Chapter 1

The Early Years of Nation-Building: Reflections on Singapore's Urban History

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Introduction

Singapore has one of the most striking and ever-evolving skylines in the world, created through a process of rapid urban development (Figure 1). In the short span of 50 years, the city-state has transformed from a third world to a modern global city. Today, Singapore ranks as one of the top 10 most livable cities in the world. Singapore's success in urban development and infrastructure efficiency has also elevated the nation's position as a desirable country for economic development, coupled with sound economic policies and a stable political environment, thus spurring greater urbanisation and development.

This transformation from a "fishing village" to a modern world-class metropolitan city was beyond the imaginations of many, given, some 50 years ago, slums and squatter settlements were rampant. Lack of modern sanitation in tandem with poor public health and safety standards were then the norm. Today, we often take for granted the privileges of health, safety, and modern conveniences that include an accessible and operational mass rapid transit (MRT) system at our fingertips. It is therefore useful to reflect where we came from and the progress Singapore has made in a post-independence era. Today's Singapore, particularly our model of urbanisation, is the envy of many countries.

This chapter is an attempt at reflecting the history of Singapore's early years, when extremely poor living conditions were part and parcel of the everyday urban experience. Improving such dire living conditions involved intense struggles and passionate efforts towards modernisation and urbanisation. The strategies, methods, and improvisations for urban development needed to compensate for the lack of readily available resources and information on the subject as televisions, publications, and the Internet were non-existent then. By shedding light on our trials and tribulations, it is hoped that the experiences of my generation will offer some useful and thought-provoking considerations for future successive generations.

Figure 1. Singapore's modern urban skyline featuring Marina Bay and the Central Business District.

Source: Urban Redevelopment Authority.

In this chapter, I would like to explore how urban planning was introduced to Singapore during the colonial era and why urban renewal was incorporated into the nation-building process following Singapore's independence. This moment of urban change was led by the clear vision and determination of fearless political leaders and government officials. Through cooperation, innovation and courage, a city was developed and a nation built in two generations. In order to value the fruits of this labour we must start at the beginning.

The Colonial Legacy: An Urban Story of Inheritance and Loss

The story of Singapore's urban history traditionally begins with the arrival of Sir Stamford Raffles in 1819 and the strategic establishment of the island into a colonial entrepôt serving the Straits Settlements trade route. During this 140-year colonial reign, the British rulers sought to imprint their Eurocentric urban planning principles on the physical terrain of Singapore. Under the colonial administration, Singapore inherited a development strategy that favoured a system of planning to promote economic development and bolster development growth. Thus, Singapore's earliest detailed town plan (1822) (Figure 2), prepared through a Town Planning Committee formed by Sir Stamford Raffles and led by Lieutenant Philip Jackson, served as the blueprint for the spatial organisation of the future town of Singapore.

The "Plan of the Town of Singapore", as the planning document was called, set forth three proposals for the layout of the new settlement sited at the gateway of the Singapore River. Firstly, a gridiron street pattern was imposed on the land as a means of inculcating a rational sense of uniformity and orderliness. Land was then subsequently divided into narrow lots which private individuals could purchase on a freehold basis or on a leasehold term of up to 999 years, as was the liberal policy then towards land ownership and tenure. Construction at the time consisted mainly of low-rise shop-house-style buildings of one- to two-storeys with commerce permitted on the ground

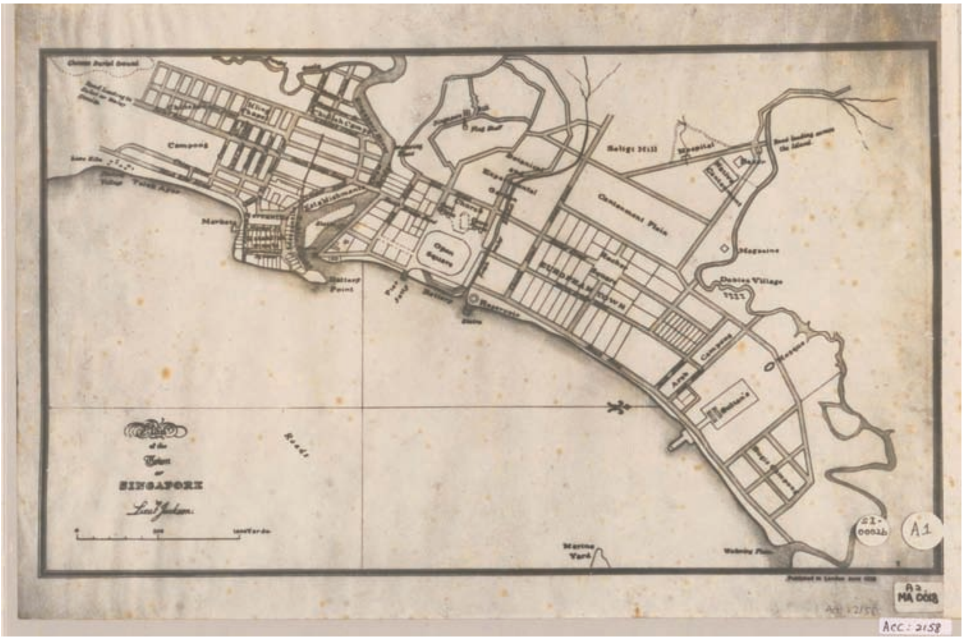

Figure 2. Plan of the Town of Singapore, 1822.

