

Owners Perspective

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Project Leadership Gold Award Winner: Miami International Airport's North Terminal

All Grown Up:
The Evolution of
Job Order Contracting



Project Leadership

Gold Award Winner

MIAMI INTERNATIONAL AIRPORT'S NORTH TERMINAL

By Brittany Fining

The 36-million-square-foot expansion and renovation of Miami International Airport's (MIA) North Terminal is one of the largest extension and redevelopment programs ever undertaken at an operational airport. The result is a facility, exceeding a mile in length, that offers 50 combined domestic/international gates and 12 regional/commuter gates that can be accessed by way of an exterior covered walkway and a four-station Skytrain. The new terminal also includes 140,000 square feet of retail and restaurant space and a revolutionary baggage handling system capable of moving and sorting baggage with limited human intervention. The team working on this project was responsible for modifying the configuration of the North Terminal departure gate to a design that would simplify the

passenger transfer process. The new facility gives the Miami International Airport the means to effectively double the number of flights per day and process about 8,000 passengers per hour.

Because the terminal was to remain functional, airport authorities required that the program be gate-driven with interim gate openings so that all the components would not be unavailable for use at the same time (especially important in light of the duration of the project, which in the end was almost six years). Initially, American Airlines (AA) had taken responsibility for both the design and construction of the project. However, the coordination and double oversight effort proved to be too burdensome for the airline, resulting in extensive delays and costly claims, so the Miami Dade Aviation Department (MDAD)

assumed project ownership early on. The project slowed down for about a year during this transition, which allowed the MDAD to re-group and re-evaluate the overall program status. This downtime also allowed them to re-estimate and re-bid the work to be completed, establish an efficient claims process and Owner's review board, contract a program management firm to hire management staff, and create new contracting assignments. In evaluating program requirements, and in an attempt to accelerate completion to save money, MDAD closed Concourse A, transforming this "airside construction project" to a "landside" construction project, easing security requirements and helping save 1,200 man-hours per day.

The key to the project's overall success was the shifting of responsibilities from AA to the MDAD, which was

Interior view of domestic circulation corridor.



better equipped to coordinate the successful phasing and delivery of a complicated construction program within an operating terminal. More critical still was the creation of a management team that capitalized on the knowledge and skill of professionals that had prior successful involvement in the project. Additionally, a commitment to effective estimating and minimizing the potential for claims won over bond holders who had previously expressed concern, and, as a result, the project's bond rating was raised.

To ensure cost management, MDAD initiated a total cost management approach, breaking the program into three components: budget and risk management, change management, and contract risk mitigation and claims avoidance. After establishing this, MDAD focused on creating a new project budget with the help of an independent estimating team. The next step was managing the budget, and the cost management team worked to develop individual project costs against which commitments were tracked and work-in-place was projected. A detailed change management system and independent change management board were put in place to control scope changes during production, and most changes were negotiated at the project level, with the involvement of all stakeholders. More difficult changes were taken to an executive review committee, and a third body, the Dispute Resolution Board, was established to prevent the most challenging disputes from becoming potential claims.

To ensure quality, MDAD held contractor community meetings to explain the claims process for earlier claims and assure contractors that they would receive timely payment for their work. This resulted in a shared commitment to project quality and overall project success. The project management team was committed in its efforts to continually update the master plan to reflect changes and ensure that every member of the project team could rely on its information. Additionally, MDAD communicated, from the outset, its clear expectation that it desired a single unified design to define the whole terminal, not sections reflective of individual firms' design philosophies. Despite there being

Interior view of domestic circulation corridor and escalator/stairs up to Skytrain station.



Interior view of terminal.

more than 27 design firms working on the project, not one disagreed with or deviated from the design theme, resulting in consistency and uniformity in the overall design.

MDAD recognized that one of AA's key breakdowns was its failure to maintain phasing requirements when unanticipated challenges arose, and, on a site that was to remain operational throughout construction, phasing was crucial to project delivery. MDAD's management created a team solely dedicated to phasing plans, responsible for re-phasing the balance of remaining work and adapting those plans as needed when new conditions were encountered. MDAD also demonstrated its scheduling expertise in the procurement process. Using relationships that it had forged with county leaders, the MDAD was able to push through the North Terminal Expedite Ordinance, which allowed the MDAD to expedite the processing of change orders and be more flexible when creating phasing plans.

MDAD commissioned a revised project estimate to understand the magnitude of the project and assess the strengths and weaknesses of the program. They then oversaw the effort to implement a new phasing plan that would accommodate the needs of all user groups. MDAD divided the various end-users into a wide range of stakeholder groups. Small group meetings were initiated to assist each group in understanding the changes they could expect and the impact on each stakeholder. MDAD's goal was to be as responsive as possible to user group requests, and these requests were prioritized by the leadership team based on whether requests impacted security, operations, or passenger experiences. With the new management hierarchy established by the MDAD, all of this was made possible.

Also critical to the project's success was the inclusion of both fire safety and building department officials. Weekly meetings were held to involve and include the building and fire departments in the program's challenges and progress, encouraging them to be part of the solution.

