

**For Information
on 10 July 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 November 2022 (LC Paper No. CB(4)1047/2022 (01)).

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. The Third Runway was officially commissioned on 25 November 2022. The Third Runway has been operating smoothly and the air traffic at HKIA has been undergoing solid recovery, leveraging on the lifting of the quarantine requirements.

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.

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

Progress Update on 3RS Project

(a) Construction

5. Construction works for all remaining project components are moving forward steadily, with contractors actively implementing measures below to enhance the overall works productivity, including –

- (a) deploying extra labour resources and plants to work extended hours;
- (b) re-sequencing works to prioritise the completion of all critical works for phased handover to/ early access by follow-on works contractors;
- (c) timely securing supply and delivery of building materials and equipment; and
- (d) using modular pre-cast/pre-fabricated units.

6. The Airport Authority Hong Kong (“AAHK”) also facilitates construction works by –

- (a) providing land access for transportation of essential materials and shuttle services for workers to reclaimed sites; and
- (b) timely sourcing labour supply for meeting the manpower requirement in the upcoming construction peak through enhanced local recruitment and training, and labour importation on a limited scale for critical work trades.

7. The 3RS is a highly complex project comprising numerous components with intertwined works and programme interfaces. Various challenges could impact individual construction fronts. With various programme control and enhancement measures in place, works progress steadily on all fronts with the target to complete the 3RS in 2024.

(i) *Airfield Works*

8. Final land formation at the western end of the Centre Runway is substantially complete, while construction of drainage box culverts, ancillary buildings and underground utilities continues on multiple fronts. The building services works for the Airport West Third Runway Substation are substantially complete, with the power company given full access to the substation for equipment installation. Excavation and lateral support works for the construction of the two vehicular tunnels underpassing the Centre Runway are proceeding at full steam. Save for the areas of vehicular tunnels, taxiway crossings and the two runway end safety areas, runway pavement construction has been progressing over the entire runway area, with laying of asphalt pavement surface and the works related to the airfield ground lighting system ongoing along the Centre Runway.

(ii) *Building and Infrastructure Works*

9. The basement construction for the Baggage Hall and APM Interchange Station underneath the northern part of the expanded T2 is substantially complete. The superstructure and roof construction of the expanded T2 continues. Multiple fronts of the associated fit-out and building services works progress closely with the basement, superstructure and roof construction. Installation of essential equipment at key plant rooms is also in process. Meanwhile, construction of new viaducts connecting the expanded T2 with the Hong Kong Port and the nearby road network continues.

10. Bored piling works for T2C and construction of the approach tunnels for the APM system/BHS are substantially complete. Basement construction of T2C continues in tandem with the superstructure construction. Backfilling progresses on multiple fronts to make way for apron works. Off-site prefabrication and assembly of the steel roof modules is underway in the Mainland.

11. Tunnel construction for the APM system and BHS is progressing on multiple fronts between T2C and the expanded T2. Backfilling continues over the completed tunnel sections located at the interface with T2C and on the existing airport island to make way for roadwork construction and utility installation. Drainage, electrical and mechanical works advance inside the completed tunnel sections in preparation for the subsequent installation of the APM system and BHS.

(iii) APM System and BHS Works

12. Manufacture of the BHS conveyor and control equipment and the APM system components continues. Assembly and testing of the APM train is ongoing in the Mainland, with targeted delivery to Hong Kong in batches from Q4 2023 tentatively. Installation of the guide beams and cable containment at the APM traction power substation within the new APM maintenance depot on the existing airport island is ongoing. For the existing APM system modification work, installation of the guideway equipment, trackside cable containment and traction power rails is ongoing. The BHS contractor is undertaking the conveyor installation at the tunnel area between the expanded T2 and SkyPier.

13. As reported before, while all the building and infrastructural works for the 3RS are proceeding, AAHK will deploy a flexible phasing strategy for the commissioning of the 3RS passenger facilities, in order to align with the progress of the post-pandemic air traffic recovery and the prevailing passenger demand.

(iv) Government Facilities

14. 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 superstructure of the new Air Traffic Control Tower is substantially complete with architectural builder's work and finishes, building services works and façade installation proceeding. The respective works contracts for the construction of the Airport East Fire Station, Chek Lap Kok North Fire Station cum Ambulance Depot and the Airport District Police Operational Base have been awarded. Meanwhile, relevant Government departments continue to liaise with AAHK on the access arrangement to their accommodation/facilities to prepare for the future 3RS operation.

