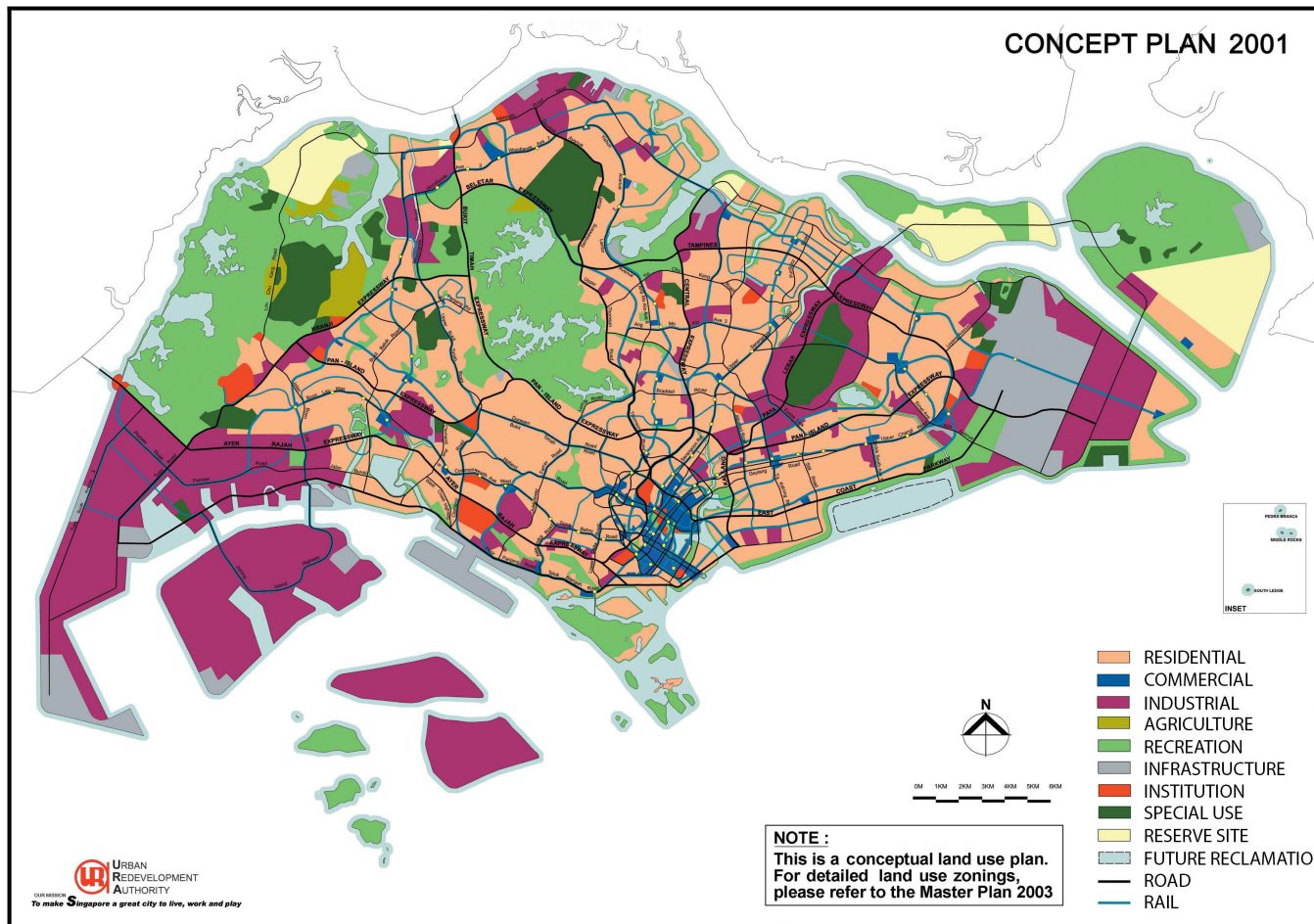


Figure 2.33 Concept Plan 2001 for Singapore, showing emphasis on bringing nature into the urban landscape
Source: Retrieved 8th September 2012 from <http://www.ura.gov.sg/gallery/images/2001YearXConceptPlanA3.pdf>

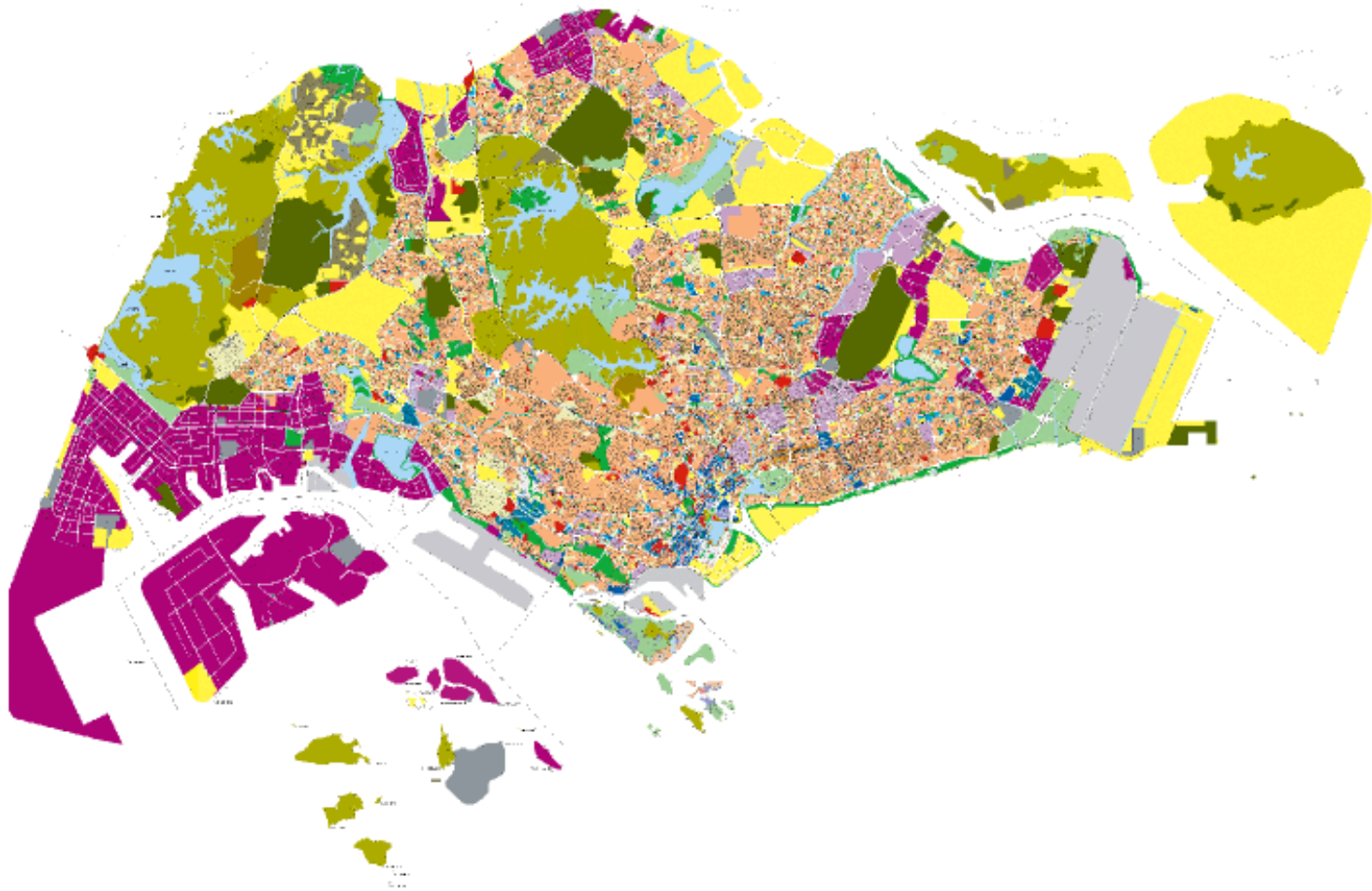


Figure 2.34 Master Plan 2003 for Singapore, showing detailed planning to guide physical development through development control
Source: Retrieved 17th September 2012 from http://www.ura.gov.sg/uramaps/index.html?config=config_preopen.xml&preopen=Master%20Plan

Similar to Master Plan 2003, Master Plan 2008 was intended to translate the broad proposals of Concept Plan 2001 to guide the physical development of Singapore for the next 10 to 15 years. Master Plan 2008 aimed to make Singapore a more ‘livable city – A Home of Choice, A Magnet for Business, an Exciting Playground, and a Place to Cherish’ (URA, 2013d) (Figure 2.35).

Following Master Plan 2008, the review of Concept Plan 2011 took into account the public feedback (URA, 2013c) (Figure 2.36). As a result of the review of Concept Plan 2011, the Ministry of National Development in 2013 released the Land Use Plan that outlined the strategies to support population and economic growth (URA, 2013c). The focus of the Land Use Plan was on achieving good quality and affordable housing; accessible green and recreational spaces, and other amenities; a dynamic economy that creates jobs for Singaporeans; greater mobility; a vibrant and cosmopolitan culture that is forward-looking while being anchored in history and heritage; and a clean, safe and pleasant environment (URA, 2013b).

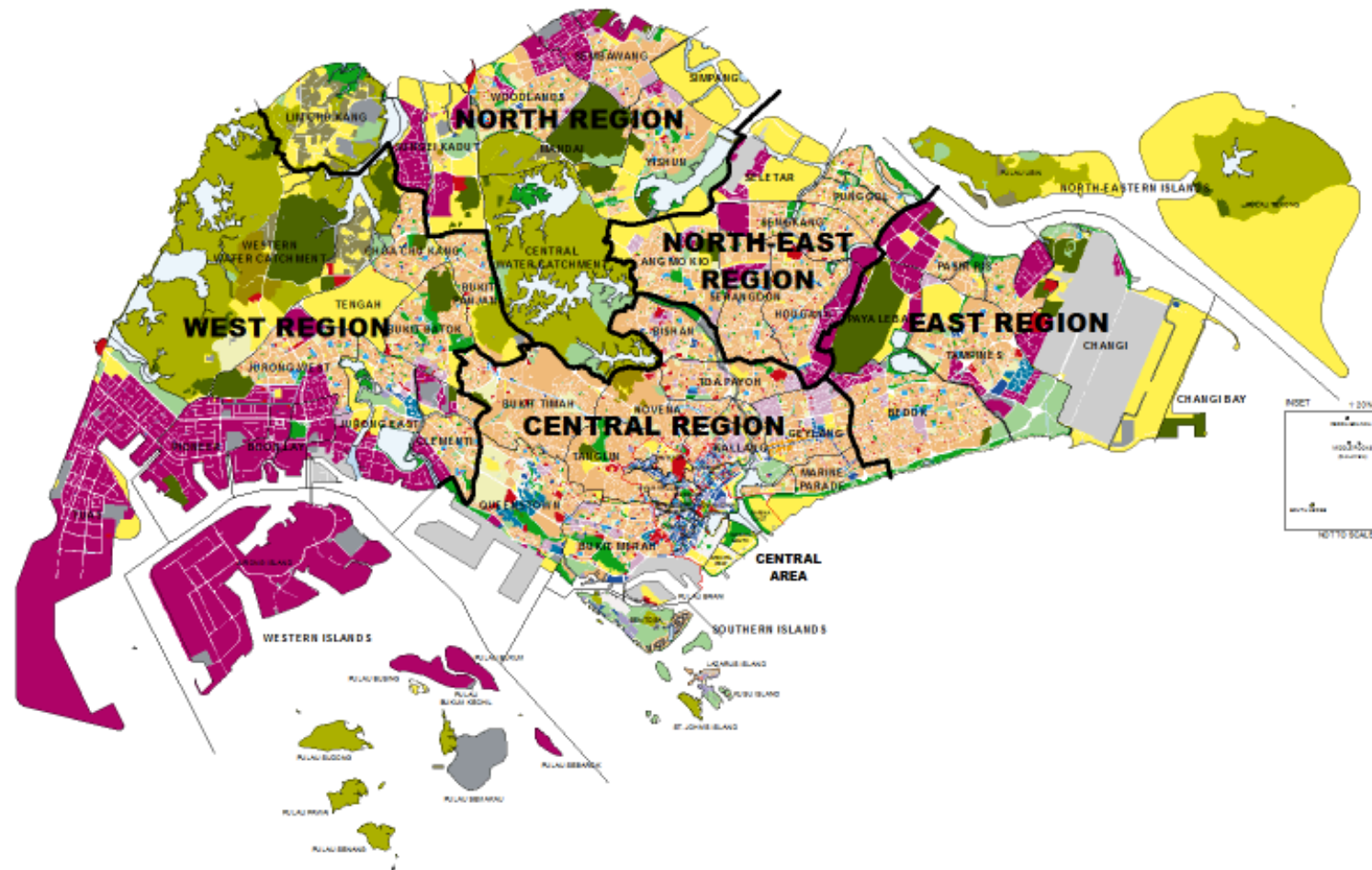


Figure 2.35 Master Plan 2008 for Singapore, showing an even more detailed plan as compared to Master Plan 2003 (Figure 2.33)
Source: Retrieved 9th October 2012 from http://www.uramaps/?config=config_preopen.xml&preopen=Master%20Plan%202003

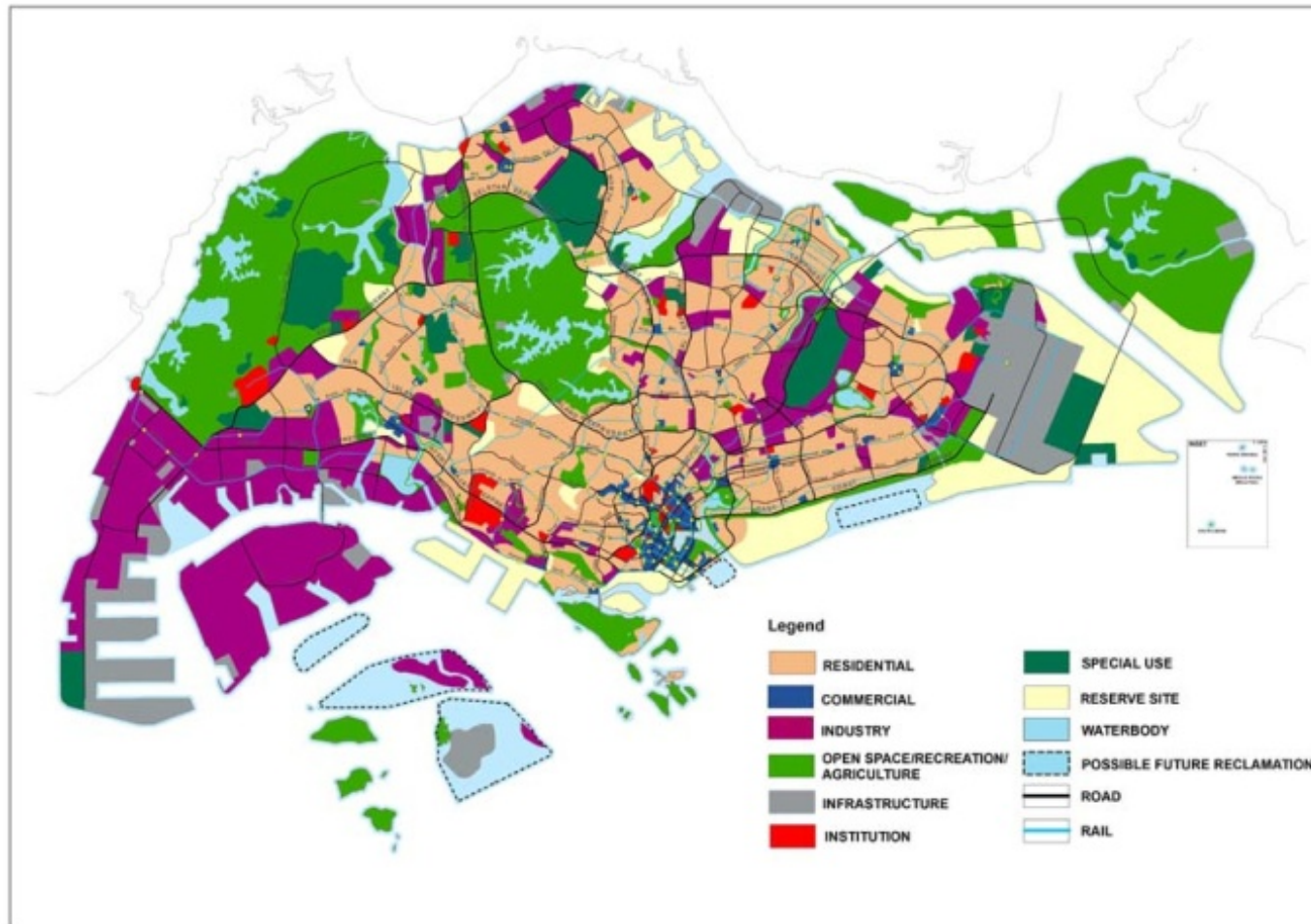


Figure 2.36 Concept Plan 2011, showing new focus on building a sustainable population for Singapore

Source: Retrieved 17th September 2012 from <http://www.ura.gov.sg/uol/concept-plan.aspx?p1=View-Concept-Plan&p2=Land-Use-Plan-2013>

The HDB housing program began the fourth era in the year 2000. This incorporated high-rise greenery – such as green walls and roofs, with higher densities and taller building heights to accommodate the projected population increase – into the HDB residential estates (MND, 2013, p. 10). A new range of flats known as ‘premium flats’ was launched with better fixtures, finishes and facilities (Lau, 1998; Yuen, 2005). The Pinnacle@Duxton, that was completed in December 2009, marked the beginning of HDB public housing developments as part of this vision (Pinnacle@Duxton, 2013) (Figure 2.37). In the Pinnacle@Duxton housing development, effort was placed on greening the surroundings in order to provide ‘environmentally friendly’ housing (Lau, Teh & Toh, 2010, p. 208). Existing mature rain-trees that were originally on the site were ‘conserved and integrated into the landscaped areas’ (Lau, Teh & Toh, 2010, p. 208). Other housing developments that succeeded Pinnacle@Duxton, include SkyVilla@Dawson, SkyTerrace@Dawson and the waterfront development of Punggol New Town. In Punggol New Town, intimately scaled residential estates were planned, each with a common green open space as a recreational focal point for the community (Yap, 2007, p. 24). These developments pay attention to ‘aestheticization’ in an effort to build ‘quality’ HDB neighborhoods (Wang, 2012, p. 373).



Figure 2.37 The fourth era of Singapore's post-Independence development – the HDB residential estates of year 2000 and beyond can be represented by Pinnacle@Duxton development completed in December 2009

Source: (Lau, Teh & Toh, 2010)

The Singapore Government's Clean and Green Movement

The Clean and Green Movement has worked and continues to work in concert with the Master Plans and Concept Plans as discussed above. In conjunction with the Master Plans and Concept Plans, the Ministry of Environment devised the Singapore Green Plan as part of the vision for Singapore's environmental management and protection program (Teo, 2004, p. 489). One of the main goals of the Singapore Green Plan was to create a 'city conducive to gracious living, with people who are concerned about and take a personal interest in the care of both the local and global environment' (MEWR, 1993; Teo, P., 2004, p. 489) . This section introduces the key aspects of the Clean and Green Movement, which include the 'clean and green' campaigns that are led by the government. The public's response to and involvement in the Clean and Green Movement is also introduced.

As discussed in Chapter 1, the Clean and Green Movement refers to a series of measures taken by the government to achieve the vision of Singapore as a Garden City. This planned government-controlled ‘movement’ has used a practical and ‘interventionist’ method of environmental management (Wong, 1969, p. 41). Nature was used to soften the hard surfaces of the built environment (Wong, 1969). In effect, the Movement can be seen as a way of diminishing the effects of rapid urbanization. Examples of the measures taken as part of the Movement include incorporating carefully managed nature within the built environment through the planting of thousands of roadside trees, the conservation of nature reserves, and the creation of many parks and park connectors within urban areas as well as in residential districts (Briffett & Sim, 1993; Wee, 1992; Wee & Corlett, 1986) (Figure 2.38).



Figure 2.38 Typical ‘clean and green’ urban landscape of Singapore

Source: Image taken by Mei Ling Wong in *Singapore: The Quest for a City in a Garden* (Borromeo, 2010)

The rapid urbanization of Singapore has been accompanied by an improved standard of living as well as economic growth. These outcomes, which will be further discussed in Chapters 4 and 5 and which to a great extent are attributable to the Clean and Green Movement, create a sense of unity and hence identity among the people. However, there have been negative effects in terms of environmental quality. The removal of existing ecosystems, including trees and wetlands along with their biodiversity, was considered necessary to make way for the construction of buildings and infrastructure. Environmental quality will be discussed in detail in Chapter 6. The environmental side effects of Singapore's urbanization are similar to those of the Industrial Revolution in Britain between 1760 and 1830 (Mokyr, 1999). According to economic historian Joel Mokyr, technology inherent in both urbanization and the Industrial Revolution, 'involves the manipulation of nature and the physical environment' (1999, p. 51).

The Clean and Green Movement, through various measures, aimed to create social equity by providing equally accessible high quality living environments for all citizens to work, live and play. There are two main types of greenery found in Singapore: the planted greenery, and the nature reserves that have inevitably shrunk as urbanization progressed. The phrase 'clean and green', when used in the context of Singapore, refers more to planned and planted green landscaping than to original biodiversity and its conservation. Some environmentalists argue that the original biodiversity is irreplaceable. While the planted greenery cannot reproduce the biodiversity of natural ecosystems, the replacement of original biodiversity with planted greenery along roads and in parks can nevertheless be considered as contributing to the social living environment of the city and to environmental benefits such as reduction in the urban heat island effect. The tension between environmental

and economic concerns with regards to Singapore's urban development will be further discussed in Chapter 6.

Figure 2.39 shows how nature reserves and parks across Singapore have changed as a result of urbanization from 1958 to 2005. Initially, nature reserves were the main form of green space. These nature reserves have seen a slight decrease in area over time, while manicured parks and park connectors have increased. Figure 2.39 also reveals an increase in the systematic planting of maintained greenery that includes designed parks and park connectors, as urbanization places pressure on and reduces the natural green environment. Despite rapid and substantial urbanization, the Singapore government claims that most of the forest that remained in the mid-1960s (5 percent of the original forested area at the time of the founding of Singapore by the British in 1819) still survive (Kong & Yeoh, 1994).

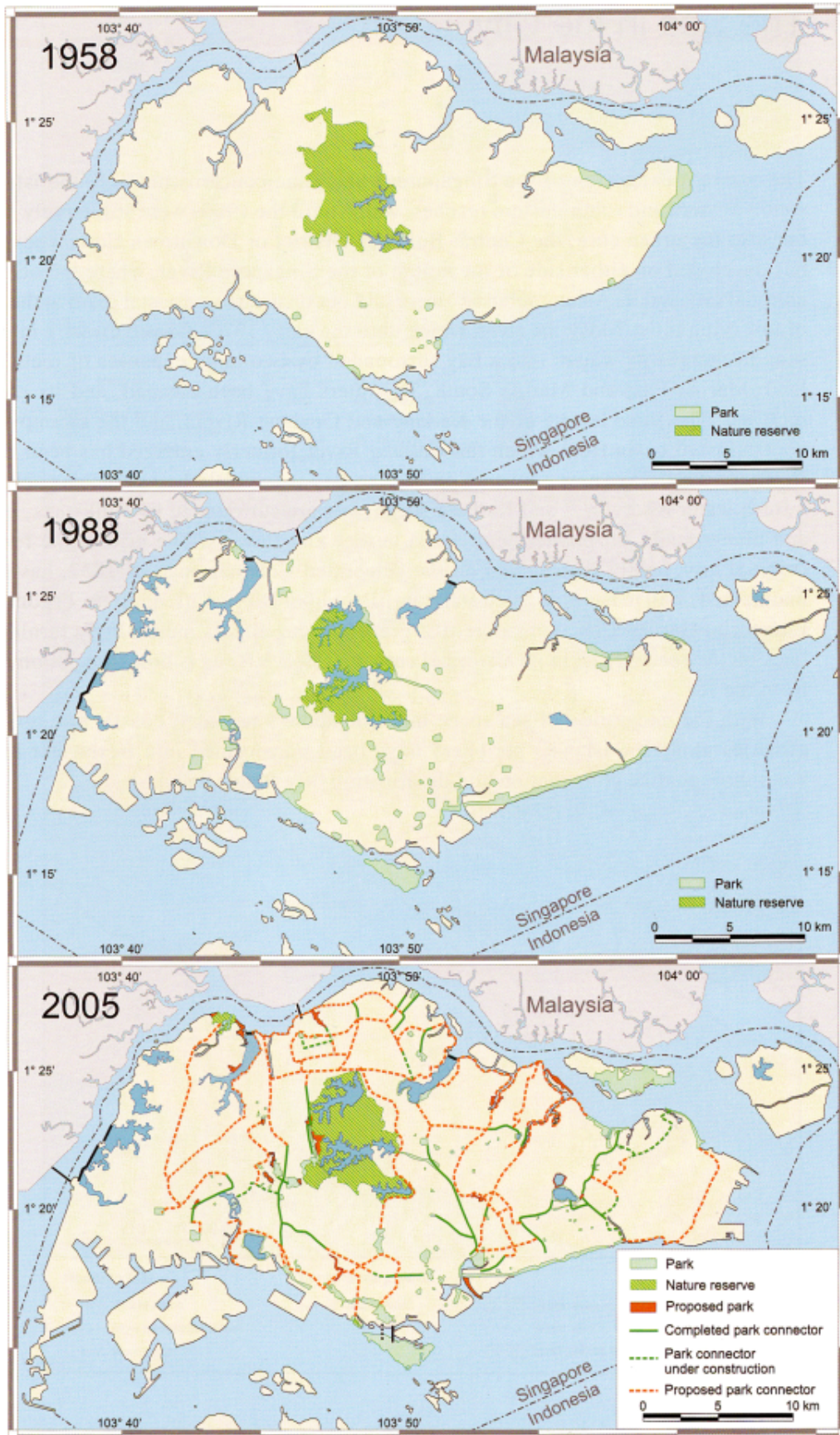


Figure 2.39 Nature reserve and park coverage in Singapore 1958-2005
Source: *Singapore: An Atlas of Perpetual Territorial Transformation* (de Koninck, Drolet, & Girard, 2008, p. 23)

The 'Clean and Green' Campaigns (1958 - present)

In Singapore, a national campaign can be defined as 'a government initiated and inspired movement which has an organized and formal course of action, used with the intent of arousing public awareness and influencing public behavior' (Teo, 2004, p. 3; Tham, 1986). Since 1965, the tourism authority of Singapore has enlisted the support of the Ministry of Health in an 'island-wide campaign to stimulate public interest' in keeping Singapore 'clean and green', especially in 'places frequented by tourists' (Leong, 1997, p. 78; Singapore Tourist Association, 1966/1967, p. 7). Buildings along the heart of the tourist belt at Orchard Road are encouraged to set up small gardens that 'would make their frontages more attractive'. Moreover, cleanliness competitions are organized to award shops with 'neat and tidy décor' (Leong, 1997, p. 78; Singapore Tourist Association, 1968/1969).

The 'green' aspect of the Clean and Green Movement begun with the 'Tree Planting Campaign' initiated by first Prime Minister Lee Kuan Yew in 1963, aimed at transforming Singapore into a Garden City, even before Independence. Since then, at least 10,000 saplings have been planted every year as part of this campaign (Roberts, et al., 2006). The Tree Planting Campaign was followed by the Tree Planting Day of 1971, which aimed to transform Singapore into a Garden City through tree planting. Tree planting will be discussed in detail in Chapter 4.

The 'clean' aspect of the Clean and Green Movement began with the 'Keep Singapore Clean' campaign that was officially launched in 1968 when the government adopted a multi-faceted approach to maintaining public cleanliness in order to build for the needs and growth of the new nation-state. Measures such as the Singapore River Clean-Up as well as the conservation and refurbishment of the riverbanks at Boat

Quay, both of which will be discussed in Chapter 4, were initiated in conjunction with the 'Keep Singapore Clean' campaign. As recorded in May 2001 by the Hong Kong-based Political and Economic Risk Consultancy, Singapore topped a poll of the cleanest country in Asia, beating Japan, which has a reputation for cleanliness (Seah, 2001).

Before the official launch of the Clean and Green Movement in 1968, Singapore had already begun similar campaigns such as the 'Keep Your City Clean' campaign in 1958, which was an anti-littering initiative organized by the City Council during that time (Chia & Lim, 2008). On 23rd November 1959, at the opening speech for the 'Movement to Clean the City of Singapore' campaign, political leader, Lee Kuan Yew hailed the campaign as a starting point for Singapore to become 'one of the cleanest and healthiest cities in Asia' (Chia & Lim, 2008). Later, at the official launch of 'Keep Singapore Clean' campaign on 1st October 1968 (after Singapore's Independence in 1965), now Prime Minister Lee again expressed the need to progress and succeed as a nation by creating an identity as 'the cleanest and greenest city in Southeast Asia' (Teo, 2004, p. 485).

We have built. We have progressed. But there is no hallmark of success more distinctive and more meaningful than achieving our position as the cleanest and greenest city in South Asia. (Teo, 2004, p. 485)

In 1990, the 'Keep Singapore Clean' campaign was merged with the 'Garden City' campaign to form the annual 'Clean and Green Week', which placed greater emphasis on community awareness and the public's participation in caring for the environment (Teo, 2004, p. 485).

As part of the Clean and Green Movement, the slogan of the ‘clean and green’ campaign changed over the years, for example, ‘Keep Singapore Clean’ (1968), ‘Keep Our Water Clean’ (1973) and ‘Be Green for Life’ (1997) (Chia & Lim, 2008) (Figure 2.40). The slogans of the ‘clean and green’ campaign between 1958 and 2003 are listed in Table 2.2 below. This annual campaign consists of a cleaning program, public education, and law enforcement to deter littering. The campaign also emphasized the importance of social discipline in community living in order to achieve the goal of a clean and green Garden City (Chia & Lim, 2008).

The construction and manipulation of national symbols and rituals play an important part in nation building. The notion of national symbols will be further discussed in Chapter 3. The annual ‘clean and green’ campaigns of Singapore will be shown to support professor Pål Kolstø claim that state leaders ‘design deliberate and active strategies aimed at building a sense of solidarity and common identity among the population’ (Kolstø, 2014, p. 4).



