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PLANNING FOR  
A SECURE CITY



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# URBAN SYSTEMS STUDIES

## PLANNING FOR A SECURE CITY

CENTRE for  
**LiveableCities**  
SINGAPORE

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## Editorial Team

Writer:	Stewart Tan, Senior Assistant Director, Centre for Liveable Cities
Research Supervisor:	Limin Hee, Director, Centre for Liveable Cities
Editor:	Prema Somasundram, Adjunct, Centre for Liveable Cities
Production Supervisor:	Eunice Rachel Low, Adjunct, Centre for Liveable Cities

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## For product information, please contact

CLC Publications  
+65 66459576  
Centre for Liveable Cities  
45 Maxwell Road #07-01  
The URA Centre  
Singapore 069118  
[MND\\_CLC\\_Enquiries@mnd.gov.sg](mailto:MND_CLC_Enquiries@mnd.gov.sg)

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## FOREWORD

Singapore enjoys one of the lowest crime rates in the world and, unsurprisingly, the sense of personal safety and security that its residents enjoy is among the highest. This is a state of affairs that has prevailed for so many years that many Singaporeans reportedly believe or think it is the normal state of social life in a densely populated modern, cosmopolitan city. The focus of this Urban Systems Study is “Planning for a Secure City”. It will attempt to recount the multi-faceted story of how this state of affairs was planned, managed and came about, for it certainly did not come about by natural evolution or by accident.

The lived reality for most residents in Singapore of the 1950s and 1960s was a place divided into ethnic enclaves, with Chinese triads and secret societies maintaining a stranglehold over specific population areas across the island’s geography. The dominant Chinese civilian and business communities in particular were plagued and exploited by these criminal elements, which, in their areas of control, also ran organised crime in the form of vice, smuggling and gambling.

This organised criminal stratum provided a form of “order” in the areas under their control; hawkers and small businesses of that era would remember the “protection money” that they had to pay to these elements akin to some local tax or levy for the right to operate their businesses unmolested. This is not to say that at the time there were no formal laws or a police force and institutions like the courts, but rather that these seemed to operate at an elevated level far removed from the living reality of ordinary members of society at the day-to-day and ground level.

For such a state of affairs to be transformed, the government needed to impose its presence and will, and re-assert an “alternative” order, with itself as its centre, and ensure that this order is observed by the community at the ground level. Essentially, this meant asserting or re-asserting the government’s political and legal authority comprehensively and effectively, enforcing the laws of the land firmly and strongly.

In his book, *Policing*\*, Asad Latif describes a speech given by Singapore's founding Prime Minister, Mr Lee Kuan Yew, to university law students in 1962, where he said: "In a settled and established society, law appears to be the precursor of order. Good laws lead to good order....But the hard realities of keeping peace between man and man and between authority and individual can be more accurately described if the phrase were inverted to 'order and law', for without order, the operation of law is impossible."

Establishing such an order, even if founded on the rule of law, cannot be achieved and certainly cannot be sustained purely by the efforts of a government acting unilaterally without the acquiescence or support of the people. The implicit or tacit support of a people by then weary of the culture of criminality plaguing their neighbourhoods, of being potential victims to the lawlessness of Communist-inspired civil strife or communalist-inspired violence, is a critical but perhaps under-developed aspect in the conventional narrative of how Singapore achieved its "safe and secure" tag-line of today.

Public confidence in the impartiality and effectiveness of the authorities—their strong and determined action to wipe out corruption in the public service, especially the police; the tough laws they enacted but more importantly their ability to effectively and impartially enforce these laws—is a crucial aspect to complete the story of Singapore's journey to achieve its record of safety and security.

Security is a deeply valued part of the Singaporean's quality of life today but the story of security was and continues to be invariably intertwined with the parallel story of social and economic development. In the early years, it may have been the foreign investor evaluating his options in the region to start or develop his business in Singapore or the resident in a Housing and Development Board (HDB) precinct whose family members benefitted from the educational amenities planned and situated nearby and the increased job opportunities that economic growth afforded. In later years, it may have been the design of our public housing estates and towns to purposively reflect multi-ethnic interests or even at the block

\* Asad Latif, *Policing* (Singapore: Institute of Policy Studies: Straits Times Press, 2017).

level to design visually porous void decks, which among other things, are also a good anti-crime feature. The aggregate product of all these is our people of diverse classes, creeds and races growing more confident not only in the continuing assurance of being able to enjoy equal protection under the law but also in sharing the well-being that comes from enjoying a strong sense of personal safety and security as the norm in their daily lives. These are the many different but allied strands that collectively constitute the story of Singapore's development of its way and quality of life, which today includes its residents' high sense of personal safety and security from the threat of crime and violence.

One may argue that the shape and pace of material development that our urban, social and economic planning agencies were able to pursue and achieve would have been improbable if the stability of order, the transparency and effective enforcement and observance of the law was not established to become the ground or context upon which such development stood. On the other hand, one may suspect that without the observable benefits of this material progress, especially through the economic programmes of the government, the public's attitude towards the value of a strict order and its tough laws may have been less accommodating.

In any case, Singapore's rapid and significant economic development must invariably bring with it attendant social and cultural change. And so, perhaps a question to ask now is how the attitudes of a generation and a half of Singaporeans born into a society with low crime and high personal safety and security as a "natural" given differ from those of their predecessors and what this may mean for the law and order equation today in Singapore.

**Benny Lim**

Former Permanent Secretary for Home Affairs,  
National Development and  
National Security and  
Intelligence Coordination

## **PREFACE**

The Centre for Liveable Cities' (CLC) research in urban systems unpacks the systematic components that make up the city of Singapore, capturing knowledge not only within each of these systems, but also the threads that link these systems and how they make sense as a whole. The studies are scoped to venture deep into the key domain areas the Centre has identified under the Singapore Liveability Framework, attempting to answer two key questions: how Singapore has transformed itself into a highly liveable city over the last five decades, and how Singapore can build on our urban development experience to create knowledge and urban solutions for current and future challenges relevant to Singapore and other cities through applied research. *Planning for a Secure City* is the latest publication from the Urban Systems Studies (USS) series.

The research process involves rigorous engagement with our stakeholder agencies, and numerous oral history interviews with Singapore's urban pioneers and leaders to gain insights into development processes. The tacit knowledge drawn out through this process allows us to glean useful insights into Singapore's governance and development planning and implementation efforts.

As a body of knowledge, the Urban Systems Studies, which cover aspects such as water, transport, housing, industrial infrastructure and sustainable environment, reveal not only the visible outcomes of Singapore's development, but also the complex support structures of our urban achievements.

The Centre would like to thank Dr Liu Thai Ker, Mr Benny Lim, Mr Pang Kin Keong, Mr Tee Tua Ba and all those who have contributed their knowledge, expertise and time to make this publication possible. I wish you an enjoyable read.

**Khoo Teng Chye**  
Executive Director  
Centre for Liveable Cities

## **ACKNOWLEDGEMENTS**

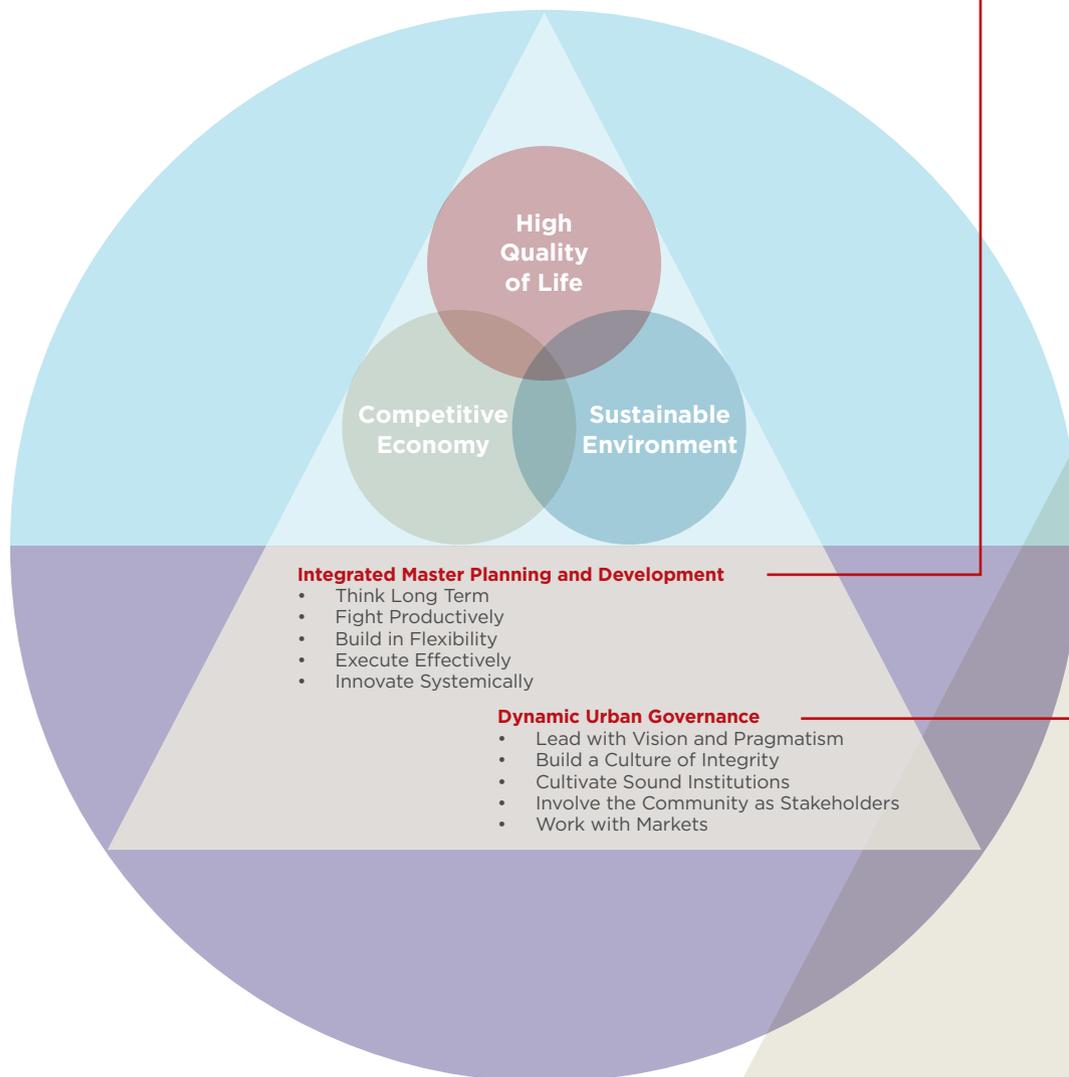
The Centre for Liveable Cities (CLC) is grateful to the security and urban leaders and experts who have generously shared their insights and experiences through the interviews conducted as part of the study process, including (in alphabetical order) Benny Lim, Dr Liu Thai Ker, Seng Joo How, Tan Boon Huat, Tee Tua Ba and Yap Kheng Guan. The Centre is also grateful for the inputs and assistance provided by the Ministry of Home Affairs, the Singapore Police Force, Gardens by the Bay, and Marina Barrage in the publication of this study.

The writer, Stewart Tan, would like to extend his gratitude to colleagues both past and present for their support and advice. In particular, he would like to thank Michael Koh, and Sophianne Araib for their guidance, Prema Somasundram for her editorial inputs, Eunice Rachel Low and Joanna Tan for their support throughout the writing and production process, as well as cubicle neighbour Kuang Jin Yi for entertaining his queries on producing the publication. Most importantly, he wishes to thank his family for their unwavering love and encouragement as he worked on this project.

# THE SINGAPORE LIVEABILITY FRAMEWORK

The Singapore Liveability Framework is derived from Singapore's urban development experience and is a useful guide for developing sustainable and liveable cities.

The general principles under **Integrated Master Planning and Development** and **Dynamic Urban Governance** are reflected in the themes found in *Planning for a Secure City*.



## Integrated Master Planning and Development

- Think Long Term
- Fight Productively
- Build in Flexibility
- Execute Effectively
- Innovate Systemically

## Dynamic Urban Governance

- Lead with Vision and Pragmatism
- Build a Culture of Integrity
- Cultivate Sound Institutions
- Involve the Community as Stakeholders
- Work with Markets

## Integrated Master Planning and Development

### Fight Productively

The Marina Barrage, built to create a reservoir across the Marina Channel, was initially planned to resemble other water sewerage and treatment plants found across the island, with their high fences and “No Trespassing” signages, and was designed as an engineering facility. However other stakeholder agencies such as the Urban Redevelopment Authority felt differently. For them, the Barrage presented an opportunity to turn a reservoir into a public space and attraction, given its central location in the downtown core. This would bring the public closer to water while at the same time retaining the core functions of the Barrage as a reservoir and flood control facility.

(see Marina Barrage: A Secure 3-in-1 Facility, p. 61)

### Innovate Systemically

In leveraging the advances made in CCTV technology and expanding its initial deployment as part of post-September 11 counter-terrorism efforts, the Singapore Police Force piloted the PolCam 1.0 system in selected Housing and Development Board (HDB) public housing blocks. Drawing on internal and resident feedback gathered during the pilot phase, the deployment and implementation plans for the subsequent roll-out to other HDB blocks and carparks were further refined. This included efforts to allay privacy concerns with permissible usage and installation guidelines put in place for both police-operated CCTV cameras and personal cameras installed by residents outside their flats.

(see Police Cameras in the Heartlands, p. 89)

## Dynamic Urban Governance

### Lead with Vision and Pragmatism

Lee Kuan Yew, Singapore's founding Prime Minister, took a pragmatic stance towards having designated tolerated zones for prostitution, seeing it as necessary to fulfil a basic human need, particularly in light of the growing migrant worker population. At the same time, vice activities would be kept in check by having clearly defined physical and regulatory boundaries that restrict the areas in which prostitutes could operate and the licensing conditions that needed to be met, such as regular health screenings for prostitutes.

(see Red Light Districts: Containing Containing Prostitution in Designated Tolerated Zones, p. 15)

### Involve the Community as Stakeholders

Beyond physically locating Neighbourhood Police Posts and Centres within housing estates to bring policing closer to the residents, the success of Singapore's community policing efforts also stems from a combination of other factors. These include initiatives such as the Neighbourhood Watch and Citizens-on-Patrol schemes, policies such as the push towards encouraging home ownership over rental, and design features such as having well-defined neighbourhood precinct boundaries, geared towards instilling a greater sense of ownership and pride over one's physical surroundings and concern for the well-being of fellow residents.

(see *Creating a Sense of Territory and Community for Improved Security*, p. 84, and *Neighbourhood Watch and Citizens-on-Patrol*, p. 110).

## OVERVIEW

“A good city, first you must feel safe in it. There's no use having good surroundings but you are afraid all the time...Today a woman can run at three o'clock in the morning... [go] jogging...She will not be raped. [This is] an essential part of a liveable city.”<sup>1</sup>

Lee Kuan Yew, founding Prime Minister of Singapore, on his model of a liveable city

## SECURITY AS A KEY COMPONENT OF LIVEABILITY

Singapore has faced wide-ranging security challenges throughout its relatively short history. From social unrest and communal strife in the form of racial riots prior to independence, the destabilising threat posed by pro-Communist elements which culminated in union strikes and violent clashes (for example, the Hock Lee Bus riots in 1955 and the Singapore Chinese Middle School riots in 1956), the drug menace with the introduction of the “hippie” culture and easy access to narcotics smuggled in from the region, a general sense of lawlessness with rampant secret societies, gang-related activities and armed kidnappings, to the looming spectre of violent extremism in a post-9-11 world, as well as the challenges of managing the demands of a rapidly changing demographic.

Yet, for the most part, Singapore has succeeded in navigating these security minefields and threats to nationhood, and, in doing so, has achieved its current status as one of the safest cities in the world. This accolade cannot solely be attributed to having world-class law enforcement and security agencies capable of stemming the spread of criminal activities, but also owes a great deal to a confluence of good planning and governance, in terms of

social measures, urban infrastructure, redevelopment and legislation, which have helped build a more inclusive society and a secure living environment for its residents. It is this sense of security to be able to carry out one's daily activities, within a well-designed urban setting, that has been a key contributor to Singapore's liveability, a sentiment that has also been expressed by Singapore's founding Prime Minister, Lee Kuan Yew.

This study documents Singapore's approach to creating a secure, liveable city which closely mirrors the nation's urban development journey—from cleaning up the streets to make them safe and ensuring the provision of adequate basic resources such as water, to providing a secure roof over residents' heads, and enhancing social bonds between the different communities as a means of preventing a reoccurrence of the social unrest of the past.

This Overview describes the importance of security in making a city liveable and how good city planning has, in turn, contributed to the overall state of security enjoyed by Singapore. Chapter 2 looks at the integral role that security has played in Singapore's nation-building and in ridding the city of post-independence social ills and crime. Chapter 3 examines how Singapore has planned for and accommodated security infrastructure in the course of its urban development, and how it has balanced the competing demands between the need for land and the provision of security services. Chapter 4 focuses on how Singapore's New Towns and housing estates have been designed with security considerations in mind. Chapter 5 captures how neighbourhood policing and the community's role in crime prevention have evolved over the decades.

## CITY PLANNING FOR A SECURE LIVING ENVIRONMENT

When asked how important good city planning is to a nation's development, Lee Kuan Yew once said that it decides the kind of environment you live in, whether it is peaceful and there is a sense of personal safety. The strong interplay between town planning and security in Singapore was further emphasised by Dr Liu Thai Ker, former Chief Executive Officer of the Housing and Development Board (HDB) and Chief Planner of the Urban Redevelopment Authority (URA), in summing up what he considers is Singapore's unparalleled achievement in clearing up the city of social ills within its first 20 years of independence through its public housing scheme. Underpinning the effectiveness of Singapore's

security policies and their implementation is its culture of non-corruption. As noted by Lee Kuan Yew, Singapore has "a non-corrupt bureaucracy, especially the police, heavy penalties for corruption, rigorous enforcement of the law". This characteristic has enabled people, then and now, to accept the fact that they have to obey the law within their homes, in the communities that they reside in and in their daily lives.

*By 1985, we have no homeless, no squatters, no ghettos, no enclaves. You name me one other city. America, Europe, they cannot have this thing. We're the only city that has done that.<sup>2</sup>*

Dr Liu Thai Ker, former CEO of the Housing and Development Board and Chief Planner of the Urban Redevelopment Authority

## COMMUNAL STRIFE: THE 1964 AND 1969 RIOTS

Singapore experienced its worst post-war riots in July and September 1964, with violent communal clashes between the Chinese and Malays resulting in 36 deaths, close to 600 persons injured and over 5,000 arrests. The 21 July riot took place during a procession celebrating the Prophet Muhammad's birthday. The procession, which started at the



Padang in the city centre and was to end in Geylang, was attended by around 20,000 Muslims. However, along the procession route, clashes broke out between the Malays and Chinese bystanders around the Kallang area as well as at Kampong Poo Soo near Geylang. The escalation of violence and destruction of property led to an island-wide curfew being imposed until early August. The following month, a second series of riots broke out after the suspicious murder of a Malay trishaw rider opposite the Changi Market at Geylang Serai, which resulted in Malays taking retaliatory action against the Chinese. Similar to the July riots, violence spilt over to other parts of Singapore, leading to another nationwide curfew being put in place.

Police responding to the 1964 racial riots.  
Image courtesy of Ministry of Home Affairs, Singapore.

The riots were largely stoked by rising political tension between the People's Action Party (PAP) government in Singapore and Malaysia's ruling Alliance Party, a coalition led by the United Malays National Organisation (UMNO). The tension was due to the perceived interference by the PAP in Malaysia's domestic affairs and the Alliance Party's unhappiness with the PAP's stance that it would not accord Malays in Singapore the special privileges such as job quotas that their counterparts in Malaysia were receiving. But the riots also exposed the simmering distrust between the Chinese and Malays in Singapore at the time.

Post-independence, Singapore experienced its next communal riot in May 1969, which again involved the Chinese and Malay communities. The trigger for the unrest was the Malaysian general election results. Unprecedented Chinese-Malay riots broke out in Malaysia, sparking off a domino effect in Singapore, which was heightened by rumoured atrocities committed against Malaysian Chinese and biased treatment by the Malaysian Armed Forces. This particular round of clashes resulted in four deaths and 80 injured.

Yet, even in the midst of the rioting and violence, as recounted by Benny Lim, Singapore's former Permanent Secretary for Home Affairs and National Development, there were incidents of residents in *kampongs* (Malay for "villages") of mixed ethnicities protecting each other regardless of their racial or religious affiliation. Such incidents were attributed to the strength of neighbourly ties among the residents, which superseded the cause of the unhappiness that triggered the riots.<sup>3</sup>

### PHYSICAL SPACES FOR BUILDING COMMUNITY BONDS

Shaped by his experience of the tumultuous 1950s and 1960s, Lee Kuan Yew saw the importance of community bonding to foster greater understanding and trust between the different racial groups, especially in a multi-ethnic society such as Singapore. Lee Kuan Yew, in his role as Chairman of the People's Association, a statutory body set up to foster racial harmony and social cohesion, had introduced Community Centres in the early 1960s to improve cross-cultural interaction. Beyond that, he viewed public housing as an important physical infrastructure that could bridge the divide between different racial groups and heal the wounds of past ethnic-driven violence.<sup>4</sup> Thus began a concerted push towards replacing the *kampongs* (that had become ethnic enclaves) with newly built towns and housing estates that had an ethnic mix.

# CHAPTER 1

# THE ROLE OF SECURITY IN NATION-BUILDING

“When we resettled, we created the opportunity to develop a proper masterplan, a logical coherent strategy, systematic design so that you do not have to first possess deep tribal or local knowledge in order to police and adequately respond to security needs.”<sup>5</sup>

Benny Lim, former Permanent Secretary for Home Affairs and National Development

## INTEGRATION AND SECURITY THROUGH SQUATTER RESETTLEMENT

### Unhealthy Segregation in Early Town Planning

In the early days of nationhood, the majority of the population resided in overcrowded slums, squatter housing and villages, with the urban district comprising one of the most congested slums in the world. Conditions were worsened by a slow-moving economy. This resulted largely from a drop in trade with a key trading partner, Indonesia, during a confrontation (Konfrontasi) between the two countries, and the withdrawal of the British military forces from Singapore beginning in 1968. With high unemployment, overcrowding and poor living conditions, these urban slums were ideal breeding grounds not only for disease, but also criminal activity such as theft, robbery, gambling and drug abuse, overlaid with a strong secret society presence within the squatter community.

Dr Liu Thai Ker recounts how the original colonial town planning and distribution of communities not only produced a segregation between urban dwellers, squatters and farmers, but also a further division into ethnic and dialect enclaves over time.<sup>6</sup> Occupying separate sides along

the Singapore River, the Chinese community was largely concentrated around the Chinatown area to the west, the Malays in Kampong Glam, Geylang Serai and Arab Street in the north, and the Indians in Little India to the east. Katong and Joo Chiat on the eastern part of the island were largely Eurasian and Peranakan Chinese<sup>7</sup> enclaves. Intra-ethnic divisions were also prevalent at the time, with the formation of dialect enclaves among the Chinese, such as at Amoy Street and Telok Ayer for the Hokkien Chinese; Circular Road and South Bridge Road for the Teochew; and Temple Street and Pagoda Street for the Cantonese. Historically, since the 1800s, there had been simmering tensions between the dialect groups that occasionally resulted in violence, the most prominent being the Hokkien-Teochew riots of 1854, dubbed the “Five Catties of Rice Riots”. In some instances, instigation from clan and dialect-based triads prompted the escalation of violence. Beyond just the spatial segregation that resulted from dividing the different ethnic communities, the town planning at the time reinforced an unhealthy social segregation, with the lack of interaction posing a major security risk to a racially diverse population.



Plan of the Town of Singapore by Lieutenant Philip Jackson, 1822.  
AccNo2158 Survey Department, Singapore Collection, courtesy of National Archives of Singapore.

Through HDB's public housing resettlement efforts in the 1960s, residents moved out of unsafe, unhygienic living conditions. Additionally, these efforts alleviated some of the negative outcomes commonly associated with ethnic clustering in economically depressed areas, akin to the ethnic ghettos (*banlieues*) seen in France. These include the risk of communities being trapped in a vicious poverty cycle owing to lack of access to proper facilities and resources, and the formation of ethnic-based gangs and secret societies.

*Because otherwise you would have a lot of problems and we did not want the Malays to be concentrated in Geylang Serai and when we rebuilt, they were dispersed because they were not given the chance to go back. You ballot for your flat and so we dispersed minority enclaves which were depressing areas, because the people were poorer, the shops were poorer, markets were weaker, less sales and once you go in there, you will know that, you are going into a slum area.<sup>8</sup>*

Lee Kuan Yew, on the impetus behind dispersing the ethnic enclaves



New HDB flat dwellers waiting for then Prime Minister Lee Kuan Yew during his constituency tours of Tiong Bahru, Delta and Havelock housing estates in 1963.

Image courtesy of National Archives of Singapore.

However, this ethnic redistribution needed to be carried out judiciously, as maintaining a semblance of familiarity and belonging among residents was still necessary during the adjustment phase of moving into public housing. Alan Choe, HDB's first architect-planner and founder of the URA, explains the concern felt by residents: "the biggest fear they have is to be detached from their neighbours, you scatter them. So we learned very quickly that when we relocate an area, we should try and make the whole area move there—intact. So that they do not lose the sense of belonging. [It] may be [a] new environment but their neighbours and friends are still there."<sup>9</sup>

As described by Benny Lim, from a policing standpoint, resettlement into housing estates helped in making the provision of security somewhat more systematic. With *kampongs* being largely unregulated spaces, police officers would not be familiar with the village layout, housing addresses and overall environment, unless they were living in them.

### Allaying Resistance to Resettlement

In the initial stage of resettlement, there was understandably some resistance, given the residents' affinity to *kampung* living and even unfounded suspicions among some quarters that the government was responsible for starting fires in the *kampongs* in order to acquire land below market value and compel the residents to leave by law. There were reported incidents of squatters on state land refusing to vacate their homes, and, in some cases, resorting to threats of violence against HDB resettlement officers and the police who came down to their homes to enforce court-issued warrants for their eviction. Another task that resettlement officers had to perform was rendering the squatters' dwellings uninhabitable by removing staircases and windows. One such personal experience was shared by Lim Hoon Yong, former Head of the Resettlement Department in HDB, who, during a house visit to the MacPherson area, was chased out by an irate resident wielding a cleaver as she did not want to comply with the eviction warrant. However, for the most part, resettlement efforts went about without major security incidents.<sup>10</sup>

Dr Liu Thai Ker attributes this partly to HDB taking proactive measures to smoothen the transition process by planning, as far as they could reasonably do, for the new housing estates to be within three to five miles from the squatters' original settlement so that they were not completely uprooted and separated from their friends and relatives. Such efforts

also allowed children to continue to go to the same schools and maintain their circle of friends. The new housing and the provision of other facilities within the new estates, such as shops, factories, bus services and public utilities, created a sense of jealousy and anticipation among the squatters yet to be resettled, especially after their newly resettled former neighbours returned with stories about their new lives in HDB estates.<sup>11</sup>

Beyond the planning considerations, another key contributor to the smooth implementation of the resettlement programme was the HDB resettlement officers themselves. They had in mind a clarity of purpose and deep understanding of the rationale underpinning the removal of slums and *kampongs*, which enabled them to effectively communicate with the affected residents and explain the improvement that moving to new towns would bring to their daily lives. Officers even went to the extent of bringing affected families down to the resettlement estates to see for themselves their new housing. In addition, compensation payments were brought forward, with squatters being paid before they moved out of their homes instead of after. These were crucial gestures to gain the squatters' acceptance. As a sign of the success of the resettlement programme, squatters were no longer writing complaint letters to HDB expressing their unhappiness at having to leave their homes; instead, they were writing to ask why they were not being resettled yet.

