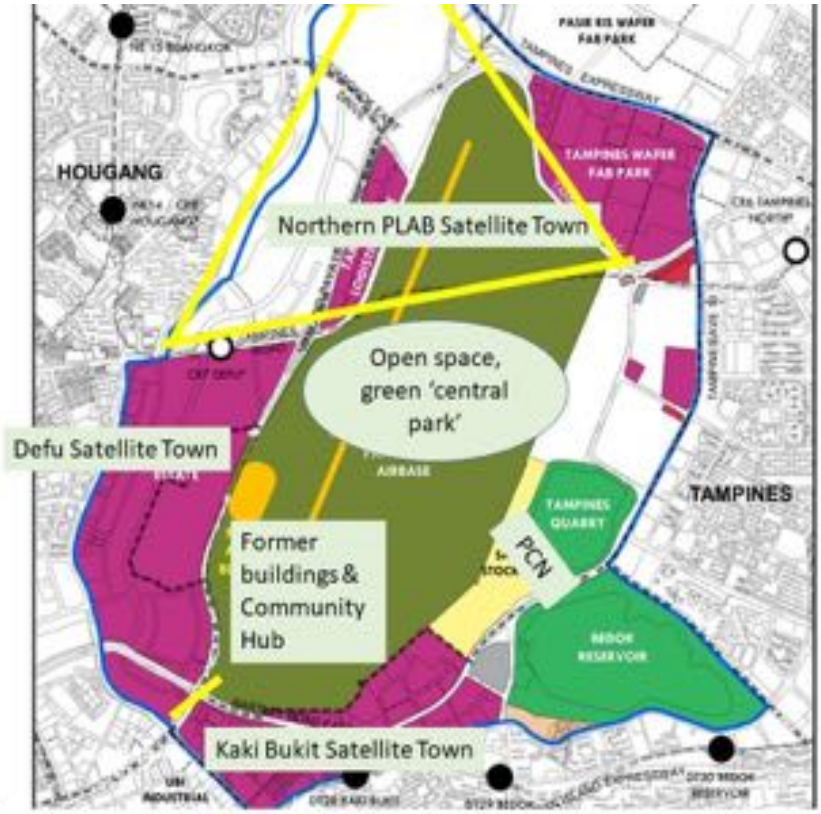


Figure 1.0 Concept Plan of Paya Lebar New Town

Vision and Rationale

Our vision for Paya Lebar Air Base (PLAB) consists of a central park, surrounded by several satellite towns. The central park capitalizes on the existing open space of the airfield, together with the former airport buildings as public spaces. A community hub will be a key fixture to the identity of Paya Lebar New Town, located next to the central park. Nowhere in Singapore do we have an open piece of land of this size, with the exception of military airbases. The use of land space of this size for a park is unprecedented in Singapore, hence allowing for a new and innovative approach towards Singapore's land use.

This will also be Singapore's first town to utilise a fully underground parking system, and transport network. As we progress towards a car-lite and sustainable society, it will be the first town to have a fleet of electric autonomous vehicles to serve as public transport. In addition, car sharing will be encouraged by charging stations implemented across the town, in the underground parking system. With minimal roads on the surface for the public transport to function, we envision private transport to be underground, via tunnels. This addresses the issue of land constraints in Singapore and drives Singapore's growth towards a sustainable city.

Description and Explanation

1) *Cultural Site Preservation*

Figure 1.1 Old Buildings, Runway, Aircrafts, and Hangers are preserved

Cultural preservation can be said to be important as it plays a key role in providing a sense of unique national identity (National Library Board, 2020). It allows us to preserve our common historical linkages through shared spaces, iconic landmarks, and traditions (OurSGHeritage, 2020).

It is important for us to thus preserve significant landmarks or buildings that are a part of Singapore's heritage and character. In addition, we understand that there is a need to balance conservation and rejuvenation, especially in the context of Singapore where there is a shortage of spaces (Wong, 2018).

Hence, we proposed a dual envelope system where concept proposals and infrastructural needs can be further integrated together. As shown in Figure 1.1, former sections of airport terminals, aircraft and runway and being preserved as a museum for the community to learn and acquire more information and knowledge about the former airbase. Hangers and facilities are further reconstructed to provide event spaces for concerts and exhibitions.

2) *Use of Green Spaces*

Figure 2.1

Figure 2.2

Figure 2: Common green spaces

Green spaces are an important part of Singapore's urban landscape. They are key to the effects of global warming on our future generation. It is also a step towards the conservation and preservation of our biodiversity culture. It allows and fosters the creation of common public spaces that enables the community to integrate and communicate (Singapore Nature Society, 2013).