Figure 2.40 ‘Green for Life’ poster promoting the ‘clean and green’ campaign in 1997
Source: (Savage & Kong, 1993)

Table 2.2: Slogans of Singapore’s ‘Clean and Green’ Campaign

1958: Keep Your City Clean.
1959: Gerakkan Pembersihan Bandar Raya Singapura.
[Movement to clean the city of Singapore]
1960: Operation Clean-up.
1961: Anti-cholera campaign.
1963: Keep Our State Clean.
1964: Help Keep Our City Clean.
1966: Keep Your Beach Clean.
1967: Big Sweep.
1968: Keep Singapore Clean.
1969: Keep Singapore Clean and Mosquito Free.
1970: Keep Singapore Clean and Pollution Free.
1971: Tree Planting Day.
1973: Keep Our Water Clean.
1978: Use Your Hands.
1979: Keep Your Factory Clean.
1983: Keep the Toilet Clean.
1984: Please Keep My Park Clean.
1988: Singapore is Our Home – Let’s Keep It Clean and Beautiful.
1988: Keep Our Buses and Interchanges Clean.
1990: From Today, Everyone in Singapore Will Go for Green
1991: When We Think Green, The Possibilities Are Endless
1992: Every Little Thing You Do Counts
1993: Please Act Today For All Our Tomorrows
1994: Please Don’t Shatter Our Peace and Quiet
1995: When You Litter, People Look at You Differently
1996: A Gracious Society Cares for the Environment and Its Neighbourhood
1997: Be Green For Life
1998: Every Little Effort Counts in Keeping Our Neighbourhood Clean and Pleasant
1999: A Decade Past, A Millennium Ahead
2000: Clean and Green: That’s the way we like it
2001: Don’t Throw Away My Future. Recycle Me
2002: Don’t Throw Away Our Future. Recycle Us
2003: We Care. We’re OK

Source: (Teo, 2004, p. 490) and retrieved 7th February 2013 from
http://infopedia.nl.sg/articles/SIP_1160_2008-12-05.html

Through the Clean and Green Movement, Singaporeans were encouraged to ‘treat Singapore as their home’, a notion that positioned them as co-owners of the country (Teo, 2004, p. 496). This differs from the colonial times when Singapore was ‘merely a piece of real estate’ that belonged to the British, and Singaporeans were ‘merely

employees working under a foreign master' (Teo, 2004, p. 496). After Independence, as a Singaporean, one would be expected to 'assume the responsibility of keeping the streets, parks and other public places clean', just as one would for one's own home (Teo, 2004, p. 496).

The Public and the Clean and Green Movement

First Prime Minister Lee Kuan Yew stated that the most difficult problem in taking Singapore from the Third World to the First World was to encourage the public to support the policies that the government implemented (Hussain, 2010). According to David Fleming, who wrote *City of Rhetoric: Revitalizing the Public Sphere in Metropolitan America*, 'the public' refers to a group of citizens of a country that enjoys and 'shares in its governance, participates in its decision making, serves in its military, sits on its juries, and obeys its laws' (2008, p. 19). In order to develop a culture of environmental awareness in Singapore, 'strong support, commitment and participation from the corporate sector, the media and non-governmental groups' was fostered (MEWR, 1991, p. 2). Singapore has attempted to unite the people, the aspirations of the politicians and the aims of the planning institutions to form a cohesive urban vision of Singapore as a Garden City (Neuman & Gavinha, 2005).

An important focus of the Clean and Green Movement has been on the interactive possibilities between parks and the community through active participation and education (MEWR, 1991, p. 2). One way of increasing social interactivity was to use plots of green space near residents' homes as community gardens in which the community can participate in growing crops (Pereira, 1990; Tan, 2010). This method of shared responsibility with the community has been the government's way of encouraging citizens to support the Clean and Green Movement. The experimental

community gardens in Bukit Panjang and Tampines in Singapore proved successful in this regard (Tan, E.K., 2010). Another method of increasing interactivity was to build parks to encourage residents to make use of these green spaces for group activities such as sports (Tan, E.K., 2010, p. 375). In this way, people developed an emotional attachment to these green open spaces, fostering a strong community spirit and contributing to the local sense of place (Koh, 2008).

Public Critique of the Clean and Green Movement

Since Independence, planning decisions have been made by government authorities, with little input from the public, due to the strict application of measures such as the ‘out-of-bounds markers’ (a verbal or written warning when your comments or actions have crossed into ‘forbidden territory’) or the ‘more potent libel suit’ (Ortmann, 2009, p. 29). These measures have fostered an atmosphere in which self-censorship is widespread in Singapore (Warren & Tettoni, 2000, p. 157). While the government has recently attempted to improve two-way communication channels with the public, it remains unwilling to relax its ‘disincentives regarding free speech and political participation’ (Ortmann, 2009, p. 29). Political participation by the public has increased only very recently (Ortmann, 2009, p. 29). The Singapore government is able to control and manage the people such that even public responses against the government are orchestrated through organized and non-violent methods.

In 2008, Prime Minister Lee Hsien Loong agreed to refrain from restricting freedom of speech in websites and newsgroups, as long as taboo topics such as religion, language or race were not touched on (Soh & Yuen, 2006). In other words, freedom to criticize the government is allowed online, as long as the criticism does not involve those taboo topics. As a result, Singaporeans are increasingly willing to participate in

the political process. According to French philosopher Michel Foucault, the public has the capability of not only ‘reacting to power’, but of ‘altering power relationships’ at the same time (Moss, 1998, p. 5). For Foucault, this is because ‘where there is power, there is resistance’ (Foucault, 1990, p. 95). Increased feedback (‘resistance’) from the public has increasingly influenced government decisions about Singapore.

A recent example where public feedback has made a difference to government decision making was where a group of residents expressed its opposition to the felling of 63 albizia trees located at South Buona Vista Road (Lum, 2010). The Singapore Land Authority, acting under the advice of the National Parks Board (NParks), originally intended to cut down these trees in a thickly wooded patch because of a perceived danger to the public. There were incidents of old trees falling due to heavy rainfall and bad weather, causing a threat to people walking near them. The residents contended that many of the trees were in areas inaccessible to the public and should not be felled. As a result of the residents’ action, only 12 trees were cut down, instead of the 63 trees first intended. The willingness of the relevant agencies to engage in dialogue with the citizens contributed to the preservation of the green belt between South Buona Vista and Kent Ridge (Lum, 2010). This example also showed the effect the Clean and Green Movement has had in inculcating the ‘clean and green’ mentality and positive environmental values among the populace.

Another recent example where public feedback was considered in the administrative processes was where invited public opinion contributed to the revision of the Urban Redevelopment Authority’s Concept Plan of 2011. This plan sets out directions for land use and transport in Singapore over the next 40 to 50 years. The land use aspect of the plan includes the amount of land set aside for planted greenery or nature

reserves. Some 300 public responses to Concept Plan 2011 were received and the public's recommendations on sustainability, identity and quality of life were collated into the Land Use Plan of 2013, as discussed in the previous section (Teo & Ang, 2010).

The general public in Singapore supports government measures such as the notion of building a clean and green Garden City, as long as their basic living necessities have been met. Sorensen, Marcotullio and Grant argue that the main difference between Asian and Western customs is that Asian communities tend not to focus so much on 'democratic processes', but on 'economic growth and strong leadership' (2004, p. 17). Hence, for some decades after Independence, criticism of the neglect of nature conservation and the removal of existing natural systems to make way for the expanding urban environment was minimal, as the economic development of the country and its people was a more pressing issue. The removal of 'nature' to make way for the urban environment can be considered as part of the Clean and Green Movement in 'cleaning' the environment and later 'greening' through the planting of greenery, as replacement of the original biodiversity. According to Ooi, once economic stability was achieved by the 2000s, criticism relating to the removal of 'nature' led to 'activism' among civil society (2005, p. 96). However, it was not until 1990, when Nature Society Singapore (NSS), a non-government organization, compiled a Master Plan for Nature Conservation, that the voice of this part of civil society was clearly articulated.

NSS is the main non-government organization that represents public opinion in relation to the conservation of nature. NSS has been dedicated to the appreciation, conservation, study and enjoyment of the natural heritage in Singapore since its

formation in 1954 (NSS, 2008). In May of 1993, NSS provided critical comments and recommendations on the Draft Copy of the Singapore Green Plan on Nature Conservation of March 1993 (Ho, 1993). In 2002, a committee of representatives that included NSS reviewed the Singapore Green Plan issued by the Ministry of the Environment in November 2001. The role of NSS in identifying and communicating perceived flaws in the Clean and Green Movement will be further discussed in Chapter 6.

The government's responses suggest that early criticisms by non-governmental organizations such as NSS have not been well received. For example, NSS's Master Plan for Nature Conservation published in 1990 is said to have been 'sidelined by planning authorities' (Ooi, 2005, p. 97). It is most probable that the government viewed civil society activities such as those of NSS as 'obstructive' (Ooi, 2005, p. 98) since these threatened to become barriers to the implementation of politically directed development on some nature reserve sites. One view put forward about the Clean and Green Movement is that it is not just about creating a 'clean and green' environment but that it exists in order to prevent public enthusiasm for 'clean and green' from interfering with economic interests. The debate between the economists and the defenders of the environment will be discussed in Chapter 6. Despite the fact that the government in Singapore, according to local sociologists Lily Kong and Brenda Yeoh, has 'absolute power and is not interested in consulting the public' (1994, p. 262), the consideration of public opinion in political decisions appears to have been slowly increasing. This will be discussed further in the thesis.

Conclusion

This chapter has traced the historical urban transformation of Singapore from colonial rule through to post-Independence. The change in urban form from colonial to post-Independence times is a result of the change in power relations towards a unifying government, which has led to a homogeneous clean and green Garden City of Singapore. During colonial rule, the city was to a large extent planned to the benefit of the colonial power, whereas the independent government envisioned building to benefit the entire population as one nation.

As discussed, the urban form that was shaped upon Singapore's Independence has many visual and planning similarities to earlier Western urban models such as the English Garden City proposed by Ebenezer Howard (1898), Frederick Law Olmsted's Park System (late 1800s), Le Corbusier's *La Ville Radieuse* (1924) and more recently English 'new towns' of the 1950s and 1960s. However, the differing political, social and climatic conditions have resulted in the uniqueness of Singapore Garden City.

The chapter summarized the building of the Garden City of Singapore based on the Master Plans and Concept Plans, according to the four eras of building for needs (1963-1980), building for growth (1980-1990s), building to compete (1990s-2000s), and building for a vision (2000-). The Clean and Green Movement, that is, the government's visions for 'cleaning' and 'greening' the city, was also introduced in this chapter.

The definition of nation building and the emergence of Singapore will be discussed in Chapter 3. The importance of the role of the Clean and Green Movement in shaping the built environment and contributing to nation building socially, economically and

environmentally, will be discussed in Chapters 4, 5 and 6. These chapters will attempt to demonstrate the urban development of Singapore, in particular the political deployment of the Clean and Green Movement, which has been a strategic mechanism for nation building in Singapore.

Chapter 3

Nation Building and the Emergence of Singapore

This chapter provides a background study of the concepts of ‘nation-state formation’ and ‘nation building’ in order to set a context for the emergence of Singapore as a nation state. The emphasis will be on understanding the processes involved in the formation of nation-states that were once under colonial rule, with particular reference to Southeast Asian states. Nation building in Southeast Asian states that were once colonies can be seen as a unique method of nation-state formation. The chapter grounds later discussions of the close relationship between nation building and the transformation of the built environment of Singapore – the significant contribution of this research. The first and second sections of the chapter define nation-state formation and nation building respectively. The subsequent section will conclude with a history of the emergence of Singapore as a nation-state. The final section forms an introduction to the role of the Clean and Green Movement in nation building in Singapore. This chapter thus provides a background for following chapters, which will present the integrated history of Singapore’s process of nation building in relation to the Clean and Green Movement.

Defining Nation-State Formation

A nation can be considered an organically whole state that is supported by a cohesive set of goals and ‘common efforts’ (Mazzini, 2009, p. 65). According to Singaporean sociologists Lily Kong and Brenda Yeoh, the nation is ‘socially and spatially’ created; and numerous ‘interpretations and alternative discourses’ coincide and compete with ‘preferred state visions’ (2003, p. 211). In other words, the nation formed will face

challenges as a result of opinions, existing issues and processes that might match or interfere with national goals and objectives.

As identified in 19th century Italian activist politician Giuseppe Mazzini's *Writings on Democracy, Nation Building, and International Relations*, a nation obtains its strength from its 'faith and traditions' (Mazzini, 2009, p. 65). A nation-state, on the other hand, includes the 'economic, social, and political progress' of a particular nation (Rodrik, 2013, p. 5). What has been termed 'nation-state formation' began in Europe with the development of a national character within France and Britain by the early 19th century (Breuilly, 2001, p. 10372). France and Britain then subscribed to a 'national' idea and protected their countries against foreign threats, portraying the basic characteristics of a nation-state (Breuilly, 2001, p. 10372). According to political scientist Ahmet Sozen, the French Revolution that began in 1789 could be considered the start of nation-state formation (2002, p. 160).

The formation of nation-states was part of a transformation: a movement away from the aristocratic ruling system of past feudal kingdoms and principalities. Feudalism involved a superior power and authority controlling a geographical territory as their 'personal domain'. Markets were 'monopolized' by local authorities (Ericson, 2000, p. 7). Although towns under a feudal system were often seen as commercial centers of exchange, they were 'closely administered institutions rather than free competitive markets' (Saunders, 1995, p. 41). In his 'Trade, towns and states: A reconsideration of early medieval economics', Saunders states that businesses were dominated by 'political mechanisms' because their success was 'dependent upon monopolization' by local authorities (1995, p. 41). The characteristics of feudalism include the seizure of lands by the ruler, 'forcing men into submission', and the ruler 'gathering up treasures' in the form of any wealth generated (Wallerstein, 2011, p. 167).

The formation of nation-states meant the end of the aristocratic feudal system and the transfer of power to a different form of government, which in the European context was often democratic. In a feudal system based on aristocracy, the state is governed and the laws are set by a 'small privileged class, who are not elected by the people and who retains power either by custom, by force, or by heredity' (Brown, 1954, p. 105). By contrast, in a democracy the 'ordinary citizen exercises some control' over the government and the government, ideally, represents the people in state governing matters (Almond & Verba, 1989, p. 154). Thus, in a democratic system the power is held by the people and this power is generally exercised indirectly by their representatives, a group elected by the people (Brown, 1954, p. 105).

Capitalism is a common economic system within democratic systems of government that is distinctive of the new nation-states that eventually replaced the feudal system of monopolized markets. Democratic government in the European context encouraged capitalism whereby the individual can make investments, as opposed to the economic methods of the feudal system where local authorities monopolized markets (Wallerstein, 2011, p. 167). In other words, the formation of often democratic nation-states, following the era of feudal kingdoms, led to a shift towards capitalism, a system where 'economic capacities' are developed and less hindered by social, cultural, or environmental factors (Comninel, 2008, p. 2). In a capitalist system any person can, in theory, accrue economic wealth, instead of wealth primarily being accrued by the ruling classes alone due to their political power.

The Historical Emergence of Nation-States in the West

According to Clive Christie, it was not until the 19th century that a 'global system of sovereign nation-states' began to be created, first in Europe, and then across the world (1996, p. 3). This has resulted in the end of the multi-ethnic empires that came under

pressure from ethnic groups claiming a separate national identity and demanding the formation of their own nation-states (Christie, 1996, p. 3). According to French philosopher and historian Michel Foucault, in the 20th century, groups that managed to represent the people held power (Danaher, Schirato, & Webb, 2000, p. 72). This is in contrast to power being inherited under the previous aristocratic feudal system.

Within the European and Western context, nation-state formation arguably occurred in three different ways: through reformation, unification and/or separation (Breuilly, 2001, p. 10372).

Reformation: the example of the French Revolution

The French Revolution of 1789-1799 can be considered an example of nation-state formation through reformation. The reformation of an aristocratic feudal system into a democratic system of government can be considered the ‘natural product of unfettered development’. This requires the removal of hindrances set by feudalism (Comninel, 2008, p. 2). According to historian John Breuilly, the concept of a ‘state occupying a national territory’ is associated with the ‘national virtues’ of the state emerging during this time (2001, p. 10371). This new nationalistic concept, and the unity developed amongst oppressed civilians, largely resulted in the French Revolution (Hunt, 1984).

According to historian Lynn Hunt (1984), there are two lines of thought regarding the French Revolution: the Marxist and the non-Marxist interpretations. The Marxist interpretation is based on the ‘existence of bourgeois revolution’ in France (Comninel, 1987, p. 1). The bourgeoisie in the Marxist interpretation can be considered to have driven the revolution by rising up against the aristocratic feudal system. Critics of the Marxist interpretation suggest that ‘lawyers and officials, rather than merchants and manufacturers’, who were the ‘capitalist bourgeoisie’ identified by Marxism, led the revolution (Hunt, 1984, p. xi). Non-Marxist cultural historians such as François Furet

argue that the French Revolution should be seen as a ‘political struggle over control of language and symbols’ – social identities, along with their linguistic and cultural representations were understood and interpreted differently (Hunt, 1984, p. xii). He argues that the ‘political innovations of the decade were revolutionary because they were used to reshape society’ (Hunt, 1984, p. 11). The French Revolution, arguably, resulted in the development of capitalism by disrupting feudal power over production and economic wealth, which brought the bourgeoisie to power (Hunt, 1984, p. 4). Therefore, the French Revolution reformed social, economic and political power within France. The nation-state of France can thus be considered to have established itself through reformation.

Political Unification: the example of Germany

The unification of Germany is an example of nation-state formation through political unification. The unification of Germany occurred at the end of the Franco-Prussian war in 1871 (Holtfrerich, 1989, p. 216). Before unification, the 19th century German Confederation was described as a mixture of several things including ‘a geographical entity, home to an ethnic group whose mother tongue was German, a cultural entity, a nation and many states, all at the same time’ (Pierenkemper & Tilly, 2004, p. 3). The end of the Austro-Prussian war of 1866 marked the end of the German Confederation, leaving a political vacuum (Pierenkemper & Tilly, 2004, p. 11). The need for a new political entity as a result of this political vacuum led to a division between the North German Confederation, dominated by Prussia, and the southern German states’ Customs Union (Pierenkemper & Tilly, 2004, p. 11). Soon after, the Franco-Prussian war of 1870-1871 anticipated German unification as its ‘predictable result’ (Kruger, 2011, p. 408). The democrats, socialists and Catholics, mostly from the south of Germany, had wanted Austria to become part of Germany in order to reduce the ‘influence of Bismarck’s undemocratic, anti-socialist and anti-Roman Catholic Prussia’

(Kruger, 2011, p. 408). However, Germany was unified in 1871 without Austria, and extensive plans were developed for massive political, economic and industrial enterprises.

Separation: the example of the Formation of the Irish Free State

An example of separation to form a nation-state is found in the formation of the Irish Free State in the early 20th century. The south of Ireland was separated physically from the United Kingdom, splitting from Northern Ireland that remained part of the United Kingdom. The split occurred largely as a result of Catholic and Nationalist discontent with the Protestant and Unionist governance of the United Kingdom (Corthorn, 2012, p. 968). Upon separation, the Nationalists showed their allegiance to Gaelic culture and especially towards the Irish language (Valiulis, 1992). According to Maryann Valiulis who wrote *Portrait of a Revolutionary: General Richard Mulcahy and the Founding of the Irish Free State* (1992), language can be considered one aspect of defining nationhood. In the case of the south of Ireland, the Gaelic culture and the Irish language have ‘justified the quest for political independence’ (Valiulis, 1992, p. 2). The cultural aspect of Catholicism, arguably, also became a form of national identity for the Irish Free State (Valiulis, 1992).

Defining Nation Building

The emergence of nation-states in the West beginning in the 19th century through processes of reformation, unification and separation can be considered the origin of the later concept of ‘nation building’, a concept especially important to post-colonial Southeast Asian states in the 20th century.

‘Nation building’ became a phrase in the literature of the 1990s and 2000s to describe the formation of nation-states after their emergence from colonial rule. The literature on

nation building describes theories and processes of nation building and also evaluates and analyses associated issues such as citizenship, national identity and territoriality (Visvanathan, 2006). According to British scholar Michael Leifer who specialized in the politics of Southeast Asia, nation building is the creation of a cohesive political community by a government (1972, p. 1). This cohesive political community is ‘characterized by an abiding sense of identity and common consciousness’ (Leifer, 1972, p. 1). Similarly, nation building can be defined as the work of a government towards the formation of a united group of citizens with a common sense of identity and common aspirations (Leifer, 1972). Prominent Australian historian of Asia, Wang Gungwu who wrote *Contemporary and National History: A Double Challenge* (2005) suggests that nation building begins immediately after the independence of a particular state is declared and the new political leaders of the new government start work. Nation building consists of a series of ‘policies and actions’ that not only define the ‘power of the state’ but also enable citizens to have a common national goal (Wang, 2005, p. 13).

Hill and Fee see education as an important aspect of nation building as it has an ability to convert ‘one generation into sharing a common destiny’ (1995, p. 4). Education forms a crucial role in molding citizens. It is the foundation of nation building and is necessary in promoting a cohesive community through a shared set of values (Gopinathan, 1974; Hill & Fee, 1995, p. 81). A ‘common public education system’ is required to ‘overcome the divides and particularistic identities’ that create disunity (Hill & Fee, 1995, p. 20). Through educating the public using strategies such as ‘campaigns and national education programs’ (Velayutham, 2007, p. 34), shared values, beliefs and norms ‘unconsciously’ emerge and become part of the new generation’s ‘internalized values, beliefs and norms of behavior’ (Quah, 1990, p. 21). These new beliefs also tend toward facilitating the growth of the economy through, for instance providing a

conducive built environment for people to work and live in, and overcoming past cultural divides.

Chan Heng Chee and Hans-Dieter Evers, authors of 'Nation-Building and National Identity in Southeast Asia', believe that nation building can be encouraged by governmental initiatives to include 'cultural, social and ethnic identity under a broader and more general national identity' (1973, p. 303). By creating a new national identity, 'stability and order' can be fostered as a result of the common vision formed (1973, p. 303). According to sociologist Selvaraj Velayutham, nation building can be considered the political process of creating a 'sense of belonging' amongst the citizens of the state (2007, p. 2). A sense of belonging or, in other words, a common identity, is an important aspect of the 'socio-cultural formation' required in building a nation (Velayutham, 2007, p. 2).

In more recent times, national identity can be seen as a 'brand' created to attract global capital, which, at the same time, contributes economically to the nation (Velayutham, 2007, p. 120). The search for national identity in new states is often based more on economic aspirations than on traditional communities that celebrate specific cultural practices of the past. At present, the unifiers that define newly established states are arguably based on economic aspirations such as earning power, consumer culture and the quality of housing and the built environment. These unifiers form an identity and brand, which attracts global capital.

Moreover, the shared 'brand' reduces the power of 'alternative national myths and symbols of identity' of the different cultures and ethnicities within a new nation to revive unwanted 'racial boundaries' (Velayutham, 2007, p. 173). A focus on economic growth and secularism within a nation tends to shift the emphasis away from racial, religious and cultural conflict or disharmony. According to Chiew Seen Kong's

‘Nation-Building in Singapore: A Historical Perspective’, racial, religious and cultural harmony is not only a pre-requisite for political stability and economic growth, but also a considerably ‘worthwhile’ set of humanitarian attributes to possess and cultivate (1990, p. 21). The importance of racial harmony to nation building, particularly in Singapore will be discussed later in this chapter.

Nation Building, State Building and National Symbols

According to Pål Kolstø, editor of *Strategies of Symbolic Nation-Building in South Eastern Europe*, nation building deals with the ‘soft’ parts of state consolidation (2014, p. 3). These include the creation of a ‘shared identity’ and a ‘sense of unity’ among citizens (Kolstø, 2014, p. 3). State building on the other hand is concerned with the ‘hard’ parts of state construction. These involve the ‘administrative, economic and military groundwork of functional states’ (Kolstø, 2014, p. 3). A state is expected to ‘provide its citizens with distinct services and benefits, such as external and internal security’ (Kolstø, 2014, p. 3). There exists a close relationship between the issues of nation building and state building. Nation building and state building are not easily disentangled.

This thesis focuses on nation building rather than state building. The national symbols of new states are given the responsibility of creating a nation (Kolstø, 2014, p. 8). Symbols are vital in new nations. They are important for successful nation building (Kolstø, 2014, p. 8). The creation of a new nation requires a large effort at ‘symbolic construction, of creation a sense of unity’ (Kolstø, 2014, p. 8).

Nation Building and Colonialism in Southeast Asia

Nation building in 20th century post-colonial states, especially in Southeast Asia, can be considered a set of processes distinct from those at play in the 19th century formation of

nation-states in Europe. The formation of an independent state from a previously colonized territory constitutes a unique form of nation building. This is particularly so in post-colonial states of Southeast Asia, where colonial methods of ‘establishing, systemizing and maintaining’ the functioning of a state have continued to this day (2014) (Yeoh, 1996, p. 1).

Nation building in the post-colonial states of Southeast Asia incorporated all three of the processes involved in the earlier period of nation-state formation in Europe: the reformation of political ideas; unification to form nation-states; and, particularly in these cases, separation from colonial governance to become independent states. These post-colonial states largely emphasize economic independence and improving material conditions for the collective good, unlike the economic and territorial aims of the colonizers that instead benefit the colonizing nation. National identities in new states are often based more on economic and consumerist aspirations. This differs from traditional communities that revolved around cultural practices of the past.

Nation building thus involves a search for national values and a national identity, while managing cultural and racial differences. It focuses on social integration that unifies the cultural values of diverse groups. Social integration can be fostered through educational programs and the participation of citizens in social activities that encourage interaction and solidarity. In nation building, aspects of the built environment can form pragmatic identities for the nation. Pragmatic identities can be created through distinctive urban forms or urban planning methods that form unique identities within a particular built environment (Chan & Evers, 1973).

The end of World War II culminated in much decolonization and the formation of new nation-states, especially in Asia (Lee, 2005, p. 168). Many independent Southeast Asian nation-states, including Singapore, Malaysia, Indonesia and the Philippines, emerged

not long after the end of World War II (Anthony, 2005). During the war, the colonial rulers often proved incapable of protecting their colonies from aggression. Upon the surrender of Japan at the end of World War II, the colonizers returned, but according to historian Anthony Milner, 'no mention is made of a warm welcome' to the returning colonial powers in most of these colonized states (2005, p. 134).

The colonial experience was nevertheless the defining condition of the formation of post-colonial nation-states. Colonialism 'demarcated territorial boundaries, established institutions of centralized government, developed primate cities, served as a conduit for global influences, and bequeathed models for modernization' (Stockwell, 2005, pp. 191-192). Thus, colonialism and its methods of administration resulted in the merging of communities within larger government structures and economic systems (Stockwell, 2005, p. 192). Colonial rule was often resisted by the locals due to the interference of colonizers in indigenous societies (Stockwell, 2005, p. 192). Moreover, in colonized states, land ownership was allocated and taxes were collected from the people; this often provoked demands for independence (Stockwell, 2005, p. 192). Colonialism has often led to independence and hence the formation of post-colonial nation-states.

The main colonial powers in Southeast Asia in the 19th century were Britain, France and the Netherlands (Christie, 1996). The British colonized Singapore and Malaysia in 1819 and 1824, which gained independence in 1965 and 1963 respectively. The French colonies of Vietnam (1858-1945), Cambodia (1863-1949) and Laos (1893-1953) also achieved independence in the mid-20th century. Indonesia, which was colonized by the Dutch in 1602, gained independence in 1949 (Christie, 1996).

The rise of these new Southeast Asian nation-states meant that new political systems were required to replace the ones that existed under colonial rule. Pek argues that for these new nation-states, the political goal of 'improving material conditions for the

collective good' was considered more important than the 'freedom of speech' that was distinctive of a Western-style democracy (2010, p. 15).

Countries such as Singapore and Malaysia have largely inherited British administrative structures. These have been 'creatively adapted' to form the basis of the newly formed nation-states (Wang, 2005, p. 4). During colonial times, the purpose of the extensive administrative structures was to promote Britain's own economic and strategic interests by contrast with their adaptation post-independence in the interests of building a new nation (Stockwell, 2005, p. 200). Although there was a shift in political focus, these strong administrative structures benefited post-colonial nation-states such as Singapore and Malaysia.

Malaysia offers one example of the adaptation of former colonial practices in the interests of the new nation-state. The British had three main aims when they colonized Malaya in 1824 (Malaya became Malaysia in 1963). According to historian Tony Stockwell, the first aim Britain had was to 'promote its own economic and strategic interests' by, for example, selling natural resources like spices found in Malaya (2005, p. 200). The second was to 'merge disparate territories' across Malaya for unification. The third was to ensure continuous colonial rule over Malaya.

After World War II, the leaders of the newly formed post-colonial independent Malaysia had a different vision from that of its previous British colonial rulers. The agreement among early leaders of the new state of Malaysia was that nation building would 'promote unity of the people' and form a sense of belonging amongst people (Lee, 2005, p. 171). Furthermore, economic growth would be encouraged in order to 'reduce poverty and social distance', and the newly independent Malaysia would 'take its place in a community of nations' (Lee, 2005, p. 171). As a result of the differences in political intentions between the colonizers and the independent government, the

colonial system had to be adapted to suit the newly developed nation. Moreover, some of the laws and regulations of the colonial era, particularly relating to international trade, become obsolete when applied to the new modern state.

The new nation-state of Indonesia is another example of post-colonial adaptation. Here, as many as 300 laws and regulations ‘inherited from the Dutch’ were voided upon independence as they were unable to match the ‘requirements of a modern state and the realities of international trade’ (Winarta, 2004, pp. 78-79).

The colonizers were perceived to have economically exploited colonized states (Breuilly, 2001). As a result, new forms of nationalism in post-colonial states emphasized ‘economic independence and cultural authenticity’, in addition to ‘political self-determination’ (Breuilly, 2001, p. 10374). Due to this similarity in formation of post-colonial nation-states of Southeast Asia, nation building in these nation-states can be considered a distinctive method of nation-state formation.

According to Clive Christie (1996), in the modern history of Southeast Asia a coherent set of historical experiences is shared by the various nation-states that were once under 19th century European colonial rule. The common pattern across these post-colonial nation-states is a ‘revolution in national consciousness, the process of decolonization’ and then the gaining of independence (Christie, 1996, p. 1). ‘Nation building’ thus became more common and important in post-Independence Southeast Asian states. During this time many of these states gained independence from colonial rule, and shaping a national identity became vital for the survival of the newly formed nation-states.

The Importance of Racial Harmony in Nation Building

The search for a national identity in the process of nation building eventually encountered an identity crisis (Chan & Evers, 1973, p. 301). This was especially so for post-colonial Southeast Asian states, largely because the colonial systems implemented in these states eventually resulted in the dilution of the original ethnic cultural identity of the people. For example in ex-British, French or Dutch colonies, the language of the colonizers ‘remained useful and valued’ even after independence, contributing to possible identity crises (Reid, 2005, p. 70). In addition, the trading opportunities provided by the colonizer resulted in the migration of people to these colonized states from different parts of the world. This meant that upon independence, the populations of these Southeast Asian states included people from diverse racial and cultural backgrounds. This again made it difficult to find a common national identity.

The search for national values and a national identity in post-colonial states such as Singapore, Malaysia, Indonesia and the Philippines became an issue of concern as the descendants of immigrants of various racial and cultural backgrounds constituted a significant proportion of the population. According to Bkhu Parekh, a leading theorist of multiculturalism, a multi-cultural society requires an even stronger and more pronounced sense of unity and belonging among its citizens as compared to a culturally homogeneous society (Kolstø, 2014, p. 6). Multi-cultural social integration was attempted with varying success in different Southeast Asian states.

