

**For Information  
on 7 May 2024**

**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 December 2023 (LC Paper No. CB(4)1069/2023(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 Runway<sup>1</sup>, 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 Runway<sup>2</sup>; 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.

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<sup>1</sup> The Third Runway was designated as the North Runway in February 2022.

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

## **Progress Update on 3RS Project**

### **(a) Construction**

4. With the contractors' continual 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 construction, streamlining design, approval process and construction methodology, etc., construction of the remaining project components has been moving forward steadily. Since last reported in December 2023, the following achievements have been made with the substantial completion of:

- (a) the pavement construction of the Centre Runway and the structures of the supporting Government facilities;
- (b) the erection of the associated steel roof structures for the expanded T2 and the ground transportation centre;
- (c) the majority of the tunnel structures for the APM system and BHS between the expanded T2 and T2C; and
- (d) the concrete structure of the central node and main concourse areas of T2C.

### **(i) *Airfield Works***

5. The construction of ancillary buildings and underground utilities continues on multiple fronts, with the supporting Government facilities alongside the Centre Runway substantially completed. The construction of the two vehicular tunnel structures underpassing the Centre Runway has been substantially completed and the remaining tunnel sections are under construction in full swing. With line marking and grooving works making good progress, the reconfigured Centre Runway has begun to take shape. Construction of associated new taxiways and modification to the existing taxiways are progressing on various fronts in parallel. Meanwhile, installation of the airfield ground lighting ("AGL") system at the Centre Runway and taxiways follows closely with the pavement works. Construction of the supporting airside and landside road network has also commenced in tandem with the installation of security fencing and critical airfield infrastructure and systems. So far, all related construction fronts remain on track for the target to commence flight check in August 2024.

*(ii) Building and Infrastructure Works*

6. Regarding the expanded T2, with the substantial completion of the concrete structure as reported in December 2023, all modules of steel roof structures have been lifted to their final positions. Installation of roof covering and building service systems thereon as well as erection of supporting columns underneath are picking up pace. The installation of façade components is nearing completion, while that for the glazing walls progresses along the building perimeter. Meanwhile, the fit-out and building services works progress at full steam within the completed building structure. Furthermore, the construction of new viaducts connecting the expanded T2 with the surrounding road network continues in parallel with the laying of external underground utilities.

7. For T2C, construction of concrete structure is substantially completed at the central node and main concourse areas, while that at the south and north wing areas continues to progress. Fit-out and building services works are also underway at full steam within the completed building structure. Off-site prefabrication and assembly of the steel roof modules for the main concourse area are progressing in the Mainland, with the first three roof modules delivered to site for lifting/installation commencing from April 2024. Meanwhile, erection of steel roof components at the central node area progresses. Installation of underground utilities is underway on multiple fronts at the apron and cross-field taxiways.

8. A majority of the tunnel construction for the APM system and BHS, in particular the segments essential to the flight check of the Centre Runway, has been substantially completed. The electrical and mechanical installation works inside the completed tunnel sections continue, with phased access provided to the APM system and BHS contractors for the follow-on system installation works. The fit-out and building services works for an essential seawater pump house, which will serve the seawater cooling system of the expanded T2 and the existing airport facilities, are nearing completion.

*(iii) APM System and BHS Works*

9. Manufacture, delivery and installation of the APM system and BHS components continue. Assembly and testing of the APM trains are ongoing in the Mainland and the first two of the six APM trains have been delivered to the new depot of HKIA. Equipment installation at the APM traction power substations and in the tunnel areas between the expanded T2 and T2C is ongoing. As regards the related modification works for the existing APM system, plinth construction is substantially completed, and installation of guideway equipment

and traction power rails, etc. is ongoing on various work fronts for establishing the link between the operating Terminal 1 (“T1”) Line and the new depot. Meanwhile, the modifications to the BHS system at the Baggage Hall of T1 are nearing completion for follow-on testing and commissioning works. Installation of steel platforms and/or conveyors continues in the tunnel areas between T1 and SkyPier, between the expanded T2 and T2C, and at the expanded T2.

