THE ISOLATOR
MARCH 2026 – VOL. 85

INSIDE THIS ISSUE

THE ISOLATOR

Hello March! As the year gathers pace, KGC continues to move ahead with steady momentum — driven by technical expertise, system innovation, and performance-focused energy solutions.

This month, we highlight two key projects: Al Ain Hub Enhancement Works and The Store in Sohar, Oman, where engineered air curtain systems improved temperature stability and reduced cooling loss at high-traffic entrances.

Our technical discussion explores the engineering behind the air barrier — examining airflow dynamics, velocity retention, and intelligent activation control that enable effective separation between indoor and outdoor environments.

We also feature the KINAIR Wall Mounted Air Curtain Series — engineered to deliver high-velocity performance, energy efficiency, and reliable environmental control for commercial and industrial applications.

As we progress through another impactful month, we're reminded that precision, practicality, and performance define every solution we deliver. Let's continue building smarter systems — engineered for efficiency, designed for control.

KINETICS MIDDLE EAST LLC
CELEBRATING 30 YEARS ANNIVERSARY
30 YEARS OF EXCELLENCE

مجموعة كينيتكس
KINETICS GROUP

PROJECT HIGHLIGHT

LOCAL PROJECT HIGHLIGHT: Al Ain Hub Enhancement Works

As part of the Al Ain Hub Enhancement Works, several service entrances required effective energy control without interrupting daily operations. Due to frequent door openings, the facility was experiencing cooling loss and fluctuations in indoor temperature, impacting overall comfort and HVAC efficiency.

To address this challenge, KINAIR Wall-Mounted Air Curtains were installed in an exposed configuration at key entrance points. The system was designed to create a consistent air barrier while allowing uninterrupted access.

System Performance

The selected models — FM-4510-L(/Y)-MC and FM-4512-L(/Y)-MC — deliver air velocities of up to 18 m/s, suitable for installation heights between 4 to 4.5 meters. This ensured effective separation between indoor conditioned air and the external environment.

To further enhance efficiency, magnetic door sensors were integrated into the system, enabling automatic activation only when doors are opened — optimizing energy consumption and reducing unnecessary operation.

Project Result

The installation led to improved indoor temperature stability and a measurable reduction in cooling loss at entrance zones, contributing to enhanced comfort and more efficient HVAC performance.

This project reflects Kinetics' commitment to delivering practical, performance-driven solutions that improve operational efficiency while maintaining environmental control.

REGIONAL PROJECT HIGHLIGHT: The Store, Sohar – Oman

Retail environments operate with continuous customer movement, and open entrances often result in significant cooling loss—particularly in humid coastal regions like Sohar. Maintaining indoor comfort while managing energy efficiency was therefore a key priority for this project.

To address this, wall-mounted exposed type air curtain units were selected and carefully configured to suit the large entrance dimensions. Three 1.8 m modules were combined to cover a 5.4 m wide entrance, while two 1 m modules were installed for the 2 m doorway. Installation heights were optimized to maintain effective air velocity and performance.

Project Outcome

The installed air curtains created a strong and consistent air barrier, significantly reducing warm air infiltration. This stabilized indoor temperatures, enhanced shopper comfort, and contributed to lower compressor cycling frequency—improving overall HVAC efficiency and energy performance.

This project demonstrates how properly engineered entrance air control solutions can support retail comfort while reducing operational energy demand.

TECHNICAL DISCUSSION:

Engineering the Air Barrier

To understand how air curtains contribute to energy savings, it is essential to examine the fundamentals of air movement and pressure dynamics at building entrances.

When a door opens, natural convection and pressure differentials immediately initiate air exchange:

- Warm external air infiltrates from the upper portion of the opening
- Conditioned air escapes from the lower portion
- Pressure imbalance accelerates the infiltration cycle

This continuous exchange increases cooling load and destabilizes indoor environmental conditions.

The KINAIR Air Curtain counteracts this effect by generating a controlled, high-velocity laminar airflow stream that functions as a dynamic air barrier—limiting thermal transfer while maintaining open access.

Core Engineering Principles

1. Velocity Retention
Discharge velocities up to **18 m/s** allow the airflow to reach floor level without separation, maintaining effective air sealing at heights of **4 meters and above**.

2. Uniform Air Distribution
Precision nozzle design ensures consistent velocity across the unit length, preventing weak zones and maintaining barrier integrity.

3. Proper System Selection
Performance depends on correct coordination of door height, airflow capacity (CMH), discharge velocity, and mounting position. Incorrect selection leads to velocity decay and reduced efficiency.

