



BLISS & NYITRAY, INC.  
STRUCTURAL  
ENGINEERS

# Services.

## *aviation*

### AVIATION

COMMERCIAL OFFICES

EDUCATION

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PARKING

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## North Terminal Development

The Corgan Team, Turner-Austin Airport Team

### Miami International Airport

*BNi is a member of the program management team for this 3.2 million sf, phased \$1.5 billion expansion and renovation project. As one of the busiest airports in the world, Miami International Airport (MIA) is the gateway to Latin America and the Caribbean. American Airlines operates over 55% of MIA's flights. The \$1.3 billion North Terminal Development was conceived to unify all of American's operations into a single 1.3-mile long super concourse.*

*American retained Corgan Associates, Inc. of Dallas, TX to execute the planning and programming of this facility, with BNi as lead structural engineer from master planning through advanced design development. Our services, which began in 1997, also include review of construction document packages prepared by the various A/E teams as well as review of construction. By the 2009 scheduled completion, there will be 47 gates in 1.9 million sf of new construction and 1.3 million sf of renovation.*

*The building design combines new and existing structures into an integrated architectural expression. A four-station passenger train (Automated People Mover) rides above the 46' high building roof and is serviced in an integral maintenance yard that extends 90' above grade. The rhythm of the structure is expressed on both the facade and the concourse. Wind tunnel testing simulated hurricane force loading and the results were used in the design and placement of shear walls and lateral bracing that would maintain the openness of the interior.*

*Design and construction phasing is the greatest challenge. After the sequencing and phasing analysis, the NTD has been packaged and scheduled into 35 separate design and construction projects, some with multiple packages.*

## AVIATION PROJECTS

### Concourse G

Miami International Airport  
Replacement of existing Concourse G with new 295,000 sf International Concourse

### "E" Satellite Extension

Miami International Airport  
Westward expansion of the existing Concourse E International Satellite, adding 11 new international gates in a 3-level, 377,000 sf facility refurbishment of existing space, construction of chiller plant (project abandoned after completion of design)



**AVIATION PROJECTS**

**Concourse "F" Phase 2**

Miami International Airport  
*Replacement of south side of original concourse with 117,000 sf 3 level facility with international capability*

**Concourse "F" Connector**

Miami International Airport  
*Foundation and column reinforcement & roof raising*

**Design Guidelines Manual, Terminal Edition, Dade County Aviation Department**

Miami International Airport  
*Revisions to the Design Guidelines Manual incorporates revised wind loading criteria for all the facilities under the Dade County Aviation Department*

**Lower Vehicular Drive Refurbishment**

Miami International Airport  
*Column strengthening and foundation underpinning from Concourse B to D and F to H*



**(Terminal Wide People Mover System) Skyride**

MC Harry & Associates  
**Miami International Airport**

*Phased extension of the Skyride system to other parts of the terminal. Extension from Concourse F to H, and Concourse D to C, Skybridge from Concourse H to Park Four, modification of bridge at Concourse C to meet Skyride; extension from Concourse C to B, Skybridge from Concourse B to Park Five; connectors over the terminal roof from the over-the-canopy connector to Concourses D and F, with vertical circulation modules at C, D, F, G and H (not built); enclosure and air conditioning of the original Skyride bridges to D and F; extension of Skyride walkways from the central tripod at the parking garages eastward along central boulevard with minor bridges to parking garages.*



**Concourse "F" Expansion and Modification**

MC Harry & Associates  
**Miami International Airport**

*Construction of twelve new gate positions and major renovation of existing concourse. The Concourse F terminal improvements will expand and modify Gates F4, F6, and F8 providing additional wide body aircraft service and international capacity.*

*It is one of several concourses being expanded and improved as part of the MIA \$4.7 billion expansion. The existing 19 gate international airport terminal concourse is being expanded and renovated through multiple construction packages.*



**A W A R D S**

*Skyride at MIA – Florida Institute of Consulting Engineerings - Engineering Excellence Award, 1986*  
*American Institute of Steel Construction - Award of Merit - Bridge Competition 1986*



**Skyport**

MC Harry & Associates, Darin & Armstrong, Inc.

**Miami International Airport**

*Elevated heliport facility with two helipads connected to Skyride system. Miami International Airport's Skyport Terminal was programmed as the first stop in a network of heliports collectively operating as a regional commuter helicopter system serving Dade, Broward, Monroe and Palm Beach Counties. Paired with the Skyride Moving Sidewalk Bridge System, the Skyport/Skyride Project has become the premier airport inter-change among multiple modes of ground transportation, commuter air service and airline passenger circulation.*

*MIA has extremely limited land resources, and therefore its expansion opportunities are virtually limited to vertical stacking and overlay concepts. The 4,000 sf heliport terminal is comprised of an air conditioned check-in/arrivals-departure lounge and an open-air breezway. The breezway is linked to an upper level vestibule and the landing pad via an open stair, escalator, and a baggage/passenger lift. The arrivals/departure lounge is accessible from Garage Level 7 approximately 65' above grade. The lounge can also be accessed from two hydraulic elevators which link the Skyport with the Terminal Wide Moving Sidewalk System.*

*The Skyport/Skybridge Project has constituted a major improvement to Miami International Airport's landside infrastructure. It has updated this 1950's vintage terminal into a viable transportation center in a highly competitive global aviation market.*

**AVIATION PROJECTS**

**Air Cargo Building 2220**

Miami International Airport  
 240,000 sf Cargo facility with rooftop parking for 456 cars

**Skyride**

Miami International Airport  
*Master planning for Skyride, a system of enclosed moving walkways connecting the parking garages to the passenger terminal and concourses; construction of the first phase of the system, with Skybridges from the parking garages numbers 2 and 3 to Concourses D and F; construction of over-the-canopy connector from Concourse D to F; vertical circulation modules at D, E and F; addition of new terminal space at the third level at Concourses D and F*

**Terminal At Concourse "E"**

Miami International Airport  
 Hotel atrium food court

**Northwest Area Improvements**

Miami International Airport  
 General aviation facilities, customs, maintenance hangars and gate structure



**A W A R D S**

*Hotel MIA - Miami Chapter, AIA, Award of Excellence, 1992*



**Hotel MIA Expansion and Renovation**

Robert B. Browne Architects

**Miami International Airport**

*Room, lobby and restaurant renovation, addition of meeting rooms, lounge, health club, racquetball court, swimming pool and scenic elevator on new eighth level, including extensive foundation underpinning and strengthening of existing columns*

**AVIATION PROJECTS**

**36th Street Aircraft Maintenance Facility**

*Miami International Airport  
Aircraft parking apron and hardstand  
aircraft washrack (designed), administration  
building, warehouse, multi purpose  
building, executive hangar, maintenance  
hangar (design development), interim  
hangar options (preliminary design), flight  
simulator facility*

**Aircraft Hangar Buildings**

*Tamiami Airport  
Three 13,000 sf hangars for small aircraft  
and helicopter operations*

**Design Guidelines Manual, Cargo  
Building Edition**

*Dade County Aviation Department*

**Bartlett Aviation Hangar**

*Opa Locka Airport*



**Air Cargo Building N805**

Belluschi Beame Architects, Odebrecht

**Miami International Airport**

*159,000 sf cargo facility, rooftop parking for 241 cars, with vehicular ramp from ground level and automated cargo handling system.*