The post-colonial nation-state of Malaysia decided that it was necessary to integrate the ‘various ethnic groups into one united Malaysian community’ (Lee, 2004, p. 106). Similarly, the national motto of Indonesia is *bhinneka tunggal*, meaning ‘unity in diversity’ (Chua, 2002, p. 118). However, despite the various post-colonial governments’ claims that they emphasize the importance of racial harmony, racial

tensions remain present, especially in Malaysia and Indonesia. This is evident in racial riots such as the anti-Chinese riots in Malaysia in 1969 and the anti-Madurese riots in West Kalimantan in Indonesia in 1997 and 1999 (Horowitz, 2001, p. 1).

Racial divisions still exist amongst the political parties that form the majority federal government and most provincial governments of Malaysia (Chua, 2002, p. 120). The three racially distinct political parties are the United Malay National Organization (UMNO), the Malayan Indian Congress (MIC) and the Malayan Chinese Association (MCA) (Chua, 2002). According to Singaporean sociologist Chua Beng Huat (2002), the riots that occurred in 1969 in Malaysia were mainly prompted by the general election results, which seemed to favor non-Malay representation and threaten Malay political dominance. Such riots and unrest undermine the unity to which a nation-state aspires and may hold back the progress of nation building.

The focus on racial ethnic integration was weak in Indonesia. The first president of Indonesia, Sukarno, banned ethnic Chinese from participating in retail trade in rural areas (Winarta, 2004, p. 67). The second president, Suharto and his government came into power in 1966. According to Chinese Indonesian sociologist Mely Tan, the ‘openly recognized discriminative laws and regulations’ of this government, spurred the ‘spirit of *reformasi*’ that ‘jolted the ethnic Chinese out of their compliance’ (2004, p. 24). Racial discrimination against ethnic Chinese continued up until at least 2001 and possibly even thereafter. Dr Asvi Warman Adam, in a paper entitled ‘Ethnic Chinese in the collective memory of the Indonesian people’, notes that in 2001 the Department of National Education proposed a new school curriculum that aimed to foster discussion of ‘the influence of Hindu-Buddhist, Islam and European culture’ while failing to mention Chinese culture (Tan, 2004, p. 24). Racial discrimination against the ethnic Chinese is said to have been present already in colonial laws; these ‘continued to be upheld’ upon Indonesia’s independence, disrupting the national unity of Indonesia (Winarta, 2004, p.

66). According to Chua, the fall of the ‘repressive New Order regime’ in Indonesia led to inter-racial or inter-ethnic violence in various parts of Indonesia (2002, p. 121). Violent riots followed the end of the Sukarno regime in 1965 and the end of the Suharto regime in 1998 (Horowitz, 2001, p. 334). Such ‘waves of killing’ included the anti-Madurese riots in West Kalimantan in 1997 and 1999 (Horowitz, 2001, p. 1).

By contrast, the political emphasis on racial harmony in Singapore was reinforced after the week-long racial riot between the Malays and Chinese that broke out on 21 July 1964 and revealed ‘the depth of the racial cleavage’ (Chang, 1968, p. 766). Since 1997, Racial Harmony Day has been celebrated annually on 21 July to remind Singaporeans of the importance of racial harmony, and the fact that the harmonious nation-state of Singapore cannot be taken for granted (Chin & Vasu, 2006). The focus of racial harmony in Singapore as a nation building strategy will be further discussed later in this chapter.

The Emergence of Singapore as a Nation-State

Singapore during British Colonial Rule (1819-1942)

Singapore has been inhabited since the 2nd century A.D. and over time formed part of various local empires within the region (Colless, 1969). Singapore was previously known as Temasek, which means ‘Sea Town’ in Malay (Ti & Ti, 2012, p. 139). According to Singaporean historian Edwin Lee (2008), a trading settlement was formed there in the late 13th century, when Temasek was populated by Malays, Orang Laut (Malay aboriginals) and Chinese. At that time, the Singapore River was ‘an artery of trade’ (Lee, 2008, p. 2). Temasek was a ‘port of call’ for Chinese traders who sailed the Nanyang (Southern Seas), ‘bartering porcelain, silk, and tea for exotic jungle products’ (Ti & Ti, 2012, p. 139). Portuguese sagas describe the conquest of Temasek by a Malay prince of Palembang, known as Sang Nila Utama (Lee, 2008). The prince spotted a

beast that looked like a lion upon landing on Singapore and thus renamed the new settlement ‘Singapura’ (Malay word for ‘lion town’) (Lee, 2008, p. 2), which subsequently anglicized to ‘Singapore’ (Saw, 2012).

Singapore was ruled by the Johor Sultanate between the 16th and early 19th centuries (Lee, 2008). The British colonial development of Singapore began with Sir Thomas Stamford Raffles, a British statesman who established Singapore under colonial rule for trading purposes in 1819 (Thevathasan, 1969). Singapore was a Malay fishing village when Raffles first arrived, with a small population of about 150 people – of whom approximately 120 were Malay and the rest Chinese (Newbold, 1839, p. 2) . Raffles represented the British East India Company in signing a treaty with the Johor Sultanate and the resident Malay chief. The agreement allowed the British East India Company to ‘use a defined area as a port and settlement, but gave away no territory’ (Lee, 2008, p. 7). A further treaty in 1824 allowed the British to colonize Singapore, taking over territory that included the whole of Singapore’s mainland and adjacent islets (Lee, 2008, p. 7).

A free port was then established in Singapore in order to promote trade (Chiew, 1990). Singapore’s population soon grew, and by 1860 it exceeded 80,000, the majority of whom were Chinese (Braddell, 1861; Chiew, 1990). Many people migrated to Singapore for better work opportunities, particularly for trading business purposes, as Singapore established itself as a center for entrepot trade, meaning that the ‘goods transacted were not produced in the island’, but the role of Singapore was to ‘finance trade and commerce’ (Lee, 2008, pp. 8,9).

During British colonial rule from 1819 to 1942, the demands on the land for urban expansion saw the quick disappearance of Singapore’s primary forests and wildlife, leaving just 5 percent of the original forested area by the time of independence in 1965

(Soderstrom, 2006). The removal of Singapore's original biodiversity as well as the rise in urban density have been occurring since colonial times to accommodate the social needs and economic growth of the city.

The Fight for Independence

Singapore remained under colonial rule until World War II, when in 1942 the British surrendered Singapore to the Japanese and the Japanese occupied the island. Although World War II ended in 1945, Singapore did not become an independent nation-state until 1965. In 1959, Singapore entered a period of self rule under the People's Action Party (PAP) and became part of the Federation of Malaysia in 1963, uniting with other former British territories (Lee, 2008; Tan, 2006).

Lee Kuan Yew, leader of the People's Action Party from 1959, favored a path toward a single multiracial and meritocratic nation (Stockwell, 2005, p. 211). This was opposed by the United Malays National Organization (UMNO) party, who supported instead the 'Melayu raya' (the greater Malay world of the archipelago) (Stockwell, 2005, p. 206). For Lee and the PAP, the fight for independence from Britain was also the fight for a merger of Singapore with Malaya (Lee, 1998; Stockwell, 2005). He believed that independence from Britain would follow such a merger. He also felt that being part of a larger Malaya could help stop communism and ensure the 'peace and prosperity' of Singapore (Stockwell, 2005, p. 194). With regards to communism, Lee believed that for an independent Malayan Government to succeed, removed from colonial rule, it had to 'win popular support' by promising social justice and, 'without the communist religion, do all that a communist state can do for the masses' (Lee, 2008, pp. 67-68).

Nonetheless, a merger of Singapore and Malaya was not supported by the UMNO, due to a number of 'economic, fiscal and political' reasons. The Chinese majority population of Singapore was considered a threat by UMNO (Ooi, 2009, p. 291). During

the incorporation of Singapore into the Federation of Malaysia in September 1963, UMNO's involvement in Singapore – a state dominated by Chinese – was limited in all areas, including political and economic activities. This is in contrast to UMNO's influence in mainland Malaya where there was support from a Malay majority population (Leifer, 1964, p. 1116). UMNO also supported the 'retention of Malay culture and dominance under the bumiputera ('sons of the soil') policy', a policy which granted indigenous Malays and tribes special rights (Barr, 1997, p. 3).

On the contrary, the PAP wanted an equal and meritocratic society, where all citizens were given equal rights and succeeded based on academic merit. This position gained support amongst many people in Singapore and the non-Malay minority of mainland Malaya, which consisted largely of Chinese (Tan, 2008). Furthermore, the leaders of the Malayan Chinese Association (MCA), which was UMNO's partner in the Alliance government of Malaya, were aware that a merger could result in a decrease in support for the MCA from the Chinese as a result of the possible increase in support for Lee's People Action Party (Stockwell, 2005, p. 206).

As a result, in August 1965, UMNO excluded Singapore from Malaysia. The exclusion of Singapore from Malaysia was a 'moment of anguish' for Lee as he favored merger, where Singapore was part of a larger Malaya (Lau, 1998; Lee, K.Y., 1998, p. 649; Stockwell, 2005). Separated from its 'economic hinterland' of Malaya, Singapore had become 'exposed to renewed subversion' and 'internationally vulnerable', as Britain was about to withdraw its military presence (Stockwell, 2005, pp. 211-212).

Singapore was separated from Malaysia and became an independent state on 9th August 1965. Despite the difficulties of being removed from Malaysia and its lack of natural resources, a PAP-led Singapore is claimed to have achieved 'unsurpassed success', and 'attained first-world status' by the end of the 20th century (Ooi, 2009, p. 291). Nation

building in Singapore differed from the path followed in many other post-colonial states as it did not cultivate a ‘mythological view of its origins’ and a ‘hatred of foreigners’. Rather, Singapore ‘pursued modern goals’ and had visions for a future ‘city-state’ that would ‘remain indispensable to the region’ (Stockwell, 2005, p. 212). The features of Singapore that distinguish it from other Southeast Asian states include its ‘size, location, commercial traditions and Chinese majority’, all of which enabled ‘central planning and managerial control’ under the leadership of Lee, resulting in effective nation building, socially, economically and environmentally (Stockwell, 2005, p. 212).

Nation Building Strategies in Singapore

Governance during Colonial and Post-colonial Singapore

Both the colonial and the post-colonial governments of Singapore exercised power systematically through a series of ‘institutionalized’ measures (Yeoh, 1996, p. 11). This form of power is what Foucault referred to as ‘generalized surveillance’, a concept where the allocation of space is controlled by ‘disciplinary power’ (Foucault, 1979, p. 26; Yeoh, 1996, p. 13). According to Foucault, disciplinary power aims to ‘mould individuals’ such that they become part of ‘various institutional structures’ (Moss, 1998, p. 2).

An example of this in Singapore during colonial times was the ‘colonial medical and sanitary campaign’ launched in the late 19th century (Yeoh, 1996, p. 81). This was an ‘exercise of disciplinary power’ that seeped into the minutiae of daily living by controlling the hygiene of spaces (Yeoh, 1996, p. 81). Studies of colonial medicine and sanitation also show how colonial power, together with its ‘complex of institutional and legislative machinery’, was used to ‘order, regulate and sanitize’ society (Yeoh, 1996, p. 81). According to Brenda Yeoh, it was recognized that controlling the environment and re-organizing spaces using the ‘science of sanitation’ could lead to better health and

prevent the spread of diseases (1996, p. 86). Hence, disciplinary control over sanitary conditions during colonial times became the ‘mainspring of municipal action’ (Cockburn, 1926, p. 89).

Also resonating with Foucault’s notion of ‘generalized surveillance’, the post-colonial government created a series of offences and fines that aimed to discipline and direct public behavior through constant surveillance and penalties for infringements. An example is in the imposition of fines to deter people from littering and spitting (Guevara, 1997). This was part of the Clean and Green Movement and will be discussed in detail later in this thesis.

In terms of controlling economic growth, the political control of the colonial city was similar to the governance of Singapore after independence. However, the intentions behind achieving economic growth were different. During colonial times, the British colonial power placed more emphasis on communication systems in order to connect Singapore to other colonial cities. This included developing port infrastructure in the Singapore harbor (Yeoh, 1996). In order to facilitate trading at the harbor, emphasis was placed on finance, banking, insurance, and warehouses (Yeoh, 1996). As a result of the strong focus on communication systems, the colonial power neglected other housing and welfare facilities (Yeoh, 1996). Furthermore, due to the speedy process of rural to urban migration during colonial times, scattered settlements, unemployment and socio-economic inequalities became common (Yeoh, 1996). In addition, British plans to modify the existing built form of the city to meet British ‘metropolitan norms’, including the shaping of ‘physically healthy environments’, proved unsuccessful because the British would not commit financially (Yeoh, 1996, p. 167). It was not until independence, under the ruling political party of PAP (Ortmann, 2009, p. 28), that these social problems were addressed and to a large extent resolved.

According to Singaporean researcher Phyllis Chew, some researchers assert that Singapore only comprised of the ruling party (the PAP), which maintained its rule since independence (Chew, 2000). This is because the opposition parties were considered ‘inconsequential’ and the civil society considered weak (Ortmann, 2009, p. 27). From independence in 1965, Singapore’s new ruling party (the PAP) began nation building by concentrating on the needs of the people and economic growth. The PAP has become known as the ‘national party’ as it still ‘dominates all areas of politics and claims to be the only organization capable of providing a stable future for Singapore’ (Ortmann, 2009, p. 28).

Government Interventions in the Built Environment

The Singapore government focused on improving the social living conditions of the people by creating a better built environment. There was a need for better housing, and over time people were relocated from overcrowded and scattered housing along the Singapore River to the new Housing Development Board flats (Dobbs, 2002). This will be further discussed in Chapter 4. The new government led by Lee deemed the changes to the built environment necessary for nation building.

The ‘cleaning’ up or removal of old buildings in Singapore is consistent with the priorities of what James Scott has called the ‘high modernist’ state, which governs with a strong ‘self-confidence about scientific and technical progress’ and ‘the rational design of social order commensurate with the scientific understanding of natural laws’ (Loh, 2009; Scott, 1998, p. 4). While the removal of old buildings such as the slums along the Singapore River was often ‘deeply contested’ and caused ‘social and political conflict’, it was considered a rational necessity for progress (Loh, 2009, p. 139).

Other issues that arose as a result of the change in the built environment into a more ordered environment include concern over the loss of the original sense and character of

place. An example of official responses to such concern is Bugis Street, where there was an attempt to rebuild some shophouses in the style of the past. New shophouses were thus created to look old (Kuah, 1994) through the use of old roof tiles and paints to obtain a worn-out physical appearance (Kuah, 1994). Other similar examples, such as the refurbishment of the Boat Quay conservation area, will be discussed in Chapter 5. While efforts were made by the Singapore government to make the ‘new place look old’, the artificially created ‘old’ was usually not appreciated to the same extent as the ‘spontaneous chaos’ that is a legacy of the past, as it was difficult to re-create the kind of social relationships and interaction of the past in the newly created, ordered built environment (Kuah, 1994, p. 179). The issue of homogenization of the urban landscape will be discussed later in Chapter 4 of the thesis.

There have been several cases of popular resistance towards proposed changes in the built environment by the government. However, despite being contested, the strong political will of the government often prevailed. In 1960, the Housing Development Board (HDB) removed kampong dwellers from the Queenstown area and established a committee to plan the clearance of Toa Payoh (HDB, 1960; Loh, 2009, p. 151). This resulted in protest by the kampong dwellers against the People’s Action Party government (Loh, 2009). The construction of new HDB housing flats slowed down as a result. However, the ‘God-sent’ fire at the Bukit Ho Swee settlement on 25 May 1961, which burnt down 2,200 dwellings and left 15,694 people homeless, was a remarkable incident as it provided the opportunity for constructing apartment blocks comprising 10,000 flats (Loh, 2009, p. 153). According to historian and sociologist Loh Kah Seng, the ‘emergency rehousing program’ that followed made this fire incident ‘the most significant fire in Singapore history’ (2009, p. 151). The fire can be considered to have played a part in creating Singapore’s ‘high modernist City’ image that is orderly, clean and green (Loh, 2009, p. 151).

Racial Harmony and Education in Independent Singapore

In the aftermath of the racial riot of 1964, Singapore reinforced its aspirations towards achieving racial harmony. This arguably enabled stable growth of the nation socially, economically and politically. As with other post-colonial Southeast Asian states, Singapore had to deal with a population of different races and cultural backgrounds. Singapore took a different approach to other newly emerging Southeast Asian states upon independence by emphasizing the importance of racial harmony and education. According to sociologists Michael Hill and Fee Lian Kwen, the early stages of nation building in Singapore tended to revolve around concepts of multi-racialism (or effectively multi-culturalism), meritocracy and multi-lingualism (1995, p. 31).

Multi-culturalism proposes the ‘ethical consideration’ that all cultures should be dealt with equally (Englehart, 2000, p. 566). Meritocracy in Singapore refers to the opportunity for any individual to succeed based on demonstrated achievement (initially, academic merit) and not on family relationships (Ortmann, 2009, p. 30). According to Singaporean sociologist Kenneth Tan, the top performers in the highly competitive education system of Singapore are largely taking up political leadership and leading civil service positions (2008, p. 7). Thus citizens are given equal opportunities to lead based on their academic merit.

Singapore has no natural resources. Being a small nation-state, its economy relies on human resources as well as on its strategic location. Good education was therefore considered vital. A good education system and governance based on meritocracy has improved the social and economic development of the nation-state. A well-structured education system was set up and improved over the years to tap the full capability of every individual, resulting in an average literacy rate of over 91 percent (Lee, 1997). The ordered education system has led to a rather uniform and disciplined population.

Moreover, gender equality in education and careers also allowed the tapping of human resources to its fullest (Lee, 1998).

The different racial and regional backgrounds of the Singaporean population have created a multilingual society. In order to encourage unity amongst the people, the government established English as the principal teaching language from 1987, with all other mother tongues relegated to secondary status (Grice & Smith, 1985, p. 350). This demonstrates that in Singapore, the focus has been on social integration, a concept which unified the cultural values of diverse groups and contributed to nation building (Hill & Fee, 1995, p. 36).

Conclusion

This chapter has defined ‘nation-state formation’ through the processes of unification, reformation and separation, which emerged in the West beginning in the 19th century. It discussed how ‘nation-state formation’ can be considered the origin of the later concept of ‘nation building’, which was defined as a cohesive political community by the government (Leifer, 1972, p. 1). This concept was shown to be important to the post-colonial Southeast Asian states in the 20th century.

This chapter then discussed the emergence of Singapore as a nation-state beginning with the British colonial rule in 1819 and the fight for Independence after the end of World War II in 1945. Singapore became an independent nation-state in 1965. The nation building strategies in Singapore were also introduced. The shifts in governance in post-colonial Singapore that led to the changes in the built environment, as well as racial harmony and education, were introduced as important nation building strategies in Singapore. The method of forming a national identity by de-emphasizing the racial boundaries and emphasizing racial harmony was preferred as it diluted the few

‘alternative national myths and symbols of identity’ (Velayutham, 2007, p. 173).

Meritocracy, which focuses on academic merits of citizens, was used as a nation building strategy to promote equality within the multi-cultural society of Singapore.

Subsequent chapters will show that the Clean and Green Movement contributed to nation building socially, economically and environmentally. The following three chapters (Chapters 4, 5, 6) will discuss the shift in emphasis of the Clean and Green Movement from social to economic and environmental emphases over the years and its changing role in nation building through each of these emphases.

Chapter 4

Nation Building in Singapore and the Early Social Emphasis of the Clean and Green Movement

Chapter 2 provided a historical overview of the politically driven attempt to transform Singapore into a clean and green Garden City. Chapter 3 revealed a series of strategies that nation-states have used in nation building. This chapter will begin by introducing the role of the Clean and Green Movement and how it contributed to the strategies of nation building in Singapore through its three emphases: the social emphasis, which began in the 1960s; the economic emphasis of the 1990s to the 2000s; and the environmental emphasis from the 2000s to this day (2014). The chapter will then discuss in detail the first of these emphases, the social emphasis of the Clean and Green Movement, and its contribution to building the nation-state of Singapore.

An analysis of the social focus of the Clean and Green Movement will demonstrate how the goals of ‘cleaning’ and ‘greening’ Singapore were deployed in the project of nation building. Tree planting, which began in 1963, can be considered the first social measure that enhanced the physical environment of Singapore. This chapter will also detail the clean-up of the Singapore River as an example of the physical transformation of Singapore that enhanced the social environment and at the same time contributed to nation building. This example is representative of measures taken at the beginning of the Clean and Green Movement and highlights the early social focus of the Movement. Tree planting and the ‘cleaning’ and ‘greening’ of the Singapore River and its riverbanks marked the beginning of the formation of political initiatives that launched

the Clean and Green Movement. It will be argued that the enhanced social environment and associated quality of life, as well as improved public health, usefully diverted attention from issues that might undermine national unity such as racial, cultural and demographic differences and tensions.

Despite the positive results of the initial social focus of the Clean and Green Movement in terms of providing adequate housing and inculcating a cohesive shared way of living for the people, there were downsides such as the impact of relocation on the community originally living along the Singapore River, and the creation of homogeneity in the urban landscape. The latter has led to the concept of a ‘ghostless’ Garden City, a concept discussed at the end of this chapter. Nevertheless, even these apparent negative impacts can be interpreted as having positive outcomes for the larger project of nation building.

The Three Emphases of the Clean and Green Movement

As discussed in Chapters 1 and 2, Singaporean researcher Tan Eng Khiam separates the development of Singapore into distinct periods: as described in Chapter 2 the initial period of building for needs and growth (1960s to 1990s); building to compete (1990s to 2000s); and building for vision (2000s and beyond) (Tan, 2010, p. 11). This separation of periods generally coincides with the research findings of this thesis in relation to the changes in the focus of the Clean and Green Movement. ‘Building for needs and growth’ correlates to the social emphasis of the Clean and Green Movement, argued in this thesis as occurring during the early period of Independence. ‘Building to compete’ correlates to the economic focus of the movement. ‘Building for vision’ correlates to the environmental vision of creating a more livable city amidst greenery in which people could ‘work, live and play’ (J.E., 2008). It must be emphasized however

that these three periods of emphases are not sharply demarcated but overlap in time (Figure 4.1). For example, the social emphasis continued in many ways through the subsequent periods of economic and environmental emphases.

Since Independence in 1965, the Clean and Green Movement's focus has shifted from a social emphasis, to an economic emphasis in the 1990s, to an environmental emphasis in the 2000s. The study of the Clean and Green Movement in this thesis emphasizes the deployment of the built environment as a strategy in nation building. The Clean and Green Movement has contributed to nation building in different ways in each of the three emphases — the social, the economic and the environmental. Shifts in the social, economic and environmental emphases as well as connections between the formation of Singapore's built environment and its identity as a nation, will be the focus of this thesis. The shifts in emphases are partly influenced by key changes occurring in neighboring countries such as Singapore's relationship with Malaysia during its founding phase as discussed in Chapter 3. Other influences include the growth of the 'Asian Tiger' states of Taiwan, Korea, Hong Kong and Singapore from the 1970s to the mid-1990s (Zhu, Ash, & Pollin, 2004, p. 69). They have registered remarkable economic growth of 6% - 8% per annum (Toh & Ng, 2002, p. 53). Also, the rise of the People's Republic of China as a new and powerful global player preceded by Japan and the 'Asian Tiger' states (Shenkar, 2004, p. 1), have influenced the shifts in emphases of the Clean and Green Movement from the social (1960s) to the economic (1990s) and then to the environmental emphasis of the 2000s.

The social aspect was a primary consideration during post-Independence Singapore in the 1960s, when forming a socially harmonious community and nation was crucial. The 1990s saw a shift in focus on economic development in which the Garden City image was employed to attract foreign investment and the creative class from other countries

to Singapore. The environmental emphasis of the 2000s highlighted the need to create parks and protect the original natural flora and biodiversity that remained in Singapore, as people became more aware of climate change and the environmental value of vegetation within the city.

The enactment of the strategies of the Clean and Green Movement in these three emphases reveals the role of the Clean and Green Movement in nation building over the years. These three broad emphases are illustrated in the Clean and Green Movement Timeline in Figure 4.1, which summarizes the periodization and key activities in each period of the movement. The three emphases will be discussed in detail through the analysis of case studies in terms of the social (Chapter 4), economic (Chapter 5) and environmental (Chapter 6) aspects of the role of the Clean and Green Movement in the nation building of Singapore as a Garden City.

Chapter 4: Nation Building in Singapore & the Early Social Emphasis of the Clean & Green Movement

	SOCIAL EMPHASIS (housing & infrastructure)	ECONOMIC EMPHASIS (green urban branding)	ENVIRONMENTAL EMPHASIS (ecological considerations)
1960s	<p>Tree Planting campaign, 1963 (aim of transforming Singapore into a Garden City through annual tree plantings)</p> <p>Parks and Trees Unit, set up in 1967 (to spearhead the tree planting campaign and to beautify highways, open spaces, roundabouts, institutions)</p> <p>'Keep Singapore Clean' campaign, 1968 (to maintain public cleanliness in Singapore)</p>		
1970s	<p>Tree Planting Day, launched in 1971 (annual tree plantings by Singapore leaders to encourage Singaporeans to care for the environment)</p> <p>Ministry of Environment, set up in 1972 (to implement public health policies and to manage environmental issues)</p> <p>Parks and Recreation Department, set up in 1976 (under Ministry of National Development, to take on the task of greening Singapore)</p>		
1980s	<p>Singapore River Clean-Up, 1977-1987 (first major development of the Clean and Green Movement)</p>	<p>Boat Quay Conservation Area, 1985-1990s (refurbishment of buildings along the Singapore River)</p>	
1990s		<p>Clean and Green Week, launched in 1990 (annual programme to raise awareness of green issues)</p> <p>National Council on the Environment, set up in 1991 (to promote environmental awareness in business community)</p> <p>Singapore Green Plans, 1993 & 2001 (describe policies for realization of the Garden City)</p> <p>Green Pledge, 1997 (to adopt environmentally friendly business practices)</p>	
2000s		<p>Active, Beautiful and Clean Waters Programme, 2006 (to improve water quality and transform waters into beautiful lakes and streams)</p> <p>Gardens by the Bay development, 2007-2012 (to showcase greenery amidst urban environment)</p>	<p>Green Plan 2012, planned in 2002 (aim of adequate clean air, water and land)</p> <p>City of Gardens and Water, 2007 (programme aimed at designing gardens and water for recreation)</p> <p>Centre for Urban Greenery and Ecology, set up in 2008 (to research on urban and green living environment of cities)</p> <p>Greenery Awards, launched 2008 (annual awards given to encourage builders to incorporate plants in designs)</p>

Figure 4.1 Timeline showing the change in emphasis of the Clean and Green Movement from the 1960s to the 2000s

Source: Timeline drawn by the author

‘Clean and Green’ Social Measures (1960s-1990s)

The timeline (Figure 4.1) highlights some of the ‘clean and green’ social measures that took place between the 1960s and the 1990s. As mentioned in Chapter 2, the Tree Planting Campaign, begun in 1963, culminated in the first of the annual Tree Planting Days in 1971, which aimed to transform Singapore into a Garden City through tree planting and was envisioned as creating an enhanced living environment across Singapore, contributing to the ‘green’ aspect of the Clean and Green Movement. As mentioned in Chapter 2, the ‘clean’ aspect of the Clean and Green Movement was initiated with the ‘Keep Singapore Clean’ campaign that was officially launched in 1968 when the government adopted a multi-faceted approach to maintaining public cleanliness in Singapore in order to build for the needs and growth of the new nation-state. As discussed in Chapter 1, from the 1960s to the 1990s, several government bodies were set up: the Parks and Trees Unit in 1967, the Ministry of Environment in 1972, and the Parks and Recreation Department in 1976. These government bodies took on the task of cleaning and greening Singapore, with the initial emphasis on social infrastructure and public health.

As Tan has argued, the period after Independence, from 1965 to the 1990s, was the time for development and building for the needs of Singaporeans (Tan, 2010, p. 11). According to social researchers Perry, Kong and Yeoh:

In the immediate post-Independence years, the government’s environmental concerns were primarily with public health issues, for example, the provision of low-cost public housing...with the emphasis on a more hygienic alternative to overcrowded slums and squatters, rather than ecological ones (1997, p. 207).

The following section outlines the tree planting program in Singapore as well as one important example of the physical outcome of the Clean and Green Movement: the cleaning-up of the Singapore River. These measures marked the beginnings of the Clean and Green Movement, where the social emphasis of the 1960s and 1970s on building for needs and growth was apparent.

Tree Planting in Singapore (since 1963)

Tree planting is a key example of how the Clean and Green Movement has been conceptualized. It is the main physical manifestation of the ‘green’ aspect of the Clean and Green Movement. The ‘green’ aspect of the Movement can be considered aesthetic and there is an underlying vision of achieving a lush and blooming Garden City through tree planting. The trees and shrubs that now flank the roads were carefully selected for shade and beauty. These trees have been planted in an orderly fashion, resulting in a distinctive appearance for the roads of Singapore. Trees have also been planted in open spaces in between buildings (MEWR & NCE, 1991, p. 13). There has thus been strict control over the urban landscape of Singapore. Strict road codes were developed to ensure that adequate planting areas were provided along new roads. This ensured planting verged along both major and minor roads. Paved areas such as car parks were required to be planted with trees to attenuate the heat of the extensive asphalt surfaces. Designed landscape parks were developed in the city to provide green lungs for people working in the urban commercial areas. Furthermore, developers of residential areas were required to plant roadside trees and set aside land for open space (Kachingwe, 2007).

The first tree planting campaign, initiated by first Prime Minister Lee Kuan Yew in 1963, aimed at transforming Singapore into a Garden City, even before Independence. Since then, at least 10,000 saplings have been planted every year as part of this

campaign (Roberts, et al., 2006). The campaign includes the annual Tree Planting Day, which falls on the first Sunday in November each year (Yuen, 2006). Tree Planting Day was launched on Sunday 7 November 1971 (Figure 4.2). A total of 8,400 trees and 21,677 shrubs and creepers were planted on that day (Pwee, 2001). As schools did not have classes on Sunday, 60 schools planted 600 fruit trees two days earlier on Thursday 4 and Friday 5 November 1971 (Pwee, 2001). The prime minister set Tree Planting Day in November because there is adequate rainfall from November to December, which means the trees have a good chance of growing without watering (Pwee, 2001). The annual event has dramatically increased the number of trees planted in Singapore. The Tree Planting day on Sunday 4 November 1990 launched the first Clean and Green Week, in order to expand the scope of Tree Planting Day (Pwee, 2001). Tree planting activities are still held during the Clean and Green Week.



Figure 4.2 The annual Tree Planting Day led by political leaders was launched in 1971
Source: (NAS, 2008)

Tree planting has always been micro-managed by the government using detailed guidelines. Such guidelines include the planting distance between trees along the roads and the distance that buildings must be set back from roads to allow room for the planting of trees. In order to achieve a shady and cool ambience, or a 'green tunnel' effect – where tree branches on both sides of the road interlock and the tree crowns merge – rain-trees, for example, have been planted 12 to 14 meters apart instead of 18 meters apart as normally recommended (Tee, Wee, & Low, 2001). Another example of the level of detailed attention paid to tree planting has been at selected road junctions where vegetation such as colorful shrubs have been planted under the trees and the trees have to be planted further apart to allow light to filter to the shrubs below (Tee, Wee, & Low, 2001).

