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# **The Planning Of A City-State**

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## Singapore Today

The modern city-state that Singapore is today owes much to the thinking, decisions and influence of Mr Lee Kuan Yew over decades.

By any measure, Singapore has done well. The vast majority of people (83%) live in affordable and good quality public housing. 90% of the population own their own homes. The city buzzes with nightlife and activities, playing host to major international events like the Formula One Grand Prix that has taken place annually since 2008. When we want to relax, we can step out of our homes and enter a comprehensive network of parks, greenery, and activated waterways, all bustling with biodiversity.

But half a century ago, Singapore was a very different place.

## Housing: Severe Shortage, Poor Quality

Housing was a big problem because there was just not enough. In 1965, there were 350,000 families in Singapore, but only 250,000 proper housing units. Three quarters of the population were crammed into the small city centre. Many families had to squeeze into shared accommodation in old shophouses. Many of these had been built in 19<sup>th</sup> Century. They were dark and dank, and they did not have a proper sewage disposal system. Communicable diseases like tuberculosis spread easily in such crowded and unhygienic conditions.

Outside the city, people lived in *kampongs*. Squatters' colonies were rampant, marked by zinc-roofed settlements that dotted the landscape and lined the major trunk roads.

The colonial Singapore Improvement Trust (SIT) just could not build fast enough. In the post-war baby boom, there were often six to seven children per family. In those days, it was estimated that the housing supply actually needed to grow 20 times faster in order to meet the demand.

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<sup>1</sup> Remarks by Mr Peter Ho, Chairman of the Urban Redevelopment Authority, made at the public conference organized by the Lee Kuan Yew Centre for Innovative Cities and the Centre for Liveable Cities on "Lee Kuan Yew and the Physical Transformation of Singapore," on September 18, 2013.

## **Economy: Unemployment, Poor Infrastructure**

The economy was also in trouble. In 1965, unemployment was high at 10%, due to the influx of people looking for work in Singapore after the war. It threatened to increase even more when the British announced its military pullout east of the Suez in 1967. To create more jobs in the economy, Lee Kuan Yew's government decided, among the many things it had to do, that it had to develop the city centre as a central business district to boost business, commercial, and financial activity.

But there was no space available to build new offices in the city. Valuable space that could be used for commercial development was instead taken up by run-down shophouses that were essentially housing slums.

## **Rejuvenating the City Centre**

Urban renewal was urgently required. To support this effort, the Lee government enacted the Land Acquisition Act in 1966. It gave the government the power to acquire land quickly, and importantly, at reasonable compensation rates. Lee Kuan Yew explains that:

I pushed the Land Acquisition Act through at the low point in the property market. It was important to get the legality of what we were doing properly entrenched, so that it cannot be changed for fickle reasons (Liu, 2013).

The Act freed up prime land in the city centre. From 1967 to 1979, under the Government's Sale of Sites Programme, 97 sites in the city centre were sold for commercial development of modern office buildings. A new financial centre gradually emerged in the city. Today, some of the early buildings—such as the OUB Centre and the OCBC Centre—stand as icons of the modern Central Business District (CBD).

## **Housing Our People, Building a Nation**

The people who were living in the CBD had to be housed somewhere. The government could not simply evict them. A resettlement programme was hence established and it systematically moved people out of their squalid accommodation in the city into more hygienic and spacious public housing in satellite towns. These towns were well equipped with thoughtfully planned

facilities. The new Housing and Development Board (HDB) was made responsible for this programme.

To clear land for these new towns, the government once again turned to the Land Acquisition Act. For example, even farmland had to be acquired to develop Toa Payoh.

Building public housing on such a scale was a massive exercise. In its first five years, the HDB built 50,000 units. In contrast, its predecessor, the SIT, built only 23,000 units over its entire 23-year existence. The HDB housing programme proved a resounding success. By 1976, half of the population lived in HDB flats; a decade later (1985), this figure rose to 80%.