*I feel that as long as you know your work, you know your rationale of your new policies, or new schemes, and you explain with respect to the people, you can count on them being rational. The secret is that if you plan your new town with good facilities, good ventilation, good lighting, and good shopping, good jobs, good schools, good transportation. The friends who moved into HDB flats reluctantly in the beginning, are now telling the people in the squatter areas, 'Wow, our life has changed, it's much better.' The rest of them will blame the government for not resettling them early. So we never had a serious problem in dealing with [re]settlement.<sup>12</sup>*

Dr Liu Thai Ker, on how HDB was able to achieve peaceful resettling of squatters



HDB flats in Geylang in the 1960s and 70s with easy access to shops and public transportation.

Image courtesy of [mforum.cari.com.my](http://mforum.cari.com.my)

Despite having strongholds in areas earmarked for resettlement, secret societies did not create much problems during the resettlement exercise. Alan Choe attributes their quiescence largely to police officers ensuring that the situation on the ground was under control, so that resettlement officers could safely go about their work. Alan Choe notes that secret society members were also aware that the new government took a no-nonsense view of the bribery of public officers and of the use of violence against them, be it during resettlement or other interactions with public servants.

*At that time one good thing is that the secret society knew very early when this government came into power this is a no-nonsense government. They cannot bribe officers or anything and what they say goes. I think because of that the resettlement officers that were the front-liners to deal with this thing, there were very few incidences of them being assaulted by the persons affected. Very few. It was a credit at that time to the police force—they were there to back up. And I think the members of the public affected also recognised that this government will not stand for any kind of threats from the members of the public to change their mind.<sup>13</sup>*

Alan Choe, on the contributions of the police and strong governance in ensuring that the resettlement process went about without secret society interference

## RIDDING THE CITY OF GANGS AND SECRET SOCIETIES

### Instilling Law and Order through Squatter Resettlement

One of the most pressing security challenges that the government had to grapple with during the early days of nation-building was how to rid the streets of gangs and secret societies, who were at the peak of their powers in the 1950s and early 1960s. This period saw widespread gang-related criminal activities and violence in many parts of the city, from marketplaces to community spaces. Secret society strongholds largely followed the ethnic geography of the time, with Chinese secret society presence being particularly strong in Chinatown, Joo Chiat, Bukit Timah, Nee Soon and Katong, while the Malay gang stronghold was largely in Geylang Serai. The Chinese *kongsis* (clan-based secret societies), purportedly formed to provide support and a sense of belonging to immigrants from the respective clans, were instead violent street gangs involved in protection rackets, clashes with rival clans, vice activities, gambling and the opium trade.

Jalan Besar, Rowell Road and Lorong Tai Seng were some of the most notorious hotbeds for gang activities in Singapore and were “no-go areas”, where young men passing through would be challenged and asked “What number do you play?”, relating to the gang number they might be affiliated to. If they offered an unacceptable response, they would be physically attacked.<sup>14</sup> Dr Liu Thai Ker recounts how Lorong Tai Seng in particular presented a major challenge to HDB when the

entire Tai Seng village was earmarked for resettlement. While it was a colourful neighbourhood that provided rustic charm, it was also a highly dense location with a complex layout where one “could disappear very quickly inside”.<sup>15</sup> Although its redevelopment was not triggered by any security impetus relating to the secret society presence there, housing resettlement had the unintended benefit of removing the physical conditions and disamenities that presented ideal breeding grounds for criminal and social ills in Lorong Tai Seng, such as the general lack of structure and order, and the presence of unsafe, unregulated spaces.



Lorong Tai Seng Estate by day in 1964.  
Image courtesy of National Archives of Singapore.

### From Secret Societies to Street Gangs

While in the past the majority of the secret societies and triads were Chinese-centric, the modern-day iteration of “street gangs”, while borrowing the names of the old triads, are less spatially-bound, multi-ethnic youth gangs. Gangs such as “Salakau” (“369” in Hokkien) have both Malay and Indian members in their ranks, alongside the Chinese. Cases of gang-related violence do surface from time to time in the form of fights between rival gang members armed with knives and poles in

neighbourhood public spaces such as coffee shops, or at nightclubs and bars, mostly triggered by a combination of trivial matters involving staring and alcohol. However, the situation has been kept largely under control. This is in no small part due to the rule of law, with the introduction of the Criminal Law Act, in 1955, allowing suspected secret society members to be detained without trial in the event that a serious crime has been committed and prosecution in Court is not possible because witnesses are afraid to come forward to testify.



Crowds at the 1990 edition of “Swing Singapore” in Orchard Road.  
Image courtesy of National Archives of Singapore.

Despite the overall low crime rate and absence of major organised crime syndicates in Singapore, stemming from the strict policing measures taken in the past, the gang situation continues to be closely monitored by the authorities and has triggered changes in policy decisions on occasion. One such decision was to cease the annual “Singapore Swing”, a large-scale street party along Orchard Road, which was first held in 1988 and attended by more than 200,000 partygoers. Subsequent runs were held in 1989 and 1990 in the build-up to Singapore’s National Day.

While injecting a high dose of vibrancy into Orchard Road and Singapore’s party scene in general, Benny Lim pointed out that once the youth gangs started to get involved in alcohol and drug-fuelled fights in the side alleys of Orchard Road, the security risks that the event posed to other revellers, many with young children or the elderly in tow, outweighed the commercial and entertainment value it brought.<sup>16</sup> Despite its popularity, “Swing Singapore” was discontinued in 1992.

## RED LIGHT DISTRICTS: CONTAINING PROSTITUTION IN DESIGNATED TOLERATED ZONES

During colonial times, prostitution was largely concentrated in and around the Chinatown area to cater to the working-class patrons who lived and worked in the vicinity of the Singapore River. Shophouses-turned-Chinese-brothels lined the roads along Smith Street and Temple Street, while Japanese Street and Banda Street had over 100 Japanese brothels in operation at one stage. While brothels were made illegal in 1930, prostitution remained legal as the colonial government adopted a containment and control strategy. This containment strategy became a mainstay of the post-independence government’s pragmatic approach to prostitution, ensuring that only specific areas known to the police have such activities taking place.

Dr Liu Thai Ker, to whom Lee Kuan Yew handed the unenviable task of spearheading the planning of Singapore’s red light districts during his time as Chief Planner, shared Lee Kuan Yew’s two-fold rationale for allowing a designated red light district in the first place. First, having a clearly defined red light district boundary and providing licences for those who operate within it, along with an awareness that those who chose to operate outside its boundaries would be arrested, provided the authorities with a certain level of control. Second, Lee Kuan Yew knew that red light areas were necessary as they fulfilled a basic human need, especially with the growing pool of migrant workers coming in. This recognition was a demonstration of Lee Kuan Yew’s human side, according to Dr Liu Thai Ker. Licensing would at least ensure that the prostitutes operating within the district complied with the regular health screening requirement to safeguard against diseases. Another key licensing condition was that locals were prohibited from working as prostitutes.<sup>17</sup>

## Moving the Red Light District from Chinatown to Geylang



Shophouses along Keong Saik Road used to house Chinese calligraphy and laundry shops as well as brothels, but have in recent years been transformed into boutique hotels and eateries.

Image courtesy of Jacklee, [https://commons.m.wikimedia.org/wiki/File:Keong\\_Saik\\_Road,\\_Singapore,\\_at\\_night\\_-\\_20150922.jpg](https://commons.m.wikimedia.org/wiki/File:Keong_Saik_Road,_Singapore,_at_night_-_20150922.jpg) (CC BY-SA 4.0).

As part of the planning process, the URA studied the existing red light districts in Jalan Besar, Keong Saik Road and Geylang to identify the appropriate boundaries. However, in doing so, it was felt that any proposal should incorporate good practices that other cities had adopted in regulating their red light districts. Melbourne was seen as a good model with a comprehensive set of regulations and control measures, and a study team was subsequently sent there. One of the key principles from

the Melbourne model that the team followed when drawing up the plans was that the boundaries needed to be realistic and acceptable to the sex trade operators; otherwise, implementation would prove challenging. As far as possible, the URA tried to retain the current areas of operation rather than move them to new locations where existing residents might resent the introduction of prostitution into their neighbourhoods. In the planning stage, extensive consultations were conducted with various agencies, including the Singapore Police Force (SPF).

Keong Saik Road in Chinatown was originally earmarked as a higher-class red light district, but as a result of the high rentals there, the prostitutes soon started to move out. The authorities were concerned that, with Chinatown located near the Central Business District, its thriving vice operations would tarnish the image of the city. Yet, at the same time, any potential red light area would still need to be close enough to the city to cater to tourists. It was then decided that Geylang, more specifically its even numbered *lorongs* (“avenues” in Malay) from Lorong 16 to 24, would be a suitable location, given that it is situated on the fringes of the central area.

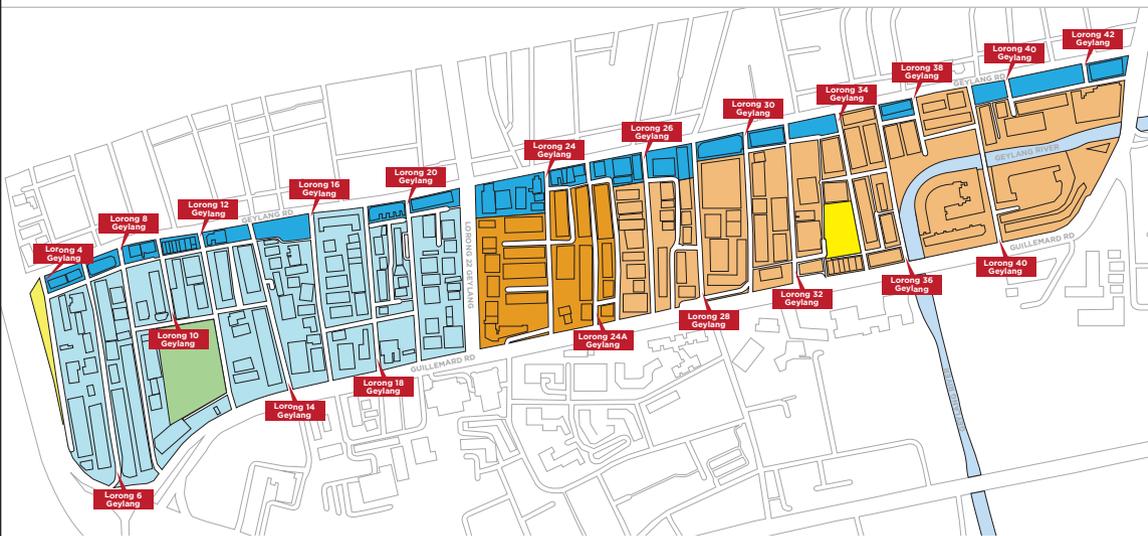
However, within the URA there were still reservations about locating the red light district close to the city. It was seen as standing out like a sore thumb, and there were concerns about the potential deflationary effect on property prices in and around Geylang. Instead, the URA's preference was for it to be relocated to Eunos Industrial Estate, so that it would be out of sight to the general public. Dr Liu Thai Ker strongly objected to this proposal as he saw the red light district as part of an ecosystem, operating symbiotically with other businesses in the area and helping each other to thrive.

*No way! Red light district is an ecosystem. In the red light districts, you have chemists, pharmaceuticals, there is a need for that. You have the best restaurants in town, there is a need for that. If you move to the industrial estate, there's no ecosystem, the red light district will not thrive!*<sup>18</sup>

Dr Liu Thai Ker, on why he opposed the URA's suggestion to relocate Geylang's red light district to an industrial estate

With the decision taken to keep the red light district in Geylang, Dr Liu Thai Ker felt that it demonstrated how the government approached its planning in a humane and non-dogmatic way.

## Exhibit 1 General Boundary for Geylang's Tolerated Zone for Prostitution



While the URA's role was focused on demarcating the areas of operation, the police managed the regulatory framework, enforcement and security-related infrastructure such as back-alley lighting. Having a ring-fenced area within which licensed prostitution could take place was a boon to the police, who could take a more targeted approach to enforcement and manpower deployment. They could also more effectively guard against organised crime syndicates taking control of the vice trade—a primary concern, given the syndicates' history of involvement in human trafficking and exploitation of women and minors. If brothels were scattered across the island, it would have become a cat-and-mouse game between the police and the brothel operators. On the other hand, permitting prostitution within a designated space instead of banning it completely allowed the authorities to avert a situation where vice operators were driven underground and away from their radar. As explained by Benny Lim, this was evidence of the government taking a pragmatic rather than moralistic stance towards vice.<sup>19</sup> However, as noted by Tee Tua Ba, former Commissioner of Police, misconceptions of this “light-touch” enforcement approach still arose from time to time, with some members of the public coming under the perception that police officers did not take any action against the prostitutes because they were corrupt.<sup>20</sup>

## Guarding Against Geographical Spill-overs

With the clear demarcation of the three areas in which brothels were tolerated, namely, Geylang, Desker Road and Keong Saik Road, it was necessary to ensure vice activities did not spill over these pre-determined boundaries. The primary and most effective ring-fencing measure was through enforcement by the SPF's Anti-Vice Enforcement Unit (AVEU), which conducted raids on vice-prone establishments, particularly those holding public performance and entertainment licences, to ensure that there were no immoral activities taking place on the premises. In doing so, the AVEU relied on their informant network to alert them to suspect establishments as well as on strong collaboration with the Public Entertainment Licensing Unit (PELU), which was also under the SPF. According to How Mun Heng, Head of AVEU in the 1970s, the threat of more frequent raids on establishments previously found to have allowed prostitution, and the damaging effect of such raids on their legal business operations, helped to deter vice activities. In turn, such vigilance would also limit the possibility of vice filtering its way into residential neighbourhoods, which was the AVEU's driving objective.<sup>21</sup>

Licensed brothels, regulated by the SPF, were demarcated with red lanterns, while public solicitation by freelance streetwalkers known to congregate at open spaces like public carparks was clamped down via police arrests. Post-September 11, CCTVs were installed around Geylang, as well as other popular tourist spots such as Little India and Chinatown, as part of anti-terrorism measures. This served as an additional deterrent to any would-be vice offenders operating in the surrounding red light districts. Overall, within these designated areas at least, the vice situation was kept largely under control through a combination of regulation, monitoring and enforcement.

However, vice continued to seep through the artificial fences of these “tolerated zones”, typifying the difficulties faced in confining such activities within a pre-defined geographical area. One hotspot in particular was Joo Chiat Road, which saw a spike in vice activities in the early 2000s, aided by both its proximity to Geylang and the decline in property prices and rental rates of shophouses in the midst of the Asian Financial Crisis of the late 1990s and early 2000s. Running between Marine Parade Road and Crane Road, Joo Chiat Road was originally slated as a food lovers' district. However, it soon found itself overrun with karaoke lounges, massage parlours and pubs, which in turn attracted prostitutes, followed by budget hotels offering hourly rates. Consequently, businesses in the area were affected after customers, particularly families, began shunning the area.<sup>22</sup>

# COMMUNITY ACTIVISM IN CLEANING UP JOO CHIAT

The “Save Joo Chiat Working Group” was formed in 2004 by a group of civic-minded Joo Chiat residents in response to the proliferation of vice and public disorder in their neighbourhood and the concerns over the security of female residents, who were leered at and accosted on the streets. A core group of 10 residents came together with a common belief that people have the power to shape and take ownership over their shared spaces. Within a few days, they had built up a database of 200 equally concerned residents. The group set up a “Community Watch” to monitor and report illicit activities and public disorder issues in their neighbourhood, while also actively lobbying Chan Soo Sen, their Member of Parliament (MP) at the time, to push the government both to take stronger action to address the law-and-order issues and to license businesses

involved in vice. At one stage, the group even wrote a plea to Prime Minister Lee Hsien Loong, who then advised them to work with their MP on this matter. Not unexpectedly, the group’s actions were met with stern opposition from the business owners, who argued that raids and enforcement measures were excessive and detrimental to the vibrancy of the neighbourhood.

Undeterred, the residents’ persistence and united stance saw further tightening of police surveillance in the area and increased police involvement in the group’s Joo Chiat Road Community Watch as part of the Community Safety and Security Programme (CSSP). Their concerted efforts also led to bans on hotels offering hourly rates, brightening of back-alleys, and a moratorium on new licences for bars, lounges and massage parlours.

*It was the principle of not surrendering a family-friendly neighbourhood to sleaze. We had to push back or we would have been overwhelmed.<sup>23</sup>*

Colin Chee, founding member of the “Save Joo Chiat Working Group”

These measures resulted in a drastic decline in women arrested for vice—the numbers dropped from 400 in 2007 to 40 in 2009. Additionally, the number of vice-related businesses went from 44 pubs, 38 massage parlours and eight hotels in 2004, to 26 pubs, three massage parlours and six hotels in 2010. This freed up additional commercial spaces for the entrance of new upmarket businesses such as art galleries, furniture shops, boutique hotels and design studios—a commercial mix more befitting the area’s conservation status. With more wholesome businesses moving in, families returned to patronise them. In February 2011, Joo Chiat was designated as Singapore’s first heritage town by the National Heritage Board.

*That’s our greater success. We’ve been able to mobilise the law enforcement agencies and residents to contain the situation. It used to be full of karaoke pubs and massage parlours but not anymore. There are now offices, restaurants and even property development firms.*

Chan Soo Sen, former MP for Joo Chiat



Joo Chiat’s transformation has seen the introduction of upmarket boutique hotels (left) and even a heritage trail (right).

Image courtesy of EazyTraveler, <https://eazytraveler.net/2017/03/hotel-indigo-singapore-katong-blog-review/> (left).  
Image courtesy of Vmenkov, <https://commons.m.wikimedia.org/wiki/File:Joo-Chiat-1111.jpg> (CC BY-SA 3.0) (right).

This period coincided with the proliferation across Singapore of commercial establishments such as massage parlours, spas, hair salons and even *tui na* (traditional Chinese medicine) outlets offering sexual services that were not part of their business licence or lease. One prime and somewhat controversial example is The Adelphi mall at Coleman Street, given its proximity to government and religious buildings such as the Supreme Court, Parliament House, Saint Andrew's Cathedral and the Ministry of Law. While known primarily as an audiophile haven, The Adelphi had seen a growing number of beauty establishments and massage parlours in its basement offering vice services, negatively affecting its image and legitimate businesses. Intensified police raids over a six-day period in June 2016 as part of a wider operation against illegal massage parlours in the downtown core and Central Business District resulted in the permanent closure of a number of the building's illegal businesses. Apart from the policing measures, The Adelphi's landlords had passed at their annual general meeting in September 2016 a by-law to prevent illegal and unlicensed massage parlours renting units in the building. A number of unlicensed massage parlours were charged in court under the Massage Establishments Act for operating without a valid licence, while around 60 parlours had their licences revoked between 2014 and 2016.<sup>24</sup>

With a 40% rise in such unlicensed massage establishments observed by the authorities between 2013 and 2016, and with around 40% of the 300 operators found to be engaging in vice activities, compared to less than three percent for licensed establishments, new provisions were made to the Massage Establishments Act in November 2017. These included reducing the hours of operation, with only accredited establishments operating in designated areas such as Orchard Road and Changi Airport allowed to operate round-the-clock. The amended Act places greater onus on landlords to ensure that errant tenants surrender the premises within a month; they would be subjected to the same fines and imprisonment as their tenants if they failed to remove such tenants. A ban on placing indecent advertisements was another new measure put in place. Amidst the tightening of massage parlour regulations, some exemptions include massage services offered in fish spas and manicure shops, which will no longer require licences, as well as massage services provided in hospitals and clinics specialising in traditional Chinese medicine.<sup>25</sup>

## Rise of the Internet and Heartland Brothels

Since the late 2000s, Singapore has seen rising instances of HDB flats and private apartments being used as brothels, with vice operators exploiting the growing popularity of the Internet and the anonymity it offers to solicit clients. Only when a client has booked the services of a prostitute would the operator need to give out the residential address where the prostitute's service can be obtained. Some of the key draws of running a brothel within a HDB flat are the associated low rental costs and discreetness as there is less likelihood of detection by the authorities. For clients, too, HDB flats offer a more discreet location to travel to than places with unsavoury reputation like Geylang. Apart from police raids on such brothels, HDB has also taken measures to deter such illicit activities from permeating into the heartlands by imposing hefty fines and jail terms for tenants who operate or assist in managing brothels in HDB flats as well as owners who turn a blind eye to their flats being used for such illicit activity. Complicit owners also run the risk of compulsory acquisition of their flats and debarment from purchasing another HDB flat in the future.<sup>26</sup>

For vice activities taking place within private condominiums and apartments, the police have to rely heavily on their intelligence networks and monitoring of known illegal brothel operators and online vice syndicates. Residents of both HDB and private residential estates play an integral role by reporting suspicious activities and strangers in their neighbourhoods. Given the elusiveness of online vice and challenges posed in detecting operators and clients, changes to existing vice laws and the Women's Charter were recently introduced to send a stronger deterrent message. For instance, new laws specifically targeting those who operate or maintain websites offering sexual services or solicitation advertisements posted by prostitutes were included in the Women's Charter in July 2016, with offenders being liable to fines of up to S\$10,000, jail terms of up to five years, or both.

*The rise of online media has allowed vice syndicates to take their business online to widen their reach to clients, while hiding behind the anonymity of the Internet. Sexual services at hotels and residences arranged by vice syndicates using new technologies also affect the public's sense of safety and security.<sup>27</sup>*

Tan Chuan-Jin, former Minister for Social and Family Development, speaking in Parliament on the Women's Charter Amendment Bill

### Unclean and Green Brothels

Beyond shops and residential premises, a spill-over of vice activity into vacant land and forested areas in close proximity to industrial estates and foreign worker dormitories has also been seen since the turn of the 21st century. This is partly due to increased enforcement in the city and heartlands pushing such activities out of the urban built environment. Also, vacant lands and forested areas serve as a convenient location to cater to the largely foreign labourer client base. These “jungle brothels”, comprising mattresses and tarpaulin sheets, would commonly spring up around areas such as Woodlands, Sembawang, Kaki Bukit, Punggol and Kranji, where operations would begin after dark, shielded by forests and thick undergrowth.<sup>28</sup>

Despite frequent raids by police and immigration officers, arrests made for trespassing onto state land, and the gradual decline in such sites owing to increased urban development, vice activities in these areas persist. The makeshift nature of the forest brothel set-up allows the operators ease of mobility, never remaining in one location for long so as to avoid suspicion and keep the authorities on their toes. This has led to the encroachment of vice activities into vacant sites close to housing estates and recreational spaces such as Punggol Waterway Park, which poses both a societal and security risk to residents and their children who frequent or pass through these areas at night.

### Ensuring the Security of Residents Living in Red Light Districts

While significant enforcement, zoning and legislative measures were taken to remove vice activities from unauthorised areas for the security and well-being of the residents and businesses that operated there, the security needs of those living, working and operating businesses within designated red light districts should also not be overlooked. While it could be argued that with these being “traditional” red light areas, the residents and businesses there should already have developed a level of awareness and tolerance of such activities taking place at their doorstep, it is nevertheless necessary to safeguard residents and businesses against the social ills associated with vice growing out of control. In terms of policing, safeguarding measures involved increased uniformed and plain-clothes police patrols targeting illegal streetwalkers, the inspection of massage parlours and clubs, installation of CCTV cameras and more back-lane lighting.

In terms of planning interventions, steps were taken by the URA to control the number of pubs, karaoke lounges, clubs and restaurants that could operate within the red light district, and by the SPF to regulate brothel operations through the use of suspensions, fines and jail terms to discourage prostitutes from public solicitation and confine their activities within the brothels. The enactment of the Liquor Control (Supply and Consumption) Bill in 2015, in the wake of the Little India riot of 8 December 2013, whereby drinking in public places as well as the sale of alcohol would have to be stopped at 10:30pm, also had a direct impact on a number of coffee shops operating within and around the red light district. Many had seen their liquor licences revoked for flouting these regulations within Geylang’s own Liquor Control Zone and, as a result, had to close down.<sup>29</sup> This, coupled with the additional presence of police to monitor and enforce the liquor ban, has further limited the opportunities and spaces for prostitutes to solicit for business.

In 2015, the URA announced that parts of Geylang’s red light district would be re-zoned from “residential/institution” (where “institution” refers to community associations and clubs) to “commercial/institution” uses, so as to impose development controls over new homes in the area. These measures were taken in response to the growing incidence of incompatibility in how residential premises were being used in Geylang, and to better manage the friction between residents, legal vice operators, and commercial business owners.<sup>30</sup> While residents who had lived in Geylang for some time had grown accustomed to the traffic congestion and noise associated with the vice trade, complaints regarding the disorderly behaviour and fights that typically break out between patrons of the vice and other nightlife establishments were still prevalent.

Beyond just relying on government intervention in the form of regular police checks, strict licensing conditions, and development control, Geylang residents devised their own creative means of ring-fencing the red light activities and preventing spill-overs into other parts of Geylang, especially the neighbouring residential estates. With the support of their MP, Dr Fatimah Lateef, and through efforts by the Geylang Neighbourhood Committee, residents organised street parties and community events around Geylang, brightened up the roads and back-alleys with additional street lamps using funds from the Interim Estate Upgrading Programme of 2012, and even pruned the trees along the streets so that the area would be less dark, all in an effort to take back their territory from the prostitutes.<sup>31</sup>



Geylang has seen improved back-alley lighting (left) and more community events (right) through the efforts of the Neighbourhood Committee, Community Club and its residents.

Image courtesy of TemporarilyLost.com, <https://temporarilylost.com/2012/01/17/bumboats-bike-rides-and-bars-in-the-sky-additional-activities-in-singapore/geylang-1-outdoor-restaurant/> (left). Image courtesy of Geylang Serai Community Club (right).

These examples serve to demonstrate the complementary roles that urban redevelopment—whether by the government or through ground-up efforts—and licensing changes and regulatory enforcement play in ensuring the proper functioning of vice activities within their pre-defined physical area of operation, while also removing, through both soft and stricter measures, those that choose to ignore these boundaries.

