



Project Introduction

- Occupant:** JetBlue Airways Corporation
- Function:** Training Facility for JetBlue Airways – Eight full flight simulators, two cabin trainers, classrooms, administration offices, training pool, & fire-fighting training station
- Size:** 105,475 sq.ft.
- Primary Project Team:** *General Contractor* – Suitt Construction Company
Owner's Representatives – Tishman Construction Corp.
Rubin & Rotman Associates
Architect/Engineer – BRPH Architects – Engineers, Inc.
Mechanical & Plumbing Engineer – Shappley Design
Mechanical & Plumbing Contractor – J&A Mechanical
Electrical Contractor – Tri-City Electrical
- Dates of Construction:** February 2004 – June 2005
- Cost Information:** Total Building Cost: \$15 million
Simulator & Equipment Cost: \$50 million
- Project Delivery Method:** Design –Build



Project History and Design

JetBlue Airways is building this training facility to house approximately 200 permanent daytime employees and up to 300 students on any given day. The facility will be used for initial and continuous training of all JetBlue pilots and in-flight crew, as well as support training for its technical operations and customer service crew. One of JetBlue Airways main company focuses is an inviting image with innovative technologies. The building design brings a strong, contemporary design element that projects a bright and inviting image for the students and crew.

Architecture

The exterior of the building will consist of composite aluminum panels in JetBlue corporate blue and grey along with architectural pre-cast concrete panels with exposed aggregate. Aluminum curtain walls and spandrel glass will encompass areas along the west façade which will function as the main entrance.

The interior will bring the strong, contemporary design elements that will project a bright and inviting image for students and crew. The main reception and areas of congregation will have porcelain or vinyl tile in shades of white, grey, and blue. Classrooms and administrative offices will be carpeted with colors and styles complimenting the tile areas. The main reception area and palm court will house multiple interior palm trees and a large steel and glass monumental stairway.

Major National Codes: BOCA
 The Florida Energy Efficiency Code for Building Construction
 South Florida Building Code, Miami-Dade & Broward Edition

Zoning Requirements: Greater Orlando Aviation Authority



Structural

Cast-in-place spread and strip footings with a slab on grade will support the structural steel system. Eight 2' thick slabs will be poured to provide extra support below grade for the Simulators. Elevated slabs will be 3" insulating concrete on rigid insulation board on 1-1/2" metal deck. Building will be framed with light gauge steel framing with galvanized metal studs. Galvanized Type B steel roof deck with 3" insulating concrete and a bituminous membrane will provide support and protection on the roof.

Mechanical

The JetBlue Training Facility has a 311-ton air-cooled chiller providing chilled water for 6 air handling units serving the Simulator Bays. Twelve packaged roof top air handling units provide cooling for the remaining office and classroom spaces. Heat is provided by electric coils in the VAV system. A 3-ton split system will service the separate security building adjacent to the entrance gate.

Electrical

The electrical system for the JetBlue Training Facility is typical for normal power conditions. The system consists of a main distribution panel 3 phase, 4 wire 480/270 V Primary System and a 208/120 V 4 wire, 3 phase, 4 wire Secondary System. It also contains 2000kVA and 2500kVA, 3 phase Y main transformers. Conduit will be run under the slab and in the walls. Electrical will be run from the OUC electrical pull box across Hangar Blvd.

Lighting

Different forms of fluorescent lighting will be used throughout the JetBlue Training Facility. Offices and classrooms are dominated by 2'x4" recessed parabolic and grid - troffer lighting on all floors. Recessed compact fluorescent downlights are used throughout the auditorium, break room, lounge and main entrance stairwell. The Simulator Bays and mezzanine areas are illuminated with fluorescent dome wrap and wrap around surface mount fixtures around the perimeter of the bays. In grade ground



fixtures illuminate the Palm Court area, while decorative surface mount lighting illuminates the terrace on the third floor.

Fire Protection

The Training Facility involves 3 wet-pipe fire sprinkler systems, two single interlock pre-action systems and a class 11 manual wet standpipe system without hose racks. The Simulator Bay, computer rooms, and cabin trainers will be protected by the pre-action system, and all other areas protected by the wet-pipe system. An electric solenoid valve for the simulator bay and computer room's pre-action system will be released by the fire alarm detection system. Pre-action system supervisory air pressure switches shall also be monitored by the fire alarm system. Valve tamper switches are being provided and shall be controlled by the fire alarm detection system.



Project Delivery System

While this project is being delivered in a design-build manner, it also has taken on a fast-track approach. Design criteria and a set of requirements were developed by the owner's architect to present to the pre-qualified Design/Build firms for proposal. These firms were to develop a firm lump sum proposal that complied with or exceeded the requirements of the design criteria. Design on the majority of the building continued after the job was awarded and will continue while JetBlue makes final decisions on their needs.

Since JetBlue Airways is managing many projects and has little experience with the construction industry, they hired Tishman Construction Corporation to act as the owner's representative on site for both their training facility and a hangar that is being built simultaneously on the other end of Hangar Road. During the initial design phase of the building, JetBlue also hired Rubin & Rotman Associates to function as the architect that would express their needs. JetBlue holds lump sum contracts with both Rubin and Rotman and Tishman Construction.

Suitt Construction Company was awarded the general contractor position on the project in January 2004 after receiving the Request for Proposal two months earlier. During the proposal design phase, Suitt Construction hired BRPH Architects-Engineers, Inc. to function as the architect and engineers on this project. BRPH Architects-Engineers will provide electrical and structural engineering with Shappely Design Consultants providing the mechanical and plumbing engineering and Global Fire Engineering providing the fire protection engineering. Suitt Construction has a standard lump sum contract with JetBlue Airways, and will hold multiple lump sum contracts with all subcontractors.



Project Cost

<u>Actual Building Construction Costs:</u>	Total:	\$15,000,000
	Unit Cost:	\$150/SF
<u>Total Project Costs:</u> <i>(Excluding the cost of simulators and cabin trainers)</i>	Total:	\$16,200,000
	Unit Cost:	\$162/SF
<u>Approximate Electrical Costs:</u>	Total:	\$1,614,000
<u>Approximate Mechanical Costs:</u>	Total:	\$292,000
<u>Approximate Plumbing Costs:</u>	Total:	\$3,237,800
<u>Approximate Fire Protection Costs:</u>	Total:	\$177,226
<u>Approximate Structural System Costs:</u>	Total:	\$727,709
<u>Design Costs:</u>	Approx.	\$455,000

**Note: These are only approximate values and should not be used beyond this project.*

Local Market Conditions

Since Suitt Construction self-performs their concrete work, there is a need to hire skilled, experienced laborers. Having multiple jobs in different stages of construction in the Florida area, allows Suitt to move experienced workers from one job to another keeping them almost continuously employed and a constant supply of experienced laborers available. With the growing population in the Florida area, there is an endless supply of laborers.

This 13-acre site allows for plenty of parking and staging areas for construction materials. The lack of congestion on site allows for easier scheduling of material delivery and parking.