Urban Density
Historicising Land Rights and Heritage as a Planning Trope

Ar. Teo Eng Kiong Shawn, Jiang Wen Huan
DP Architects Pte Ltd

Abstract

Singapore's Old Kallang Airport was once Southeast Asia's finest commercial airport in the late 1930s, when international travel was at its height before the Second World War. The British identified this to be their first purpose-built civil airport and a testament of the prospects of air travel, with Singapore as a gateway between England and Australia. Within a kilometre radius from the main terminal, most adjacent buildings and sites like the open- air theme park Happy World, have been demolished and redeveloped to cope with pressures of the urban centre alongside key infrastructural works. The conservation of the buildings within Old Kallang Airport, against a slate of tabula rasa in context, questions the prospect of urban redevelopment and intensification where the site is read through the built and barren landscape, a tussle of land rights over time and space. Today, Old Kallang Airport is hoarded up and rehabilitated for posterity, while the Singapore Land Authority attempts to seek complementing interim uses to sustainably rejuvenate this urban vacuum. This paper investigates the architectural permutations in urban density, programmatic use through urban morphology and historical synapses to inform possible urban planning and design outcomes.

Keywords
Kallang Airport, Singapore's Built Heritage, Adaptive Reuse, Urban Morphology, Urban Redevelopment

How to cite
Ar. Teo Eng Kiong Shawn, Jiang Wen Huan, "Urban Density: Historicising Land Rights and Heritage as a Planning Trope". In Ian Morley and Hendrik Tieben (eds.), *International Planning History Society Proceedings*, 20th IPHS Conference, "The (High Density) Metropolis and Region in Planning History," Hong Kong, 2 - 5 July, 2024, TU Delft Open, 2024.

DOI: 10.7480/iphs.2024.1.7621

INTRODUCTION

Kallang Airport was once Southeast Asia's finest commercial airport in the late 1930s, when international travel was at its height before the Second World War, given its close proximity

to the city centre, as opposed to the Seletar Military Airbase north of the island. The British colonial government had identified this to be their first purpose-built civil airport and a testament of the prospects of air travel, with Singapore as a gateway between England and Australia, even before Singapore became a crown colony. Famed aviator Amelia Earhart even remarked how this airport was "an aviation miracle of the East" where "the barren margins of our isolated Western airports could scarcely assimilate such urban frivolities"[1]. When Kallang Airport was decommissioned in 1955, the main terminal, and some ancillary buildings were adapted for various civic and government uses such as Singapore Youth Sports Council (1955 – 1960), People's Association (1960 – 2009), Public Works Department (1960 – 1972), and the Central Manpower Base (1967 – 1972). The compound of 5 buildings and heritage structures, driveway and green lawn were conserved in 2008 by the Urban Redevelopment Authority. Notably, the circular aerodrome, which was built over reclaimed land, once inhabited by the sea-faring Orang Asli, also left an indelible mark in the city centre, genesis for the former National Stadium (1973 – 2010) and current Singapore Sports Hub and upcoming Kallang Alive Master Plan.

Since the beginning, Kallang was largely used as an industry district, with a progression of industries ranging from brick kilns, sugar plantations, saw mills and gas works for more than a century between the 1830s till 1970s. Most industries have moved out of Kallang to lower cost sites such as Sungei Kadut Industrial Estate, with the exception of those within the Kallang – Kolam Ayer Industrial Estate, hence there is a unique of a mix residential, commercial, industrial and recreation being so close to the city centre. Within a kilometre radius from the terminal building, most adjacent buildings and sites like the open-air theme park New World in 1923 and Happy World (also known as Gay World) in 1936, have been demolished and redeveloped to cope with pressures of the urban centre alongside key infrastructural works. These worlds formed the early strands of Singapore's popular culture, housing dancing halls, amusement rides and iconic cabaret girls who danced to both Malay tunes and Western foxtrot.[2] The conservation of the buildings within Old Kallang Airport, against a slate of tabula rasa in context, questions the prospect of urban redevelopment and intensification where the site is read through the built and barren landscape, a tussle of land rights over time and space. Today, Old Kallang Airport is hoarded up and rehabilitated for posterity, while the Singapore Land Authority attempts to seek complementary interim uses to sustainably rejuvenate this urban vacuum. This paper investigates the architectural permutations in urban density, programmatic use through urban morphology and historical synapses to inform possible urban planning and design outcomes.

Fig. 1. Comparison between 1914 map (Above) and 1930 map (Below) for the extent of land reclamation (339 acres) in the construction of the civil aerodrome (DPA).

Fig. 2. View of Kallang Airport Terminal Building from ceremonial tear shaped drop off, 1940s[7]

Fig. 3. View of crowds at Kallang Airport Terminal Building from civil aerodrome during Singapore Air Day, 1950[8]

STATEMENT OF SIGNIFICANCE (SOS)

Singapore's endearing obsession of land reclamation took place since 1822 at the south bank of Singapore River. Since then, Singapore's land area has expanded by more than 25 percent - from 57,800 to 71,910 hectares (or 578 to 719 sq km)[3]. Reclamation of Kallang Basin and Beach Road for the construction of Kallang Airport culminated to 137 hectares, or approximately 0.9% of the land reclaimed today, but close to 40% of all reclaimed land by the colonial government. Nation-states claim air, water, and land rights as well as the right to exploit geogenic resources. In the case of Singapore, a small city-state, this repetitive cycle has become an addiction, a pledge to eternal growth symbolising the country's dominance over nature's elements as well as the principles of the global economy and its political and diplomatic influence in the region.[4] The 339 acres of reclamation of Kallang Basin and Beach Road would be the last major land reclamation projects in colonial Singapore, costing 9 million Straits dollars over "the worst mosquito-infested land on the island"[5] which was undoubtedly an "audacious engineering achievement" by Public Works Deparment (PWD) Director Major R.L. Nunn. The filling operation started in May 1932 using a workforce of over 400 coolies, and shortly after the reclamation was complete in October 1936, construction of Kallang Airport commenced.[6]