## THE DRAGON AND THE FERRET: TACKLING THE DRUG MENACE

### Controlling the Spread of Opium Dens and the Arrival of the “Hippie Culture”

Opium smoking, imported as an accepted practice by mainland Chinese immigrants to Singapore during the colonial period, escalated into an addictive vice that gripped both the Chinese elite and coolies in Singapore. The British government’s encouragement of opium trading, which brought it revenue from its trade and licensing, gave further impetus to the practice. The high cost of opium, however, led to lower-earning addicts turning to crime to support their addiction. While the government only allowed opium smoking to take place in licensed opium dens, located mostly around Chinatown’s Pagoda Street and Temple

Street, and along the Singapore River, a number of illegal opium dens inevitably set up shop as well. These illegal dens were found in Tanjong Pagar, Sungei Road, Beach Road and Amoy Street, and continued to operate even after the government stopped issuing opium licences and banned its consumption in 1945. Approximately 1,571 opium saloons were still in operation in 1949.<sup>32</sup>

Following a massive crackdown by the Singapore authorities in 1952, over 2,000 persons were arrested for opium-related offences, leading to the colonial government setting up a rehabilitation centre for addicts. Prior to that, opium smokers were charged in court and sent to prison.<sup>33</sup>

With the opium situation largely brought under control, Singapore only saw a brief respite from drug abuse until the influence of the “hippie culture” from the West brought a new drug menace to its shores in the 1970s. Youths in Singapore started abusing “hard drugs” such as morphine and cannabis, with the number of heroin addicts growing 200-fold. With scores of youths “chasing the dragon”, a slang term used to describe heroin smoking, drug traffickers also grew in numbers to exploit the situation. These traffickers would distribute and sell drugs openly in certain parts of Singapore, labelled as “black areas”. These included the Weld Road and Beach Road areas, which primarily offered the abusers an isolated congregation point to “get high”.<sup>34</sup>

### Operation Ferret: A Pioneering Inter-agency Effort

Law enforcement agencies began to express growing concerns that the kind of drug culture already afflicting other cities such as New York and Petaling Jaya could easily take root in Singapore. Given the strong correlation between drugs and crime, as witnessed in affected cities, such a culture could have a domino effect on the overall crime situation in the country. It was thus decided that more resources needed to be deployed to the Central Narcotics Bureau (CNB) to combat the drug menace.

Whereas Western countries tended to focus their drug enforcement efforts on tackling the supply chain, the Singapore government placed greater emphasis on clamping down on the demand that fuelled the drug trade. As pointed out by Tee Tua Ba, who also previously helmed the CNB, the government was strongly driven by the overarching pragmatic objective to ensure that Singapore’s youth do not succumb to the addictive effects of drugs, as they represented the key resource for a young, recently independent, developing nation lacking in most natural resources.<sup>35</sup>

Armed with this unwavering mandate and sense of purpose, Operation Ferret, a massive drug dragnet involving officers from the SPF, the CNB, the Prisons Department, the Singapore Customs, the Department of Scientific Services and reservists from the Vigilante Corps, was launched in 1977 to flush out and detain drug addicts with a view to rehabilitating them and to get drug pushers and traffickers off the streets. Given that these “black areas” were well known to law enforcement officers, with abusers gathering en masse in some locations, officers were able to round them up with relative ease. However, the significance of Operation Ferret was not only in the number of drug addicts arrested and sent for rehabilitation, which amounted to more than 5,000 over a seven-month period. As recounted by Tee Tua Ba, who was one of the leaders directing the operation, prior to Operation Ferret, law enforcement departments tended not to go out of their way to assist one another. Hence, Operation Ferret represented one of the pioneering joint operations that managed to successfully galvanise the various agencies into collective, decisive action, from the stage of integrated planning to joint execution.

Post-Operation Ferret, significant behavioural and visual changes were observed: drug abusers were no longer “chasing the dragon” in public spaces and back-alleys. With abusers being detained for six months of rehabilitation at a time, demand was severely crippled and scores of drug traffickers soon started exiting the market.<sup>36</sup>

### Flushing Out Illegal Gambling

From the years under colonial rule up till the 1960s, illegal gambling remained a widespread problem. Illegal horse racing, poker, and *pai kau* (Chinese dominoes) dens dotted the neighbourhoods of Geylang, Jalan Besar and Chinatown, with activities spilling over into coffee shops, bars and private homes despite the ban placed on gambling in public. China Street, in particular, was a hotbed for such dens, earning the nickname *giao keng kau* (meaning “outside the gambling den” in Hokkien). The colonial government’s repeated legislative changes—legalising gambling for a period of time as it was seen as an important source of government revenue, before criminalising it again—added to a constant grey area in terms of the legality of gambling, which only fuelled its pervasiveness. Similar to the drug and vice scene, secret societies were heavily involved in gambling activities, operating the majority of the gambling dens in Singapore, aided by equally powerful moneylenders. Beyond the dens, informal local lotteries such as *Chap Ji Kee* and *Si Sek Pai* were also extremely popular among the Chinese housewives and the elderly, with many using up their allowances and savings in the hopes of striking it rich.

Post-independence, the popularity of such dens waned owing to a combination of police enforcement and the government’s decision to introduce legalised lotteries and sports betting by setting up the Singapore Pools Private Limited in 1968 as the sole legal lottery operator. Consequently, the once public and open illegal gambling dens went out of business or were driven underground.

### Taking a Calculated Gamble on Integrated Resorts

Faced with fierce regional and international competition in the area of tourism, stagnating tourist arrivals and flagging tourism receipts, the idea of lifting the longstanding ban on casinos was first mooted in 2004 as part of a wider redevelopment plan for Sentosa Island and Singapore’s Southern Islands. A decision was made by the government in 2005 to proceed with the development of two integrated resorts (IRs) that would house casinos, in addition to hospitality, entertainment, convention and exhibition facilities, shopping and dining experiences, as well as related development commitments that were ultimately attached to the winning bidders’ proposals, namely the Universal Studios theme park at Sentosa and the Marina Bay Cruise Centre. The establishment of the resorts was seen not just as a way of adding variety to Singapore’s tourist attraction offerings; it was also considered a means of creating jobs, enhancing Singapore’s status as an aviation hub, boosting the economy through greater foreign investments, and providing locals with a more vibrant entertainment and retail scene.

However, the decision to allow casinos and indeed the deliberation process that preceded it, triggered heated debates not just in Parliament but also across all sections of society, from ethno-religious groups, businesses, civil society, educational institutions and the general public. Concerns largely stemmed from the social, moral and security risks associated with casinos. The erosion of traditional family values, the possibility of families being broken up as a result of gambling addiction and debt, the elderly gambling away their life savings, and the entrance of money-laundering, gaming syndicates and vice activities into the casinos were among the main concerns raised. On top of this, the early seeds of public unhappiness over the influx of hundreds of thousands of foreign workers into the country to work on the massive development and construction of the two IRs, one on Sentosa and the other at Marina Bay, were already being sown.

Following an extensive consultation process to identify as many of the potential societal and security pitfalls and to allay public fears, the government put in place the Casino Control Act (CCA) in 2006 to provide the necessary social safeguards and strict law enforcement measures required well ahead of the casinos' eventual opening in 2010. The original Act contained the regulatory framework governing the management of the casinos, which also spelt out the strict laws against illegal gambling and gaming syndicates and the ensuing punishments, and measures to restrict access through daily and annual membership fees.

To oversee and focus government efforts at administering and maintaining these safeguards, two bodies were established: the National Council on Problem Gambling (NCPG) in 2005 under the then-Ministry of Community Development, Youth and Sports (MCYS); and the Casino Regulatory Authority (CRA), set up in 2008 as a statutory board under the Ministry of Home Affairs (MHA). The NCPG's mandate is to advise the Ministry on social issues arising from gambling and to implement programmes aimed at public education on problem gambling, promoting responsible gaming practices among operators, and providing prevention and treatment services to help problem gamblers and their families. The Council leverages the expertise of members from diverse areas of specialisation such as psychiatry, psychology, law, rehabilitation and religion. The CRA, on the other hand, focuses on the enforcement aspects of the CCA and is charged with keeping the casinos' operation and management free from criminal involvement and exploitation, ensuring that vulnerable members of society and the wider community are not harmed, and that gaming practices are conducted fairly and honestly.

While casino-related crimes were largely petty offences and no deterioration in the law and order situation was observed in the first few years after the opening of the casinos, problem gambling cases and average betting amounts were seeing increases, along with persistent concerns over the negative societal impact of casinos. The government responded by introducing amendments to the CCA in 2012. Armed with a better sense of the operating environment, and guided by a multi-Ministry review team comprising the MHA, the Ministry of Trade and Industry, the MCYS, the Ministry of Finance and the CRA, stronger social and security safeguards were introduced. These included NCPG-enforced casino visit limits and casino exclusion orders for financially vulnerable individuals or

those at risk of gambling addiction—which both the individual or family members can apply for—greater protection for underaged individuals, tighter licensing requirements for casinos and their staff, rules to compel operators to follow international benchmarks in responsible gaming practices, and stiffer penalties for cheating and counterfeiting.

Physical planning was another means to mitigate any potential social and security impact of the casinos. Both casino sites offered the available land mass needed for such massive development projects, and were located in prime areas near their target customer base: tourists. But, more importantly, they were situated away from the residential areas and HDB heartlands and comparatively less accessible to the local population, thereby discouraging Singaporeans from patronising the casinos regularly.

This episode demonstrated the confluence of pragmatic decision-making, legislation, enforcement, physical planning and stakeholder activism in striking a balance between the potential social and security risks associated with the introduction of a new feature—in this case, the casinos—and reaping its economic benefits.

*Gambling pathology, like AIDS or SARS or avian flu, cannot be prevented from affecting Singaporeans. We can take measures to keep Singapore clean and safe, despite these dangerous viruses. We have the determination and ability to handle these social problems.<sup>37</sup>*

Lee Kuan Yew, speaking in Parliament on the government's proposal to develop the IRs

While the authorities have largely been able to eradicate the scourge of traditional gambling dens through a combination of enforcement, legislation and redevelopment, illegal makeshift gambling spaces still persist in the form of stalls and gambling tables. Given their high mobility and ease of setting up and packing up prior to the arrival of the police, these stalls and gambling tables can still be found in pockets of spaces, such as the back-alleys of Geylang. The operators continue to play a cat-and-mouse game with the police by using black cloth and vehicles such as vans to conceal the makeshift dens, putting in place a pool of well-trained, Bluetooth-connected spotters to look out for the authorities, and gathering at regular coffee shops in the vicinity.<sup>38</sup>



Illegal gambling tables set up in Geylang's back-alleys.

Screenshot of YouTube video "Illegal Street Gambling in Singapore" at [https://youtu.be/FDNY\\_z5xFZc](https://youtu.be/FDNY_z5xFZc)

The police, for their part, have also taken a leaf from technology to counter these mobile gambling dens, in addition to other petty crimes commonly committed in Geylang's back-lanes, such as illegal medicine peddling, selling of duty-unpaid cigarettes and snatch theft. More police CCTV cameras have been installed in the back-alleys and side lanes to deter and detect such offences by identifying persons-of-interest and popular spots, and then mounting enforcement operations. Between 2015 and February 2017, 171 new police cameras were installed in Geylang, a four-fold increase from the 47 cameras there in 2014. The SPF has also worked on improving the visibility in the area by introducing more street lights.<sup>39</sup>

Given the cross-cutting nature of some back-alley offences that fall under the purview of separate agencies (such as the Singapore Customs and the National Environment Agency), the SPF set up an Inter-Agency Operations Centre (IAOC) in Geylang Neighbourhood Police Centre in May 2016 at which the various agencies could better plan, coordinate and

execute enforcement operations, and tap the existing CCTV surveillance feeds. To maintain security in the face of limited enforcement resources, the SPF, along with the other regulatory and law enforcement agencies, has consolidated its enforcement resources and redeployed existing auxiliary police officers to form multi-skilled enforcement teams. While in the past the enforcement teams from individual agencies possessed limited scope and mandates for taking action, these multi-skilled teams are now able to take action against a variety of offences during each round of their high-visibility enforcement patrols, using the same amount of resources. These wide-ranging measures, targeted at crimes taking place in the shadows, have resulted in a 42% decrease of such offences, with numbers falling from 134 in 2013 to 77 in 2016.

### **Gambling in Housing Estates: Where to Draw the Line**

As with prostitution, the government has taken a pragmatic rather than moralistic view towards gambling. Benny Lim contends that potential excesses that could undermine families and Singapore's social fabric, and the potential involvement of secret societies, lie at the crux of the government's concerns over gambling. This concern is amplified when gambling activities spill over into the the HDB heartlands. While recreational gambling within one's own home, such as mahjong with relatives or friends, is not something that the authorities or the HDB want to clamp down on, enforcement becomes necessary when such premises are converted into gambling dens, complete with spotters looking out for police officers, and attract residents from the neighbouring blocks, especially retirees who may gamble away their life savings.<sup>40</sup>

The HDB has indeed encountered cases of flat owners violating the terms of their leases by opening up their flats for illegal gambling, and creating an unsafe and undesirable living environment for genuine residents. These were described by Desmond Lee, then Minister of State for National Development, when discussing amendments to the Housing and Development Act in Parliament in 2015.<sup>41</sup> Prior to the amendments, the HDB had to decide between the extremes of compulsory acquisition of such flats, lease termination or imposing a fixed-quantum fine based on the type of lease infringement. In most cases, the HDB tended to adopt a compassionate approach in waiving the penalty in full, but this in turn presented a moral hazard.

With the amendments to the Act, the HDB is now able to implement a more calibrated penalty framework for owners using their flats for illegal gambling and can penalise them up to \$50,000. Amendments were also made to enhance the investigative powers of HDB officers when looking into such cases of lease infringement. Previously, HDB officers could not enter the flats without the owners' permission, and could not conduct their investigations effectively when the owners did not let them in. With the changes to the Act, officers equipped with a court warrant can now enter and search flats as well as record video, audio and photographic evidence.<sup>42</sup>

## CONTESTED SPACES

### Speakers' Corner: Balancing Free Speech with Security

In response to the call for greater freedom of speech among certain segments of the population and civil society groups in the late 1990s, the government's stance shifted towards greater openness and accommodation of diverse views. Among some suggestions the government considered was the idea of having a public space catering specifically to the airing of views and opinions held by Singaporeans. This was in light of previous incidents involving political personalities such as Chee Soon Juan of the Singapore Democratic Party holding public rallies without permits.

As noted by then Minister for Home Affairs Wong Kan Seng in Parliament on 25 April 2000, when the idea of a designated space for public speeches was mooted a year earlier by then Senior Minister Lee Kuan Yew, it failed to get government support as there were concerns about its effect on public order and religious and racial harmony in the event of irresponsible speakers and inflammatory speeches. However, upon further study of the proposal and with strong support from civil society, the government felt the timing was right and that it could manage the risks of providing a designated public space for Singaporeans to give speeches on any topic without the need to apply for a Public Entertainment licence—provided they observed a certain set of rules to ensure the maintenance of law and order.<sup>43</sup> On 1 September 2000, Singapore's very own Speakers' Corner was opened, occupying 6,000 m<sup>2</sup> of Hong Lim Park.<sup>44</sup>

As recalled by Tan Boon Huat, who was involved in its development, these rules were put in place by the MHA and the SPF, after closely studying examples of other overseas models, in particular London's Royal Parks Agency and Constabulary's experience in managing their Speakers' Corner at Hyde Park. The basic conditions were that speakers must be Singapore citizens, must register their intention to speak beforehand, and speeches should not be religious in nature or potentially cause feelings of hatred or ill will between different racial and religious groups. Additional restrictions put in place at the beginning included the prohibition of sound amplification devices so as to keep noise levels down, avoiding "shouting contests" between speakers, and delivering speeches in one of Singapore's four official languages. A licence waiver was also enacted in view of the restrictions and conditions. With the guidelines in place, it was hoped that the authorities could take a more minimalist, hands-off approach in policing the activities at Speakers' Corner, and instead deploy police resources to more critical security matters.<sup>45</sup>



Proximity to transportation nodes such as the adjacent Clarke Quay Mass Transit Rapid (MRT) increases the accessibility of the Speakers' Corner.

Image courtesy of Groyn88, <https://commons.m.wikimedia.org/wiki/File:HongLimPark02.JPG> (CC Attribution-SA 3.0).

In choosing the location for Speakers' Corner, the MHA and the SPF had considered other possible sites such as the Padang, Ngee Ann City Civic Plaza, Bras Basah Park, the Botanic Gardens as well as the use of sports stadiums. However, given that the Speakers' Corner is intended for frequent usage, it would be too disruptive to situate it at locations that regularly host commercial or sporting activities. There were also concerns over poor accessibility and the future need to redevelop some of these considered locations, such as Bras Basah Park, which was earmarked for the construction of the Singapore Management University.<sup>46</sup> Hong Lim Park was found to be a more appropriate location, given its greater accessibility, with Mass Rapid Transit (MRT) stations located within walking distance, and proximity to the Central Business District and Chinatown, as well as a greater concentration of people and activities.

As explained by Tan Boon Huat, from both a law and order and spatial perspective, Hong Lim Park offered a readily available, self-contained location. While being close to the city centre, it was away from crowded residential areas, which meant that noise from events held at the park would not cause undue annoyance to residents and, in the worst-case scenario of activities spiralling out of control and turning violent, there would be less property damage and risk to residents' well-being. The government's approach to defining the use of the Speakers' Corner was influenced by the unpredictability of crowd behaviour and earlier experiences of supporters of opposing political camps gathering at the same centralised location when general election results were announced. Camps opposing a particular speaker or speaker's topic were not permitted to hold simultaneous events at the Corner to reduce the risk of emotions running high and the potential for riots to break out. The adjacent Kreta Ayer Neighbourhood Police Post (NPP) added an extra layer of security and order to the vicinity, while providing a convenient location for speakers to register to use the Corner.

The location had historical significance as the site of numerous fiery and influential political speeches and rallies in the past. Nonetheless, additional physical improvements were needed to suitably prepare the area for use, such as erecting signage and demarcation of its boundaries so that both speakers and attendees knew the limits and could avoid spilling over onto the busy roads, which would remain operational during events. In 2004, the use of Speakers' Corner was extended beyond just speeches to allow the holding of performances, processions, exhibitions and cause-related events.<sup>47</sup>

*Hong Lim Park should not be seen as, because we modelled it after Hyde Park, a place for political free speech while the rest of Singapore has no space for free speech. Firstly, Hong Lim Park is still governed by laws related to speech like defamation [and] sedition. There is no suspension of the law that requires responsible behaviour. However, it is a space that is set aside to facilitate ease of application for use for such activities. You apply for use just as you would do so for use of a barbecue pit under the National Parks Board (NParks). It is meant to be a 'light touch'.<sup>48</sup>*

Benny Lim

### Revitalisation After Relaxation of Rules

In 2008, the administrative management of Speakers' Corner was transferred over to the National Parks Board (NParks), which had already been managing and maintaining Hong Lim Park.<sup>49</sup> This move was accompanied by the lifting of the ban on outdoor demonstrations, a ban in place since the racial riots of the 1960s: demonstrations are now permitted at Speakers' Corner without the need for a police permit. The NParks introduced an online registration system, replacing the need for speakers to apply for permits at Kreta Ayer NPP. The transfer of management represented the government's effort to liberalise further use of Speakers' Corner and allowed the SPF to focus on its core duties of dealing with any public order concerns or complaints stemming from events held there.<sup>50</sup>

These measures have brought about an increased vibrancy to the Corner, after years of low utilisation and dwindling turnouts. Major events have since been held there, including: the annual Pink Dot event, Singapore's first outdoor lesbian, gay, bisexual and transgender (LGBT) event, which has a yearly attendance of over 20,000; rallies such as those held in 2008 by angry local investors affected by the collapse of the investment bank Lehman Brothers; anti-government protests such as those opposing the "6.9 million people by 2030" Population White Paper in 2013; and, more recently, a silent protest over the 2017 Reserved Presidential Election.



Since the relaxation of rules, peaceful demonstrations such as those against the Population White Paper have been held at Speakers' Corner. Image courtesy of The Thinker, <https://thesmartlocal.com/read/the-6-9-million-population-white-paper-protest?format=amp>

Recent years have seen more instances of progressive regulatory relaxation, such as extended opening hours (i.e., 7:00 am–10:30 pm instead of the original operating hour of 7:00 am–7:00 pm), allowing the use of sound amplification devices, and allowing Singapore companies and Non-Governmental Organisations (NGOs) to sponsor, promote or involve their employees in Speakers' Corner events without needing to apply for permits. However, this has been tempered by tightening of rules in other areas such as the temporary suspension of the unrestricted use of Hong Lim Park during the campaigning period leading up to general and presidential elections, where police permits would be required for all events held there during that time. The rationale behind this suspension was to prevent the bypassing of rules governing election rally permits; and because designated rally sites were already set aside for such purposes. As part of recent amendments to the Public Order Act in April 2017, restrictions were put in place to prevent foreign sponsorship of events as well as to prevent non-citizens from participating in events held at Speakers' Corner in case they use the space as a platform to push their foreign political agendas and interfere in Singapore's domestic affairs. The authority to refuse or grant a permit for public assemblies and processions that are directed towards a political end has since been granted to the Commissioner of Police.<sup>51</sup>

## SECURITY AFTER DARK: THE EFFECT OF NIGHTLIFE LIBERALISATION

### Redevelopment as a Means of Redressing Security Concerns



The old Bugis Street's mix of vibrancy and disorderly behaviour (top) contrasts with its current-day sanitised form (bottom).

Image courtesy of Yeo Hong Eng (<http://yeohongeng.blogspot.com/2012/05/singapores-bugis-street-of-old.html?m=1>) (top).  
Image courtesy of Bahnfreund, [https://commons.m.wikimedia.org/wiki/File:New\\_Bugis\\_Street,\\_Singapore,\\_2014\\_\(01\).JPG](https://commons.m.wikimedia.org/wiki/File:New_Bugis_Street,_Singapore,_2014_(01).JPG) (CC Attribution-SA 4.0) (bottom).

Akin to how squatter-filled areas have been redeveloped to stem the health and infrastructural risks posed, redevelopment has also helped in the establishment of law and order in certain districts where it was previously lacking. Bugis Street was one of the main nightlife hubs in Singapore in the 1950s up till the early 1980s. It was popular with locals and foreigners alike for its al fresco hawker eateries, *pasar malam* ("night market" in Malay), bars and, more infamously, raunchy adult-themed

cabaret shows and beauty pageant parades featuring transgender performers. Colonial soldiers, sailors on shore leave, and tourists would flock to the area each night, making it one of the most notorious tourist destinations in the region. With bars stretching from Victoria Street to Queen Street, alcohol-fuelled indecent acts and rowdy behaviour was commonplace.<sup>52</sup> These acts not only posed law and order issues but were also seen by the locals as running contrary to Singapore's clean image and family-centric values.

Beyond just cabaret performances, Bugis Street's pool of foreign customers also attracted catamite and transgender prostitutes who solicited for business in the area. The situation was exacerbated by criminal activity involving older catamites who were attracting fewer customers and resorted to robbing some of the patrons. These activities triggered greater police attention and a crackdown on the area during the late 1970s. In addition, the area was plagued with sanitation and infrastructural challenges in the form of its dilapidated shophouses, clogged drains, rat-infested alleys and unlicensed hawkers.

A decision was taken in the mid-1980s for Bugis Street to make way for the development of Bugis MRT and subsequently the Bugis Junction retail complex, to feature a mix of a shopping mall, restaurants, nightspots and regulated roadside and back-alley stalls. The redevelopment led to some of the trans community relocating to the Changi Village area. In the mid-1980s, amid nostalgia for the old Bugis Street, the Singapore Tourist Promotion Board attempted to recreate some of its original colourful vibrancy and to bring back the tourists by re-starting staged shows featuring transgender performers at the New Bugis Street situated directly across the road from its namesake. Unfortunately, these more sanitised performances were less well received and were subsequently scrapped. The present-day New Bugis Street is home to largely retail stalls selling a wide range of goods and food.<sup>53</sup>

### **A More Liberal Approach to Nightlife Security**

In the wake of the global recession of 2001 and the Severe Acute Respiratory Syndrome (SARS) outbreak, Singapore's economy suffered a downturn. It began to lose its competitive advantage in manufacturing to Malaysia, India and China, and unemployment was at its highest in almost 20 years. In an effort to revitalise the economy and restore Singapore's

global competitiveness, the government convened the Economic Review Committee in 2002 and, alongside it, the Remaking Singapore Committee, which would complement the former's economic initiatives by identifying ways in which the political, social, and cultural norms held by Singaporeans could be reshaped through better understanding the changing aspirations and expectations of the third generation of citizens.

One of the four key themes that arose as part of the Committee's recommendations was that of "A Home Owned", which called for further relaxation of the many rules over expression and experimentation that had been put in place to deal with Singapore's various post-independence challenges, but which had diminished in relevance over time and with societal and contextual changes. Liberalising the social scene was viewed as an important step in this direction as it would not only help in nurturing Singapore's creative class and instil a greater sense of risk-taking, but also attract more tourists, foreign professionals and businesses to the island. Yet, this needed to be done without losing sight of Singapore's conservative values.

*If we want our people to make more decisions for themselves, and if we are to encourage a derring-do society, we must allow some risk-taking, and a little excitement.*<sup>54</sup>

Goh Chok Tong, former Prime Minister of Singapore, in explaining the move towards liberalisation

A year after these recommendations were put forth and accepted, bars and nightclubs in certain areas such as Boat Quay and Clarke Quay were allowed to extend their operating hours and liquor sales to 24 hours, with the main provision being that these establishments should be situated away from residential areas and the HDB heartlands. Previously banned activities such as bar-top dancing were legalised. In the past, bar-top dancing was prohibited largely for safety and security concerns—that it might cause patrons and performers to injure themselves, trigger arguments and fights among intoxicated patrons, or lead to a spike in molestation cases. Benny Lim notes that, from a policing perspective, this loosening of regulations did not unduly raise alarm bells or warrant a drastic shift in enforcement strategy because the current nightlife scene was considered mild, compared to the heyday of the 1950s and 1960s, with rampant drug, vice and secret society elements permeating such establishments.

Modern-day establishments largely practised self-policing where business owners would take the necessary measures to prevent drugs, drunken fights, and other law and order incidents from taking root, knowing that their business license would be revoked if they failed to do so. In terms of curbing immoral and lewd acts, the Criminal Investigation Department conducted spot-checks to ensure certain standards were maintained, such as the ban on striptease acts in bars. Another strategy adopted was that of “quick response” by the police, who were fully aware that the probability of drunken and disorderly behaviour would inevitably increase in tandem with the surge in the number of nightspots and their longer hours of operation. Quick response to security incidents was aided by their already identified at-risk hotspots, which were largely concentrated within fixed boundaries through zoning and licensing requirements.<sup>55</sup>

Amid this light touch response, what was of more pressing concern to the authorities, with similarities drawn to the vice and gambling scene, was guarding against the re-infiltration of secret society influence and involvement in Singapore’s nightlife scene. Tee Tua Ba recounted a particular case of one of the largest karaoke lounges in Singapore that was being financed by the United Bamboo Gang, one of Taiwan’s largest triads. Tee Tua Ba revealed that once this information came to the attention of the police, the lounge was swiftly told to shut down its operations as a preventive measure against secret societies taking root. Another particular area of concern to the CNB was the ubiquity of psychotropic and synthetic drugs within the local clubbing scene: abusers tended to be more educated, working middle-class individuals. This dual approach of not over-enforcing but being prepared to take decisive action to deter criminal activity once detected is clearly demonstrated by the regular intelligence-driven police raids that are conducted to round up members of unlawful societies, prostitutes and drug peddlers operating within these establishments.<sup>56</sup>

## CHAPTER 2

# SECURE INFRASTRUCTURE AND PUBLIC SPACES

“I’m pleased that we’ve redeveloped the city when there was a chance to do it. We knocked down Outram Prison, we started from Changi and worked towards the centre and re-built the whole city. That was a chance of a lifetime.”<sup>57</sup>

Lee Kuan Yew

## THE NEED FOR SPACE: RELOCATING POLICE STATIONS OUT OF THE CITY

### Extensive Police Development in the 1930s

The early 1930s saw a ramping up in the construction of colonial police stations, depots, training barracks and staff quarters across the island. This was largely a response to the growing influence and spread of secret societies and triads and an overall worsening crime rate as the population grew, along with an appreciation that the police force at the time was too understaffed and poorly equipped to deal with these security challenges. When the British set up their very first police station in 1823, it was housed within the residence of the first Police Chief, Francis James Bernard, which also doubled as a jail, with prisoners kept in the basement. Driven by Inspector-General Harold Fairburn, the head of the Straits Settlement Police, who lobbied for new facilities and expanding the police presence, the British colonial government embarked on one of the most extensive building schemes in Singapore’s policing history. Among the most prominent of these newly constructed and refurbished buildings were the Central Police Station and Hill Street Police Station.