Thus the use of green spaces is very apparent in our design through the retention of a portion of the PLAB airfield, connected to Bedok Reservoir, with trees, parks, and common facilities. In line with the idea of sustainability, the use of environmentally-friendly forms of transportation are encouraged. Pavements are clearly demarcated for cyclists and pedestrian usage. Traditional road networks are made smaller and deprioritized for private road users to encourage a better mix of human traffic.

For the public to actively use these green spaces, accessibility will be a key factor. The park connector network coming from the Eastern Coastal Loop (Tampines Park Connector/Bedok Reservoir Park) will be extended and integrated into the pathways of the new community hub around the old airport, and connect with the Central Urban Loop (Hougang Avenue 3 Park Connector). This will allow for greater accessibility for PCN users coming from the central, eastern or northeastern regions of Singapore. An MRT line (in planning) is also suggested to provide even greater accessibility for all, in tandem with other forms of public and personal transport.

3) Integrated Commercial Complex

Figure 3.1: Sports Complex

Figure 3.2 Lifestyle Hub

Figure 3: Creation of a New Integrated Commercial Complex

By initiating an integrated complex where facilities usage is being interlinked, it encourages a more efficient use of land. This allows the chance for different agencies to better coordinate and organise different forms of programs for residents (Lee, 2018).

We propose to create an integrated complex where a wide variety of facilities can be found. Taking into the rich aviation history of the site, there would be a public library with a strong focus on aviation. Other facilities such as polyclinics, community centers, and shopping mall retailers can also be found under the same roof. Similarly, the sports hub proposed is interlinked with the lifestyle hub. The sports hub would be highly comprehensive and include swimming pools, tennis courts and football fields, among other sports facilities. This allows one-stop services for residents to bring about greater convenience. At the same time, agencies can be better integrated in terms of administration and providing services to residents.

This will thus free up some of the landscape for other commercial and residential purposes.

