

**For Information  
On 16 February 2016**

**Legislative Council Subcommittee  
to Follow Up Issues Relating to the  
Three-runway System at the Hong Kong International Airport**

**Issues Raised at the Meeting on 5 January 2016**

**Introduction**

In discussing LC Paper No. CB(4)399/15-16(01) on the Airport Authority Hong Kong (“AAHK”)’s proposed financial arrangement plan for the Three-runway System (“3RS”) project at the Subcommittee meeting on 5 January 2016, Members requested information on a number of issues. Some Members also asked for supplementary information through their letters to the Chairman of the Subcommittee. This paper sets out the information as requested.

**Follow Up on Issues Raised at the meeting on 5 January 2016**

**(a) Legal opinion on the basis of levying the new Airport Construction Fee (“ACF”) in accordance with the Airport Authority Ordinance (Cap. 483)**

2. In LC Paper No. CB(4)399/15-16(01), we have set out all the relevant legal provisions under the Airport Authority Ordinance (“AAO”) that empower AAHK to levy the proposed ACF. Given that AAHK is engaged in legal proceedings of judicial review involving, amongst other things, AAHK’s proposals on ACF, AAHK in order to protect its legal privilege is unable to produce the legal opinion as requested. After all judicial review proceedings against ACF are over, AAHK would be able to reconsider the request.

**(b) Financial Internal Rate of Return, Financial Net Present Value and Weighted Average Cost of Capital for the 3RS Project**

3. Members noted that AAHK has appointed The Hongkong and Shanghai Banking Corporation Limited (“HSBC”) as its financial

advisor to conduct a study on the financial arrangement plan for implementing the 3RS project. In connection with the report produced by HSBC, Members asked for :

- (a) detailed information on how HSBC have come up with (i) a financial internal rate of return (“IRR”) of around 8%; and (ii) the financial net present value (“NPV”) for the 3RS project;
- (b) detailed information on how HSBC came up with a financial IRR of 3% for Master Plan 2030 in 2011 and the reason for a financial IRR of 8% for the 3RS project in 2015; and
- (c) information on change of Weighted Average Cost of Capital (“WACC”) of AAHK from 10% to 8%.

4. In response to paragraphs 3(a) and (b) above, HSBC has prepared a supplementary note which provides information on the calculations of the financial IRR and financial NPV for the 3RS project in HSBC 2015 report (at **Annex A**). Detailed explanation of the financial IRR calculation of 3% for Master Plan 2030 in 2011 can be found in Chapter 6.5 of the HSBC 2011 report, which is available on AAHK’s website at <http://info.threerunwaysystem.com/pdf/en/HSBC.pdf>.

5. The reduction in the WACC of AAHK from approximately 10% estimated in 2011 to the current estimate of approximately 8% reflects the changes in financial market conditions over the 5 year period. This includes, for example, the continuing low interest rate environment which has reduced the “risk free rate” estimate as well as weaker equity market performance and outlook which has resulted in a fall in the “market rate of return” observed and used by market analysts. These factors have led to a reduction in both the estimated “cost of debt” as well as the “cost of equity” for AAHK and hence a lower WACC estimate.

6. Based on the calculation in **Annex A**, the financial IRR of 3RS project is approximately 8% whereas the WACC as illustrated in paragraph 5 is also approximately 8%. Accordingly, the financial NPV of 3RS project is assessed to be close to zero.

(c) **Key Risks and Potential Downside Scenarios Assessed by HSBC**

7. Members also asked about :

- (a) information on “the key risks which still remained with respect to capital expenditure cost estimated risk referred to in paragraph 6.1.3 of the 2015 HSBC report”; and
- (b) measures AAHK would take in the event of a funding shortfall beyond the five potential downside scenarios assessed by HSBC.

8. As set out in paragraph 6.1.3 of the 2015 HSBC report, the risks are those related to the estimation of the capital cost of the 3RS project which are elaborated in paragraphs 6.1.3.1 to 6.1.3.5 of the report and summarized below :

- (a) land formation – covering the techniques and scale related to Deep Cement Mixing (“DCM”); conditions of the contaminated mud pits; fill materials required for the reclamation; “bidder bias”;
- (b) interface risk with individual contractors;
- (c) risk associated with the baggage handling system;
- (d) risk related to reduction in contingency; and
- (e) possible change in scope as a result of, for example, technological advancement and changes in regulations, etc.