First constructed in 1867, the Central Police Station at South Bridge Road was redeveloped at a cost of S\$144,000, with the addition of new reinforced concrete three-storey blocks, architecturally modelled

after Hong Kong’s Central Police Station. Strategically located close to Chinatown and the secret societies that operated there, the new blocks housed an armoury, detention cells and recreational rooms for the officers. Later, in 1934, nearly half a million dollars was spent on the construction of the Hill Street Police Station at the junction of River Valley Road and Hill Street, making it the largest police barracks in British Malaya and Singapore’s largest pre-war government building. At six storeys high, the station was regarded as a modern skyscraper at that time, complete with electric lifts and living quarters that were considered luxurious then.

### Relocation in the Face of Urbanisation

As part of the URA’s post-independence redevelopment of central Singapore and the resettlement of the population previously concentrated in the central business district and along the Singapore River in the newly developed housing estates, it was opportune for some of the police stations to vacate their expansive premises that occupied valuable land to make way for urbanisation. For instance, the old Central Police Station, with its core population base having since moved out of Chinatown to the heartlands, no longer required its prime location and was eventually torn down in 1978 to accommodate the widening of Upper Pickering Street. This transition was aided by a reorganisation in the approach to policing in the early 1980s, which prioritised a greater police presence in the residential areas as opposed to maintaining excessive resources and facilities within the increasingly sparsely populated city centre. With the Police Force Housing Priority scheme introduced in the 1960s to encourage police officers and their families to live in HDB flats instead of staff quarters, there was also less of a need for police installations to allocate space for staff housing.

Stations that were to be conserved and gazetted as national monuments owing to their historic and architectural significance, such as Hill Street Police Station, the Upper and Lower Barracks at Pearl’s Hill and Beach Road Police Station, were repurposed by the URA for multiple uses and tenancies in the decades that followed. For instance, Hill Street Station continued to house other government agencies such as the National Archives, the National Arts Council and its current occupants, the Ministry of Communications and Information, and the Ministry of Culture, Community and Youth, while Beach Road Station, which sits on a 0.02 km<sup>2</sup> reserve site and has been marked as a historic site since 2003, has served as the campus of the Raffles Design Institute and more recently has been put up for sale by public tender.

## SINGAPORE'S PRISONS: FROM SATELLITES TO CENTRALISATION

### Outram Prison: Singapore's First Combined Prison

During colonial rule, Singapore served as one of the British penal settlements in Southeast Asia for housing convicts from India and Penang. Singapore's first jail, opened in 1825, was located at Bras Basah Road and comprised a series of open-concept attap sheds (houses built using attap leaves for their rooftops). With difficulties in accommodating the growing convict population, which numbered up to 2,000 on average as of 1941, the decision was made to construct a proper enclosed prison along Bras Basah Canal and at the foot of Fort Canning Hill. This first convict jail, completed in 1860, was equipped with improved facilities such as a reception area, dormitory-styled accommodation and an on-site hospital. Its development was followed by the construction of Singapore's second jail, Pearl's Hill civil prison for vagrants, debtors and remandees.

However, a violent prison riot at Bras Basah in 1875 over overcrowding and harsh prison conditions, which resulted in the murder of the prison's superintendent, prompted change. The Commission of Inquiry that was convened after the incident decided that a new prison was needed which would adopt a more secure cellular concept of incarceration, modelled after prisons in Britain. While initial discussions revolved around locating the new convict prison on Pulau Brani, an offshore island, or extending the Bras Basah jail, these proposals were later abandoned in favour of constructing a new prison next to the existing Pearl's Hill civil prison.

What followed was both the physical merging of the two prisons as well as a combination of two incarceration systems, convict and civil, into one. These jails became known collectively as Outram (Local) Prison as of 1882. All prisoners from Bras Basah prison were eventually transferred to Outram Prison to alleviate the overcrowding situation. The expanded compound was planned in a segregated manner, with five prison blocks for male prisoners, i.e., four for local prisoners and one for Europeans, separate buildings for the women's criminal and civil prisons, employees' quarters, work sheds and even an execution room. Further spatial and utilisation modifications followed in the 1930s to accommodate the inmate population, such as converting the European block into a new women's prison and repurposing one of the halls such that it could house 220 single-inmate cells to isolate the more problematic prisoners.

### The Need for Changi Prison

Outram Prison proved to be only a temporary solution to the continued dilemma of prison overcrowding. With Singapore's population growth seeing a commensurate increase in crime rate, the problem was exacerbated. In 1932, preliminary work was underway to construct an additional jail at Changi Road, designed by the then Public Works Department (PWD). In contrast to the design of the earlier prisons, Changi Prison's design was based on that of a maximum security prison. Upon its completion in 1937, Changi Prison prided itself on being the most modern institution in Asia employing state-of-the-art technology such as a comprehensive network of alarms with 19 nerve centres and electrical lighting for its cells. The availability of abundant open land around the prison, initially conceived as areas where the prisoners could engage in some form of cultivation, provided a buffer for expansion to increase its capacity from its original 600 inmates when necessary.

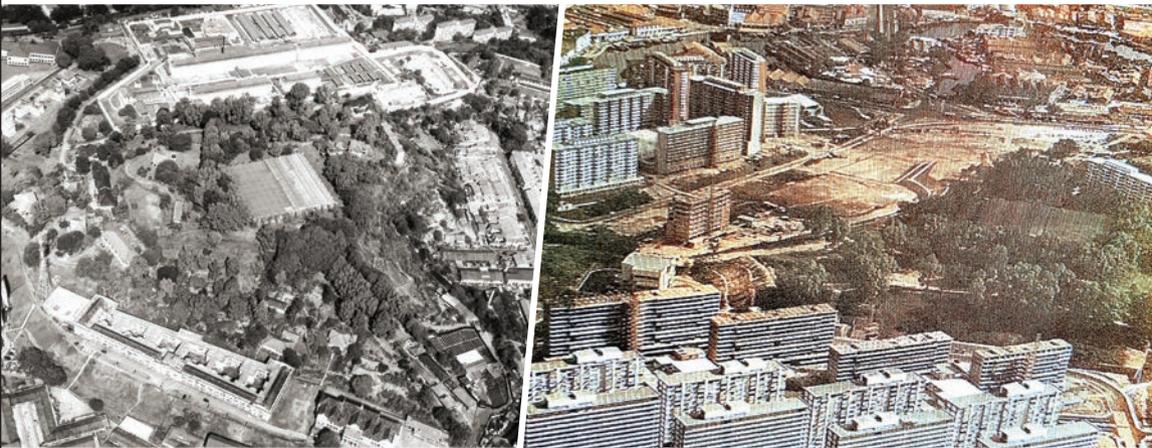


Changi Prison's telephone-pole layout and surrounding buffer capacity. Image courtesy of Peter Biggadike, <http://www.users.waitrose.com/~g8jan/index.html>

Structurally, the prison's layout was aligned to the "telephone-pole" design, which was increasingly adopted for prisons around the world. It comprised two four-storey cell blocks connected on either side of a central covered corridor and was enclosed by a six-metre tall perimeter wall with a turret watchtower located at each of the four corners. This layout enabled wardens to access either block quickly. Upon completion, Outram Prison's long-term inmates were transferred to Changi Prison.

### Closing Outram Prison: “A Chance of a Lifetime”

Outram Prison’s siting on prime land had seen calls from within the colonial government to have it relocated since the late 1920s. Its lack of space necessitated the risky decision of placing serious criminals together with vagrants and juveniles instead of segregating them, which accounted for the rising number of prison escapes. This security concern further fuelled the view that Outram was an antiquated, unsafe prison that should be closed.



Outram Prison occupied an expansive land area (left), which was redeveloped into Outram Park Complex (right, foreground).

Images courtesy of the Urban Redevelopment Authority and The Hunter, <https://sgfilmhunter.wordpress.com/tag/outram-park-complex>

In 1963, the government launched a massive 100-acre (0.4 km<sup>2</sup>) redevelopment plan to rebuild “old Singapore”, covering the Tanjong Pagar, Anson and Telok Blangah areas, and reshape the city’s skyline. As part of the systematic redevelopment of the slum areas and removal of ageing buildings, the 35-acre (-0.14 km<sup>2</sup>) site upon which Outram Prison sat was earmarked for building 5,000 housing units, while the surrounding hills would be cut. In 1968, after having stood for 86 years, Outram Prison was demolished and its inmates relocated to Changi Prison, Bedok reformatory training centre and the newly opened Queenstown Remand Centre. The first phase of the S\$35 million Outram Park Complex, the first and then largest public housing project with comprehensive shopping facilities, saw the construction of 864 two- and three-room flats in eight 15-storey blocks, along with 440 shops, two multi-storey car parks for over 400 vehicles and a children’s playground.

From a planning perspective, the closure of Outram Prison presented an opportunity that could not be missed as it allowed the housing of an eventual 12,500 residents on a land site that was previously occupied by just 750 inmates. The development also stimulated the job market by creating over 1,000 new jobs for shop workers, carpark attendants, estate watchmen, gardeners and cleaners.

This was a sentiment echoed by Alan Choe, who felt that the URA was fortunate that there was Outram Prison occupying a large piece of valuable prime land that a prison did not need. Its clearance paved the way for the URA to raise money by selling two sites within the former prison grounds to the private sector. The Outram area redevelopment was seen as an experiment for the URA to explore new approaches to urban design in a high land-value, high-density location.<sup>58</sup>

In terms of prison operations, Outram’s demolition allowed the prisons service to further move away from its traditional inmate treatment strategy of incarceration and punishment to one that was more attuned to rehabilitation and reformatory training, with the opening of the S\$2 million Queenstown Remand Centre. This was located on a five-acre site near Margaret Drive and housed a number of the shorter-term inmates from Outram.

### Consolidating Satellite Prisons into Changi Prison Complex

With the scarcity of land being a perennial challenge, it was necessary to redevelop the scattered, low-rise prison clusters at Changi to make way for newer and more integrated facilities. This was to provide a more conducive facility to house the inmates, one which facilitated their rehabilitation while optimising resources. Faced with a daily crisis of prison overcrowding stemming from the spike in drug offenders post-Operation Ferret and the risk of prison riots, the then Director of Prisons, Tee Tua Ba, made a bold request for the expansion of Changi Prison, appearing before Lim Chee Onn, Chairman of Parliament’s Public Accounts Committee, without the backing of the Ministry of Finance. Tee Tua Ba emphasised that having an extremely overcrowded prison, with the world’s highest ratio of drug addicts to prison staff and housing remand inmates who committed capital crimes together with petty criminals, represented a “ticking time bomb”. As such, time was of the essence to act swiftly to avert a potential prison uprising. In his view, the pressing need for a reorganisation of Changi Prison’s layout could only be achieved through physical expansion.<sup>59</sup>

With the Committee's approval, the redevelopment of the existing Changi Prison into Changi Prison Complex (CPC) was launched in 1992. The new complex would be arranged in four main clusters, an approach implemented in 1998 by Chua Chin Kiat, then Director of Prisons, consisting of 14 institutions and support facilities. The new complex would see the consolidation of all medium-security and maximum-security facilities previously located in different sites across Singapore, such as Moon Crescent Prison, Portsdown Prison and Tampines Prison, into a single 0.479 km<sup>2</sup> site where the existing Changi Prison stood. Through this, there would be greater streamlining of operations and assets, along with speedier mobilisation of manpower if a crisis were to break out in one of the institutions.

### Design Considerations

In consolidating the previous prisons, the Prison Service, along with the appointed designers, CPG Consultants, had to first address the challenge of capacity—accommodating the satellite prisons' population into a smaller land area than previously and catering for a projected inmate capacity of 23,000. In addition, with the shift in strategic focus from incarceration to the rehabilitation of inmates, space and facilities for rehabilitation programmes would need to be factored into the design. Prisons was also mindful of the trade-off in adopting this consolidated approach, where the increased concentration within a single location could pose proximity risks, such as spread of epidemics and fire management issues. Beyond hygiene, cleanliness and control features that were catered for in the design, the safety of both the prisoners and non-prisoners such as counsellors and prison guards was of utmost priority.



Façade of Changi Prison Complex.  
Image courtesy of CPG Consultants.

As noted by Shankar Ramasamy, CPG's Senior Vice-President and one of the principal architects involved in the CPC project, a master planning consultant from the United States was engaged to assist in planning CPC. As part of the planning process, a combined team comprising Prisons officers and CPG staff embarked on study trips to the United Kingdom and United States to observe alternative forms of prison operations and designs. The team found that in the United Kingdom the majority of prisons continued to adopt the traditional "telephone-pole" design, which the original Changi Prison was modelled after, while in the United States the ample availability of land allowed them to continue building single or at most double-storey prison buildings. However, because Singapore faced the perennial issue of land scarcity, the CPC needed to have a high-density, multi-storey design.

Building high-rise with eight-storey prison blocks addressed the capacity issue for housing the projected 23,000 prisoners. CPG's design also took into consideration environmental and operational concerns. One of these was capping the number of storeys at eight, although it was architecturally possible to go higher. This cap was due to the CPC's proximity to Changi Airport, which required observing a height restriction. Singapore's tropical climate was another key consideration in terms of ensuring adequate ventilation. In addition, the entry and exit points of the CPC needed to be carefully considered. This was because prison inmates needed to be escorted out in the event of an emergency, such as a riot or fire, unlike the typical mass self-evacuation approach applied to the occupants of high-rise commercial or residential buildings. While there were pockets of private residential housing on the fringes of the prison compound whose owners had grown accustomed to living alongside a prison over the decades, CPG and the Prisons ensured that the "onion ring" principle for layering prison infrastructure and installations continued to be incorporated into the overall layout. This principle involves locating the more security-critical facilities at the centre of the complex and the less sensitive ones along the periphery.

As redevelopment works needed to be carried out while the inmates were still on-site, CPG strived to ensure a highly secure environment while maintaining optimum operational and staffing efficiencies during the process. For instance, the clusters comprising training and housing facilities were evenly distributed and built close together, which made it easier to localise and seal off affected areas during the redevelopment process so as to ensure uninterrupted prison operations. As described by Ramasamy, this approach was akin to well-organised "musical chairs".

The “direct supervision” concept, whereby prison officers are stationed within each self-contained cluster, complete with its own set of infrastructure such as shower facilities and dining hall, enabled CPG’s architects to create a standardised design and repetitive model that could be reapplied to subsequent units. This standardisation brought with it additional cost savings and productivity improvements. With each cluster intended to house a different security category of inmates, the cells were structured in a modular fashion and added onto the cluster building.

As noted by Ramasamy, the Prisons had fully engaged CPG’s planners, designers and architects from the outset, from providing CPG with detailed briefs, going on overseas study trips together and jointly working on their project proposals in their hotel rooms while still abroad, to jointly developing the layout. This early involvement and open lines of communication represented one of the key thrusts behind the success of the CPC project, which has since garnered a great deal of international attention and design awards. It also helped that CPG, in its previous incarnation as a statutory board, the Public Works Department, had designed a number of the satellite prisons along with the original Changi Prison. As such, CPG officers were well attuned to Prisons’ security and operational concerns and could adapt the design to meet the current operating environment.

The first cluster, Cluster A, was opened on 16 April 2004 and served as a prototype for the subsequent development of Cluster B, with design tweaks made where necessary. Cluster B began operations on 20 January 2010. On 15 October 2017, Changi Women’s Prison was relocated out of its Tanah Merah premises to Cluster A. While the CPC design caters for the development of four clusters, there has thus far not been a need to expand beyond the current two clusters, with the Prisons reporting a convicted penal population of 8,885 and prison capacity of 14,678 as of end 2017.

### **An Opportunity to Raise their Game**

In consolidating the various satellite prisons into the CPC, the underlying impetus was not providing the Prisons with the physical space and resources to build a larger prison that functioned along the same lines as the satellite prisons that preceded it, nor was it the need to free up valuable state land for urban redevelopment. Instead, as pointed out by Benny Lim, it was about providing the opportunity and helping the Prisons to build an improved prison complex over the one they already had, one that leveraged technology-enabled applications and resource optimisation and allowed the Prisons to raise their game further.<sup>60</sup>

*The issue is not about aggregating everything into a place per se, but rather it is looking at what synergistic values you can create when you pull everything together, and of course what kind of negativities that would come with it as well.<sup>61</sup>*

Benny Lim

### **Conservation Efforts**

In 2000, the old Changi Prison building was demolished. Given its historical significance and the special place it held in the collective memory of both locals and Australian prisoners-of-war who were interned at Changi Prison during the Japanese Occupation, the Preservation of Monuments Board worked with the Prisons and the URA to allow the front gates of the old prison to be preserved and moved to the new prison. On 15 February 2016, the entrance gate, a 180-metre stretch of the prison wall along Upper Changi Road North and the two corner turrets were designated as Singapore’s 72nd national monument.

## **OFFSHORE ISLANDS AS ALTERNATIVE SPACES FOR REHABILITATION**

### **Pulau Senang: An Uneasy Solution to Rehabilitating Secret Society Members**

In the aftermath of the major police efforts in the 1950s to crack down on secret societies, whose members numbered over 10,000, and the introduction of Section 55 of the Penal Code allowing for detention without trial for secret society members, thousands of gang members were rounded up. This surge in inmate numbers further strained the capacity of Singapore’s existing prisons. Given the land constraints on the mainland and the existence of only Outram and Changi Prisons then, a plan to set up an offshore detention prison was drawn up in 1960. Known as the Pulau Senang Rehabilitation Settlement plan, the idea was to build an offshore detention prison that would serve the dual function of rehabilitating the inmate population, largely Chinese secret society members, through discipline and hard manual labour, and relieving the capacity shortage on the mainland. Pulau Senang (Malay for “Isle of Ease”), previously an uninhabited 227-acre (-0.9 km<sup>2</sup>) coral island 13 km off Singapore’s southern coast, would serve as the test site for this penal reform experiment.

Led by Prison Superintendent Daniel Stanley Dutton, the first batch of 50 inmates went about developing Pulau Senang's infrastructure from the ground up, building its roads, reservoirs, workshops, farms, jetty, and sports facilities in addition to the rehabilitation centre. In contrast to prisons on the mainland, the Pulau Senang facility operated on a "minimum supervision, prison-without-bars" concept, guided by the belief that the inmates would not attempt to escape. Dutton and his three assistants also did not carry any firearms. This was in keeping with the overall softer approach to rehabilitation on the island, where Changi prison inmates would volunteer to spend a year on Pulau Senang during which they would be taught various trades such as plumbing, hair dressing, and farming. If they were assessed to have been successfully rehabilitated, they would be allowed to reintegrate into society.

Despite its literal English translation as an "Island of Ease", life on the island was anything but easy. While Pulau Senang was initially deemed a success, with 250 inmates having undergone reformatory training and those assessed to have been successfully rehabilitated being released and sent back to the mainland, the harsh methods adopted by Dutton and his team in achieving this created a great deal of pent-up anger among the inmates. This anger was deemed to have triggered the Pulau Senang riot of 12 July 1963. During the riot involving 58 of the close to 320 inmates on the island at the time, Dutton and his assistants were hacked to death while the majority of the island's buildings were burnt down within a span of 40 minutes.

Stemming from the systemic failure and general complacency in the management of the inmates in the lead-up to the riot, a decision was made to close down the Pulau Senang settlement just three years after it had begun operation. Decades later, in 1986, the facility was converted into a Singapore Armed Forces live-firing training area.

### St. John's Island: From Quarantine Centre to Drug Rehabilitation

With the surge in migrants following the establishment of the port of Singapore and the cholera epidemic of 1873, there was a need for migrant health controls to be put in place to screen arriving ships and travellers and quarantine them if necessary. St. John's Island, situated 6.5 km off the southern coast of Singapore, was identified as the site for the screening centre and quarantine quarters. It was also subsequently used as a space for housing beriberi and leprosy sufferers. By 1920, the quarantine centre had expanded to become one of the largest in the world, with the capacity to accommodate 6,000 individuals. In the 1930s, it doubled up as a screening centre for pilgrims returning from the Hajj in Mecca.

From isolating individuals with contagious diseases during the era of mass migration, St. John's Island, with its treatment-centric infrastructure and facilities, soon became a ready-made option for accommodating sufferers of another equally serious affliction, opium addiction. In 1952, as a means of combating opium trafficking, which had already hooked over 16,000 addicts, the SPF and the Central Narcotics Intelligence Bureau launched a crackdown on opium peddlers and smokers, resulting in around 2,000 arrests. Moving beyond the government's approach of arrests and imprisonment, the Legislative Council in 1954 approved amendments to the Dangerous Drugs Ordinance aimed at rehabilitating the addicts as the second phase of its "Withdrawal-Rehabilitation-Re-Integration" strategy. The amendments also allowed for an Opium Treatment Centre to be established on St. John's Island.



Detainees working in the fields as part of their reformatory training on Pulau Senang.

Image courtesy of National Archives of Singapore.

In 1955, the centre commenced operation for opium addicts from Outram Prison's opium ward who were assessed to be amenable to treatment. It was felt that using an offshore island with its clean, natural surroundings would aid the opium addicts in enhancing their physical health as a first stage. In addition, the centre would provide the necessary space for siting activity areas where the addicts could be assigned work to regain their self-respect and sense of worth. As part of the addicts' occupational therapy, carpentry and rattan workshops, tailor shops, a hospital and cookhouse were set up on the island. While the emphasis was on providing the addicts with an open, conducive living environment, there was still a need to prevent the addicts from interacting with the island's inhabitants. This necessitated the construction of barbed wire fences around the centre, one of its only penal-styled features. The project represented a somewhat revolutionary approach to rehabilitating drug addicts and was closely watched by the international medical and penal fraternities, as well as the United Nations, given the challenges that other countries had been facing in managing their own opium situation.

Expanding from 18 addicts when it first opened to around 580 addicts by 1960, the treatment centre subsequently extended its outreach to addicts who wished to voluntarily enrol in the programme. Within 11 years, it was estimated that close to 4,000 addicts had passed through the centre.

### Repurposing Existing Infrastructure for Drug Rehabilitation Centres

Akin to the secret society and opium clampdown of the 1950s, another major security dragnet in the 1970s, this time against heroin abusers and traffickers, had a significant knock-on effect on spatial and infrastructural planning. With over 5,100 drug addicts rounded up within the first seven months of Operation Ferret, as detailed in the previous chapter, and with the Director of CNB granted the power to send addicts directly for six months of rehabilitation upon a positive urine test under the Misuse of Drugs Act (MDA), there was an urgent need for more Drug Rehabilitation Centres (DRCs) to be built as the existing prison buildings were unable to cope with the doubling of drug inmate numbers. With St. John's Opium Treatment Centre being repurposed to treat heroin addicts and becoming Singapore's first DRC in 1973, the government decided that disused army barracks and premises left behind by the British Armed Forces, who were gradually withdrawing from Singapore, would be converted to DRCs. Government school buildings also were mobilised and reconfigured overnight into temporary DRCs.

The conversion of military premises into DRCs was aided by the work of the Bases' Economic Conversion Department. This was a unit set up in 1968 under the Prime Minister's Office (PMO) to start negotiating the transfer of over 15,000 acres of buildings and housing that the British military would be leaving behind when they began their withdrawal in 1971 and to decide on subsequent redistribution of these buildings in consultation with the various economic, tourism, planning and security agencies. While the PMO oversaw the spatial allocation, the responsibility for ensuring the fit-for-use repurposing and development of DRCs and proper treatment of addicts that would be housed within them rested with the security agencies. To this end, the CNB and the Prisons worked on putting in place new operational procedures and facilities for the arrest, detention and treatment of drug addicts in compliance with legislation under the ambit of the MDA, which was first enacted in 1973. These combined efforts paved the way for the establishment of five much-needed new DRCs at locations such as Sembawang and Selarang Park, as well as Tanah Merah, which housed female addicts.

With the shift towards a more rigorous heroin abuse treatment regime compared to the softer methods previously deployed for opium addicts, the DRC on St. John's Island was gradually phased out. In 1975, after more than a century of use as a centre for quarantining and treating the afflicted and addicted, St. John's Island was eventually converted into a holiday and recreational spot and, more recently, in 2002, a site for marine science research.

### BALANCING OPENNESS WITH SECURITY: KEEPING ICONIC PUBLIC SPACES SECURE

#### A City in a Garden: Gardens by the Bay

In line with the government's greening strategy to transform Singapore from a "Garden City" to a "City in a Garden", the 1.01 km<sup>2</sup> Gardens by the Bay was officially opened in 2012 in the heart of the Marina Bay downtown area. With its objective of enhancing the quality of life through the introduction of more greenery and flora into the city and of becoming Singapore's leading urban outdoor recreation space through numerous programmes and events, the iconic Gardens has seen more than 33 million visitors as of March 2017.<sup>62</sup> With three expansive free-access gardens, two cooled conservatories, a children's garden, close to 5 km of promenade frontage alongside the Marina Reservoir, a grove of tree-like structures towering 25–50 metres, and an elevated public walkway, it presents a unique set of challenges in terms of safeguarding the well-being of visitors and infrastructure.

As noted by Ng Boon Gee, Senior Director of Gardens Operations, who was involved in the Gardens' planning and design from the beginning, the Gardens was fortunate to have put in place a robust process together with its design consultants from the outset. Having experienced officers as part of the planning team who could advise and raise probing questions to the design consultants was also critical in the conceptualisation and implementation of practical ideas and in developing a comprehensive security design that met the approval of the MHA without major objections when first submitted. This provided a strong enough base from which the Gardens could be further developed and security enhancements made over the years without the need for major overhauls and retrofits, which would have been costly.<sup>63</sup>

Looking at specific design features and principles, the Gardens explored ways to ensure the multi-functional usage of its infrastructure to serve both day-to-day operational needs as well as security functions. For instance, the back-of-house tunnel system was initially conceptualised by the designers to function as a service tunnel for transporting plants as well as for food and beverage catering during events. However, given that the Gardens is essentially a public space with high visitor traffic, the operations team saw the need to incorporate additional security enhancements into the design such as setting up a security post at the front of the service road leading to the tunnel in order to prevent members of the public from wandering in. This has allowed the tunnel to double as a VIP entrance and exit route. The security agencies were supportive of such proactive interventions as they helped provide an additional security layer to their own VIP management plans.