*Source***:** Survey Department Collection, Courtesy of National Archives of Singapore.

floor to support the expanding mercantile activities along the Singapore River. Secondly, land was assigned functional specialisation with areas carved out for administrative, educational, recreational, and religious activities. This initial zoning of land led to the provision of infrastructure and amenities such as civic institutions, schools, and parks for use by the growing numbers of Europeans settling in Singapore. These places, however, ostracised the local inhabitants. Thirdly, and in relation to the local populace, the town plan concentrated and segregated the various racial and ethnic groups into designated residential enclaves. Some enclaves, such as Chinatown, were further divided according to clan dialects with the Hokkien, Teochew, and Cantonese communities occupying various parts of the Chinese district.

The ethnic enclaves created social and spatial divisions; at the same time, they attracted newly-arrived migrants who naturally gravitated to areas that resembled the familiarities and kinship of their homelands. These migrant settlements soon became more and more populated as demand for labour coincided with Singapore's growth from a fledgling trading outpost to a major commercial seaport. In the early days of development, a massive influx of foreign capital and enterprising immigrants entered Singapore, thereby contributing further to the acceleration of economic growth and transforming a once sleepy town into a bustling city. During this growth period, Singapore inherited from the colonial predecessors a modern system of planning

which laid the foundations for urban development. The colonial legacy also included the inheritance of a physical morphology characterised by its fine-grained compact urban fabric and a human-scaled streetscape consisting of low-rise shophouse architecture.

A century later, the urban scene in Singapore became a stark contrast of its early days. By the 1920s, the city core (Central Area) was experiencing severe issues of residential overcrowding, poor sanitation, and street congestion. Many European settlers were relocating from the Central Area to the outlying urban fringe, where larger estate homes could be built in more open space settings. This transition led to the gradual blurring of boundaries and overlapping of functional zones within the Central Area, as earlier settlement patterns conformed less and less to the intentions of the 1822 town plan. In 1927, the Singapore Improvement Trust (SIT) was formed by the British colonial administration to help with progressive environmental improvements such as the introduction of backlanes—for service maintenance and collection of refuse—between shophouses that once existed back-to-back. The SIT was later granted greater authority to build low-cost public housing, the first being the Tiong Bahru Estate in the 1930s. However, the SIT did not produce sufficient numbers of units to mitigate the rising need for adequate housing made more acute following the Pacific War (1941–45). Urban conditions in the Central Area dramatically worsened.

The shophouse, which was designed to accommodate a single household, was partitioned into smaller living quarters which, in many cases, were further subdivided into cubicles and sublet by tenants or the landlord. This practice of absorbing multiple families in shophouses, many of which had been indiscriminately altered with extensions and additions, resulted in severe overcrowding. These densities ranged from 1,200 to 1,700 people per hectare with occasional instances of densities on some blocks reaching approximately 2,500 people per hectare (Chua, 1989). The overcrowding situation severely aggravated the health and safety of those living in the dilapidated shophouses. Ironically, the Rent Control Act of 1947, which sought to protect tenants from exorbitant rental increases arising from the acute shortage of housing following the Pacific War, contributed to the physical deterioration of buildings as landlords were no longer incentivised to maintain and upkeep their properties. Elsewhere, slums and squatter settlements were proliferating in open spaces where salvaged materials such as *attap* leaves, corrugated iron sheets, and wooden planks were used in the construction of makeshift dwellings and ancillary spaces for unregulated businesses. These unauthorised developments posed tremendous risks to the inhabitants and the surrounding environment, especially when activities involving the use of fire, such as cooking, could not be properly contained and controlled.

It became increasingly obvious to the colonial government that Singapore's urban situation would spiral into a vicious cycle unless an intervention was made to regulate growth and development. This intervention was introduced in the form of the

Singapore Improvement Ordinance (1952), which required the SIT to convene a work team that would carry out a detailed island-wide survey to help guide future development. The study was conducted over a period of three years, after which the team produced a Preliminary Island Plan (1955). This draft plan, which was conceptualised by colonial officers at the time, was based mainly on British town-planning practice and was predicated on assumptions of slow managed growth. In terms of land use, the draft plan proposed to retain a clear distinction between the core functions of the Central Area for industrial purposes and peripheral functions of outlying suburbs for self-contained residential communities. The draft plan also favoured low-rise buildings over high-rise constructions, citing cost and traffic congestion as liabilities. The draft plan was further refined and formally approved in 1958 as the Master Plan (Figure 3)—Singapore's first statutory land use document.