9. It should be noted that the risks identified by HSBC were based on HSBC’s due diligence meetings with AAHK and their consultants as well as HSBC’s review of the reports prepared by AAHK’s consultants. As stated in paragraph 6.1.3 of the HSBC report, the work done by AAHK’s consultants has attempted to limit the risks through thorough and professional planning. In addition, AAHK has engaged a Planning, Procurement and Risk Assessment Consultant to further evaluate the risks associated with the 3RS designs. Effective measures to mitigate all remaining key risks will be identified as far as possible and incorporated into the detailed designs currently undertaken by AAHK. A summary of the measures identified to mitigate the risks is at **Annex B**. Implementation of the measures would also be carefully planned and managed in the overall 3RS construction programme.

10. The five potential downside scenarios assessed by HSBC are

for sensitivity testing purpose and do not reflect HSBC's expectation of possible outcomes. HSBC designed downside scenarios to test the financial robustness and prudence of the 3RS financial arrangement plan and concluded that AAHK would be able to raise additional debt to fund the consequential funding shortfall.

11. AAHK considers that the occurrence of scenarios which have a more severe financial impact than those considered in the five downside scenarios assessed by HSBC would be most unlikely. Should circumstances arise such that AAHK reasonably expects a funding shortfall that could not be prudently met with additional indebtedness, AAHK would, as recommended by HSBC, revisit its financial plan. AAHK may look to develop other revenue streams or access alternative forms of financing.

12. Under the current 3RS financial arrangement plan, the Hong Kong Government is not required to provide any form of financial guarantees or undertaking to AAHK.

### **Other Issues Raised in Members' Letters**

13. Members also asked for additional information vide their letters in LC Papers No. CB(4)445/15-16(01), CB(4)445/15-16(02), CB(4)445/15-16(03) and CB(4)445/15-16(04). Apart from the following issues, the others have been addressed either at the meeting on 5 January 2016 or in the paragraphs above :

- (a) a copy of the report for AAHK's contract C007-14;
- (b) a list of consultancy studies conducted by AAHK (both completed and ongoing) in relation to the 3RS;
- (c) the legal basis for Passenger Security Charge and Terminal Building Charge under AAO;
- (d) whether authorization/approval from the Executive Council is required for the implementation of the 3RS;
- (e) the required increase in capital expenditure to cater for the additional 50 million additional passengers per annum ("mppa"); and

- (f) the impact on AAHK's financial arrangement plan in the event of a lowering of its credit rating.

**(a) and (b) AAHK Contract C007-14 and List of 3RS Related Consultancy Studies**

14. A list of AAHK's Master Plan 2030 and 3RS related main consultancy and supporting services (completed and ongoing) is at **Annex C**. Report for AAHK's contract C007-14 is the Economic Impact Study of the 3RS updated by the independent consultant Enright, Scott & Associates in 2015 as mentioned in LC Paper No. CB(4)273/15-16(01) and has been uploaded onto AAHK's website at [http://info.threerunwaysystem.com/pdf/en/economic\\_impact\\_study\\_of\\_the\\_three\\_runway\\_system.pdf](http://info.threerunwaysystem.com/pdf/en/economic_impact_study_of_the_three_runway_system.pdf).

**(c) Legal Basis for Passenger Security Charge and Terminal Building Charge**

15. Section 34(1) of AAO provides that AAHK may "make a scheme or schemes for determining airport charges", subject to the approval of the Chief Executive in Council ("CE in C"). "Airport charges" is defined in Section 2 of the AAO as "charges payable in connection with landing, parking or taking off of aircraft at the airport". Terminal Building Charge ("TBC") is part of the scheme of airport charges.

16. Section 7(2)(i) of the AAO stipulates that subject to Section 34 where applicable, AAHK may determine the amount of charges and fees. The passenger security charge of \$45 is charged in accordance with section 7(2)(i) of the AAO.

**(d) Approval from the Executive Council for the Implementation of the 3RS**

17. In the light of AAHK's recommendations in its Master Plan 2030 ("MP2030"), the Executive Council ("ExCo") approved in principle in March 2012 for AAHK to adopt the option of expanding into a 3RS as the future development option for HKIA for planning purpose and for AAHK to proceed with the planning related to the development of the 3RS. AAHK completed the planning work in January 2015 and submitted a recommendation to the Government for consideration. In March 2015, ExCo affirmed the need for the 3RS.

