

**For Information
on 11 December 2023**

Legislative Council Panel on Economic Development
**Update on the Development of the Three-Runway System
at the Hong Kong International Airport**

Purpose

This paper provides an update on the developments of the Three-Runway System (“3RS”) project since last reported to this Panel in July 2023 (LC Paper No. CB(4)662/2023(04)).

Background

2. The construction of the 3RS at the Hong Kong International Airport (“HKIA”) comprises different components, including –

- (a) the formation of about 650 hectares of land; construction of the Third Runway¹, taxiways and aprons;
- (b) expansion of the Terminal 2 (“T2”);
- (c) construction of the T2 Concourse (“T2C”);
- (d) installation of a new automated people mover (“APM”) system and a high-speed baggage handling system (“BHS”);
- (e) reconfiguration of the Centre Runway²; and
- (f) construction of airport support infrastructure, utilities and facilities (scope of the 3RS project at **Annex**).

3. This paper presents updates on the overall progress of the 3RS project as well as its individual key aspects: (a) construction; (b) preparatory work for the operation of the 3RS; (c) labour supply; (d) construction safety; (e) environment-related issues; and (f) financial arrangement.

¹ The Third Runway was designated as the North Runway in February 2022.

² The former North Runway was re-designated as the Centre Runway in December 2021.

Progress Update on 3RS Project

(a) Construction

4. Despite inclement weather, especially the typhoons and extended periods of black rainstorm in early September and October 2023, with proper precautionary and contingency measures implemented, works on site could in general resume soon after the adverse weather conditions subsided.

5. With the contractors' active implementation of various works-enhancement measures, such as deploying additional resources and working extended hours, prioritising the completion of critical activities for follow-on works construction, streamlining design, approval process and working methodology, etc., construction works for all remaining project components have been moving forward steadily. Since last reported, the following achievements have been made with the substantial completion of:

- (a) the extension of the drainage culvert system from the existing airport island;
- (b) the majority of pavement construction of the Centre Runway;
- (c) the concrete structure of the expanded T2;
- (d) the sections of tunnel structure for the APM system and BHS on the existing airport island, and those leading to T2C on the reclaimed land; and
- (e) the substructure of the central node and main concourse areas of T2C.

(i) *Airfield Works*

6. The construction of ancillary buildings, cross-field taxiways, apron and underground utilities continues on multiple fronts, with the extension of the drainage culvert system from the existing airport island substantially completed and various sections of the new aviation fuel pipelines already laid. The construction of the two vehicular tunnels underpassing the Centre Runway continue to proceed at full steam. Save for the areas of the two vehicular tunnels and various sections of the taxiways, the runway pavement begins to take shape over the entire Centre Runway. Installation of the airfield ground lighting system follows closely.

(ii) Building and Infrastructure Works

7. Regarding the expanded T2 and the associated ground transportation centre, the concrete structure is substantially completed. The roof construction and installation of supporting columns underneath are picking up pace. Meanwhile, fit-out and building services works progress at full steam within the completed building structure. Installation of façade components is ongoing with the southern face of the expanded T2 substantially completed. Furthermore, the construction of new viaducts connecting the expanded T2 with the surrounding road network continue in parallel with the laying of external underground utilities.

8. For T2C, the substructure construction is substantially completed at the central node and main concourse areas, while that at the south and north wing areas continue to progress. The construction of superstructure at the central node area continues in tandem with the fit-out and building services works. Off-site prefabrication and assembly of the steel roof modules for the main concourse area are progressing in the Mainland.

9. The tunnel construction for the APM system and BHS are progressing steadily. The electrical and mechanical works continue inside the completed tunnel sections in preparation for the subsequent installation of the APM system and BHS. Separately, the concrete structure of an essential seawater pump house, which will serve the air-conditioning system of the expanded T2, is substantially completed, with the internal fit-out and building services works progressing expeditiously on site.

