THE ISOLATOR
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INSIDE THIS ISSUE

THE ISOLATOR

Hello January! As the new year begins, KGC continues to move forward with strong momentum — driven by engineering precision and high-performance acoustic solutions.

This month, we highlight a chiller yard acoustic mitigation project for a five-star hotel in Ras Al Khaimah, where integrated noise control enhanced guest comfort and surrounding environments.

Our technical discussion explores the acoustic design strategy behind the chiller yard, focusing on sound absorption, isolation, and controlled noise paths.

We also feature the Kinetics Acoustic Wall Lining System and Metal Barrier System — engineered to deliver effective noise reduction with durability and operational efficiency.

As we begin another impactful year, we're reminded that precision, passion, and purpose remain at the core of every solution we deliver. Let's keep the momentum strong — engineered for performance, designed for silence.

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PROJECT HIGHLIGHT

Chiller Yard Acoustic Mitigation – Five-Star Hotel, Ras Al Khaimah

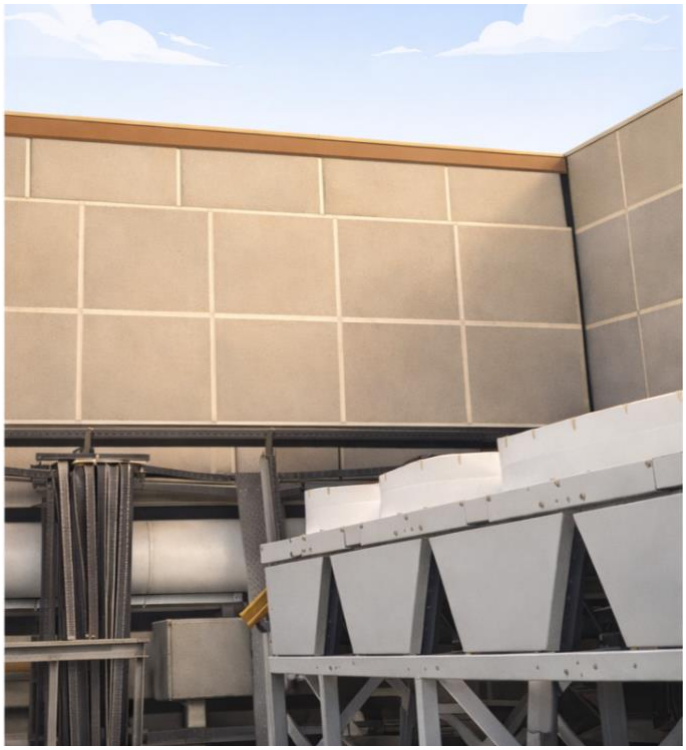
The chiller yard at a five-star hotel in Ras Al Khaimah was producing elevated noise levels that impacted guest comfort and surrounding areas. To resolve this, Kinetics delivered a fully integrated acoustic mitigation solution that significantly reduced noise while maintaining ventilation, access, and chiller performance.

Project Challenges

The solution required balancing effective noise control with operational efficiency due to high noise from multiple chillers, limited installation space, strict day and night noise limits, and the need to maintain maintenance access and system performance.

Acoustic Solution

A multi-layered acoustic strategy was implemented to control airborne and reflected noise. High-density wall-lining panels reduced internal reverberation, while inline acoustic barriers limited direct sound transmission toward sensitive areas. Deflector barriers redirected noise away from occupied spaces and minimized reflections within the yard. Acoustically treated louvers ensured proper airflow while reducing noise escape through ventilation openings.



Project Outcomes

The project successfully achieved noise reduction targets for both daytime and nighttime operation, maintained full chiller efficiency and ventilation performance, preserved maintenance access, and delivered a visually integrated solution suited to a luxury hotel environment—significantly improving acoustic comfort for guests and nearby areas.

Conclusion

Through a coordinated, multi-layered acoustic approach, Kinetics transformed a high-noise chiller yard into a controlled and efficient acoustic environment, delivering long-term performance, compliance, and enhanced guest experience.

TECHNICAL DISCUSSION:

Acoustic Design Strategy For The Chiller Yard

To achieve the required levels of noise and vibration control, a carefully engineered acoustic strategy was developed, addressing sound generation, propagation, and containment—while ensuring uninterrupted chiller operation and airflow performance.

Acoustic Treatment & Containment

The existing architectural louver arrangement was replaced with a 300 mm double-bank acoustic louver, specifically engineered to provide high attenuation while maintaining ventilation efficiency. In addition, approximately 60% of the internal chiller yard walls were treated with high-performance acoustic wall linings, increasing sound absorption and reducing internal reverberation levels within the enclosure.