18. While implementation of the 3RS does not require the approval of ExCo, the proposed reclamation of land and the associated land use zonings are governed by the Foreshore and Seabed (Reclamations) Ordinance (Cap. 127) and the Town Planning Ordinance (Cap. 131) respectively. The Lands Department and the Town Planning Board are proceeding with the relevant statutory processes at the moment and authorization will be sought from ExCo in due course for the proposed reclamation and land use zonings related to the 3RS project.

**(e) Additional capital expenditure to cater for the additional 50 mppa**

19. The 3RS project, with a total estimated construction cost of \$141.5 billion in money-of-the-day prices, is designed to cater for an additional 30 million passengers per annum. AAHK produces a 20-year master plan for the development of HKIA that is updated every 5 years. Whether and when to expand further the capacity of the airport to cater for the planned additional 50 mppa, including the cost involved, will be examined further in the context of the next HKIA master plan i.e. MP2035 which is currently underway.

**(f) Impact on AAHK's financial arrangement plan in the event of a lowering of its credit rating**

20. AAHK currently has a Standard & Poor's ("S&P") overall credit rating of "AAA" based on S&P's continued expectation that AAHK remains wholly owned by Hong Kong SAR Government.

21. In paragraph 6.2.7 of the 2015 HSBC's report, HSBC has indicated that under the five downside scenarios considered in the report, AAHK's financial ratios would remain at or near to levels consistent with an underlying rating of investment grade. HSBC expects that any additional funding requirements arising under the five scenarios considered can be raised by AAHK from the market on reasonable terms.

**Advice Sought**

22. Members are invited to note the additional information as set out in this paper.

**Airport Authority Hong Kong  
February 2016**

## **Supplementary note on Financial IRR and Financial NPV of 3RS prepared by HSBC**

### **1. Introduction and background**

This paper has been prepared by HSBC at the request of AAHK in addition to the report prepared by HSBC titled “3RS consultancy study, Financial arrangement for 3-Runway System (“3RS”) at HKIA – Financial advisor report” dated September 2015.

In 2009, the Airport Authority Hong Kong (“AAHK”) engaged The Hongkong and Shanghai Banking Corporation Limited (“HSBC”) to act as financial advisor for the financial feasibility assessment of the Hong Kong International Airport (“Airport”) Master Plan 2030 (“MP2030”). A report was published on 31 May 2011 which set out the findings of the assessment (“MP2030 Report”).

The financial feasibility assessment showed that the standalone financial internal rate of return (“IRR”) of the proposed 3RS was around 3% (pre tax). The financial IRR calculation did not take into account any economic benefit to be brought by the 3RS project as this was outside the scope of HSBC’s financial feasibility assessment. The low financial IRR at that time led to the conclusion that the 3RS does not generate a commercial rate of return on a standalone basis and would only be justifiable if the project delivers substantial economic benefits to Hong Kong in addition to the financial returns generated for the AAHK.

A public consultation on MP2030 was then conducted. Based on feedback from the public consultation and recommendations of AAHK in March 2012, the Executive Council (“ExCo”) gave its in-principle approval for AAHK to proceed with planning related to the development of a 3RS system at the Airport. AAHK was asked to proceed with (i) the Environmental Impact Assessment (“EIA”); (ii) financial arrangement proposal; and (iii) associated design details.

Since then, the scheme design for construction of the 3RS project has been developed. The traffic projections were reviewed and updated by International Air Transport Association Consulting (“IATA Consulting”) in 2012.

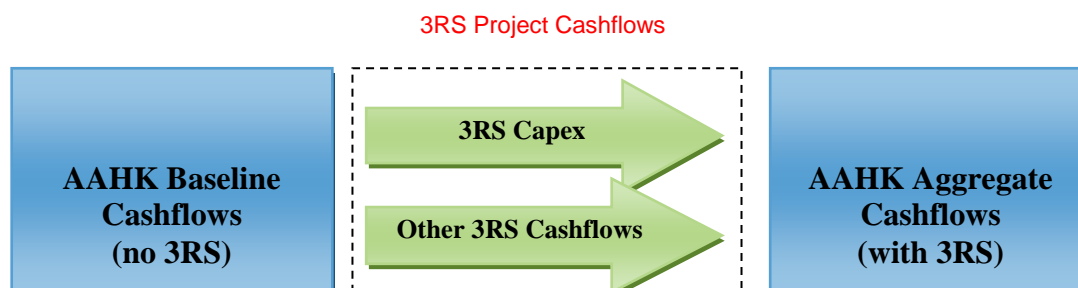
In 2013, AAHK engaged HSBC to act in the role of financial advisor to prepare the financial arrangement plan of expanding the Airport into a 3RS system based on updated traffic projections and capital expenditure estimates. This paper presents the current estimates of Financial IRR based on the latest financial projections and financial arrangement plan, and highlight key points to note when comparing these estimates with those presented in our MP2030 Report.

