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# THE ISOLATOR

Hello February! As the year progresses, KGC continues to advance with focused momentum — driven by engineering expertise, design precision, and performance-led acoustic solutions.

This month, we highlight a premium rooftop chiller acoustic solution combining acoustic louvers and metal barriers, along with a custom fabric acoustic panel system that successfully controlled reverberation within a training room environment.

Our technical discussion examines why the positioning of acoustic absorption panels is critical — exploring how placement influences reflections, reverberation control, and overall speech clarity within interior spaces. We also feature the Kinetics Stretch Fabric System — engineered to deliver seamless architectural finishes with high acoustic performance for premium interior applications.

As we move through another productive month, we're reminded that precision, passion, and purpose continue to guide every solution we create. Let's carry the momentum forward — shaping quieter spaces through engineering excellence.

# PROJECT HIGHLIGHT:

## Premium Acoustic Louver & Metal Barrier Solution for Rooftop Chiller

This project involved five high-capacity chillers installed on the building roof, creating a significant noise risk to occupied spaces below—particularly through direct sound transmission and nearby windows. To overcome these challenges, Kinetics Engineering was engaged to design and deliver an effective acoustic solution that would control noise without compromising system performance or architectural intent.

### Project Requirements

The acoustic solution was required to:

- Deliver high noise attenuation while maintaining proper airflow
- Provide long-term durability and corrosion resistance suitable for coastal conditions
- Integrate seamlessly with the building façade and overall architectural vision
- Meet frequency-based acoustic performance targets set by the authorities

### Kinetics' Engineered Solution

Following a detailed analysis of the mechanical noise sources, our engineering team developed a custom rooftop enclosure system comprising:

- Two sides of 300 mm double-bank acoustic louvers
- Two sides of 100 mm high-performance acoustic metal barriers

This combined approach enabled the project to achieve the required noise levels in compliance with municipality regulations—without affecting chiller performance, airflow, or the visual character of the building.



### Key System Features

- Acoustic louvers effectively reduced direct chiller noise while maintaining ventilation and airflow requirements
- Acoustic metal barriers, strategically positioned at the front and rear of the chillers, prevented noise breakout without restricting system operation
- The hybrid louver-and-barrier configuration delivered superior acoustic performance compared to louvers alone, with minimal visual impact

This engineered solution ensured reliable noise control, operational efficiency, and architectural harmony—reinforcing Kinetics' commitment to high-performance acoustic engineering for complex rooftop applications.



# PROJECT HIGHLIGHT:

## Custom Fabric Acoustic Panel System For Training Room Reverberation Control

Alongside the rooftop chiller noise control works, this project also included an interior training room that was experiencing excessive echo and reduced speech clarity due to high reverberation levels. To address this, the client engaged Kinetics Engineering to deliver an acoustic solution that would enhance room performance while complementing the architectural design.

### Project Requirements

The acoustic treatment was required to:

- Significantly reduce echo and reverberation
- Improve speech intelligibility for training and presentations
- Feature a modern, architecturally appealing panel design
- Offer flexibility in color and layout to suit the interior theme



### Kinetics' Engineered Solution

Following a detailed acoustic assessment, our engineering team proposed a custom fabric-wrapped acoustic panel system, designed in a hexagonal configuration to align with the client's aesthetic vision.

The panels were strategically arranged across the walls to maximize sound absorption within the speech frequency range, while also creating a distinctive feature wall that enhanced the visual character of the space.

### Key System Features

- Fabric-wrapped acoustic panels delivering high sound absorption and refined appearance
- Custom hexagonal panel geometry to support the architectural concept
- Balanced color selection integrated with the interior design
- Targeted reverberation control without impacting room functionality



### Result

The installed acoustic panel system successfully reduced echo and reverberation, creating a clear, comfortable, and well-controlled acoustic environment for training sessions and meetings.

This solution highlights Kinetics Engineering's ability to combine acoustic performance with architectural creativity, delivering tailored interior treatments that enhance both functionality and visual appeal.

# TECHNICAL DISCUSSION:

## Why the Position of Acoustic Absorption Panels Matters

In acoustically treated spaces, panel placement is as critical as panel performance. Even panels with high absorption ratings can deliver poor results if they are installed in acoustically ineffective locations. This becomes especially important in training rooms, offices, classrooms, and conference spaces—where speech clarity, listening comfort, and echo control are essential.



### How Panel Position Influences Acoustic Performance

The location of acoustic absorption panels has a direct impact on key acoustic parameters, including:

- Control of early sound reflections
- Reduction of reverberation time (RT60)
- Improved speech intelligibility and clarity
- Limiting sound energy build-up within the space
- Achieving balanced and controlled room acoustics

When panels are positioned correctly, they intercept sound energy at critical points along its reflection path—delivering effective acoustic control without excessive or insufficient treatment.