While CCTVs are extensively deployed across the Gardens—the initial number of 150 cameras has since been doubled to close to 300—and they have been supplemented by increased security manpower, it is still not possible to cast a security blanket over the massive grounds. Nonetheless, with constantly evolving technology and the team's openness to exploring new innovations in the market, security provisions around the premises are never compromised and are constantly being enhanced. For instance, the first generation CCTVs are in the process of being upgraded to full high-definition ones that offer greater visual clarity and the opportunity to add on facial recognition features in future. Similarly, the bollards that the Gardens originally erected were in line with those that the NParks was using in other parks and gardens across the island. However, with security foremost in their minds and appreciating the need to adopt new designs to suit evolving situations and the Gardens' increasing popularity, the authorities recently upgraded the bollards to crash-rated ones that can withstand the impact of a three-tonne vehicle and had these placed at key entrance points.

*In the beginning when we built the Gardens, we used the normal bollards that were used in the rest of Singapore's parks. A 'bollard' is a 'bollard'. But very soon we realised there are those that are more hardy, more robust that can withstand vehicle impact. So we also spent on such measures to make sure that certain key spaces are well protected.<sup>64</sup>*

Ng Boon Gee

In incorporating security features such as large cameras and barriers, there is a need to strike a balance between having a certain degree of visibility for deterrence purposes and maintaining the aesthetics of the Gardens, which is ultimately the key draw for visitors. Achieving such a balance involves close collaboration between the Gardens' designers, operations staff and security team, and adapting their approaches so that they are better aligned with the principles and design of the Gardens. One example is the use of Segways alongside the buggies that security officers use during their patrols, which allows faster response as well as greater access to narrow garden paths and secluded spaces.

### **Partnership with the Police and Other Neighbouring Stakeholders**

Although the Gardens has proactively put in place a set of security measures as part of its daily routine and these have been carried out with minimal issues encountered, additional assistance from security agencies is crucial during large-scale events, given that the Gardens' iconic status makes it an attractive target for terrorism. For instance, with the rise of vehicle ramming attacks in other cities, the Gardens worked closely with the police on special event-specific provisions to be put in place for the 2017 edition of the Christmas Wonderland event, which usually attracts thousands of revellers each day. These measures included placing concrete blocks at possible access points. The porous nature of the Gardens presents a challenge in conducting security checks on every individual entering the grounds. As such, the Gardens and the police adopted the strategy of having a more visible security presence to act as a deterrent during such events, even to the extent of deploying armed guards. Regular joint exercises are conducted together with the Central Police Division and the Singapore Civil Defence Force (SCDF) to simulate terrorist attacks at various locations in the Gardens. These help improve coordination between the three parties and develop a better understanding of the response times and actions the Gardens team can take to mitigate the immediate fallout of a security incident while waiting for the authorities to arrive.

The Gardens' operations team works closely with event organisers and would sit down with first-time organisers during the early planning stages to go through the security arrangements in greater detail to ensure that the latter adequately factor in the cost of the requisite security provisions in their budget. The Gardens, for their part, see events as a two-way partnership with the organisers and beef up their own security deployment to complement the latter's resources. Separately, the Gardens engages in monthly meetings led by Marina Bay Neighbourhood Police Centre (NPC) together with security managers from other key commercial establishments in the area such as Marina Bay Sands, Marina Barrage and the Esplanade to share information on upcoming events and current security issues of concern and to de-conflict some of these programmes where necessary. These meetings are part of the Garden's involvement in the Safety and Security Watch Group (SSWG), a networking platform set up by the police for the commercial sector to collaborate on hardening their premises against security threats. This sharing platform is of particular importance to the Gardens as it tends to be the primary location into which crowds from major events organised at these other establishments would spill over. Prior knowledge of such events enables the Gardens to put in place pre-emptive crowd control measures.

### Bringing the Public Closer to Water

The mid-2000s saw a move within the Public Utilities Board (PUB) to start opening up Singapore's previously protected reservoir and water facilities and to increasingly bring on board the private sector and members of the public as important stakeholders in Singapore's water resources. As noted by Yap Kheng Guan, former Senior Director at the PUB, the shift from the previous approach where the PUB had a tendency to over-protect its water facilities to trying to bring people closer to water saw the setting up of two test sites, at MacRitchie and Bedok Reservoirs, to study this open-access proposal. Yet, this shift was still in keeping with the government's overall principles: that of taking a cautious, calibrated approach where large-scale developments were concerned and not rushing into major changes without first ensuring that all stakeholders, the operators, the public, and interest groups, were satisfied and that their needs and safety concerns were well taken care of.<sup>65</sup>

*Of course there were concerns that people would go there and mess about, pollute the water. But we found that it was not a big problem, in fact no concern at all. If anything, it could help us get people who would now want to make sure that the water is clean. Having gone in to the water, enjoyed the water, they are now more of a champion for keeping the water clean. So this goes with the mission of getting people to be more engaged, to own the water...and become a guardian.<sup>66</sup>*

Yap Kheng Guan

The success of the two trials provided the PUB with the confidence that the concern over potential acts of mischief or pollution by members of the public was not as serious as initially thought, and instead opening up water resources to the public would instil in them a greater sense of ownership. This was a critical and timely development as the mindset change and fresh approach could then be adopted for another project that was in the works at the time: to convert Marina Basin, right in the heart of the city, into Singapore's 15th reservoir.

### Marina Barrage: A Secure 3-in-1 Facility

Officially opened on 31 October 2008, the Marina Barrage, which houses the Marina Reservoir, serves three key objectives. Firstly, it functions as an additional water source producing around 10% of Singapore's water supply. Along with two other recently commissioned reservoirs, Punggol and Serangoon, it has raised the island's overall water catchment area from half to two-thirds of Singapore's land area.<sup>67</sup>

Secondly, the Barrage helps in flood control, particularly for low-lying parts of the city such as Chinatown and Geylang. It performs this function through the use of its nine 30-metre wide, five-metre high hydraulic steel crest gates that stretch across the Marina Channel and seven 28-tonne drainage pumps. These gates are opened during heavy rainfall to release excess water into the sea during low tide, and, in the event that the rain coincides with a high tide period, the excess water will be pushed out into the sea through the pumps.<sup>68</sup>

Thirdly, the Barrage was designed to be a lifestyle and educational attraction. It not only allows visitors to interact with water through various water sports activities such as windsurfing, canoeing, dragon boating, and water play areas for children, but also strives to educate the public on Singapore's efforts towards achieving environmental sustainability and to develop a greater appreciation of the need for water conservation through the Sustainable Singapore Gallery located there. The Barrage has also served as a venue for large-scale events such as the 2010 Youth Olympic Games. Beyond water-based activities, the Barrage sees a regular stream of pedestrians strolling along the Marina Bridge that sits atop the crest gates and visitors having picnics and flying kites at the Green Roof above the Visitor Centre.<sup>69</sup>

At the early stage of developing the Barrage, the PUB's engineers mooted the idea of adopting the standard fenced-up design used at other water treatment and sewerage plants. However, given its unique location in the downtown core, other agencies involved in its planning such as the URA advised that the Barrage should instead be designed as an accessible public space, open to visitors and offering a host of amenities, rather than be treated like a typical engineering facility. As described by Yap Kheng Guan, the project director who oversaw the Barrage's development from conceptualisation to completion, this advice was taken up by the design team. The open concept adopted meant that important components of the plant needed to be secured. During the planning process, the PUB's Health, Safety and Security Division, which oversees plant security, was brought in, together with the operational team that would be tasked with running the Barrage, so that potential downstream issues could be identified and the designers and engineers could then incorporate the right blend of security and openness. With the Barrage being designated as a critical installation, the PUB also worked with the MHA to provide inputs on additional security requirements.

Broadly, the Barrage adopted three categories of security measures: hard, non-intrusive, and soft barriers, as described by Tan Nguan Sen, the PUB's Chief Sustainability Officer. One such "hard" design feature involves the pump house. This contains the seven drainage pumps, which are encased in glass panels to restrict access while at the same time allowing visibility to visitors as they serve as a useful educational reference and constitute a central feature of the Barrage's operations. Ancillary equipment such

as power generators and electrical equipment are secured behind large access-controlled steel gates that are able to withstand vehicle impact. However, given their prominent location along the façade of the Barrage, a more aesthetically pleasing lattice design was chosen for the gates. Bollards were placed around Marina Bridge to prevent vehicles from driving onto it. Since the facility is a reservoir, sea-borne threats also needed to be taken into account, such as intentional or unintentional collision by boats and other sea vessels. To guard against such threats, steel Vessel Impact Barriers were erected in the waters in front of the gates.<sup>70</sup>



Marina Barrage: lattice gates (left) and Vessel Impact Barriers (right) providing additional layers of security on land and in the sea.

Images courtesy of Stewart Tan, Centre for Liveable Cities.

Non-intrusive security measures include the use of CCTV cameras and security patrols by both unarmed and armed guards from a private security firm, Certis Cisco. Tan Nguan Sen describes how the CCTV network was gradually expanded from 43 to 73 cameras owing to a shift in its original focus from sensitive areas housing the key physical infrastructure of the Barrage to now include the public areas and open spaces where visitors congregate. Similar to the Gardens by the Bay, the cameras have since been upgraded so that they can now perform more sophisticated functions such as "Tag and Track", where the movement of suspicious characters can be monitored. Service gates that allow access to the gate controls, which were initially secured through the lock-and-key method, have since been enhanced and require biometric access.

The number of guards deployed at the Barrage was only slightly increased in recent times so as not to make their presence seem overwhelming, which would have affected the public appeal of the Barrage. Given that the Barrage is open to the public 24 hours and seven days a week, additional security patrols are conducted after dark while the camera upgrades were also aimed at improving night-time visibility. Such decisions on enhancing security features are taken internally through the PUB's security steering committee.

Supplementing the Barrage's own CCTV network and the patrols done by its Certis Cisco guards are the efforts of the Police Coast Guard. As part of their overall coastal control efforts, the Police Coast Guard have deployed their own cameras along the Marina Bridge to monitor the coastline, and their patrol vessels that are docked at the Barrage itself undertake periodic sea patrols within the reservoir and in its surrounding waters. As for "soft" features, the initial design of the Barrage made use of the tree lines such as shrubs and bushes to control access to, and visibility of, the restricted areas around the premises.

By and large, the types of security incidents that have occurred at the Barrage have been minor in nature, such as unattended bags or sporadic acts of mischief by youths trying to trespass on out-of-bounds areas along the Marina Bridge in the middle of the night. To guard against acts of sabotage such as pouring of hazardous materials into the reservoir, the Barrage employs automated water quality monitors, which measure the quality at different parts of the reservoir around the clock through an online platform. In the event that abnormalities are detected, the monitors would sound an alarm, signalling the need for further investigation.

As noted by Khairil Anwar Makkotom, Deputy General Manager of Marina Barrage, the security measures deployed are constantly evolving in tandem with the growing global threat posed by terrorism and, in particular, the increasing trend of vehicle-borne improvised explosive devices and vehicle ramming attacks. The upgraded measures have also sought to meet the MHA's new guidance and requirements on securing government buildings and infrastructure. These include the construction of low walls and installation of crash-rated bollards, with these low-height structures chosen to prevent a fortress-like look to the Barrage while still affording the necessary protection. Close cooperation with the Barrage's nearest neighbour, the Gardens by the Bay, is critical in managing these new security challenges as both premises share a common boundary

and are connected by a heavily used promenade. As such, both organisations need to strengthen their security measures to ensure there are no loopholes in either system that can be exploited. As noted by Makkotom, discussions between the two organisations on areas of security collaboration and synergies are currently ongoing.



Recently installed crash-rated bollards and low walls around the perimeter of the Barrage to counter the growing threat of vehicular attacks. Image courtesy of Stewart Tan, Centre for Liveable Cities.

Given that it is a public space, the changing recreational habits of visitors is another aspect that the Barrage has to adapt to. For instance, the use of drones was initially prohibited at all areas of the Barrage. However, noting the increasing public interest in flying drones for recreational purposes, the Barrage loosened some of its restrictions while requiring drone operators to be guided by the directions set by the Civil Aviation Authority of Singapore (CAAS), such as height limits and the ban on flying over crowds. As such, the Barrage now adopts the house rule that if it is not crowded, flying drones on the green roof is permitted; in the event that the crowd begins to swell, drone operators will be guided to an open field across the public carpark, which is operated by the NParks. In fact, research and development trials are underway by the Barrage to leverage drones to enhance efficiency and security by serving as a first line of response to identify whether there is indeed a valid security concern before manpower and vessels are deployed. With the amount of computer-controlled critical functions around the reservoir, cybersecurity is another growing concern for the Barrage. Measures such as having these computers as standalone systems separated from the Internet have helped minimise external threats, while biometric and access control measures guard against insider threats.

Singapore's traditional approach of tightly protecting engineering facilities such as reservoirs and water plants may have been necessary in its early stages of development as a young nation still plagued by great uncertainty and societal struggles. But, as Yap Kheng Guan notes, the Barrage signals a new model that lends itself to a more open and accessible design while not compromising security.

*I would like to think that Marina Barrage has opened the door for thinking about public facilities. Do we always have to think about it as something that we need to protect with fences all around and make it a protected place with signboards saying 'No Trespassing'? That is the traditional approach. But with the Marina Barrage, it took on a different approach altogether. I think after 10 years it has proven that that is the right way to go. If we had secured it the traditional way, we would have lost a very important facility that the public could enjoy.<sup>71</sup>*

Yap Kheng Guan

## CHAPTER 3

# BY DESIGN: SECURITY IN PUBLIC HOUSING ESTATES

“The best defence against theft and robbery is to create a sense of community, which we tried to do. By creating this cohesiveness and highlighting this community awareness, you actually improve the safety of the houses because the neighbours are watching and looking after your apartment when you are away.”<sup>72</sup>

Dr Liu Thai Ker

## FROM KAMPONGS TO FLATS: ADJUSTING TO URBAN LIVING

The resettlement of *kampung* residents and squatters, a number against their will, into the newly built housing board flats represented a significant adjustment not only to the denser, more enclosed living environment, but also to the concept of high-rise living. Dr Liu Thai Ker notes that one group in particular that encountered some difficulty were female residents who worried about their safety when they were alone in their flats. In an HDB flat, a lady would have to decide for herself whether or not she should invite someone at the door into her flat, minus the protective code and sense of safety that *kampung* living offered, where she had her extended family in the same house and neighbours nearby.

Being aware of these early adjustment problems, HDB estate management officers put in a great deal of effort into educating residents on how to adapt to high-rise living, such as overcoming their fear of using lifts. According to Dr Liu Thai Ker, this was helped by estate managers and area officers having formed friendships with grassroots leaders, which allowed for good lines of communication to the residents and in gaining awareness of their concerns.<sup>73</sup>

As described by Dr Aline Wong, former Chairman of HDB, *kampongs* provided a certain sense of social security in the form of social networks, which HDB in the 1960s and early 1970s, under the leadership of Dr Liu Thai Ker, strived to replicate when designing the blocks and towns. As Dr Aline Wong noted, Dr Liu Thai Ker and his team had “implemented or interpreted the concepts of space, the interaction between physical space and social formations or social relationships into design”.<sup>74</sup>

## SECURITY CONSIDERATIONS IN NEW TOWN PLANNING

### Security and Crime Concerns in the Early Days of Public Housing

In describing the crime situation in Singapore’s housing estates in the early 1970s, Goh Yong Hong, former Commissioner of Police, highlighted housebreaking as being particularly rampant at that time as residents were in the process of moving into public housing. Private housing estates, such as Bukit Timah and East Coast, were not spared either as they fell victim to housebreaking gangs. Security in HDB lifts was also an area of some concern as there were a number of cases of molestation, snatch theft, vandalism, and even anti-social acts such as urinating in lifts. Other social ills such as high-rise littering and people sleeping at the void deck were also fairly common disamenities that residents faced.

Certain housing estates were considered more prone to crime. This was believed to be due to the higher concentration of low-income slum dwellers, a handful of whom were associated with gangs that operated in the various *kampongs* whose residents were being resettled into the emergency and one-room flats. A case in point, according to Dr Liu Thai Ker, was the northeast corner of Toa Payoh, which was nicknamed “the Chicago of Singapore” owing to the higher rate of petty crime there, with its high concentration of resettled farmers and squatters, creating a “resettlement ghetto”.<sup>75</sup> Bukit Merah was another such neighbourhood that was initially a “ghetto of the poor” after resettlement, according to Tee Tua Ba. The HDB drew lessons from these incidents of crime, which they incorporated into their design when the opportunity for the redevelopment of these areas arose in the late 1970s and early 1980s. The earlier flats were demolished and varying flat types were built in their place and offered to residents. As noted by Dr Liu Thai Ker, this effort

was manageable and incurred lower financial losses because the blocks being demolished were low-rise structures. Nonetheless, this episode highlighted how resettlement planning could negatively affect the security landscape of neighbourhoods.<sup>76</sup>

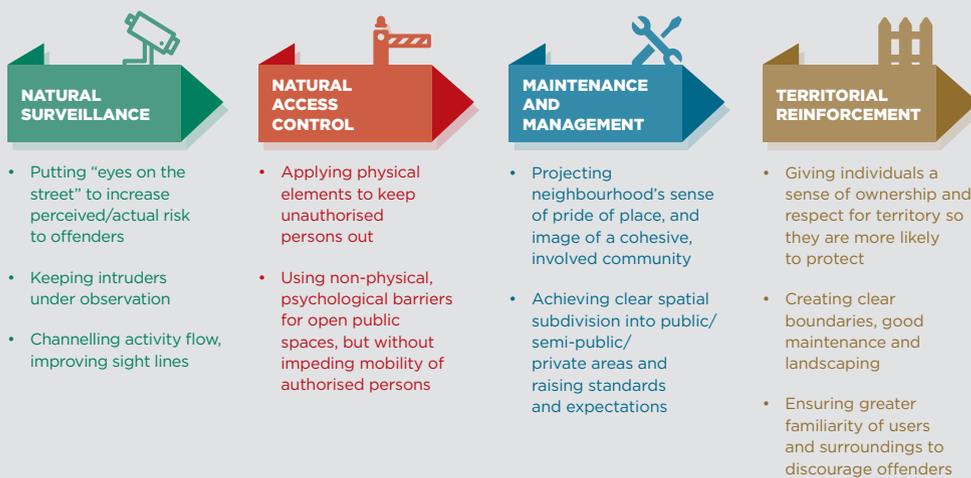
*The root cause of having high crime rate in public housing is the social mix. If you mix all the poorest people with low education, low income into the same area, they reinforce each other's weaknesses. In the beginning, when the HDB was just starting out, we could only cater for the poorest, so our public housing had a high concentration of lower socio-economic residents.<sup>77</sup>*

Dr Liu Thai Ker

## REMOVING THE “HANDICAPS” OF PUBLIC HOUSING THROUGH URBAN DESIGN

### Exhibit 2

#### Key Principles of Crime Prevention Through Environmental Design (CPTED)



While studying in the United States, Dr Liu Thai Ker had seen first-hand how public housing there, as with most Western countries, tended to be closely associated with crime. Upon returning to Singapore, he drew further inspiration from Oscar Newman’s 1972 book *Defensible Space: Crime Prevention Through Urban Design*, which looked at the crime problem in New York’s public housing and how it could be addressed by design. Driven by an appreciation of the ability to improve security through design, a field later known as “Crime Prevention Through Environmental Design” (CPTED), Dr Liu Thai Ker personally conducted a detailed study of how crime could be prevented in HDB estates. Drawing from the study’s findings, he embarked on designing the yet-to-be built HDB blocks in such a way as to either remove the “handicaps of public housing”, his term for aspects of a housing block which compromised the security of its residents, or to compensate for these handicaps in the existing buildings.<sup>78</sup>

### Redesigning Corridors for Greater Privacy

The study uncovered residents’ concerns about the lack of privacy stemming from the long common corridors that were centrally located between facing flats, a commonplace feature of early HDB designs. Similar issues were noted with the central corridor design in public housing overseas, where there was the perception that high-rise public housing was crime infested. Dr Liu Thai Ker attributed this sense of insecurity to the corridors being dark and poorly ventilated, which affects one’s mood. This was aggravated by public housing overseas largely comprising “all the poorest people with the biggest social ills in the same community”. Dr Liu Thai Ker, therefore, suggested a move away from central corridors to a more open concept with natural lighting and ventilation, where the common corridors in newer blocks would be located on the façade of the buildings instead.<sup>79</sup>

Dr Liu Thai Ker also pushed for the use of segmented corridors, with the long corridors on each floor broken into three or four segments comprising a smaller number of either six or eight units each, with a common stairway or lift shared by each segment. This was based on the inputs of sociologists that consistently stated that the number of neighbours an individual would be comfortable living alongside and could reasonably develop a cordial relationship with is about seven. While corridors would compel people to keep moving along, a segmented space

would allow residents to stop and interact in these “courtyards in the sky”. This new design helped contribute to a greater sense of privacy, while at the same time allowing for closer interaction and increased familiarity with one’s neighbours. The spirit of this design continues to be evident in the HDB blocks of today, building on the “courtyard in the sky” principle that Dr Liu Thai Ker had envisioned decades earlier.<sup>80</sup>



The evolution in common corridor design, from central (top left) to façade (top right) to segmented (bottom).

Image courtesy of Reggie Wan, <https://www.flickr.com/photos/reggiewan/5083813670> (CC BY-NC-SA 2.0) (top left).

Image courtesy of ProjectManhattan, [https://commons.m.wikimedia.org/wiki/File:Corridor\\_at\\_an\\_HDB\\_flat\\_1.jpg](https://commons.m.wikimedia.org/wiki/File:Corridor_at_an_HDB_flat_1.jpg) (CC BY-SA 4.0) (top right).

Image courtesy of Stewart Tan, Centre for Liveable Cities (bottom).

### Making Void Decks Less “Void”

HDB void decks, introduced by Teh Cheang Wan while he was Chief Executive of the HDB in the early 1970s, were primarily meant to cater to very practical needs—as an outlet to reduce the claustrophobia that residents felt living in their flats and to provide school children with shelter from the rain. This was according to the late E.W. Barker, former Minister for National Development and Law. When Dr Liu Thai Ker assumed the role of CEO, he received feedback from the estate managers and his team of sociologists that residents considered the void decks to be “totally void”, leading to young female residents feeling insecure whenever they returned home late at night. A small HDB-led committee conducted a study on how more activity could be injected into the void decks. The study discovered that residents tended to only use about 30-40% of the void deck space in their daily routines. It was then decided that the centre of the void deck would be left vacant while the two ends would house activities such as kindergartens, nurseries or homes for the aged, with the latter being particularly effective in enhancing the feeling of security when residents returned home after dark. Tables, chairs and benches were also strategically located near the lift lobbies at the void deck so that residents who were seated there could keep an eye on people entering and leaving the block.<sup>81</sup>

However, there were instances in the past where the over-emphasis on security had a reverse effect on void deck usage. As noted by Dr Liu Thai Ker, “there was this practice by the police that if you see more than five or six youngsters together, they’ll come and question you”.

*Youngsters hesitated to gather around the void deck because the police will come and ask you what you’re doing. So there was that problem that we couldn’t really handle too well.*<sup>82</sup>

Dr Liu Thai Ker, on the younger residents’ reluctance to use the void deck

As such, void decks tended to be predominantly used by elderly residents, who would be the ones left looking after the security of the block from the vantage point of the void deck’s chairs and benches. Echoes of this trade-off between the need to maintain security and order in the void decks and the desire to inject vibrancy and a sense of community can still be seen in some of the recently installed void deck infrastructure. These include removable barriers and railings erected by the Town Council in the HDB blocks in Queenstown, Stirling Road and Commonwealth Drive,



Strategic siting of void deck facilities to enhance security.

Image courtesy of Stewart Tan, Centre for Liveable Cities (top left).

Image courtesy of Horst Kiechle, <https://www.flickr.com/photos/archisculpture/22917665481/in/photostream> (top right).

Image courtesy of Nick Yeo, <https://lionraw.com/2013/07/11/singapores-bird-singing-corners/amp/> (bottom).

which are aimed at preventing children from playing football there. These measures were in response to resident complaints about the noise and risk of accidents and property damage, but, in accommodating these complaints, the void decks have been transformed into sterile spaces. Seng Joo How, former Chief Estates Management Officer at the HDB and current Chief Executive Officer of CPG Facilities Management, notes that some Town Councils have gone to the extent of installing spikes on the void deck walls that are meant to puncture footballs. While he agrees that void decks are not suitable locations for activities such as football owing to the potential property damage and injuries they could cause, he considers such measures too extreme. He believes estate managers and Town Councillors could adopt a softer, more resident-centric approach.

*That [installing spikes] can be a bit too heavy-handed. Instead of adding spikes as a deterrent, we could encourage positive behaviour by going down and getting the grassroots to organise them into football clubs, encourage them to go to nearby schools where there would be a proper place for them to play, or provide street soccer spaces. This is a better way to manage the issue.<sup>83</sup>*

Seng Joo How

One particular measure to try and mitigate the security concerns while still allowing for free and spontaneous usage of the space by residents involves adopting the “maintenance and management” principle from the CPTED literature. This involves territorial reinforcement efforts such as regularly maintaining cleanliness and a sense of order in the void decks or setting up well-organised, attractive void deck facilities such as Yuhua Estate’s dual bicycle rack and community parklet, efforts that would give residents a sense of ownership. Such efforts not only improve the community’s self-image but also project to those who may bear ill intentions that this is a community that looks after its fellow residents and surroundings.



Measures taken to deter playing of football in some void decks.

Images courtesy of William Goh, Facebook (DJ Will), <https://www.facebook.com/photo.php?fbid=10154572701497892&set=a.10150307359562892.412093.759862891&type=3&theater>

### Natural Access Control and Surveillance within a “Fenceless Community”

Two additional CPTED principles that have worked their way into security planning for housing estates are “natural access control” and “surveillance”. Given the importance placed on the estates being fenceless communities, it is critical that the design be as natural and unobtrusive as possible. The use of landscaping, trees and playgrounds around the precincts has enabled access to be better managed, such that there would only be a limited number of ingress and egress points to keep out individuals who have no legitimate reason for being in any precinct. The availability and visibility of escape routes and avenues for seeking help is another natural access component that has been incorporated into the design. This includes elements such as the directional signs and estate maps containing emergency contact numbers that have been positioned at HDB block entrances and near activity nodes such as common corridor intersections.

Features that allow for natural surveillance to keep potential intruders under observation include the way the open-air public carparks, playgrounds and parks around the housing estate are positioned, that is, with a clear line of sight from the flat windows. Another such feature is having a natural flow of activities throughout the day, such as those offered by situating 24-hour coffee-shops and mini-marts below the HDB blocks.

In designing the blocks, the HDB drew some reference from the security guidelines spelt out in Newman’s book. Notably, this involved checking for hidden corners in the layout of a block that could present opportunities for would-be criminals to surprise their victims, as well as deliberately designing HDB staircase corridors to have large openings so that crime victims could be seen by residents in neighbouring blocks. Dr Liu Thai Ker notes that police officers appreciate the fact that the design and layout of HDB blocks has made performing their duties less challenging, such as when it comes to apprehending criminals who run into an HDB block to evade arrest. In such instances, all the police would need to do is to position one officer at each of the two staircase landings and wait for the criminal as these are the only entry and exit points into a block.