On 12 June 1937, Sir Thomas Shenton Whitelegge Thomas, Governor of The Straits Settlements opened the Singapore Civil Airport; later known as Kallang Airport. The British government purported that Kallang Airport possessed three outstanding advantages: proximity to the centre of the city, free aerial approaches (albeit through an aerodrome design), and common facilities for both land and marine aircraft. What was once a tidal basin populated by the sea-faring peoples of the Malay Archipelago, commonly known as Orang Asli, had been reclaimed with seven and a half million cubic yards of earth from a hill five miles away. Another two million cubic yards of mud and debris were dredged from the sea bed to create the seaplane anchorage and channel. Such an intensive civil infrastructure was notably advocated by Sir Shenton Thomas' predecessor, Sir Cecil Clement in 1931, when the travel aficionado saw the prospects for Singapore to be a key site of international travel. Construction began in 1931 and cost the Straits Settlement Government approximately $9 million dollars. Main building works were executed by the Public Works Department over six years, with Mr. Frank Dorrington Ward as the Government Architect and Mr. R. St. George Caulfeild as the Resident Engineer

.As an urban construct, the imposing landing ground was designed with a diameter of 1000 yards, with a taxi strip that is 100 feet wide skirtig the perimeter of the landing ground in the arc adjacent to the apron head. The Terminal Building consists of offices for air transport companies, a post office, telephone booths, and the usual amenities for last minute purchases. At one end of the building there is a fully equipped restaurant and a wide roof verandah which gives unrestricted view over the landing ground. While the other end consists of passport, medical and customs offices for passengers. The first floor (second level) also contains office accommodation for the airport staff and the meteorological service. Parallel to the ceremonial tear shaped drop off are two storey annexe buildings for office, stores and workshops. Adjacent to the hangars which are 300 feet by 150 feet on plan with 35 feet clear height to fit the largest air liners yet built then. Surrounding the Terminal Building and hangars extends a concrete pave-

ment of 15 acres for the handling of mail and freight. Extending to the western perimeter of the landing ground was the seaplane slipway and wharf, connected to the main hangar. This is currently used by the Kallang NCC (Sea) Training Centre of the National Youth Sports Institute for the deployment of boats, and is regarded as a Protected Place (No. 5) Order 2014.

Kallang Airport handled all commercial air services in Singapore from 1937 till 1955. Despite improvements made by the Japanese during its Occupation and subsequent upgrading by the British after they returned, the advancement of aviation technology during the war had resulted in the production of larger and heavier aircraft that Kallang Airport was inadequate to handle.[10] At its peak, Kallang Airport was even ranked the second busiest airport in the Far East[11] handling a movement of 20 aircraft a day, which was comparable to Kai Tak Airport in Hong Kong. As the world recuperated and gained consciousness of a free world premised upon ever extensive global trade and commerce, air transport grew exponentially, prompting the government of the day to relocate the civil airport to Paya Lebar by Aug 1955. Yet in less than two decades, the airport had to be expanded several times. *No less than two airport consultants were employed to draw up and revise the master plan for Paya Lebar. In 1975, it was decided that, rather than developing Paya Lebar further, a new airport at Changi would be built to cater for air transportation needs of our Republic into the next century*. (Cheong, pV) Following the closure of Kallang Airport, the area in Kallang Basin was redeveloped to create new public spaces, including playing fields, gardens and parks.[12] The site was taken over by the People's Association (PA) in the early 1960s, and the former Terminal Building became the PA HQ building until PA moved to its current site at Tyrwhitt Road in 2009.[13] Former Kallang Airport was gazetted on 5 December 2008 for conservation by the Urban Redevelopment Authority (URA).

Fig. 4. Aerial view of old Kallang Airport after it has been decommissioned, with Nicoll Highway constructed in front of the circular control tower, 1958.9

Fig. 5. Digital Newspaper clipping of MND, SLA and URA's RSVP programme.[17]

Without a doubt, Old Kallang Airport needs to be conserved properly and meaningfully, given the substantial layers of history for such a prominent urban space and construct within less than a century. Yet, the periodic change of use also presents itself with its own set of challenges, especially when adaptive reuse is frequently presented as a compromise; whereby heritage properties are converted for contemporary usage, often into profit yielding enterprises in a manner which theoretically respects the history of the premises and guarantees its survival[14]. In an island city-state like Singapore where land is a scarce commodity, it is almost inevitable that the relevant authorities have to decide on strategies for the demolition and safeguarding of built heritage, some of which is associated with subjugation[15], as part of physical planning. Heritage buildings and sites such as Old Kallang Airport which have been gazetted but not prescribed National Monument status, are often placed under the stewardship of the Singapore Land Authority (SLA), which largely undertakes the maintenance, lease and tenancy of prospective private developers or public agencies who take on short term lease agreements for approved uses. It remains SLA's mission to ensure effective use of land resources and data for the economic and social development of Singapore by: optimising land and space utilisation, safeguarding property ownership, promoting the use of land and space data[16].

Most would concur that heritage can create income directly and indirectly by increasing "city liveability" and contributing to a "unique sense of place and singular urban landscapes" employed in branding and marketing to attract investors and tourists[18] (Ebbe, 2009, p1). Hence it is laudable that since 2019, SLA and URA have *jointly called for innovative proposals to transform State properties and land into places that will inject vibrancy and enhance the character of precincts under a new programme called Reinventing Spaces into Vibrant Places (RSVP)*[19]. Of the six state properties and parcels identified, Old Kallang Airport is due to be launched, and the site has garnered good attention from medium to large private developers given its rich his-

tory, prime location and urban connectivity. Aside from the timely discussion of Old Kallang Airport, where the Request for Proposals (RFP) is due to take place in the following months, it should be noted that Old Kallang Airport is the only property within the RSVP programme that consists of a conserved building within a site with a high capacity for intensification of up to Gross Plot Ratio (GPR) 3.5. Therein lies the conundrum where heritage structures are faced with land intensification and commercial pressures for redevelopment.

Singapore's first statutory master plan was completed in 1955 and approved in 8 August 1958, after the State of Singapore Act was passed which made Singapore a self-governing state. At that moment, the 1958 master plan was regarded as a highly restrictive "instrument of control"[21] with modest population growth assumptions catering for a population of two million by 1972 and the idyllic concept of town versus rural areas. Having adopted resettlement and land acquisition strategies, the People's Action Party (PAP) government also saw the need for an effective planning framework to guide development, given the inadequacies of the planning system it had inherited from the colonial administration.[22] The sanctity of property was breached through the Land Acquisition Act (1966) which "allowed the government to amass highly fragmented, prime urban land into more efficient parcels, redistributing them towards more economic uses and larger, more comprehensive development"[23] Such a high handed policy move was instrumental in the development of residential precincts and city infrastructure within the confines of the land inherited, while the post independent government planned for further territorial expansion through land reclamation.