Besides trees, a number of creepers and climbers were brought into Singapore and planted to cover hard surfaces such as retaining walls, lampposts, flyovers, and overhead bridges (Wong, 1969; Yeh, 1989) (Figure 4.3). Prime Minister Lee Kuan Yew himself showed his intimate involvement in the Clean and Green Movement by being personally involved in suggesting 'the use of the creeping fig vine (*ficus pumila*)' to hide overpasses and other exposed cement constructions (Warren & Tettoni, 2000, p. 153). The planter boxes that flanked the overpasses have also been planted with bougainvillea, a genus of plants which is 'perpetually in bloom' and which the Singapore Botanic Gardens found, after experimentation, to grow well in this tropical climate and urban setting (Warren & Tettoni, 2000, p. 157).



Figure 4.3 Concrete overpass covered with creeping fig vine

Source: Image courtesy of Wong Yew Kwan, past High Commissioner of the Parks and Recreation Department

Roadside tree planting has been taking place since the colonial period, becoming increasingly extensive after Independence and continuing up until today. Over the years, government agencies such as the National Parks Board (NParks) have experimented with different species of roadside trees. Tree selection has changed over time based on various factors such as the maintenance required and a desire for biodiversity. The British initiated the planting of fast-growing trees such as yellow rain-trees along the roadside (Warren & Tettoni, 2000, p. 14). The flowers of the yellow rain-tree provide a pleasant contrast to the otherwise consistently green foliage of Singapore. The yellow rain-tree is also well suited to the wet climate of Singapore. However, many of these fast-growing trees eventually had to be removed as they outgrew the space they were intended to occupy. Many plants selected during the colonial era were not native species

and this diminished their capacity to attract wildlife. The planting of more local species after Independence led to an increase in the populations of previously rare native animals (Soderstrom, 2006). Species of trees that shed their leaves too often, such as bamboo, are no longer planted in order to cut down the labor cost of sweeping dead leaves (Briffett & Sim, 1993; Quah, 1984). Ease and minimal cost of maintenance of vegetation in the visually ‘clean and green’ Singapore are considered important criteria. Hence for example, the African tulip tree is no longer planted as the flower falls easily in strong winds. Ficus (fig tree) is no longer planted due to its ‘invasive roots’, and neither is kapok as the fiber-filled pods ‘create a maintenance problem’ (Warren & Tettoni, 2000, p. 115).

The common trees now planted in Singapore include the wild cinnamon whose bright red new leaves provide color contrast. Palms have also been widely used, including a variety of fishtail palms, which were brought from Sarawak, Malaysia and have been ‘used along entrances and exits to tunnels and expressways’ (Warren & Tettoni, 2000, p. 115). Other trees that can be found along roadsides include the yellow flame, the false mahogany and the red flame (Soderstrom, 2006).

The Singapore River Clean-Up (1977-1987)

The Singapore River was where most trading activities had taken place since the founding of Singapore by Sir Stamford Raffles in 1819. The river was the spine of the city and played a unique role in connecting the different settlement clusters of Chinese, Malays, Indians and Europeans. According to researcher Johannes Widodo, these ‘multi-cultural settlements formed the urban core’ which, together with ‘markets, harbors, temples, mosques and palaces’, formed the basis of the city (2004, p. 192). The life and vibrancy of the city have always centered on the Singapore River. The Singapore River was historically known not just for its vibrant trading port, but also for

its pollution. Containerization of cargo initiated the relocation of the main port from the Singapore River to the deeper harbor of Keppel Port in 1983 (Dobbs, 2002). This meant that the Singapore River was superseded as a trading hub. The decision to clean up the river caused adjacent property land values to increase and the river banks have, upon completion of the clean-up, become a popular destination for dining and entertainment (Biswas & Ching, 2011).

The clean-up of the Singapore River can be considered the first major green urban redevelopment project planned after Independence as part of the push for a clean and green Singapore. It aimed to provide a clean and hygienic environment for the benefit of the people (see Figures 4.4 and 4.5). By October 1977, plans had been made and the first steps had been taken to clean up the Singapore River. Prime Minister Lee commissioned the task. According to Khoo Chin Hean from the Ministry of the Environment Singapore, Lee's goal was 'to remove the sources of pollution and eradicate filth and stench permanently from the rivers and canals so that aquatic life could thrive once again. This was also in keeping with Singapore's clean-and-green image' (1989, p. 98). The clean-up of the Singapore River is an example of the physical transformation of Singapore that enhanced the social environment and at the same time contributed to nation building. This example marks the beginnings of the social emphasis of the Clean and Green Movement.



Figure 4.4 The Singapore River before the clean-up which began in 1977

Source: Retrieved 15th October 2013, from <http://www.yipcheongfun.com/photos/Singapore-River.jpg>



Figure 4.5 The Singapore River in 2010

Source: Photograph taken by the author, 3rd August 2010

The government saw the cleaning-up of the Singapore River as a necessary part of relieving the housing problem. There was a need to remove the congested, unhygienic and disorganized village housing, especially along the river, that permitted the quick spread of diseases such as tuberculosis and malaria (Dobbs, 2002). The relocation of citizens residing by the Singapore River to well-managed and systematically maintained new housing estates was meant to provide an enhanced living environment and to ensure equality of access to amenities. According to Singaporean sociologist Alan Cheong, if ‘revitalization and renewal’ were not carried out, problems with ‘fragmented landownership’, and ‘land clearance’ and the ‘difficulty of getting suitable land for development in the central area’ would ‘encourage businesses to sprawl their shops along main roads that radiate out from the city center’ (1969, p. 38). ‘Urban sprawl’ would not only ‘strain the public utilities and services’, but would also give rise to ‘traffic and car parking congestion’ as a result of poor planning (Cheong, 1969, p. 38).

As part of the Singapore River Clean-Up, people were relocated away from the riverbanks. All existing land uses, such as cottage industries and pig farms, were removed from the riverbanks. Households living along the river were relocated and port-related activities were shifted further south away from the river. In the ten years after 1977, 26,000 inhabitants, 5,000 hawkers and 2,800 riverine industries were moved to alternative locations (Waller, 2001). In September 1983, 800 tugs, supply vessels and vegetable wholesalers that had previously polluted the river were moved to Pasir Panjang at a cost of 25 million Singapore dollars (Waller, 2001). A government committee was formed to manage the programs that aimed to prevent river pollution and, upon relocation of the people, the river was dredged, rubbish was removed and the riverbanks repaired (Waller, 2001). Within ten years, the Singapore River was

transformed into a clean waterway with attractive green promenades along the riverbanks.

The density of population along the Singapore River grew during colonial times, when a large proportion of the population lived around the river. In *Sustainable Built Environment: The Singapore Experience*, Tan explains that the Central Area, which is along the banks of the Singapore River, had been the ‘residential and commercial hub’ of Singapore up until the 1960s (2010, p. 19). At this time, one-quarter of the population of Singapore lived along the riverbanks, an area of about 800 ha or 1.3 percent of the total central area of Singapore (Tan, 2010, p. 19). Slum clearance in concert with the building of Housing Development Board (HDB) blocks of flats reduced the previous social issue of overcrowding (Dobbs, 2002). According to Tan, the state had to ‘implement forced acquisition via eminent domain under the Land Acquisitions Act’ in order to move the squatters to the high-rise HDB public housing estates (2010, p. 19). This was done to ‘free valuable urban land for redevelopment’ (Tan, 2010, p. 20).

With the strong commitment of the government, by 1987 the river was ‘clean enough for fish to return’ (Long, 2003, p. 29). In the same year, then Prime Minister Lee issued another challenge — to dam the mouth of the marina channel to create a freshwater lake (Long, 2003). Subsequently, in 1988, he proposed that the water of the river be treated to make it potable (Waller, 2001). The focus on cleanliness has completely changed the ambience of the river, and the unpleasant sights and smells of the past have been removed. To keep the river clean, there are now booms at various points in the drains to ‘siphon off any rubbish from upstream’ (Waller, 2001, p. 149).

The completion of the cleaning-up of the Singapore River marked the beginning of a process of transforming other canals around Singapore into recreational areas under the

Active, Beautiful and Clean Waters Programme (Yap & Koh, 2010). ‘What we have done with the Singapore River and the Kallang River [to convert them] from two sewers into recreational areas, we must do with every canal in Singapore. And it will be done within the next ten years,’ first Prime Minister Lee promised, and work on this vision is currently underway (Li, 2008).

Ever since the clean-up, the Singapore River has been used for recreational purposes. Dragon boat races were held during water festivals that started in 1983, and special events such as tightrope walkers crossing the river were held at weekends. The cleaning-up of Singapore River in the 1970s and the development of its riverbanks in the 1980s have transformed the place from a heavily polluted trading port to a major tourist and recreational hub.

Contributions of ‘Clean and Green’ Social Measures to Nation Building

Social theorist David Harvey believes that all suggestions towards achieving a better physical environment are in actual fact ‘proposals for social change’ (1996, p. 119). This idea resonates with the beginnings of the Clean and Green Movement, where the initial focus of the government was on the social aspect of building the nation. Clean and green measures such as tree planting and the cleaning up of the Singapore River could be argued to have contributed to nation building by enhancing the living environment, leading to an improved public health environment and the perception of social equity and equality of access to amenities.

Key impediments to nation building in Singapore included the ethnic differences and the socio-economic disparities within the population that had the potential to cause disunity. Enhancing the living environment and unifying the urban landscape across

Singapore could be argued to have served to unite the nation by providing a shared environment and shared material aspirations, which diverted people's focus away from competitive tensions due to racial, cultural and demographic differences (Velayutham, 2007). Moreover, the consistently 'clean and green' urban landscape formed a distinctive national identity for Singapore, which became a unifying image for Singaporeans to strive towards.

Enhanced Living Environment led to Health Improvements that Overcame Inequity

Since Independence, the political leaders of Singapore have envisioned achieving an enhanced living environment. It was felt that perceptions of inequity between population groups might be overcome if an enhanced living environment was provided, starting with equal access to housing and public and leisure spaces. The motivation behind the clean-up of the Singapore River was to relocate the citizens into well-managed and systematically maintained new housing estates and to create a 'clean and green' environment not only in and around the Singapore River, but also across the city. The government used the Clean and Green Movement as the basis of infrastructure development, which according to Singaporean sociologists Ooi Giok Ling and Belinda Yuen (2010) is a key issue for nation building, especially in developing cities in Asia.

Tree planting, discussed earlier, was one of the measures of the Clean and Green Movement that contributed significantly to nation building by enhancing many aspects of the living environment. Tree planting improved the quality of the urban environment at a relatively low cost, despite being labor intensive. As discussed earlier, besides enhancing the living environment, a 'clean and green' environment addresses the fundamental social development of the nation and thus makes it easier to address other social issues such as poverty, public health, housing and financial problems (Ooi &

Yuen, 2010). According to former Minister for the Environment Ong Pang Boon in 1983:

A clean environment is important. It is a measure of the quality of our life, an asset which the future generations will find worth defending. It is important for a citizen returning to Singapore after a business or holiday trip to feel relieved that he has returned home to a place where the air is clean, the water is safe to drink, and where tropical diseases are relatively unknown. It is important that he should step from his plane into an airport terminal which is kept spotlessly clean and drive through a green city free of decaying refuse and litter. We are building a heritage. (Ong, 1983, pp. 28-29; Teo, Peter, 2004, p. 497)

Since Independence in 1965, one of the political aims of Singapore has been to become the Asian city with the highest quality of life, evidenced in the speech made by the former Minister for the Environment in 1983 reproduced in the excerpt above. According to medical researcher David Goode, the concept of 'quality of life' places emphasis on encouraging common feelings or attitudes of well-being, the chance to accomplish one's potential and 'feelings of positive social involvement' (1997, p. 73). Also, medical researchers Felce and Perry (1995) suggest that quality of life encompasses five aspects including physical, material, social, and emotional well-being as well as activity. The greening of Singapore was deployed to enhance quality of life by developing a high-density 'clean and green' city. The government's current goal is to have 8,000 square meters (0.8 hectares) of green space for every 1,000 people by 2030 (IMCSD, 2009).

NParks, as mentioned in Chapter 1, is Singapore's scientific authority on nature conservation, which coordinates measures to ensure the health of designated nature

areas. Its goal is to make parks and gardens ‘relevant to park users...and to enhance the quality of life’ of Singaporeans (NParks, 2007). In the contemporary urban context, trees and plants also have a utilitarian function in that they help reduce anxiety and provide a sense of being removed from urban life (Wong, 1969, p. 34). According to Singaporean geographer Wong Poh Poh (1969), green corridors also break the monotony of the built environment and create a more aesthetic landscape for the comfort of Singaporeans. The emphasis on equal access to comfort thus promotes social equality.

Professor Tommy Koh, who is now ambassador-at-large for the government of Singapore, has supported physicians Eric Chivian and Aaron Bernstein’s concept that human beings are part of nature, and that human health depends on the health of nature’s species and on the ‘natural functioning of its ecosystems’ (Chivian & Bernstein, 2008, p. xiii; Davison, Ng, & Ho, 2008). According to Wong, who shares the views of Chivian and Bernstein, the green spaces in Singapore in effect benefit the city socially, as more green open spaces allow people to stay healthy, and reflect and encourage creativity, innovation and imagination that leads to economic growth, which in turn benefits the people socially (Wong, 1969). As mentioned in Chapter 2, without the planted greenery or nature reserves within the built environment, Singapore’s city life was at risk of being stressful and unhealthy. Parks and greenery have responded to social needs by fostering the use of public spaces for aesthetic, educational, recreational and cultural purposes, amidst the built-up surroundings (Tan, 2010; Yuen, 1996).

According to researcher Anne Lusk, an important element of a ‘humane metropolis’ is its capacity to relieve personal discomfort, depression, and poor health through promoting outdoor physical activities within the urban environment (2006, p. 87). The ‘clean and green’ Garden City environment provides green spaces, where outdoor

events can easily be staged (see sports fields in Figure 4.6). 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 human health (Girardet, 1996). For example, the health problems and quick spread of diseases such as tuberculosis and malaria that resulted from the poor hygiene of Singapore in the 1950s and 1960s were brought under control in the planned and managed ‘clean and green’ urban environment. Parks where people could relax are considered of benefit to social health. Moreover, people with access to parks are considered less prone to diseases, crime and discontentment with society (Girardet, 1996). 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).



Figure 4.6 Enhancing Singapore’s social environment through a ‘clean and green’ city center with sports facilities

Source: (de Souza, 2008)

According to sustainable-city researcher Timothy Beatley, people need contact with nature as it 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, seen especially in recent studies (Frumkin, 2001). Although these positive psychological effects were not necessarily the intended objectives at the beginning of the Clean and Green Movement, it is worthy to note that the government's 'clean and green' aspirations coincide with the more recent findings of social benefits, where people are happier and more contented within an enhanced living environment. Modern urban lifestyles and the 'concrete jungle' are constraints that decrease the interaction between people and can result in the alienation of the urban population from nature and natural processes. Parks can restore people's 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, stimulates the curiosity of the young about the natural world (Briffett & Chew, 2002).

Health and well-being are affected by the environment in many ways. The trees planted along roads and paths, the neighborhood parks and gardens and nature reserves in Singapore can be considered, according to Beatley's principles, to have served to moderate urban temperatures to a comfortable level, reduce harmful air pollutants, and help control dangerous storm water runoff (2004). Inner-city vegetation also reduced noise levels (Girardet, 1996). As discussed earlier, the Tree Planting Day that began in 1971 is important symbolically as a reminder to the public that greenery ought to be nurtured (The Straits Times, 1990). The tree planting campaign, introduced to keep the city green, has proven 'effective in improving the quality of the environment at minimal cost' (Lim, 1975, p. 31). The resultant enhanced living environment has improved the health and social well-being of all citizens equally, which has in turn contributed positively to nation building by helping to overcome inequity.

Inculcating a Cohesive Shared Way of Living

The Clean and Green Movement represented a social change and at the same time brought about a more livable environment. According to Harvey, ‘social objectives and goals can vary greatly depending upon who is doing the desiring about what and how human desires get institutionalized, discursively expressed, and politically organized’ (Harvey, 1996, p. 147). The beginnings of the Clean and Green Movement emphasized the social aspect of inculcating a cohesive shared way of living amongst the citizens, which worked towards achieving a clean and green Garden City of Singapore.

However, the early measures of the Clean and Green Movement did initially negatively impact on the low-income population (Elsheshtawy, 2008). The relocation of the residents who were living by the banks of the Singapore River to new HDB housing estates broke up ethnic communities where people lived together and depended on one another. The relocation led to resistance from the affected residents (Dobbs, 2002). ‘To say that there was reluctance and resistance on the part of those affected by the resettlement and clean-up is an understatement’ (Dobbs, 2002, p. 297). The resettlement and clean-up ‘affected profoundly the lives of people who made their living on the congested, filthy waterways’ (Dobbs, 2003, p. 17). As discussed in Chapter 2, the 1822 Plan of the Town of Singapore, which aimed to achieve an ordered pattern of settlement along the banks of the Singapore River, incorporated provisions for the separation of indigenous and European inhabitants along racial and social lines (Figure 4.7) (Teo, 1992, p. 165). Ethnic quarters (Malay, Chinese, Bugis, Arab and Indian) were distinctly demarcated with the intention of achieving political and economic control over the indigenous population (Teo, 1992, p. 165). The European quarter, which formed the administrative and commercial center, was located south of the Singapore River, while

the east bank and the southwestern tip of the river's mouth were allocated for defense purposes (Teo, 1992, p. 165).

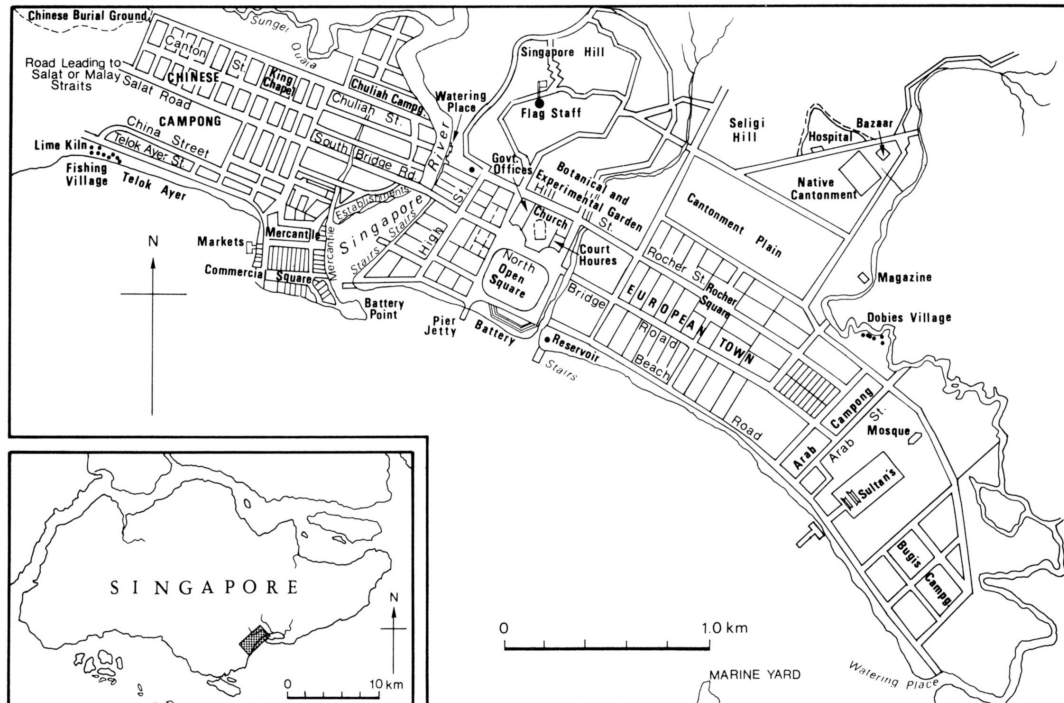


Figure 4.7 The Jackson Plan of Singapore, 1822
Source: (Teo, 1992)



Figure 4.8 Singapore River in the mid-1960s
Source: Retrieved 17th October 2012, from http://www.country-data.com/frd/cs/singapore/sg03_01a.jpg

Conditions along the Singapore River were haphazard and disorderly, with commercial houses, wharves and godowns accessible to trading boats before the Singapore River clean-up (Figure 4.8) as discussed earlier in the chapter. The Land Act of 1974 ‘empower[ed] the URA to acquire land from private land owners (with compensation) for redevelopment purposes’ (Kuah, 1994, p. 172). During that period, people made appeals to be allowed to remain along the river, but these ‘were of no avail’ (Dobbs, 2003, p. 17). The Ministry of the Environment emphasized that the Singapore River was part of a ‘new beautified Singapore’ and thus it was necessary that the river was ‘kept clean’ (Dobbs, 2003, p. 17; PWD, 434/5, 27 October 1970). By 1983, more than 80 percent of the people initially designated for resettlement had been relocated away from the overcrowded and scattered housing along the riverbanks to the new HDB flats (Dobbs, 2002).

With regards to the resettlement of people from the riverbanks to the new HDB flats, there were also some residents who positively supported the move, having ‘very painful memories’ of being cramped together in old shophouses (pers. comm., 6 May 1998; Chang, T.C. & Huang, 2005, p. 273). The government did not neglect the social well-being of the residents who were relocated from the banks of the Singapore River. In a survey commissioned by Reach in 2010, over 90 percent of the 2,012 respondents of age 17 and above who had been relocated were content with their overall quality of life (Chang, 2011). A large proportion of respondents were ‘satisfied with the economic policies of the government, the public service quality, their living environment and concerns such as the education system’ (Chang, 2011). Maximum proportions are set for the various ethnic groups in each HDB block and in each HDB neighborhood, in order to prevent the formation of racial enclaves and promote ethnic integration (Chew, 2009).

While social problems did arise as a result of the inability to adapt to the new environments provided, resistance eventually lessened when the affected residents perceived themselves as better off in terms of an enhanced living environment with better housing as well as ease of access to basic amenities, outdoor recreational and social spaces, and transport (Chang, 2011). In other words, a cohesive shared way of living in a clean and green Garden City environment appeared to overcome the initial negative impact of the social engineering inherent in the Singapore River Clean-up. Thus, the enforcement of a cohesive shared way of living in a clean and green Garden City environment appears to have been effective in integrating disparate communities and contributing to nation building.

Generalized Surveillance in Clean and Green Singapore

The construction and planning of the new HDB housing estates resulted in an ordered landscape that is meticulously clean and enhanced with greenery (Muzaffar, 2007, p. 270). These housing estates provided ease of access to basic amenities and transport for the people. Since Independence, improvement of the social welfare of the citizens has also been considered essential to the growth of the country. In return for access to public and welfare services, the citizens appear to have been supportive of the government's overall goal of putting both the social development and economic growth of the country first (Hobson, 2005).

The 'Keep Singapore Clean' campaign that was launched in 1968 comprised a cleaning regime, public education and law enforcement to deter littering (IMCSD, 2009, p. 51). This form of government power is what Foucault referred to as 'generalized surveillance', where the allocation of space is controlled by 'disciplinary power' (Foucault, 1979, p. 26; Yeoh, 1996, p. 13). One example of disciplinary power

displayed in Singapore is the imposition of fines to prevent people from littering and spitting (Guevara, 1997). The annual ‘clean and green’ campaigns emphasize the importance of social discipline in community living and inculcate a cohesive shared way of living that aims to achieve the goal of a clean and green Garden City (Wong, 1969). The high level of control by the government and the social discipline of the citizens have resulted in a visually ‘clean and green’ environment that might be argued as correlating with social harmony.

In Singapore, competitions have been used as strategies to achieve a clean and green Garden City. Awards are given out to, for example, the cleanest and greenest housing estate within a particular district. Many awards related to the Clean and Green Movement are given out not only at government level but also in some schools in order to inculcate the importance of the clean and green Garden City Singapore concept among the younger generation. These awards motivate people and raise their awareness of the importance for Singapore to be clean and green. In addition, environmental education is included in the primary, secondary and pre-university curriculum (MEWR, 1992). As discussed in Chapter 3, education forms the foundation of nation building. Lessons about the importance of a ‘clean and green’ environment have been imparted to the citizens through education to the point where, for example, it becomes natural and habitual not to litter and to appreciate the greenery amidst the urban density. In Singapore, ‘a clean city is a strong reflection of our moral and civic values’ (National Environment Agency, 2002).

Uniting the Nation through the ‘Ghostless’ Urban Landscape

Alongside the social benefits of the Clean and Green Movement, the homogeneity of the urban landscape could be argued to have had a negative impact on the cultural

identity of certain places within Singapore. The loss of cultural identity results from a homogeneous urban landscape stripped of an original sense of place that includes both the cultural heritage and the original plant and animal biodiversity of Singapore. From this perspective, Singapore could be seen as the ‘ghostless’ Garden City. Singaporean geographers Peggy Teo and Shirlena Huang used terms such as ‘elitist’ or ‘museumization’ to describe the creation of a landscape that is ‘removed from the lived experiences of the locals’ (1995, p. 593). The ‘ghostless’ Garden City analogy describes the loss of contexts in which ghosts of the past can survive. The word ‘ghostless’ here refers to the noticeable lack of spaces of interest for ghosts to roam, and also to spaces where memories of the past have been purged. It can be used when describing the Garden City as being too ordered, which leads to uniformity and homogeneity and allows no place for difference. Hence, memories have been ‘cleansed’ along with the cleansing of the built environment. The places associated with ghosts are often old, dilapidated and disordered (McEwan, 2007). These places tend to convey a sense of mystery and darkness that is difficult to find in clean and green Singapore. The homogeneity of the green urban landscape of Singapore is part of an orderly environment, which obscures associations of the city with places where ghosts can roam. The disappearance of the original sense of place as a result of the ‘cleaning’ and ‘greening’ of the Singapore River and its riverbanks means that the new developments may be seen as lacking substance and as being ‘ghostless’ in that the ghosts of the past can no longer dwell in this modern ‘clean and green’ environment (Muzaffar, 2007, p. 269). The redevelopment of these locations may make the city appear ‘clean and green’ but it has also resulted in a lack of feeling, depth, culture and heritage within the city. The rich historical essence of the city as it once was seems to be increasingly obscured.

The orderly environment has removed the ‘inexplicable presences, feelings or events’ that might have once existed (McEwan, 2007, p. 29).

The ‘clean and green’ image constructed through ‘cleaning’ and ‘greening’ the city has led to change in the urban environment, removing memories of previous ways of living and other racial, cultural and demographic differences. From this perspective, the Garden City can be considered to have neglected important intangibles such as traditional culture, creative ideas and freedom of expression.

Gone is the chaos; in its place is a pristine clean environment. It is precisely because of this systematic approach to development that Singapore is known to be a well-planned city. (Kuah, 1994, p. 18)

‘Order’ is usually associated with the developed world and is considered a modernist master planning approach (Koolhaas, 2000, p. 652; Muzaffar, 2007, p. 327), while ‘disorder’ is most often linked with the underdeveloped. The ordered urban environment of Singapore is a result of rapid, controlled modernization. The conservation of existing buildings is an attempt to slow down the process of modernization. However, the result of planning and conservation in Singapore has been criticized as having deprived the city of authentic forms of life and vibrancy. ‘Authentic’ here refers to the original sense of place. This is evident in comments from a journal article ‘A clean and green Asian alternative’ describing Singapore as over-Westernized and Singaporeans having ‘nothing to do apart from shopping’ (Travel Trade Gazette Europa, 1994, p. 15). From a survey conducted by the Singapore Tourist Board in 1999, it can be deduced that Singapore is rapidly moving towards becoming a ‘modern, familiar and expensive place’ similar to Western countries, and thus it can be considered to have lost its attractiveness as ‘something different’ (Hui & Wan, 2003, p.

305). The characterization of ‘authenticity’ is 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 can be found in the rigidity and orderliness of the ‘clean and green’ environment and also in the lack of chaos within the structured urban environment of Singapore. The chaotic but vibrant nature of the Singapore River of the past, as described earlier in this chapter, could be interpreted as having been livelier in its disorderliness than the present refurbished incarnation.

It is interesting that some efforts were made by the Singapore government to make the ‘new place look old’ (Kuah, 1994, p. 179). An example is where some shophouses along Bugis Street were rebuilt in the style of the past and at the same time were fashioned to look old (Kuah, 1994). Old roof tiles and paint effects were used to achieve a worn-out appearance (Kuah, 1994). However, this ‘created chaos’ could not achieve the effect of the ‘spontaneous chaos’ that existed in the past (Kuah, 1994, p. 179), as it is difficult to re-create the kind of social relationships, interaction and lifestyles of the past in the newly created ‘clean and green’ environment.

According to Teo and Huang, developers tend to replicate visible details to achieve the aim of creating a historic ambience for tourists, rather than represent a real picture of the past or to increase the understanding of what is historically significant and valued in the environment (Teo & Huang, 1995, p. 594). Places with strong associations for older generations, such as the Albert Street hawker center where food stalls were once located along the street, have lost their sense of place through modernization and the cleaning

and greening of the city. The original essence of these places has been adapted to reflect the new situations of modern-day needs and functions.

As mentioned earlier, the old settlements were replaced with high-rise HDB residential blocks that were, in contrast, highly ordered. Settlements of the kampong type can still be found in Malaysia or Indonesia and are seen as a symbol of ‘underdevelopment’ and representative of the ‘chaos’ of the past and hence disordered (Bay & Ong, 2006, p. 281). This ‘underdevelopment’ and ‘chaos’ are disadvantageous in terms of social equality and equal access to amenities and infrastructure and have the potential to lead to political unrest. A report arising from a public consultation exercise in Singapore, which helped devise the Urban Redevelopment Authority’s Concept Plan 2011, did suggest the possibility of preserving the culture of streets that are rich in heritage and art (Teo & Ang, 2010). However, this solution seems difficult to achieve amidst rapid modernization.

First Prime Minister Lee Kuan Yew hinted at this more recent change of attitude towards the orderliness of what the Clean and Green Movement had created. He cautioned that:

If we remain static and unchanged, known only as clean and green Singapore, but otherwise with an international reputation for being a dull and antiseptic place, we will lose out in this fast-changing world. (The Straits Times, 2007, p. 28)

In his memoir, *From Third World to First: The Singapore Story 1965-2000*, first Prime Minister Lee wrote of the later efforts made by the government to retain the unique character and identity of the past. He explains that the modernization of Singapore has caused the loss of much of its heritage and cultural diversity (Lee, 2000). However, it is

impossible to retain the essence of history when the central purpose of cleaning and greening Singapore has been towards newness and wealth. Lee recognized that economic growth and aesthetic improvements were made possible, at the cost of the loss of heritage and cultural diversity. The idea of museumization and its economic implications will be further discussed in Chapter 5.