(iii) APM System and BHS Works

10. Manufacture, delivery and installation of the APM system and BHS components continue. Assembly and testing of the APM trains are ongoing in the Mainland. Equipment installation at the APM traction power substation is ongoing. As regards the related modification works for the existing APM system, plinth construction, and installation of guideway equipment and traction power rails, etc. are ongoing at various work fronts. Meanwhile, the BHS contractor is carrying out the required conveyor modification works at the Baggage Hall of Terminal 1 and the tunnel area between the expanded T2 and SkyPier, and steel platform installation works at the expanded T2.

11. As reported before, all the building and infrastructure works for the 3RS are proceeding with the target to complete the 3RS in 2024, and the Airport Authority Hong Kong (“AAHK”) will open relevant passenger facilities in phases in light of passenger traffic demand.

(iv) Government Facilities

12. To ensure better coordination and management of interface issues, AAHK has undertaken the design and construction of essential Government facilities³ for airport operations in connection with the 3RS project. The fit-out, building services, and façade installation works of the new Air Traffic Control Tower (“NATCT”) are progressing at full steam. The Civil Aviation Department (“CAD”) and the Hong Kong Observatory (“HKO”) have been given phased access to all critical accommodations in NATCT for system and equipment installation. Access to their new facilities/ equipment sites alongside the Centre Runway is scheduled for end 2023. In the Eastern Support Area, the superstructure construction of the Airport East Fire Station has commenced. Meanwhile, the piling works of the Chek Lap Kok North Fire Station cum Ambulance Depot and the Airport District Police Operational Base continue.

(v) Project Cost

13. AAHK will continue to closely monitor the budget situation and manage the project expenditure by taking into account the cost implications due to restructured works plans for mitigating the impact of the previous Coronavirus Disease 2019 (“COVID 19”) pandemic and the claims by contractors for the purpose of cost control. It remains AAHK’s target to deliver the 3RS project within the budget of HKD141.5 billion.

(b) Preparatory Work for the Operation of the 3RS

14. Apart from construction works, AAHK is working closely with the Government and airport stakeholders on the preparatory work for the operation of the 3RS in 2024. Various plans are underway to establish the operational readiness of the related airfield works and facilities in 2024. AAHK is working with CAD, targeting to organise a flight check exercise for the reconfigured Centre Runway in August 2024 to verify that relevant air navigation services equipment, flight procedures and aeronautical ground lighting system concerned are in compliance with the requirements of the International Civil Aviation Organization and CAD.

³ For example, air traffic control facilities; aviation weather services facilities; rescue and firefighting facilities; customs, immigration, quarantine, port health control and law enforcement facilities; etc.

15. To ensure the safe and effective operation of HKIA, the Map of Airport Area and the Maps of Restricted Area under the Airport Authority Ordinance (Cap. 483) shall be amended by way of subsidiary legislation to reflect the changes required to support the operation of the 3RS and the related facilities. Relevant legislative procedures would proceed for effecting the proposed amendments in mid-2024.

(c) Labour Supply

16. The 3RS project has entered its construction peak. The demand for skilled worker of the 3RS project is expected to peak from mid-2023 to 2024, with about 13 000 skilled workers needed. On the premise of ensuring employment priority for local workers, relevant 3RS contractors would import skilled workers, in a limited scale, to fill the manpower gap in some shortage trades.

17. AAHK and various 3RS contractors continue to widely adopt a variety of innovative engineering techniques and applied technologies, including Building Information Modelling for planning, design and construction, travelling formwork systems in tunnel construction, and precast components and Modular Integrated Construction methods, etc., with a view to enhancing construction quality and safety and reducing the manpower needs. Moreover, AAHK and the 3RS contractors would continue to collaborate with training institutions to proactively train up local workers for participating in the 3RS construction and nurture talents for the long-term development of the Hong Kong construction industry. To provide job opportunities for suitable local job seekers, AAHK and the contractors continue to regularly publish job advertisements on newspapers and recruitment websites and organise job fairs for recruiting targeted personnel, including fresh graduates and women.