But it was not just a numbers game. The public housing programme aimed to get Singaporeans to own their flats, instead of just renting them. Lee Kuan Yew stresses that, “My primary preoccupation was to give every citizen a stake in the country and its future” (Lee, 2000, pp. 116–117). He explains the importance of equity:

They own it, an asset which will increase in value as the city grows .... A homeowner keeps the public space clean. The person who rents doesn't care, he just looks after the inside. So I said, let everybody own a home, their value goes up if the place is clean and beautiful on the outside and inside. We were asking people to get their sons to do National Service, to learn to fight for the country. Unless you give them a home, why should they be fighting? (Liu, 2013, p. 13)

This is foundational, and it helped to build a nation out of disparate racial and ethnic communities. So it was in the new towns that a sense of community was forged with Chinese, Malays, and Indians living side-by-side as neighbours along the common corridors of HDB blocks, going to the same schools, markets and community centres, and engaging in common activities every day.

Lee Kuan Yew explains that the new housing estates mixed “Malays, Chinese, Indians and all others alike and thus prevent them from congregating as they had been encouraged to do by the British” (Lee, 2000). In Geylang Serai, he even re-drew the road system to turn one large ghetto into nine small pockets. This was, in his words, to “prevent another ugly situation from arising should there be another race riot” (Lee, 2000). This typified Lee Kuan Yew's approach to the planning of Singapore—hard-nosed, with an economy of effort, and a view to the long-term.

## A Structure for Singapore: The 1971 Concept Plan

The locations of these satellite towns were neither random nor opportunistic. They formed part of a long-term land-use plan that laid out the physical structure for the whole of Singapore. This was the seminal 1971 Concept Plan. Even though this plan was developed more than 40 years ago, its essential features are recognisable even today as the basic structure of Singapore:

- The centre of the island is preserved as a nature reserve and water catchment, surrounded by a ring of self-contained satellite new town developments.
- The major, heavy industrial area is in the west, in Jurong, keeping pollution away from the populace. Lighter industrial estates are planned adjacent to the new towns, so that not all residents have to go into the CBD or travel far for work.
- A network of expressways, and a mass rapid transit system connects the new towns. Indeed, it was a bold leap of faith to plan for an MRT system at the time, given the high cost of such infrastructure. But in doing so, the plan reserved sufficient space for an MRT corridor, which later on made it easy to construct the MRT.
- The seaport and airport are relocated to Pasir Panjang and Changi, respectively, where there is enough room for them to meet the needs of a growing economy.

By setting a very clear, long-term structure for Singapore, the 1971 Concept Plan served as a common reference to focus, guide, and coordinate the various government agencies in carrying out extensive clearance, resettlement, and development works. Everyone was expected to play their part, to respect the thinking behind the plan, and to adhere to it. Lee Kuan Yew emphasises the discipline underlying the Concept Plan: “There’s a definite plan, and we stuck with the plan. There is no corruption and nobody can deviate from the plans” (Liu, 2013, p. 9). This whole-of-government approach, combined with a strong planning ability, and attention to effective implementation of plans, marks out Singapore’s competitive advantage in urban development. Arguably, Lee Kuan Yew set the tone by establishing clear priorities and directions for Singapore’s development—economic and social—and by ensuring that the government delivered, even if it meant tough laws like the Land Acquisition Act.

## Reclaiming Land to Meet Our Needs

The government freed up prime land in the CBD. It also decided to move the main airport from Paya Lebar to Changi so that it would be able to grow over the long term. But to be truly world-class as a hub for business and tourism, the city needed to be easily and quickly accessible from the airport.

So the government decided to build an expressway to connect Changi Airport to the CBD. But there was no land—the British had allowed people to build properties all the way up to the coastline. The entire east coast was already built up to the sea.

The solution was to reclaim the coastline and doing so would achieve multiple national objectives. Firstly, there would be ample space for the East Coast Parkway (ECP), a full eight lanes wide and 19 kilometres long. Secondly, stretched along the entire ECP would be the 185-hectare East Coast Park, with a scenic 15-kilometre coastline and beach for everyone to enjoy. And thirdly, more land would be available to build new towns, such as the Marine Parade Housing Estate.

But the main obstacle to reclamation was the high cost of compensation for coastal land. So the government amended the Foreshores Act in 1964, so that owners of prime seafront land would not need to be compensated even if they lost seafront as a result of reclamation. As Lee Kuan Yew recalls:

So we passed a law that said that when government acquires coastal land, we compensate without taking into account that it's by the seaside. The market was at an all time low at the time and so we acquired large tracts of land. They were lying fallow — investors were waiting for the climate to change so they could manipulate and sell it at a big price. We just acquired as many large pieces of land as possible and claimed the right to reclaim coastal areas (Liu, 2013, p. 9).