4) *Mixed Residential and Commercial Space development*

Figure 4.1: Condominiums

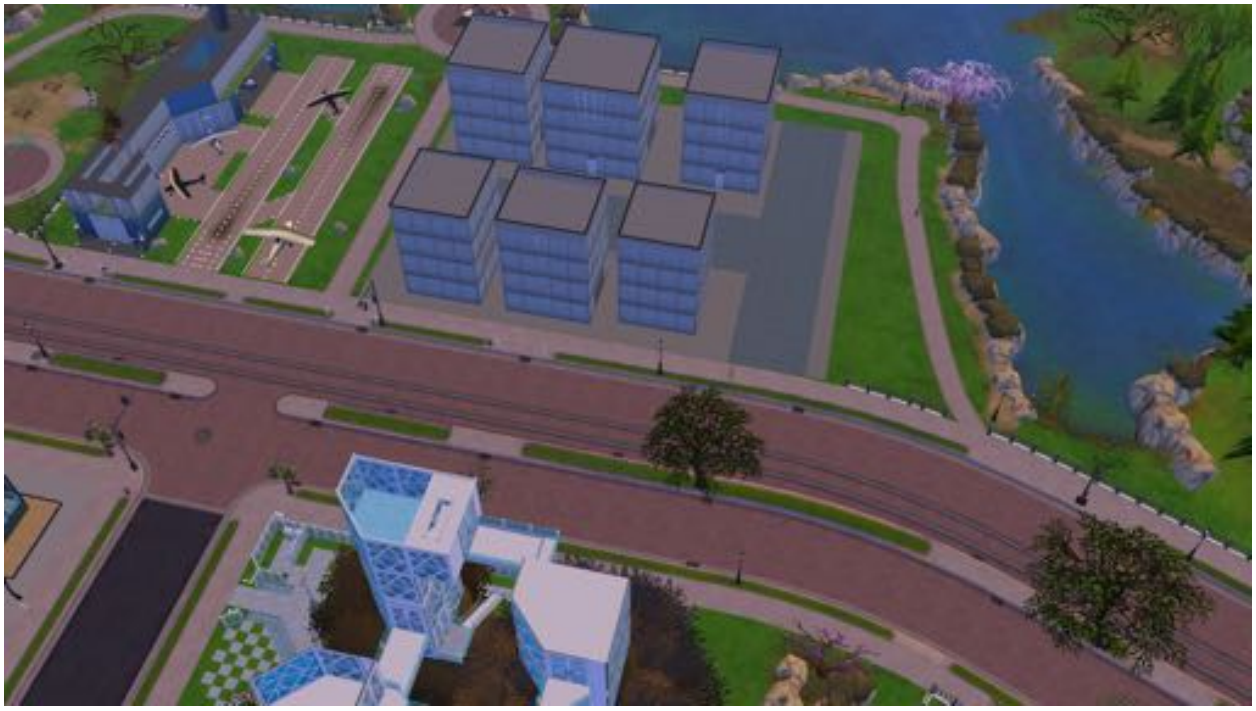


Figure 4.2: Public Housing

Figure 4.3: Satellite towns

We propose the development of three satellite towns, located at Defu, Kaki Bukit, and the northern part of PLAB. Defu and Kaki Bukit are selected due to the availability of MRT stations, and its proximity to the former airport buildings of PLAB. This is in line with Singapore's approach to developing higher densities in a transit-oriented way to encourage people to use public transport. Residents in these towns will have access to the larger community hub in the ground of the former PLAB.

Although there are currently no planned MRT stations in the northern part of PLAB, we propose that adjustments can be made to current plans. A new, currently unnamed line has been identified for feasibility study and may form part of the rail network by 2040. As it is projected to serve various towns including Sengkang, we suggest that the authorities can consider including a station in the northern part of PLAB. Such a new station would make transport more convenient for residents who live in the northern part of PLAB.

For the residential areas, we propose that there can be various forms of housing in the same area. Other than public housing such as Housing and Development Board flats and private housing such as condominiums, we also suggest that there can be integrated housing. Integrated housing would have both commercial and residential spaces in the same building, with commercial areas such as shopping malls on the lower floors and residential areas on the upper floors. The provision of a wider variety of housing can better cater to the needs of different individuals and families. Having such housing in relatively close proximity to each other can also encourage social mixing, as people of a particular socioeconomic status may be found in a greater proportion in the same type of housing.