(d) Construction Safety

18. AAHK is committed to maintaining the highest safety standards in construction. As at end October 2023, the 12-month rolling Accident Frequency Rate (“AFR”)⁴ for the 3RS project was 5.2. The figure has been steadily decreasing since the last report and remains relatively lower than the industry-wide accident rate of 29.1 per 1 000 workers for 2022 as released by the Labour Department (“LD”). To ensure work safety and address related issues, AAHK, together with the contractors, continues to proactively assess the effectiveness of

⁴ AFR is the number of reportable accidents per 1 000 workers per year. This calculation is in accordance with LD’s practice and is widely used in the local construction industry.

the safety measures implemented across the 3RS project and take preventive and responsive actions against inherent safety issues in critical areas and any deficiencies identified.

19. During the reporting period, AAHK continues to implement the enhanced confined space management by deploying closed-circuit television monitoring in underground drainage and pipeline works. Relevant 3RS contractors are implementing a host of initiatives under the Smart Site Safety System (“4S”), such as deployment of tower cranes and mobile plant collision warning systems, smart smoke alarm systems, artificial intelligent 360-degree cameras for enhanced safety surveillance, etc. AAHK will closely monitor the effectiveness of the 4S implemented by the contractors. Furthermore, AAHK continues to undertake measures to prevent fire hazard in building sites. Task inspections are conducted periodically to ensure that all required fire prevention measures are implemented, and fire service installation and equipment deployed in the 3RS construction sites are functioning properly. The Project Fire Team regularly advises contractors on fire prevention measures and arranges fire drills for the 3RS construction sites. Besides, thorough checks on the structural stability of the foundation of all tower cranes deployed in the 3RS project were carried out in September 2023.

20. Precautionary and contingency measures are taken to ensure an effective and prompt response to flooding risks in tunnels arising from heavy rain and/or typhoons. In case of imminent flooding incident, works in tunnels will be suspended and all personnel will be evacuated from the tunnels. Drainage systems in and around the tunnels are checked for proper functioning. Portable flood barriers will be installed at tunnel entrances or exits. Emergency power supplies and equipment will be made ready for use.

21. Furthermore, the Independent Safety Assessment of VCommit⁵ continues in tandem with independent safety audits conducted by external experienced safety auditors registered with LD for selected sizable parts of the 3RS project. AAHK also continues to operate the VCommit Safety Training Centre at the 3RS works site, and has organised Mobile Elevating Work Platform operator training courses for workers and supervisors since Q3 2023.

22. To ensure all personnel in the worksite are familiar with relevant safety requirements, all imported workers will receive the Mandatory Basic Safety Training arranged by their respective employers before working in the 3RS project work sites. In addition, contractors have assigned safety officers and/or

⁵ The VCommit Safety Campaign is an AAHK-led Safety and Social Responsibility promotion programme targeting at the caring of 3RS staff, workers and their families.

supervisory staff to coach and guide their imported labour to assure their early familiarisation with the local working environment, site safety management system and preventive measures.

(e) **Environment-Related Issues**

23. The implementation of the Environmental Monitoring and Audit (“EM&A”) programme for the 3RS project is ongoing. The EM&A information together with the finalised Environmental Permit (“EP”) submissions are publicly available on a dedicated website⁶.

24. AAHK continues to fulfil its commitments to enhancing marine ecology and fisheries resources. The Marine Ecology Enhancement Fund and the Fisheries Enhancement Fund have granted over HKD10.7 million to 11 projects for a 12-month period from 1 July 2023 to 30 June 2024. Both funds have granted more than HKD80 million in total to support marine ecology and fisheries projects since their establishment in late 2016. Details of the funded projects, including the reports of completed projects, are posted on dedicated websites⁷. Regarding the proposed North Lantau Marine Park (“NLMP”), the map has been deposited for public inspection in accordance with the Marine Parks Ordinance (Cap. 476). The Agriculture, Fisheries and Conservation Department continues to take forward the statutory procedures for the designation of NLMP targeted in 2024.