(v) Project Cost

15. AAHK will continue to closely monitor the budget situation and manage the project expenditure, taking into account the cost implications due to restructured works plan for mitigating the impact of the Coronavirus Disease

³ For example, air traffic control facilities for the Civil Aviation Department; aviation weather services facilities for the Hong Kong Observatory; rescue and firefighting facilities for the Fire Services Department, customs, immigration, quarantine, port health control and law enforcement facilities, etc.

2019 (“COVID-19”) pandemic. It remains AAHK’s target to deliver the 3RS project within the budget of HKD141.5 billion.

(b) Labour Supply

16. With the Third Runway officially commissioned in November 2022, AAHK is pressing ahead with the remaining works of 3RS. AAHK anticipates that the demand for skilled labour will further increase and will peak from mid-2023 to 2024. By that time, the 3RS project will need about 13 000 skilled workers. On the premise of ensuring employment priority for local workers, relevant 3RS contractors seek to import skilled workers, in a limited scale, during the construction peak to fill the manpower gap in some shortage trades.

17. AAHK and various 3RS contractors have widely adopted 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. AAHK and the contractors also continue to step up local recruitment to employ suitable local workers for meeting the substantial manpower needs, including putting more job advertisements on newspapers and recruitment websites and organising more job fairs.

(c) Construction Safety

18. AAHK is committed to maintaining the highest safety standards in construction. As at end May 2023, the 12-month rolling Accident Frequency Rate⁴ (“AFR”) for the 3RS project was 8.0. The figure has been steadily decreasing since the last report and remains relatively lower than the industry-wide accident rate of 29.5 per 1 000 workers for 2021 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 the safety measures implemented across the 3RS project and takes responsive actions against any deficiencies identified. Special attention is paid to identifying any inherent safety issues in critical areas such as airfield works,

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.

steelwork, electrical and mechanical installation, architectural builder's work and finishes works in terminal construction, etc.

19. In addition to the ongoing implementation of the Inspection and Testing Plan on Quality and Safety and enhancing the confined space management with closed-circuit television monitoring underground drainage and pipeline works, AAHK has conducted a proactive and comprehensive review of the fire prevention measures at the 3RS construction sites. The review covers the planning, implementation and drills of the prevailing fire prevention measures as well as some task inspections on the proper functioning of the fire service installation and equipment deployed in the 3RS construction sites. Regarding the safety of tower cranes, stability check, particularly on the structural stability of the foundation, was conducted in Q4 2022 for all tower cranes deployed in the 3RS project. The Inspection and Test Plan on Quality and Safety for tower cranes also continues to be in place to ensure that key work control points are included as part of engineering control. Furthermore, AAHK has proactively managed the operation of power-operated mobile elevating work platforms ("MEWP"), in order to cope with the change in construction focus to building-oriented activities. With the support of Hong Kong Mobile Aerial Work Platform Association and Hong Kong Construction Association, AAHK has arranged MEWP operator training courses from May 2023 onwards for all persons who need to operate MEWP in the 3RS project, with an aim to enhance the operating skills and refresh the safety awareness of operators.

20. The Independent Safety Assessment of VCommit continues, with particular emphasis on the safety management for tunnel/basement construction, lifting safety, heat stroke prevention, fire prevention, work above ground, and confined space works and their access control. This programme has also been enhanced by focusing particularly on key operators, processes and procedures of site activities with foreseeable high risk. In addition, independent safety audits conducted by external experienced safety auditors registered at LD have been arranged for selected sizable parts of the 3RS project. All major high-risk activities and their associated risks continue to be discussed in the Method Statement Review meetings between AAHK and the contractors to ensure that all identified risks have been addressed before the commencement of works. Internal safety workshops are also conducted regularly. Meanwhile, AAHK continues to operate the Safety Learning Commons - VCommit Safety Training Centre on the 3RS works site. The VCommit Safety Campaign⁵ was also implemented in Q1-Q2 2023, focusing on electrical safety and hand protection

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

for promoting a safe working environment and practice among workers of the 3RS project.

(d) Environment-Related Issues

21. The implementation of the Environmental Monitoring and Audit (“EM&A”) programme for the 3RS project is ongoing. All EM&A information, including monitoring results, implementation status of mitigation measures, events of non-compliance and the corresponding follow-up actions, etc., are reported on a monthly basis. The EM&A information together with the finalised Environmental Permit (“EP”) submissions are publicly available on a dedicated website⁶. The EM&A programme and all the required environmental mitigation measures for the 3RS project have been properly implemented since the commencement of the construction.