Fig. 6. Clockwise (L-R): URA Master Plan 201920 illustrating land use for selected RSVP sites: 45 Sultan Gate (Tender Closed), 30 Maxwell Road (Tender Closed), 15 – 31 Hindoo Road (Upcoming), Old Kallang Airport (Upcoming) Instruments for Development

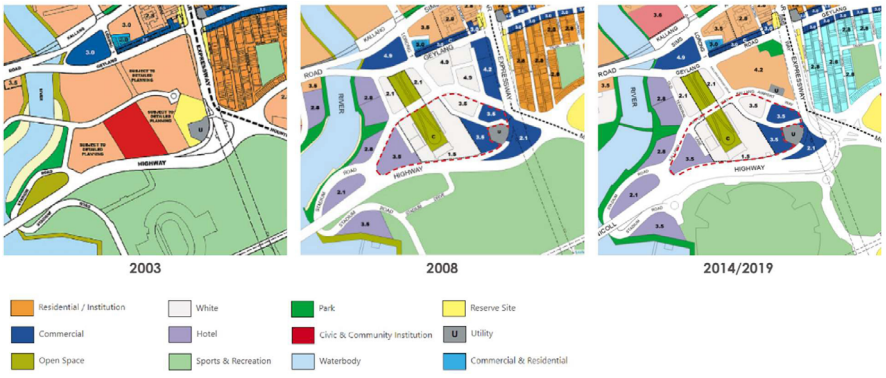


Fig. 7. Evolution of Master Plans between 2003, 2008 and 2014/2019 which shows the change in GPR and land use within and around the site. (Source: URA)

Over time, the 1958 master plan would gradually evolve to the 1980 and 2003 master plans which are milestone planning instruments that reflect key changes in social, economic and infrastructure, based on thorough planning across respective statutory agencies. In particular, these three master plans chronicle the change in measurement, from *Persons per Acre (PPA) to Persons per Hectare (PPHA)* and ultimately the prevailing *Gross Plot Ratio (GPR)*. The variance in these measurement scale not only translate in to minor arithmetic adjustments but effectively the urban massing of our built environment, albeit within the definition of urban density. URA continues to review the Master Plan every five years and translated the broad long-term strategies of the Concept Plan into detailed plans to guide development of land at the local and regional levels. Prior to the formalisation of URA's role in 1974, with the "responsibility and power on all matters relating to urban redevelopment, including the clearance of land, development of land and management of buildings therein"[24], Architects, planners and civil society were rallying behind independent think tanks such as SPUR (Singapore Planning and Urban Research Group) between the 1960s and 1970s. In their hallmark 1968 – 1971 publication, SPUR had rightly advocated to *Locate Airport at Changi*, despite nascent calls by government officials to expand Paya Lebar Airport due to

budgetary concerns[25]. Critical discourse by the private sector proved to be beneficial, but also suggested a shared investment in our built environment and city planning, which then Prime Minister Lee Kuan Yew once described SPUR as "critical but nonetheless dedicated"[26]. Nonetheless, it seems that global shifts in public sentiment from the "guilt and failure (that) took the place of utopian positivism" at the end of the twentieth century, "the bodies that undertook planning became those of deregulated government" while "private and quangoized public/private institutions became mechanisms of planning and development"[27].

From the 1970s onwards, planning in Singapore took on a more sophisticated and comprehensive model that allowed URA to consider a wider suite of plans beyond renewal or conservation, traversing other state authorities and agencies such as the Housing Development Board (HDB) for public residential development plans, JTC Corporation (JTC) for industrial development, Land Transport Authority for the planning of rails and roads, Public Utilities Board

and National Environment Agency for the utilities and infrastructure. Supply and demand projections were made for various types of developments to determine the types and intensity of developments for the sale sites.[28] This is also guided by the 1964 Planning Bill amendment, with the introduction of the development charge system where "developers benefiting from the granting of development permission would have to pay a development charge to the state, to ensure that "the increases in value of land brought about by community development and not through the efforts of the landowner" would accrue to public coffers"[29].

In the case of Old Kallang Airport, it is observed that this prime land is slated for high rise and high-density developments comprising of Commercial and Hotel uses at a considerable high GPR of 3.5 since 2008. The intended quantum in the 2003 master plan might have been similar to the 2008 master plan, where in the case that a site is subject to detailed planning, URA or SLA could have called for a RFP tender based on a specified land lease, or receive an Expression of Interest (EOI) from private developers with a quality fee proposal that can rejuvenate or activate the precinct and city positively. For the latter option, URA would nominally advise on the basic planning parameters, palatable land tenure model based on preliminary advice from the Chief Valuer via SLA, to guide private developers on their feasibility studies which is ultimately evaluated by URA in terms of its overall merit to urban development, place making and development charge.

Master Plan Year	Land Use	Plot Ratio (PR)	GFA	Rate	SHB Value	Total
1958	Industrial	0.16	4,556 SQM	S$500/SQM *September 2003 Rate*	S$2,278,000	S$2,966,425
	Community Buildings	0.025	1,376.85 SQM	S$500/SQM *September 2003 Rate*	S$688,425	
1980	Industrial	0.16	4,620 SQM	S$500/SQM *September 2003 Rate*	S$2,310,000	S$2,965,875
	Community Buildings	0.024	1,311.75 SQM	S$500/SQM *September 2003 Rate*	S$655,875	
2008	*Commercial*	3.5	22,451 SQM	S$2,240/SQM	S$50,290,240	S$352,952,390
	Commercial	3.5	26,328 SQM	S$2,240/SQM	S$58,974,720	
	Hotel	3.5	39,179 SQM	S$2,450/SQM	S$95,988,550	
	White	1.5	44,576 SQM	S$2,240/SQM	S$99,850,240	
	White	3.5	21,361 SQM	S$2,240/SQM	S$47,848,640	
2014	*Commercial*	3.5	22,451 SQM	S$5,460/sqm	S$122,582,460	S$851,236,820
	Commercial	3.5	26,328 SQM	S$5,460/sqm	S$143,750,880	
	Hotel	3.5	39,179 SQM	S$5,740/sqm	S$224,887,460	
	White	1.5	44,576 SQM	S$5,460/sqm	S$243,384,960	
	White	3.5	21,361 SQM	S$5,460/sqm	S$116,631,060	

Fig. 8. Estimated Development Charge based on historical master plans from 1958, 1980, and 2008 (Source: DPA)