The 1958 Master Plan provided a comprehensive island-wide development framework for a projected population of two million in 1972, by identifying three new town sites in Jurong, Woodlands, and Yio Chu Kang as well as prescribing maximum permissible net residential densities (in persons per acre) for planning districts within the Central Area. The architects and planners of the 1958 Master

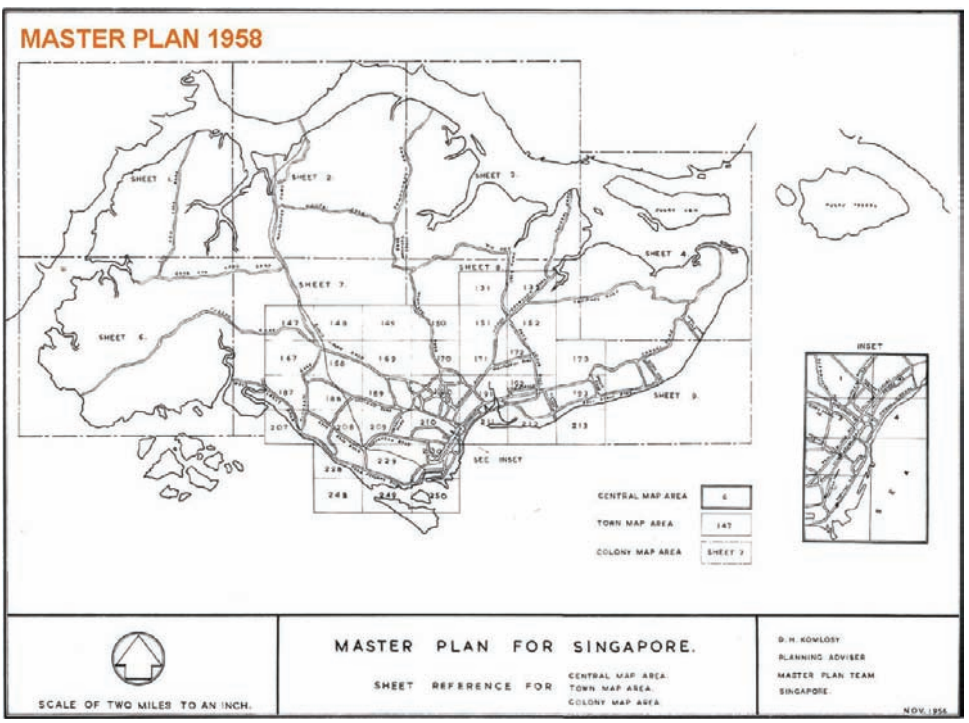

Figure 3. 1958 Master Plan—Singapore's first statutory land use plan.

Source: Urban Redevelopment Authority.

Plan, however, did not anticipate that Singapore's rate of growth would quickly outnumber their projections, nor did they envision the series of political developments that would alter the course of Singapore's colonial history and consequentially pave the path towards full independence as a Republic.

The Road to Independence: Challenges and Opportunities

In 1959, I returned from my architectural and town planning studies in Melbourne to Singapore at a time of transitional change. Singapore had achieved status as a self-ruling State through a democratically-elected government in 1959. The newly-established government was confronted with several major challenges, but the focus on three key priorities would set the stage for Singapore's breakaway from poverty and disorder. The first and most immediate priority was to resolve the acute housing problem. The SIT could only manage an average of 1,700 housing units per year during the post-war period when the population had already exceeded one million (Teh, 1969). A new institution named the Housing and Development Board (HDB) was therefore created in 1960 to replace the SIT.

Secondly, Singapore could no longer depend on her natural hinterland or rely solely on her regional port activities for sustained economic stability as more land was required to accommodate the growing population. In addition, unemployment was on the rise, resulting in a burgeoning informal sector comprised of itinerant hawkers and petty traders working in precarious conditions (Figure 4). Economic advancement therefore

Figure 4. Illegal hawkers and traders once plied the streets of Chinatown (left). A specially-designed shopping environment at People's Park Complex, a URA sale of site development, provided modern facilities for vendors (right).

Source: Urban Redevelopment Authority.

became a priority which set in motion the creation of a statutory board, the Economic Development Board (EDB), in 1961. As I will later illustrate, there was to be great strategic cooperation between the domains of urban planning and economic development that helped spur Singapore's progress from third world conditions to a developed nation.

Lastly, when Singapore gained full independence as a Republic in 1965 following her separation from Malaysia, the newly-established government led by then Prime Minister Lee Kuan Yew focused on nation-building for a population that was approaching two million. Paradoxically, this pressure drove the government to new heights of courage such that opportunities could be grasped and bold visions adopted, in this way, allowing dynamic and effective changes to ensue. In the next section, I relate my experiences on three bold urban programmes that I believe paved a critical path for Singapore's transformation and modernisation.

A Young Nation with Bold Urban Plans

In Singapore's early years as a young nation, there were hardly any trained architects. For the most part, the transfer of design and planning knowledge was passed down from colonial administrators to local technicians and draftsmen. When the SIT dissolved upon the establishment of the HDB, a large number of British architects and town planners left Singapore. However, a small cohort of freshly-qualified architects had just returned to Singapore. I also returned along with this cohort as a graduate of architecture and town planning, and I initially joined a private architecture firm where I was seeking to develop my professional career. Shortly after, however, I was headhunted and invited to join HDB in 1962 as I happened to be the first and only architect then with town planning qualifications in Singapore.

A dynamic team was appointed by the government to steer the newly-established HDB. The team included Lim Kim San (HDB's first Chairman) and Howe Yoon Chong (HDB's first CEO), both of whom were neither architects nor planners. Moreover, Lim Kim San and Howe Yoon Chong had no prior building experience nor a successor from whom they could take over the reins of SIT's public housing mandate. But they were courageous visionary leaders with strategic ideas. Under their directorship, I was empowered to carry out bold and sweeping public housing programmes, new town developments, and urban planning ideas never before experimented in Singapore or elsewhere. Although faced with immense challenges, I was emboldened by the fact that we were all learning together without recourse to sources of information and we had to improvise and devise our own strategies and methods. My only advantage is that I was the only one trained in city planning then.