25. Besides fulfilling the EP requirements, AAHK continues to explore and/or implement additional marine ecology and fisheries enhancement measures in Lantau waters. The final phase of the fish fry release/ restocking pilot test was conducted in May and September 2023 near the artificial reefs (“AR”) deployed under the earlier pilot study, with a total of about 20 000 fish fingerlings released. In addition, one million shrimp fry were released at Sham Wat Wan and Sha Lo Wan of Lantau in September 2023. Post-release monitoring of the released fish fingerlings is ongoing to investigate the suitability of AR as a preferred habitat for the released fishes. Further to the success of the AR and shellfish reef pilot studies in enhancing species diversity and density in the marine environment, AAHK has developed a scale-up plan and is proceeding with the statutory procedures for deployment of the AR under the Foreshore and Seabed (Reclamation) Ordinance (Cap. 127). AAHK is also evaluating the effectiveness of the fish fry release/ restocking programme, which AAHK plans

⁶ Dedicated 3RS webpage for environment-related issues: <http://env.threerunwaysystem.com/en/index.html>

⁷ Marine Ecology Enhancement Fund webpage: <http://env.threerunwaysystem.com/en/meef/index.html>
Fisheries Enhancement Fund webpage: <http://env.threerunwaysystem.com/en/fef/index.html>

to carry out in phases at the Airport West area and the proposed NLMP from 2024 onwards.

26. AAHK continues to engage stakeholders through the Professional Liaison Group (“PLG”) and the Community Liaison Groups (“CLGs”)⁸ with a view to providing a liaison platform for communication between AAHK and community members on 3RS-related issues. The last CLGs and PLG meetings cum airport visit were held in August and November 2023 respectively, at which members were briefed on the latest 3RS works progress, the related environmental issues, as well as other airport related matters. AAHK will continue to arrange different publicity initiatives to enhance the public’s understanding of the 3RS project.

(f) Financial Arrangement

(i) AAHK’s traffic performances and outlook

27. Since Hong Kong’s full resumption of normal travel at the beginning of the year, Hong Kong’s air traffic has been steadily recovering. HKIA recorded 3.8 million passengers and 26 265 flight movements in October 2023. Passenger volume saw a four-fold year-on-year increase while flight movements approximately doubled compared to October 2022. HKIA’s passenger traffic is expected to recover to about 80% of the pre-pandemic level by the end of this year⁹ and fully recover by the end of 2024. Cargo throughput continued to grow in October 2023, increasing by 12% year-on-year to 393 000 tonnes.

(ii) 3RS Funding Plan

28. AAHK continues to finance the 3RS project through three sources, including retaining its operating surplus, collecting the airport construction fee (“ACF”) and raising funds from the market. While the operating surplus and receipt of ACF were challenging during the previous COVID-19 pandemic, AAHK expects funding obtained from these two sources would gradually recover as passengers return. Meanwhile, the majority of external borrowings for the 3RS project is completed. As at the date of the Paper, AAHK’s total executed external financing was about HKD115 billion¹⁰ at an overall borrowing cost of around 3% per annum. In the last quarter of FY2023/24, among other

⁸ There are five CLGs, namely, Islands, Tsuen Wan, Tuen Mun, Sha Tin and Kwai Tsing.

⁹ It refers to the percentage of daily average passenger volume against the pre-pandemic level.

¹⁰ Including external debts of approximately HKD104 billion and USD1.5 billion (or HKD11.6 billion equivalent) of perpetual securities issued.

things, AAHK plans to issue up to HKD5 billion fixed coupon retail bond to allow participation of the general public in the 3RS project. AAHK is expected to maintain its investment grade credit rating “AA+” by S&P Global, Inc. AAHK believes that it does not require any form of financial guarantees from the Government in funding the 3RS project.