4. Intelligent Activation
Magnetic door sensors enable demand-based operation, reducing unnecessary runtime and energy waste.

Energy Performance Impact

Without an air curtain, infiltration heat gain increases HVAC cooling load. With a properly engineered system, infiltration can be reduced by **up to 70–80%**, improving temperature stability and lowering compressor cycling.

Through optimized airflow engineering and smart control, KINAIR air curtains effectively manage thermal exchange at high-traffic entrances.

PRODUCT HIGHLIGHT:

KINAIR Wall Mounted Air Curtain Series

KINAIR Wall Mounted Air Curtains are designed for commercial and industrial facilities where durability and airflow performance are critical. Built for demanding Middle Eastern climates, they create an effective air barrier while maintaining open access.

Construction & Design

- Robust metal casing with powder-coated finish
- Exposed wall-mounted configuration
- Aerodynamic discharge nozzle
- Low-vibration motor assembly

Engineered for reliable performance in dusty, humid, and high-traffic environments.

Performance Capabilities

- High discharge velocity up to **18 m/s**
- Suitable for installation heights up to **4.5 meters**
- Standard **230V / 1Ph / 50Hz** electrical configuration
- Modular lengths for wide entrance coverage

Typical Applications

KINAIR air curtains are ideal for:

- Supermarkets and retail outlets
- Fuel stations
- Logistics hubs and warehouses
- Industrial workshops
- Commercial building entrances

Why KINAIR Air Curtains Perform

- Reduce cooling loss and stabilize temperature
- Lower compressor cycling and extend HVAC life
- Minimize dust, humidity, and insects
- Maintain a clean, obstruction-free entrance
- Compatible with door sensors and remote controls

Conclusion

Energy efficiency starts at the entrance. KINAIR air curtains reduce HVAC load, improve comfort, and maintain seamless access — delivering engineered performance where it matters most.

Engineering efficiency where it matters most — at the door.

KINETICS MIDDLE EAST LLC CELEBRATING 30 YEARS ANNIVERSARY 30 YEARS OF EXCELLENCE

مجموعة كينيتكس KINETICS GROUP

KINETICS YOUTUBE & TESTIMONIAL

Discover Kinetics Group's Engineering Services, where advanced analysis and precision-driven design come together to deliver safe, compliant, and high-performance building systems. With decades of expertise across the Middle East, Kinetics provides specialized seismic, pipe stress, surge, and acoustic engineering solutions for commercial, industrial, and critical infrastructure projects.

From seismic analysis and PE certification to pipe stress modeling, thrust block design, and comprehensive acoustic studies, Kinetics delivers end-to-end engineering support built on calculations and code compliance. Focused on resilience, reliability, and performance, our solutions protect systems where it matters most—engineering confidence into every project.

YouTube Channel: https://lnkd.in/dtwpwyqw

YouTube Video Link: https://youtu.be/5HuRrtt_pul?si=QD-iZIjrUlRJ7snD

Learn more about our products by connecting with us:
info@kineticsgroup.ae | sales@kineticsgroup.ae
+971 4 885 7361
Website: www.kineticsgroup.ae

"What our Customers ARE SAYING"

"Professional, skilled, and reliable — that's Kinetics Group's Sales Team."
GILBERT OLEGARIO
East Consulting Engineering Center

"Great coordination — Kinetics Group made the delivery process effortless."
SOORAJ SUDARSAN
Projate FZE

"We value the professionalism Kinetics brought to the table during our site inspection and follow-up."
UMASANKAR SUBRAMANIAN
Sobha Construction L.L.C.

"Great experience dealing with Kinetics Group's efficient sales admin team."
SUNIL KUMAR M K
Sun Star Electromechanical Co L.L.C.

"Timely updates and quick resolutions — great job by Kinetics Group logistics!"
FARHAAN AHAMED
Tarshiha Electrical Contracting - Telco L.L.C.

"Kinetics' commitment to excellence was evident in both their inspection approach and resolution of issues."
ENG. LUKMAN YUSAF
TS Electromechanical equipment Installation L.L.C.

"Always a pleasure working with Kinetics Group — clear communication and quick follow-ups."
ENGR. SINTHA SHEIK
Al Naqeeb Electrical & Mechanical Works L.L.C.

"Every question we had was answered clearly and confidently by Kinetics' knowledgeable supervisor."
SUFAIZ C U
CONVERSION ELECTROMECHANICAL L.L.C.

✦✦✦✦✦