Master Plan Year	Land Use	Plot Ratio (PR)	GFA	Rate September 2022 Rate	Development Baseline	Total
Present	Commercial	3.5	22,451 SQM	S$6,720/SQM	S$150,870,720	S$1.1 billion
	Commercial	3.5	26,328 SQM	S$6,720/SQM	S$176,924,160	
	Hotel	3.5	39,179 SQM	S$8,680/SQM	S$340,073,720	
	White	1.5	44,576 SQM	S$6,720/SQM	S$299,550,720	
	White	3.5	21,361 SQM	S$6,720/SQM	S$143,545,920	

Fig. 9. Estimated Land Betterment Charge (formerly known as Development Charge) based on 2014/2019 master plan (Source: DPA)

Development charge is a tax that is levied when planning permission is granted to carry out development projects that increase the value of the land, i.e. Rezoning to a higher value use or increasing the plot ratio. These rates are reviewed every 6 months (on 1 March or 1 September), in consultation with the Chief valuer at the Inland Revenue Authority of Singapore (IRAS). While this has been superseded by the Land Betterment Charge Act with effect from 1 August 2022, the mechanism of pre-chargeable and post-chargeable valuation and difference in the previous DC system remains similar. It should be noted that preliminary calls for Old Kallang Airport's RFP is speculated to be based on a 30-year lease arrangement, where any Land Betterment Charge will be tied to a percentage of freehold value. In other words, a term of 30 years will incur 60% of the freehold value, as illustrated in the Table Showing Leasehold Values as Percentages of Freehold Value (Figure 6).

Yet even at a 30-year lease with 60% of the freehold value, estimated at S$1.1 billion, would entail a land tax of

$660 million, excluding all construction cost, Capital Expenditures and Operational Expenditures for any viable development venture. Clearly, considerable financial pressure will inevitably cast a deep shadow on any meaningful adaptive reuse to the conserved buildings within Old Kallang Airport.

INSTRUMENTS FOR CONSERVATION

On this note, Uta Hassler makes a poignant proposal where "urban transformation could be guided by using time as a tool of measurement, rather than basing on land use rights, volumetric requirements and the price of land, as in the past" given that "the morphology of Singapore's building stock generally depends on when the land was reclaimed or prepared" and "a healthy maturation of existing building stock could be tied to the age of the land" which "might further result in differentiated land-lease regimes that set different speeds for future development cycles". [30] Time, against the age of the land, posits a contrarian perspective which fundamentally requires a paradigm shift in the way we value any form of redevelopment around conserved buildings. Where land as one of the most prized commodity, *we must therefore maximize the value creation from our land*[31]. Some lament that while Singaporeans

might benefit from the constant urban redevelopment of neighbourhoods and planning precincts, it is recognized that the general population is not necessarily "invited nor expected to contribute to the decision-making process, since their individual and collective territoriality does not seem to weigh much in the balance"[32] of urban master planning and land use.

APPENDIX 2

TABLE SHOWING LEASEHOLD VALUES AS PERCENTAGE OF FREEHOLD VALUE

Term of Years	Percentage (%) of Freehold Value	Term of Years	Percentage (%) of Freehold Value	Term of Years	Percentage (%) of Freehold Value
1	3.8	34	63.7	67	84.2
2	7.5	35	64.6	68	84.5
3	10.9	36	65.4	69	85.4
4	14.1	37	66.2	70	86.0
5	17.1	38	67.0	71	86.5
6	19.9	39	67.7	72	87.0
7	22.7	40	68.5	73	87.5
8	25.2	41	69.2	74	88.0
9	27.7	42	69.8	75	88.5
10	30.0	43	70.5	76	89.0
11	32.2	44	71.2	77	89.5
12	34.3	45	71.8	78	90.0
13	36.3	46	72.4	79	90.5
14	38.2	47	73.0	80	91.0
15	40.0	48	73.6	81	91.4
16	41.8	49	74.1	82	91.8
17	43.4	50	74.7	83	92.2
18	45.0	51	75.2	84	92.6
19	46.6	52	75.7	85	92.9
20	48.0	53	76.2	86	93.3
21	49.5	54	76.7	87	93.6
22	50.8	55	77.3	88	94.0
23	52.1	56	77.9	89	94.3
24	53.4	57	78.5	90	94.6
25	54.6	58	79.0	91	94.8
26	55.8	59	79.5	92	95.0
27	56.9	60	80.0	93	95.2
28	58.0	61	80.6	94	95.4
29	59.0	62	81.2	95	95.6
30	60.0	63	81.8	96	95.7
31	61.0	64	82.4	97	95.8
32	61.9	65	83.0	98	95.9
33	62.8	66	83.6	99	96.0

Fig. 10. Table Showing Leasehold Values as Percentages of Freehold Value. (Source: SLA/URA)

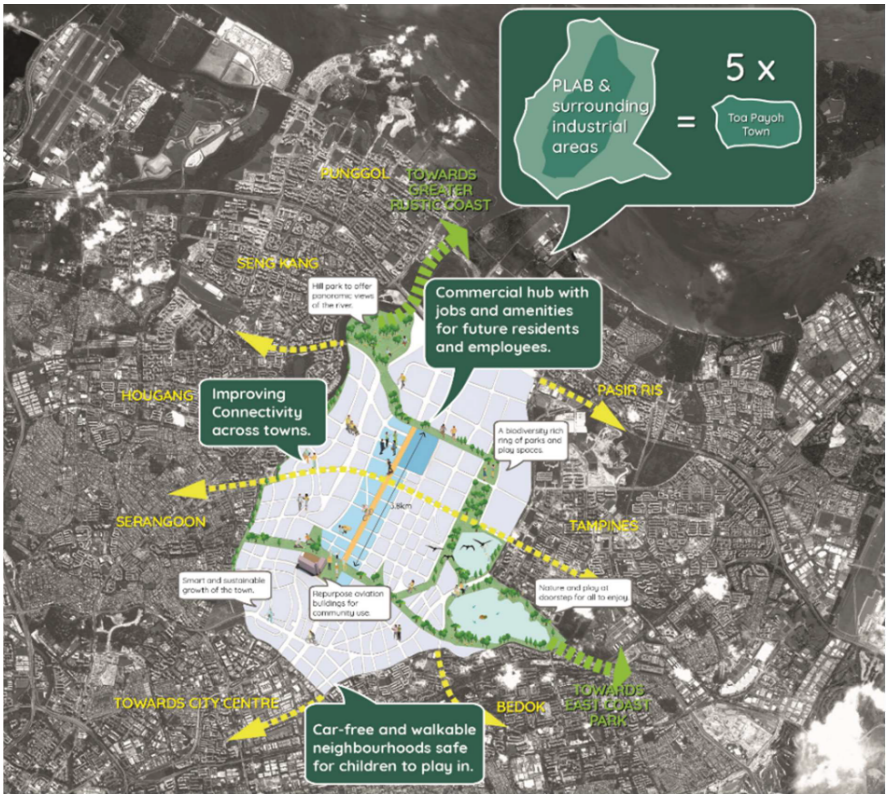


Fig. 11. New Possibilities for Paya Lebar Air Base (Source: URA)