10. As reported before, all the major 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*

11. To ensure better coordination and management of interface issues, AAHK has undertaken the design and construction of essential Government facilities<sup>3</sup> for airport operations in connection with the 3RS project. Façade installation works of the new Air Traffic Control Tower (“NATCT”) are substantially completed, while fit-out and building services works are progressing at full steam. The Civil Aviation Department (“CAD”) and the Hong Kong Observatory have been given access to the control tower cab and essential equipment rooms in NATCT, and their new facilities/equipment sites alongside the Centre Runway, for system and equipment installation. In the Eastern Support Area, with the superstructure construction of the Airport East Fire Station substantially completed, fit-out and building services works within the completed building structures are progressing in full swing. Meanwhile, the piling works of the Chek Lap Kok North Fire Station cum Ambulance Depot and the Airport District Police Operational Base are nearing completion.

*(v) Project Cost*

12. 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 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.

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<sup>3</sup> 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.

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

13. In parallel with the construction works, AAHK is working closely with CAD, other Government departments and airport stakeholders on the operational readiness, activation and transition (“ORAT”) process for the commissioning of the 3RS in end 2024.

14. To ensure the safe and effective operation of HKIA, the Map of Airport Area and the Map of Restricted Area under the Airport Authority Ordinance (Cap. 483) will be amended accordingly by way of subsidiary legislation to reflect the changes required to support the operation of the 3RS and the related facilities. The subsidiary legislation amendments will be tabled at Legislative Council in May for negative vetting for taking effect on 31 July 2024.

15. CAD has been collaborating with AAHK on the provision of various Air Navigation Services (“ANS”) equipment necessary to support the 3RS operation. The installation of the ANS equipment is progressing on track as planned. Flight check for relevant facilities of the reconfigured Centre Runway is scheduled for commencement in August 2024 to ensure that the AGL system, ANS equipment and flight procedures for 3RS are in compliance with the requirements promulgated by the International Civil Aviation Organization (“ICAO”) and CAD. CAD plans to brief and inform airline operators of the new flight procedures associated with the 3RS operation in mid-2024 to allow them adequate time to prepare for the 3RS operation.

16. Before commissioning of the 3RS, AAHK has to demonstrate to CAD that the reconfigured Centre Runway and associated facilities are in full compliance with the safety and security requirements of the ICAO and CAD to meet the aerodrome licensing standards. Having regard to the considerable extent of tasks required under the process, AAHK is conducting the licensing process in a progressive manner. For example, to fulfil CAD’s licensing requirements, AAHK will coordinate an aircraft crash and rescue exercise to take place in October 2024 (tentative) involving various Government departments, emergency response units and airport stakeholders to ensure the airport’s readiness to handle aircraft accidents on the reconfigured Centre Runway.

17. With the 3RS targeted to be commissioned in end 2024, upon satisfactory submission of the required documentation, drawings and reports to CAD, completion of the licensing acceptance inspections by CAD as well as the aircraft crash and rescue exercise, AAHK targets to obtain the aerodrome licence that covers the operation of the existing South Runway and North Runway, the

reconfigured Centre Runway under 3RS, associated taxiways and supporting facilities from CAD in November 2024.

18. Regular meetings of AAHK with relevant Government departments, airlines, airside operators, franchisees and other stakeholders, have been convened as planned since January 2023, at which AAHK has shared the progress of construction works, key airport and airfield operation preparation and the upcoming ORAT tasks. Various on-site familiarisation, operational drills, emergency response exercises and procedure trials are being coordinated with relevant stakeholders.

**(c) Labour Supply**

19. On the premise of ensuring employment priority for local workers, relevant 3RS contractors imported about 2 000 skilled workers by end March 2024 to fill the manpower gap in some shortage trades. Meanwhile, AAHK and the 3RS contractors 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. AAHK and various 3RS contractors also 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 pre-cast concrete components and Modular Integrated Construction methods, etc., with a view to enhancing construction quality and safety and reducing the manpower needs.