While the project was a success, the complexities of the project posed challenges along the way. However, these were all met by innovative and dedicated project leadership. The



View of regional commuter facility covered walkway, which provides protection from the elements to passengers walking to and from the airplanes.

project's size alone made it inherently complex, requiring the coordination of more than 27 design firms. The project's initial floundering also posed problems, but MDAD created an independent Owner's review board, a claims resolution fund, and claims resolutions procedures to effectively and fairly resolve previous issues and prevent further ones from arising. An additional complexity arose in coordinating and meeting the needs of multiple agencies and end-users. The project touched multiple user groups, all of whose needs

had to be met, and MDAD worked one-on-one with each of these groups to ensure that this occurred. Furthermore, MDAD redefined the project while in process in order to coordinate the many construction components and logistical challenges, and to deliver groups of gates in a more efficient manner, as well as re-phasing multiple construction projects "on-the-fly," allowing work to continue unhindered by hold-ups and in a timely manner. Dealing with the reality of post-9/11 security requirements also posed a challenge, but MDAD's conversion of the project from an "airside" operation to a "landside" operation eased security and created \$240 million in savings. Finally, one of the project's greatest challenges was the year-long delay in opening the new baggage handling system, but MDAD's decision to build temporary ticketing counters eliminated the potential negative impact on travelers.

Throughout the many phases of the project, effective communication, coordination of efforts, and steadfast dedication allowed MDAD to meet and resolve the many challenges that inevitably arise in a project of this size and scope. The project members worked together and avoided conflict by having clear, defined roles and plans, responsibilities, and direction. All of these efforts are evident in the end result. For their excellent planning and management, COAA bestows a Project Leadership Gold Award to the Miami International Airport for the North Terminal Project.

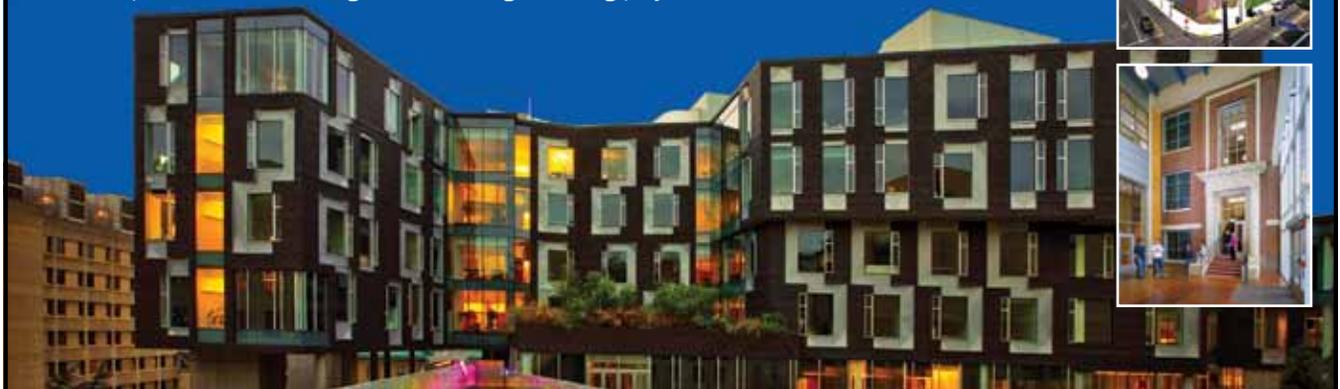
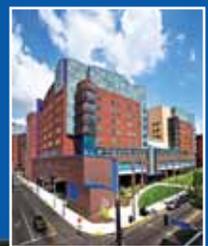
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PJ Dick Projects: (above) Carnegie Mellon University Gates Center for Computer Science; (top to bottom) Children's Hospital of Pittsburgh of UPMC and Penn State Shenango Sharon and Lecture Halls

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North Terminal Development (NTD) Program

Total Construction Cost: approximately \$2.26 billion

Total Program Cost: approximately \$3.06 billion



Exterior view of ramp control tower specifically dedicated to control the north terminal gates.

Owner: Miami-Dade Aviation Department
NTD Program Director: Juan Carlos Arteaga,
AIA, NCARB, CBO, CGC, LEED® AP BD+C

Program Management Consultant: Heery S&G
Principal-in-Charge: Fernando Gavarrete

People Mover Consultant: Lea & Elliot
Project Manager: Dan McFadden

Baggage System Consultant: URS
Project Manager: Bob Baker

Design Professional: The Russell Partnership
Project Manager: Fernando Calcines

Design Professional: Harper Partners Perez & Perez
Project Manager: Jim Griffin

Design Professional: Wolfberg Alvarez and Partners
Project Manager: Raul Estevez

Design Professional: Bermello Ajamil and Partners
Project Manager: Steve Pynes

Design Professional: Rodriguez & Quiroga
Project Manager: James Palma

Design Professional: M.C. Harry and Associates
Project Manager: Jim Piersol

Design Professional: Gurri Matute
Project Manager: Jose Matute

Design Professional: T.Y. Lin International
Project Manager: Richard A. Waters

Design Professional: Leo A. Daly
Project Manager: Abdel F. Martel

Managing General Contractor:
Parsons-Odebrecht Joint Venture (POJV)
Director: Dave Brown
Deputy Director: Lucas Prado
General Superintendents: Art Dunn, Tommy Valentine

General Contractor:
MCM-Dragados Joint Venture (MDJV)
Project Executive: Lou Munilla
Project Manager: Eugenio Jaramillo
General Superintendent: Daniel Perdomo

General Contractor: Beauchamp Construction
Project Executive: Brad Smith
Project Manager: Jorge Sanchez
General Superintendent: Adel Suarez

Baggage System Vendor: Siemens Industries
Project Executive: Stephen Kramer
Project Manager: Del Hollingsworth

People Mover System Vendor:
Sumitomo Corporation of America
Project Executive: Gino Antonello