*Once a criminal runs into a slum area like Lorong Tai Seng in Paya Lebar, the police would be helpless. But in the HDB flats, if a criminal runs into that block, all you would need are two policemen, one at each of the two staircases. That’s all you need. He can’t run away.<sup>84</sup>*

Liu Thai Ker



HDB estates designed for greater accessibility and visibility.

Image courtesy of iamkevinloke, <https://hiveminer.com/Tags/aerial.hdb> (top left).

Image courtesy of Stewart Tan, Centre for Liveable Cities (top right).

Image courtesy of ProjectManhattan, [https://commons.m.wikimedia.org/wiki/File:Urban\\_Redevelopment\\_Authority\\_car\\_park\\_in\\_a\\_Housing\\_and\\_Development\\_Board\\_estate\\_Singapore\\_-\\_20140816.jpg](https://commons.m.wikimedia.org/wiki/File:Urban_Redevelopment_Authority_car_park_in_a_Housing_and_Development_Board_estate_Singapore_-_20140816.jpg) (CC BY-SA 3.0) (bottom).

Lighting also has contributed significantly to housing estate security, be it at the void deck, corridors, back lanes, staircase landings, or along the footpaths and streets. The HDB's estate managers would consciously look out for poorly lit areas that could be conducive to criminal activity. These could be areas that the designers may have overlooked or areas where residents may have reported feeling unsafe. The now common use of LED lighting has also helped the HDB as it allows for sensors to be incorporated that can adjust the lighting intensity based on utilisation. This has proved beneficial not only from a security perspective but also an energy efficiency perspective.

### Reducing Conflicts through Maintaining the Right Mix of Flat Sizes

In designing housing blocks, the HDB ensured that there was no wide deviation in the flat sizes in each block and that blocks would either contain, for instance, one- and two-room flats, or one-, two- and three-room flats, but never one- and three-room flats. This was based on advice received from the HDB estate officers, who observed that "skipping" flat sizes would present too wide a socio-economic divide among the residents, leading to jealousy and conflict. While not directly addressing security concerns, Dr Liu Thai Ker feels that this approach of "prevention rather than cure" in reducing opportunities for conflict contributes to the longer-term sense of security among the residents.

### Addressing Security Concerns over HDB Lifts

Given the earlier mentioned concerns expressed by residents over their personal safety while taking lifts, the HDB worked closely with Japanese lift manufacturer Fujitec to install a number of security features and sensors in the lifts. A crime of concern during the early years of the HDB lift was molestation, with a spate of incidents being reported. To address this concern, the HDB's engineers again played a critical role in developing an alert system that was primarily meant for lift breakdowns. The system would send signals to a central system every five seconds, according to six different categories of breakdowns. However, when a particular combination of alerts was triggered by a lift user, this system allowed the HDB to be alerted to a potential molestation taking place. The lift rescue team would head down immediately to investigate, while also locking the lift system so that the suspect could not escape. In 1992, a decision was made to install an additional security feature, glass view panels, to

increase visibility from the outside and guard against the lift becoming an entrapment area for molest, theft and vandalism. These panels were first introduced in new HDB blocks and estates undergoing upgrading. While the panels are costly to install and maintain, they have now become a mainstay in most HDB lift designs. Subsequently, CCTV technology was adopted as an additional security measure for the HDB lifts, with cameras installed at lift landings and inside the lifts in certain housing estates. The footage captured is stored in a device located at a separate location within the building, such as within the lift motor room, and will be retrieved when police request it for crime investigations.

*Therefore now you don't hear too much about lift breakdown, you don't hear about molesting in the lifts. You think that happened by chance? It's our electrical engineers' work. Electrical and mechanical engineers' work. So, after you get all these things done, people don't care if they have to go up 30 floors.<sup>85</sup>*

Dr Liu Thai Ker, in highlighting the important role that engineers played in HDB lift security



Glass panel lift alongside the earlier generation panel-less single door lift. Image courtesy of Going Places Singapore, <https://www.goingplacessingapore.sg/more/Top5/2015/Top5elevators>

Although not a security concern, urinating in lifts was one of the more common anti-social acts encountered in lifts. Complaints regarding this problem led the HDB and its team of engineers to invent and install its very own in-house ammonia-sensitive urine detector in lifts. When the detector is activated, the lift would stall, with the perpetrator trapped inside until an elevator maintenance crew arrived. According to Dr Liu Thai Ker, the HDB's drive to solve the security problems associated with its lifts was a reflection of one of the HDB's overarching success factors—its drive to continually find solutions to different sets of problems, solutions that need not always involve high-priced, cutting-edge technology, and its commitment to addressing these problems system-wide rather than on a case-by-case basis.

*I believe it [innovative problem-solving] existed because when I stepped into the HDB, I felt it and I continued with this. It's to always find solutions or better solutions for a problem that you face. You don't allow the problem to stop you from moving towards a target. That actually provoked a lot of, maybe not technology that would get written up in Scientific America, but technology which is low-tech. But somebody has to think through it to get it done. And we have thought through many of this kind of so-called low-tech. Because we're public housing, you don't need a high-tech [solution]. Low-tech is good.<sup>86</sup>*

Dr Liu Thai Ker, on the HDB's strength in problem-solving

### Fast Response to “Broken Windows”



Loan shark-related vandalism in HDB estates.  
Image courtesy of Holly Jean Aroozoo, <http://www.hollyjean.sg/2009/12/loan-sharks-terrorising-my-neighbour.html?m=1>

Wilson and Kelling's “broken windows theory”<sup>87</sup> describes the signalling effect posed by urban disorder within neighbourhoods and how this attracts the committing of additional criminal and anti-social acts. As a corollary, the speed and effectiveness with which neighbourhood problems and disrepair

are fixed would help deter an escalation in anti-social behaviour and crime. This approach has influenced how the HDB, the Town Councils, and the SPF have responded to incidents around HDB estates such as vandalism, property damage, littering and urination.

A recent example of anti-social activity in HDB housing estates is harassment by unlicensed money-lenders. This often involves “loan sharks” (debt collectors) vandalising with paint the doors and common areas outside a debtor's flat or damaging property outside the flat. Occasionally loan sharks have also vandalised neighbouring flats when their initial threats go unheeded. While such acts of vandalism may be viewed as low-level victimless crimes, if left unchecked they are a signal to would-be criminals that the authorities are complacent, which may motivate them to commit more serious crimes. These acts add to residents' sense of insecurity and may raise the maintenance costs borne by all the residents. To send a strong signal that vandalism by loan sharks would not be tolerated, the SPF officers practise “quick response” when such cases are reported, and the Town Councils are activated to clean up the damage and paint over affected common areas once investigations are completed. The speed with which the authorities are able to bring disrepair back to order relies heavily on the residents being alert and proactive in reporting, as they are the first point of contact on the ground. Beyond the more reactive enforcement and remedial measures taken, the HDB's Estate Managers and the Town Councils prioritise educating the public on civic consciousness and caring for their living environment as a preventive measure. Raising resident awareness of cases where vandals were charged in court and punished has been used as one means of instilling respect for rules in residents.

*From a facilities management perspective, we always try to take on a resident-centric approach to educate the residents on neighbourliness and civic-consciousness. However, such an approach can be time-consuming because it is never a one-off project but an on-going process of educating and reinforcing.<sup>88</sup>*

Seng Joo How

### Building Spacing and Vistas for Comfort and Security

In planning the HDB new towns, Dr Liu Thai Ker adopted a “Western chessboard” approach, with high-rise high-density housing representing the black squares, and less dense schools, parks, sports fields, and neighbourhood centres representing the white squares to relieve the



The HDB towns with a mix of high-density and low-density developments. Image courtesy of Chensiyuan, [https://commons.m.wikimedia.org/wiki/File:Ghim\\_Moh\\_panorama\\_Singapore\\_-\\_20101230.jpg](https://commons.m.wikimedia.org/wiki/File:Ghim_Moh_panorama_Singapore_-_20101230.jpg) (CC BY-SA 4.0).

density in the towns. Building spacing standards were lacking in the early days of HDB site planning and urban design, with some blocks being too close to one another and others being too far apart. This inconsistency prompted Dr Liu Thai Ker to introduce spacing standards, which helped in reducing the sense of claustrophobia felt by residents.

In addition, Dr Liu Thai Ker introduced the concept of vista buildings, specially-designed buildings at the end of a certain vista within the estate that look significantly different from the other buildings and would provide an identity to different locations. Given that there was insufficient budget and manpower to create specially-designed HDB blocks at every vista, the HDB made use of facilities such as churches, community centres and commercial buildings to serve as a vista landmark in some cases. These buildings soon became a familiar, recognisable sight to allow residents to venture around their estate with greater confidence.

*If you walk in a city along the road, you see that the buildings mostly just follow the edges of the road. So when you walk, you feel very comfortable. The buildings really become your companion. But when the buildings were not following the road, you really are on your own. They don't feel comfortable; you don't feel secure psychologically.<sup>89</sup>*

Dr Liu Thai Ker

### Security Hardening for Out-of-bounds Areas

While the spirit of the current HDB design is largely geared towards softer, more barrier-free accessibility, in situations where an area is highly security-sensitive and access needs to be strictly controlled or prohibited altogether for the well-being of its residents, a certain degree of security hardening is necessary. Security breaches that aroused concern included the 2011 case where the body of an Indonesian domestic helper was found in the rooftop water tank of an HDB block in Woodlands Drive, the 2014 case where a group of teenagers spray-painted graffiti on the rooftop of a Toa Payoh block, and the September 2017 incident where youths were found to have been practising the sport of parkour by swinging across a two-storey high sheltered link-way between two HDB blocks in Simei. These incidents prompted the Town Councils to further tighten security measures. New security protocols were developed and put in place in consultation with the SPF and the PUB, ranging from a standard operating procedure regarding roof access, increased regularity of on-site checks by the Town Council's property officers, installation of enhanced locks for access doors and, in the case of water tanks, brackets with nuts and bolts to secure the tank covers.

## BUILDING A COHESIVE COMMUNITY THROUGH PUBLIC HOUSING

### Tensions Between Residents in the Early Days of Public Housing

During the transition to high-density urban living with unfamiliar neighbours, social friction among residents was a common occurrence in the first decade or so of public housing. Numerous complaint letters were sent to the HDB by disgruntled residents. Common bugbears included residents throwing rubbish out of their flat windows instead of using their rubbish chutes, noisy neighbours, and children accused of vandalising lifts and causing breakdowns. With the enclosed flat design limiting opportunities for interaction and bonding, there tended to be greater anonymity and apathy among neighbours, in stark contrast to the communal spirit practised as part of *kampung* living. Apathetic and unfriendly residents were unlikely to place high priority on looking out for each other's security in a HDB neighbourhood, let alone in an HDB estate as a whole.

*With urbanisation our people tend to develop a rather faceless, impersonal and even perfunctory relationship with each other. It lacks the warmth, concern and cohesiveness of the old traditional communities, whether in the village or parts of our old city.<sup>90</sup>*

Chua Sian Chin, former Minister for Home Affairs

### Creating a Sense of Territory and Community for Improved Security

Aware that good neighbourly relations form the building blocks for a more cohesive, resilient, and secure community, the HDB and other stakeholder agencies applied design as well as policy levers to try to forge stronger community bonds. One such design intervention was that of better defining HDB precinct boundaries so as to create a sense of territory. Adopting the concept of defensible space, Dr Liu Thai Ker felt that “if you feel that this territory is yours, you will take better care of it, it’s safer from a security angle”. In keeping with his emphasis on aesthetics, he suggested that a precinct boundary need not be in the form of an obtrusive wall or fence, but could instead comprise a garden hedge or a green patch to create a visual barrier. Each precinct was thus designed with a distinct theme and landscaping, with the Residents’ Committees (RCs) also getting involved through programmes such as organising fruit tree planting, mural painting at the void decks and lift lobbies, and social activities such as block parties and welcome parties for new residents.

According to Dr Liu Thai Ker, another way to encourage a closer-knit community was to limit the number of households per HDB block so as to avoid residents becoming “just a digit”. In the early days, HDB blocks such as those in Toa Payoh and Whampoa were designed to have a single long corridor stretching about 300 metres, with around 45 to 50 three-room flats per floor. However, Dr Liu Thai Ker felt that blocks should instead be broken down to at most 100 households per block so that residents could better identify with one another. This mutual recognition and identification with one’s neighbours was also enhanced by designing the precincts with a single access point instead of two. Sociologist Chua Beng Huat advised Dr Liu Thai Ker that doing so would allow residents to have facial recognition and familiarity with those who lived in a particular precinct and those who did not simply by using the same fixed path every day.

*When you have a sense of familiarity, there is a sense of comfort, of safety. Anytime you see a strange face, you get alarmed. That also increases the sense and level of security.<sup>91</sup>*

Dr Liu Thai Ker



Strategic positioning of playground benches to encourage interaction. Image courtesy of Justin Zhuang, <https://www.flickr.com/photos/zmackid/3681328295/> (CC BY-NC 2.0).

Beyond the HDB block and its immediate vicinity, attention was also given to how the community facilities and infrastructure located around the neighbourhood played a part in providing spaces for bonding across diverse groups. These include amenities ubiquitous to all neighbourhoods and new towns such as hawker centres, coffee shops, wet markets, community clubs, playgrounds and neighbourhood schools. Taking playground design as an example of how the HDB used physical elements to enhance community bonds, Dr Liu Thai Ker explains how seats in the playgrounds were organised not in a straight row but facing each other so that parents or grandparents who brought their children down to the playgrounds would be more likely to interact with one another.

As part of the town planning process, the government has made it a point to locate different places of worship alongside each other within HDB estates. This juxtaposition is intended to serve as a physical indicator that these institutions, along with their respective worshippers, are an equal part of the community and have a legitimate right to occupy part of the shared space. It is hoped that acceptance of this right would in turn translate into greater appreciation for racial and religious diversity.

and increased tolerance for the kind of religious and cultural practices that may cause occasional inconvenience to residents of other faiths, such as the parking congestion around mosques during Friday prayers or the burning of joss sticks as part of the Chinese Seventh Month Hungry Ghost Festival. Without this exposure and awareness built up over the years, such religious and cultural practices might have triggered far more conflicts and security concerns, compared to the sporadic incidents and disagreements thus far observed. Fractures along religious and cultural lines could pose a greater law and order risk than crime in some cases, as reiterated by Tee Tua Ba.

### The Role of Housing Policies in Building Stronger, Secure Communities

From the onset of its public housing policies, the HDB offered all citizens, even the poorest individual, the ability to live in public housing as long as she was able to minimally afford the rental fees for an emergency one-room HDB flat. The HDB viewed the flat as an asset that could instil a sense of ownership in its occupants, not solely from a property ownership perspective, but rather from a deeper feeling that they have a stake in the community and, by extension, in the country as well and would have a greater desire to protect it. This singular policy was evident from the beginning where even the poorest citizen was allowed to have access to public housing. It took on added significance, given that Singapore was largely a land of migrants. Through the HDB's core commitment to enable home ownership and provide quality homes across socio-economic and demographic groups, it put homes within the reach of the people and encouraged them to sink their roots in Singapore, as they now had something tangible and of value attached to it.

*So, home ownership, what is the effect? Well, the effect of course is that people have a sense of having a stake in the country, that's the most important. And so that means they would have a stronger will to protect the country. Most immediate one is they have a stake. Second, they will look after their own homes.<sup>92</sup>*

Dr Liu Thai Ker

As explained by Alan Choe, owning a HDB flat was encouraged and made accessible as ownership enabled residents to take pride in their flat, estate, and the assets within their homes such as televisions and air-conditioners.

This was in contrast to rental flats, where there was greater incidence of social ills such as vandalism and a general disrespect shown by residents for their living environment as they did not own their units. To encourage ownership, it was important to first remove the social stigma attached to HDB flats, that is, as housing for poorer Singaporeans.<sup>93</sup> This was indeed the case in the early days when the majority of flats built were one to three-room flats. To remove the stigma, the HDB introduced larger four- to five-room flats, executive apartments, and even the slightly more luxurious flats built by the Housing and Urban Development Company (HUDC), to cater to the different income classes and tastes. This in turn allowed for a greater socio-economic mix of residents staying in the same block, avoiding the earlier situation with an over-concentration of low-income residents. The government's push towards home ownership over rental was acknowledged by the security pioneers such as Tee Tua Ba as being instrumental in curbing a "broken windows" type situation where rental flat owners tended to treat their estates more like "public toilets". If estates were poorly maintained and left abandoned, crime would undoubtedly set in, as seen in overseas examples that Tee Tua Ba had come across.

The HDB reinforced the importance of having a mix of residents within a precinct by allowing for a third of the residents in a precinct of around 700 to 1,000 units to be resettled rural squatters while the remaining two-thirds had to be urban dwellers. As recounted by Dr Liu Thai Ker, Teh Cheang Wan's rationale for this mix was the hope that the children of rural squatters would be able to adopt a more urban mentality with regard to living and functioning in an urban setting through increased social interaction with children of urban dwellers as such adaptation would be more challenging for the adult squatters, who would tend to hold firm to their rural ways. The diversity offered by the socio-economic mixing, as noted by Dr Liu Thai Ker, also ensured that all residents could be part of the HDB Residents' Committee (RC) in some role, if they so desired, and feel they are making some contribution, with educated residents taking on executive roles, while the others take on administrative or operational roles. This policy contributed to the largely smooth adaptation to urban life and living in public housing estates.

*If we have the right policies to move towards the goals that we want, then you do not need a lot of administrative effort to correct mistakes. You just move in a logical way.<sup>94</sup>*

Dr Liu Thai Ker

The Ethnic Integration Policy (EIP), which assigns a specific ethnic quota for buyers of HDB flats, is arguably the key policy aimed at forging inter-ethnic bonds across residents. In the early days, flat allocation was done purely by random ballot, which did manage to achieve a good racial mix in the neighbourhoods and helped to mitigate the issue of ethnic enclaves in the *kampongs* to an extent. However, the liberalisation of home ownership policies in 1970 and an open resale market saw more residents moving closer to their extended families, leading to the re-emergence of ethnic clusters. The HDB picked up the early signs in 1986 of certain estates attracting a disproportionate number of residents of the same race. Given that a central tenet of the government since the start of nation-building has been the importance of social cohesion among a multi-racial, multi-religious population, the EIP was implemented on 1 March 1989 and continues to be in force. While not a security-centric policy, the EIP, according to Benny Lim, has helped in sensitising the Chinese majority to the importance of accepting diversity through living and interacting with the ethnic minorities. Given that the tumultuous racial riots that Singapore experienced a few decades earlier had been triggered in part by mutual suspicion, reinforced by a lack of understanding across different ethnic groups, the increased opportunities for inter-ethnic mixing that the EIP allows are critical for creating a more tolerant society and secure living environment.

*The EIP is about trying to create a more cohesive, multi-ethnic society. In so far that it is able to do so, it contributes to a sense of community safety and security, where residents take more initiative, and are more vigilant over deviance.*<sup>95</sup>

Benny Lim

Cognisant of the importance of family bonds and filial piety, especially within an Asian context, the HDB has over the years introduced pro-family housing policies such as the Married Child Priority Scheme and the Proximity Housing Grant aimed at encouraging married children to live near their parents or single children to live together with their parents. A key contributor to an individual's resilience and mental well-being is having strong family ties and the ability to count on them for support during times of personal and national emergencies and also in coping with their aftermaths.

The combination of design, planning and policy measures that have been proactively implemented by the HDB since its inception, even in the absence of security agencies' direct involvement, demonstrate the HDB's far-reaching vision that housing a nation involves more than bricks and mortar and that it is about taking a systemic view towards delivering a secure and peaceful living environment.

## SECURE, SMART TOWNS: LEVERAGING INNOVATION

With rapid technological advancement, coupled with a dwindling manpower pool attributed to Singapore's greying population and declining birth rate, the SPF has been increasingly leveraging smart technology and innovation in maintaining the high standard of security in Singapore's urban landscape. One of the key technological enablers that have allowed for improved manpower deployment in policing the city and heartlands has been the introduction of CCTV technology and corresponding improvements in camera resolution and image clarity.

### Police Cameras in the Heartlands

The SPF first started trialling the use of CCTV cameras in 2002. These were then mainly installed in selected housing blocks, where there was greater incidence of crime reported, and crowded public spaces such as Boat Quay and Clarke Quay, as part of counter-terrorism measures in the wake of the September 11 attacks and the uncovering of the Jemaah Islamiyah terrorist threat in Singapore. While the cameras were not monitored "live", when a crime was reported in the vicinity of a camera, the footage would be reviewed to help in investigations. Through CCTV use in housing estates, the police were better able to solve cases of housebreaking, snatch theft, molest, and vandalism. One of the more prominent cases solved through the technology was that of the "Heartbeat Molester", Singapore's worst serial molester who preyed on close to 30 young school girls over a 10-year period. He would accost them while they were returning home from school and molest them at the HDB staircase landings in various estates across Singapore. The molester was arrested in November 2010 after a member of the public had seen the published CCTV images of him on the news and alerted the police. While this targeted camera roll-out did prove effective in improving the crime situation in the abovementioned areas of concern, there was a growing appreciation that a wider CCTV deployment could contribute greatly to improved security outcomes.

In 2012, as part of the SPF's new community policing strategy, the power of remote surveillance was harnessed with a pilot roll-out of police cameras to 300 HDB blocks in Bishan, Bukit Merah, Clementi, Punggol, Sengkang, Tampines and Woodlands under what was known as PolCam 1.0. Cameras were primarily placed at public spaces within and around the HDB block such as lift lobbies, stairwells, and entry and exit points to multi-storey carparks, and continuous footage was recorded and reviewed when necessary, with images being overwritten on a monthly basis. The new cameras complemented the existing network of location-specific CCTVs and were aimed at not only helping in post-incident investigations but also deterring would-be offenders as the cameras were prominently accompanied by blue and white signage indicating that police cameras were in operation.

Before proceeding with a wider roll-out, the SPF gathered both internal as well as public feedback to help in refining its camera deployment and implementation plans. Residents' responses to the first phase of cameras were encouraging, with most seeing their presence as improving the sense of security of the neighbourhood as a whole. Some neighbourhoods even saw marked reduction in crimes commonly associated with their estates such as unlicensed money lending (UML) harassment. The deployment of cameras was eventually extended to cover 10,000 HDB blocks and multi-storey carparks across the island in July 2016, amounting to 62,000 cameras. As of May 2016, these cameras provided 2,300 clips of video footage that had proven to be useful leads in solving over 1,100 cases of crime, ranging from UML activities to theft and outrage of modesty.

### Balancing Privacy Concerns with Security Provision

Appreciating the importance of maintaining their boundaries and not intruding into the privacy of residents, the SPF ensured that the PolCams were positioned in such a way that they did not face residents' flats and only captured incoming and outgoing traffic from the block. This feature added to the capabilities of the earlier CCTVs. However, in the case of tackling UML harassment, which was at its peak in 2009, specially installed CCTV cameras had to be strategically located outside affected flats and the surrounding corridor and lift landing in an attempt to catch the harassers in the act. These cameras were actively monitored by duty officers at the respective police operations rooms.

Guidelines on the permissible usage and installation of CCTVs in housing estates not only extend to those operated by the police but also to personal CCTV cameras set up by home owners themselves to capture potential criminal activity and misdeeds of their neighbours. Residents would first need to have made a police report and subsequently seek a permit from their Town Council before they can install a camera outside their homes. These cameras should only capture activities within the boundaries of the residents' own units and should not intrude into the neighbouring units' private space. The cameras are only permitted to be up for a maximum of six months and should be taken down once the issue or dispute that led to its installation has been resolved. These requirements are pre-emptive measures aimed at preventing both the invasion of privacy as well as an unnecessary escalation of tension between residents.

### Eyes on the Streets



Police cameras installed within the Liquor Control Zone in Little India.  
Image courtesy of Stewart Tan, Centre for Liveable Cities.

Street cameras have also been deployed in high-traffic and high-risk locations such as Little India, Geylang, Marina Bay, and, more recently, Orchard Road to provide officers with additional "eyes on the ground", to serve as a round-the-clock deterrence, and enable faster follow-up investigations. In the wake of the 2013 Little India riot and the subsequent implementation of the Liquor Control Act on 1 April 2015, around 80 CCTV cameras have been installed to guard against crime and to ensure that the ban on alcohol drinking in

public is adhered to in the Little India Liquor Control Zone. This large-scale deployment of cameras has helped to supplement the reduced off-peak police patrols in the area and enabled the authorities to remotely monitor for disamenities such as rowdy congregations and littering and urinating in the common areas of HDB blocks.

### Security in Multi-Storey Carparks

While the open-air surface HDB public carpark design of the past provided visibility through its central location within or alongside the blocks of flats, the shift towards multi-storey carparks for newer estates as a way of maximising land utilisation has presented a challenge for police officers. Multi-storey carparks are potential blind spots that are not part of regular police patrols. The HDB moved to address potential security concerns by using an open-concept design for the multi-storey carparks to increase visibility to residents on the ground and the surrounding HDB flats. The PolCams installed at all entry and exit points to these carparks, complemented by the HDB's own carpark CCTV cameras, have helped to control the incidence of vehicle theft, stolen cash cards, and vandalising of parked vehicles. In 2015, public carpark surveillance was further enhanced through the "Vehicles on Watch", programme which involves vehicle owners granting the police access to their in-car camera footage in the event of a crime having taken place in the vicinity of their parked vehicles.

### PolCam 2.0

Given PolCam 1.0's effectiveness and tangible benefits in crime solving, a PolCam 2.0 initiative was launched in August 2016, which saw an expansion of the PolCam network to additional public areas, including the town centres, hawker centres and link-ways to public transport nodes such as MRT stations and bus interchanges. Cameras have already gone up in Ang Mo Kio Town Centre, Bedok Town Centre and Jurong Gateway. This plan would see the progressive installation of an additional 11,000 cameras at 2,500 locations island-wide by the end of 2020. Beyond just the wider geographic spread of the cameras, technological advancement has allowed for improvements in the technical capabilities of the new PolCams, with pan-tilt functions, 360-degree fields of view and instantaneous analysis of the footage captured to detect suspicious activity.

### Trust as the Basis for Public Acceptance of Increased Surveillance

Despite the pervasive surveillance that members of the public increasingly encounter in their daily lives, the authorities have by and large been able to allay public concerns and suspicions of the PolCams. This is due in no small part to the level of trust between the police and public that has been built up over the years, trust leading to confidence that the

authorities would not abuse their position to intrude into their personal lives or use camera footage for non-policing purposes. This level of acceptance and the added sense of security that CCTV cameras around their homes and neighbourhood give have even led to some residents eagerly asking the authorities when their blocks would undergo CCTV installation. The cameras allow a reduction in police visibility without compromising security, a situation that, according to Tan Boon Huat,<sup>96</sup> is in contrast to some countries where the presence of armed policeman is all pervasive.