One positive outcome of the homogeneous urban landscape in terms of nation building can be seen as the diminution of the cultural differences of multiracial Singapore. The potential for the traditional cultures of the various races to highlight the differences amongst the people of multiracial Singapore might pose a threat to the social harmony amongst the citizens. However, the ‘clean and green’ Garden City has formed a shared ‘consumer’ environment and helped bind the citizens and downplay the racial, cultural and demographic differences of the citizens. In other words the potentially negative aspect ‘ghostlessness’ can be seen to have positively contributed to a shared consumerism or ‘postcard’ heritage of the clean and green Garden City of Singapore. This in turn has encouraged cohesiveness and unity within the nation. The homogeneity found in the ‘ghostlessness’ of Garden City Singapore as a result of being ‘clean and green’ has, perhaps ironically, helped construct a unified national identity.

Conclusion

This chapter has described the contribution made by the built environment to nation building. The particular aspect of the built environment emphasized in this chapter was that transformed by the Clean and Green Movement, specifically the social phase that was the first emphasis of the Clean and Green Movement. Through ‘clean and green’ social measures such as tree planting and the clean-up of the Singapore River, an enhanced and homogeneous social living environment was created. Nation building

strategies related to the social aspects of the Clean and Green Movement included overcoming inequity through an enhanced social living environment that led to better public health, inculcating a cohesive shared way of living through the shared vision of a clean and green Garden City and creating a homogeneous urban landscape that helped unite the nation.

The revitalization of the city, especially in the central area that was located near the Singapore River, due to rapid urbanization and the need to address social needs of the people in the 1960s, led to increased focus on social housing and transport, where emphasis was also placed on landscaping, street design and ‘the proper segregation of pedestrians and vehicles’ (Cheong, 1969, p. 42) (see Figure 4.10). As part of the strategic land use plan for Singapore, care was taken to ensure that Singaporeans had enough green space for rest and recreation amidst the urban setting. The equality of access to this enhanced healthy living environment encouraged social equity, which contributed towards nation building.



Figure 4.9 In road codes, adequate planting spaces are set aside beside roads
Source: (Nez, 2008)

The rush to achieve the physical and economic developmental objectives of Singapore has led to the loss of most of its original natural and traditional environments, resulting in the condition of the city described here as ‘ghostless’ (Lim, 1979). Attempts to imbue cultural memory in the buildings and spaces of the city have at worst created mere stage props, emptied of the different cultural and socio-economic situations that used to be played out. Nevertheless, and perhaps ironically, the successes in removing these ethnic differences, in other words creating a ‘ghostless’ urban landscape, can be argued to have resulted in greater equality and homogeneity in the ‘clean and green’ urban landscape, encouraging a sense of unity amongst the people.

While the loss of original culture and tradition of many places around Singapore has resulted in homogeneity in the urban built environment and in a ‘ghostless’ Garden City, being ‘clean and green’ can be seen to have created a new distinctive national identity for Singapore. The formation of this ‘clean and green’ national identity has encouraged social integration and distracted people from issues of racial, cultural and demographic differences. Hence, the apparent negativity of the loss of heritage and cultural diversity could perhaps be considered a positive in that it helped develop a sense of unity among the multiracial society of Singapore.

Overall, the reformation of political ideas with emphasis placed on achieving an enhanced social living environment from the 1960s to the 1990s through the Clean and Green Movement is argued here to have contributed to nation building. The downplaying of cultural divisions within multiracial Singapore, in conjunction with a growing economic emphasis, which will be discussed in the next chapter, gradually changed Singaporeans into consumers who share the ‘postcard’ image of a ‘clean and green’ Singapore rather than a people with differing cultural identities.

Chapter 5

Singapore as Green Spectacle: The Economic Emphasis of the Clean and Green Movement

This chapter will discuss the economic emphasis of the Clean and Green Movement and its contribution to nation building. Since Independence, general support for the economic growth of the country has been a common objective among the Singaporean political leaders (Hobson, 2005). In return for economic wealth and access to public and welfare services, the citizens appear to have been supportive of the government’s overall goal of putting the development and economic growth of the country first (Hobson, 2005).

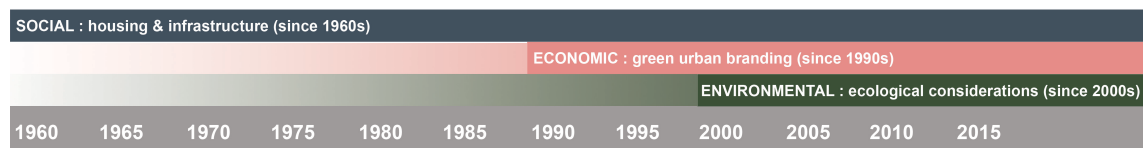


Figure 5.1 Timeline showing the overlap and change in emphasis of the Clean and Green Movement from the 1960s to the 2000s

Source: Timeline drawn by the author

As previously discussed, this thesis argues that the focus of the Clean and Green Movement moved from a social to an economic and later to an environmental emphasis. Although these three emphases intersected and often operated concurrently throughout the years of nation building in Singapore, there were tangible shifts that allowed each in turn to predominate: the social emphasis, which began in the 1960s, gave way to a more economic emphasis in the 1990s to the 2000s, which in turn has yielded to a more environmental emphasis in the 2000s (see Figure 5.1). This chapter will discuss the economic emphasis beginning around the 1990s, correlating to the nation building

period of ‘building to compete’ (Tan, 2010, p. 11), as discussed in Chapter 4. This economic emphasis, which followed the period in which the social needs were being met, involved extending the improvements in the existing built environment so as to ensure competitiveness within the region and the world at large, in turn enhancing Singapore’s nation building program. The Boat Quay conservation area along the Singapore River can be considered one of the first ‘clean and green’ construction projects aimed at improving the economy. The Strategic Economic Plan of Singapore formulated in 1991 discusses situating Singapore as a global city, by ‘making it a “total business hub” for the Asia-Pacific and offering a business location on par with other leading global cities’ (Kong, 2000, p. 412). The government aimed to beautify the city with green landscaping, develop parks and gardens that contributed to the Garden City image of Singapore, with the intention of attracting tourists and the overseas creative class to boost the country’s economy (Kong, 2000; Singapore Economic Sub-Committee, 1985).

Using a body of literature from the 1990s, the chapter will discuss the economic role of the Clean and Green Movement in nation building, which focused on creating attractive and competitive cities. Concepts such as the ‘experience economy’, ‘urban branding’, ‘spectacle’ and the ‘creative class’, will be used to discuss how the ‘clean and green’ Singapore Garden City was deployed to distinguish Singapore from other cities. This was mainly undertaken in order to attract people to boost the economy, especially during the period of global competition among cities in the 1990s, which correlates with Tan’s categorization of ‘building to compete’ in Singapore, as mentioned earlier.

This chapter will argue that the production of a pleasant ‘clean and green’ environment in Singapore aimed to encourage both tourism and foreign investment, as this image portrayed a well-managed city. The orderly planting of trees and the consistent maintenance and management of greenery and waste showcased the efficiency and

systematic methods of Singapore's government. The green urban planning measures of the Clean and Green Movement have arguably contributed to the formation of the 'clean and green' image, which, in turn, has boosted the 'experience economy' (Pine & Gilmore, 1998, p. 97). The thesis contends that the concept 'green urban branding' played a part in encouraging visitors to stay in the country longer, and to undertake repeat visits, by providing memorable experiences in green spaces, and thereby boosted Singapore's economy.

According to social theorist David Harvey, capitalism requires an increase in population in order for economic growth to occur (1979, p. 161). The government was aware that people is an important resource for economic growth, given the scarcity of land and natural resources. The concept of 'green urban branding', which will be the focus of this chapter, exemplifies the way the Garden City idea has been used to brand Singapore. This clean and green environment arguably resulted in a more livable environment, which attracted foreigners to the country, hence encouraging economic growth.

The chapter also adopts Debord's concept of the 'spectacle' (1967), focusing on the 'green' aspect of Singapore's spectacle, which also unifies the nation through engaging people in a common 'green' aspiration that encourages economic growth and contributes towards nation building. Modern society is said to be a society of the spectacle (Debord, 1998, p. 5). The modern spectacle, according to Debord, can be defined as the 'autocratic reign of the market economy which had acceded to an irresponsible sovereignty, and the totality of new techniques of government which accompanied this reign' (1998, p. 2). The development of the Gardens by the Bay, located in the second central business district area of Marina Bay, will be used to illustrate the branding of Singapore as a 'green spectacle'. The way Gardens by the Bay is designed and marketed can be considered to move the focus of the Clean and Green Movement towards an economic trajectory (Gulsrud & Ooi, 2014). The use of the

‘green spectacle’ to portray political and economic stability distinguishes Singapore from other cities and at the same time plays an important role in attracting tourists and the overseas creative class as well as contributing to the unified image of Singapore as a new nation-state.

The chapter concludes that the ‘green spectacle’ is not only an image of visual greenery, but also a portrayal of political and economic stability, which encourages economic growth, and contributes to nation building.

Tapping the Green Experience Economy as a ‘Clean and Green’ Economic Measure

This section will highlight ‘clean and green’ government measures, such as the conservation of the Boat Quay and the Gardens by the Bay development, as initiatives that contribute economically to nation building.

Along with the attractive geographic and economic aspects of Singapore, the ‘green spectacle’ contributes to drawing global capital and foreign investment to the city by engaging both locals and foreigners in activities, thus forming the basis of the ‘experience economy’. According to business researchers Joseph Pine and James Gilmore, the ‘experience economy’ consists of engaging people in activities that will form ‘memorable experiences’ (1998, p. 102). This thesis introduces the term the ‘green experience economy’, which describes the creation of such things as the ‘clean and green’ dining experience along the Boat Quay conservation area or planted green attractions such as Gardens by the Bay in Singapore in order to engage people to visit and experience the city.

The Boat Quay Conservation Area (1985-1990s)

The refurbishment of the Boat Quay conservation area, which took place along the riverbank towards the final stages of the cleaning-up of the Singapore River in the late 1980s and 1990s, exemplifies the end of social focus and the beginning of the economic focus of the Clean and Green Movement.

The conservation of heritage buildings in the Boat Quay conservation area had two criteria: that there was a possibility of economic advantage; and that the old buildings were still structurally stable and were therefore capable of being refurbished (Waller, 2001). In the case of the Boat Quay conservation area, the economic advantage of retaining the structure of the Boat Quay shophouses was intended to emerge from creating a new and distinct ambience along the Singapore River.

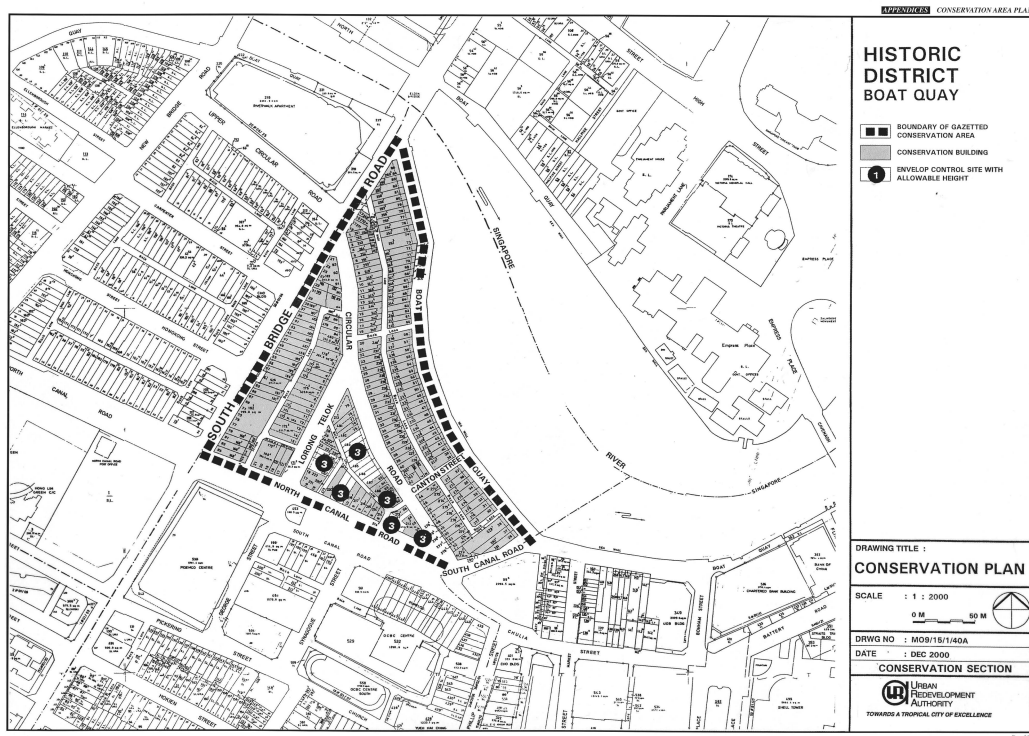


Figure 5.2 Plan of Boat Quay conservation area
Source: (URA, 2014)

The Boat Quay conservation area extends from the mouth of the Singapore River to South Bridge Road (see Figure 5.2 above). In the Town Plan of 1828, the Chinese, who

were the main workers in the trading industry, were allocated areas to work on the south bank of the Singapore River, where Boat Quay was completed in 1842 (URA, 1991). One of the consequences of the 1869 opening of the Suez Canal was that Boat Quay developed into a new international commercial center with rows of warehouses (Widodo, 2004). In the late 19th century, Boat Quay became the center of commercial enterprise in Singapore. Boat Quay was at that time an important loading, unloading and warehousing area by the Singapore River. Small bumboats were then used to trans-ship provisions from ships anchored offshore. These bumboats crowded the Singapore River and occasional oil leakages polluted the river. Mechanization, which enabled ships to load and unload goods directly, removed the bumboat's role in the shipping industry in the 1960s (Yuen & Chin, 1993). Boat Quay began to see major change around 1983 when the main port relocated from the Singapore River to Keppel Port's deeper harbor.

The driving force behind the cleaning-up of the Singapore River was the desire for a cleaner, more hygienic and less polluted city. In the case of the Boat Quay, a district that was characterized by its old riverfront warehouses (also known as shophouses), retaining the refurbished shophouse structures as well as cleaning and greening their surrounding environment was intended to create a distinct 'clean and green' ambience along the Singapore River.

Since the Singapore River Plan of 1985, the focus had been on the conservation and refurbishment of the promenades and architecture along the riverbanks, including the conservation and transformation of the warehouses into a popular dining destination at the Boat Quay conservation area. The preservation and refurbishment of these areas was intended to create a 'clean and green' social environment at the city center where people could work, live and play.

Since its transformation, Boat Quay has become a commercial zone along the distinctive crescent-shaped riverbank, interspersed with new high-rise developments such as the Oversea-Chinese Banking Corporation (OCBC) building, the United Overseas Bank (UOB) building, the Chartered Bank buildings and the Shell Tower (URA, 1991). The preservation of the facades of the old warehouses aimed to retain the original character of the place. The historic shophouses lining the riverbanks of Boat Quay were earmarked for conservation in the Singapore River Plan of 1985. The idea was to preserve as much as possible of the waterfront's architecture and ambience and to improve the physical environment by providing pedestrian walkways, plazas and landscaping (URA, 1991). By the 1990s, the shophouses at the waterfront had been restored. The adaptive reuse of the shophouses included new functional spaces such as shops, restaurants, wine bars and entertainment spots to enliven the area (URA, 1991). The riverfront was also landscaped with a public promenade. It was re-paved with red interlocking pavers to allow for traffic-free pedestrian movement on the wide street along the riverbank. The space from the street edge to the river edge allowed for the placement of permanent benches provided by the government as well as tables and chairs supplied by the restaurants and hotels that line the street (see Figure 5.3). Today (2014) this area in the heart of Singapore's central business district is a lunch destination for office workers and a place where young professionals dine at night (Yuen & Chin, 1993). These dining experiences also promoted tourism for the economic growth of Singapore. The banner in Figure 5.3 below, which advocates no touting or overcharging, highlights the change in emphasis of the Clean and Green Movement from a social focus to an economic one.



Figure 5.3 Visually green promenades and converted shophouses along the Singapore River at Boat Quay in 2011

Source: (Tng, 2011)

The conservation and refurbishment of buildings along the Singapore River attempted to retain the initial appearance of these buildings and at the same time enhance the living environment. However, as discussed in Chapter 4, it might be argued that the original sense of place has been lost in the process of ‘cleaning and greening’ the buildings and their surroundings, resulting in homogeneity and ‘ghostlessness’ (Chang & Huang, 2005). Despite the conservation of the buildings, the creation of new ‘clean and green’ physical surroundings and the modern functional usages of the buildings have resulted in a lack of a sense of place and hence homogeneity in the urban landscape. According to researcher Sibel Bozdoğan (2001), there is a need everywhere for cities to preserve a sense of their history and oppose attempts to erase history through modernization. The failure to respect and preserve heritage, especially during periods of rapid economic growth, adds to the loss of sense of place. Like Singapore, many countries around the globe are absorbed in the pursuit of economic wealth and

‘nationalist aspirations of modernization’, and have become inclined to remove the old for something newer and bigger (Muzaffar, 2007, p. 30).

One focus of the refurbished Boat Quay area is food. Public dining has become increasingly popular around the world and can be considered one of the most important touristic experiences (Quan & Wang, 2004). The desire to keep up with the demand for unique dining experiences, and the rising cost of space along the banks of the Singapore River meant that the conversion of the shophouses to accommodate places providing modern dining experiences became the most commercially appropriate use. Boat Quay can be considered an example of the commodification of heritage, which is in accordance with the Tourism Product Development Plan that outlines how specific attractions are to be refurbished based on what ‘tourists want to see’ (Buang, 1987; Teo & Huang, 1995, p. 591). The absence of memory in this ‘clean and green’ dining environment along the Singapore River means that the place exudes a modern form of energy different from the days when it was a port. Then the port was the center of trade and business for Singapore, a place where people exchanged commodities; today, that commodity is the dining experience.

The museumization of precincts such as the Boat Quay conservation area may attract and satisfy tourists, while leaving locals feeling alienated from their traditional places (Teo & Huang, 1995, p. 611). Museumization has led to the loss of the villages that used to be within the central part of the city, especially along the riverbanks of the Singapore River the old *kampongs*, consisting of timber houses built on stilts. Nevertheless, the museumization of Boat Quay through the injection of a new modern experience of dining and living has contributed to the experience economy by encouraging tourists and visitors to spend their time and money for the experience at Boat Quay. This has in turn boosted economic growth. The unique ‘clean and green’ dining and living experience at destinations such as the conserved Boat Quay discussed,

has distinguished Singapore from other competitor cities; but its achievement required choices to be made between conserving heritage and boosting the economy, choices that are not entirely without cost.

Gardens by the Bay as ‘Green Spectacle’

City marketing and city branding, according to urban studies researcher Nadir Kinossian, can be seen as ‘tools of entrepreneurial urban governance’ (2008, p. 189). Rebranding Singapore with the concept of a ‘City in a Garden’ is illustrated in the new Gardens by the Bay development (Figure 5.4), located at the second central business district area of Marina Bay (Koh, 2011, p. 49). This development is an architectural ‘green spectacle’ comprising new as well as existing high-rise developments and a showcase of the urban environment amidst planted greenery.

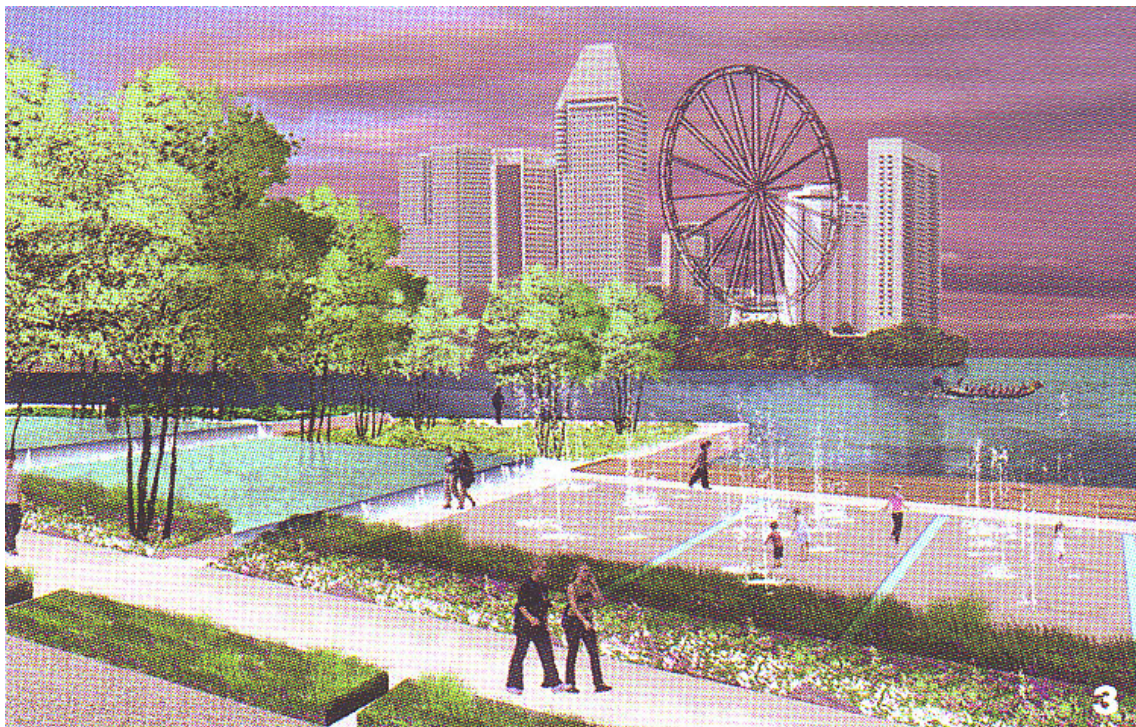


Figure 5.4 Artist impression of Gardens by the Bay in the central business district along the Singapore River
Source: (Low, 2008, p. 34)

While the development had been in planning for some time prior, the construction of Gardens by the Bay began in 2008 and the development officially opened in June 2012. Architects Wilkinson Eyre, landscape architects Grant Associates, and structural

engineers Atelier 10 were key members of the Gardens by the Bay design team, collaborating with CPG Consultants, a local architectural firm. This green attraction contributes to an impactful image of planted greenery at the heart of the central business district of Singapore (Low, 2008).

The plan for this 1.01 square kilometers (101 hectares) development was to create a new and visually green destination for tourists and locals. The site is carved into three separate parks linked by bridges, with each park offering distinct experiences. Gardens by the Bay spreads across the Marina Channel, with the main section of 0.54 square kilometers (54 hectares) located in Marina South, and two additional sections in the gardens at Marina East and at Marina Center (Figure 5.5). This area aims to become a place where people can engage in various recreational and business activities amidst a green urban environment – a unique setting that is distinctive to the place and to Singapore’s ‘City in a Garden’ image.



Figure 5.5 Masterplan for Singapore Gardens by the Bay
Source: (Low, 2008, p. 34)

According to Singaporean sociologists Chang Tou Chuang and Brenda Yeoh, the changing cultural landscape of Singapore depicts ‘the influence of tourism on traditional culture, contemporary society and local economy’ (1999, p. 114). The increase in recreational and leisure spaces within the urban environment, such as the Gardens by the Bay, reveals the government’s focus on the new and emerging experience economy. The experiences possible in these green spaces allow the spaces to be marketed in order to attract tourists as well as locals. According to Dr Vivian Balakrishnan, Minister for Environment and Water Resources since 2011, providing a visually green and welcoming environment tends to satisfy citizens and to obtain for Singapore ‘a competitive advantage’ over other neighboring cities (Feng, 2012). The clean and green Garden City image is thus intended to make lasting impressions on

tourists, and it is said that it has given foreign investors the confidence to invest in Singapore (Rana, 2007).

The pockets of space created for varied events and attractions at Gardens by the Bay offer different experiences for visitors to enjoy while being close to planted greenery within the built environment of the city center. The development of the garden attraction of Gardens by the Bay at the heart of the city illustrates an attempt to sell the city through the ‘re-branding and re-packaging of places’ (Kinossian, 2008, p. 192) and through the ‘promotion of new urban images, of new lifestyles and of new city myths’ (Goodwin, 1993, p. 149). The green nature of the new mixed-use developments at Marina Bay emerges from the artist impressions of the proposed gardens (Figures 5.6 and 5.7). Architecture critic Darrel Crilley (1993) believes that images such as these are important for promoting speculative investment and urban regeneration projects. The Sail, which is a residential condominium at Marina Bay, promoted sales with images showing projected views of units with unobstructed views of the waterfront and its surroundings. As a result, units were ‘snapped up quickly’, even before construction (Business Times Singapore, 2005).

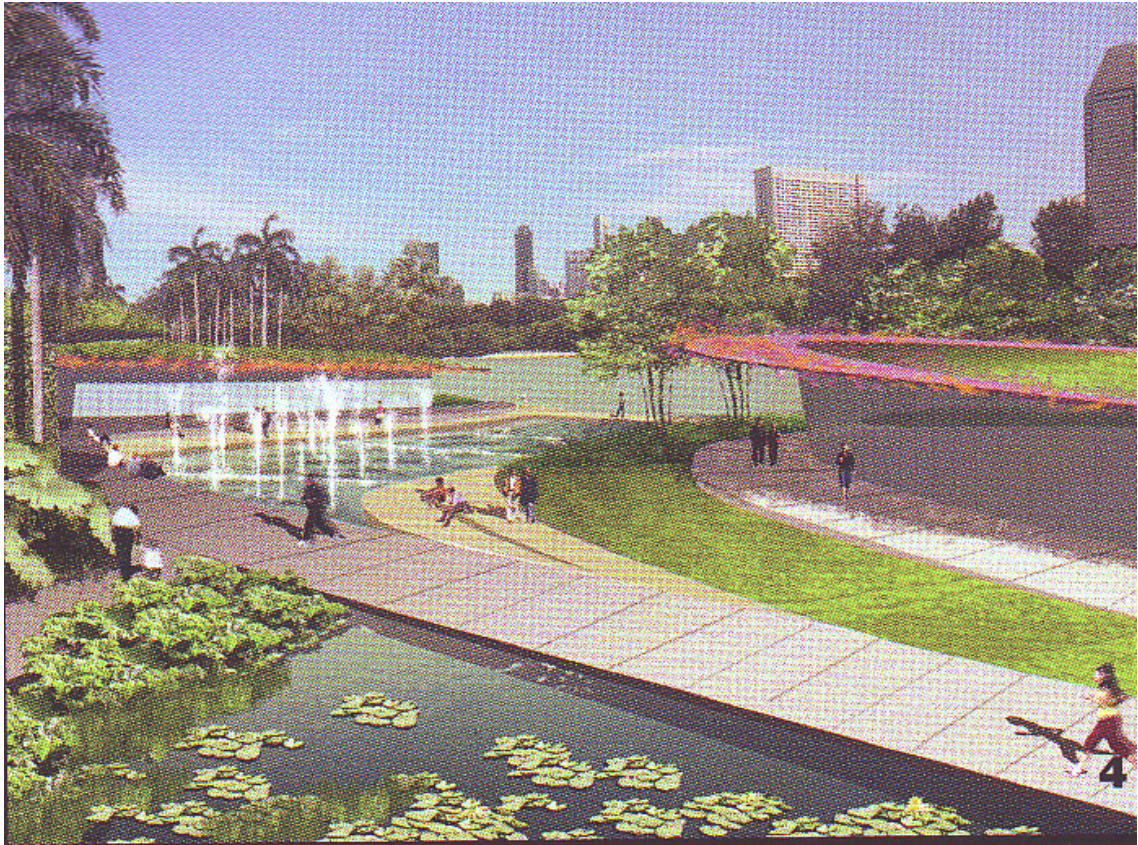


Figure 5.6 Artist impression of Singapore's Gardens by the Bay from Marina South
Source: (Low, 2008, p. 34)



Figure 5.7 Artist impression of the constructed green landscapes of Singapore's Gardens by the Bay
Source: (Low, 2008, p. 34)

The 'green spectacle' of the Gardens by the Bay development includes two conservatories — a cool/dry and a cool/moist conservatory — for the display of plants from the Mediterranean and Tropical Montane regions respectively, both of which are among the 'most threatened habitats' in the world as a result of climate change (NParks,

2011). The conservatories consist of more than 2,000 types of plant species from places such as Uruguay, Brazil and Madagascar (Lim, 2010). In addition to the conservatories, the ‘supertrees’, which are constructed ‘tree’ structures that allow plants to grow vertically against them, creating a unique vertical display of flora and fauna within an urban setting, also form key attractions within the Gardens at Marina South (NParks, 2008).

Other spaces at Marina South include the Pride of Singapore Plaza, the Events Stage and the Events Lawn, which are designed for major events and community cultural festivals. These events act as animators of place and attract crowds of participants and observers. The Scented Walk and the Flower Market are other examples of attractions created for visitors to experience (Low, 2008).

The 0.32 square kilometers (32 hectares) of gardens at Marina East include gardens with themes, such as the Color Garden, Food Garden, Night Garden and Shade Garden. The marketing claim was that it would be ‘a horticultural fantasia, [which] will showcase garden craftsmanship and floral artistry at its finest’ (NParks, 2008).

Singapore’s new developments in the city center, such as Gardens by the Bay, exemplify visual greenery as a form of aesthetic that contributes to an image of a ‘green spectacle’. Gardens by the Bay added to the ‘lifestyles and recreational activities’ of locals and tourists through ‘high-end edutainment opportunities and a sustainable green infrastructure’, which had an impact on Singapore’s future economic development and growth (Godwyn Group of Companies, 2009). Consequently, the Gardens by the Bay development forms a lens through which the impacts and implications of increased visually green environments created within the urban cities can be observed and analyzed.

Green Urban Branding: A ‘City in a Garden’ Brand

According to branding researcher Keith Dinnie, the nation-brand can be defined as the ‘unique, multi-dimensional blend of elements that provide the nation with culturally grounded differentiation and relevance for all of its target audiences’ (Dinnie, 2008, p. 15).

Especially from the 1990s to the 2000s, the ‘green spectacle’ of the Garden City image became an identity for the nation to aspire to and encouraged economic growth through attraction of visitors. According to Keith Dinnie, the nation’s brand attracts ‘talent’, as countries compete for more highly educated students and skilled workers (2008, p. 17). For Singapore in particular, attracting the creative class from other countries, which will be discussed later in this chapter, can be considered to have led to increased economic growth. Singapore’s green urban brand is claimed to attract tourists, stimulate investment and boost exports (Dinnie, 2008, p. 17).

The Singapore Tourism Board (STB) under the Ministry of Trade and Industry launched its ‘Uniquely Singapore’ branding in March 2004 (Henderson, 2007). This brand later evolved into ‘Your Singapore’ in 2010. As mentioned in Chapter 1, the Ministry of the Environment and Water Resources (MEWR) and the Ministry of National Development (MND) are the main government bodies responsible for the creation of Singapore as a Garden City, as part of the government’s Clean and Green Movement. As shown in the conservation of Boat Quay and the development of Gardens by the Bay, it can be shown that the Clean and Green Movement also influenced other government ministries such as the Ministry of Trade and Industry, in its economic emphasis towards nation building, to tap into the green experience economy as an economic measure.

