

Project Report

Raleigh-Durham Airport (RDU)

North Carolina, USA



Photography: Mark Herboth

Architecture: Clark Nexsen Architects

KALWALL®

high performance translucent building systems

KALWALL SPECIFICATION:

Panel: 2.75" | 70mm

Grid core: Vertikal™

Exterior FRP: white

Interior FRP: white

System finish: 204R1 clear anodized

U-Value: 0.23 | 1.25 Wm²K

Solar Heat Gain Coefficient: 0.23

Visible Light Transmission: 15%

WHAT IS KALWALL?

A translucent, structural sandwich panel that provides:

Glare-free, balanced daylighting

Superior thermal performance

Energy + electricity saving

Low maintenance life cycle requirements

Safety + security through visual privacy

Durability + graffiti / vandal-resistance

Hurricane, explosion venting + blast rated options



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For unparalleled thermal performance in translucent daylighting, consider specifying Kalwall with **CABOT's Lumira®** aerogel insulation. Available in 2.75" (70 mm) panel formats up to: 4' x 12' (1200 mm x 3600 mm) and 5' x 10' (1500 mm x 3000 mm) maximum.

Raleigh-Durham Airport (RDU), North Carolina, USA

Airports act as a gateway to the communities they serve, offering a first and last impression to travelers. As U.S. air travel continues to increase, airport authorities face a dilemma. A well-designed airport terminal needs to balance efficiency and enhanced security requirements of a post 9/11 era with growing traveler expectations, such as bright and modern terminals with access to all the amenities.

Such expectations didn't exist in 1981 when Terminal 1 at Raleigh-Durham International Airport was built. Nicknamed the 'Blue Box', the original rectangular building was constructed using blue corrugated metal that made it dark and uninviting. Designed before TSA Protocols were in place and the concepts of safety and control of passenger flow were developed, the interior was confusing. There was a haphazard sequence of arriving, ticketing, TSA screening and departure, causing stress and poor passenger experience.

The Raleigh-Durham Airport Authority recognized that was no longer acceptable when it employed Clark Nexsen Architects to refurbish the aging building.

In a \$68 million transformation, Clark Nexsen created a stunning new terminal, redesigning everything from the curbside to the interior space. On landside arrival, a Kalwall® canopy system provides shelter and links access points, while a Kalwall facade is utilized for the main building. The unique ability of Kalwall translucent sandwich panels to diffuse natural daylight into the interior means the new TSA screening facility maintains privacy for the sensitive areas while bathing the interior with natural, glare-free light.

Kalwall's inherent strength makes it ideal for such secure locations. With heavy-duty, impact-resistance properties and shatter-proof nature, it denies access through facades or skylights. It can be configured to exceed Large Missile D hurricane compliance for wind-borne debris protection, making it suitable for facilities needing enhanced protection or serving critical national defense functions. Kalwall can even be manufactured for blast resistance and compliance with DoD, GSA anti-terrorism, ATFP and UFC military guidelines.

In addition to its ruggedness, Kalwall eliminates shadows, glare and the stark contrasts of light and shade. Even on overcast days, the interior is bathed with natural daylight, which means less artificial lighting and, because Kalwall is highly insulating, energy costs are reduced. Although translucent, it offers the big advantage of privacy with elevations which appear crisp and simple. When illuminated at night, the building emits an inviting and welcoming glow.

With its LEED certification, this new terminal demonstrates the Authority's desire to reduce carbon footprint and impact on the environment.

Airport Authority President and CEO Michael Landguth comments, *"The Terminal 1 project demonstrates the Airport Authority's commitment to sustainable business practices and energy efficiency. From the beginning, our team set its sights on achieving LEED certification. This designation illustrates the team's hard work and that of our architects and construction firms."*

Awards:

South Atlantic Region Design Awards:

Merit Award for New Construction/Substantial Renovation (2016)

AIA:

AIA North Carolina Merit Award (2016)

Engineering News-Record:

Southeast Best Airport/Transit Project (2014)

U.S. Green Building Council:

LEED Certification



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