22. 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 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, the Agriculture, Fisheries and Conservation Department is undertaking the statutory procedures for its designation targeted in 2024 in accordance with the Marine Parks Ordinance (Cap. 476).

23. Besides fulfilling the EP requirements, AAHK continues to explore and/or implement additional marine ecology and fisheries enhancement measures in Lantau waters. The installation of eco-seawall blocks along the western and eastern sloping seawalls is substantially completed and post-installation monitoring of the eco-seawall blocks is ongoing to evaluate the benefits for marine ecology enhancement. Separately, the twelve-month post-deployment monitoring of the artificial reefs and shellfish reefs has been completed. The results have demonstrated that the shellfish reefs have been successful in enhancing species diversity and density while the artificial reefs have encouraged an increase in species colonisation. Further to these successful pilot studies, AAHK is developing a scale-up plan for these reef deployment initiatives. In addition, AAHK is carrying out the second round of fish fry

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>

restocking in Q2 and Q3 of 2023 which will involve the release of about 20 000 fingerlings in the vicinity of the deployed artificial reefs, followed by a six-month post-release monitoring, to investigate the suitability of the artificial reefs as a preferred habitat for the released fish. The findings would be useful for evaluating the effectiveness of the fish restocking programme and studying the feasibility of future restocking exercises in the western waters.

24. 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 meeting cum airport visit was held in February 2023. CLGs members were briefed on the latest 3RS works progress and the related environmental issues, including the aircraft noise issue, as well as other airport related matters. A PLG meeting was held in end April 2023. AAHK will continue to arrange different publicity initiatives to enhance the public’s understanding of the 3RS project.

(e) **Financial Arrangement**

(i) *AAHK’s Traffic and Financial Performances in FY2022/23*

25. With the gradual lifting of traffic restrictions, HKIA recorded a 12.4 million passenger throughput and handled 161 160 aircraft movements in FY2022/23, which represented a year-on-year surge of 770% and 12% respectively, although the figures remain lower than the pre-pandemic level recorded in 2019. Meanwhile, the global economic uncertainties and supply chain disruptions related to the COVID-19 pandemic gave rise to a decline in cargo volume by 16% during the same period to 4.1 million tonnes. AAHK continued to extend its relief package to support the airport community against the prolonged impact of COVID-19 on the aviation industry. AAHK achieved the Earnings before Interest, Taxes, Depreciation and Amortisation (“EBITDA”) breakeven of HKD170 million and reported a net loss of HKD1.2 billion in its interim result for the first half of FY2022/23.

(ii) *3RS Funding Plan*

26. AAHK continues to finance the 3RS project through three sources, including retaining its operating surplus, collecting the airport construction fee and raising funds from the market. In early January 2023, AAHK successfully issued a total of USD3 billion (or HKD23.4 billion equivalent) multi-tranche institutional bonds at a weighted average cost of 4.9% per annum. The bonds

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

were oversubscribed by more than eight-times and well received by a diverse group of both conventional and green investors in the midst of a volatile interest rate market. The USD1 billion (or HKD7.8 billion equivalent) 5-year green bond included in this round of financing is the second green bond issued by AAHK and received an encouraging demand from global green investors, accounting for 49% of the final allocation. To supplement the green bond issuance, AAHK has completed comprehensive environmental, social and governance (“ESG”) evaluation with two globally leading ESG rating agencies. Specifically, AAHK is the first airport operator globally receiving ESG evaluation by S&P Global Ratings, with the most recent rating being 75 out of 100 for its ESG performance⁹. Also, Sustainalytics has ranked AAHK to be amongst the best five in the airport sector out of the 82 evaluated airports worldwide in terms of ESG risk exposure¹⁰. These ratings have sent a clear message to the global investors and stakeholders that HKIA has a high-level of business resilience and sustainability.

27. The external borrowings for the 3RS project have been largely completed. As at the date of the Paper, AAHK’s total executed external financing was about HKD115 billion¹¹ at an overall borrowing cost of around 3% per annum. For the upcoming financings, AAHK will, among other things, issue HKD5 billion retail bond to allow participation of the general public in the 3RS project. Despite the increase in leverage, 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

28. 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.

⁹ AAHK received the rating in June 2023. On S&P’s scale, a higher number indicates stronger sustainability. As at April 2023, S&P Global Ratings evaluated more than 180 entities across the globe, with an average score of 65.