### **2. Notes on Calculation Methodology**

#### **Financial IRR**

The Financial IRR is calculated as the discount rate which when used to discount both the positive and negative future cashflows arising from the 3RS project (the “3RS Project Cashflows”) results in the sum of future cashflows equaling zero. 3RS Project Cashflows are calculated as:

- i) Total cashflows generated by AAHK as a whole assuming that the 3RS is developed, less
- ii) Total cashflows generated by AAHK as a whole, under a baseline scenario assuming that 3RS is not developed (in this scenario it is assumed that (i) no 3RS capex is incurred and (ii) traffic is constrained at two-runway capacity as estimated by IATA and (ii) other consequential changes in cashflow projections)





### Financial Net Present Value

The financial NPV of the 3RS project is calculated by discounting 3RS Project Cashflows and presented as Chart 1 based on a range of discount rates. The discount factor used in financial NPV calculation should be an appropriate discount rate for the risk profile of the project, and is a key variable in the financial NPV calculation. A company's weighted average cost of capital ("WACC") is often used as the discount rate in the financial NPV calculation.

3RS Project Cashflows are the project cashflows after tax but before financing.

### 3. Latest Financial IRR Calculation

The 3RS capex is currently estimated at HKD141.5bn, which will increase the capacity of the Airport from 420,000 ATMs per annum to 620,000 ATMs per annum and bring in incremental revenues and incur additional operating expenses, taxes (with traffic capped at 103 million passengers per annum in FY2030/31).

3RS incremental cashflows are calculated relative to a two-runway baseline case (with traffic capped at 77 million passengers per annum in FY2030/31).

The Financial IRR of 3RS also includes a terminal value in 2047 based on 15x FY 2046/47 EBITDA multiple.

The aggregate incremental cashflows arising from undertaking the 3RS project through to 2046/47 are as follows:

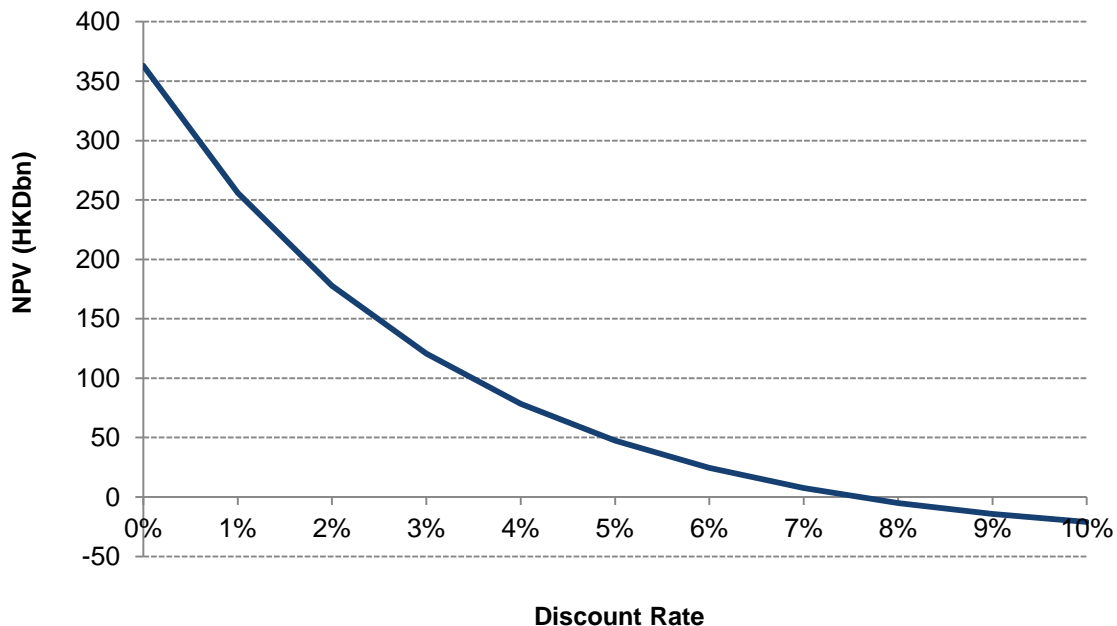
In HKDbn

Revenues	422.0
Operating Costs and Replacement Capex	(148.5)
Taxation and change in Working Capital	(31.9)
3RS Capex	(141.5)
Net Cashflow	100.1
Terminal Value	262.9
Financial IRR (approximately)	8%

The latest Financial IRR of the 3RS project is approximately 8% (post tax) on standalone basis before taking into account any economic benefit.

### 4. Estimation of Financial NPV

The financial NPV of the incremental cashflows arising from undertaking the 3RS project is illustrated below:

**Chart 1 – Financial NPV at Different Discount Rates**

AAHK has estimated that its WACC is approximately 8% based on internal assessment. According to this approximately 8% discount rate, the financial NPV of 3RS project is close to zero.

## 5. Key Differences in calculation of current Financial IRR compared to MP2030 Report

The MP2030 Report was a financial feasibility assessment where the financial IRR (excluding economic benefit) of both a 2RS and 3RS scenarios were analyzed. To achieve a fair comparison of the 2RS and 3RS scenarios at that time, financial IRR for both scenarios were computed based on incremental cash flows compared to a status quo scenario with capex limited to completion of the Phase 1 Midfield development in FY 2016 and traffic capped at the FY2016 traffic forecast upon completion of Phase 1 Midfield development (based on projections prepared in 2010).

In the current Financial IRR estimate, the baseline is updated in light of HKIA's development in recent years. The incremental cash flows of the 3RS project are calculated by comparison with a two-runway baseline case with capex including completion of the Midfield development and traffic capped at 77 million passengers per annum in FY2030/31 (i.e. constrained at two-runway capacity based on projections prepared in 2014).

The financial IRR of the 3RS project in MP2030 Report (2011) was computed based on pre-tax incremental cash flows because the source of funding was yet concluded and a financial plan was yet to be developed, while the Financial IRR under the 3RS financial arrangement study in this paper is based on post-tax incremental cash flows based on the current proposed financial arrangement plan.

Other assumptions in respect of costs and revenues have been updated in preparing the current projections used to prepare the financial arrangement plan report compared to those used in the MP2030 report.

The latest Financial IRR (approximately 8%) is higher than that under MP2030 Report (approximately 3%) principally because of changes in operating assumptions, including incremental revenue from ACF and airport charges, better traffic and financial performance of AAHK.

## Disclaimer

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**A Summary of the Measures identified to Mitigate  
the Risks that May Affect the Capital Cost for the 3RS Project**

**1. Land Formation**

Non-dredge method is adopted for land formation. The method has been incorporated into the Environmental Impact Assessment and approved by the Director of Environmental Protection as one of the environmental mitigation measures for marine ecological conservation. The scheme design of the non-dredge method was studied comprehensively by professional consultants and international experts to ensure that it complies with all relevant technical and statutory requirements.

**2. Use of DCM Technique**

With the presence of contaminated mud pits (“CMPs”) underneath the 3RS reclamation footprint, extensive research and investigation were conducted to study feasible ground improvement method to ensure the impact to marine ecology is acceptable. DCM was then concluded as the most appropriate method to treat the CMP areas. Although this technique has not been used in Hong Kong before, it has been widely used internationally, in particular in Japan and South Korea (e.g. Osaka Kansai Airport and part of the runway in Tokyo Haneda Airport in Japan, Busan New Port and Incheon Asia Games 2014 Wangsan Yacht Marina Project in South Korea). AAHK has successfully conducted a series of DCM site trials to provide confidence in the productivity, constructability and environmental acceptability of such method for the 3RS project. In addition, international experts in DCM have been engaged to carry out independent review of the latest DCM design to ensure its robustness and buildability.