We should acknowledge that there are selective cases where the general public and private sector gets involved in the planning process, such as the 800ha Paya Lebar Air Base where URA launched an open competition in partnership with the Singapore Institute of Architects and Singapore Institute of Planners in April 2021.[33] Through three themes of Concept Master Plan, Transforming the Runway and Rejuvenating Paya Lebar Airport, the call for ideas is in anticipation for the Royal Singapore Air Force (RSAF) relocation from 2030 onwards, which was unveiled by then PM Lee Hsien Loong in 2013. The relocation of Paya Lebar Air Base is noted to have a considerable impact on the real estate value of multiple estates across 8 surrounding precincts as building height restrictions are lifted for better land optimisation and rejuvenation. It is estimated that 150,000 new public and private homes can be accommodated in Paya Lebar from the move, an immense uplift in real estate for the north eastern side of Singapore. Understandably, it might be due to the sheer scale of Paya Lebar Air Base, at more than 100 times the size of Old Kallang Airport, that such a collaborative stance between URA and the masses was adopted. Quantifiably, while there is an element of heritage conservation for both sites, the discrepancy in economic yield and significance is evidently incommensurate. Where the value creation of land is almost overrepresented by commercial gains. While it is also understandable that such large swathes of land of Paya Lebat Air Base needs to be

carefully planned across agencies and sectors, the seemingly lack of planning for smaller plots such as Old Kallang Airport presupposes a certain biases in the quantifiable yield, which would logically be coutnerintuitive for a nation perpetually starved of land. In the case of Old Kallang Airport, which has categorically not seen any meaningful adaptive reuse or programmatic intervention for the last 15 years, the site runs into the risk of urban abeyance.

Old Kallang Airport might seem to be rather fortunate in its adaptability for various government uses since it was decommissioned in 1955. This is possibly due to the potentials of "how modernist buildings are evolving entities, constantly being used and reused, designed and modified through occupation."[34] Occupation, as defined by Hannah le Roux is premised upon the minimal and abstract forms of modern buildings with the potential to take on different social lives.[35] These were evident when it was Singapore Youth Sports Council (1955 – 1960), People's Association (1960 – 2009), Public Works Department (1960 – 1972), and the Central Manpower Base (1967 – 1972). Yet it is also noted that these programmatic uses are primarily administrative and recreation within the purview of statutory boards.

Further to this, Old Kallang Airport is also confounded by the lack of meaningful rehabilitation, where SLA is noted to have adopted the 'little and often approach'[36] or minimal interventionist in the restoration techniques, while waiting for its prospective tenant to take on a larger scope of further consolidation and fitting out works. Such means of preventive conservation "avoid the need for major interventions using conservation materials with high embodied energy, often from non-renewable resources such as petrochemicals, and to replace it with a holistic approach to the care of collections that manages the environment surrounding the collection, creating conditions that reduce the rate at which damaging change occurs"[37]. As of April 2023, the conserved structures were still undergoing their last phase of consolidation, to preserve the structural integrity while maintaining any additive but non-historic architectural finishes.

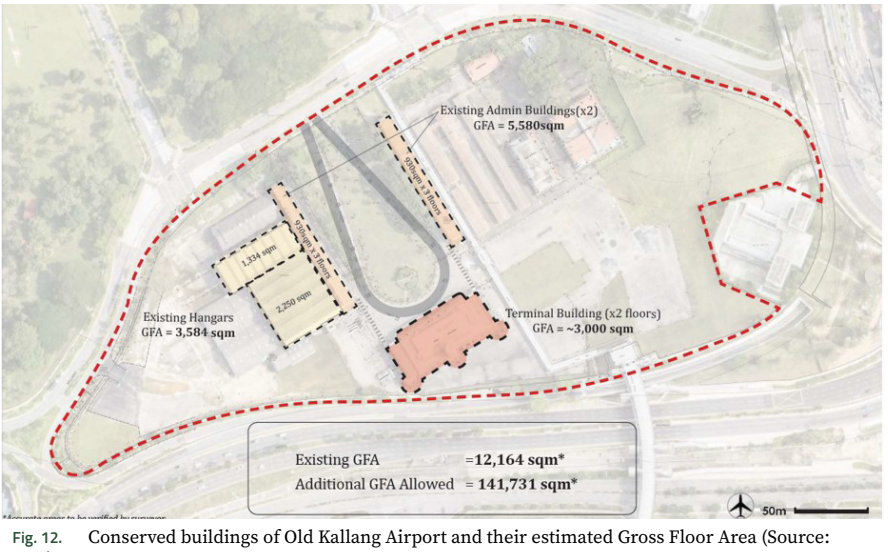
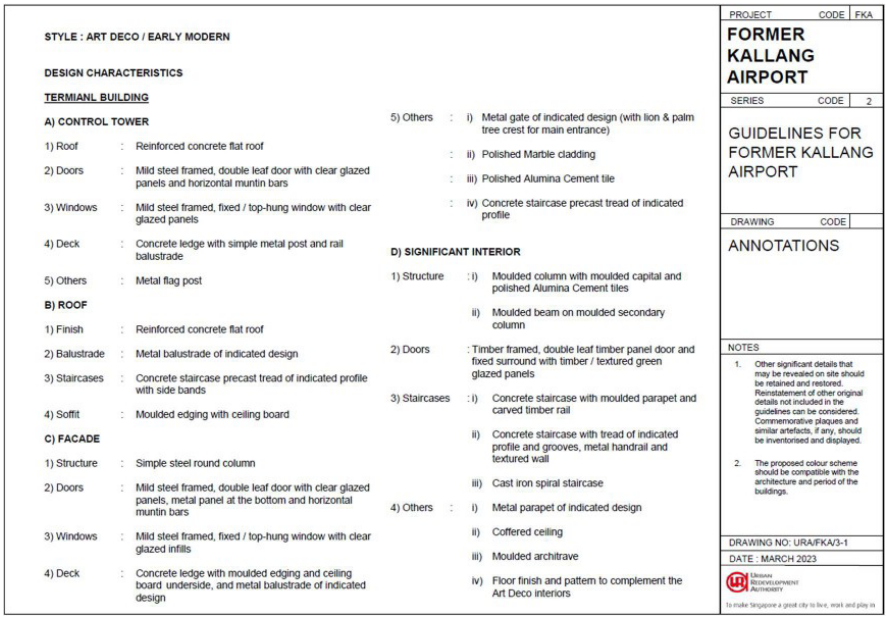