Similar to the post-independence ‘Garden City’ vision of first Prime Minister Lee Kuan Yew, ‘City in a Garden’ is a more recent branding slogan that further defines specific attributes of Singapore such as its cleanliness and greenery. According to former permanent secretary for national development, Ngiam Tong Dow:

By considering the whole of Singapore as one beautiful garden, the possibilities for National Parks Board (NParks) to exercise their imagination and creativity soared. With this paradigm shift came ambitious plans such as linking all the major parks in Singapore with a network of cycling tracks, and developing Singapore as ‘the first city garden in the world’ (cited in Koh, 2011, p. 49).

As discussed in Chapter 1, the idea of the clean and green Garden City of Singapore was first given official expression within the second reading of the Environmental Public Health Bill of 1968, where it was stated that the goal of the government was to improve the quality of the urban environment as well as to change Singapore into a Garden City (Waller, 2001). The slogan ‘City in a Garden’, was introduced by the government around 2008, replacing the initial ‘Garden City’ slogan that had been used since the 1960s (Koh, 2011; Lang, 2008). The concept of ‘turning Singapore from a garden city into a city set in a garden’ originated with the former head of the NParks, Dr Tan Wee Kiat (Koh, 2011, p. 48). In searching for an appropriate brand for Singapore, Dr Beh Swan Gin, the managing director of the Economic Development Board, expressed the need to brand Singapore in order to bring in foreign investment and to encourage the development of Singapore as a base for commercial activities in Asia (Cheam, 2010). As mentioned earlier, the idea was that the actual economic wealth and political stability of Singapore could be projected through images of a clean and green Garden City (Figures 5.8 and 5.9). A brand is best shaped by the reality of what is happening at the place being branded (Cheam, 2010), and ‘the Garden City’ or a ‘City in a Garden’ is very much what Singapore’s national image has become.



Figure 5.8 Skyscrapers amidst Singapore's 'clean and green' environment depict economic and political stability

Source: Retrieved 17th November 2009, from [http://www.ur.gov.sg/pwbid/pwb-main\(frame\).htm](http://www.ur.gov.sg/pwbid/pwb-main(frame).htm)



Figure 5.9 Artist impression of the Singapore Flyer with planted greenery meandering around the skyscrapers

Source: Retrieved 20th April 2011, from <http://www.traveldestinationinfo.com/singapore/best-tourist-attractions-in-singapore/>

Representative images of a city play a vital role in its branding (Smith, 2006). These images are often those of a particular iconic building. Typically, iconic buildings such as the Guggenheim Museum in Bilbao, Spain, or the Eiffel Tower in Paris, France, are representative of and associated with their city. The widespread dissemination of images of these buildings allows branding to occur. A city can also come to be represented metonymically by a particular type of built environment; for example, the intimate scale of buildings and the narrowness of the streets of Florence, or the waterways of Venice in Italy. In these latter cases, the overall impression of the built environment thus becomes iconic of the place. In Singapore's case, the iconic image is that of skyscrapers amidst planted greenery. The images of architectural landscapes in Singapore, especially those of the new developments in the city center, include luxuriant planted greenery that seems to capture more attention than the architecture itself (Figure 5.10).



Figure 5.10 A photograph of a typical architectural landscape of Singapore, focusing more on the planted greenery than the buildings

Source: Retrieved 11th June 2008, from

http://www.nparks.gov.sg/cms/index.php?option=com_content&view=article&id=78&Itemid=66

Many buildings have been constructed in the 2000s at the new mixed-used development at Marina Bay to form the second central business district for Singapore. The Gardens

by the Bay development, which was discussed earlier, is an example of a planted green attraction within the concrete built environment of the second central business district of Singapore. This planted green attraction is counterposed to the built-up concrete environment and has already become iconic of that city center (Figure 5.11).



Figure 5.11 The Gardens by the Bay development as an example of a planted green attraction within the second central business district of Singapore
Source: Retrieved 21st July 2012, from
<http://www.gardensbythebay.com.sg/en/the-gardens/garden-news.html>

As a result of globalization, cities are competing to build ‘spectacular architectural symbols’ as a way of gaining international recognition (Elsheshtawy, 2008, p. 164). Spectacular architecture includes for example, buildings that are the biggest or tallest in the world. The ‘green spectacle’ of Singapore, by contrast, envisions and promotes the city as the cleanest and greenest among the city’s peers. By incorporating green spaces amidst high-rise buildings, Singapore has managed to ‘brand itself on the international stage as a desirable city to live in’ (Cheam, 2010, p. A2).

The ‘green spectacle’ of Singapore as a Garden City, disseminated through media such as newspapers, postcards and travelers’ guides, as well as the internet and social media (Bowman & Willis, 2003), is quite different to its image during colonial times, where the common impression of Singapore was of a place filled with ‘grand edifices of

colonial munificence' (Yeoh, 1996, p. 3). The 'green spectacle' has become the way Singapore is projected to the rest of the world. The idea of using visual greenery to brand Singapore is a concept that sees nature in terms of its economic value. This concept is now becoming the new vision for many cities, where urban dwellers aspire to be close to nature within cities. This is in contrast to the vision of rural dwellers of the past who, according to urban researcher Duanfang Lu, aspired to enjoy things that were only available in cities, such as 'electricity, machinery and modern architecture', as well as the better economic opportunities they provide (2006, p. 109). Urban dwellers today arguably appreciate living in a modernized city for economic reasons; but, at the same time, they also appreciate any opportunity in that situation to live close to nature. Green urban branding promotes Singapore by tapping into the urban dwellers' quest to live close to nature.

As discussed in Chapter 4, the Clean and Green Movement has led to an enhanced living environment. In the book *The Economics of Amenity*, McNulty, Jacobsen and Penne argue that there is a close link between the quality of life and the economic success of cities (1985). Cities that are not as livable have a lower ability to be successful economically. This is evidenced in Mercer Human Resource Consulting's ranking of Singapore as 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 decade prior to 2006 (Tortajada, 2006), shows how the Clean and Green Movement benefited both the social quality of life and the economy concurrently.

According to Wong (1969) and the physicians Chivian and Bernstein (2008), the green spaces in Singapore will in effect benefit the city economically as more green open spaces will allow for people to stay healthy, and reflect and encourage creativity, innovation and imagination which will in turn nurture growth in the economy. Visual

preference surveys, which have been used in the United States, especially by architect/planner Anton Nelessen, demonstrate that most people prefer to see streets lined with planted greenery and as a result value is placed on trees and tree-lined streets (Beatley, 2004). A recent study of the economic value of green spaces in London further demonstrates their strong impact on the market values of properties located near greenery (Beatley, 2004). The effort put into creating a ‘City in a Garden’ brand for Singapore could thus be argued to make good economic sense.

Contributions of Green Urban Branding to Nation Building

The green urban brand of Singapore contributed to nation building in many ways including boosting the economy. The green urban brand attracted tourists and the creative class who tap into the green experience economy. The economic role of the Clean and Green Movement in nation building is portrayed in the image of political and economic stability of the nation. The projection of an image of political and economic stability facilitated in part by the Clean and Green Movement is a key strategy used by the government to construct the subjectivity of its citizens and build unity within the nation.

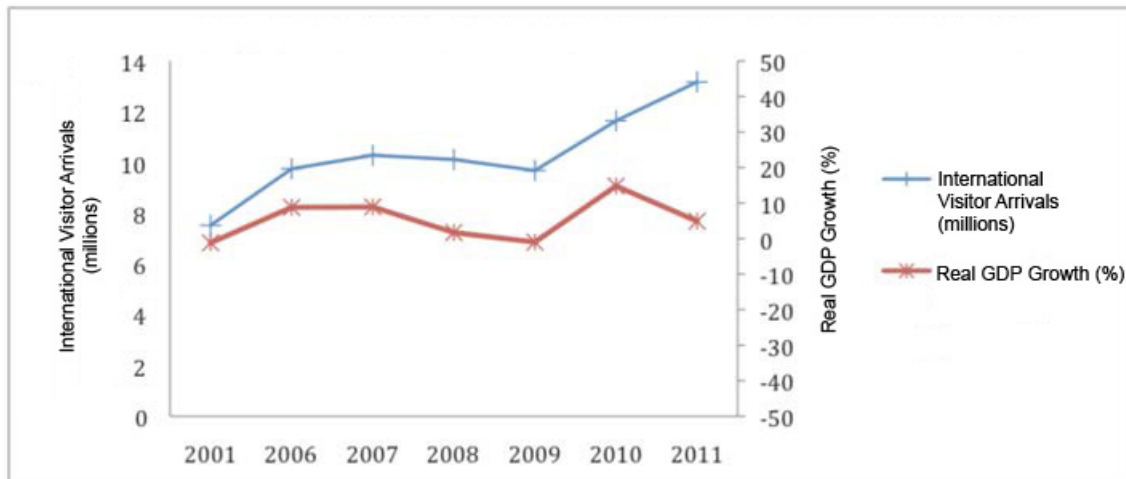
Attracting Tourists and the Creative Class through the Green Experience Economy

The greenery found along the roads and in the parks and nature reserves of Singapore has played a vital role in contributing to the green experience economy. As mentioned previously, the ‘experience economy’ engages people in activities that form ‘memorable experiences’ (Pine & Gilmore, 1998, p. 102), ‘thereby encouraging return visits even amongst time-strapped visitors’ (Chang & Yeoh, 1999, p. 109). The provision of experiences has the power to create new and greater economic value through tourism (Pine & Gilmore, 1997). According to Habibullah Khan, Chou Fee Seng and Wong

Kwei Cheong's article 'Tourism Multiplier Effects on Singapore' (1990), tourism 'contributes significantly to Singapore's gross domestic product (GDP) and employment' (Diamond, 1979; Schymyck, 1983a, 1983b; Seow, 1981). The green experience economy fosters tourism, attracting visitors and expatriates alike and encouraging them to increase their expenditure within the city. This leads to economic growth that contributes to nation building.

According to annual surveys conducted by the Singapore Tourism Board, Singapore's 'clean and green environment continues to emerge as the winning factor' in attracting overseas tourists (Hui & Wan, 2003). In a survey conducted in mid-1992 at the Civic and Cultural District that is the central city area of Singapore, 21.4 percent of the 112 tourist respondents considered the 'cleanliness' of the district as most attractive and 16 percent considered 'urban open spaces', in other words visually green spaces, as most attractive (Teo & Huang, 1995, p. 604). The number of visitors increased dramatically over the years of the implementation of the Clean and Green Movement from 128,670 people in 1966 to 13,171,300 in 2011 (Department of Statistics Singapore, 2012; Henderson, 2007).

There are many expatriate professionals who have chosen to live in Singapore with their families and travel a number of days per week 'to work in neighboring countries' (Rana, 2007, p. 93). Economic benefits to the country flow from the attraction of international visitors (Tables 5.1 and 5.2). The tables show the relationship between the numbers of international visitors and fluctuations in real economic growth, especially in 2009 due to the global financial crisis. This indicates how the international visitor numbers were largely maintained even through the worst of the global financial crisis.

Table 5.1: Singapore's International Visitor Arrivals and Real GDP Growth between 2001 and 2011

Source: Adapted from *Yearbook of Statistics Singapore, 2012* (Department of Statistics Singapore, 2012)

Table 5.2: Singapore's International Visitor Arrivals and Real GDP Growth between 2001 and 2011

	2001	2006	2007	2008	2009	2010	2011
International Visitor Arrivals	7,522,200	9,751,100	10,284,500	10,116,100	9,682,700	11,641,700	13,171,300
Real GDP Growth (%)	-1.2	8.8	8.9	1.7	-1.0	14.8	4.9

Source: Adapted from *Yearbook of Statistics Singapore, 2012* (Department of Statistics Singapore, 2012)

The Singapore government aimed to create an economically flourishing city where modern city living is combined with 'lush greenery, extensive green landscape and memorable recreational experiences' (CUGE, 2010). According to Gilmore, modern 'consumers seek to spend less time and money on goods and services', but 'more time and money on compelling experiences' (2003, p. 6). Over the years, green spaces such as parks and nature reserves have been designed and formed as spaces for a variety of activities and events, giving people the opportunity for a range of experiences. Creating

spaces for experiences to occur can lead to economic advantages (Pine & Gilmore, 2005).

Little of Singapore's natural environment remains (Hall, 2000), and according to Chang and Yeoh, the emphasis has therefore been 'on the development of garden attractions' (1999, p. 104). In addition, detailed planning and landscaping such as tree-planting along roads, as discussed in Chapter 2, has ensured the visual presence of greenery and helped to boost the 'clean and green' experience economy as people gain pleasure from an urban experience amongst nature and greenery (Chew, 2009).

Globally, cities are coming to understand that lasting economic advantage lies in attracting and retaining talented people rather than simply competing for goods, services and capital (Florida, 2005). According to American urban studies theorist Richard Florida, 'wherever talent goes, innovation, creativity, and economic growth are sure to follow' (2005, p. 4). In his book *The Flight of the Creative Class*, Florida uses the term 'creative class' to refer to a particular sector of the world population that 'accounts for nearly half of all wage and salary income', which is 'as much as the manufacturing and service sectors combined', who are considered talented people (2005, p. 7). Business researchers Christopher A. Bartlett and Sumantra Ghoshal claim that in a knowledge-based era, the scarce strategic resource that will enable a company to stay ahead of its competitors is the quality of the people working for it (Ghoshal & Bartlett, 1998). Hence, an increase in the numbers of the overseas creative class being attracted to reside in Singapore should allow more companies to excel and boost economic growth. The 'clean and green' image of Singapore has had an impact on attracting the creative class from other countries (Hui & Wan, 2003). The percentage of national employment in Singapore in what might be called creative class employment was 3.4 percent in 2000, which was comparable to other larger countries that also recognize the economic value of the creative class such as Australia where the level is much higher than most of its

Asian neighbors at 3.8 percent (Entrepreneur's Resource Centre (ERC) Services Subcommittee Workgroup on Creative Industries, 2002).

Ensuring that the city remains attractive to the overseas creative class is important for continued economic growth, especially for a city like Singapore, given the scarcity of natural resources and land. According to researcher in urban and political economy, Jamie Peck, urban cities such as Singapore have increased their ability to 'attract, retain and even pamper' a mobile class of 'creatives, whose aggregate efforts have become the primary drivers of economic development' (2005, p. 740). Cities are competing to attract the overseas creative class to boost their economy. According to social theorist David Harvey, 'the city has to appear as an innovative, exciting, creative, and safe place to live or visit, to play and consume in' (1989, p. 9). For this reason, festivals, 'spectacle and display', cultural events and the arts are increasingly appropriated as 'symbols of the dynamic community' (Harvey, 1989, p. 9). The Clean and Green Movement reflects Harvey's idea, as the clean and green Garden City environment operates to enhance these dynamic communal activities, since events can be staged in parks or promenades, with shade provided by trees and attractive greenery as the backdrop.

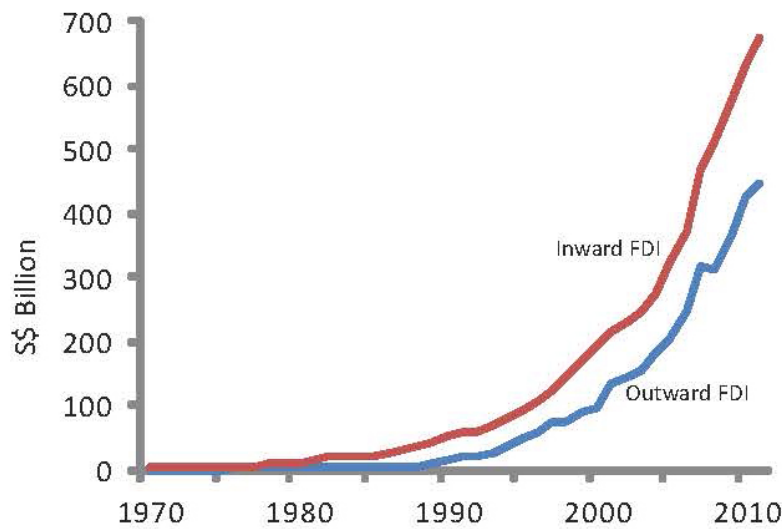
According to Florida, the majority of the creative class indulge their 'passionate quest for experience' and expressive consumption surrounded by 'indigenous street-level culture – a teeming blend of cafes, sidewalk musicians and small galleries and bistros, where it is hard to draw the line between participant and observer, or between creativity and its creators' (2003, p. 166). In Singapore, the Minister for National Development manifested this logic in the promise to realize the government's vision of a bustling and cosmopolitan city, with space for both nature and history. The minister added that 'the goal is not just to provide space but also to enhance our living environment to the extent that it becomes our competitive advantage in the attraction of talent and investment' (Tan, 2010, p. 335). American urban planner Mike Douglass agrees that this green

urban branding has not only attracted capital investment but also continues to draw skilled labor and the creative class, to the country through the image of a ‘clean and green’ livable Garden City (Douglass, 2002). The total non-resident population of Singapore, which excludes tourists or ‘transients’, has been increasing since 1970 (Yeoh & Lin, 2012) (Table 5.3). The increase in the number of expatriates who form part of the Singaporean creative class coincides with an increase in foreign direct investment in Singapore (Table 5.4). The growth of Singapore’s economy through an increase in foreign direct investment has also meant an economic contribution towards nation building. Table 5.4 shows an exponential increase in foreign direct investment in Singapore from the 1990s, one of the results of the increased emphasis placed on the economy during this period of nation building.

Table 5.3: Growth in Singapore’s Non-Resident Population

	1970	1980	1990	2000	2010
Total Non-Resident Population	60,944	131,820	311,264	754,524	1,305,011
Percentage of Total Population (%)	2.9	5.5	10.3	18.7	25.7

Source: Adapted from (Yeoh & Lin, 2012)

Table 5.4: Singapore's Foreign Direct Investment (FDI), 1970-2011

Source: (Cheng & Tan, 2013)

The Image of Political and Economic Stability that Unifies the Nation of Singapore

Nation building requires the construction of an image of the nation that the populace shares. The image of political and economic stability can be considered a shared image, whose construction has been contributed to by the Clean and Green Movement since the 1990s. This shared image is depicted not only in economic value terms through the real GDP growth as seen in Tables 5.1 and 5.2, but also in the physical built environment itself.

According to French Marxist theorist Guy Debord, spectacle means ‘capital accumulated to the point that it becomes images’ (1967, p. 17). Debord’s notion of ‘spectacle’ can also be used to describe Singapore, where the clean and green Garden City image adopted by the government can be seen as depicting the actual political stability and economic wealth of the country. According to Debord, when ‘the real world is transformed into mere images, mere images become real beings’ (2002, p. 9). The spectacle is ‘not merely a matter of images’ (Debord, 2002, p. 9).

Promoting any city requires image management (Short, Benton, Luce, & Walton, 1993). The visually green built environment of the city of Singapore forms the basis of the image for the city. The dissemination of curated images of Singapore is one of the factors, in addition to powerful economic and geographic forces, which attracted foreigners and encouraged local and foreign investments in the city. Since images are effective in reaching an audience through the media, producing 'attractive' images became important to attract the attention of a larger audience. Social theorist Arjun Appadurai links the term 'ethnoscape' with 'mediascapes', which are compositions of images that recur in the media (1996, p. 35). By ethnoscape, Appadurai refers to the cultural exchange resulting from the movement of people between cities, by grabbing the attention of people, often through the mass media. The mass media has thus become a tool used to encourage movement of people between cities, through the use of attractive visual images of various cities.

According to Appadurai:

Global advertising is the key technology for the worldwide dissemination of a plethora of creative and culturally well-chosen images of consumer agency. These images of agency are increasingly distortions of a world of merchandising so subtle that the consumer is consistently helped to believe that he or she is an actor, where in fact he or she is at best a chooser (1996, p. 42).

Images of the built environment, whether photographed or digitally produced, are necessary if the aim is to introduce and promote places to people from afar and to arouse interest among those people to visit (Appadurai, 1996). People can and do form impressions of cities and countries through images spread by the media; therefore, the production of an appealing image of the destination is crucial if increased visitation is the aim (Appadurai, 1996). Figure 5.12 is an example of an appealing image of the

central business district of Singapore that has been used to attract foreigners and encourage local and foreign investments in the city.



Figure 5.12 Artist impression of the central business district of Singapore

Source: Retrieved 1st July 2008, from

http://dl.nlb.gov.sg/victoria/02_SignatureSkyline_BottomComposite_13Jun06%20copy_A4.jpg



Figure 5.13 Photo of Singapore's skyline taken by Singapore Tourism Board

Source: Copyright © 1998 Singapore Tourism Board

The construction of a shared image of political and economic stability in Singapore has at the same time encouraged a sense of unity of the nation-state (Figure 5.13). According to Geh Min (2006), a former nominated Member of Parliament and a former president of Nature Society Singapore, the image of stability found in 'clean and green' Singapore is a visible demonstration of the transformation of Singapore from a third- to a first-world country. The clean and green Garden City of Singapore projects the image

of a ‘clean, effective and forward-looking’ government and also a ‘responsible, educated and disciplined’ group of people (Min, 2006, p. 45).

An Image of Political Stability

The Singapore government invested heavily in cleaning and greening the urban environment (Askew & Logan, 1994). As discussed in Chapter 4, from the 1960s to the 1990s Singapore was transformed from a scene of scattered and dilapidated housing into the image of an ordered high-rise urban landscape within a sea of planted greenery. This transformation permitted financial gains from the international market for business and tourism. Moreover, as discussed earlier in this chapter, the branding of Singapore using slogans such as ‘City in a Garden’ contributed to the formation of an image that was projected onto Singapore and which Singaporeans recognized as a national identity (Tan, 2006).

The will of the government to articulate public interest in terms of ‘cleaning’ and ‘greening’ and place it before private profit was clearly demonstrated by the set of government measures taken as part of the Clean and Green Movement. The same political party has controlled Singapore since it gained independence in 1965. As discussed in detail in Chapter 2, the Clean and Green Movement was based on a series of government policies and public campaigns to promote the clean and green Garden City. The government has since invested in landscaping and street design through means such as widespread tree planting across the country (Conceicao, 1969). The Clean and Green Movement resulted in not just a ‘clean and green’ image being projected. The movement also led to the showcasing of the strong and ordered structure of the government in executing ‘revolutionary action’ (Borromeo, 2010, p. 402) in terms of the outcomes of the movement in achieving the clean and green Garden City vision – an image of political stability.

An Image of Economic Stability

Economic stability is portrayed through the well-managed and systematized Garden City of Singapore. The Garden City environment has resulted in a better overall standard of living and an improved working environment for the population. Also, the value of visitors to Singapore is evidenced in the government's attempts to double their numbers to 17 million per year by 2015 (Tan, 2007). The increase in the number of visitors to Singapore has encouraged economic growth as shown earlier in Table 5.2. Thus, a complex circular relationship can be recognized between the Garden City image and the economy.

The stability of Singapore's economy has been linked to the government's careful green urban planning. The GDP has increased alongside the increase in green spaces. From 1996 to 2006, the average GDP growth was 7.7 percent per year (Tortajada, 2006). At the same time, the land area covered by planted greenery and nature reserves had risen from 36 percent in 1986 to 47 percent in 2007 despite an increase in population from 2.7 million to 4.6 million during the same period (Mulchand, 2008). The latter was among the findings of a study by the Centre for Remote Imaging, Sensing and Processing (CRISP), the National University of Singapore as well as NParks (Mulchand, 2008). According to Singaporean sociologist Belinda Yuen (2006), the increase in population, together with the increase in greenery from 1986 to 2007, has shown that Singapore's economic growth can be achieved without sacrificing the entire environment. This is especially so if green urban plans are taken into consideration.

Economic growth through population (and therefore workforce) increase has been considered essential in land scarce Singapore. According to researchers David Bell and Mark Jayne, cities are dependent upon 'population size and the presence of particular types of economic activity', including financial services, law and accountancy or on

airport connectivity (2009, p. 685). Singapore with a population of 5.4 million people (Department of Statistics Singapore, 2013), is an example that highlights the importance of green urban planning not only for environmental benefits, but also for economic and population growth (Bell & Jayne, 2009). Economic independence that has been achieved in Singapore is depicted through the ‘clean and green’ image (Breuilly, 2001, p. 10374). This ‘clean and green’ image together with the actual stability that has been achieved encourages growth in the economy and thus contributes to nation building of Singapore.

Conclusion

The government’s structured design and planning of artificial greenery to create the clean and green Garden City image distinguishes Singapore from other cities. This ‘clean and green’ image can be defined as a ‘green spectacle’. The spectacle is a ‘real product of that reality’ (Debord, 2002, p. 8). The political stability projected through the ‘clean and green’ image of Singapore has in turn led to economic stability and growth by attracting tourists and the overseas creative class, which strengthened the nation.

The use of the ‘green spectacle’ to portray political and economic stability distinguished Singapore from other cities and at the same time played an important role in the unification of Singapore as a new nation-state. The image and reality of political and economic stability in the country was made possible by three key factors: green urban planning, Singapore’s high standard of living, and the government’s investments in public infrastructure. The ordered trees planted along streets in the destination images of Singapore, for example, are perceptually linked with security and efficiency, which can be considered ‘attractive and reassuring’ to tourists, investors and the creative class (Henderson, 2007).

Economic growth is a major aspect of nation building in Singapore. As there is a scarcity of natural resources in Singapore, people, especially the overseas creative class is an important resource for economic growth and survival of the nation. The Clean and Green Movement of Singapore is an example of how the identity of a Garden City image as projected through projects such as the conservation of Boat Quay and the Gardens by the Bay development can be used to brand a city, in order to attract foreigners and encourage local and foreign investments in the city, which boost economic growth.

Singapore prides itself on being one of the cleanest cities in Asia (Agence France Presse, 1997) and its reputation as a Garden City remains strong (Luen, 2005). Trees and shrubs with flowers, such as the colorful bougainvillea, are visible around the urban landscape. The green ambience is felt across Singapore due to the meandering tree-lined roads interspersed with lush parks and gardens. There are also numerous parks to provide 'green lungs' for people working in the urban commercial areas or living in residential areas (Luen, 2005). These scenes contribute to the 'City in a Garden' brand of Singapore that the citizens share and connect with and which unify Singapore as a nation.

Singapore's urban landscape is now mostly made up of constructed and planted landscapes instead of the original biodiversity (Waller, 2001). The tension between economically driven greening and the conservation of original biodiversity will be discussed in the next chapter, Chapter 6.

Chapter 6

Creating Green Space and Retaining Nature: The Environmental Emphasis of the Clean and Green Movement

Since 2000, the Clean and Green Movement shifted its emphasis from social and economic concerns (as discussed in chapters 4 and 5, respectively) towards an increasing focus on the ecological aspects of the environment. Throughout the years of nation building in Singapore, although there were tangible shifts that allowed these three emphases – social, economic and ecological – to each predominate in turn, they often intertwined and operated concurrently. As such, in this latest phase of ecological emphasis of the Clean and Green Movement, social and economic factors continued to exert an influence.

As shown from the timeline of Figure 4.1 in Chapter 4, the shift in emphasis of the Clean and Green Movement towards the ecological aspects of the environment was apparent in: (i) the Green Plan 2012 that was planned in 2002 with the aim of achieving adequate clean air, water and land for the people; (ii) a program entitled ‘City of Gardens and Water’ developed in 2007, with aims to design gardens and water for recreation; (iii) the Greenery Awards that were launched in 2008 that were aimed at encouraging builders to incorporate planting in designs. Moreover, the Centre for Urban Greenery and Ecology was set up by the government in 2008 to research urban and green living environments of cities.

This chapter describes the impact of ecological concerns on nation building in Singapore. It highlights the ongoing debate between the economists and the defenders

of the natural environment, and how this debate played out through the Clean and Green Movement and how the Movement, in turn, contributed to nation building.

Debating Nature

There exists a tension between economically driven greening and the conservation of original biodiversity. This also means a tension between economists and defenders of the environment, who are in constant debate. In Singapore the government and its agencies could be broadly described as economically oriented. The economists' view proposes dealing with the environment as an economic commodity and focusing on the economic benefits associated with desirable environmental outcomes. In contrast, the defenders of the environment in Singapore, represented by Nature Society Singapore (NSS), believe that ecological systems are priceless and are, in themselves, a heritage that cannot be replaced once removed. This section will introduce the NSS and discuss examples of the tensions between proponents of economic growth and the conservation of original biodiversity.

Nature Society Singapore

Unlike the government's Clean and Green Movement, which focuses on environmental, social and economic concerns, Nature Society Singapore, or NSS, is a non-government, non-profit organization dedicated to the appreciation, conservation, study and enjoyment of the original biodiversity in Singapore, Malaysia and the surrounding region. It was set up by a group of enthusiasts to raise awareness of green issues in Singapore. It is interesting to note that due to the strong laws the government has against activism, such a group prefers to be known as 'enthusiasts' rather than as 'activists'. Nature Society Singapore was formerly known as the Singapore branch of the Malayan Nature Society. The branch was formed in 1954 and only became known

as Nature Society Singapore in 1991 (NSS, 2006). NSS participates in national, regional and international conservation efforts to preserve the Earth's biodiversity (NSS, 2008a).

Defenders of the environment, such as NSS, have provided an important source of alternative perspectives and proposals to protect nature reserves in Singapore since 1954. NSS has made many contributions to the conservation and development of nature reserves in Singapore. They have also had an important role in the planting of greenery in the Garden City of Singapore.

NSS highlights green issues with the aim of encouraging Singapore to become a 'model environmental city of the tropics' (Chan, et al., 2001, p. 1). In order to achieve this aim, NSS provides expertise and assistance in surveying and monitoring the biodiversity of natural areas. They also play an active role in planning, designing, managing and patrolling these areas and providing educational guidance for visitors (Chan, et al., 2001).

Since 2000, environmental advocates such as NSS have become more concerned about the need to conserve what is left of the natural environment in Singapore. NSS represents people concerned with protecting the natural environment and NSS is proactive in its responses to the 'environmental regulation and ecological controls' of the government (Harvey, 1996, p. 377).

NSS began to have more influence on the government in the 1990s and 2000s, as the Clean and Green Movement shifted its emphasis from social and economic concerns towards the ecological aspects of the environment. Since then, the government, represented by the National Parks Board (NParks), has strengthened its conservation arm, in line with the greater powers given to it in the revised National Parks Act of 2006.

NParks regularly consults with non-government organizations such as NSS, in addition to agencies like the National Environment Agency (NEA), and the Public Utilities Board (Min, 2006). Whilst the views of NSS were previously often marginalized, the government has, since 2000, started to represent a fuller spectrum of Singaporean perspectives by including their standpoints.

Tension between Economists and Defenders of the Environment

A shared high quality of life and equality of access to an enhanced living environment have lessened the significance of racial and ethnic divisions. The sense of equality gained through providing equal access to the enhanced environment helps minimize political discontent due to inequality, and facilitates social harmony and unity. However, the growing awareness of environmental issues both globally and locally meant that there was a potential for a new type of division: between those who favour economic growth and those who favour ecological conservation.