5) Transportation System

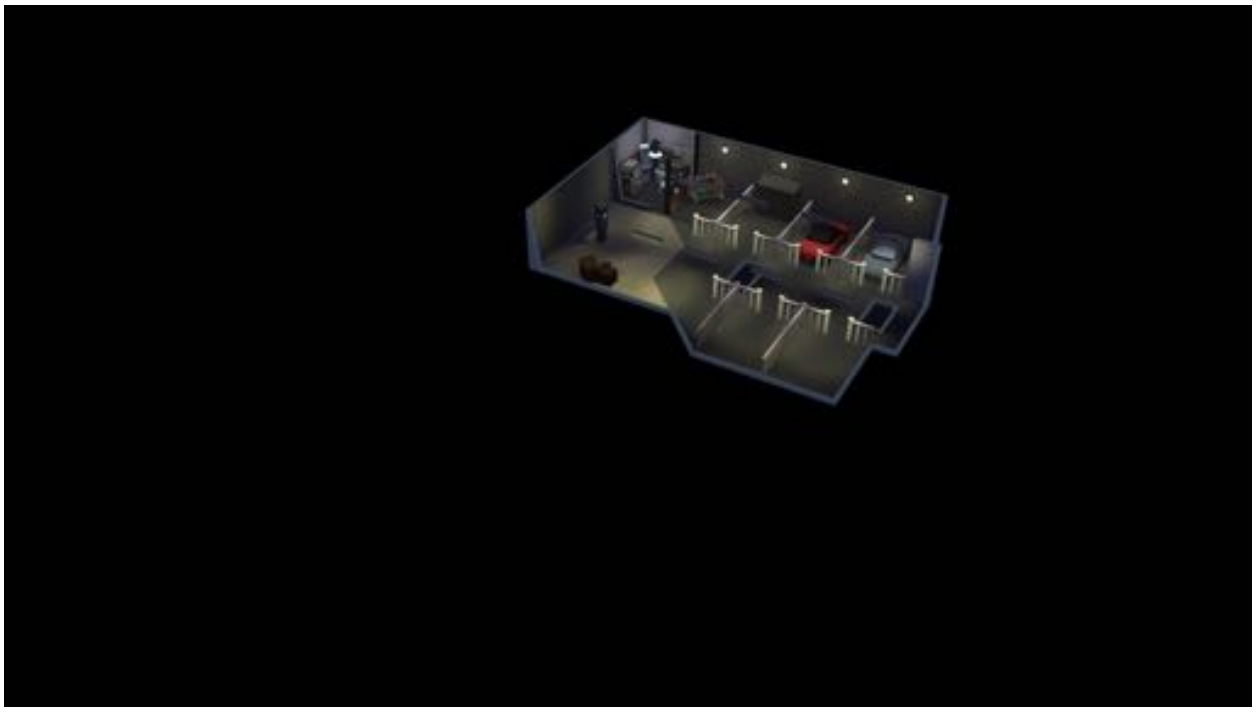


Figure 5.1 Underground Car Park System

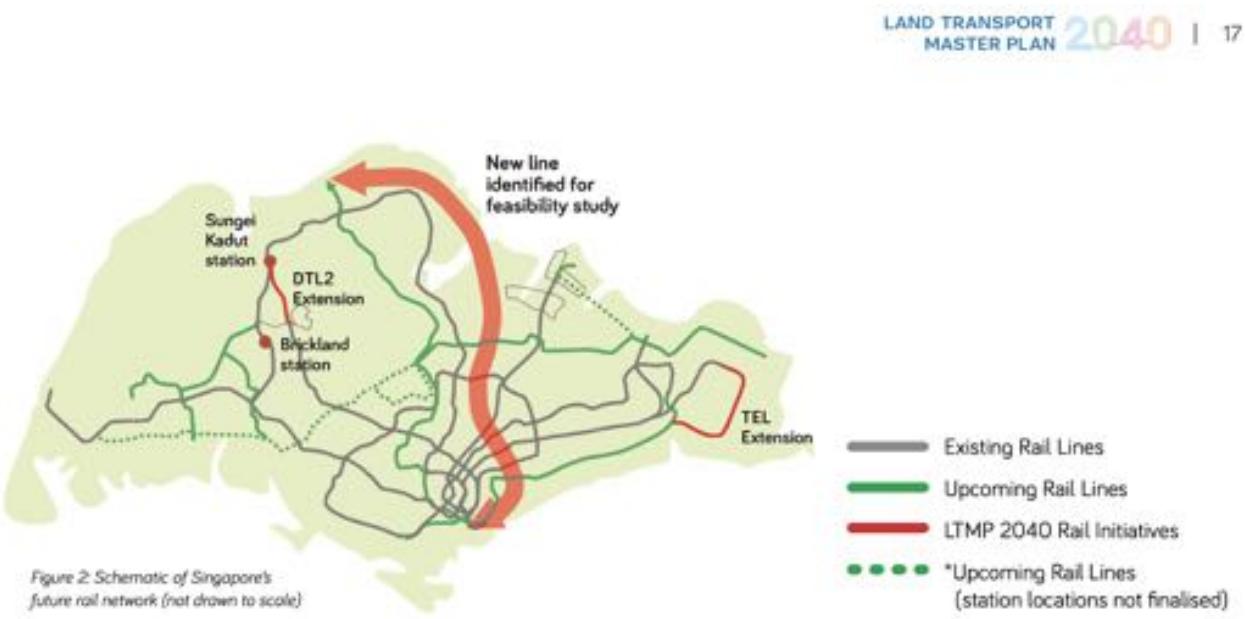


Figure 5.2 LTA's visualization of a possible future line

We envision a town so well-connected by efficient and timely public transport such that private means of transportation would be considered inferior. This allows for a downsize in traditional road networks and larger green spaces for all.

For public transportation, electric buses incorporating technologies such as on-demand scheduling are to be implemented alongside the creation of Mass Rapid Transit (MRT) stations. Should the required technology be finally developed by 2030 or beyond, optimally, these buses will be self-driving and fast self-charging, where it can fuel up during a stop or during non-peak hours.

Additionally, we propose for an additional station to be built between Defu and Tampines North stations on the Cross Island Line, and for a future MRT line (currently under consideration by LTA) to cut through the Paya Lebar New Town region to provide greater convenience and accessibility to all those that live or access the area. Good rail transport accessibility, along with bus transport, is paramount to ensuring that the public is incentivized to use public transport.

However, we cannot ignore that private motor transport cannot be totally eliminated. With the large amount of commercial and residential facilities being built, at least some form of car park space is needed. In order to conserve surface land, these car parks will only be built underground. Furthermore, in line with the Government's goal of phasing out petrol and diesel motor vehicles by 2040, only sustainable electric vehicles will be allowed for parking. Car-sharing services will have priority for these lots and every lot will include car-charging infrastructure. This will allow Paya Lebar New Town to achieve a car-lite vision and experience lower levels of noise and air pollution.