Fig. 12. Conserved buildings of Old Kallang Airport and their estimated Gross Floor Area (Source: DPA)

Fig. 13. Clockwise (L to R) - Level 2 of Terminal Building with exposed columns, Workers in the midst of repainting steel trusses of Hangar A, External wall of Terminal Building stripped of plaster exposing brickwork, External wall of Terminal Building stripped of plaster exposing block masonry, reinforced concrete structure and embedded piping. (Source: DPA)



STYLE : ART DECO / EARLY MODERN

DESIGN CHARACTERISTICS

TERMIANL BUILDING

A) CONTROL TOWER

1) Roof	:	Reinforced concrete flat roof
2) Doors	:	Mild steel framed, double leaf door with clear glazed panels and horizontal muntin bars
3) Windows	:	Mild steel framed, fixed / top-hung window with clear glazed panels
4) Deck	:	Concrete ledge with simple metal post and rail balustrade
5) Others	:	Metal flag post

B) ROOF

1) Finish	:	Reinforced concrete flat roof
2) Balustrade	:	Metal balustrade of indicated design
3) Staircases	:	Concrete staircase precast tread of indicated profile with side bands
4) Soffit	:	Moulded edging with ceiling board

C) FACADE

1) Structure	:	Simple steel round column
2) Doors	:	Mild steel framed, double leaf door with clear glazed panels, metal panel at the bottom and horizontal muntin bars
3) Windows	:	Mild steel framed, fixed / top-hung window with clear glazed infills
4) Deck	:	Concrete ledge with moulded edging and ceiling board underside, and metal balustrade of indicated design
5) Others	:	i) Metal gate of indicated design (with lion & palm tree crest for main entrance)
	:	ii) Polished Marble cladding
	:	iii) Polished Alumina Cement tile
	:	iv) Concrete staircase precast tread of indicated profile

D) SIGNIFICANT INTERIOR

1) Structure	:	i) Moulded column with moulded capital and polished Alumina Cement tiles
		ii) Moulded beam on moulded secondary column
2) Doors	:	Timber framed, double leaf timber panel door and fixed surround with timber / textured green glazed panels
3) Staircases	:	i) Concrete staircase with moulded parapet and carved timber rail
		ii) Concrete staircase with tread of indicated profile and grooves, metal handrail and textured wall
		iii) Cast iron spiral staircase
4) Others	:	i) Metal parapet of indicated design
		ii) Coffered ceiling
		iii) Moulded architrave
		iv) Floor finish and pattern to complement the Art Deco interiors

PROJECT CODE FKA

FORMER KALLANG AIRPORT

SERIES CODE 2

GUIDELINES FOR FORMER KALLANG AIRPORT

DRAWING CODE

ANNOTATIONS

NOTES

1. Other significant details that may be revealed on site should be retained and restored. Reinstatement of other original details not included in the guidelines can be considered. Commemorative plaques and similar artefacts, if any, should be inventorised and displayed.
2. The proposed colour scheme should be compatible with the architecture and period of the buildings.

DRAWING NO: URA/FKA/3-1

DATE : MARCH 2023

URBAN REDEVELOPMENT AUTHORITY

To make Singapore a great city to live, work and play in

Fig. 14. Guidelines for Former Kallang Airport, pg 14 (Source: URA)

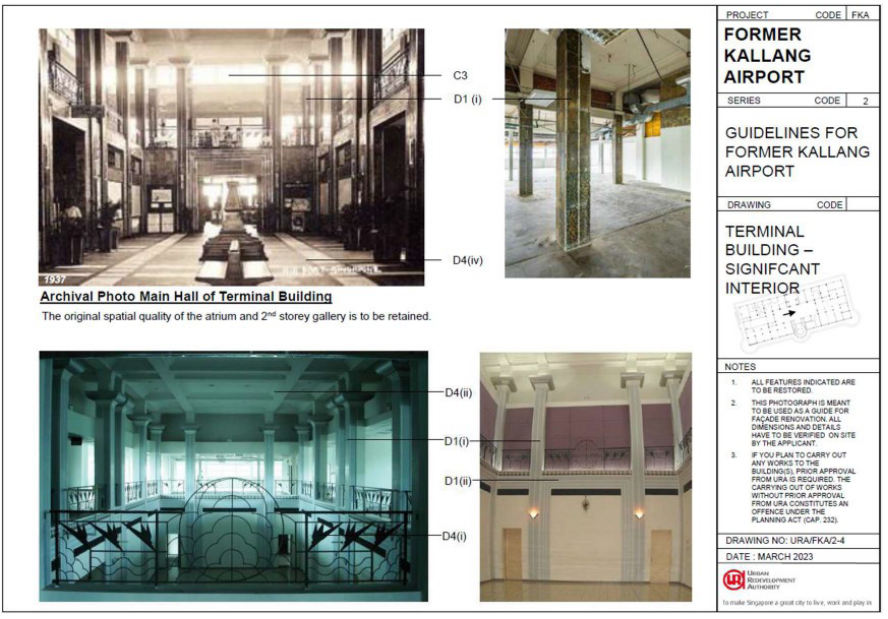


Fig. 15. Guidelines for Former Kallang Airport, pg 5 (Source: URA)

As with most conserved buildings in Singapore, URA and Preservation of Sites and Monuments (PSM) will provide Planning Parameters and Restoration Guidelines (extract in Figure 9) to key defining design characteristics based on archival photographs and any historic documents or drawings available at that moment in time. Further to the conservation of Old Kallang Airport, prominent sites within the city are also controlled by Urban Design (UD) Requirements which aim "to preserve and enhance the urban character of the different planning areas" and "ensure that developments integrate well with their surrounding urban environment"[38]. Engagement with URA has unveiled preliminary UD Guidelines which focus on the following:

Provision of Continuous Elevated Link from Sports Hub
- Allow seamless, direct connection to Stadium & Kallang MRT Station
- Provide sufficient elevated pedestrian link width & vertical circulations including lifts and stairs
- Connect to Terminal & East Building at localized areas, could be integrated with new developments