Way Forward

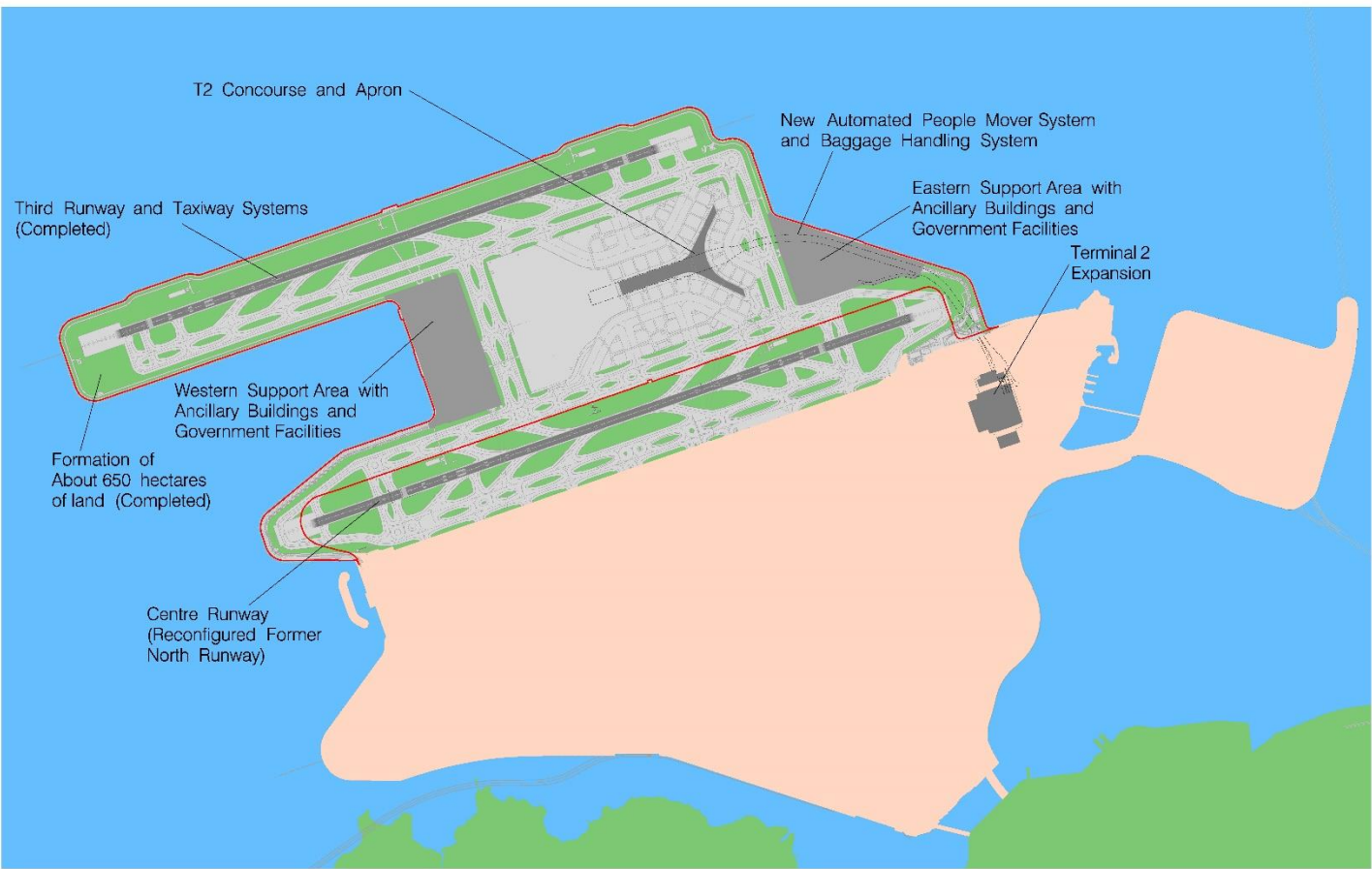
29. AAHK will stay vigilant and exercise stringent cost control in accordance with the prudent commercial principles while continuing to take forward the 3RS project and various airport development projects to consolidate Hong Kong’s status as an international aviation hub.

Advice Sought

30. Members are invited to note the above.

**Airport Authority Hong Kong
December 2023**

Project Scope of the Three-Runway System



Reclamation Footprint