

StructuresUnlimited

ENGINEERING DAYLIGHT

Project Report

Scarborough Atrium

Scarborough, Ontario, CA

ClearSpan™ Skyroof®

Architect: NORR

Photo: INDUSTRIOUS Photography



Testimonial

“It was a great experience to be part of this unique project. Congratulations to all involved! Working with such a knowledgeable team was wonderful.”

– Vestacon Limited



STRUCTURES UNLIMITED SPECS:

ClearSpan™ Skyroof®
Custom Skyroof
Aluminum Box Beam Frame: 4" x 8" 100 mm x 200 mm
Aluminum Finish: KCRF
Size: >300' x 60' 90 m x 18 m

KALWALL PANEL SPECS:

Panel: 2.75" 70 mm
Grid Core: TB
Exterior FRP: crystal SW-c
Interior FRP: white S-171
Panel U-Factor: 0.14 0.795 Wm²K
Solar Heat Gain Coefficient: 0.15
Visible Light Transmission: 13%

PROJECT CREDITS:

Architect: NORR
General Contractors: Vestacon Limited
Erector: Flynn Group of Companies
Photographer: INDUSTYOUS Photography
Local Design Assist / Distributor: Bravura Daylighting Specialists

WHY STRUCTURES UNLIMITED?

Single source turnkey solutions
Estimating + budgeting services
Daylight modeling services
Design + engineering services
Delegated design
Drafting + modeling
Project management
Precision fabrication
Rapid installation

THE BEAUTY AND COMFORT OF SIMPLICITY

The Scarborough Atrium, initially constructed in the 1990s, faced a critical failure of its expansive glass skylight. The original design featured remote-controlled blinds intended to minimize solar heat gain to maximize occupant comfort. Unfortunately, these blinds failed within the first few years of use and could not be repaired. Additionally, many of the Insulated Glazing Units (IGUs) began to fail over time, creating further complications.

To address these issues and future-proof the build, the architect team at NORR made the decision to employ a more reliable daylighting solution by Structures Unlimited Inc. and Kalwall.

The 300-foot-long Skyroof®, spanning 20,000 square feet, now enables beautiful glare-free daylighting to illuminate the space without the need for secondary controls. Removing the requirement for motorized blinds or scheduling future IGU replacements, the client was able to see immediate savings of millions of dollars.

In addition to the savings provided by the diffuse daylighting, the new Kalwall panels also contribute to a lower HVAC load, further improving the building's energy efficiency. Long-term energy use isn't the only place the project promoted sustainability. Together with Structures Unlimited, the team at Vestacon was able to utilize the existing and highly durable structural steel, avoiding 40 tons of CO₂ emissions in addition to a smoother installation.

After working remotely throughout the COVID-19 pandemic, the Scarborough Atrium was proud to welcome employees back with such a comfortable, impressive environment. The atrium is commonly used for small meetings and impromptu conversations, which can now be carried out without the impact of glare or heat necessitating a change in venue partway through.

The renovation of the Scarborough Atrium highlights the opportunities for sustainability at all steps of the project lifecycle, with significant improvements in both energy use and environmental impact from start to finish. The enhanced space stands as a testament to the potential for dated and inefficient spaces to embrace a single-source solution that can check every box while emphasizing the original vision: a comfortable place where people can gather at any time of day.

Awards:

Project of the Year 2023
Bravura Architectural Products

Project of the Year 2023
Structures Unlimited Inc.

