



HONG KONG INTERNATIONAL AIRPORT

Hong Kong

Third Runway System Baggage Handling System

Airport Authority Hong Kong | Projected Completion 2024

To meet future air traffic growth, the Airport Authority of Hong Kong (AAHK) will expand Hong Kong International Airport (HKIA) into a three-runway system (3RS). AAHK will expand the airport capacity to 100 million annual passengers in 2024 by reclamation of approximately 650 hectares of land north of the existing airport island. The Third Runway Passenger Building (TRC) providing 57 new parking positions will be constructed on the new reclaimed area. A 2.6 km long BHS Tunnel will be constructed to connect the new terminal with the existing Terminal 2 located on the airport island.

BNP was employed by AAHK to carry out the detailed design of the new BHS for the airport expansion including all new BHS systems and facilities, interconnecting baggage tunnel systems, and modification of the existing baggage facilities for integration into the new airport-wide BHS.

The new TRC BHS will handle transfer bag input and screening, departure bags sortation and make-up as well as arrivals bags offloading while the Terminal 2 BHS will be completely rebuilt in the redeveloped and expanded building to provide check-in, arrivals reclaim and departure bags security screening. The new BHS installed in T2 and new passenger terminal will adopt Individual Carrier System (ICS) technology to provide the highest tracking accuracy as well as high speed transportation between terminals. Tote-based hold baggage screening will be used to provide high tracking accuracy of security status.

In addition to connection to new passenger terminal, T2 BHS will serve as a hub to interconnect with the existing SkyPier baggage hall and T1 baggage hall via ICS and belt conveyor system with the new 3RS BHS.

In response to AAHK's strict requirement on system resilience, BNP provided a design which allows for redundant capacity such that each individual sub-system can handle 75% peak bag flow under single failure. To ensure that the BHS will provide sufficient capacity and satisfy all process time requirements, a real-time 3D simulation model of the baggage systems for T1, T2, TRC and SkyPier was developed and extensively analyzed to confirm the capacity and performance of the baggage systems.

BNP rendered its services for reference design, simulation, design development and tender drawings and specifications for the new BHS to allow AAHK to procure the systems through competitive tender. During the Construction stage of the project, BNP will provide experience site-based staff to support AAHK for the delivery of the operational BHS.



ASSOCIATES, INC.

BNP PROJECT TEAM

Damien Breier, Principal
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BHS CONSTRUCTION AMOUNT

US \$750+ Million

REFERENCE

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SCOPE OF SERVICES

Design Development
Simulation
Contract Documents
Tender Review
Construction Stage Support