



BOB MOORE CONSTRUCTION

**Trammell Crow Company  
CargoCentre™ III and AirFreight &  
LogisticsCentres™ Complex:  
Overcoming the Regulatory, Security and Safety Chal-  
lenges of Construction in an International Airport**

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White Paper  
July, 2006



# **Trammell Crow Company CargoCentre™ III and AirFreight & LogisticsCentres™ Complex: Overcoming the Regulatory, Security and Safety Challenges of Construction in an International Airport**

## **Summary**

Few environments present a wider range of regulatory requirements, safety and security considerations and other complexities to a contractor than a major commercial airport that originates and lands hundreds of flights every day. The Trammell Crow Company CargoCentre™ III and AirFreight & LogisticsCentres™ complex is located at the intersection of two active runways at DFW Airport, with an active air cargo facility on the third side of the tract. This location presented a wide range of challenges throughout the project that necessitated creativity, attention to regulatory requirements and close communication with DFW Airport officials to overcome.

This paper describes how we addressed the various challenges inherent to working in this difficult and hazardous environment to deliver an award-winning project.



## Overcoming the Regulatory, Security and Safety Challenges of Construction in an International Airport

The Trammell Crow Company CargoCentre™ III and AirFreight & LogisticsCentres™ complex may be the most significant air cargo project ever built at Dallas / Fort Worth (DFW) International Airport. With this four-building complex, DFW became the first airport in the United States to offer an air cargo facility with parking space specifically designed to accommodate the massive new Airbus A380 aircraft.

The complex includes the 116,000 SF Air CargoCentre™ III and AirFreight & LogisticsCentres™ 1, 2 and 3 (sized 114,000, 113,000 and 54,000 SF respectively). It was built on a 35-acre tract on the west side of DFW Airport.

Air CargoCentre™ III is designed to support parking for three Boeing 747-400F or two Airbus A380 aircraft with 17" thick concrete paving in the apron area. It features a 125-foot clear span bay for material handling, with mezzanines at both entrances, and a "pass-through" design to allow workers to unload aircraft on one side of the facility and transfer cargo directly through to trucks parked on the other side. The intelligent design and A380 aircraft support provide for a level of operating capability that no other facility in the country can match. An in-ground refueling system at the facility further enhances its operating efficiency.



Air CargoCentre™ III is connected to the three Airfreight & Logistics Centres™ by way of an onsite private road that was built during construction of the complex. The AirFreight & LogisticsCentres™ are designed to support single or multiple third-party logistics providers and shippers. The buildings have access to the aircraft apron area via a security gate. The security gate features an innovative traffic control and vehicle restraint system, and it is manned 24 hours per day, seven days per week. With these traffic control mechanisms, the new AirFreight & LogisticsCentres™ possess a high level of efficient access to the AOA without being in the secured area (thereby reducing the number of employees needing badges to enter the AOA), while meeting Homeland Security standards.



The complex was built to meet the exacting standards established by the Trammell Crow Company for any building bearing the CargoCentre™ or AirFreight & LogisticsCentre™ brand name and to conform to the regulatory requirements of the Environmental Protection Agency, the Department of Homeland Security, the Transportation Safety Administration and other federal and state agencies.

## **The Challenge**

Few environments present a wider range of regulatory requirements, safety and security considerations and other complexities to a contractor than a major commercial airport that originates and lands hundreds of flights every day.

The CargoCentre™ III and AirFreight & LogisticsCentres™ complex is located at the intersection of two active runways at DFW Airport, with an active air cargo facility on the third side of the tract. A portion of the project fell within the Airport Operating Area (the controlled portion of the airport where people have direct access to the aircraft, also called the “AOA”). This location presented a wide range of challenges throughout the project that necessitated creativity, attention to regulatory requirements and close communication with DFW Airport officials to overcome.

### ***Security During the Project***

The project effectively altered the perimeter of DFW Airport, and for this reason Bob Moore Construction employees were required to follow protocols for maintaining the integrity of the secured AOA, as established by the Department of Homeland Security and other agencies, even as construction took place.

Access to the AOA was strictly controlled during construction. A temporary gate in the AOA fence was coordinated and approved through DFW Airport officials and governing federal agencies, and was constantly manned with a Department of Public Safety guard to ensure that security was not compromised at any time. This temporary gate was maintained throughout the project until the permanent gate was installed and staffed with airport security personnel. All work crew employees involved with this phase of the project were identified and badged, and were escorted into the AOA with 100% supervision from Bob Moore Construction employees.

### ***Protecting Workers, Aircraft and Airport Personnel***

As part of the project, work crews installed a fuel system for CargoCentre™ III. This included the laying of pipes and other work along an active taxiway inside the AOA.



All workers entering the AOA received daily Pre-AOA Briefings to discuss flight schedules, safety procedures and the hazards inherent to working in close proximity of taxiing aircraft. While work crews operated inside the AOA, flagmen for each subcontractor stood watch for unscheduled aircraft. Workers maintained strict standards for securing loose materials and tools to ensure the wind did not pull any items from the construction area into the taxiway, and performed frequent “FOD Walks” to pick up any loose materials that could damage aircraft.