**(d) Construction Safety**

20. AAHK is committed to maintaining the highest safety standards in construction. As at end March 2024, the 12-month rolling Accident Frequency Rate (“AFR”)<sup>4</sup> for the 3RS project was 4.9. 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 organise safety briefings to workers, assess the effectiveness of the safety measures implemented across

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<sup>4</sup> 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 3RS project and take preventive and responsive actions against inherent safety issues in critical areas and any deficiencies identified.

21. 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 continue to closely monitor the effectiveness of the 4S implemented by the contractors. Furthermore, AAHK continues to undertake measures to prevent fire hazard in building sites, and to ensure an effective and prompt response to flooding risks in tunnels arising from heavy rain and/or typhoons.

22. Furthermore, the Independent Safety Assessment of VCommit<sup>5</sup> 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. In Q1 2024, AAHK introduced the Safe Use of Tools campaign to enhance workers’ awareness regarding the proper use of hand tools.

23. To ensure all personnel at 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 at the 3RS project work sites. In addition, contractors have assigned safety officers and/or 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**

24. The implementation of the Environmental Monitoring and Audit (“EM&A”) programme for the 3RS project is ongoing in full accord with the conditions of the Environmental Permit (“EP”). The EM&A information together with the finalised EP submissions are publicly available on a dedicated website<sup>6</sup>.

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<sup>5</sup> 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.

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

25. 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 HKD15.1 million to 13 projects for a 12-month period from 1 July 2023 to 30 June 2024. Both funds have granted more than HKD85 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 websites<sup>7</sup>. 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 Q4 2024.

26. 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 has provided positive indication 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 Sea-bed (Reclamations) Ordinance (Cap. 127). AAHK is also evaluating the effectiveness of the fish fry release/ restocking programme, which AAHK plans to carry out in phases at the Airport West area and in the surrounding waters of the proposed NLMP after its designation.

27. AAHK continues to engage stakeholders through the Professional Liaison Group (“PLG”) and the Community Liaison Groups (“CLGs”)<sup>8</sup> 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.

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

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

**(f) Financial Arrangement**

*(i) HKIA's traffic performances and outlook*

28. Since Hong Kong's full resumption of normal travel at the beginning of 2023, Hong Kong's air traffic has been recovering steadily. During the fiscal year 2023/24, HKIA handled 45 million passengers and 309 650 flight movements, representing increases of 265% and 92% respectively when compared to the low base in the last fiscal year. Daily passenger volume at HKIA recovered to 80% of the pre-pandemic level during the Christmas peak in 2023. HKIA's passenger traffic is expected to fully recover by the end of 2024. Total cargo throughput saw an annual growth of 9% during the fiscal year 2023/24 to 4.5 million tonnes.

*(ii) 3RS Funding Plan*

29. Financing for the 3RS project remains healthy. In January and February 2024, AAHK issued HKD9 billion of bonds, comprised of HKD4 billion 3.5-year 3.83% per annum ("p.a.") publicly offered institutional bonds, and HKD5 billion 2.5-year 4.25% p.a. retail bonds, with a weighted average cost of borrowing for the two issuances at 4.06% p.a. Both transactions have received overwhelming subscriptions from investors, which is a testimony to the markets' confidence in HKIA.

30. Meanwhile, the majority of external financing for the 3RS project has been completed. As at the date of this paper, AAHK's total executed external financing was about HKD124 billion<sup>9</sup> at an overall borrowing cost of around 3.1% p.a. Going forward, AAHK will focus on refinancing its maturing debts. AAHK expects to maintain its investment grade credit rating "AA+" by S&P Global, Inc. and believes that it does not require any form of financial guarantees from the Government in funding the 3RS project.

**Way Forward**

31. 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.

