SCHIPHOL INTERNATIONAL AIRPORT

Amsterdam, The Netherlands

Terminal A Baggage Handling System

Schiphol Group | Ongoing

BNP was retained by KAAN Architects as part of an architecture and engineering consortium for the design of the new Terminal A at Schiphol International Airport in Amsterdam. BNP designed the baggage handling system for the new Terminal, which would function as a logical extension of the existing South Bag Hall, sharing logistics and capacities between the joint systems. The design was required to be 'robust', allowing for a low impact conversion between OD and HUB based utilization. This required a flexible system design which could cater to two differing flight schedules. The new terminal was designed around a 24 million annual passenger demand.

BNP performed a numerical analysis to determine critical requirements for the new baggage handling system. This included the development of an individual bag load file, which was used to determine the baggage system demands on a very high level of detail.

These results were translated into demand requirements, which were in turn used in a multidisciplinary concept study to validate the shape and overall dimensions of the new Terminal. Owing to the 'robust' requirements, it was determined that the new system would share the large existing early bag store of the south bag hall. This would reduce the required building footprint if the OD scenario were selected.

This constrained footprint also led to the deployment of batch processing technologies in the new Terminal. These new batching stations would use semi-automated loading technology to minimize the number of make-up positions required, whilst still providing a high make-up capacity.

To demonstrate the system satisfied the demand metrics, BNP produced a full 3D simulation of the proposed system, inclusive of the existing south bag hall, existing rack-based early bag store, and proposed batching process. This simulation used the individual bag load file to accurately re-create a bag-by-bag arrival/departures profile.

Design challenges revolved around the two-scenario, one design 'robust' approach, which required the system to satiate two very different modes of operation in a single footprint without major changes to the technologies or arrangement. BNP had to employ new technologies and processes to satisfy the high transfer, EBS, and make-up requirements associated with a HUB operation. In addition, a strong interface had to be established with the existing bag hall, ensuring both could work together for a HUB operation or independently for an OD, depending on the selected scenario.

BNP ASSOCIATES, INC.

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TOTAL CONSTRUCTION AMOUNT
TBD

BHS CONSTRUCTION AMOUNT
TBD

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SCOPE OF SERVICES
Analysis Study
Conceptual Design
Design Development
System Simulation