My initial HDB experience was daunting, as the responsibilities borne were unlike other earlier duties I had held in town planning. The overseas training that I underwent involved the planning of only small European towns with populations of 10,000 to 30,000 people. At HDB, one is thrust into real world conditions with

national implications—this proved to be a tremendous learning curve. The real world conditions of Singapore then were indeed extraordinary and a far cry from any of the case studies I encountered in my University studies. Information on public housing was sparse then, as few cities in the world had embarked on such daring and massive public housing initiatives.

Public Housing: Reinventing the Way-of-Living

Immediately after its formation, HDB was tasked with not only eradicating chronic overcrowding by clearing slums and substandard dwellings in the Central Area, but also providing permanent homes for people affected by resettlement as well as for future population growth (Figure 5). Upon surveying the extent of the housing problem, HDB assessed that 147,000 dwelling units (some of which would include market housing built by the private sector) would be required to meet their objectives by 1970 (Yeung, 1973). Thus began an ambitious 10-year programme with a target of over 50,000 public housing units to be constructed within the first Five-Year Plan between 1960 and 1965. Recognising the severity of the housing shortage, HDB delivered basic accommodation with speed and quantity without compromising on liveability such that, by the end of 1965, the target figure was exceeded with the completion of nearly 55,000 public housing units (Ibid).

How did HDB achieve the construction of a maximum number of units in minimum time and with the least cost? Firstly, by constructing larger numbers of small units of one- and two-room flats, HDB was able to meet the housing demands in terms of quantity. Secondly, by standardising the floor plans as well as sourcing for affordable and easy-to-assemble construction materials, HDB not only saved on construction time but also cost. The second Five-Year Plan concluded in 1970, raising the total stock of public housing units under the management of HDB to over 118,000 (Ibid). In those years, attention to fanciful communal facilities and architectural design details was a luxury that speed and monetary constraints simply did not permit, but that was to change as Singapore progressed and advanced with experience and confidence gained. Today, HDB has pushed the frontier for public housing and estate planning through demonstration projects such as Treelodge@Punggol and Pinnacle@Duxton which feature environmental design elements and the integration of public facilities for social, recreational, and commercial activities.

Urban Renewal: A Formula for Conservation, Rehabilitation, and Rebuilding

My initial years at HDB were steeped in the design of prototype public housing units and planning and development of new towns that included Queenstown