*I think we have, over the years, won the trust of the community: that they can trust us and rely on us to do the job in an honest manner.<sup>97</sup>*

T. Raja Kumar, former Deputy Commissioner, the SPF, on how public acceptance of police cameras was achieved

### Applying Smart Technology to Neighbourhood Security

As of January 2018, Singapore had an 84% Internet penetration rate and seven in 10 Singaporeans made use of social media through their mobile devices. Agencies responsible for safeguarding the neighbourhood thus have a ready-made platform that can be tapped not only as a means of conveying public education messages and conducting outreach, but also as an incident reporting and ground intelligence gathering tool. One example is "i-Witness", an online application developed by the National Crime Prevention Council (NCPC) that makes use of crowd-sourcing and the in-built cameras in the majority of mobile phones in use in Singapore, where members of the public can send images and videos to alert the police to suspected criminal acts or emergencies. The information provided could be used to help in ongoing investigations or in detecting unreported crimes. However, i-Witness is not meant to replace reporting situations that require immediate police response or serve as a tool for making an official police report. Prior to the launch of the application in 2016, i-Witness was introduced in 2009 in the form of an online programme produced jointly by the NCPC, the SPF and RazorTV, an online live news service by the Singapore Press Holdings (SPH). It was made available to audiences through the *Straits Times* webpage, on the SPF's Facebook page and YouTube channel, and through the SPH's Media Box Office screens at high-traffic locations around the island such as Raffles Place. Through a series of short clips featuring crime re-enactments, it appealed to the public to come forward with information on unsolved crimes.

### “Every Lamp Post a Smart Lamp Post”



The SNSP leverages the wide range of sensors and cameras already in place. Images courtesy of Stewart Tan, Centre for Liveable Cities.

In line with Singapore’s Smart Nation Sensor Platform (SNSP), announced by Prime Minister Lee Hsien Loong during his 2017 National Day Rally, the government aims to make greater use of artificial intelligence (AI) technology to analyse data, information and video footage collected by various public agencies through the thousands of sensors and CCTV cameras already in place across the island. While these technologies are currently being deployed for agency-specific needs—for instance, the Land Transport Authority (LTA) has cameras to monitor traffic conditions and illegal parking, while the PUB has sensors in place to detect changes in water levels in drains—the government recognises the value of integrating and harnessing the high volume of information being collected by various agencies.

Having an inter-connected network of information nodes is particularly vital from a security and emergency response perspective. Prime Minister Lee Hsien Loong noted that the motivation behind the SNSP was the Little India riots, where the authorities were caught “a little flat-footed” owing to the lack of CCTV cameras and the shortage of real-time ground information that would have helped the decision makers and commanders to have a fuller appreciation of the situation and deploy the appropriate response more swiftly. Instead, the authorities had to rely on social media posts and footage from members of the public in and around the riot zone. In the case of the 2013 Boston Marathon bombings, the Boston police were able to leverage the city’s comprehensive CCTV network to full effect in tracking down the bombers within three days. The SNSP and its AI video analytics system will be trialled in Orchard Road and selected housing estates not only to improve the monitoring of estate management and environmental issues such as temperature, vehicular traffic, water and sewage levels, but also to support security efforts by detecting anomalies and suspicious activity such as increasingly unruly crowds or potential terrorist acts. This will allow for pre-emptive measures to be put in place as well as improved situational assessment and speedier action.

# PARTNERS IN SECURITY

“ It [Community Policing] further cemented the already basic, good relationship between the people and the police... Singapore is probably one of the safest countries in the world, and all these cannot come about if we don't get the support of residents.<sup>98</sup>

Tan Ngo Chew, former Assistant Commissioner of Police and community policing pioneer

## THE EVOLUTION OF COMMUNITY POLICING

### The Early Days: A Lack of Trust and Rapport with the Police

In the 1950s and 1960s, the police force was largely concentrated within the city and downtown area, with limited police presence in the rural areas. At the time, it was commonplace for only one constable to be deployed to look after the safety of several *kampongs*. However, as the population in the *kampongs* grew and there was a need for more police officers to provide an adequate level of security, police posts were erected at convenient locations in the suburban areas to better serve the residents. To bring the police closer to the community, new police stations were also set up within the residential areas, a decision driven by the shift in Singapore's population density away from the city as land there needed to be freed up for the development of the Central Business District.

Despite the increased police presence in the neighbourhoods, there was still a disconnect between the police officers and members of the public, who had a general sense of fear towards law enforcement. This fear was due to the strict clampdown by the government and police on crime, drugs, social unrest and secret societies in the preceding years. The

attitudes of police officers in the 1960s and 1970s also contributed to the public's wariness. According to Tee Tua Ba, police officers of the time felt they were not accountable to members of the public. They would often talk about their actions with bravado, without considering whether their actions were excessive or had negative impact on members of the public. One example was the way police officers went about clamping down on illegal hawking. The hawkers, who were trying to make a living, were shoved into the police "Black Marias", vehicles used to transport detainees and convicted prisoners, right in front of the watchful eyes of the public. Similar enforcement tactics were used in responding to gambling in the housing estates, with even elderly ladies engaging in recreational gambling being handcuffed in front of their fellow residents. Such instances strengthened the public's view that the police took a heavy-handed approach in dealing with essentially petty offences.

This sense of distrust towards the police discouraged public reporting of crime incidents. There were also concerns at that time that the police force was corrupt and had been bought off by the secret societies and that some officers would either not take any action or would tip off the gang members if members of the public reported their activities. This distrust led to under-reporting of crime. According to Chua Cher Yak, former Director of the Criminal Investigation Department (CID), this culture of fear was reinforced by parents who demonised the police and used their name as a threat to elicit good behaviour from their children.

### Improving Public Relations and Image of Incorruptibility

Over time, with the government's strong stance against corruption and with leaders showing the way by example and accountability, public trust in the police began to improve, with more people coming forward to report crime and suspicious activity. Such an instance of "leading by example" was displayed by Tee Tua Ba, in his position as Commissioner of Police, when he gave a media interview declaring that in the event of rampant organised corruption being detected within the police force, "the top management, including the Police Commissioner, cannot deny accountability, and he should be hanged from the highest tree".<sup>99</sup>

Changing public perception also involved changing the way the police communicated with the public. In the past, detectives often refused to identify themselves and produce their warrant cards when carrying out operations and, should a member of the public ask the officer too

many questions, he would be instantly rebuked by the officer. A great deal of effort was required to transform such practices from within the organisation and instil a more people-centric approach, from using minimum rather than maximum force in dealing with criminals, to smaller, but no less important, gestures such as addressing members of the public as “sir” or “madam” and answering police “999” hotline calls in a politer tone.

*I used to tell my officers, it takes a lot of courage for a member of the public to call up 999. And at the end of the line, ‘Yes, what do you want?’. A police officer’s caring response to the effect of ‘This is the Police, can we help you?’ will make a world of difference to a person who made a distress call. You must remember that the chap is asking for your help!<sup>100</sup>*

Tee Tua Ba, on changing the way the police interacted with the public

Other public relations initiatives by the police involved giving out awards and providing media publicity to recognise public spiritedness in alerting the police to crime. These initiatives, in fact, preceded the neighbourhood policing model of the early 1980s. However, it was still felt that more could be done to enhance the police-public relationship.

### Learning from the Japanese

Intrigued by a 1979 book titled *Japan as Number One: Lessons for America* by Ezra Vogel on Japan’s resourcefulness in managing its internal problems, Prime Minister Lee Kuan Yew alerted then Minister for Home Affairs Chua Sian Chin to the chapters on Japan’s approach to policing and disaster preparedness. Seeing the potential of Japan’s *koban* (police box) system to address the limitations of the arms-length relationship between the SPF and Singapore citizens at the time, a study trip was organised to Japan in 1981 to learn more about its policing model. In Japan, the *kobans* are located in the middle of the housing estates and communities in the urban areas, with each *koban* responsible for an area of around 0.56 km<sup>2</sup>. The unique architectural designs of the police boxes are meant to convey a level of friendliness and be inviting to the public.



Varied Japanese *koban* designs since the inception of the model in the 1880s.

Image courtesy of Changlc, [https://commons.m.wikimedia.org/wiki/File:Chinkuashih\\_Koban.jpg](https://commons.m.wikimedia.org/wiki/File:Chinkuashih_Koban.jpg) (CC Public Domain) (top left).

Image courtesy of Stronglk7, [https://commons.m.wikimedia.org/wiki/File:Japanese\\_Koban\\_Shibuya\\_Udagawa.JPG](https://commons.m.wikimedia.org/wiki/File:Japanese_Koban_Shibuya_Udagawa.JPG) (CC BY-SA 3.0) (top right).

Image courtesy of Author unknown, <https://commons.m.wikimedia.org/wiki/File:Koban-chiba-main-station.jpg> (CC Public Domain) (bottom right).

Image courtesy of 663highland, [https://commons.m.wikimedia.org/wiki/File:Koban\\_asago\\_city960.jpg](https://commons.m.wikimedia.org/wiki/File:Koban_asago_city960.jpg) (CC BY-SA 3.0) (bottom left).

As noted by Tee Tua Ba, who led another study delegation to Tokyo in 1983 and was one of the pioneers of the neighbourhood policing model, in the *koban* system the village constable was known to all the residents as he would frequently walk around the neighbourhood and was encouraged not to ride in motor vehicles as this would limit interactions with residents. As such, he was referred to as “Mr Omawarisan” (Mr Walkabout). According to Cheong Quee Wah, former Permanent Secretary in the Ministry of Home Affairs, Japan’s patrol officers were well respected by the people and there was good communication between the people and the police. Tee Tua Ba was impressed by how well integrated the officers were in the communities under their jurisdiction. These officers would visit residents to find out how they were, gather intelligence from them, even to the extent of providing wake-up announcement services in poorer neighbourhoods where residents were not able to afford alarm clocks. Overall, such efforts contributed to the image of the police as a friend next door.

This familiarity and close interaction with the public were some of the key selling points of the *koban* model that Singapore wished to replicate. The SPF also had the foresight to recognise that the *koban* system, through the help of the community, could help to prioritise crime prevention over crime solving and enforcement.

*By getting closer to members of the public, we should be able to get better cooperation in as far as information that would help us in crime solving and crime prevention. We thought that the policy of preventing crime is much better than solving the crime. Once a crime is committed, you may solve the crime but the damage is already done. So there was a great emphasis on crime prevention. And you can only do crime prevention if you get members of the public to work with you, to cooperate, to feed you information and also to be educated on how to take precautions at their homes, at their business and so on.<sup>101</sup>*

Cheong Quee Wah

To help in the implementation of the *koban* model, SPF’s Japanese counterparts came to Singapore to better understand its system and provide advice. SPF, for its part, sent additional teams at both the management and ground level to Japan to gain a deeper appreciation of their philosophy and policies and to experience working in a *koban*. These visits encompassed an in-depth study and consultation process before the decision was made to go ahead. Despite the clear benefits of the *koban* system, its challenge lay in adopting and localising the model within the Singapore context, as noted by Tan Ngo Chew, former Assistant Commissioner of Police and another neighbourhood policing pioneer.

## Bringing Policing into the Housing Estates

In June 1983, the very first Neighbourhood Police Post (NPP), in the former Khe Bong constituency, was officially opened at the foot of HDB Block 89 in Lorong 2 Toa Payoh, and came under the command of the Toa Payoh Police B Division. The Toa Payoh area was selected as the location for Singapore’s first eight NPPs owing to the mixture of housing types within the district—old and new HDB flats together with established private estates, as well as its mix of urban and resettled rural residents. The NPPs were mostly located at the HDB void decks as these provided a strategic location that was close to the residents. Void decks represented a low-cost option as they did not require the construction of a building structure and largely comprised partitions and basic furnishings. In identifying the specific blocks to locate the NPPs, the SPF took into consideration the level of crime, the population size in the neighbourhood, as well as the availability of space. In rolling out the NPPs and generating awareness across the respective neighbourhoods, the SPF Division in charge of that area worked closely with the Residents’ Committees, Members of Parliament and the Community Centres.



Residents taking a peek at the newly opened Khe Bong NPP.  
Image courtesy of National Archives of Singapore.

Beyond just performing basic policing duties, NPP officers provided social and administrative services to their residents, such as calling on the homes of families in the neighbourhood, processing address changes on residents' national identity cards, and issuing death certificates. Bicycle patrols were re-introduced as a crime prevention measure in the more crime-prone areas. Initially, there was some apprehension on the part of the residents as neighbourhood policing was an alien concept to them at that time. However, as the police officers got out of their stations and vehicles and onto the streets, coming into closer contact with residents, the latter's perception of the police role shifted from that of a purely enforcement-focused one to one that was also service-oriented. This not only resulted in improved policing outcomes but also increased awareness of crime prevention among residents and a greater appreciation of their role in keeping their neighbourhoods safe as the police could not always be everywhere.

*Whereas before we depended a lot on patrol cars and so on, hardly do we ever get on to the streets. In the public housing estates we do street patrolling. All you do was whizzing along in a car and you don't know the people, the people do not know you. You are just responding to situations.<sup>102</sup>*

Goh Yong Hong, former Commissioner of the SPF

With the introduction of NPPs, crime prevention messaging, such as distribution of advisory pamphlets and organising mini-exhibitions at the void decks, could now be coordinated by the respective NPPs at the community-level. This translated not only to improved attendance at these events, but also an increase in crime reporting by residents and an overall reduction in the level of crime as the NPP officers were better suited to identify typical neighbourhood hotspots and to respond to these localised problems. The greater familiarity and opportunity to interact with the officers on a more sustained, individual basis raised the popularity of the NPPs to the extent that some residents would drop by the NPP to inform the officers of the period that they would be away on holiday, with some even asking officers to help look after their pets while they were gone, as recounted by Tan Ngo Chew. The officers were successfully able to garner community trust and residents viewed the NPP as a safe place, somewhere children could wait to be picked up by parents, grandparents and school buses.

*We have the NPPs—police who know the people in that neighbourhood, so they know when strangers come in. It is easier to prevent people from going to another place where they are not recognised and committing crimes, because if you are not from the neighbourhood and you come in, you are noticed.<sup>103</sup>*

Lee Kuan Yew, in describing the importance of the neighbourhood police posts

*You go out to them [the residents], you don't wait for them to come to you, you conduct surveys amongst them, you visit them, teach them, try to educate them on crime prevention, try and solicit some information from them, not so crudely but try to be friendly with them so that they would be willing to talk to you.<sup>104</sup>*

Goh Yong Hong, on how the improved rapport with residents helped in both crime prevention messaging and information gathering

## Challenges in Meeting Community Needs

However, implementing the NPP system was not without its difficulties. For one, officer deployment was made more complicated by the need to ensure the right racial mix of Chinese, Malay and Indian officers who could speak to the residents in their local language. The need for officers to understand and be mindful of religious and cultural sensitivities had to be factored as well since the officers would be conducting house visits and interacting with residents at close proximity. Efforts were made to seek the advice of officers of particular religions on appropriate behaviour, such as taking off their shoes before entering Hindu or Muslim residents' homes and choosing visiting times that do not coincide with prayer timings for Muslim residents. The first batch of the NPP officers received elaborate training from a Japanese consultant on how they should speak to residents and children, given that maintaining regular quality interactions was the key criterion for the successful operation of the police post, according to Cheong Quee Wah.

*When it is new, it is quite unusual for the police to go into the house. It could create misunderstanding. All you need is a few wrong handling of the way you question or the way you chit-chat with the residents.<sup>105</sup>*

Cheong Quee Wah, on the importance of proper handling of interactions and house visits

Yet, it was the NPPs' very popularity with residents that represented a double-edged sword as it led to an overtaxing of police resources and officers' time. The officers had to go to great lengths to satisfy the wide-ranging needs and requests of the residents and cope with their frequent visits to the NPPs. There was also a degree of cynicism among some of the officers about being posted to an NPP. The term "No Power Policeman" was coined by some police officers to reflect the types of non-policing activities that occupied most of their time and having to accede to the demands of the residents.<sup>106</sup>

According to Tan Boon Huat, former Deputy Secretary in the MHA, there was a degree of boredom attached to the NPP officer role as officers would spend most of their time walking round the neighbourhood, which was largely uneventful. Even in instances where the officers came across serious crimes, they would need to pass the case to their Divisional Headquarters and onwards to the Criminal Investigation Department to follow up. In addition, the officers who initially joined the SPF were unlikely to have possessed a natural flair for public relations and were not equipped with the necessary people skills to handle the new role, all of which contributed to adjustment difficulties and low morale among them. As summed up by Chua Cher Yak, former Director of Training in the SPF, "community relations is important, but it is a question of how much is right".<sup>107</sup>

Cheong Quee Wah noted that, beyond morale issues, there were some technical problems in this decentralisation effort, notably, difficulties in finding spaces for the 91 NPPs that the SPF planned to set up, obtaining funding from the Ministry of Finance, and finding sufficient manpower to operate the NPPs. As explained by Tee Tua Ba, deploying the officers on round-the-clock patrols was very manpower-intensive, as there was a need to have groups of officers on rotating eight-hour shifts.

### The Shift to Neighbourhood Police Centres

As Singapore's population grew and more new towns opened up, it was difficult for the SPF to sustain the deployment of a new NPP in every new estate that was developed, a problem exacerbated by the shrinking pool of police officers. Although NPPs operated with around three officers at any one time, in reality around a dozen officers were attached to a single NPP working three eight-hour shifts each day. There was also the problem of uneven workloads from one NPP to another owing to the variation in the number of households under their jurisdiction. In addition, service delivery was slow, with crime cases passed from the NPP officer to an investigator and scene of crime officer from the Divisional Headquarters to carry on with the investigation.



An example of a co-located NPC and Community Club.  
Image courtesy of Stewart Tan, Centre for Liveable Cities.

To alleviate the strain that the NPP operations placed on the SPF's manpower and to consolidate resources deployed across geographically-dispersed NPPs, the Neighbourhood Police Centre (NPC) model was introduced in 1997, starting with Queenstown NPC. The NPC was meant to serve as a one-stop policing centre, with improved manpower deployment and enhanced patrol coverage, particularly in crime-prone hours after dark. It enabled officers to provide residents with a full service process, reduced the need for referrals and cut down case processing time, while at the same time continuing to leverage the involvement and sense of ownership of the residents. Each NPC had around 100 to 120 officers under its charge, serving a base of 100,000 residents on average. At the NPC launch event, Wong Kan Seng, then Deputy Prime Minister and Minister for Home Affairs, noted that the NPC model would see officers "deployed exclusively to meet local community needs. The public can expect faster response, more immediate investigation, better counter service, more frequent patrols and a sharper community focus from such NPCs".<sup>108</sup>

Through the consolidation of neighbourhood policing resources, a wider variety of challenging policing roles were made available to the NPC officers, which, according to Tan Boon Huat,<sup>109</sup> helped not only in boosting officer morale but also in talent attraction and retention. In a sense, the NPC reflected the SPF's effort in finding a compromise between the older, highly centralised system and the NPPs' decentralised approach.

Another modification over the NPP was the co-location of some NPCs within the community clubs found in every constituency. This was intended to further strengthen the police outreach to the community as well as optimise land utilisation. Initially, there was some public resistance to the closure of the popular NPPs within some of the neighbourhoods. There were also various teething problems. One of these was the delays in opening some planned NPCs. This was because the construction of NPCs was planned to take place in tandem with the building of the HDB new towns but some housing developments proceeded slower than expected.

### From Neighbourhood to Community Policing: COPS

*I think we will be doing a disservice to the SPF and to community policing if we do not continue to improve. The fact we have gone into NPCs is the right thing to do. The challenge now is where we go from here.<sup>110</sup>*

Tan Ngo Chew, on the need for constant evolution in the SPF's approach to community policing

In line with the SPF's drive for continuous improvement to meet the changing needs of society and to adapt to an increasingly complex security environment, the Community Policing System (COPS) was introduced in 2012. This was intended to augment the NPC approach through greater resource deployment on the ground so that more could be done for residents at the local level. The first two NPCs to adopt the COPS were Bukit Merah East and Tampines, complete with the Community Policing Unit (CPU). The CPU is an expanded version of the original Community Liaison team found in NPCs and allowed residents to see familiar and trusted faces while bringing the police even closer to the community as the officers conducted daily patrols around the neighbourhood on foot as well as on wheels, with the return of the police bicycle patrol. The officers deployed in this new unit needed to be of a certain calibre in terms of being comfortable communicating with strangers and coping with difficult residents. In addition to the CPU, a Crime Strike Force (CSF) in the NPCs is tasked with fighting localised crime and comprises experienced investigators who make use of their extensive knowledge and familiarity with their neighbourhood terrain and community to solve crimes. Each CSF officer specialises in a particular type of crime and receives daily updates on occurrences of crime. CSF officers partner with the community to chase leads and solve cases.

## COPS IN THE PARK: INTER-AGENCY ENGAGEMENT WITH THE COMMUNITY

Armed with a wider mandate and greater resource availability offered through the COPS, NPCs were better equipped to connect more with their constituents. They could also co-opt other government agencies in extending security coverage and crime prevention messaging to other parts of the neighbourhood, beyond the residents of the housing estate, who were already recipients of a variety of programmes catering to their needs.

As part of a new "COPS in the Park" initiative launched in 2013, Clementi NPC officers teamed up with the NParks for an educational and enforcement drive in West Coast Park, which falls under the NPC's jurisdiction. West Coast Park allows visitors to set up camping tents and is popular with both locals and foreigners. The NPC officers and the NParks officers carried out joint outreach to the park-goers on crime prevention measures relating to campsites and parks as well as enforcement checks on persons suspected to be carrying dangerous items and on campers who may be in breach of the NParks permit conditions. During these patrols, the NPC officers maintained an approachable demeanour while appropriately attired in their COPS uniform of white polo shirts and blue bermudas.



Camping is permitted at Area 3 of West Coast Park.

Image courtesy of CYCLETOURSG, <https://cycletoursg.wordpress.com/where-to-stay>

## Freeing Up Police Resources and Community Spaces Through e-NPPs

With the shift in resources towards NPC operations through the COPS, some of the existing 62 NPPs were revamped into electronic NPPs (e-NPPs) in 2013, with electronic kiosks replacing the officers, who have been re-deployed to the NPCs. Relieved of desk-bound duties, these officers are able to cover the ground more effectively. The e-kiosks provide residents with round-the-clock access to automated services such as crime reporting, applying for police documents, and automated drop-boxes for lost-and-found property. The e-kiosks also have interactive tablets containing computer applications for residents to perform other government transactions. If residents require further assistance, they are still able to speak to a police officer situated at the nearest NPC in real-time via video conferencing. The e-NPPs are even equipped with a “safe room” that residents could use in the event of an emergency. If residents feel their safety is at risk, the safe room provides a secure space where they could hide from assailants while awaiting the arrival of the police.



The evolution of the NPP.

Image courtesy of National Archives of Singapore (left).  
Image courtesy of Stewart Tan, Centre for Liveable Cities (right).

Beyond the “service zone”, the redesigned e-NPPs have a separate space earmarked as a “community zone”, which serves as a place where officers and residents can come together for community activities, as a meeting point for the police to discuss crime concerns with grassroots leaders and community volunteers, and as a training venue for residents on crime prevention. The first e-NPPs were rolled out in West Coast, Radin Mas and

Marsiling in 2013, with an additional six launched in 2016 in Bishan, Boon Lay, Nee Soon, Pasir Panjang, Siglap and Tanjong Pagar. These locations were selected based on the wider age demographic, which allows the SPF to better gauge the effectiveness of the e-NPP in serving the different age groups.

The move towards a more technology-driven NPP design has led to concerns being expressed by some Members of Parliament and residents alike that the less tech-savvy members of the community, particularly the elderly, may encounter difficulties accessing the various e-kiosk functions. Others have expressed reservations about the officer-less NPP design as residents may find it difficult to write a police report without guidance from the police. They feel there should be at least one officer at the NPP at any point in time. The SPF has worked to address these concerns by adopting more user-friendly system interfaces and having officers “on-hand” via video-conferencing to guide residents along when needed. It hopes that as the members of the population become increasingly adept at using the Internet and mobile applications, they would have greater confidence to tap on the e-NPP services more regularly and would appreciate the convenience that they offer. Technological improvements and progressively faster Internet connection speeds would also go some way towards increasing the reliability and speed with which residents are able to contact the officers through the e-NPP kiosk and bridging the physical distance with the NPC officers that some residents may feel.

## A COMMUNITY ON PATROL

### Community Safety and Security Programme

The SPF, together with the HDB, has expended much effort to bring policing closer to the community by physically locating the NPCs and the NPPs within HDB estates. The SPF has also teamed up with other government agencies as well as grassroots organisations to develop community-based security programmes with a view to educating the wider community and co-opting it into neighbourhood security. One such community-based security initiative was the Community Focus Plan (CFP), a partnership between the NPC and the housing estates’ Residents’ Committees (RC), which was endorsed in 1998. Its aim was to identify safety and security concerns around the neighbourhood, handle resident disputes, and proactively co-create and implement joint community-police projects and activities, by leveraging the NPCs’ strong local base. In 1999, the CFP was renamed the Community Safety and Security Programme (CSSP) to better reflect

the community's ownership of the programme and the fact that each member has a stake and needs to actively take the lead in improving the safety and security of the neighbourhood. Through this expanded programme, residents not only work with the SPF and the SCDF, but also with grassroots organisations and relevant stakeholders, such as hawker centres, wet markets, schools, places of worship and industries operating in the community, to develop action plans to tackle a particular area of concern. This programme harks back to the spirit of *gotong-royong* (Malay for "reciprocity and mutual aid") that was present in Singapore's *kampong* communities.

*The spirit of community self-help goes way back to the kampong days where neighbours help look out for the safety and security of one another. The residents know their own safety and security concerns best, and they have the immediate resources available to resolve them.*<sup>111</sup>

Wong Kan Seng, in describing the spirit behind the CSSP

### Neighbourhood Watch and Citizens-on-Patrol

One of the very first efforts at encouraging residents to show care for one another, to develop a sense of ownership over their physical surroundings and work together to keep their neighbourhoods crime-free was the Neighbourhood Watch Scheme (NWS), which was launched in 1981, pre-dating the police post system. Through the NWS, residents were gathered into groups to keep a look-out for one another's premises and alert the police should they notice suspicious activity or suspicious individuals in the immediate vicinity of their homes, as well as spread crime prevention messages. A typical Neighbourhood Watch Group comprised five households from the same or adjacent floors and were formed under the auspices of the RCs for HDB estates and Neighbourhood Committees or Residents' Associations for private residential areas. In 1996, the scheme was reviewed and the Watch Groups were re-organised into Neighbourhood Watch Zones (NWZs) to better leverage both the increasing sophistication and scope of duties of the NPPs and the RCs, as well as the strengths of existing grassroots networks. These NWZs were overseen by the residents themselves, either through the RCs, the Neighbourhood Committees or the Residents' Associations.

Under the ambit of the CSSP, the Citizens-On-Patrol (COP) scheme was introduced in 1999 to engage residents beyond just crime prevention efforts and to get them to play a part in neighbourhood crime fighting and to see neighbourhood security as a shared responsibility. Whereas

the NWS represented a more passive form of semi-organised surveillance, with members looking out for neighbourhood security threats from their homes or while carrying out their daily activities and subsequently contacting the police, the COP entails active involvement, with residents augmenting police patrols by going on rounds in the estate together with NPC officers and fellow residents. Given that the COP helped bring together residents who shared a common interest and presented opportunities for greater community bonding, agencies such as the People's Association (PA) were highly supportive of the project, according to Tan Boon Huat, former Deputy Secretary in the MHA and former Chief Executive Director of the PA.<sup>112</sup> The PA helped facilitate the promotion of the COP to residents during its early stages through roadshows, exhibitions and talks organised by the SPF.