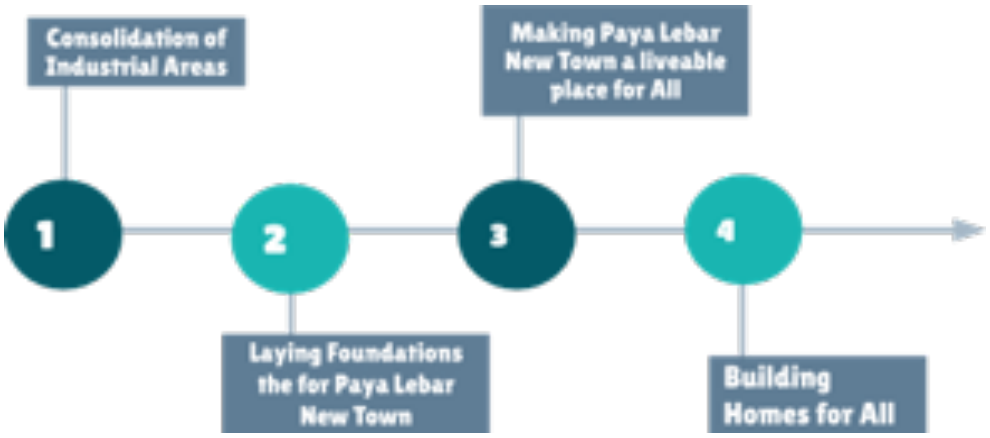
For inter-town motor vehicle transportation, such as for logistics, a network of underground road tunnels will be built to link Paya Lebar New Town with other parts of the country. A possible link to another underground expressway, the Kallang-Paya Lebar Expressway (KPE) is possible, along with connections to other above-ground expressways. This will ensure that the Paya Lebar New Town maintains good connectivity with the rest of the nation such that enterprises will not feel that they are at a loss by choosing to operate in this region. Due to land constraints in Singapore, it is vital to explore underground space and Paya Lebar New Town provides an excellent opportunity to test this out.

*Figure 5.2 Bus - Aero-Shape, possible attraction[1]

Kaki Bukit and Defu will serve as 'hubs' for their respective satellite towns. While these MRT stations serve as a 'hub' for a more comprehensive transport network, autonomous ride-sharing vehicles will ply the roads within the town for point-to-point access that might not be served by underground transport. To complement the provision of public transport, the town will be highly walkable and promotes cycling and ride-sharing as an alternative. Roads will be kept to a minimum and mainly for the function of the public transport system.

[1] Proposed wings, wheels, and tails are not drawn to scale. More for aesthetic purposes. :)

Phases



Phase 1: "Consolidation of Industrial Areas"

The first phase will begin in 2026, when Paya Lebar Air Base is still occupied. Construction can commence on the empty plots of land that are around the north of the airbase, adjacent to Hougang. In addition, discussions can begin to take place with the industrial tenants. They will be informed that the land that they are currently on has been designated as a residential area so that they have time to wind down their operations and eventually move out of the area within a certain timeframe. In particular, the tenants that will be informed include those in the Defu and Kaki Bukit industrial estates, as well as those in the Tampines log park.

Phase 2: "Laying the foundation for Paya Lebar New Town"

Next, the second phase begins in 2030, when Paya Lebar Air Base is vacated. Considering the extensive underground structures that we have proposed, we will begin by commencing the underground construction and work on the structures above ground from Phase 3 onwards. This is also taking into account that it is easier to commence work underground when there are less structures on the ground above and that working on the development of structures aboveground and underground simultaneously may compromise the stability and safety of the construction. At the same time, the existing airport buildings will be retained and refurbished, where necessary, before they are opened to the public.

Phase 3: "Making Paya Lebar New Town a Liveable Place for All"

In Phase 3, the construction of residential units located within the base for "Northern PLAB Satellite Town" will begin after the foundation for the underground work is completed. With the foundation work completed, the park will be opened while the portion of the runway undergoes construction. Park connector linking the park to the Bedok Reservoir will be completed in this phase.

Phase 4: "Building Homes for All"

Given that the industrial tenants have been given advance notice and have moved out, the Kaki Bukit and Defu areas will be demolished and redeveloped as new towns. Each serving as its own satellite town, they will have their own mix of residential, commercial and mixed-use facilities. Town facilities will be mainly built around their town centers, located near their respective MRT stations.

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