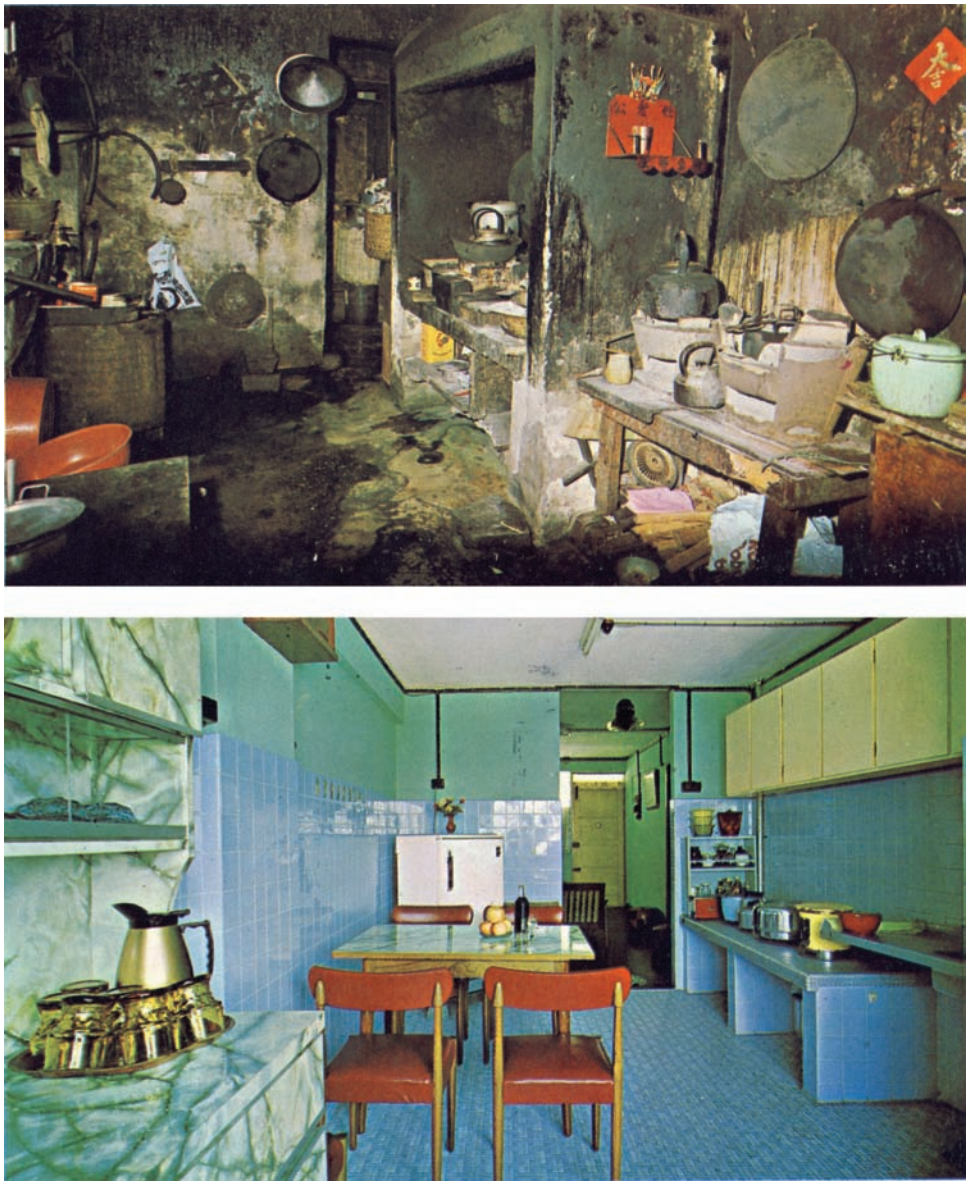

Figure 5. Poor, unhealthy, and dangerous living conditions of a slum quarter in Singapore's early history (top). New HDB one- or two-room flats offered to families affected by resettlement (bottom).
Source: Urban Redevelopment Authority.

and Toa Payoh, both iconic public housing projects through which I gained much experience. The government and HDB soon realised that providing public housing alone, however, cannot completely eradicate the acute source of poor housing and living conditions. Slums and squatters had to be cleared. But such actions could only

be undertaken when sufficient public housing was available to adequately resettle affected residents.

The Singapore government, through the auspices of the United Nations Development Programme (UNDP), deployed Erik E. Lorange in 1962 as an expert to evaluate Singapore's readiness for urban renewal. Being the only trained architect and town planner at the time, I was again tasked by HDB to study, shadow, and assist Lorange in his three-month study in Singapore. At the end of his review, Lorange submitted a report to the government outlining Singapore's readiness to embark on an urban renewal programme.

In 1963, a second UNDP team of three experts in urban renewal visited Singapore after the government accepted Lorange's report. The three experts were Otto Koenigsberger, an architect-planner, Charles Abrams, a legal advisor on land issues, and Susumu Kobe, a traffic economist. At my request, I was given two more architects to study and assist the three experts. Despite the short two-month stay, they were able to outline a report with the boundaries of the central areas to be renewed. Accordingly, in 1964, HDB formed an Urban Renewal Unit and I was tasked to head this special unit. As the importance of slum clearance and urban renewal gained momentum, the Urban Renewal Unit upgraded two years later to a full-fledged Urban Renewal Department (URD) within HDB. The URD was responsible for undertaking land requisition, resettlement, urban renewal, conservation, and sale of sites for private development.

To better understand how urban renewal was carried out in the developed world, I embarked on study trips to Britain, Germany, Japan, and the United States. Other than the United States, the other countries barely carried out or experimented with urban renewal. The American urban renewal experience was the most revealing; here, urban renewal received harsh domestic criticisms for its blatant demolition of buildings and indiscriminate destruction of neighbourhoods that resulted in the displacement of people, for its development of urban ghettos, and a non-transparent sale of sites process for private development. Returning to Singapore, I prepared a report with strong convictions that Singapore would need to approach urban renewal in a different fashion from that which I had witnessed in the United States. Singapore had to create her own formula of urban renewal—a formula of sensitive clearance, resettlement, conservation, rehabilitation, and careful sale of land for private participation and rebuilding.

Government Land Sales: Private Participation and Economic Development

In order for urban renewal to be impactful at a comprehensive level, contiguous parcels of land needed to be transferred legally to the government, cleared, and

re-parcelled for redevelopment opportunities. However, much of the land in the Central Area was subdivided under the earlier colonial planning system into many small narrow lots that were individually owned by private persons. This fragmented patchwork of proprietorship complicated the process of land purchase and clearance. Hence, the Land Acquisitions Act, which was legislated in 1966, enabled the government to acquire private land, in support of national development programmes, at market value compensation to the owner. Within the Central Area, two precincts better known as South 1 (bounded by Havelock Road, Outram Road, and New Bridge Road) and North 1 (bounded by Crawford Street, Beach Road, Jalan Sultan, and Victoria Street/Kallang Road), served as pilot sites for land acquisition and urban renewal.

One of the earliest land parcels to be redeveloped for public housing for resettlement was the former Outram Prison site situated at the foot of Pearl's Hill in precinct South 1 (Figure 6). Built during the colonial period, Outram Prison served as the largest penitentiary facility until the construction of Changi Prison in 1936. Given the prime real estate on which Outram Prison was situated and the urgency faced by a young nation to allocate land in the Central Area for housing resettlement, the rational decision then was to transfer the functions of Outram Prison to a location outside the Central Area and to develop the site for higher intensity residential use. In 1966, the Queenstown Remand Prison was constructed to replace Outram Prison and, with the site freed up, HDB proceeded to develop 1,000 public housing flats and a multi-storey shopping complex at Outram Road specifically to resettle a whole community cleared from People's Park (Figure 6). Other sites in precincts South 1 and North 1 were identified for redevelopment potential. By 1968, 85% of the land in South 1 and North 1 had been acquired for public redevelopment, which resulted in