¹⁰ Sustainalytics is a company of Morningstar Inc. that rates the sustainability of organisations based on their ESG performance. It has rated AAHK as “low risk” in terms of exposure to ESG risk that is determined by a set of ESG-related risk factors that pose potential financial risks for organisations.

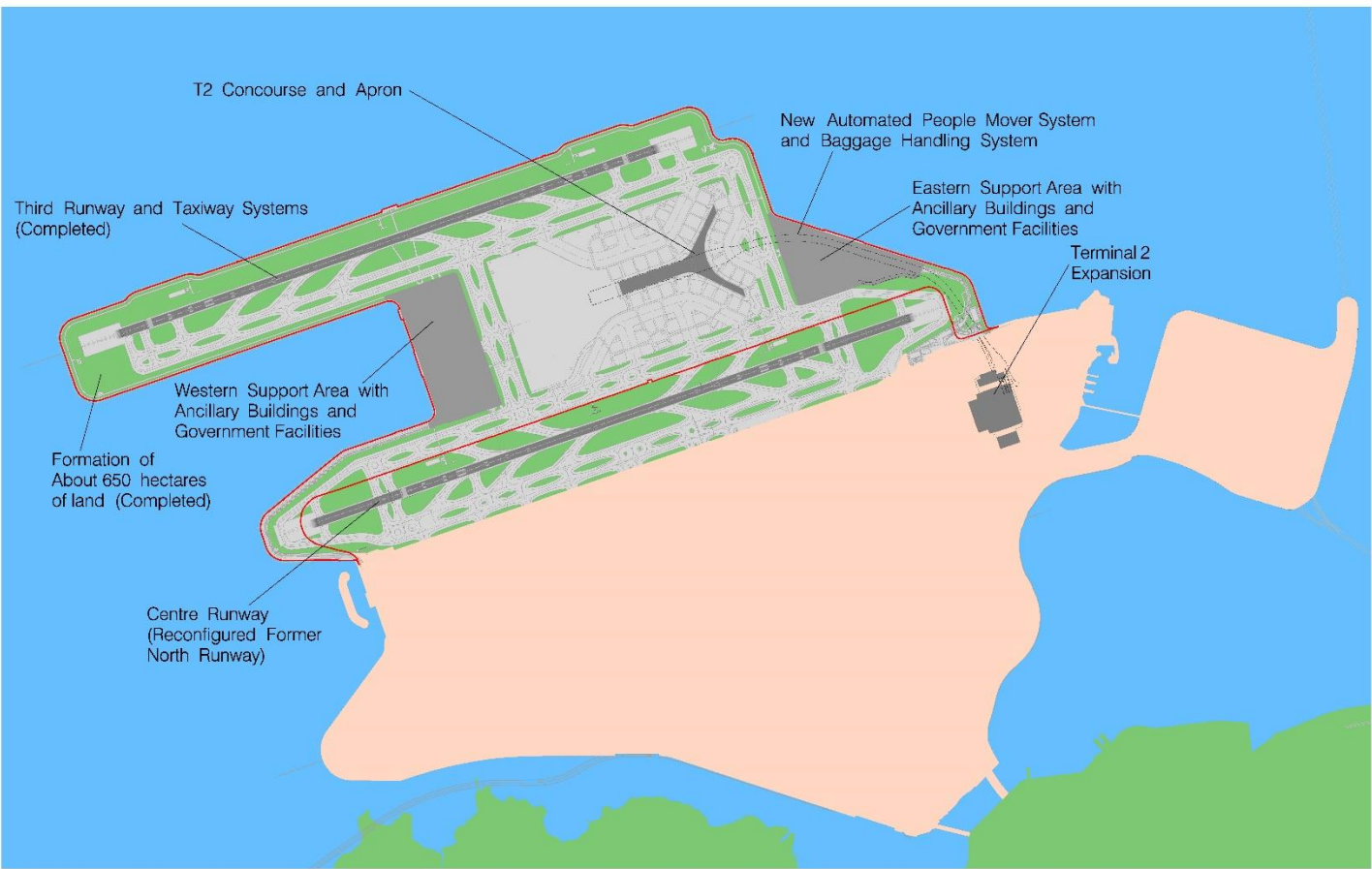
¹¹ Including external debts of approximately HKD104 billion and USD1.5 billion (or HKD11.6 billion equivalent) of perpetual securities issued.

Advice Sought

29. Members are invited to note the above.

**Airport Authority Hong Kong
July 2023**

Project Scope of the Three-Runway System



Reclamation Footprint