Special procedures were necessary during construction to ensure the safety of work crews, airline employees and passing cargo aircraft as well. The apron area for CargoCentre™ III lies directly adjacent to the taxiway for the fully operational CargoCentre™ II. Significant measures were necessary to ensure the safety of work crews and to protect taxiing aircraft from foreign object damage (“FOD”) while this phase of the construction took place. This required all subcontractors to follow a procedure referred to as a “pullout process” when working in proximity to the taxiway. The pullout process was as follows:

1. The procedure started with daily communications between Bob Moore Construction employees and the aircraft schedulers in the Logistics Department for CargoCentre™ II to coordinate arrival schedules and planned construction activities.
2. Work crews received a daily briefing on hazards, flight schedules and pullout program procedures.
3. While construction work was taking place, flagmen for each subcontractor stood by in the work area to watch for approaching aircraft making an unscheduled approach.
4. As the time neared for a scheduled aircraft arrival, workers secured all materials, tools, equipment and other foreign objects close to the taxiway and moved behind a safety barrier.
5. CargoCentre™ II Logistics instructed aircrews who were operating taxiing aircraft to stop engines on the side of the aircraft closest to the construction work, to avoid pulling debris into the engines’ air intakes, until the aircraft had taxied safely into the CargoCentre™ or away from the construction area.
6. Once the aircraft had passed the work area and taxied into the CargoCentre™, the flagmen could direct workers back into the construction area.

As additional protection for aircraft, work crews regularly performed FOD walks to find and remove any loose items from the work area that may be pulled into the engines of taxiing aircraft.

Per DFW Airport requirements, Bob Moore Construction personnel maintained a daily log of the Pre-AOA Meetings and provided this log to airport representatives on a weekly basis.

The pullout process ensured that no employees, subcontractors, airport employees or aircraft were injured or damaged in any way during construction, and that the jobsite maintained its



compliance with regulatory requirements for OSHA, Transportation Safety Administration, Department of Homeland Security and other federal and state agencies.

### ***Existing Fuel Mains***

Existing fuel mains that crossed the 35-acre tract for the complex also required special attention during the project. Long stretches of shallow jet fuel lines passed under the planned locations for the buildings and the new aircraft apron.

Each time work crews planned to work near or over one of the lines, Bob Moore Construction employees hand-located the lines and received approval to proceed from airport personnel before work would commence. At times the process was cumbersome, but given the quantities and volatility of the fuel transported through these lines, this process was critical to stay within compliance of airport regulations and keep workers and property safe.

### ***Storm Water Retention***

Given the volume and volatility of the chemicals inherent to an air cargo facility (particularly jet fuels), storm water pollution prevention is critical. Federal regulations for environmental compliance mandate exacting standards for controlling and cleaning storm water run-off.

As a result, the complex includes two underground oil / water separators. Each separator is 40 feet long with a 20,000 gallon capacity, and is designed to clean storm water run-off after it flows through the retention ponds. Each retention pond contains a multi-layer filter system of porous gravel and sand to initially screen contaminants prior to the water entering the oil / water separator filter system.

### ***Managing Traffic Around the Jobsite***

While much attention was given to procedures driven by the AOA, the northern side of the tract was bordered by the primary road leading in and out of DFW Airport's current air cargo facilities. For much of the project, this road was also the primary entry point for large equipment coming in to the job site. While it didn't represent a security risk, any interference to the normal traffic patterns on this road would have created a significant disruption to the airport's ongoing air cargo operations, with substantial financial consequences the result. Throughout the construction process, and particularly in the early months when the north entrance to the work site was most heavily used, Bob Moore Construction personnel carefully controlled the arrivals and departures of the heavy equipment and monitored activities to avoid traffic interruptions.



## ***A Phased Approach***

The Federal Aviation Administration's permitting specified strict windows of time for this project, which resulted in an extremely aggressive schedule. As a result, we used a phased approach to create the buildings. Preconstruction took place between August, 2004 and January, 2005. Mass grading took place from January to March, 2005. Construction started with the CargoCentre™ in April, 2005. AirFreight & LogisticsCentre™ 1 was started in mid June, 2005. AirFreight & LogisticsCentre™ 2 was started in mid July, 2005. AirFreight & LogisticsCentre™ 3 was started in mid September, 2005. Construction was completed at the end of December, 2005.

## **End Results**

The issues described here reflect just some of the unique challenges presented by the fact that the buildings were constructed in a busy, international airport - one of the most regulated and demanding environments a commercial construction company can work in today. In spite of these challenges, Bob Moore Construction was able to maintain the demanding regulatory requirements of the various federal agencies and deliver a four-building complex that positioned DFW Airport as one of the top international air cargo airports in the nation. The project was completed on schedule, and with no injuries or regulatory fines or sanctions.

In recognition of the creativity employed to overcome the considerable challenges of construction at DFW Airport, the Trammell Crow Company CargoCentre™ III and AirFreight & LogisticsCentres™ complex received the 2005 Summit Award from QUOIN, the north and east Texas chapter of Associated General Contractors of America.

## Air CargoCentre™ III / AirFreight & LogisticsCentres™

**Location:**

DFW International Airport, Texas

**Size:**

395,000 SF

**Owner / Developer:**

Trammell Crow Company

**Role:**

General Contractor

**Building Type:**

Distribution Center



### About This Project:

- Includes the 116,000 SF Air CargoCentre™ III and Air-Freight & LogisticsCentres™ 1, 2 and 3 (sized 114,000, 113,000 and 54,000 SF respectively)
- Supports three Boeing 747-400F or two Airbus A380 aircraft. No other U.S. airport has a cargo facility that was specifically designed to accommodate the A380. Air CargoCentre™ III also features a 125-foot clear span bay, with mezzanines at both entrances.
- Constructed at the intersection of two runways in one of the busiest airports in the country, with an active air cargo facility on the third border of the tract.
- Complex includes two underground, 40', 20,000 gallon capacity oil / water separators, and is designed to clean storm water run-off after it flows through the retention ponds. Each retention pond contains a multi-layer filter system.
- Received the prestigious AGC Summit Award for Excellence in Industrial / Warehouse Construction.