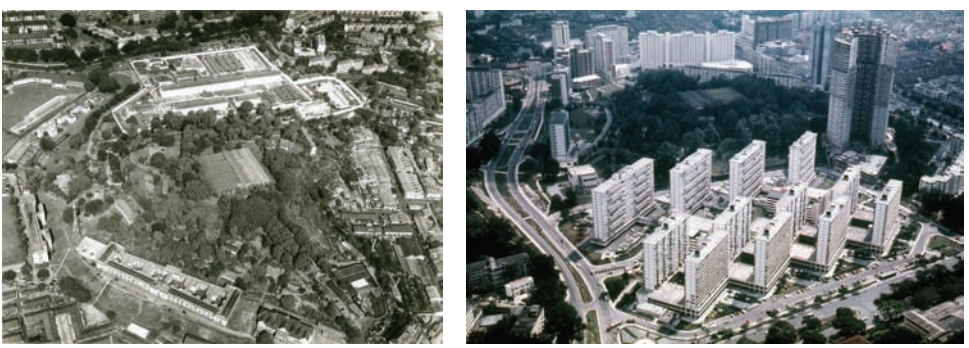

Figure 6. Outram Prison (left) occupying a strategic site was relocated to make way for development of public housing and shops (right) for a whole community affected by URA's resettlement programme.

Source: Urban Redevelopment Authority.

the completion of 3,200 units of flats and shops with a further 3,000 units under construction (Choe, 1969) for resettlement and private development.

Following the success of the South 1 and North 1 pilot projects, the subsequent planning strategy was to redevelop the Central Area in phases. Thus, 15 precincts were demarcated with seven precincts north of the Singapore River and Central area (North 1 to North 7) and eight precincts south of the central business district (CBD) (South 1 to South 8). The strategy was to develop progressively the less complicated parcels of land at the fringes and advance towards the more challenging sites within the Central Area. In particular, the strategic location of the Central Area called for a variety of commercial buildings that would promote economic development. Such projects needed to be viable in order to attract private participation, which was vital to the success of urban renewal. In this way, private participation in commercial developments allowed the government to concentrate mainly on public infrastructure projects such as public housing.

For a long time, however, the fragmented subdivision of land, with narrow frontages for shophouses with multiple ownerships, prevented private development of any significant value to be built on such plots. The private sector is unable to buy, assemble and clear such small lots into sizeable plots of significant projects. Only the government, through the URD, can acquire, clear, and assemble such small plots into sizeable parcels for major commercial projects. In addition to making available amalgamated land, the URD also offered incentives—such as reduced property tax, easy repayment of land cost, and accelerated approval of plans—to attract private sector participation. The URD also embarked on publicity campaigns to educate the public on the needs and opportunities of urban renewal.

In 1967, 14 sale sites on 99-year leases in the Central Area were selected and launched publically for tender to the private sector (Choe, 1969). The first sale site, incidentally, was made available as a result of a fire in 1966 which destroyed an open-air makeshift market that once occupied the grounds we know today as People's Park Complex. People's Park Complex—the first mixed-use podium and tower block construction in Singapore, opened in 1973—was designed and developed by private enterprises following a successful tender bid for the site. In determining the land use for such sale sites, the URD consulted readily with the Planning Department. Right from the beginning, the URD was to not only clear slums and rebuild the CBD but also to generate economic development. Hence, projects offered to the private sector had to warrant demand in and of itself, which also ensured the success of the private sector. As such, the EDB was consulted to ascertain industry trends and market demands which could be developed to spur economic growth. Projects identified for the 14 sale sites ranged from hotels and shopping complexes to offices and residential apartments. By 1973, this initial pilot scheme led to further successive sales, resulting in a total of 45 sites released

through the tender system and attracting $466 million worth of investments (Chew, 1973). It soon became clear that, as the number of sale sites amplified in conjunction with the rapid pace of urban renewal, the URD's workload would not only outgrow its staff but the scope of work would also diverge more and more from the mandate of HDB.

I was convinced that the URD needed greater independence and flexibility in order to effectively and efficiently implement urban renewal programmes beyond the current scale and pace; thus, I began to advocate for the URD's autonomy. Accordingly in 1974, the government established the Urban Redevelopment Authority (URA) to become a statutory board under the Ministry of National Development (MND). I was appointed as the first General Manager of the newly-formed URA, where I intended to serve a brief term after I had completed setting up the rules, procedures, and launch of the first three sale of sites. Thereafter, my intention was to return to private practice. However, I agreed to stay at the request of the Board and I continued on as General Manager of the URA until my resignation in 1978.

The Significant Role of URA and HDB

The government's sale of sites programme for private development was the most important and significant instrument in promoting Singapore's urban development as well as economic growth. Under this initiative, URA would identify potential sites then acquire, clear, and assemble the sites into substantial parcels for major developments. URA would also conduct research on market demands for particular commercial projects that would contribute to Singapore's economic growth—for example, promoting tourism by building hotels or generating financial services by constructing offices. In addition, URA would lay down very specific planning and design requirements for each parcel of land sold. The sale of sites programme by URA also offers much financial incentive to attract bidders for the sites.