Sensitive Building Heights / Form to the conserved buildings and surrounding landmarks
- Overall building heights within OKA not to be higher than the National Stadium Dome
- Stepping down of heights towards the conserved lawn / open space & Kallang River
- Development behind conserved East block should mirror the scale of the Hangar

Pedestrian Network & Public Space
- Provide comprehensive pedestrian network
- Provide public spaces

Open Space as vista corridor
- Keep the conserved lawn (open space) for public use
- Preserve view corridor between MRT to Stadium Dome

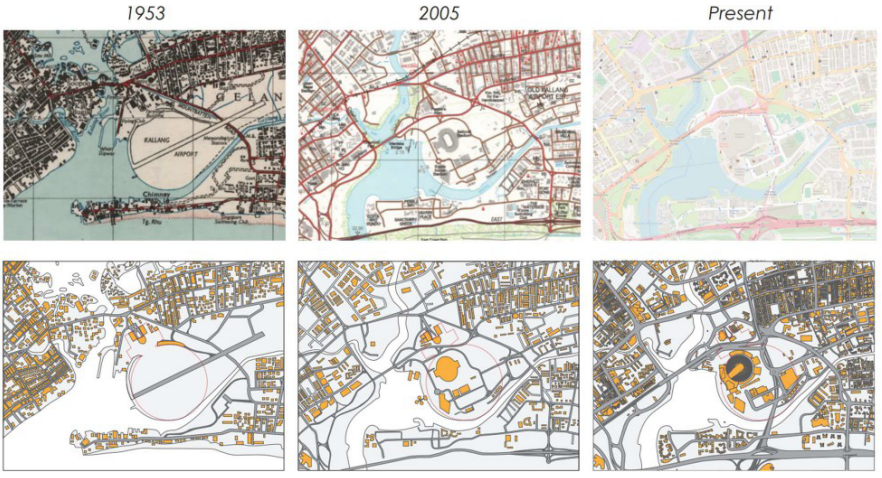


Fig. 16. Mapping of urban morphology within 1km from Old Kallang Airport (Source: DPA)

While these UD guidelines are only indicative and subject to further study, its respectful and sensitive approach to the interventions around the conserved buildings is highly commendable. Nonetheless, it can also be said that such open-ended guidelines might either enable creative interpretations or inhibit authentic conservation processes, both subject to the rigour of the public and private sector influences. In considering urban design and conservation within the ambit of urban planning, it would be apt to quote Lichfield on this note; "land planning aims at a reduction in cost both private and social and apportionment between private and social cost which is in social conscience"[39].

CONCLUSION

> *Land, like the water we drink, like the air we breathe, is a commodity that is the right of all men. In cities where it is apparent that there is a crisis in population growth and therefore a desperate need to apportion the use of land in a planned fashion, can laissez faire ownership of land continue?*[40]

Site, and by extension, space, is encountered as intrinsic to the fluid formation of group, as well as individual identities.[41] This paper has approached the site from two distinct prongs and scales, through the instruments of development and conservation, to discuss the role of the group which has thus far encompassed public agencies and private developers, with the clear absence of civil society and the general public. In the case of Old Kallang Airport, the interregnum of social memories is evident, where the site's urban morphology has distinctly changed within recent decades. While Chee astutely notes that "history is conveyed as an overarching concept of the space concerned, and disseminated as a narrative that is as easily appropriated as it is slippery and intangible. For example, architectural studies of

ethnic enclaves, state monuments and landmark sites frequently espouse the use of the aerial perspective as a means for getting into unfamiliar terrain."[42] Yet the urban scale for Old Kallang Airport necessitates a more macro perspective, observed through the social, political and economic lens, to formulate the future of this site/space.

As SLA/URA's RSVP closes its call within this year, the future of Old Kallang Airport remains uncertain, despite the fact that most of the conserved buildings covers close to 40% of the site. Henderson critically observes, "analysis of the Singapore case confirms that the significance allotted to heritage is not uniform or fixed, but diverse and fluid. It varies with individuals and the groups to which they belong, organisations and official stakeholders"[43]. Socio-cultural and economic meanings attributed to built heritage conservation differ from place to place (Rypkema, 2012), yet gentrification, a phenomenon that has in recent years been viewed as negative and problematic (Arkaraprasertkul, 2018) remains prevalent in most conserved sites and buildings which have undergone some level of rehabilitation or adaptive reuse. Yet it is almost certain that for Old Kallang Airport, gentrification is the only means to ameliorate the pressures of development and conservation. Perhaps what is also questionable is the relationship between urban density and gentrification, which is not always quantifiable or qualifiable within confines of the instruments of development and conservation. Our preliminary studies suggest that the land value and developmental right for intensification predicated in the master plan might be met with considerable inertia from private sector developers who are unable to balance their developmental cost and yield based on the current instruments of development and conservation. Therein, further entrenching the predicament and urban vacuum that Old Kallang Airport has been in for the past decades. Old Kallang Airport calls for a critical re-evaluation to the way we approach urban density around heritage sites, through a keen understanding of history, land and value.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author.

ENDNOTES

1. "Singapore's Forgotten Age of Innovation," Channel NewsAsia, January 10, 2017, http://www.channelnewsasia.com/news/ singapore/singapore-s-forgotten-age-of-innovation-7555728.
2. Adeline Foo, "The 'lancing' girls from a glitzy world," The Straits Times, April 30, 2016, http://www.straitstimes.com/ opinion/the- lancing-girls-from-a-glitzy-world.
3. Singapore Land Authority. (2016, May 19) Total Land Area of Singapore. Retrieved from Data.gov.sg website
4. Uta Hassler, "Development Dynamics and Constructed Land: Singapore as a Model for Purposeful Deceleration?" in *Constructed Land: Singapore 1924-2012*. (Singapore: ETH Zurich DArch and Future Cities Laboratory, 2014), p.14.
5. Nine million dollar airport opens. (1937, June 13). Sunday Tribune (Singapore), p.1: New airport is on former swamp site. (1937, June 12). The Straits Times, p.10: Key position in sea and air communications. (1937, June 14). The Straits Times, p.18.
6. Lim Tin Seng, Land from Sea: Singapore's Reclamation Story. BiblioAsia Vol 13. Issue 01 (Apr - Jun 2017). (Singapore: National Library Board), p.18.
7. Collection of National Museum of Singapore, 1996-00396-011
8. Collection of Ministry of Information and the Arts Collection, courtesy of National Archives of Singapore, 19980000824 - 0004
9. Aerial photographs by the British Royal Air Force between 1940 to 1970s, from a collection held by the

