



SEATTLE-TACOMA INTERNATIONAL AIRPORT

Seattle, Washington

Baggage Optimization Project

Port of Seattle | Ongoing

BNP is the prime design consultant. Our team consists of Gensler, Mazzetti and WSP. The existing BHS has seven separate CBIS' systems currently in use have very little or no redundancy between systems. During the design, the Port asked BNP to redesign to 66 MAP due to the rapid growth.

The overall project removes and replaces over 10 miles of conveyor. Multiple products were tested for energy costs reduction. The data was evaluated and compared to the manufacturer's claims and the airport's existing equipment to determine long term energy savings gained. Along with input from POS O&M staff, the BHS equipment specifications were updated for the Optimization project.

Phase 1 construction began in March of 2017 and concluded in April of 2020. It consisted of 8 CTX 9800 machines, 28 baggage inspection tables, 1 temporary MEC and 2 temporary sortation mainlines. It utilized 690 drives with distributed I/O controls, Run-on-demand energy management, and provided the ability to bypass the C1 CBIS. In lieu of conventional controls methodology using MCP's, the distributed controls architecture consists of Motor Power panels (or MPP's) that provide the 480vac power to the drives, and Conveyor System Controllers (or CSC's) that communicate with the real-world devices over ethernet. Conventional pipe and wiring is used for the 480VAC power. All control wiring utilizes ethernet or low voltage cabling run in cable trays along the side of the conveyors. This drastically decreases electrical installation time and labor costs and provides plug and play operation for replacement components. With run on demand methodology, each individual conveyor runs only when a bag is approaching, or the conveyor is occupied. Once the conveyor is clear, the conveyor stops and remains in a ready state. Run time can be configured to any value and can be by individual conveyor, sub-system or globally.

Phase 2 of the project adds an additional 4 EDS machines (with the ability to add 4 more) to the centralized CBIS. It adds 14 new bag inspection tables (with the ability to add an additional 16) to the centralized CBRA, it also adds 4 manual encode lines, new sortation to the north concourse, and new mainlines to the south connecting to the south satellite. It also adds over 2200 new drives with distributed controls and energy management as in Phase 1. When completed, it will eliminate four of the seven CBIS's currently in operation.

The future phase 3 design has not been vetted and updated to reflect any of the changes from Phase 2. Phase 3 connects the south ticket counters to the centralize CBIS adds four sortation mainlines, two recirculation lines, two additional makeups added to existing 8 makeups on the south, and final connections to the SSAT tunnel and international arrivals facility.

Phase 3 will eliminate the remaining three CBISs.



ASSOCIATES, INC.

BNP PROJECT TEAM

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BHS CONSTRUCTION AMOUNT

US \$300 Million

REFERENCE

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