**3. Availability of DCM Equipment**

AAHK has completed an international market sounding exercise in 2015 to verify DCM plant availability and the results demonstrate that sufficient plants can be made available by either fabrication or modification of the existing plants to meet the requirement of the 3RS reclamation works. The 3RS works will be procured globally

in order to tap into the expertise/resources available worldwide, so as to minimize the risk of equipment shortage and its impacts on the 3RS project.

The DCM trial has also proven that modification of a conventional barge into a DCM barge by installing DCM equipment requires only a few months' work in a conventional shipyard. Hence, AAHK is confident that the timely mobilisation of adequate number of DCM barges for the 3RS reclamation works would not be an insurmountable issue.

#### **4. Conditions of the Contaminated Mud Pits**

In order to fully understand the existing ground conditions of the reclamation area, a comprehensive ground investigation study had been conducted both within and outside the CMPs (with over 650 ground investigation points). The study reveals that the general ground condition comprises a thick layer of soft marine mud of varying thickness (averaging 15m), underlain by a layer of stiffer alluvium of 15 to 20m. About 40% of the reclamation area is underlain by disused CMPs within the layer of the marine mud. Regarding the “worst case scenario” where the condition of the mud proved to be sufficiently poor to require the entirety of the pits to be filled with cement, AAHK's consultant verified the scenario to be extremely unlikely.

AAHK has conducted a series of DCM site trials to provide confidence in the constructability and environmental acceptability of the DCM method in Hong Kong. The first DCM trial carried out in 2012 in the scheme design stage has confirmed the environmental and engineering feasibility of the method. The second DCM trial carried out in 2015 was for evaluating the engineering properties of the DCM clusters as well as the efficiency and cost effectiveness of the DCM plants and equipments. The trials and the associated monitoring and testing had all been proven successful. An Independent Checking Engineer has also been engaged to verify the DCM trials and results. The DCM site trials, together with the expertise provided by international DCM experts, have enabled AAHK to gain valuable knowledge to optimize the DCM extent required within the 3RS reclamation area.

## **5. Reclamation Materials**

AAHK had initially studied the possible sand sources from nearby countries and coastal cities from Mainland. It is envisaged that it would be most desirable to source sand from the Pearl River Delta (“PRD”) due to its close proximity and hence lower transportation cost. Based on the recent market sounding research and discussions with the Mainland authorities, AAHK is given to understand there is sufficient sand supply from the PRD region. The Government and AAHK are continuing discussion with the Mainland authorities on the detailed arrangement for sand supply. Good progress is being made.

Separately, with the much lower transportation cost due to decreased oil prices, there is opportunity to secure competitive prices of sand from further away from the PRD.

## **6. Bidder Bias and Contingency Reduction**

The project estimate was developed in conjunction with scheme design consultants and a professional independent quantity surveying (“QS”) consultant and was reviewed by AAHK’s management team. In coming up the estimated cost, reference has been made to the appropriate market rates; supported by benchmarking and building up from first principle based on materials and resources. Cost estimation, and the consequential changes in contingency, was a highly vigorous process which enables a high degree of confidence in the sufficiency and accuracy of the estimate.

## **7. Interface Risk**

Airport construction is highly specialized and requires in-depth design and construction knowledge of the full range of airport infrastructure works; specialized systems; their relationship with the existing airport facilities; and an appreciation of the logistic and construction constraints imposed by the existing airport operations. The Third Runway Division (“TRD”) (formerly the Projects Division) within AAHK, which is responsible for managing the 3RS project, has over 20 years of experience in project management construction at HKIA since the commencement of the original airport construction in the early 1990s. The TRD, comprising a compact structure of key in-house professionals, will expand its in-

house project management team to cope with the challenging tasks ahead.

An independent consultant was appointed to further develop a detailed Project Master Programme, Project Procurement Strategy and Project Risk Management Plan with a view to providing a robust basis for taking the project forward with programme and cost certainty.

## **8. Baggage Handling System (“BHS”) Risk**

Apart from the wealth of professional experts in the TRD within AAHK, a BHS consultant has been appointed for the design, installation and commissioning of the 3RS BHS to ensure the operational readiness of the system.