To better perform their roles, the COP members receive training in crime prevention, safety and observation skills as well as in conducting routine patrols. With its mix of older and younger members, the COP scheme can be seen as providing the additional benefit of serving as a form of active ageing with a purpose while also presenting the opportunity to inculcate values and a deeper appreciation of the community's role in security for the younger members. However, as noted by Tan Boon Huat,<sup>113</sup> one of the challenges that the COP faced was trying to encourage new participants to join and reaching out to a wider cross-section of residents, as opposed to always having the same faces attending. Having wider involvement would also help in overcoming the narrow mindset of some residents, who feel security is "not my responsibility, it's the police and all these *kay poh* [Hokkien for 'busybody'], *geh gao* [Hokkien for 'know-it-all'] fellows".

### Co-opting Different Strata of the Community

The NPCs, together with grassroots organisations, have worked to bring together the diverse members of the community by involving them in neighbourhood security efforts. This not only offers more eyes and ears on the ground for the police to tap, but at the same time gives residents from diverse backgrounds the opportunity to socialise, which helps further enhance neighbourly relations. One initiative under this joint endeavour, the Silver Watch Group, is targeted at residents above the age of 50 who are relatively technology-savvy and are able to converse with other elderly residents in languages and dialects that they are more comfortable with. These members would help the NPCs impart crime prevention knowledge in a supportive and friendly manner to prevent their fellow seniors from falling victim to crime.

Given the changing demographics in the housing estates, with an increasing foreigner presence, crime prevention outreach has been extended to foreign workers and domestic helpers. Examples include the Toh Guan Patriots, a group comprising foreign workers living in dormitories in Clementi who have teamed up with Clementi NPC officers and local residents to conduct joint patrols as part of the COP rounds. The foreign workers also actively participate in community-level events and serve as a useful link between the police and the foreign worker community as they help to relay crime prevention messages and advice against anti-social behaviour to residents of foreign worker dormitories in the vicinity. Beyond just the SPF training, the workers also receive training by the SCDF in life-saving and fire-fighting skills as well as anti-littering and dengue prevention training by the National Environment Agency (NEA). The Faber Hills “Maid Watch” project, a CSSP initiative, has seen the Faber Hills Neighbourhood Committee and Clementi NPC partner with domestic helpers living in that area to help keep a look-out for housebreaking and other crimes that may take place during the day when their employers are not at home.



Clementi NPC's crime prevention outreach to the foreign worker community.  
Image courtesy of Clementi Neighbourhood Police Centre.

NPC officers also conduct security talks to schools in the neighbourhood along with hosting educational visits by students to the NPCs. Through the Retail Watch Group, neighbourhood retailers and shop owners are roped in to help deter and detect crime and also serve as useful sources of ground information, given their familiarity with the daily comings and goings of residents in their area. Both parties are able to exchange tips on crime prevention and security practices, in addition to police conducting “red teaming” exercises with retail management and business owners to test the effectiveness of the security features that the stores have in place and assess staff vigilance.

*In Singapore, community policing has gone beyond being simply a policing strategy. It has become instrumental in helping to build community spirit and bonding.<sup>114</sup>*

Wong Kan Seng

## BRINGING STAKEHOLDERS TOGETHER IN CRIME PREVENTION: THE NCPC

### Working with Industries

Bridging the divide between the police and other stakeholder agencies with regard to security planning is not without its challenges. One agency that has performed a bridging role over the past 37 years by bringing diverse parties onto the same page is the National Crime Prevention Council (NCPC). Since its establishment in 1981, the NCPC has worked together with the police, the public and the private sector and within the community to raise awareness, garner active involvement and coordinate efforts in crime prevention. The Council itself is made up of members from different fields such as the hotel, banking and insurance sectors, as well as representatives from the PA, the HDB and the media. It represents one of the first working prototypes of a successful tripartite partnership, which is now a pervasive model throughout Singapore's regulatory agencies where they work in consultation with industry and the public.

Some of the NCPC's contributions include providing Town Councils with a security perspective in planning the layout of neighbourhoods and highlighting at-risk locations such as areas with poor lighting that require environmental and situational prevention enhancements. In 2003, the NCPC published the “Crime Prevention through Environmental Design

(CPTED)” guidebook to serve as a reference for security agencies, planners, building professionals, and homeowners on ways to incorporate crime prevention and security features as part of the planning and design of their buildings and infrastructure. The CPTED guidelines, which the HDB had pioneered since the early days of public housing, have since become standard industry practice.

### Transforming Public Apathy into Care

Beyond guiding the security planning of neighbourhoods and buildings, one of the NCPC’s key contributions is that of enacting social change by transforming Singaporeans’ apathy towards their surroundings and neighbours into care. This it has done through its various nationwide campaigns, public exhibitions and talks on how to avoid falling prey to scams, unlicensed moneylending harassment and seasonal crimes. Among these various NCPC efforts is the highly-watched “Crimewatch” television programme and the awards given out to recognise and motivate industries that adopt crime prevention principles, such as the annual Hotel Association’s Security Award. By helping to raise the confidence of the public in the efficacy of the police officers entrusted to protect their neighbourhoods the NCPC’s work can be seen as strongly complementing the SPF’s shift to the neighbourhood policing model in the early 1980s.

As explained in the NCPC’s 30th anniversary book, *Making Singapore Safe: 30 Years of the National Crime Prevention Council*, in serving as an intermediary between the police, the people and private sector, the NCPC has enabled the police to adopt a “lighter touch” approach to maintaining law and order, such as by helping to persuade nightspot owners to take proactive measures to minimise vice and drug activities on their premises. Through such efforts, the NCPC has engendered a zero-tolerance approach to crime that is governed by public consensus and not borne out of fear of the authorities.

*Its [NCPC’s] real value lies in what it represents—the wider community, including the business sector, and its support for the social compact that says society will not tolerate crime and violence and accepts that the Police can use all lawful means to prevent harm to society and to bring offenders to justice.*

Susan Sim, author of the NCPC’s 30th anniversary book

# CONCLUSION

## KEEPING A CITY SECURE YET LIVEABLE

Singapore has seen an evolution in how its neighbourhoods and the city as a whole have been kept secure without sacrificing elements that contribute to liveability. The evolution involves a strategic and philosophical transformation in the SPF's approach to policing—which today is based on relationship-building with citizens and involving them in keeping neighbourhoods safe—as much as a physical redesign of infrastructure to keep pace with societal changes and contemporary security challenges.

From having a visible physical presence and show of force in clamping down on the social strife and violence that plagued Singapore in its early years, to piloting new models of policing and adopting a more public-oriented policing style built on mutual trust and respect. From an original town planning that reinforced segregation, lack of understanding and distrust, which in turn allowed crime to fester, to one that has been painstakingly re-crafted through physical, policy, and enforcement means into a more inclusive, safe living space for all. From an over-reliance on the authorities to keep an individual and his or her family safe to a community-partnered model, with citizens taking greater ownership over their security and engaging in self-policing in exchange for a “lighter touch” from the police. From building houses out of urgency and overlooking security or adding it on as an afterthought, to building secure homes and community spaces that leverage integrated planning guided by stakeholder consultation and piloting innovation in technology and design. From hardening of spaces through barbed wire fences and concrete walls and at times “over-policing” in the name of security, to adopting softer measures that negate the need for round-the-clock police presence or physical barriers through redesigning the urban environment and leveraging less obstructive technology. From unilaterally imposing laws governing the acceptable use of Singapore's physical and social space to consulting with the public and educating them to appreciate the need for such laws.

As noted by Benny Lim, ultimately what has set Singapore apart from other countries and served as a key success factor in its ability to maintain a low crime rate and secure living environment is having strong governance predicated on the rule of law and a law abiding populace that values peace and order and is supportive of the authorities.

*We are not successful in having low crime because our police ratios are so high or that our police are so much more efficient in solving crime than the FBI or London Metropolitan Police. I do believe that one of the things that we have that many countries do not have is that we have strong support from a public that values order, peace, safety and security of their children and families. Because of that we are able to enact and enforce tough laws with the support of the people.<sup>115</sup>*

Benny Lim

Another contributing factor, as recounted by Dr Liu Thai Ker in describing how infrastructural and development problems are resolved in building public housing, is that right from the early post-independence years government agencies were able to work together effectively and to cooperate to overcome challenges as they were driven by a common good. He notes that, unlike many other cities, where inter-agency cooperation has been difficult to achieve, in Singapore inter-agency cooperation is strong “because logic is our ultimate authority” and Singapore possesses a corporate culture which shows “respect for doing the right thing”.

## FUTURE CHALLENGES AND CONSIDERATIONS

### Greater Integration of Security and Urban Planning

While security principles have been incorporated by engineers, planners and architects as part of their building and town planning designs for some time, in some instances these are still carried out without getting the security agencies involved at the initial planning stages. Instead, inputs from the security agencies tend to be sought after development plans have already been approved and, in some cases, with construction already underway. There is a need to avoid a repeat of situations in the past where security features have had to be built on top of or retrofitted into existing structures. Worse, in some cases, these eleventh-hour approaches necessitated the tearing down of infrastructure, which caused unnecessary inconvenience to residents and incurred additional construction costs.

In some contexts, as noted by Benny Lim, such recalibrations in security design are unavoidable owing to the evolving nature of threats and criminal modus operandi. For instance, with regard to terrorism, where

infrastructure such as glass doors and windows were once seen as important security features allowing for greater visibility and light flow, now, in the event of an improvised explosive device or car-bomb being detonated, glass shards could cause additional injuries or death. Nonetheless, adopting a more consultative approach that pulls together different fields of expertise at the initial stages of a development project would allow for more holistic planning and more bases to be covered. Seng Joo How encourages involving facilities management practitioners early in the design and planning stage as they would be the ones who would inherit the benefits and shortcomings of these design plans.

### **Go Native in Understanding Residents' Behaviours and Needs**

In planning, whether it is for added security or for development projects at the town and city level in general, agencies involved in the decision-making process should strive to better understand the behaviour of the people that they are planning for. While surveys, public consultation and feedback gathering exercises are important means of gauging the needs of residents and users, richer information on their actual patterns of behaviour and how they interact with the physical and natural environment and each other can be gleaned by “going native”, as espoused by Benny Lim. This involves ground observations, ethnographic research and social mapping, which would allow for a deeper understanding of the end users' behaviour, such as how they spend most of their day, where they congregate for socialising, where they visit for essential services and their daily needs, and the informal “paths of desire” that they take for getting from Point A to Point B. Residents' strong objections to or preference for a proposal or project that affects their housing estate or living environment should not be lightly dismissed. For instance, the construction of a columbarium in Sengkang in 2015 and of a foreign worker dormitory next to the Serangoon Gardens private estate in 2008 were simply typecast as manifestations of the “NIMBY” (Not-In-My-Backyard) syndrome and it was assumed that all the residents were concerned with was how the development of these structures would deflate the price of their properties. There may be other issues at play that the authorities may not be aware of if they simply look at a problem from the surface.

This view was echoed by Dr Liu Thai Ker, who believes strongly in involving planners and researchers from diverse fields when studying communities. Without this diversity of insights, an architect's plans may “hold little relevance to human life”. Dr Liu Thai Ker himself had brought in sociologists to help advise him when designing HDB estates while also relying on the estate managers as a critical part of the feedback loop.

### **Look Towards “Inclusion” Rather than “Cohesion”**

When striving towards a desired state for one's community, the priority should be on achieving an inclusive rather than cohesive society. Owing to in-group, out-group biases, a community of similar individuals can be a highly cohesive, well-functioning one but it may not be inclusive in accepting and recognising outsiders who are different from them as part of their community. The government, private sector, civil society and residents have been making greater efforts to bring members of diverse nationalities, ages, and abilities together as an inclusive community. But more can still be done. Providing more dedicated public and community spaces for people to come together and interact and conducting more programmes for interaction are steps in the right direction. But, as noted by Benny Lim, agencies should introduce programmes into these spaces that not only promote meaningful and regular encounters and experiences but also produce shared positive experiences targeting the involvement of diverse groups.

### **The Impact of Social Media on Planning for Security**

The rise of social media has presented both an opportunity as well as a dilemma for planners and security agencies. It can be a powerful mobiliser in bringing out the good in society, encouraging activism in keeping one's neighbourhood secure, alerting fellow residents to potential dangers, and allowing for public consultation. At the same time, it can add unnecessary fuel to neighbourly disagreements and make amicable resolution all the more challenging when grievances are widely shared via video footage on social media platforms. In the era of “fake news”, government agencies need to be alert to the use of social media for propagating unsubstantiated claims such as those pertaining to security, management or infrastructural lapses. They need to respond to these unsubstantiated claims in an unequivocal and timely manner as the security consequences of not doing so could be grave. The government has taken initial steps to tackle this issue of online falsehoods through the setting up of a Select Committee in January 2018 to examine the associated problems and invite public representations with the aim of developing suitable counter-measures.<sup>116</sup>

## Security and Liveability in the Age of Terrorism

In the face of increasing terrorist threats from the Islamic State in Iraq and Syria (ISIS) terror group, which has identified Singapore as one of its target countries, the SGSecure national movement was launched by the Ministry of Home Affairs on 24 September 2016 to “sensitise, train and mobilise the community to play a part to prevent and deal with a terrorist attack”. While security agencies have been strengthening infrastructure protection measures and expanding the CCTV surveillance network, along with enhancements in their security and emergency response capabilities, the cornerstone of Singapore’s counter-terrorism strategy is the community’s level of vigilance, cohesion and resilience. A year into its launch, K. Shanmugam, Minister for Home Affairs and Law, assessed that SGSecure had been somewhat successful in raising awareness among the population on the imminent terror threat and the general principles of SGSecure, but he also felt more needs to be done to increase the public’s level of mental preparedness and sense of ownership over their own security in the event of a terror attack.<sup>117</sup>

To this end there is a need to reach out to more than the 400,000 households that have been engaged thus far by the Home Team, that is, all the departments and statutory boards under the MHA, and grassroots volunteers. The target set is for all constituencies in Singapore to have undergone the Crisis Response Exercise, which involves simulated terror attacks and post-attack events that may take place in a HDB town centre or neighbourhood hawker centre, which would demonstrate what residents should do in the event of a real incident. This is where the strong community partnership and existing lines of interaction that have been forged through the SPF’s three decades of neighbourhood policing as well as the NCPC’s efforts can be leveraged to gain residents’ and other stakeholders’ support and ownership to face the new threat of terror as one community.

On 1 October 2017, the Infrastructure Protection Bill was passed in Parliament calling for increased protective measures against acts of terrorism to be put in place for buildings which are iconic, have a high volume of traffic or house essential services. For new developments, security features such as video surveillance, vehicle barriers and blast protection are to be integrated into the building design before construction. As for identified existing buildings, they would have to incorporate these features into their future renovation plans. The majority of the buildings that would be affected by the Bill are those considered critical infrastructure such as Changi Airport, with the rest being iconic buildings such as the Sports Hub. For new developments, these new requirements would largely affect those with a gross floor area of more than 100,000 square metres.

In introducing new programmes and legislation, trade-offs need to be carefully weighed between instinctively erecting physical and social barriers and hardening infrastructure to deter acts of terrorism or reduce the potential fallout, and maintaining an inclusive society with vibrant, accessible spaces for different communities to come together and interact. From the examples of Marina Barrage and Gardens by the Bay, two public spaces that see high visitor footfall each year, planners, designers, architects, and the operations teams have demonstrated that, regardless of the level of security put in place, there is still a keen awareness that such features should be kept as subtle as possible, and should blend in with the overall aesthetics and welcoming feel associated with an iconic public attraction. Be it in dealing with terrorism or the security threats of the past decades, the ability to strike such fine balances between otherwise competing physical, social and security needs has been one of the enduring hallmarks that have contributed to Singapore being one of the world’s most secure and liveable cities.

## POST-SCRIPT

Security is essential for a city. A strong sense of personal safety enhances the living environment, and good city-planning and design contribute to the overall state of safety and security. Urban planners and security agencies therefore have every interest to work hand in hand.

Security agencies need to have some understanding of city design, to strike the appropriate balance in security measures, and to ensure that the city remains liveable. Similarly, urban planners should have an appreciation of evolving security threats, so that these can be factored into city design.

Terrorism, for example, has ebbed and flowed over the ages, in tandem with global and regional developments. Religious-based radical ideology has been spreading through the Internet, and seeped into mobile devices and home computers, inspiring self-radicalised lone wolves. In recent times, we have seen terrorist attacks by such individuals, with little forewarning, and employing everyday items like kitchen knives, and ramming their vehicle into crowds. Crime, too, is going online. Vice syndicates peddle their wares and transact with customers online, with only the final act remaining physical. Frauds and scams, perpetrated online but involving physical goods, are also growing. Loansharks as well are resorting to e-harassment because of the police's success in cracking down on traditional means of pressuring debtors. In these instances, we see how digitalisation is intertwined with our cyber and physical worlds.

The ease and speed with which falsehoods can be spread through social media, and how societal fault-lines can be exploited, poses a new and serious threat to democracies. Elections in countries like the US, the UK and France have been the target of hostile information campaigns by foreign actors. Such attacks can also undermine social cohesion, and in Singapore's case racial and religious harmony.

Planning a secure city amidst this evolving landscape requires security to be integrated even more tightly into urban planning and design. We need to consider that the security of critical physical infrastructures now also depends on their cyber design and defence. Critical information infrastructures, on the other hand, also require physical hardening. As a result, we need to mitigate unpredictable terrorist acts, the best we can. Even more effort must be invested to bring together people of different races and religions in daily work, life and play, through urban design practice and policy, to counter the insidious impact of segregationist ideas and teachings, and the natural tendency of humans to congregate among those who look like us.

Yet all this is often an afterthought. When project cost and timelines are pressing, security is seen as an unattractive and unwelcome expenditure, with uncertain

pay-offs. Where we should strike the balance is a fundamental question for society. But in answering the question, I would caution us to be mindful that the safer Singapore becomes, the harder it seems to justify measures to keep us safe, and yet the cost of scaling down security measures, when security is compromised, can be immeasurable.

Achieving the appropriate balance requires us to be flexible, innovative and responsive to changing needs. There will be areas, identified by risk assessment, where it is in the public interest for security to be among the highest priorities. In others, the balance can tilt differently. Under the Infrastructure Protection Act, the government takes such a risk-managed and outcome-based approach to designing security into buildings that house essential services or have very high public footfall.

Technology is also reshaping how we think about security, and can offer solutions to increasingly acute manpower constraints. Threat detection can now be almost completely automated through advanced surveillance equipment and video analytics, which can also support security personnel in decision-making and response. Moreover, big data and predictive algorithms can help focus limited resources. But we will need to weigh these benefits against the cybersecurity vulnerabilities they bring, along with concerns about privacy and data security. As in the past, public confidence and trust in the government will shape how and to what extent we can harness these intrusive tools for the public interest.

Even as we plan for and design against security threats, resilience is the best defence against the unexpected. A resilient community stays united, recovers quickly, and helps one another—every individual understands that their personal interests are best served by playing a role for the common good. The SGSecure movement—through various programmes in the neighbourhoods, community, workplaces and schools—has helped to sensitise and prepare the public on how to react and respond during a terrorist attack.

We must however never take our safety and security for granted. Loss of public confidence would not only damage our living environment, but society as well. Instead, we should work together to navigate evolving security challenges. Building a safe and secure home is every Singaporean's responsibility.

**Pang Kin Keong**  
Permanent Secretary  
Ministry of Home Affairs

# TIMELINE: SECURITY PLANNING AND URBAN DEVELOPMENT

**1820**

▶ Formation of the Singapore Police Force.

**1822**

▶ Jackson Plan of the town of Singapore formulated.

**1823**

▶ Opening of Singapore's first police station.

**1825**

▶ Opening of Bras Basah Jail.

**1854**

▶ Hokkien-Teochew "Five Catties of Rice Riots".

**1930**

▶ Criminalisation of brothels.

**1937**

▶ Opening of Changi Prison.

**1945**

▶ Ban on opium consumption.

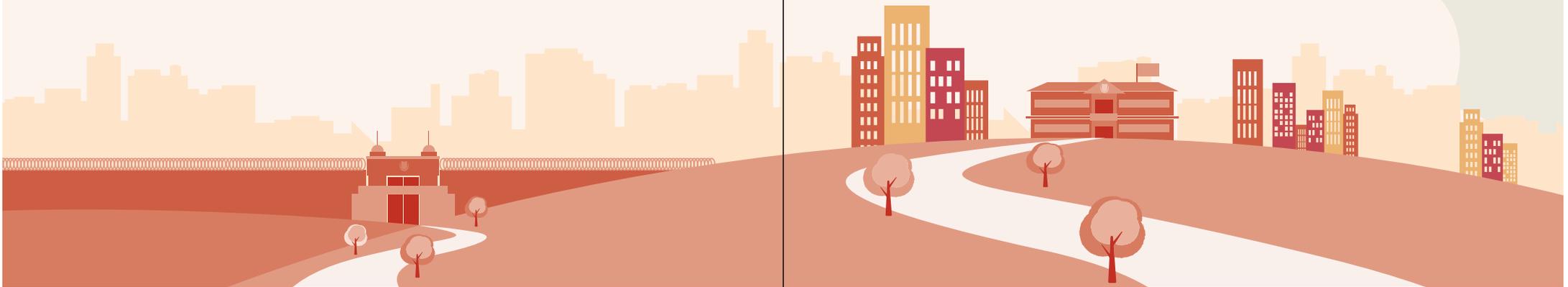
**1946**

▶ Formation of the Singapore Prison Service.

**1955**

▶ Introduction of the Criminal Law Act.  
▶ Opening of Opium Treatment Centre on St. John's Island.

**Before 1960**



**1960**

▶ Formation of the Housing and Development Board (HDB).

**1963**

▶ Pulau Senang Riot.

**1964, 1969**

▶ Communal riots.

**1968**

▶ Demolition of Outram Prison.

**1971**

▶ Formation of the Central Narcotics Bureau.

**1973**

▶ Enactment of the Misuse of Drugs Act.

**1977**

▶ Operation Ferret.

**1981**

▶ Launch of Neighbourhood Watch Scheme.

▶ Establishment of the National Crime Prevention Council (NCPC).

**1983**

▶ Opening of first Neighbourhood Police Post at Khe Bong.

**1986**

▶ Establishment of Town Councils.

**1989**

▶ Implementation of the HDB's Ethnic Integration Policy.

**1997**

▶ Opening of first Neighbourhood Police Centre at Queenstown.

**1999**

▶ Launch of Citizens-on-Patrol scheme.

**1960s**

**1970s**

**1980s**

**1990s**



**2000**

- ▶ Opening of Speakers' Corner.

**2003**

- ▶ The NCPC's Crime Prevention Through Environmental Design Guidebook published.

**2004**

- ▶ Opening of Changi Prison Complex.

**2005**

- ▶ Setting up of the National Council on Problem Gambling.

**2006**

- ▶ Introduction of Casino Control Act.

**2008**

- ▶ Formation of Casino Regulatory Authority.
- ▶ Opening of Marina Barrage.

**2010**

- ▶ Opening of Integrated Resorts.

**2012**

- ▶ Opening of Gardens by the Bay.
- ▶ PolCam 1.0 and Community Policing System (COPS) Pilots.

**2013**

- ▶ First e-NPP (Neighbourhood Police Post) roll out.
- ▶ Little India Riot.

**2015**

- ▶ Enactment of Liquor Control (Supply and Consumption) Act.

**2016**

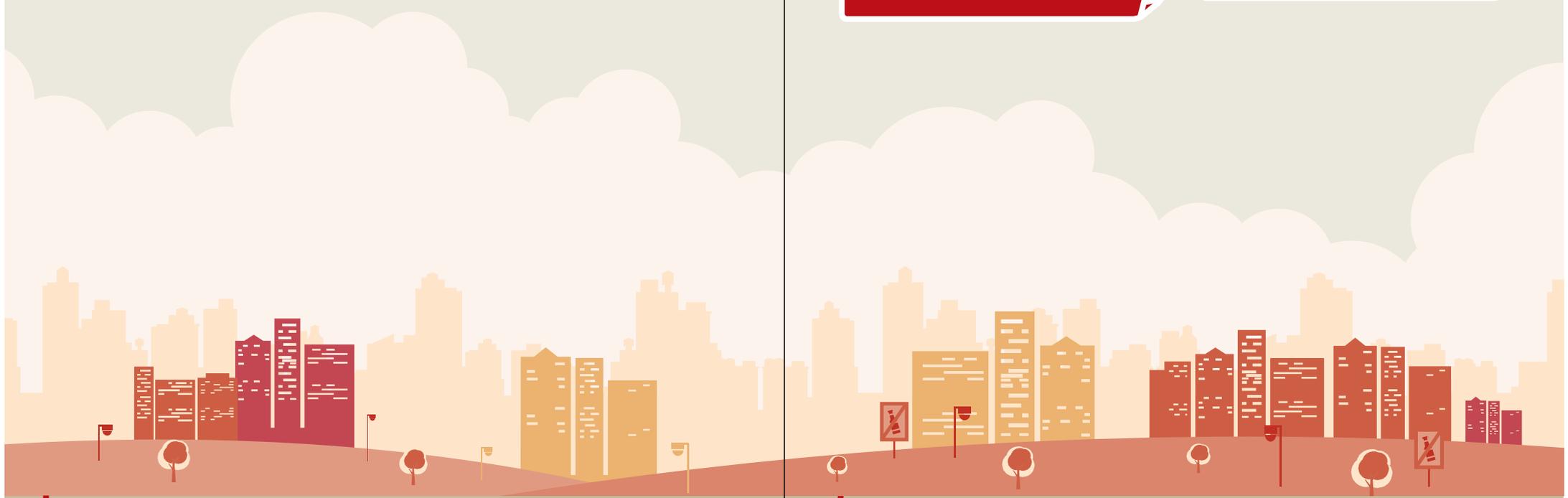
- ▶ Launch of PolCam 2.0.
- ▶ Launch of SGSecure movement.

**2017**

- ▶ Launch of Smart Nation Sensor Platform.
- ▶ Passing of Infrastructure Protection Bill.

2000s

2010s



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# PLANNING FOR A SECURE CITY

Undergirding the perceptible dimensions of a liveable city—a bustling economy, dazzling skyline, state-of-the-art public infrastructure and amenities—is its ability to provide its inhabitants and visitors alike the confidence that their personal safety is ensured and safeguarded. Yet, at times, balancing security and urban design needs presents unique, though not insurmountable, challenges.

This Urban Systems Study charts the critical role that security planning and urban design have together played in Singapore's transformation from being the crime-ridden city that it was some 50 years ago to one of the safest places in the world today. It discusses the country's use of innovative ideas and technology, its pragmatic approach to security enforcement and urban planning, and its willingness to challenge traditional norms of security provision where necessary. It also examines how neither liveability nor security was compromised in Singapore's plans to better prepare itself for emerging security and societal threats.

This book additionally highlights how the co-opting or active involvement of the public in various security-related initiatives, and the resulting trust built between the government and people, have complemented and enhanced the efforts of Singapore's security and planning agencies in creating a secure city.

*"A good city, first you must feel safe in it. There's no use having good surroundings but you are afraid all the time... Today a woman can run at three o'clock in the morning... [go] jogging... She will not be raped. [This is] an essential part of a liveable city."*

Lee Kuan Yew, founding Prime Minister of Singapore,  
on his model of a liveable city