The tender documents clearly stipulate that, aside from the price offered, the URA panel also places great emphasis on the design when deciding on the winner of a tender bid. In this way, the process aims to promote good design, nurture and help discover talented architects, as well as educate developers to appreciate good designs. The sales programme sprouted a new generation of designs never before seen in Singapore at that time. For example, the first sale of sites resulted in the People's Park Complex (the first large multi-use building with a large atrium) and three large international class hotels on Havelock Road. Subsequent sales resulted in strikingly large and well-designed high-rise buildings of various commercial and residential types in the precincts of Golden Mile, Central Business District (Figure 7), and Shenton Way (Figure 8).

Figure 7. The early launches of URA's sale of sites programme introduced skyscrapers and modern architectural styles to Singapore's urban skyline. International Plaza in the Tanjong Pagar district (left). OCBC Building in the Raffles Place district (right).

Source: Urban Redevelopment Authority.

Figure 8. Shenton Way before URA commenced a major sale of sites effort to create a Financial Centre (left). Shenton Way after redevelopment gave rise to six modern well-designed office towers along a stretch of former warehouse sites (right).

Source: Urban Redevelopment Authority.

Since its inception, URA has operated independently and alongside the Planning Department (then under the Prime Minister's Office) and Research and Statistics Unit (under MND) to carry out the multifaceted work of nation-building. Over time, however, there was stronger impetus for the centralisation and streamlining of

planning, development control, sale of sites, and conservation functions that resulted in the merger of the URA, Planning Department, and Research & Statistics Unit. Maintaining the name Urban Redevelopment Authority (URA), the new statutory board became operational in 1989.

URA and HDB were and still are significant organisations that have contributed directly to Singapore's urban development. The striking, attractive, and dramatic skyline bears testimony to our very rapid growth, elevating Singapore to one of the most liveable cities in the world.

Long-term Planning for the Future: Genesis of the 1971 Concept Plan

Most of the discussion thus far has dealt with the intricacies of Central Area redevelopment and urban renewal. On a grander scale, planning in Singapore is also an island-wide endeavour. In order to ensure optimal and judicious use of limited land resources to accommodate future economic and population growth, Singapore has systematised a comprehensive and long-range guiding plan for island-wide development. In 1967, a Plan of Operation was signed between the Singapore government and the UNDP for the preparation of a Concept Plan under an initiative called the State and City Planning Project (SCP).

The SCP drew from the expertise of a multidisciplinary team comprising the HDB, Planning Department, Public Works Department, and the assistance of the United Nations. In 1969, the SCP released a draft Concept Plan that made Singapore's approach to planning more strategic and forward-looking, gradually supplanting an otherwise piecemeal and corrective stance towards nation-building. The draft Concept Plan proposed a long-term vision for the allocation of land and investment of infrastructure, thus providing strategic directions for the physical development of Singapore over a 20-year forecast. After two years of further refinements—which included a special topics study carried out by the URD for the preparation of a Central Area Structural Concept Plan that would extend on the island-wide scheme—the Concept Plan was adopted by the government in 1971.

The 1971 Concept Plan (Figure 9) mapped out a vision for the future development of Singapore that can be abstractly represented as a 'ring' pattern of self-sufficient new towns encircling the green Central Catchment area and an East-West corridor along the southern coast of Singapore connecting major employment hubs such as Changi Airport (East), Central Business District (Central Area), and Jurong Industrial Estates (West). The 1971 Concept Plan imparted three urban growth strategies which, today, are visible components of Singapore's physical landscape. Firstly, in terms of spatial organisation, the 1971 Concept Plan promoted a form of urban development and expansion structured around a ring pattern of circulation. This ring helped to ensure the safeguarding of land for essential transportation infrastructure such as the island-wide expressway system, MRT network, and Changi

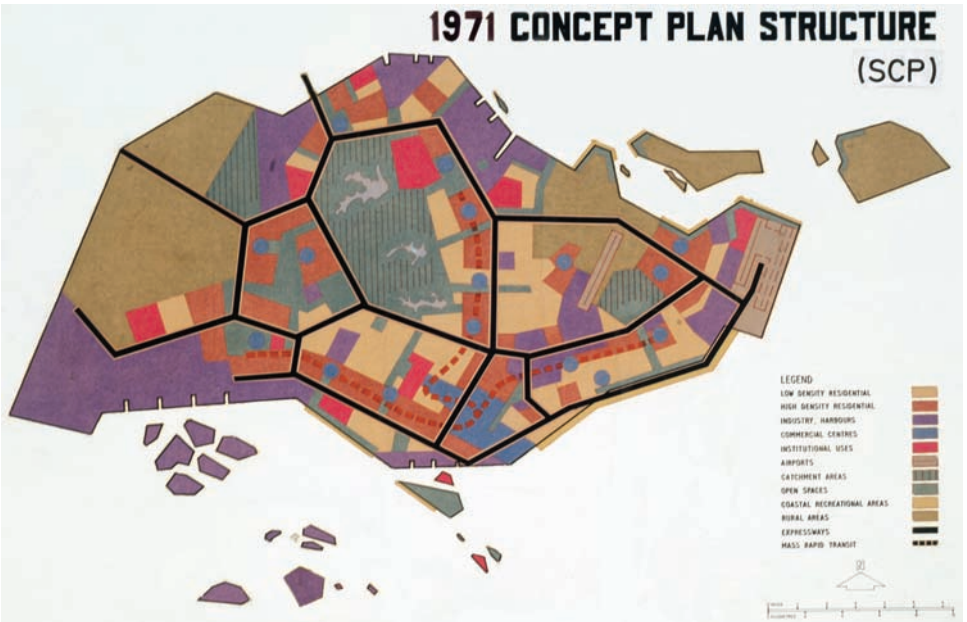

Figure 9. 1971 Concept Plan.
Source: Urban Redevelopment Authority.

