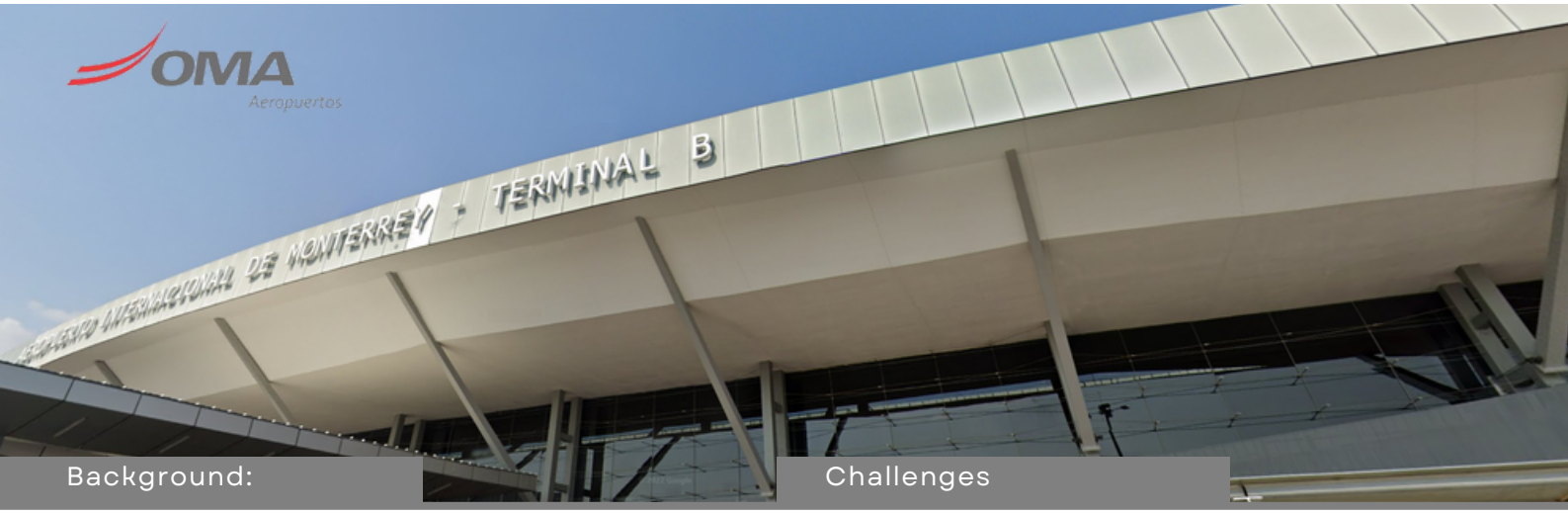
Case Study Monterrey Airport Mexico

Officially known as General Mariano Escobedo International Airport, it is an international airport located in Apodaca, Nuevo León, Mexico.

Along side the Del Norte International Airport, it handles both international and domestic travel for the city of Monterrey and its metropolitan area. It is the fifth busiest airport in Mexico's and twelth in the whole of Latin America.



Background:

Despite recent issues with overheating, Monterrey International Airport's Terminal B remains a state-of-the-art facility that's designed to provide a seamless travel experience.

The terminal, which opened in September 2010, is considered the second-most modern air facility in Mexico and boasts an impressive range of features and amenities.

With eight gates, the terminal can handle up to 2 million passengers per year. It's also home to all operations of the SkyTeam member airlines

Challenges

The most clear and impactful challenge was the terminal overheating with internal temperatures reaching well over 40° C. This meant an uncomfortable and unpleasant experience for travellers and staff alike.

The airconditioning was woefully inadequate and with the exorbitant costs continuing to grow a non-mechanical, but completely effective solution was required.

An additional challenge was to deliver a solution with no interruption to the daily activities of this very busy airport.

The Problem:

Architecturally beautiful, in its design aesthetic, the General Mariano Escobedo International Airport was lacking in its function due to insufficient climate control in the busiest thoroughfares.

Downtime caused by redesign or installation of additional mechanical methods of cooling was unimaginable and would have proven extremely costly.

So what could be done about a 40+° C airport?

KoolShade®
The Ultimate In Passive Solar Shading

Undertaken in phases, Kapra devised a solution that fully hit the brief using KoolShade from Smartlouvre Technology.

Solar Shading is Koolshade's® primary application and it has been specifically designed for high-performance sun control as an external passive system for the thermal management and glare reduction of sun-exposed glazing. It is proven to:

- Block Solar Heat Gain
- Not interrupt daily activity
- Slash aircon requirement /costs
- Provide Essential Shade

It continually dissipates the sun's heat and energy whilst not blocking views, daylight or ventilation. It allows perfect outward vision, is eco-friendly and drastically reduces the need for mechanical cooling.

PHASE 1

The first phase commenced in February 2023. 132 screens were manufactured, quality checked and processed before being shipped directly to site.

On arrival in Mexico, the assembled Kapra team unpacked the shipment and got to work.

The glazed arches that allowed light into Terminal B were completely covered in Koolshade® and an immediate drop in internal temperature of over 10° C was measured.

The Angular Selective Nature of Koolshade® meant that whilst the sun's heat is stopped, 100% pure, full colour rendered (CRI) daylight still floods through for the occupants.

PHASE 2

The second phase, consisting of 554 screens, commenced in June 2023 and involved the air-side elevation that contained the shops, restaurants and waiting areas of the airport.

Using the cable-stayed fix, the vast area of glazing, that was causing the unmanageable overheating, was cured with Koolshade®.

The installation has become an architectural feature with incredible benefits to the travellers, staff and financial stakeholders of this airport.

RESULTS

- 100% solar heat block
- 100% internal shading
- Hurricane wind resistant at 100+mph
- Clear outward vision
- 60+-year maintenance-free life span
- Massive energy saving and ROI
- Green, sustainable building solution
- Temperatures reduced by up to 26°F (15°C)