

MIAMI INTERNATIONAL AIRPORT

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Gateway to the Americas

A wide-angle, low-perspective shot of a modern airport terminal hallway. The hallway is long and brightly lit, with a polished floor reflecting the overhead lights. People are walking in both directions, some carrying luggage. On the left, a sign for gate D27 is visible, along with an exit sign. The architecture features clean lines, glass railings, and a high ceiling with recessed lighting. The overall atmosphere is busy and contemporary.

The new North Terminal Development (NTD) at Miami International Airport represents the biggest ever single investment in US aviation history. Program director Juan Carlos Arteaga talks to Jayne Alverca as the project nears completion

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By the end of 2012, Miami International Airport (MIA) will have been transformed by completion of the North Terminal Development Program. MIA, which is operated by the Miami-Dade Aviation Department, is the largest US gateway to Latin America and the Caribbean and is one of the leading international passenger and freight airports in the world. 96 different carriers are involved in shifting over two billion tons of freight annually and ensuring the safe travel of almost forty million passengers.

Lea+Elliott is proud to be the
APM CONSULTANT
 for the new MIA North Terminal
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Lea+Elliott is also the APM Consultant for the new MIA Mover.
 MIA Mover will begin passenger service in September 2011.

MIA also has a reputation for aesthetics to live up to. Cited within the industry as one of the six most beautiful airports in America and among the top 15 in the world, it is imperative that any new development enhances the environment of calm and tranquility that its operators have sought to cultivate.

"This has been a huge redevelopment project which is costing in the region of \$3 billion," states Juan Carlos Arteaga, who has held overall responsibility for the program since March 2006. The most significant challenge of his career to date has involved expanding and renovating five distinct concourses which have been remodeled into a state-of-the-art, 1.3-mile-long linear terminal.

Today, only three gates remain to be opened in the 50-gate "super concourse," which is used by American Airlines as its hub for Latin America and the Caribbean with over 300 daily flights. One of the most significant features of the new concourse is its dual-functionality with the ability to adapt to either domestic or international travellers. The new ease with which people can move has greatly improved efficiency and the passenger experience and is seen as one of the key benefits of the redevelopment.

To give some idea of the scale of the NTD program, Arteaga points out that the new North Terminal accounts for approximately half of the total built space of almost eight million square feet at MIA and holds 50 out of a total of 130 departure gates. Luckily Arteaga enjoys managing complexity and one of the most challenging aspects of the program has been ensuring that the 24/7 construction operation did not impact on the safety or comfort of passengers. Throughout the duration of the program it has been business as usual at the airport.

"I am extremely proud of the fact that the majority of this program has achieved every single milestone that has been set over the past five years," he declares. Delivery of the program has been long awaited. "It originally began back in 2001, but was beset by many problems in its early stages. The program I inherited was over budget and far behind schedule and the biggest difficulties were encountered at the outset, getting it back on track.

Lea+Elliott

"The opening of the Skytrain has helped make MIA a world-class airport."

Skytrain is the world's newest airport APM. The Skytrain decreases walking time 70% for domestic connecting passengers and 34% for international connecting travelers. Skytrain operates in a pinched-loop configuration with four, 4-car trains at approximately 120-second headways. Serving four stations during peak hours of operation, the system can carry nearly 9,000 passengers per hour per direction.

As the APM consultant, Lea+Elliott provided planning, specification development, procurement support, design review, and manufacturing and construction oversight services to Miami Dade Aviation Department.

Lea+Elliott is currently the APM consultant for the new MIA Mover that will connect the Airport to the new Miami Intermodal Center.

But since then, it has been a success story all the way," he adds.

To help in the task, he has drawn on the expertise of over a hundred architects, engineers, planners and schedulers. "When I took over the management of the program, we instigated a lot of contractor outreach workshops. We wanted a fresh start and a fresh approach with much more emphasis on communication and partnership working," he says.