Noise Isolation & Barrier Design: To further control direct and reflected noise paths, a combination of inclined and vertical acoustic barriers was introduced. Inclined isolation barriers were installed at Chiller No. 2 and Chiller No. 5 to interrupt direct noise transmission toward sensitive areas, while vertical barriers were positioned around all chillers to limit both airborne and structure-borne noise propagation across the site.

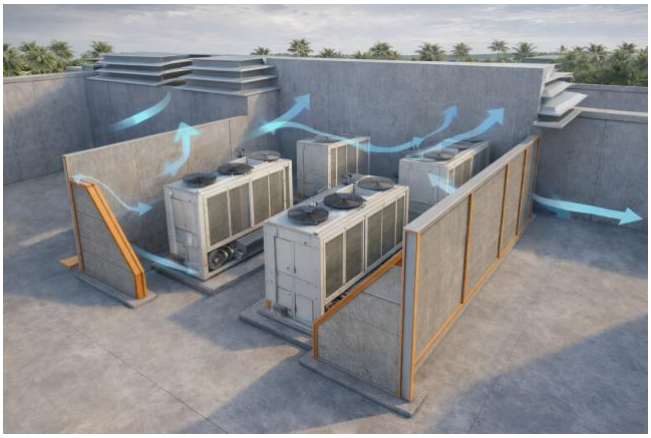
Ventilation & System Performance: All acoustic elements were integrated with careful consideration of airflow dynamics. The design ensured that ventilation paths remained unrestricted, preventing any adverse impact on chiller heat rejection, system efficiency, or operational reliability—while still achieving the required acoustic attenuation.

Performance Verification

Comprehensive noise measurements were carried out before and after installation, during both daytime and nighttime operation. The post-installation results confirmed full compliance with the project's acoustic criteria, demonstrating a measurable reduction in environmental noise and vibration levels.

Functional & Operational Benefits

- Improved acoustic comfort and compliance with noise regulations
- Reduced transmission of structure-borne vibration to surrounding infrastructure
- Maintained optimal chiller performance and ventilation efficiency
- Delivered long-term operational stability and mechanical system reliability



Summary

By combining engineered acoustic louvers, strategic isolation barriers, high-performance wall linings, and airflow-optimized ventilation design, the project successfully transformed the chiller yard into a stable, acoustically controlled mechanical environment. This integrated technical approach ensured regulatory compliance, protected equipment performance, and significantly enhanced overall acoustic comfort for the surrounding spaces.

PRODUCT HIGHLIGHT: Kinetics Acoustic Wall Lining System

In mechanical rooms, chiller yards, and HVAC installations, noise doesn't stay where it's generated. Hard surfaces reflect sound, allowing operational noise to travel through walls and structures—often reaching occupied or sensitive spaces.

The Kinetics Acoustic Wall Lining (AWL) System is engineered to solve this challenge. Designed to absorb airborne sound and control reverberation at the source, AWL helps create quieter, more compliant environments without compromising durability or design flexibility.

What the AWL System Does

The AWL Series delivers high-performance sound absorption when installed on walls and barriers surrounding noisy equipment such as chillers, pumps, compressors, and air handling units.

By converting sound energy into heat within its high-density acoustic core, the system significantly reduces ambient noise levels and limits sound propagation to adjacent areas—improving overall acoustic comfort.

Engineered for Performance & Durability

Each AWL panel is purpose-built for demanding mechanical environments:

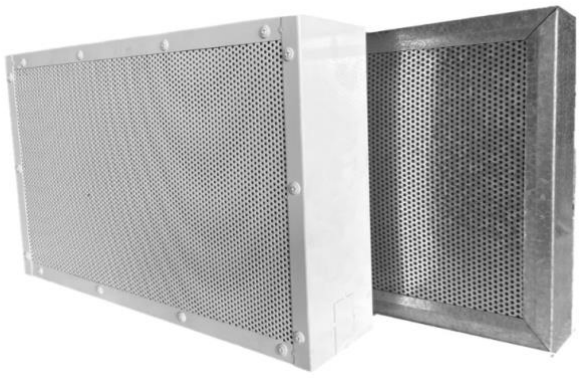
- **50 mm thick modular acoustic panels**
- **Perforated galvanized steel facing** for strength and long service life
- **High-density Rockwool core (48 kg/m³)** for effective sound absorption
- **Excellent mid- and high-frequency performance**, ideal for HVAC and plant noise
- **Powder-coated finish** for enhanced corrosion resistance
- **Resistant to moisture, fire, and mechanical wear**

The modular design allows easy wall mounting and seamless integration with ventilation openings and other building services.

Where It's Used

The Acoustic Wall Lining System is widely applied in:

- Chiller yards and mechanical plantrooms
- Pump and compressor enclosures
- HVAC corridors and air handling unit areas
- Industrial rooms with high operational noise levels



Why It Works

- Reduces airborne and reverberant noise
- Durable construction for long service life
- Flexible installation for full or partial wall coverage
- Integrates seamlessly with Kinetics vibration isolation systems

The result

A robust, engineered acoustic solution that delivers quieter spaces, improved compliance, and long-term reliability—where it matters most.