## **9. Scope Changes**

AAHK has an established vetting process and cost control system to manage the design scope changes. Continuous engineering analysis will be carried out during the detailed design stage to freeze the design scope and achieve cost-effectiveness and operational needs of the 3RS to ensure that the design will be fit-for-purpose and value-for-money, avoiding extravagant or unnecessary design or architectural features. Regular cost checks on the detailed designs will be carried out by independent professional QS consultants to ensure that the project cost based on the final design will not exceed the project budget. In the event that adjustments to the contract sum are necessitated by genuine needs, a detailed assessment of the need, justification, cost and programme implications of the proposed change will be carried out to ensure vigorous cost control, and recommendations will be put forward for the Board’s approval as appropriate.

**A List of Main Consultancy and Supporting Services  
Undertaken by the Airport Authority Hong Kong  
In Relation to Master Plan 2030 and the Third-Runway System**

**Completed Consultancy and Supporting Services**

	<b>Contract Title of Consultancy and Supporting Services</b>	<b>Name of Lead Consultant</b>
1.	Primary Air Traffic Forecast	IATA Consulting
2.	Airspace and Runway Capacity Analysis	NATS
3.	Initial Land Formation Engineering Evaluation	Meinhardt (Hong Kong) Limited
4.	Preliminary Engineering Feasibility and Environment Assessment Study – Comparative Environmental Assessment (this study covered the EIA study)	Mott MacDonald Hong Kong Limited
5.	Preliminary Aircraft Noise Impact Analysis	URS Corporation
6.	Preliminary Air Quality Impact Analysis	Ove Arup and Partners Hong Kong Limited
7.	Airport Master Plan 2030 – Economic Impact Study (2011)	Enright, Scott & Associates Ltd.
8.	An Update of Airport Master Plan 2030 Economic Impact Study (2015) (Note : this is AAHK’s contract C007-14 referred to in paragraph 13 of the paper)	Enright, Scott & Associates Ltd.
9.	HKIA Airport Master Plan 2030 : Financial Feasibility Assessment – Financial Advisor Final Report (completed in 2011)	The Hongkong and Shanghai Banking Corporation Limited



	<b>Contract Title of Consultancy and Supporting Services</b>	<b>Name of Lead Consultant</b>
10.	3RS Consultancy Study : Financial arrangement for 3-Runway System (3RS) at HKIA – Financial Advisor Report (completed in 2015)	The Hongkong and Shanghai Banking Corporation Limited
11.	HKIA Carbon Emissions Study	Environmental Resources Management
12.	Automated People Mover Systems Review Consultancy Services	Lea Elliott Limited
13.	Third Runway Reclamation Design Consultancy Services (Scheme Design)	Atkins China Limited
14.	Third Runway Environmental Impact Assessment Review Consultancy Services	ERM-Hong Kong, Limited
15.	Third Runway Reclamation QS Consultancy Services (Scheme Design)	Langdon & Seah Hong Kong Limited
16.	Terminal 2 Expansion Design Consultancy Services (Scheme Design)	AECOM Asia Company Limited
17.	Third Runway Infrastructure and Concourse QS Consultancy Services	Langdon & Seah Hong Kong Limited
18.	Third Runway Infrastructure and Concourse Design Consultancy Services	Mott MacDonald Hong Kong Limited

**Ongoing Consultancy and Supporting Services**

<b>Contract Titles of Consultancy and Supporting Services</b>		<b>Name of Lead Consultant</b>
1.	Third Runway Reclamation Design Consultancy Services (Detailed Design)	Atkins China Limited
2.	Third Runway Reclamation QS Consultancy Services (Detailed Design)	Langdon & Seah Hong Kong Limited
3.	Terminal 2 Expansion Design Consultancy Services (Detailed Design)	AECOM Asia Company Limited
4.	3RS Environmental Team Consultancy Services	Mott MacDonald Hong Kong Limited
5.	3RS Independent Environmental Checker Consultancy Services	AECOM Asia Company Limited
6.	3RS Environmental Permit Consultancy Services	ERM-Hong Kong, Limited
7.	Building Information Modelling Consultancy Services	AECOM Asia Company Limited
8.	Terminal 2 Expansion QS Consultancy Services	Rider Levett Bucknall Limited
9.	Automated People Mover System Design Consultancy Services	Ove Arup & Partners Hong Kong Ltd
10.	Baggage Handling System Design Consultancy Services	BNP Associates Inc
11.	Automated People Mover /Baggage Handling System Tunnels Design Consultancy Services	Mott MacDonald Hong Kong Limited
12.	North Runway Crossover Taxiway Design Consultancy Services	Atkins China Limited