The main contractor has been a Parsons-Odebrecht Joint Venture which was awarded the biggest single contract worth over \$1 billion. Sequeira & Gavarrete Inc., a Heery International Company, also played a key role in enabling the smooth integration of design and construction elements of the program. "Collaboration and team work have been key to avoiding many problems between designers and builders which can affect complex projects such as this and our contractors have done an excellent job in



operational in September 2010. MDAD along with its APM consultant, Lea+Elliott Inc, have successfully delivered this critical component of the program. The Skytrain rapidly moves passengers between four conveniently located stations on the roof of the mile-long concourse. It is a spectacular experience for travellers which dramatically reduces walking time and has greatly improved the flow of people, permanently solving the passenger congestion problem which used to mar the smooth running of MIA.

The stations for the APM system were built by Parsons-Odebrecht; and there are five four-car trains which were manufactured, built and installed by Sumitomo Corporation of America and Mitsubishi Heavy Industries. The Skytrain has the capacity to transport 9,000 passengers per hour. "It is an amazing feat of engineering which has had 99.7 percent availability since it opened and we have had extremely positive feedback from users," Arteaga adds.

ensuring the smooth day to day running of the project," he adds.

Arteaga has presided over many discrete achievements to reach this point. Most recently, the Automated People Mover, or the Skytrain as it is commonly known, became

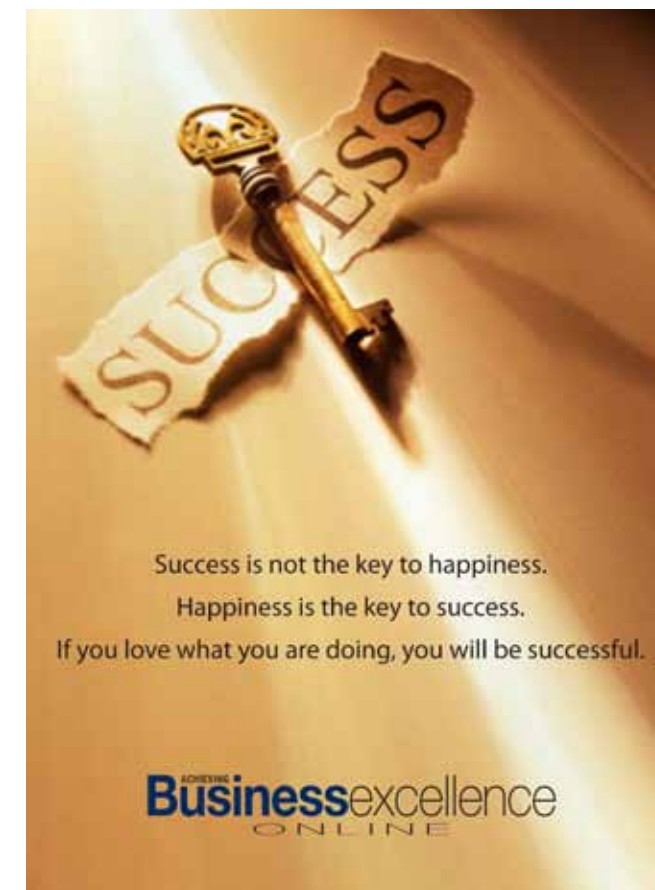
Siemens Industry has been the driving force behind the new \$210 million gate delivery baggage handling system. This is the largest system of its kind in the US and consists of over 10 miles of conveyor belts. "The system takes luggage from the check-in point directly to the makeup unit device closest to the departing plane and incorporates a number of very sophisticated security measures. There are a total of 25 explosion detection system devices (EDS) and five distinct security matrices to pass through," he explains. The inherent complexities associated with the delivery of this extremely large system have been extremely challenging to manage and engineer.

Now, there is just the new Federal Inspection Services area to be completed where international passengers check-in through immigration and customs. This will extend across 400,000 square feet and include 72 service lanes with a total capacity to process 3,600 international passengers per hour.

The design also accommodates an eight-lane security check point.

Arteaga is confident that this too will be completed to schedule. "We have just eight months left to go before the contractors leave and we will have completed every single phase of the building construction on time and within budget. That is the contribution I would most like to be remembered for," he concludes.

Now the accolades are flowing in. The American Institute of Architects has lauded the NTD program director with an award; and the NTD Program also received the 2010 Best Vertical Transportation Award by *Southeast Construction & Engineering News Record*. Other aviation developers are also taking a keen interest and Arteaga hopes this example of his work will encourage and inspire others. http://www.miami-airport.com/about_us.asp



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