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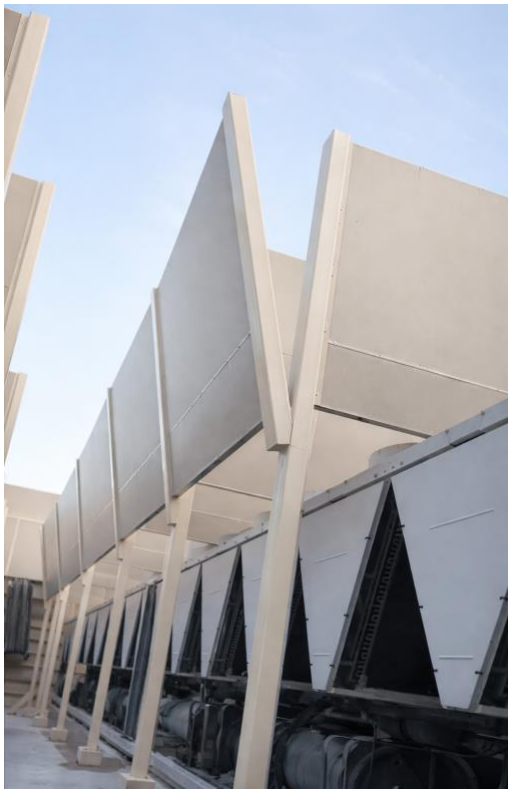
PRODUCT HIGHLIGHT: Kinetics Metal Barrier System

In high-noise mechanical and industrial environments, controlling direct sound transmission is critical. The is engineered to block, redirect, and contain noise from rotating equipment—protecting nearby spaces and ensuring regulatory compliance.

What It Does

The MBS Series forms a robust physical barrier around noise sources such as chillers, pumps, and HVAC equipment. It reduces direct sound paths, limits noise spill, and enhances overall acoustic control when combined with absorption treatments.



Key Features

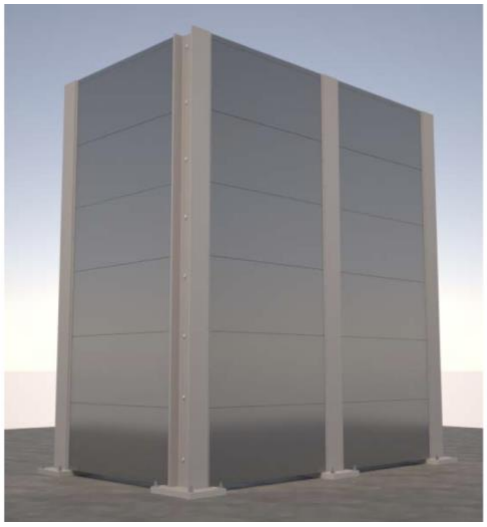
- Heavy-duty galvanized or powder-coated steel construction
- Customizable thickness based on noise control requirements
- Optional acoustic infill for enhanced absorption
- Modular, prefabricated panels for fast installation
- Available in straight or angled configurations

Where It's Used

Chiller yards, mechanical plantrooms, pump and compressor enclosures, HVAC equipment shielding, and industrial process areas.

Why It Works

- Effectively reduces airborne noise transmission
- Durable and corrosion-resistant for outdoor applications
- Flexible layout for partial or full enclosures
- Compatible with acoustic wall linings and vibration isolation systems
- Maintains ventilation access and operational performance



Discover Kinetics Group's Architectural Acoustic Solutions, where advanced engineering and thoughtful design come together to create quiet, compliant, and comfortable building environments. With over 30 years of experience across the Middle East, Kinetics delivers complete acoustic solutions for hospitality, education, healthcare, commercial, and high-end residential projects.

From acoustic analysis and architectural treatments to floating floors, ceilings, and industrial noise control, Kinetics provides end-to-end noise and vibration engineering. Focused on performance, clarity, and comfort, our solutions ensure every space achieves its highest acoustic potential—engineering silence where it matters most.

YouTube Video Link: https://youtu.be/NUzd70Drt8g?si=giSvZNAUy1_g-S8x

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

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🌍 Website: www.kineticsgroup.ae

What our Customers ARE SAYING

"The team at Kinetics Group handled all submittals and quotes with accuracy and speed."
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Desert Leisure Swimming Pools L.L.C.

"Kinetics Group offers excellent technical recommendations and tailored solutions."
Eng. Amr Abd El Meguid
Darwish Engineering Emirates L.L.C.

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Trans Emirates

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MaxCool Electromechanical L.L.C.

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Eng. Rama Krishnan
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Eng. Mohammed Hussain
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"Great technical knowledge and professionalism from Kinetics Group's Sales Team."
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