The revised act opened the way for the government to reclaim Singapore's seafront—first the eastern shoreline, and later the western one—and to develop the whole coastline of Singapore for infrastructure, recreation, and housing. And with the ECP, a businessman or tourist can get to his meeting or hotel in the city in less than 20 minutes from Changi Airport. As Lee Kuan Yew points out, “These are basic infrastructures. Unless they are in place early, it's very difficult to overcome the obstacles” (Liu, 2013, p. 10). But land was reclaimed not just to meet the needs of the day. Additional land was also

reclaimed to cater to the needs of future generations, taking advantage of the low cost of reclamation at that time. This was typical of the forward-looking, long-term approach of Lee Kuan Yew and his government. So the reclamation for Marina Bay started as early as the mid-1970s. Later on, in the 1980s, another decision was made to enlarge the land reclamation profile to expand the waterfront for the future CBD. Without this, the glorious panorama of Marina Bay that we have today could not even have been put on the drawing board.

### **Conserving Our Built Heritage**

In spite of the intensity and urgency of urban redevelopment, Lee Kuan Yew has always emphasised the importance of conserving our built heritage for future generations. Even in the early days, he was commending General Manager of the Urban Redevelopment Authority, Mr Alan Choe, in 1967, for his initiative in identifying monuments such as the Fatimah Mosque for preservation.

Thus today, the historic ethnic districts of Chinatown, Little India, and Kampong Glam stand intact. The value that Lee Kuan Yew attached to Singapore's history translated into a practical approach to conservation that has allowed our cityscape to retain some of its original character and identity, even amidst the drive to develop and modernise. Unlike other countries that tried to wipe out all traces of their colonial past, Singapore has kept the grand buildings that the British built and put them to new but meaningful and modern uses. The Old Supreme Court and City Hall, for example, will soon gain a new lease of life as the National Gallery.

When asked in a recent interview what he was most pleased with in terms of Singapore's urban development, Lee Kuan Yew said:

I'm pleased that we redeveloped the city when there was a chance to do it. ... And the big heritage sites in the city, like Fullerton, we left those alone. That was the chance of a lifetime (Liu, 2013, p. 11).

### **Creating a New Engine of Growth**

Lee Kuan Yew's approach is to be open to ideas and to learn from others. He made the Dutch economist, Dr Albert Winsemius, the chief economic

advisor to the Singapore government. He held the position for almost 25 years, from 1961 to 1983, long enough to have a real impact on Singapore's development. Dr Winsemius' advice led to the establishment of a major industrial estate at Jurong.

Attracting foreign direct investment and multinational corporations (MNCs) to locate their Asian headquarters in Singapore, starting with oil refineries like Shell and Esso, and labour-intensive industries like electronics.

Emphasising the provision of basic infrastructure such as airports and seaports to support these industries, which paved the way for Singapore to become an air and sea transport hub, container hub, and tourism hub.

## **Connectivity**

Lee Kuan Yew saw the need to manage demand for cars and to keep roads free of congestion. While acknowledging the need for a good transportation system to keep the city moving, he also observed:

I could see traffic jamming up and making travel impossible. Bangkok was an example where you had to have pot full of pee because you may be stuck in traffic for one or more hours. The way to stop it is to limit the number of cars so that they can flow at least at 25 miles per hour, and to improve public transport (Liu, 2013, p. 12).

The Area Licensing Scheme, introduced in 1975 and subsequently replaced by the ERP in 1998, was probably one of the most innovative but draconian policies implemented under Lee Kuan Yew's leadership. Later, in 1990, when there was a need to curtail car population, he introduced the Vehicle Quota System, popularly known as the Certificate of Entitlement (COE). Few leaders anywhere in the world have been prepared to tackle the issue of car population head on the way he did. Lee Kuan Yew later explained:

If we did not introduce the Certificate of Entitlement at a time when the public could not afford cars as much, you could not do it now without a big row — because you can't get people to give up their cars. But we did it when the cars were few. Today, it's accepted as a fact. If you want the roads to be free, you've got to pay for the right to use the road (Liu, 2013, p. 10).