Airport. Secondly, the nodes along the ring provided a spatial framework for the integrated planning of major land use sectors, namely, high-density residential areas served by commercial centers, industrial estates, and green spaces, resulting in the coherent development of self-sufficient new towns. Thirdly, the 1971 Concept Plan identified the Central Area—situated at the historic city centre and where the two proposed MRT lines would intersect—as a significant commercial hub for business and financial activities, which then prompted the series of urban renewal programmes described earlier.

The 1971 Concept Plan laid the necessary foundations for Singapore's growth and promoted a rational planning approach based on grounded calculations and population forecasting. Thereafter, subsequent reviews of the Concept Plan would be undertaken every 10 years to build successively upon the broad strategies and development policies of earlier Concept Plans. With each new version of the Concept Plan, we learn more about our past and, in turn, this learning creates new lessons for our future.

Today, URA has evolved its capacity to include many new functions relating to land development and control. At the same time, URA is continuing the essential traditions of its predecessor by identifying and conserving architectural heritage while also charting the urban future of Singapore by building on the successes of earlier plans. The 1971 Concept Plan is the earliest long-term land use plan whose foundational

principles continue to manifest in the physical landscape of Singapore. The story of Singapore's urban history, therefore, would be incomplete without illustrating the contribution of the 1971 Concept Plan—a hallmark blueprint and a keystone in the making of modern Singapore at that time. The URA of today, comprising a highly developed and extremely talented team, has adopted an action oriented plan that can quickly adapt to the ever-changing demands and needs of society and businesses but with careful consideration on long term land use, availability of land, and population and economic growth.

Conclusion: Lessons from the Past are Lessons for the Future

Singapore's rapid progress of nation-building and urban development is the envy of many countries. Within 50 short years as an independent city-state, Singapore has developed into a global hub with modern amenities rivalling advanced urban economies such as Hong Kong, London, and New York. Today's image of Singapore, however, is a sharp contrast against the Singapore of yesteryear. That a small island-nation emerged from near destitute urban conditions to become one of the world's wealthiest countries is indeed a remarkable feat involving cooperation, innovation, and courage. It is these three qualities that, time and time again, resonate in the story of Singapore's urban history.

Cooperation was a vital work ethic during an era of limited financial resources and scarce knowledge capital. In those days, government agencies learnt to adopt a consultative and collaborative attitude towards their counterparts in the public sector. By leveraging on the multidisciplinary skills of civil servants and sharing knowledge across agency lines, a whole-of-government approach to planning was formulated so as to achieve the best all-round results on public projects for which many lives and multiple stakeholders were affected.

In the early years, innovation was rampant despite the lack of resources, due to the necessity for functional housing, amenities, proper sanitation, and efficient traffic circulation. Such urgent matters served as a powerful driving force for advancements in planning. Much of the innovation was derived by way of studying and learning from precedents. Public housing, for example, has gone through a series of design innovations with each new era producing better improvements over the previous one. During my initial years with HDB, I studied the early generation of SIT flats in housing estates such as Tiong Bahru where kitchens and lavatories were communal facilities shared by multiple households in the one-room units built. The HDB flats that immediately superseded the SIT flats were not only much taller buildings, in order to maximise the use of land, but also designed such that each dwelling unit was equipped with its own private kitchen and lavatory as a result of changing social demographics. Such quantum leaps continued as public housing evolved over the decades with the introduction of the Build-to-Order and Design, Build, and Sell schemes.

Courage has served as the resilient axle for every pivotal turning point in Singapore's urban history. The courage to draw up ambitious visions and bring to reality bold urban plans through committed implementation enabled Singapore to overcome challenge after challenge. In the early years, such courage stemmed from strong political will, good governance, and pragmatic foresight, which were instrumental in gaining public support for projects that at first seemed too radical and ahead of their time. Projects such as high-rise living in HDB flats, acquisition of private land for urban renewal, and transportation by means of the MRT network were initially confronted with public hesitation and scrutiny. However, through sound planning, rational goals, and testing of pilot studies, the government sought the support and confidence of the public. In this respect, it could be said that Singapore's pioneer generation visibly wore courage on their sleeves.

Singapore's path was paved 50 years ago with clear intentions and ambitions. The direction of Singapore's progress and development was charted early on, allowing key action programmes to be identified and swiftly carried out: eradicate poverty; provide safe and permanent housing for the masses; revitalise the city centre; and inject new economic opportunities that would simultaneously create jobs and raise the employment rate. In those early years, the objectives were discernable and the will to achieve them was fervent. As we now ponder the urban fate of Singapore in the next 50 years, we need to ask ourselves if we should continue forging on the path which we have trekked for five decades, or venture on a trail yet to be marked. The road ahead is laid with complexities and uncertainties, but by gleaning insights from Singapore's urban history, we learn anew the ways through which cooperation, innovation, and courage can take the future of urban planning in Singapore to heights never before imagined.

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