There is ongoing debate between the economists and the defenders of the natural environment in Singapore. The economists, represented by the government and its agencies, propose dealing with the environment as an economic commodity. In contrast, the defenders of the environment, represented by NSS, believe that ecological systems are irreplaceable, once removed for urban development and economic benefits. Ideas from environmentalists represent the voices of people who view the protection of nature as more important than urban development. Environmentalists consider their actions necessary to 'save planet earth from economists' (Rich, 1994, p. 248). The reasoning of economists or, in Singapore's case, political leaders with economic priorities with regards to the removal of nature for urbanization, are described by environment researcher Bruce Rich as 'perfectly logical but totally insane' (Rich, 1994, p. 246). Debate is therefore perpetual because of the two different understandings of nature –

one sees nature as an economic good and the other sees nature as an absolute good, not substitutable by other forms of capital. In cities, the tension is often between the process of the removal of original biodiversity for urbanization; and the desire to retain original biodiversity despite modernization (Borromeo, 2010, p. 435).

The shift from an economic emphasis to an ecological emphasis precipitated a dilemma for the Singapore government. The government recognized the broadening of environmental consciousness amongst its citizens. In order to retain stability in the nation, the government had to move to somehow accommodate this shift in sentiment towards ecology. However, including ecological views had the potential to come into conflict with economic concerns, and in Singapore economic incentives continue to have a predominant role in nation building.

On the other hand, the government acknowledged that it is desirable to provide maximum possible original biodiversity and open green spaces within the limited land available. As Singapore achieved increased economic wealth, a higher quality of life became important. There was concern that lack of green spaces might lead to dissatisfaction with the government, as planted greenery and nature reserves are a recreational resource. The inability to provide for the diversified needs of the people ran the risk of resulting in negative perceptions or apathy towards the nation and its environment. According to Ho Hua Chew, founder of Nature Society Singapore, the presence of nature allows people to appreciate their environment and can help improve their 'quality of life' (2002, p. 129). In addition, as mentioned in the previous chapter, nature is also useful due to its economic value. Greenery is attractive to foreigners and invites tourism and investment (Newman & Kenworthy, 1999).

Consequently, the government aimed to accommodate both economic and ecological positions, satisfying both sufficiently to forge their union and create an image of a clean

and green, economically prosperous and ecologically aware nation. This position aligns with what environmental social scientist Martin Janicke calls ‘ecological modernization’. Nonetheless, this chapter will later argue that the concept of ecological modernization in Singapore may not necessarily be compatible with the environmental defenders’ vision of conserving nature.

Ecological Modernization as a Nation Building Strategy

Modernization in Singapore has been a process of ‘disciplinary modernization’ led by the PAP government (as discussed in Chapter 3), resulting in a ‘protective-interventionist state that supported free trade’ (Wee, 2001, p. 987) .

The process of modernization can be said to have had its roots in Singapore’s colonial period. Colonial Singapore can be considered as having Western influences such as the “Western Commercial Zone” and the port with its complex of warehouses and wharves’, which were developed in Singapore during colonial times (Yeoh, 1996, p. 4). Other urban spaces that reflect the ‘military, residential, and social space in colonial societies’ include spaces such as ‘the cantonment, the bungalow compound, and the hill station’, some of which have been conserved and retained up until today (2014) (Yeoh, 1996, p. 6).

The urban built environment, which according to David Harvey is the ‘totality of physical structures’ such as ‘houses, roads, factories, offices, sewage systems, parks, cultural institutions, educational facilities and so on’, was developed during the process of modernization (1982, p. 545). The colonial city can be seen as a ‘transition between the “Traditional” and the “Modern”’ (Yeoh, 1996, p. 4). Since the beginning of colonial rule, Singapore has been slowly changing and ‘assuming patterns’ consistent with the patterns of cities in the West (Yeoh, 1996, p. 5). It was not until Independence that most

of the ‘traditional’ elements of the city were replaced or refurbished into a new form of ‘modern’ city, especially through the process of the Clean and Green Movement.

The concept of ecological modernization was first proposed by member of the Berlin state parliament and environmental social scientist Martin Janicke during debates in 1982 and was based on providing the ‘modernization processes’ with a ‘strong ecological twist’ (Mol & Janicke, 2009, p. 17). The concept of ecological modernization can be defined as a way in which newly urbanized societies can approach environmental problems (Mol & Sonnenfeld, 2000). Ecological modernization can be considered to be a form of modernization that attempts to build the economy while considering environmental issues (Borromeo, 2010, p. 151). It emphasizes the measures that can be taken to ensure the environmental sustainability of a location and attempts to address pressing environmental issues, such as climate change, while allowing modernization to occur.

The uniqueness of Singapore’s Clean and Green Movement is that it operates concurrently with ongoing urbanization of the city. The manifestation of the Clean and Green Movement adheres to many of the principles of ‘ecological modernization’, even though the term has only recently been theorized (Mol & Janicke, 2009). Singapore’s system of green urban planning contributing to nation building can be considered an example of ‘ecological modernization’. Hence, Singapore, as a Garden City, can be considered one of the pioneer cities to have adopted at least some aspects of the concept of ecological modernization.

For Singapore, ecological modernization is carried out through the process of ‘cleaning’ and ‘greening’ of the city while urbanization is intensified. In other words, lush tropical vegetation has been incorporated into the planning of infrastructure, housing, industrial and commercial developments (Tan, 2006).

Singapore is one of the few cities to have actively invested in greening the city while large-scale urbanization takes place. The Singapore government proposed that the building of a clean and green Garden City would counter the scarcity of land and natural resources, and help attain a high-quality living environment in the compact city state (IMCSD, 2009).

Evidence of Ecological Modernization: Creating and Protecting Parks

As a result of the political vision of developing the city, the removal of original biodiversity to make way for economic development in the late 20th century was considered necessary in land-scarce Singapore. However, since Independence and the beginning of the Clean and Green Movement, trees have been planted wherever possible around Singapore to replace the original biodiversity lost and to provide an enhanced social environment for the people.

According to researcher Sibel Bozdoğan, modernity displays one's desire for 'self-representation and self-transformation' (2001, p. 22). Singapore responded to this desire through the Clean and Green Movement, by transforming the country from an under-developed state into a Garden City. Ecological modernization for Singapore thus becomes a form of urbanization where the process of creating a built-up environment incorporated manicured greenery. Much of this manicured greenery takes the form of man-made parks, which include themed parks and neighborhood parks.

Themed parks, such as the Singapore Zoological Gardens opened in 1973, cater to both tourists and locals, and contribute to the economic aspect of the Clean and Green Movement. In fact, themed parks are landscapes specially created for the generation of revenue. These parks are constructed green attractions (Waller, 2001). Landscape aesthetics generate revenue by attracting visitors. Planners aim to identify suitable visually green areas to be enhanced through the development of themed parks in order

to attract tourists (Briffett & Sim, 1993). Nonetheless, although these themed parks were created largely as a revenue raising exercise, they still contribute positively towards the ecology by conserving some original biodiversity and preventing species extinction.

Neighborhood parks are usually smaller and are located in the midst of low-rise residential areas or in the HDB residential estates. Neighborhood parks have been included in the design of the HDB residential estates since the 1980s. Neighborhood parks are inexpensive to create and are intended to provide environments where the residents can be close to nature and away from the bustle of the city. These parks are recreational and provide facilities to ease urban stress (Lee & Chua, 1992). Most neighborhood parks have jogging and cycling tracks, fitness corners, playgrounds, ponds, pavilions, picnic grounds, bird singing areas (places allocated for people to bring their pet birds to sing) and even ‘habitats to attract wildlife such as birds’ (NParks, 2009). These parks provide spaces for activities such as fishing, picnics, cycling and even outdoor concerts (Luen, 2005). Some neighborhood parks have restaurants and cafés (Lee & Chua, 1992). Night lighting is provided for the neighborhood parks to allow the use of the park after dark as well as throughout the day. The aim is to create spaces that are ‘meaningful to the residents, rather than just monotonous landscapes’ (Yuen, 1996, cited in Tan, 2010, p. 343).

The provision of playgrounds and open spaces in an urban residential precinct setting is an important consideration that is often neglected in some cities. These breathing spaces are important for the enjoyment of residents, especially children. Before the 1970s, the presence of a great number of children playing on the roads highlighted the lack of playgrounds in urban residential precincts such as Hong Lim and Telok Ayer. Furthermore, there were many children using the facilities of community centers, which showed the insufficiency of playgrounds within these urban residential precincts (Lim,

1975). Some neighborhood parks, such as Pearl's Hill Park, have also been used as pleasant pathways for pedestrians to move from the end of one precinct to the next. Additionally, neighborhood parks served as meeting points as they are accessible from all sides of a precinct.

In addition to man-made parks, the conservation of nature areas and nature reserves also contributed to greenery in Singapore. *Nature areas* (a term used by the Singapore government) are sites where natural flora and fauna remain relatively undisturbed by human activity. They provide food, shelter and breeding sites for diverse species. As of 2008, there existed 17 separate sites in this category. Although they are regarded as having biodiversity value, many of these sites have only been preserved because there have been no plans by the government for urban development there. A general observation is that nature areas are preserved for as long as possible, until there is a need for land to build on. This means that although such areas are seen as an asset, they will often be given up for urbanization if the economic benefits outweigh the ecological loss. Examples of nature areas include Kranji Marsh, the Western Catchment Area, Tekong and Kent Ridge (NSS, 2008b).

In contrast to nature areas, *nature reserves*, including Bukit Timah, the Central Catchment Area, Sungei Buloh and Labrador, are forests that are legally protected from development (Luen, 2005). The nature reserves of Bukit Timah and the Central Catchment Area add up to 21 square kilometers (2,100 hectares) of forest, or 3 percent of the total land area in Singapore (Luen, 2005). The Singapore Green Plan for 2012 states that about 5 percent of Singapore's land area is designated as nature reserves or nature areas (Lye, 2002).

Park connectors are constructed walkways and bridges that form linkages and ecological corridors between the nature reserves and landscaped parks in Singapore

(Tan, 2010). The introduction of park connectors to link up the parks in Singapore is an innovative method of increasing green areas within the urban built-up environment. These ecological corridors allow for the ecological environment to continue flourishing between nature reserves, when these areas are disrupted as a result of the construction of roads and buildings. Additionally, these urban greenways join the population centers to the main parks (Tan, 2006). For example, new park connectors now allow easy access between the Lower Seletar Reservoir and nearby homes (Tan, 2010). The objective of park connectors, according to Tan, is 'to turn Singapore into a huge network of interconnected parks and play areas' (2010, p. 343). The total length of the park connectors is intended to increase 'from 100 km in 2007 to 360 km by 2020' (IMCSD, 2009, p. 35).

The government enforces strict rules with regards to the protection of parks and trees. The Parks and Trees Act of 1975 ensures that trees, plants and turfed areas are not destroyed without valid reason (Waller, 2001). Anyone who fells or cuts a tree within a tree conservation area can be fined up to 10,000 Singapore dollars (Min, 2002). Another example of strict control over the urban landscape is the Parks and Trees Order of 1991, which bans the chopping down of mature trees within designated tree conservation areas. In addition, trees with a girth of more than one meter, as measured half a meter from the ground, and trees growing on vacant or gazetted land cannot be cut down without the permission of the Commissioner of Parks and Trees. The penalty on conviction for this offence is a fine of up to 10,000 Singapore dollars (Lye, 2002).

The Parks and Trees Act also protects Heritage Trees. The criteria to qualify as a Heritage Tree include: a trunk circumference of more than 5 meters, rarity of species and historical significance (NParks, 2013). In one instance, NParks went as far as installing lightning protection to protect a particular tree. In addition, the conservation of old, rare and attractive trees is taken to the point where newly constructed roads have

been built around these old trees (Briffett & Sim, 1993). Sometimes, however, mature trees can be removed after gaining permission from NParks. One known example is the removal of a previously conserved mature tree along the expanded Braddell Road (Figure 6.1). A number of cars ran into the tree after the road was widened and, after much consideration, it was removed for traffic safety reasons. In this particular case, the preservation of the Heritage Tree clashed with the redevelopment and widening of Braddell Road.



Figure 6.1 A conserved mature tree along the expanded Braddell Road, which was removed after several cars ran into it

Source: Retrieved 17th September 2010, from <http://yelnats.idollic.com/wp-includes/images/angsana.gif>

The emphasis on the creation and protection of parks in the 2000s again reflects the change in the focus of the government's Clean and Green Movement to one that raises the priority of the ecology relative to social and economic concerns.

According to Singaporean researcher Tan Eng Khiam, a total of 10 percent of Singapore's land has been committed to greenery. Of this 10 percent, half consists of nature reserves (33.26 square kilometers as of 2007), allowing for the conservation of biodiversity in habitats, including lowland rainforests, freshwater swamp forests and

coastal forests (2010). These, together with the roadside planted greenery (0.42 square kilometers as of 2007), neighborhood parks and the island-wide park connector network (18.5 square kilometers as of 2007), have resulted in close to 10 percent of Singapore being covered by planted greenery or nature reserves (IMCSD, 2009).

The government's efforts towards ecological modernization are evident from the increase in the area of planted greenery or nature reserves by 10 percent between 1986 and 2007 (Quah, 2010). In addition, there has been a reduction in Singapore's carbon emissions by about 30 percent since 1990 (Quah, 2010). The 'clean and green' approach to the 'ecological modernization' of Singapore could be argued to have created a high quality living environment where people can enjoy clean air, clean water and a lush green environment (IMCSD, 2009).

Benefits of Ecological Modernization

Ecological modernization attempts to address environmental issues in response to the realization that urbanization continues to cause destruction of the natural environment.

Given the dense high-rise urban landscape, it is difficult to avoid the criticism that Singapore is 'artificial, superficial, too high-maintenance and, ultimately, not ecologically sustainable' (Min, 2006, p. 45). In 2001, *Newsweek*, a weekly magazine with a distribution of 200,000 copies across Asia (Newsweek, 2000-2011), ranked Singapore as one of the 10 worst countries out of 50, alongside Bangladesh and Uganda, for its environmental record. Prime Minister Lee Hsien Loong, the son of influential first Prime Minister Lee Kuan Yew, defended Singapore in terms of its environmental record, by claiming at the launch of the annual 'clean and green' Singapore campaign in 2007 that this relatively small country ought to be practical and recognize that the direct impact of a small country on global warming is limited (Channel NewsAsia, 2007). Professor Euston Quah, Head of Nanyang Technological University's economics

department and winner of last year's President Award for the Environment, confirms that Singapore contributes less than 0.2 percent of the total global carbon dioxide emissions (Quah, 2010). Nonetheless, the reverse argument that every small percentage of carbon dioxide emissions from any city will result in an increase in the total global carbon dioxide emissions cannot be overlooked.

An argument framed using a different set of parameters contends that Singapore does relatively well with regards to environmental impacts. According to the Environmental Performance Index (EPI) in 2014 (monitored by Yale University), Singapore's environmental performance relative to other countries scored 81.78 out of 100 and ranked 4 out of 178 countries. The indicators of the EPI include health impacts, air quality, water and sanitation, water resources, agriculture, forests, fisheries, biodiversity and habitat, and climate and energy (Yale, 2014). Singapore's good performance on this index is contributed to by its high population density, small ecological footprint and its reduction of the heat island effect.

Small Ecological Footprint

The ecological footprint concept examines 'the flows of energy and matter to and from any defined economy' and calculates the respective 'land/water area required from nature to support these flows' (Wackernagel & Rees, 1996, p. 4). It can be used as a measure of a city's ongoing 'liquidation of the planet's natural capital' as humans 'consume more resources than nature can regenerate and create more waste than nature can recycle' (Deumling, Wackernagel, & Monfreda, 2003, p. 1).

The ecological footprint of a specified population or economy can be defined as 'the area of ecologically productive land (and water)', which would be required 'to provide all the energy/material resources consumed' and 'to absorb all the waste discharged by a given population in a given area' (Munda, 2006, p. 87)

Despite the loss of several natural areas to urbanization, ecological modernization, through the creation of planted greenery and the protection of the remaining biodiversity whenever possible, has allowed the ecological footprint of Singapore to stay low. The density and compact planning of Singapore requires of 5.3 global hectares per capita (Ewing, et al., 2010), which is comparable to that of New York with its low ecological footprint of 6.1 global hectares per capita (Moore & Global Footprint Network, 2011), which is considered the ‘greenest community’ in the United States (Owen, 2009, p. 2). There is consensus that a compact city has less environmental impact than a decentralized city (Munda, 2006, p. 88). Thus, the high urban density of Singapore can be considered environmentally sound in terms of energy conservation, particularly with efficient public transport systems such as the Mass Rapid Transit (MRT) system.

Heat Island Effect Reduction

The phenomenon whereby temperatures in a city are higher than in suburban and rural areas is known as the urban heat island (UHI) effect. The causes of UHI effect include: the absorption of solar radiation by building materials and the re-radiation of this heat to the surroundings; heat generated from combustion processes and 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 discomfort and higher energy use because of the need for air conditioning (Bay & Ong, 2006). According to Singaporean researchers Bay Joo Hwa and Ong Boon Lay, with rapid urbanization in Singapore the UHI effect has become an ‘unavoidable issue’ (2006, p. 181).

Greening the urban area is an effective strategy 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 cooling energy requirements of these buildings through providing shelter from solar radiation and radiation reflected from surrounding buildings. Nature reserves, urban parks, neighborhood parks and rooftop gardens provide sources of moisture for evapotranspiration and enable the dissipation of more absorbed radiation (Bay & Ong, 2006, p. 189). At a macro level, an entire city can be cooled by the addition of these evaporating surfaces (Bay & Ong, 2006, p. 189).

According to Bay and Ong, ‘historical analysis of long-term climatic data of Singapore indicates rise in temperature is associated with land use’ (2006, p. 197). The Clean and Green Movement of Singapore has played an important role in improving the environment through non-air conditioning methods of mitigating UHI effects such as evaporative cooling and shade provided by trees. The planted green spaces, park connectors, sky-rise greenery and roadside plantings have led to a significant drop in the urban temperature of Singapore (Bay & Ong, 2006). According to Akbari, Davis, Dorasano, Huang, & Winnett, who wrote *Cooling Our Communities: A Guidebook on Tree Planting and Light-Colored Surfacing* (1992), large numbers of trees and urban parks can reduce local air temperature from approximately 0.5°C to 5°C. In a study comparing two residential areas in Singapore, the temperature surrounding the residential area near a park was 1.3°C lower than the temperature around the one without a nearby park (Bay & Ong, 2006). 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 an enhanced setting for urban living.

Through the creation of planted greenery and protection of original biodiversity, the UHI effect has been alleviated. The Clean and Green Movement thus enhanced the

environment and worked towards a city that has nature, water bodies and urban development woven together (Malone-Lee, 1993, p. 5; URA, 1991, p. 4).

Ecological Conservation vs Economic Growth

While the government argues that the ‘cleaning and greening’ of Singapore has created an ‘aesthetically pleasing environment’ (Ooi, 2005, p. 84), others have critiqued the process, declaring that the physical changes which occurred due to urbanization have taken place at the expense of original biodiversity.

There is a distinct difference between the conservation of original biodiversity and economically driven greening. These signify two dissimilar approaches to achieving greenery: one opts to leave the original biodiversity as it is; the other removes nature reserves in order to urbanize, then compensates with large-scale tree planting elsewhere. The Singapore government has practiced the latter to a large extent mainly due to the scarcity of land and natural resources and the need for development in order to encourage economic growth.

Due to the scarcity of land, the development of any part of Singapore has never failed to deliver economic benefits. However, given the economic prosperity Singapore has achieved, many began to argue that it was in the best interest of the government and the people alike to strive to retain as much of the nature reserves as possible, since there were so few natural green spaces left (Ho, 2002).

In 1990, NSS published the Master Plan for the Conservation of Nature in Singapore, in which 28 sites around Singapore were recommended for conservation. The NSS Master Plan aimed to identify methods of conserving nature in Singapore and ‘depicts how preservation, development, and management processes could be implemented’ (MNS, 1990, p. 3). Moreover, NSS recommended replanting schemes and the increased use of

native plant species, which would contribute to improved biodiversity (Davison, Ng, & Ho, 1994)

The Singapore government, while being more open to NSS arguments, has largely remained functional and utilitarian in its methods of creating visual greenery. They view continuing economic growth as a necessity and a priority for the nation to function. The biodiversity of the island has generally not been greatly valued, and the irreversible removal of original native forest and consequent loss of biodiversity has been viewed as ‘an accepted component of development rather than as an act of environmental degradation’ (Min, 2006, p. 45).

Professor Euston Quah provides an economic perspective in support of the government’s stand on conserving nature (Chua, 2008). He believes that Singaporeans must understand that if the government leaves expanses of nature reserves and nature areas untouched, this will cause housing and industry congestion as a result of land scarcity. This will in turn cause rental prices and business costs to increase and investors will eventually leave. Professor Quah believes that what drives Singapore is the industry and growth upon which the nation-state’s economic success is mainly based. In addition, he believes that when the economy flourishes, good economic conditions allow more people’s voices regarding environmental concerns to be heard. This in turn facilitates efforts towards achieving a better quality of life (Chua, 2008). Hence, Professor Quah supports the government’s stand of placing economic growth as priority when dealing with ecological conservation issues.

Despite the benefits described above, others assert however that constructed greenery fails to make up for the removal of nature. Besides conserving original biodiversity, the nature reserves and nature areas often create a sense of identity among the community. This increases the residents’ sense of belonging and commitment to the city (Beatley,

2004). As such, there is a reduced sense of place within constructed greenery. Some have commented that Singapore is a ‘green desert’, with artificially planted greenery that is lacking in wildlife and biodiversity (Corlett, 1985, cited in Briffett & Sim, 1993, p. 103). As discussed in Chapter 4, the homogeneity created by manicured greenery has also led to the perception of a “ghostless” Garden City. By lobbying for the retention of nature and original biodiversity, NSS has attempted to prevent this increasing homogeneity.

Examples of the tension between advocates of the conservation of original biodiversity and proponents of economic growth have become increasingly evident in the most recent phase of the Clean and Green Movement. The following analysis demonstrates how the government through the Clean and Green Movement has fluctuated between supporting ecological conservation and supporting economic growth.

Decisions for Economic Growth

Making Way for Economic Considerations

An instance when NSS was unsuccessful in their attempts to protect nature from urban development, and economic considerations ultimately outweighed the desire to retain the original biodiversity in land-scarce Singapore, was NSS’s proposal in 1990 to protect the original biodiversity at Senoko. The importance of the conservation of the Senoko area was that it was an established birdlife site. It was also felt that it would provide Singaporeans with a natural environment for leisurely outdoor recreation (MNS & NSS, 1990). In response to the proposal to conserve Senoko, the Urban Redevelopment Authority initially agreed to allow 0.23 square kilometers (23 hectares) to be set aside for conservation. NSS then wrote to the Ministry of National Development (MND) to offer to manage the site so that the site could be conserved (NSS, 1992). The MND replied that the site boundary was not fixed and later decided

instead to use it for 17,000 HDB public housing flats. The then Minister of National Development challenged NSS in parliament to collect 17,000 signatures to show the public's support for retaining the site for nature. A signature campaign led by the Friends of Senoko in support of NSS subsequently began, and 25,000 signatures were collected (Chew, 2009). However, despite these efforts, the area was still entirely developed into the Sembawang HDB housing estate (NSS, 2007).

One of the reasons the MND cited for turning down the petition to save the potential bird reserve at Senoko was that they believed this was no longer a natural area (Wang, et al., 1994). MND's stance was that natural areas refer to areas where human intervention has been absent or negligible. Senoko used to have natural mangroves but these had previously been removed, leaving a tidal inlet with 'man-made prawn ponds' and 'naturalized vegetation around the edges' (Waller, 2001, p. 5). Accordingly, Senoko could no longer be considered a natural area in need of conservation. Thus, in this case, even though enough signatures had been collected from the public to show public support for protecting the site, the government adduced an environmental justification for disregarding public opinion and eventually proceeded with their initial intended plans.

A more recent petition in February 2008 to save the Sungei Ulu Pandan Woodlands was also dismissed. The petition, signed by 1,330 people, appealed for the Sungei Ulu Pandan Woodlands to be left in its natural state. The HDB had plans to develop one-third of the woodlands for a new cluster of housing blocks. NSS understood the need to replace old HDB blocks in another area known as Ghim Moh but urged that this project be relocated elsewhere outside the woodlands. It argued that the destruction of the woodlands would be a great loss to the community and the nation as the preservation of this significant 'green lung' was important. NSS explained that the woodland's rich

biodiversity would continue to benefit the larger community who live, work and relax in the area (NSS Conservation Committee, 2007).

In response, the HDB identified the benefits of the construction of the proposed new housing estate in that particular area. Its proximity to the town center meant that residents would be well connected to shopping facilities and could avail themselves of the park connector, which would allow access to nature. The HDB also argued that the Ghim Moh residents were used to ease of access to public transport via the nearby Buona Vista MRT Station, concluding that Sungei Ulu Pandan Woodlands were an ideal site for relocation of Ghim Moh's residents due to its proximity to Woodlands MRT Station. Ultimately, the residential development was carried out as planned and not modified in any way in response to NSS's protests.

Environmental Impact Assessments

A significant example of the environmental emphasis of the Clean and Green Movement being in tension with economic progress can be seen in the government's refusal to legislate a requirement to undertake an Environmental Impact Assessment (EIA) before the redevelopment of any given location. An EIA is undertaken in many developed countries in the early stages of any urban development process to predict the impact of the proposed development on the environment of the site and its surroundings (Briffett, 2002). An EIA serves to increase awareness among the people involved in planning and development, and attempts to lessen any deleterious effects of the development on the environment (Briffett, 2002, p. 100).

There is ongoing disagreement between the Singapore government and NSS over the optional status of EIAs in redevelopment projects. NSS has been fighting for legislation that will make an EIA mandatory for all projects or activities that may have an adverse or deleterious effect on the environment. They propose that an EIA should be required

for all developments that might affect nature reserves, parks, public open spaces and vulnerable coastal locations. If the law advocated by NSS is passed, all proposed development sites will have to be assessed thoroughly for potential environmental impacts and evaluated before development, which will ensure careful consideration before possible removal of the natural environment (Malone-Lee, 1993)

Currently (2014), an EIA is required by the Ministry of the Environment only in the case of projects that may cause pollution. The government regards EIAs as unnecessary for proposals such as new golf courses, for instance, because golf course developments are not viewed as sufficiently harmful to the environment (Lye, 2002).

From the government's point of view, even if there is now greater priority for protecting the environment, it would still be counterproductive to mandate EIAs in view of the scarcity of land and resources in Singapore. They are concerned that EIAs might hinder the progress of economic development (Newman & Kenworthy, 1999). The non-mandatory status of the EIA gives the government flexibility in determining whether they wish to favor the environment or development in any given project.

Decisions for Ecological Conservation

Powers of Persuasion

Despite their failure to convince the government to make EIAs a mandatory requirement for all urban development projects, NSS has often been an effective voice for advocating ecological concerns. An example that demonstrates NSS's power of persuasion is their opposition to the construction of a golf course at Lower Peirce first proposed in 1992. Lower Peirce is part of the Central Catchment Forest Reserve in Singapore. NSS conducted its own Environmental Impact Assessment (EIA), published in 1992, on the Lower Peirce golf course construction proposal. Through the results of

the assessment, NSS demonstrated that it had good environmental reasons to stand against the proposed 1.2 square kilometer (120 hectare) golf course project at this location.

NSS campaigned for public opposition to the proposed golf course, arguing, among other things, that 40,000 mature trees would have to be removed, the equivalent of 6 percent of Singapore's mature forests. In addition, they demonstrated that the development would pose a threat to endangered species of plants and animals as well as to the Nee Soon freshwater swamp forest (Wee, 1992). NSS's argument for retaining the Central Catchment Forest Reserve at Lower Peirce was that forests, with their original biodiversity, are part of a unique ecosystem and are worthy of being protected. Moreover, they are inexpensive to maintain. In addition, NSS argued that constructed parks, including golf courses, are artificially created and hence are 'virtually green deserts', with limited biodiversity (Wee, 1992, p. 8).

NSS initiated a petition to persuade the Public Utilities Board to abandon the proposed golf course at Lower Peirce. More than 20,000 signatures from the public were collected in support of NSS and their opposition to the proposed golf course, which showed the government the level of public interest. This level of opposition is significant because Singaporeans are generally reserved when it comes to opposing the government's policies. When the Singapore Broadcasting Corporation filmed the golf course controversy for a feedback program, the producers had problems getting people to express their views about the construction of the golf course on television (Briffett & Sim, 1993). Although many people were against the construction of the golf course to replace Lower Peirce, they were unwilling to voice their opinions publicly. The program, made more than 20 years ago, has yet to be aired (Briffett & Sim, 1993). The fact that the Singapore Broadcasting Corporation is owned by the government's

investment arm is significant as it shows that the government made an effort to engage the public on this issue (MediaCorp Press, 2007).

Despite the reservation of Singaporeans being unwilling to voice their opinions publicly, the Lower Peirce episode demonstrated that when non-government organizations such as NSS coordinate and organize actions, they can engage the public. In this way, non-government organizations such as NSS provide an avenue for the public's voice to be heard.

The detailed EIA conducted by NSS convinced the government to acknowledge the evidence that careful consideration was necessary before removing forests for other facilities, including golf courses (Wee, 1992). Furthermore NSS's recommendations, including finding an alternative site for the proposed golf course, and enhancing the existing Lower Peirce site for other more appropriate activities, provided a different perspective on the utility of Lower Peirce. NSS, therefore eventually successfully deterred the government from the construction of this golf course.

Other Ecological Victories

Measures such as the Green and Blue Plan within the Concept Plan of 1992, which proposed park connectors and land and water recreation areas, illustrate how the government has increasingly accepted the position of NSS where their interests coincide (Goldblum, 2008). The green corridors for walkways and bicycle paths are in line with the objectives of NSS and also match the 'clean and green' visual image that the government aims to portray (Waller, 2001). Moreover, the government's Development Guide Plan of the 1990s envisions a 'city with nature: a city that appears to have sprung from nature' (Briffett & Sim, 1993, p. 101).

Many natural sites, such as the Lower Peirce and the Sungei Buloh Wetlands Reserve, were at risk of disappearing in the face of new developments to accommodate the demands of economically driven projects. However, through the submission of conservation proposals to the government, NSS has managed, in some cases, to persuade the government to act on their concerns. The Sungei Buloh Area, a reserve located to the west of Kranji Dam, is home to a wide range of flora and fauna. Initially, the law in Singapore did not protect the Sungei Buloh special wetland habitat. In their proposal for the conservation of the Sungei Buloh area in 1988, NSS highlighted the importance of this piece of natural heritage, which has 126 species of birds making up 42 percent of all bird species in Singapore. The area represented the ‘last sanctuary for these birds in Singapore’ as the other wetlands had been destroyed by land reclamation (Hale, et al., 1987, p. 8). In addition, NSS asserted that this area was the last remnant of ‘traditional rural Singapore’, where items of cultural and natural historical interest are preserved (Hale, et al., 1987, p. 16).