National Archives of Singapore. Crown copyright. 20120000764 - 0042
10. Peter Hutton, *Wings Over Singapore: The Story of Singapore Changi Airport* (Singapore: MPH Magazines, 1981), pp 23-25. Department of Civil Aviation and Archives & Oral History Department Singapore, *Singapore Fly-Past: A Pictorial Review of Civil Aviation in Singapore, 1911–1981* (Singapore: MPH Publishers, 1982), p.53.
11. Kallang is now no. 2 airport in the Far East. (1950, April 14). *The Straits Times*, p. 7. Old Kallang Airport building restored. (1994, January 13). *The Straits Times*, p.2.
12. Public Works Department Singapore, *Annual Report 1955*, p.34.
13. https://www.ura.gov.sg/Conservation-Portal/Explore/History?bldgid=FKA
14. Langston, C., Wong F., Hui E., & Shen L. Y., Strategic assessment of adaptive reuse opportunities in Hong Kong. Building and Environment, 43, 2008. pp.1709-1718.
15. Western, J., Undoing the colonial city? The Geographical Review, 75(3), 1985. pp.335-337.
16. https://www.sla.gov.sg/about-sla/vision-mission-values
17. The Straits Times, 15 May 2019. https://www.straitstimes.com/singapore/public-encouraged-to-inject-new-ideas-into-old-buildings-under- ura-sla-reinvention-scheme
18. Ebbe, K., Infrastructure and heritage conservation: Opportunities for urban revitalization and economic development in Directions in Urban Development. (World Bank, Urban Development Unit, 2009).
19. https://www.sla.gov.sg/articles/press-releases/2019/rsvp-reinventing-spaces-into-vibrant-places
20. Urban Redevelopment Authority, https://www.ura.gov.sg/maps/#
21. Abrams, C., Kobe, S. & Konigsberg, O., Growth and Urban Renewal in Singapore. In Habitat Internation 5(1/2), 1980 pp. 85-127.
22. Urban Redevelopment: From Urban to Global City. (Singapore: Centre for Liveable Cities, 2016). p.11.
23. CLC, Ibid. p11.
24. Singapore Parliamentary Debates. (1973, July 26). Minister for Law and National Development, E W. Barker. Vol. 32, Col. 1204.
25. SPUR to Progress. (1971, March 6). The Straits Times, p.14.
26. Airport Expansion Plans: SPUR to answer govt arguments. (1971, March 1). The Straits Times, p19.
27. Sam Jacob, Resurrecting the Dodo: The Death and Life of Urban Planning in *49 CITIES, Ed. Eugenia Bell (3rd Ed)*. (New York: Inventory Press, 2015). p.123.
28. Urban Redevelopment: From Urban to Global City, 2016. Centre for Liveable Cities, Ministry of National Development, Singapore. p53.
29. Singapore Parliamentary Debates (1964, November 2). Minister for National Development, Lim Kim San. Vol. 23. Col. 146.
30. Uta Hassler, 2020. Development dynamics and constructed land: Singapore as a model for a purposeful deceleration? In Singapore's Building Stock: Approaches to a multi-scale documentation and analysis of transformations. (Germany: ETH Zurich, 2020). p.26.
31. Ministry of Trade and Industry Singapore, New Challenges, Fresh Goals. Towards a Dynamic Global City. (Singapore, 2003)
32. Rodolphe De Koninck, 2017. pp 133.
33. The Straits Times, 15th April 2021. https://www.straitstimes.com/singapore/get-to-redesign-paya-lebar-air-base-as-a-town-of-the-future- in-ura-competition
34. Chang Jiat Hwee, Justin Zhuang and Darren Soh, Everyday Modernism: Architecture & Society in Singapore. (Singapore: NUS Press, 2023), p.73.
35. Hannah le Roux, "Lived Modernism: When Architecture Transforms" (PhD thesis, Leuven, Katholieke Universiteit Leuven, 2014).
36. Morris, W., 'The Principles of the Society (for the Protection of Ancient Buildings) as set forth upon its Foundation', The Builder 35 (25 August 1877).
37. Staniforth, S., Slow Conservation. Studies in Conservation 55(2). (United Kingdom: International Institute for Conservation of Historic and Artistic Works, 2010). P.75.
38. https://www.ura.gov.sg/Corporate/Guidelines/Development-Control/Non-Residential/Commercial/UD , accessed May 1, 2023.
39. Lichfield, N., Evaluation methodology of urban and regional plans: a review. Regional Studies, 4(2), 1970. pp151-165.
40. SPUR, 1967. The Future of Asian Cities. SPUR: 65-67. Eurasia Press, Singapore. p11.
41. Lilian Chee, Site, Situation, Spectator: Encountering History through Site-Responsive Practices in *Future Asian Space: Projecting the Urban Space of New East Asia. Ed. Limin Hee, Davisi Boontharm & Erwin Viray.* (Singapore: NUS Press, 2012), p155.
42. Ibid, p141.
43. Henderson C. Joan, Built Heritage Conservation, Urban Development, and Tourism: Singapore in the

21st Century in Tourism, Culture & Communication, Vol. 11(Singapore, Nanyang Business School, 2012) pp. 137-147.

IMAGE SOURCES

Figure 1 DP Architects Pte Ltd
Figure 2 DP Architects Pte Ltd
Figure 3 Urban Redevelopment Authority [https://www.ura.gov.sg/maps/].
Figure 4 DP Architects Pte Ltd
Figure 5 DP Architects Pte Ltd
Figure 6 Singapore Land Authority [https://www.sla.gov.sg/articles/press-releases/2023/revision-of-land-betterment-charge-rates-from-1-march-2023].
Figure 7 Urban Redevelopment Authority
Figure 8 DP Architects Pte Ltd
Figure 9 Urban Redevelopment Authority
Figure 10 Urban Redevelopment Authority
Figure 11 DP Architects Pte Ltd
Image 1 National Museum of Singapore [1996-00396-011].
Image 2 Ministry of Information and the Arts Collection [19980000824-0004].
Image 3 National Archives of Singapore [20120000764-0042].
Image 4 The Straits Times [https://www.straitstimes.com/singapore/public-encouraged-to-inject-new-ideas-into- old-buildings-under-ura-sla-reinvention-scheme].
Images 5 - 8 Urban Redevelopment Authority [https://www.ura.gov.sg/maps/].
Images 9 – 12 DP Architects Pte Ltd