## Ensuring Clean Air: First World Pollution Control Standards

Lee Kuan Yew recognises that Singapore is not like any other country. Singapore is a compact city-state on a small island. Within such a dense template, he knows that pollution that would impinge on our quality of life, and recreational environment. He once commented:

We are just one small island, if we were to spoil it, we've had it. Unless we protect ourselves by placing the right industries in the right places ... we will despoil the city (Han *et. al.*, 2011).

So heavy industry was located to Jurong, and later to Jurong Island, away from the populace, alleviating the pollution load. But this was only part of the solution.

The government insisted that MNCs in Singapore employ the highest pollution control standards in their factories, even though the extra costs carried the risk of deterring them from choosing to locate here. But instead of compromising on pollution control, the government gave concessions to offset costs, for example on labour or the cancellation work permit fees.

Heavy vehicles, especially the diesel buses and trucks driving into Singapore from Malaysia, were another major threat to clean air. Lee Kuan Yew knew something had to be done because:

The condition of our plants gave me an indication of the pollution levels – I used to see bushes covered with soot. Then I installed pollution-measuring machines [... which confirmed my intuition] (Han *et al.*, 2011).

When Lee Kuan Yew was on sabbatical in Boston, in 1968, he learned about how they did emissions inspections for vehicles there, and brought the idea back home. After that, even Malaysian vehicles entering Singapore had to conform to Singapore emissions standards.

Because of these early efforts, and that foresight, Lee Kuan Yew was later able to say:

Today at Jurong Country Club or Raffles Country Club, you don't smell any fumes from the petrochemical plants in Jurong (Han *et al.*, 2011).

But all this was just a means to an end. As Lee explains:

If we want to be a first-world oasis, we must produce first-world conditions, not just the environment but facilities, health standards, services, connectivity, security. We just have to keep up with the highest benchmark that exists at any one time. Then you are in the game (Han *et al.*, 2011).

## **A Clean and Green Environment for Everyone**

In 1968, Lee Kuan Yew said in Parliament:

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 (Lee, 1968).

Having plants and flowers everywhere was a conscious response to Singapore's rapid industrialisation and urbanisation. But this was not just window-dressing. To Lee Kuan Yew, equal and public access to greenery, clean air, and water is nothing less than a matter of social equity, a critical condition for ensuring the morale of the people, and a source of unity and national pride for the nascent nation. As he succinctly put across:

An elected government cannot have certain sections of the city clean and green, as when the British were here, and leave the rest to fester: squatter huts, Malay villages, no drainage, no sewers, no lavatories, open earth drains, flooded.... If we did not create a society which is clean throughout the island, I believed then and I believe now, we have two classes of people: the upper class, upper middle and even middle class with gracious surroundings; and the lower middle and the working class in poor conditions. No society like that will thrive. No family will want its young men to die for all the people with the big homes and those owning the tall towers (Han *et al.*, 2011, Chapter 9).

Building up a sense of nationhood and unity was of paramount concern when Singapore separated from Malaysia. Providing a good quality living environment for all, regardless of their status, coupled with universal home

ownership, was a fundamental principle on which all policies were based. To quote Lee Kuan Yew again:

This is a priority that was very high up on my list. Apart from finance and defence, it's a sense of equalness in this society. You can't have this sense without giving all Singaporeans a clean and green Singapore. Today, whether you are in a flat, executive condominium or landed property, it's clean. You don't live equally, but you are not excluded from the public spaces for everybody.... So it was important that the whole island be clean, green and with everyone owning property. It was a fundamental principle on which I crafted all policies, and it's worked (Lee, 2011, Chapter 9).

### **Clean Environment—Proof of Government's Ability**

Of course, having a good environment and a well-kept city had economic benefits as well. To Lee Kuan Yew, it serves as physical proof to potential investors that the Singapore government was committed, disciplined, and efficient, and thus a safe haven for investment:

If a garden is well maintained and neatly landscaped, there must be a dedicated and efficient gardener (Neo, Gwee & Mak, 2012).