NSS’s detailed proposal, explaining the importance of conserving the Sungei Buloh area, influenced the government’s decision to designate the area a nature reserve in 1989. NSS hence successfully persuaded the government to set aside the Sungei Buloh area as a mangrove and bird sanctuary. As a result, the area was developed into a site for migratory shorebirds between 1989 and 1993 (Francesch-Huidobro, 2008). By 2002, the nature park became legally protected from development and became known as the Sungei Buloh Wetlands Reserve (NSS, 2006). The Sungei Buloh Wetlands Reserve was incorporated into the 2003 Urban Redevelopment Authority Master Plan and it is now one of the four nature reserves listed in Singapore (Singapore Government, 2003).

The preceding examples illustrate that while the government is turning toward a more ecological orientation with regards to Clean and Green Movement initiatives, there is still a tension between ecological conservation and economic growth. NSS’s

conservation proposals have undoubtedly had significant contribution to building the Garden City of Singapore. Although some of NSS's proposals have been unsuccessful, the suggestions they contained still appear to have raised environmental awareness within the government as well as among a portion of the public, many of whom have even been prepared to voice their opinions peacefully through petitions. The government's fluctuation between accepting and rejecting NSS advocacy is evidence of their pragmatism in walking the fine line between prioritizing economic and ecological concerns.

The Image of a Clean, Green, Economically Prosperous and Ecologically Aware Nation

The government's ambivalence on the competing issues of ecological conservation and economic growth is indicative of the flexibility of the 'clean and green' concept. It demonstrates how the 'clean and green' concept has been able to alternate between accommodating both ecological conservation and economic growth and thus accommodate the shifts in perspective and government policy settings.

Kolstø argues that national symbols provide the capacity to express meaning (2014, p. 9). According to political scientist Marc Howard Ross, the power of symbols in the public sphere 'lies not in the explicit content, but in how they are perceived in various social and political contexts' (Ross, 2009, p. 15). In other words, national symbols have the capacity to accommodate multiple meanings. Social anthropologist Thomas Hylland Eriksen argues that a flag, for example, has to be an 'empty vessel' and that it 'ought to be possible to fill it with many things' (Eriksen, 2007, p. 5). It is bound to be divisive if the flag is associated with 'particular regional, political, religious or ethnic interests in a diverse country' (Eriksen, 2007, p. 5). The symbolic image of Singapore as a clean and green Garden City is argued here to act as such an 'empty vessel' that can be filled with

multiple interpretations. That there are multiple ways of reading the Clean and Green Movement is evident in the way it is able to present itself both ecologically and economically. As an ‘empty vessel’, it allows a differentiated identification across the population and is thus able to be interpreted positively by both sides of the debate and therefore becomes a unifying force.

As argued, it is the contention of this thesis that the Singapore government is strategically using the image of a clean and green, economically prosperous and ecologically aware country for the purpose of nation building. As issues of global warming and climate change became top international concerns in the 2000s (Hamilton-Hart, 2007), awareness of the need for nature conservation in Singapore increased. The government’s increased efforts to retain natural environments and create new green spaces contributed to a sense of ecological consciousness among Singaporeans, in line with the growing sentiment throughout the world. The dual focus on economic and ecological concerns has resulted in a shared vision of a clean and green economically prosperous and ecologically aware nation.

According to anthropologist David Kertzer, ‘without rites and symbols there are no nations’ (Kertzer, 1988, p. 179). As discussed in Chapter 3, symbols are important especially in new nations in order to create a sense of unity. Rites such as the annual tree planting campaign as discussed in Chapter 4, symbols found in the green urban brand and image discussed in Chapter 5 and the concerns of the ecological aspects of the environment discussed in this chapter come together and contribute towards ‘clean and green’ rites and symbols of Singapore. These ‘clean and green’ rites and symbols form a shared bodily ‘performance’ that contributes to unity within the nation. The ‘clean and green’ rites and symbols downplay the ethnic cultural differences while being involved in the construction and manipulation of rituals associated with the symbol (Kolstø, 2014, p. 4). Over the 50 year history of the Clean and Green Movement

in Singapore, the malleability of the 'clean and green' rites and symbols has become evident from their capacity to accommodate shifts in governmental approach from social to economic and environmental emphases.

Conclusion

This chapter presented the Clean and Green Movement's shift in emphasis towards the ecological aspects of the environment. The chapter maps the struggle between retaining original biodiversity and urban development. The shift in emphasis of the Clean and Green Movement from the economic focus of the 1990s to a greater environmental focus of the 2000s presented a dilemma for the government, as including environmental views has resulted in conflict with economic incentives. This chapter has illustrated how the government used the flexible symbolic value of the Clean and Green Movement to manage the shift towards a more ecological focus, while still being concerned with economic growth.

Ecological modernization in Singapore is displayed in the creation of planted greenery and some protection of original biodiversity in conjunction with urban modernization, and is distinctive of the environmental emphasis of the third phase of the Clean and Green Movement. As discussed, close to 10 percent of Singapore was covered by planted greenery or nature reserves, as of 2007. The government's efforts towards addressing ecological issues are evident from the increase in the area of planted greenery and increase in nature reserves over recent decades.

The debate between economists and the defenders of the environment in Singapore has highlighted the tension between the removal of the original biodiversity for economic growth and the conservation of the natural environment. The discussion in this chapter has shown that this tension appears inevitable in the process of ecological modernization. The chapter shows the government's attempt to manage the perceptions

and expectations of both those who favor economic growth and those who favor ecological conservation.

The critiques presented by Nature Society Singapore (NSS) and reported in this chapter highlight the government's difficulties when faced with having to balance ecological issues and economic development. NSS has had some influence on the government. This can be seen in the example of the golf course at Lower Peirce, which was eventually not developed as a result of protests from the public led by NSS. However, from the majority of the responses of the government to the conservation proposals of NSS, it can be deduced that the latter do not always overrule the government's development plans. Examples of these include the government's decision to remove original biodiversity at Senoko and Sungei Ulu Pandan Woodlands, despite the arguments against its removal by NSS. Nonetheless, NSS's efforts can be perceived as beneficial to a certain extent as its work brings ecological environmental issues such as nature conservation to the attention of the government and the people, and this benefits the living environment both ecologically and experientially. NSS's efforts have also created opportunities and channels for the public to express their desire to advocate for nature and the environment.

The thesis has argued that the Clean and Green movement has acted like Kolstø's notion of a symbol with the capacity to hold multiple interpretations simultaneously. The two different ways of reading the Clean and Green Movement is evident in its ecological and economic presentation. By embodying both sides of the debate between economic growth and ecological conservation, the Clean and Green Movement continues to be a unifying nation building strategy. The balancing act performed by the government to achieve both economic success and an enhanced living environment with ecological conservation through the Clean and Green Movement in Singapore, has the

potential to become a useful example or reference for other cities with a vision of adopting ecological modernization as a nation building strategy.

Chapter 7

Conclusion: Learning from Singapore as a Garden City

This thesis examined the history and mechanism of building Singapore as a Garden City through a strategy termed in this thesis as the ‘Clean and Green Movement’, from the years 1965 to 2010. The thesis discussed the previously unexplored role of the Clean and Green Movement in creating Singapore’s physical urban environment and its contribution to nation building in Singapore. It focused on the importance of the projection of Singapore as a ‘Garden City’ in the government’s efforts toward building a unified national identity. The thesis has described the role and contributions of the Clean and Green Movement in the nation building of Singapore since Independence in 1965. In this way, the thesis has presented an alternative perspective to the existing literature on Singapore as a Garden City, which largely describes the political processes of nation building in Singapore.

The thesis began by discussing the way nation building can be defined as the formation and development of a nation following historical and political processes of reformation, unification and/or separation. It presented a brief history of the emergence of Singapore from British colonial rule, which provided a background for subsequent chapters that presented Singapore’s process of nation building in relation to the Clean and Green Movement.

The thesis addressed a gap in the literature by analyzing how the Clean and Green Movement shifted historically through three different emphases (social, economic, environmental) in creating the Garden City of Singapore. It described ways in which

nation building in Singapore has been closely associated with the social, economic and environmental development of Singapore as a Garden City since its Independence in 1965. The thesis identified shifts in the focus of the government-driven Clean and Green Movement during different periods of Singapore's development. A social emphasis – 'building for needs and growth' – was strong between the 1960s and 1990s, while economic objectives were foregrounded from the 1990s onward, in order for Singapore to compete with other cities. A greater environmental focus and vision emerged in the 2000s. The Clean and Green Movement began as a means of solving hygiene issues, which improved social livability and led to the formation of a clean and green Garden City image that has benefited Singapore economically through growth in tourism and investment. The Movement also resulted in an enhanced living environment for people through the creation and protection of parks, which have also been contributing factors in nation building.

In terms of social contributions, creating an enhanced living environment led to health improvements and inculcated a cohesive shared way of living as discussed in Chapter 4. Tree planting, the relocation of people away from the overcrowded and scattered housing along the riverbanks to the new Housing Development Board flats and the cleaning up of the Singapore River comprised the main initial social measures of the Clean and Green Movement, which formed a distinctive 'clean and green' national identity for Singapore. The formation of this 'clean and green' national identity encouraged social integration and deflected people's attention from issues of racial, cultural and demographic differences.

After the initial social focus, the Clean and Green Movement moved to an economic focus as discussed in Chapter 5. The 'clean and green' image became a green urban brand projected through projects such as the conservation of Boat Quay and the Gardens by the Bay development. The 'clean and green' ideal proved to be useful and

adaptable in terms of growing inter-city competitiveness in the region. In economic terms, green urban branding led to the attraction of tourists and the creative class by tapping into the green experience economy. Chapter 5 also emphasized the economic contributions of the Clean and Green Movement in nation building during this period. At the same time, this green urban branding portrayed international economic competitiveness. It provided an image of a politically and economically stable Singapore Garden City that helped unify the nation of Singapore. The chapter concluded that the clean and green Garden City of Singapore was not merely a ‘green spectacle’ but, through the political and economic effects of the green urban branding, made a positive contribution to the sense of a cohesive nation.

The environmental emphasis of the Clean and Green Movement and the process of ecological modernization as a nation building strategy were discussed in Chapter 6. The government’s ‘clean and green’ ideal proved usefully adaptable to growing environmental concerns. The Movement became a program for improving Singapore’s environmental performance, especially in the 2000s. This can be seen in its increased efforts during this period to create planted greenery and protect original biodiversity as well as its considerations with regard to the criticisms and proposals of Nature Society Singapore (NSS). However, the chapter also noted the ongoing tension that existed between providing an enhanced living environment and destroying the original biodiversity. The tension between the ecological conservation and economic growth has resulted in a new interpretation of the Clean and Green Movement, which is the image of a clean and green, economically prosperous and ecologically aware nation. This new, flexible national symbol has helped bind the citizens in a shared vision, which has contributed towards nation building.

While the Clean and Green Movement can be seen to have had positive effects, ambivalences inherent in the movement’s contribution to nation building have also been

highlighted in this thesis. For example, while a strong and influential image of a ‘Garden City’ has been generated, the loss of identity and cultural heritage accompanying a homogenization of the urban environment is identified as a negative outcome that can also be associated with the Clean and Green Movement. Chapter 4 discussed the way this process of homogenization can be seen to have created a ‘ghostless’ Garden City.

In the most recent phase of the Clean and Green Movement, the Singapore government displayed ambivalence regarding the tensions between retaining the original biodiversity and the pursuit of urbanization and social and economic growth. It has moved pragmatically between favoring economic growth and favoring ecological conservation. The tension between economists and the defenders of the environment in Singapore emphasized the debate between the removal of the original biodiversity for economic growth and the conservation of the natural environment, which shows the government as being more inclusive of views put forward by NSS that it previously marginalized, and therefore as acknowledging the fuller spectrum of Singaporean positions. It also highlights tensions between the existing image of a lush ‘green’ Garden City and changing notions of what constitutes a sustainable balance between ‘Nature’ and the ‘City’ in Singapore’s development.

Nation Building Strategies in the Clean and Green Movement

Nation building, according to professor Pål Kolstø, can be defined as a series of ‘processes and strategies’ resulting in the formation of a nation-state (2014, p. 2). The argument of this thesis is that the Clean and Green Movement can be considered a set of processes and strategies that have contributed to nation building in Singapore. The social, economic and environmental processes of the Clean and Green Movement as discussed in this thesis have led to ‘greater identification with the state among its

citizens', which resulted in the construction of a shared image of the nation-state (Kolstø, 2014, p. 2).

Nation building strategies aim to create 'unity within and difference without' (Kolstø, 2014, p. 13). Imaginary boundaries are erected around nations that distinguish them from the world beyond. The Clean and Green Movement is an example of the construction of such an imaginary boundary, separating Singapore from the rest of the world by means of 'clean and green' rites and symbols. The strategies of the Clean and Green Movement have thus helped unify and form a distinct, if flexible, national identity for Singapore. The clean and green initiatives have also shifted to help the government accommodate its own changing priorities as well as those of its citizens, shifting the resonance of the clean and green symbolism to reflect the differing emphases of social, economic and environmental issues.

The thesis identified a number of nation building strategies that were evident in the implementation of the Clean and Green Movement. Key strategies included: inculcating a cohesive shared way of living through an enhanced living environment; education; building the economy by attracting tourists and the creative class through the green experience economy; unifying the nation through the image of political and economic stability; ecological modernization by creating green space and retaining nature.

Inculcating a Cohesive Shared Way of Living through an Enhanced Living Environment

Tree planting and the Singapore River Clean-Up marked the beginning of the political initiatives that formed the Clean and Green Movement. The thesis argued that the enhanced social living environment and associated quality of life, as well as improvements in public health, served to defuse issues such as racial, cultural and demographic differences and tensions. Moreover, the enhanced social living

environment encouraged interaction among the diverse races and socio-economic groups.

The political leaders of Singapore have envisioned achieving an enhanced living environment since Independence. It was felt that perceptions of inequity between population groups might be overcome if an enhanced living environment was provided, starting with equal access to housing and public and leisure spaces. The sanitization of public space in the process of modernization contributed to cleanliness and greenery in a Garden City state where people have reasonably equal opportunity to share in high quality public amenity.

The social aspect of nation building often hinges on the issue of equality. The Clean and Green Movement contributed to equality in terms of basic living conditions (Sheng, 2011). The provision of parks and greenery around Singapore enhanced the social living environment. In Singapore, people have shared access to the ‘clean and green’ environment, including natural and designed landscape parks, tree plantings around the neighborhoods and recreational facilities, all of which are provided for them by the government. The aspiration towards equal access to these facilities encouraged cohesiveness and inculcated a shared way of living amongst people.

The ‘clean and green’ image of the HDB residential estates can be considered a ‘neutral’ environment that the new social profile of Singapore could build on. As discussed in Chapter 3, nation building can be defined as ‘strategies of identity consolidation within states’ (Kolstø, 2014, p. 3). It is particularly important for a multicultural state such as Singapore to develop a sense of identity amongst citizens. The Clean and Green Movement has developed a cohesive shared way of living and a ‘clean and green’ image, which has become an identity that citizens relate to and share.

Education as the Foundation of Nation Building

Molding the idea of ‘cleaning’ and ‘greening’ into people’s attitudes through education has formed a vital part of building a cohesive national mindset. This resonates with Foucault’s notion of ‘generalized surveillance’ where disciplinary power aims to ‘mould individuals’ such that they become part of ‘various institutional structures’ (Moss, 1998, p. 2). As discussed in Chapters 3 and 4, education forms the foundation of nation building. The knowledge about the importance of a ‘clean and green’ environment has been imparted to the citizens through education to the point where, for example, it is expected of citizens that it becomes natural and habitual not to litter and to appreciate the visual greenery amidst the urban density.

The education system has formed the basis of the population structure of Singapore and has aspired to groom each citizen into similar law-abiding traits as well as contributing to social and economic wellbeing both personally and nationally. The Clean and Green Movement has molded its population into ‘authentic, organic political and cultural communities’ through education (Rothschild, 1981, p. 228). The nation building of Singapore that saw education as its foundation reflects historian and political scientist Joseph Rothschild’s view that the state does ‘command integrative resources’ that have allowed it to mold the ‘demographic raw material of its populations’ into one cohesive nation (Rothschild, 1981, p. 228). The construction of subjectivity of its citizens, particularly inculcating a ‘clean and green’ mindset, can be considered the result of education in Singapore.

Attracting Tourists and the Creative Class through the Green Experience Economy

Images of Singapore are often distinctive and recognizable from the buildings and their surrounding green landscape of common types of trees planted in the city. This physical

manifestation of greenery coexisting with tall buildings contributes to the 'green experience economy'. As discussed in Chapter 5, according to business researchers Joseph Pine and James Gilmore, the 'experience economy' seeks to engage people in activities that will form 'memorable experiences' (1998, p. 102). This thesis has used the term the 'green experience economy' to describe the creation of green attractions such as Gardens by the Bay in Singapore in order to engage people to visit and experience the city. The green experience economy encourages tourism, attracting the overseas creative class, investors and expatriates alike, while encouraging them to increase their expenditure within the city. This has led to economic growth that strengthens the nation and thus contributes to nation building.

The annual surveys conducted by the Singapore Tourism Board have demonstrated that Singapore's 'clean and green environment continues to emerge as the winning factor' in attracting overseas tourists (Hui & Wan, 2003). The cleanness and greenness of the Garden City can be seen as symbols of progress and stability. The 'clean and green' urban environment of Singapore is also attractive to the overseas creative class and investors, who seek symbols of progress and stability because these provide them the confidence to live and invest in a country. Chapter 5 discussed how the increase in the number of foreign expatriates who form part of the Singaporean creative class contributed to an increase in foreign direct investment in Singapore.

Singapore's green urban brand thus attracted tourists and the creative class, stimulated investment and boosted exports (Dinnie, 2008, p. 17). The green urban brand was beneficial especially for a city like Singapore where land and natural resources are scarce, and human resources are vital. Along with the attractive geographic and economic aspects of Singapore, the green experience economy has drawn global capital and foreign investment to the city by engaging both locals and foreigners.

The Image of Political and Economic Stability that Unifies the Nation of Singapore

The strong political will of the government ensured that ‘clean and green’ intentions were carried out comprehensively and that the planted greenery was properly maintained across the city. The many trees nurtured in the Garden City of Singapore can be said to depict the stability and efficiency of the government by demonstrating its capacity to manage the vast areas of landscaping effectively and hence the country. The building of a Garden City, according to William Warren and Luca Invernizzi, authors of *Singapore: City of Gardens*, ‘required vision, determination, education, hard work and money’ (2000, p. 14).

The detailed and structured planning of Singapore’s ‘clean and green’ urban landscape is reflected in the meticulously managed land. The strict enforcement of laws resulted in a well-managed ‘green spectacle’, which portrayed the image of political and economic stability. The careful creation of the clean and green Garden City image symbolizes and reinforces the sense of a Singapore that is successful and stable. By gaining support of the people as a result of a well-managed, efficient and effective government, there existed reduced opposition amongst the people. This in turn encouraged unity within Singapore, which further enhanced economic growth.

Ecological Modernization by Creating Green Space and Retaining Nature

For Singapore, ecological modernization was carried out through the process of ‘cleaning’ and ‘greening’ of the city while urbanization was intensified. In other words, lush tropical vegetation was incorporated into the planning of infrastructure, housing, industrial and commercial developments (Tan, 2006). In Singapore, the original biodiversity was reduced as a result of urbanization, in the process of which attempts have been made to replace original biodiversity by planted greenery through tree

planting. Processes of ecological modernization in Singapore thus include creating green space and retaining nature.

The creation and protection of parks within the dense urban context created an enhanced living environment, which provided a distraction from other issues such as the racial and social differences amongst people. The sense of equality gained through providing equal access to the enhanced built environment helped keep political discontent due to inequality to a minimum and contributed to social harmony and unity.

Chapter 6 highlighted the successes and failures of Nature Society Singapore (NSS) in its criticism of and support for the Singapore government in creating green spaces as well as its advocacy for retaining natural ecosystems. The growing awareness of environmental issues both globally and locally as raised by NSS means that there was a potential for a new type of division between those who favor economic growth and those who favor ecological conservation. The government attempted to accommodate both positions through measures taken in ecological modernization and created the image of a clean and green economically prosperous and ecologically aware nation.

It can be seen in the government's pragmatic shift towards the ecological environment in the 2000s, such as through the creation of planted greenery and protection of original biodiversity, that the government recognized the importance of protecting as much as possible of the remaining natural environments in order to both meet the expectations of a more ecologically aware populace and to ensure the attractiveness of living in Singapore, which was also argued to have contributed to the national identity.

Ambivalences Inherent in the Clean and Green Movement

While the Clean and Green Movement has made social, economic and environmental contributions towards nation building, it has also had consequences that could be

considered negative. An example is the criticism that the Singapore Garden City has lost its cultural heritage and original biodiversity, leaving the city ‘ghostless’. Another example of the ambivalence inherent in the Clean and Green Movement is the tension between economists and defenders of the environment, resulting in constant debate within Singapore.

The Clean and Green Movement illustrates how the ‘soft’ aspects of nation building, in terms of creating a shared identity and a sense of unity, are closely connected to the ‘hard’ aspects of state building discussed in Chapter 3, namely the administrative, economic and military groundwork of state construction (Kolstø, 2014, p. 3). Under the umbrella of the former, the state is expected to provide ‘welfare and various amenities of life’ (Kolstø, 2014, p. 3). In the case of Singapore, this thesis has shown that the Clean and Green Movement supported high quality social infrastructure and produced good economic and environmental outcomes. Through the Clean and Green Movement the Singapore government thus encouraged citizens to ‘attach their identity and loyalty to the state’, strengthening unity amongst citizens as the bond between the state and the populace developed (Kolstø, 2014, p. 3).

Uniting the Nation through the ‘Ghostless’ Urban Landscape

According to Anthony Smith, author of *The Ethnic Origins of Nations*, nation building means not only establishing appropriate institutions, it also involves ‘re-interpretations, rediscoveries and reconstructions’, where each generation has to ‘re-fashion national institutions and stratification systems in the light of the myths, memories, values and symbols of the past’ (Smith, 1987, p. 207). In the case of Singapore, the ‘past’ has been strategically removed in the formation of what was described in this thesis as a ‘ghostless’ Garden City, creating new unifying myths and symbols. According to Kolstø, national symbols that are connected to a cultural past will ‘tend to be more

divisive than unifying’, as different ethnic and political groups are often linked to different pasts (2014, p. 11). Singapore gradually replaced divisive memories with a Clean and Green unifying ‘ghostless’ urban environment. The removal of the divisive memories made way for new myths, rites, symbols and images that are shared by the nation and are therefore unifying.

As argued, the limited retention of cultural identity and original biodiversity in many localities around Singapore resulted in a ‘ghostless’ Garden City. The creation of an orderly landscape removed much of the original context of place, including the historical and cultural value of many locales in multiracial Singapore, resulting in a homogeneous urban environment. Since Independence, the modernization of Singapore has evolved through interactions with the West mainly due to many powerful ministers in the government having had their education there. Western knowledge has been adapted to suit the ‘local political and architectural cultures’ of Singapore (Bunnell, Drummond, & Ho, 2002, p. 142). These Western traits contributed to the ‘sanitization of the vernacular experience’ that resulted in loss of identity in some places (Bay & Ong, 2006, p. 280).

The thesis argued that the often negatively perceived homogeneity in the urban landscape of Singapore’s Garden City has actually formed an identity that is distinctive to Singapore. Most of the refurbished buildings have been renovated in a consistent way, resulting in the homogeneous urban landscape. They have been cleaned up, and plantings around them have been either added or preserved, resulting in a ‘clean and green’ visual image for these refurbished buildings. The adaptive reuse of buildings retained a superficial signification of culture and tradition while meeting modern expectations. At the same time, it produced a new sense of place that is unique and distinctive to the area, which also contributes to the overall identity of a clean and green Garden City.

The realization of the loss of cultural value, identity and sense of place along with the removal of certain buildings has led to efforts to conserve others with significant historical value, such as the Boat Quay conservation area discussed in Chapter 5. However, in the process of preserving these buildings or places as functioning components of contemporary urban life, the original sense of place has disappeared. However, and perhaps ironically, such transformations have managed to communicate a sense of controlled orderliness, which has led to a perception of economic stability and a sense of public safety within the city. This new sense of orderliness of the Garden City might now be seen as authentic to Singapore.

According to Singaporean architecture critic Tay Kheng Soon, the people living in a tropical city search for creative methods for strengthening and re-creating their own identity and future ‘beyond the concepts set by the European and North American models’ (Bishop, Phillips, & Yeo, 2004, p. 165). In addition, Abidin Kusno, an architectural and urban historian, suggests that the tropical city differs from other global cities as a result of the presence of lush vegetation (Kusno, 2000). In the case of the tropical city of Singapore, a distinct identity can be considered to have been created when the built form is not the main emphasis of the city, but the focus is on visual greenery within the built environment (Bishop, Phillips, & Yeo, 2004). Over time, new values and standards have become part of the contemporary society of Singapore (Lim, 1975). Thus, while the clean and green Garden City has lost much of its ethnic heritage and cultural diversity, the ‘ghostless’ urban landscape can perhaps now be seen as being authentic to Singapore. The Clean and Green Movement as a method of modernization has created a new identity and global image of its own, that of being clean, green and ordered, all of which unites Singapore as a nation.

Tension between Economists and Defenders of the Environment

The Singaporean government and its agencies can be broadly characterized as economically motivated. The economists view the environment as an economic good and focus on the economic benefits associated with environmental issues. In contrast, the defenders of the environment represented by Nature Society Singapore (NSS) believe that forests are priceless and are in themselves a heritage that cannot, once removed, be replaced or substituted by other forms of capital. The thesis argued that so-called ecological modernization is often incompatible with the environmental defenders' vision of preserving nature. The dilemma for Singapore's government is that the nation-state is caught between the need for urban renewal and the need to preserve natural heritage such as its irreplaceable tropical rainforests.

There is constant debate about the respective merits of retaining the original biodiversity and planting new landscaping when urbanization takes place. The process of modernization and urbanization has exploited and altered the natural environment. Original natural systems are often neglected, as seen in the removal of ecosystems to make way for Singapore's urban expansion and densification. Although in Singapore's case trees are re-planted within the urban environment, the original biodiversity is inevitably largely lost, resulting in what has been described as a 'green desert' (Briffett & Sim, 1993, p. 103).

While critics have questioned the environmental outcome of the Singapore Garden City, there are also many reports that support the idea that the city is relatively environmentally sustainable, largely because of its high density and small ecological footprint.. In 1997, the United Nations presented Singapore with the Outstanding National Ozone Unit Award for having successfully reduced the consumption of ozone-depleting substances before the targeted time (Luen, 2005). Moreover, Singapore is

reported as being the most livable city in Asia, ranking third globally, according to a recently developed ‘city biodiversity index’, where five criteria were used: safety, environmental friendliness and sustainability, governance, economic vibrancy and quality of life (Chan, 2010).

Applications of the Clean and Green Garden City Idea

It is apparent that many cities around the world and especially in Asia are looking at Singapore’s Garden City idea as a model for building a clean and green urban environment. According to Chan Heng Chee and Dieter Evers, who have written on ‘Nation-Building and National Identity in Southeast Asia’, the nation building of Singapore is being widely observed and might provide a ‘demonstration effect’ for other Southeast Asian nations (1973, p. 315). This thesis has presented an original argument that in Singapore, the role of the Clean and Green Movement in the built environment has significantly contributed to nation building.

Singapore has now become an urban prototype influencing the growth of cities and nations around the world including Dubai and China, as well as other developing cities in Southeast Asia (Bagaeeen, 2007; Hoffman, 2011). Singapore continues to implement its city experiments and export them to cities such as Tianjin and Suzhou in China (L’Heureux, 2009). In the case of Tianjin, the Tianjin eco-city is a joint development between Singapore and China. The 30 square kilometer Tianjin eco-city was designed for 350,000 residents. The Tianjin authority aims to bring vibrancy and economic benefits to the newly created city built on what used to be ‘barren land’. The project consists of infrastructure, roads, and planted greenery that will provide a garden-like ambience. Tianjin’s public housing within greenery is modeled on the typical Housing Development Board public residential estates of Singapore (Ng, 2010).

Singapore's Garden City idea has potential to be applicable to developing cities, particularly Southeast Asian cities, which have similar climates as well as comparable historical and cultural backgrounds, as many were also once under colonial rule. According to Singaporean researchers Bay Joo Hwa and Ong Boon Lay, in post-colonial times many Southeast Asian cities paid insufficient attention to the 'ecological consequences' of development, committing to either a capitalist or a socialist development model (2006, p. 269). In contrast, Singapore's Garden City idea is an approach to urbanization that aims to address green issues while allowing modernization to take place. It can be considered one of the ways to mitigate impact of urbanization and modernization on the environment. While not always completely successful, the measures applied in Singapore were designed to protect the environment by adopting an integrated approach to the environment and to development.

There is interest from leaders of other cities in the clean and green Garden City idea of Singapore, evident at the inaugural World Cities Summit, held in Singapore in 2008 (Ooi & Yuen, 2010). This was the world's first international conference discussing issues related to public governance, green urban planning and sustainable development in cities. It was held again in Singapore in 2010 demonstrating the concerted initiative among Singaporean planners to share their best practices in urban development with other cities (Cheam, 2010).

Conclusion

This research examined the contribution of the Garden City to nation building through the analysis of the Clean and Green Movement in Singapore from 1965 to 2010 and its transitions from social to economic to environmental emphases, which coincide with the periods of urban transformation in Singapore as defined by Singaporean researcher Tan Eng Khiam: building for needs and growth (1963-1990s), building to compete (1990s-

2000s) and building for a vision (2000-) (Tan, E.K., 2010, p. 11). Although the social, economic and environmental emphases intertwine and operate concurrently throughout the years of nation building in Singapore, there were tangible shifts that allowed each to predominate for given periods.

According to Singaporean sociologists Lily Kong and Brenda Yeoh, the Singapore nation is ‘socially and spatially constructed, reinforced and challenged’ by ‘multiple interpretations and alternative discourses’. The flexibility of the concept of being ‘clean and green’ and its ability to ‘hold’ these multiple interpretations and alternative discourses and adapt over time to new social, economic and environmental circumstances is a unique finding of this thesis. The Clean and Green Movement has been able to accommodate the changing circumstances over time in its contribution to nation building. Kolstø’s notion of an empty symbol that can change over time or represent different things to different people at the same time encapsulates the adaptable and versatile nature of the Clean and Green Movement.

The social, economic and environmental measures taken pursuant to the three emphases of the Clean and Green Movement — the social emphasis through ‘cleaning’ and ‘greening’, economic growth through green urban branding, and environmental focus through ecological modernization — have brought Singapore to a point where it has developed a strong national identity around the ‘clean and green’ qualities of its urban environment. While this has opened the ideal of the ‘clean and green’ Singapore Garden City to various criticisms, this ideal nevertheless remains robust, multivalent and adaptable.

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