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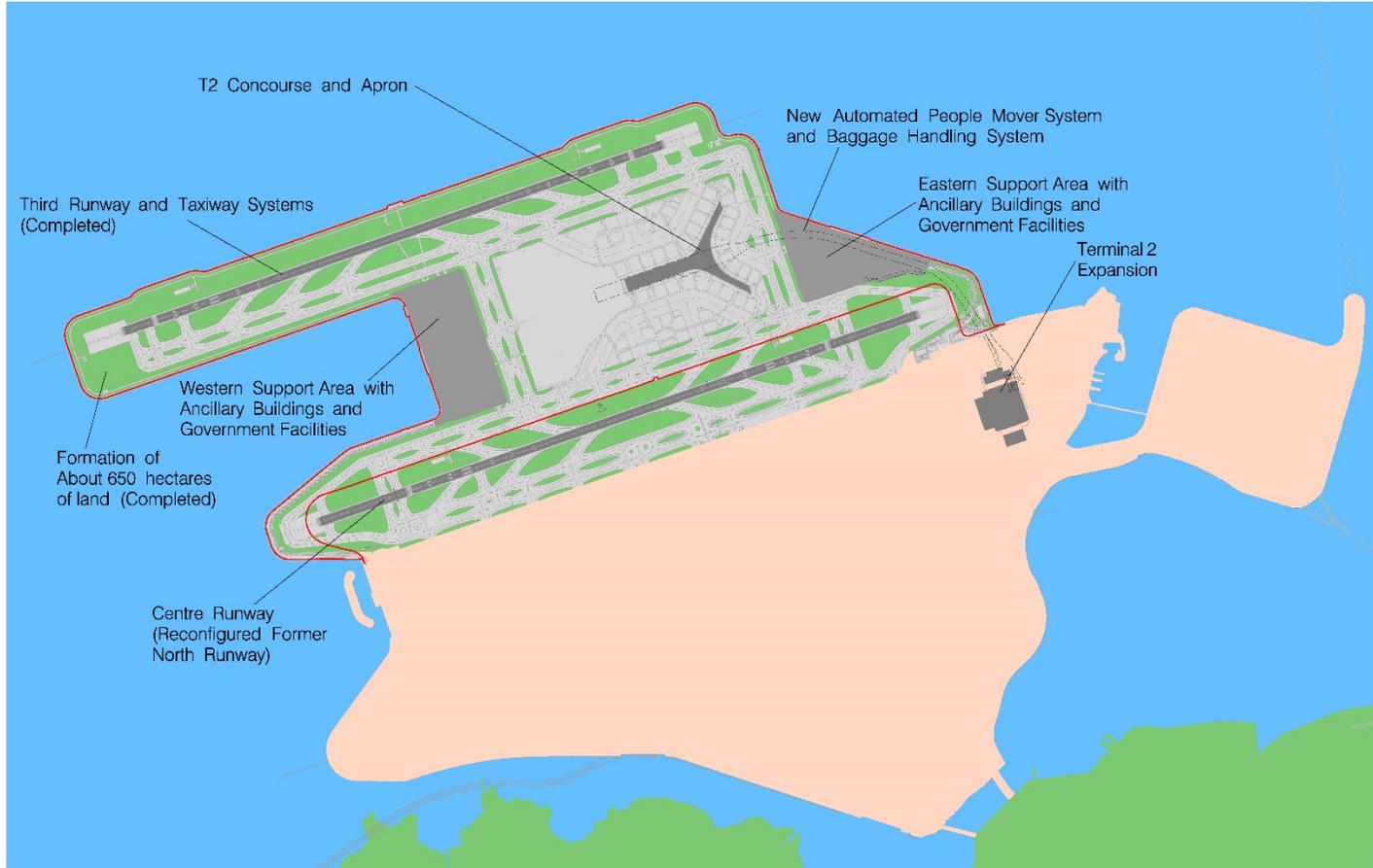
<sup>9</sup> Including external debts of approximately HKD112 billion and USD1.5 billion (or HKD11.6 billion equivalent) of perpetual securities issued.

## **Advice Sought**

32. Members are invited to note the above.

**Airport Authority Hong Kong  
May 2024**

### Project Scope of the Three-Runway System



 **Reclamation Footprint**