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PLANNING THE FUTURE OF AVIATION

In its bid to stay ahead of competition today, a long-term strategic plan conceptualising aviation needs for the next 15 years guides Singapore’s airport master planners. Key to planning the effective use of land for developing Singapore into a global aviation hub is the web of close cooperation woven among several agencies from both the government and private sectors.

As Singapore’s gateway to the world, Changi Airport serves millions of passengers annually and houses dozens of organisations that ensure smooth operations at the facility. With limited space available for expansion in and around Changi Airport, planners tend to face the issue of competing uses and the need to prioritise the requests for land to ensure greatest operational efficiency. “You also have to ensure that positioning facilities in certain locations will not get in the way of future development partway through their lease and a sound master plan can help to prevent that,” noted Lim Siew Lian, Senior Manager, Airport Planning, Changi Airport Group (CAG).

Sharing responsibility with the Civil Aviation Authority of Singapore (CAAS) for the master planning of Changi Airport, CAG begins its master planning process by evaluating the airport’s capacity needs. Air traffic projections for passenger, aircraft and cargo movements are vital to helping planners determine whether expansion or upgrading of existing facilities is necessary and when to do so to ensure that Singapore can adequately support greater demand in a timely fashion. This has been a key ingredient in the nation’s success as an air hub thus far. “More passengers coming through Changi Airport will lead to a corresponding increase in demand for capacity-related facilities and resources, such as the number of belts or fuel farms, and we need to ensure we can cope,” explained Lim.



Baggage handlers loading a luggage belt at Changi Airport's Terminal 3...



...while passengers wait for their bags in the Arrivals hall.

Equally important is feedback from Changi Airport's users, who actively inform CAG of the space they require. They range from airlines to maintenance service organisations to immigration and security agencies. "They're the best people to tell us what they need as they're using the space daily for their operations," Lim pointed out. "For example, the

maintenance companies may tell us that they need ten more hangars of a certain size because they want to service A380 superjumbos. We'll work with them to see how we can make that happen.”

At the same time, the proposals also need to factor in international guidelines. Those issued by the International Air Transport Association govern the way the terminals are designed, such as how much space to provide for each passenger and recommended walking distance. Regulations from the International Civil Aviation Organization, meanwhile, dictate the overall design of the airfield, such as the number of and how far apart facilities like the apron and parking stands should be.

ENGAGING IMPORTANT STAKEHOLDERS

The efforts of CAG's master planners culminate in concept proposals for infrastructural expansion that are delivered to CAAS for approval. As the regulatory body, CAAS reviews CAG's proposals to ensure they comply with international aviation regulations and are compatible with national development goals.

In charting the Urban Redevelopment Authority (URA) course for aviation in Singapore, CAAS engages non-aviation government agencies and organisations, like URA and the Singapore Economic Development Board (EDB), that assist by providing a strategic viewpoint at the national level. When existing space is deemed insufficient to meet future demand, CAAS communicates with URA and the Singapore Land Authority to identify suitable plots of land to support the airport's expansion. CAAS and URA also cooperate to ensure sufficient infrastructure to support Changi Airport's growth and to address the effect of the airport's development on surrounding areas. EDB then plays a crucial role by providing projections of ancillary needs to support aviation, helping to identify opportunities abroad that the industry can or should prepare to tap into. Leong Kwok Kin, Senior Manager, Land Use and Master Planning, CAAS, noted: “EDB's projections help complete the master plan as CAAS does not plan only for the airport core function, it also plans for the aviation industry as a whole.”

A case in point, economic projections for growth in the air cargo and logistics industry and recognition of Singapore's strength in the sector led to development of the upcoming Air Cargo Express Hub. The specialised cargo and logistics infrastructure will facilitate unrestricted flow of goods to and from aircraft and allow air express companies to provide faster turnaround, which is core to their business. Land was purchased in the Free Trade Zone specifically for the development that will further strengthen Singapore as an air cargo hub.

Through an interactive process of airport committee consultations with key stakeholders, “comments are taken on board by the planners who refine the proposals before these are put through another round of consultations,” Leong elaborated. This process is important to ensure that plans for expansion or upgrading will match stakeholders' needs and the limited land is used optimally to bolster Singapore's growth as a global air hub.

EXERCISING FORESIGHT

Relying on traffic and demand forecasts to make informed projections on future developments for Changi Airport, Lim said: "Assumptions are made to the best of our abilities and rooted in current knowledge like Singapore's latest economic and tourism statistics. We also build in flexibilities or buffers in case demand grows faster than expected." Longer term strategic concept plans have been crucial not only in sustaining the country's vibrant aviation industry, but also in building Singapore's reputation as a global aviation hub.