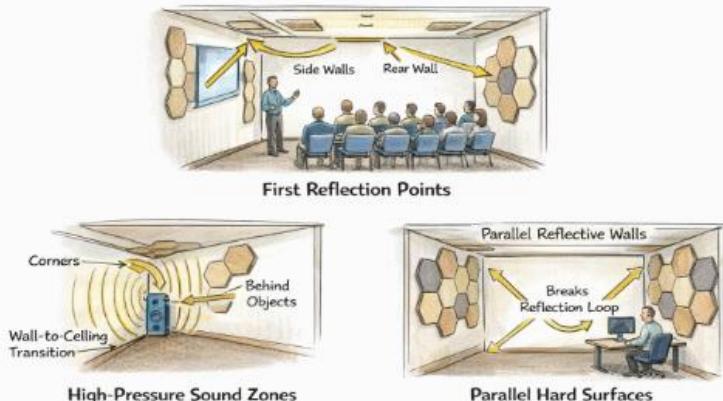
### The Acoustic Principle Behind Strategic Placement

Sound energy propagates through a space, reflecting off hard surfaces before it decays. Acoustic performance improves when absorption panels are:

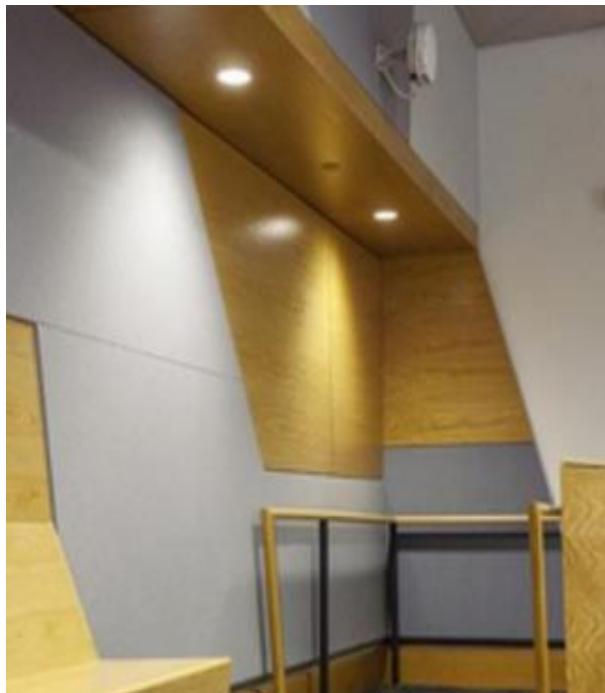
- Installed at first reflection points, where reflected sound reaches listeners almost immediately after the direct sound
- Positioned in areas of high sound pressure, such as near reflective boundaries
- Used to interrupt parallel reflective surfaces, reducing flutter echo and standing waves

The objective is not to simply cover walls with absorption material, but to control sound where it has the greatest acoustic impact. Strategic panel placement ensures efficient reverberation control, enhanced speech clarity, and a well-balanced acoustic environment—optimized through engineering rather than excess material.

### Optimal Placement of Acoustic Absorption Panels



# PRODUCT HIGHLIGHT:



## Kinetics Stretch Fabric System

The Kinetics Stretch Fabric System is a high-performance acoustic solution designed to combine seamless architectural aesthetics with effective sound absorption for premium interior spaces. Unlike conventional prefabricated panels, this field-fabricated system allows large, continuous fabric surfaces—offering greater design freedom while delivering reliable acoustic performance.

### Engineered for Performance & Design

The system conceals high-efficiency acoustic cores behind tensioned fabric, creating a refined, upholstered wall or ceiling finish that integrates smoothly with architectural details. This approach delivers:

- Excellent sound absorption
- Clean, modern visual appeal
- Wide flexibility in fabric type and color selection
- Adaptability in size, thickness, and layout

### Key System Features

- Field-fabricated stretch fabric system for seamless wall and ceiling applications
- Acoustic cores hidden behind fabric for a smooth, uninterrupted finish
- NRC performance up to **1.00**, depending on thickness and installation
- Custom panel sizes with thickness options from **25 mm to 50 mm**
- Low-profile track system with adjustable depth for deeper assemblies
- Installed in accordance with Kinetics' proven system guidelines

### Where It's Used

Ideal for spaces requiring both acoustic control and premium finishes, including:

- Meeting rooms and conference areas
- Auditoriums and multipurpose halls
- Sports halls and training facilities
- Corridors and circulation spaces
- High-end offices, educational, and hospitality interiors



### Why It Matters

The Kinetics Stretch Fabric System delivers effective reverberation and echo control while offering architects and designers the freedom to create seamless, elegant interiors. It provides a practical yet sophisticated solution for spaces where acoustic performance and visual quality are equally important.



# KINETICS YOUTUBE & TESTIMONIAL

Discover Kinetics Group's urban noise control solutions, where advanced engineering and infrastructure-focused design come together to create quieter, healthier, and more livable cities. As transportation networks expand across rapidly growing regions, Kinetics delivers integrated noise and vibration solutions that protect communities, public spaces, and surrounding developments.

From transportation noise barriers and vibration isolation systems to sound-engineered infrastructure and urban environments, Kinetics provides end-to-end noise and vibration control for modern cities. Focused on long-term performance, comfort, and sustainability, our solutions help cities grow smarter—designing sound control where it matters most.

► YouTube Channel: <https://lnkd.in/dtwpyqw>



YouTube Video Link: [https://youtu.be/5HuRtt\\_puI?si=QD-iZIjrUIRJ7snD](https://youtu.be/5HuRtt_puI?si=QD-iZIjrUIRJ7snD)

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**“Very satisfied with Kinetics Group’s responsiveness and documentation accuracy.”**

Biku Mathew  
Iwin Electromechanical L.L.C.

**“Very impressed by the expertise and efficiency of Kinetics Group’s team.”**

Sajin Clement  
Weathertech Electromechanical Contracting L.L.C.

**“Kinetics Group demonstrated great understanding of our project requirements.”**

Sanjay Kumar  
DC Serve Equipment Trading L.L.C.

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Aero cool HVAC System Air Solutions

**“We appreciate your prompt response and support. Your team’s technical knowledge has been invaluable to our tender and projects.”**

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Lean Industries L.L.C.