More explicitly, he says that “well-kept trees and gardens were a subtle way of convincing potential investors in the early crucial years that Singapore was an efficient and effective place” (Lee, 1996). So high-visibility and first-impression areas were given priority in the greening programme, such as the raintree-lined ECP, which brings people from the airport to the city, as well as on reclaimed but then yet-to-be-developed land, like the current Marina Centre and Marina Bay area, which was planted with trees to provide a visually pleasant, green mantle that could be seen from the high-rise offices in the CBD.

### **Creating a Garden City**

All this was possible because Lee Kuan Yew had taken a keen, direct, and personal interest in the greening of Singapore. He conceived the annual national tree planting campaign, now a tradition, and he planted the first

tree in 1963. Looking back at this transfiguring even, he said that, “When I planted my first tree at Holland Road Circus back in 1963, it was to make Singapore green” (Lee, 2011). Lee Kuan Yew paid a lot of attention to details. For example, there was an extensive effort to green concrete structures like retaining walls, road flyovers, and overhead bridges to “soften” our cityscape. Without that focus, we probably would not have become a Garden City. He sent teams around the world to study suitable tropical and equatorial species for planting in Singapore. Each type was selected for a specific function. Tree species had to be carefully studied for their optimal growing conditions, before the government could be comfortable to recommend them for widespread planting. To quote him:

Trees and vegetation need air, through water, to breathe. We must get the right trees, shrubs, creepers, and ivy for the right soil, exposure of sun, humidity of soil, etc. (Prime Minister’s Office, 1975).

### **Garden City to City in a Garden**

With the Garden City vision that Lee Kuan Yew personally set for Singapore, the nation has evolved into the City in a Garden of today:

- Despite a population increase of 68% between 1986 and 2007, Singapore’s green cover grew from 36% to 47%.
- We have an island-wide network of nature reserves, parks, park connectors, and street-side and waterfront greenery that is not far from every citizen’s doorstep.
- Our parks and nature reserves make up 8% of our land area today, and will increase to 9% by 2030.

In a recent interview, Lee Kuan Yew said:

For everyone who wants to get out of the urban jungle, they can come here and find the surroundings completely different. We have to do this in many parts of Singapore. We will have 360 kilometres of park connectors within 700 square kilometres of land; there are not very many countries that can say they have that (Lee, 2009).

## Clean Water

To Lee Kuan Yew, as with greenery, clean water and universal access to clean waterways are also matters of social equity and assurance to investors. In particular, water is a strategic matter of survival, self-sufficiency, and sovereignty: after independence, threats came from Malaysia to cut off the water supply to Singapore despite being guaranteed by the water agreements every now and then.

This has meant for the need to carefully manage the development of the island so as not to compromise scarce water resources. I do not mean scarce in the sense that we do not have enough rainfall—but scarce in that we do not have enough land to catch all the water we need, without affecting our other development needs.

But today, through careful planning, an astonishing two-thirds of our land are water catchment areas. It was not so high in the past. For some years (1983–1999), a strict urbanisation cap had to be imposed on the intensity of development within the areas that were water catchment. However, this was lifted when we found that strict pollution control measures, tackling pollution at its source, coupled with constant technological improvements, could keep water quality up to standard in the catchment areas.

By the time our current water agreement with Malaysia expires in 2061, we will be self-sufficient. Technological advances will allow us to increase our water catchment to a whopping 90% of our land area, and NEWater and desalination can make up the bulk of our water supply.

## Setting the Challenge: Cleaning up Singapore River

In 1977, Lee Kuan Yew issued his now-famous challenge:

It should be a way of life to keep the water clean, to keep every stream, every culvert, every rivulet, free from unnecessary pollution. In ten years, let us have fishing in the Singapore River and fishing in the Kallang River. It can be done (Lee, 1977).

This launched a massive dredging and clean-up effort to rid the Singapore River of huge amounts of toxic debris that had piled up over decades of heavy and indiscriminate use.

Today, the Singapore and Kallang Rivers are not just clean, but nightlife,

shopping, housing, and recreation at Boat Quay, Clarke Quay, Robertson Quay, and Tanjong Rhu also enliven them.

But Lee Kuan Yew's vision exceeded even this. More than a clean and activated waterbody, he saw that the Singapore River could one day even become part of our water supply.

This vision came true in 2008. The formation of Marina Reservoir, through the Marina Barrage, has increased the water catchment area of Singapore from half to two-thirds, and now provides 10% of our water needs.

### **Active, Beautiful, Clean Waters**

The island-wide cleaning of waterways directed by Lee Kuan Yew paved the way for the Active, Beautiful, and Clean Waters projects that we see everywhere today. These allow our people to still enjoy some semblance of a natural environment, in spite of our dense urban landscape. Beautifying our rivers and canals has also increased the value and desirability of the developments along these waterfronts. Lee Kuan Yew said in a recent interview:

Beautifying the rivers and canals requires ingenuity and capital expenditure, but the capital cost of beautifying the city is worth it. It will increase the value of all the buildings along these streams and canals. If we can create water bodies all along the stretches of the rivers and canals, and educate our people not to throw rubbish or litter, we will have a beautiful city. With greening and fishing, we will have something special (Lee, 2005).

### **Conclusion**

The legacy of Lee Kuan Yew is Singapore, and it is also a legacy of good urban planning. Lee Kuan Yew's ideas, values, and leadership have translated into making Singapore the modern city-state of today — through good governance, getting the right people in place, and most of all, determination and political will. He famously declared:

I'm very determined. If I decide what something is worth doing, then I'll put my heart and soul to it. The whole ground can be against me, but if I know it is right, I'll do it. That's the business of a leader (Lee, 1998).

Lee Kuan Yew spoke about his bold vision for Singapore recently:

Singapore must retain the sense of space. We're going to build taller buildings but we can't build them closely together. There must be a sense of playing fields, and recreational areas for children and old people—a sense that this is a full country with all the facilities which you expect of a large country but in a confined space (Liu, 2013).

But he is not and has never been a starry-eyed optimist. His approach is best captured when he said:

The good things of life do not fall from the skies. They can only come by hard work and over a long time. The government cannot produce results unless the people support and sustain the work of the government. ... There may be times when, in the interest of the whole community, we may have to take steps that are unpopular with a section of the community. On such occasions, remember that the principle which guides our actions is that the paramount interest of the whole community must prevail (Lee, 1959).

Despite the constraints of being a city-state on a small island, he led his government and the people to convert this vision into a long-term economic and land use plan. Through leadership and good governance, and sometimes with a dose of tough laws, these plans have been systematically and efficiently implemented.

## References

- Han, F.K., Fernandez, W. & Tan, S. (Eds.) (1998). *Lee Kuan Yew: The man and his ideas*. Singapore: Times Editions.
- Han, F.K., Ibrahim, Z., Chua, M.H., Lim, L., Low, I., Lin, R. & Chan, R. (2011). *Lee Kuan Yew: Hard truths to keep Singapore going*. Singapore: Straits Times Press.
- Liu, T. K. (2013). Lee Kuan Yew: The chance of a lifetime. *Urban Solutions*, February, pp. 8-13. Retrieved from <http://www.clc.gov.sg/documents/UrbanSolutionsIssue2.pdf> accessed on accessed in August, 2013.
- Lee, K. Y. (1959). Speech at a mass rally after the Legislative Assembly General Elections, 3 June.
- Lee, K. Y. (1968). Remarks during the second reading of the Environmental Public Health Bill (Cap 95, Hansard Col. 369), 16 December.
- Lee, K.Y. (1977). Speech at the opening of the Upper Pierce Reservoir, 27 February.
- Lee, K.Y. (1996). Speech at the EDB's 35<sup>th</sup> anniversary, 1 August.
- Lee, K.Y. (2000). *From Third World to First: The Singapore story 1965–2000*. New York: HarperCollins.
- Lee, K.Y. (2005). Comments on Garden City Action Committee report, 21 November.
- Lee, K.Y. (2011). Speech by Mr Lee Kuan Yew at the special preview of the Flower Dome, 14 November.
- Lee, U.-W. (2009, January 24). Recession may stretch but govt ready: MM Lee. *Business Times*.
- Neo, B. S., Gwee, J. & Mak, C. (2012). Growing a city in a garden. In J. Gwee (Ed.) *Case studies in public governance: Building institutions in Singapore* (p. 13). Singapore: Routledge.
- Prime Minister's Office (1975). Memo to the Garden City Action Committee, June.

