THE ISOLATOR
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THE ISOLATOR

Hey August! As the summer holidays wind down and the back-to-school buzz kicks in, things at KGC are just heating up.

While most are chasing shade and iced drinks, we've been busy turning up the volume on quiet (yes, that's a thing) with some seriously cool acoustic wins.

This month's project spotlight? A buzzing Battery Storage Factory in Abu Dhabi and a Renal Dialysis Clinic in Oman—both needing hush-mode HVAC solutions. We rolled up our sleeves, tuned the airflow, and brought the noise down like pros.

Over in our tech corner, we're diving into smart sound control in ductwork—where airflow meets acoustics with precision. And our product of the month? The mighty Kinetics Rectangular Attenuator—quiet, tough, and pressure-drop-friendly.

So grab your iced drinks, kick back, and enjoy this issue packed with projects, and proof that even in August, it's full speed (and low noise) at Kinetics. Let's keep it cool, clever, and just loud enough to say—we love what we do.

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

مجموعة كينيتكس KINETICS GROUP

Battery Storage Solutions Factory, Abu Dhabi

A large factory facility in Abu Dhabi that leads in renewable energy and battery storage solutions operates with 20 Air Handling Units (AHUs), each producing approximately overall 101 dB of sound power. Kinetics Group proudly designed and supplied sound attenuators for both the supply and return duct sections, with a target Noise Criterion (NC) of 40 across the workspace as per of the project.

For each AHU, KGC conducted a full duct acoustic calculation — starting from the AHU outlet and extending through elbows, branches, and all the way to the first air outlet.

Additionally, one AHU was dedicated to supplying an office space within the facility. For this zone, it was designed and delivered a custom sound attenuator capable of achieving NC 35**,** suitable for a quieter office environment based on tailored duct-by-duct acoustic assessments to ensure precise performance.

The project also involved treatment of four Fresh Air Handling Units (FAHUs), each generating similar sound levels of 101 dB. The approach followed the same rigorous process of acoustic evaluation along the duct route to ensure accurate attenuator sizing and configuration.

Renal Dialysis Clinic, Oman

Kinetics provided a noise control solution for a Renal Dialysis Clinic in Oman, specifically targeting the generator room, which housed three high-capacity generators. Each generator produced an estimated sound power level of 127 dB, which posed a significant noise concern for both occupants and surrounding structures.

Drawing on decades of expertise in industrial noise control and a proven track record of solving complex acoustic challenges across diverse environments, Kinetics Group demonstrated its technical capabilities by delivering a comprehensive solution that exceeded client expectations. We supplied it by sections and assembled it onsite.

Kinetics was able to reduce this high noise level to no more than 85 dBA at 3 meters from the generator outlet as per project specification. Through the engineered solution for both intake air and discharge air paths, using large-format, high-performance Kinetics sound attenuators, the project showcased the company's ability to tackle extreme noise scenarios while maintaining operational efficiency.

Technical Discussion: Precision Sound Control in HVAC Applications

The Battery Storage Solutions Factory project each of the **20 AHUs** in, which produced approximately **101 dB** of sound power, was analyzed separately. Instead of using assumed or average values, a duct-by-duct acoustic simulation for each system was instead conducted. This involved calculating the insertion loss across:

- Main ducts
- Bends and elbows
- Branch connections
- Diffuser and outlet points

This method enabled to determine exactly how much attenuation was naturally provided by the duct system and how much **additional attenuation** was required from the sound attenuator to reach the **target NC of 40**.

Office Area Acoustic Control

For the office AHU targeting NC 35, a detailed analysis of the full duct path—including all bends and transitions—was conducted. A high-performance attenuator was selected to achieve the required noise level without compromising airflow or pressure.

FAHU Noise Management

Each of the four FAHUs **(101 dB)** underwent a full acoustic study of their supply and return ducts. Custom attenuators were designed to achieve **NC 40**, optimized for airflow, splitter configuration, and minimal ventilation impact.

Renal Dialysis Clinic Project used this individualized design approach that allowed us to minimize the length of attenuators where space was limited while still achieving the required insertion loss.

Design Summary – Generator Attenuation

To meet the acoustic target of **85 dBA at 3 meters**, each generator's intake and discharge path was modelled to determine required insertion loss. Large-format attenuators were selected to control noise without compromising airflow needed for cooling and combustion. Pressure drop was a critical design factor.

Attenuator Features

- Custom-sized intake and discharge silencers matched to duct layout and airflow.
- Designed with extended splitters, high-density Rockwool, and perforated GI liners.
- Aerodynamic baffles minimized pressure loss while maximizing attenuation in low–mid frequencies.

Airflow vs Noise Control

A large cross-sectional area kept air velocity low, reducing resistance. All designs were validated using **AMCA-tested performance data** to ensure acoustic effectiveness and system efficiency.

Sound Attenuator Design Considerations

Each sound attenuators used for the **Renal Dialysis Clinic** and the **Battery Storage Solutions Factory** Projects on the acoustic modelling, was custom-selected and designed to match the required performance. Key design factors included:

- **Splitter configuration** - Number and thickness of splitters were optimized for maximum attenuation.
- **Airway dimensions** - Sized to balance noise reduction with airflow requirements.
- **Face size matching** - Matched to existing duct sizes to ensure seamless integration.
- **Pressure drop management** - Ensured low resistance to avoid overloading the AHUs or impacting energy efficiency.

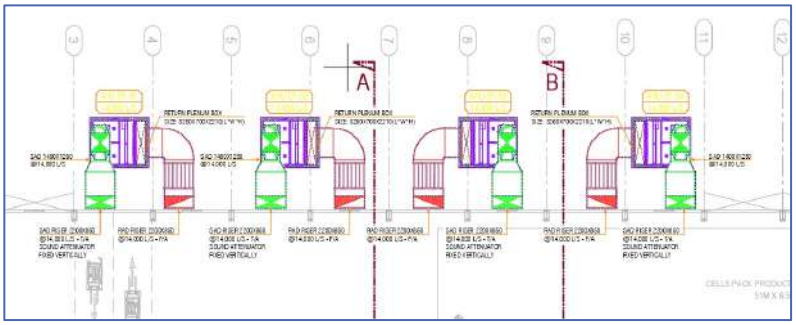

FIGURE 1. AHUs

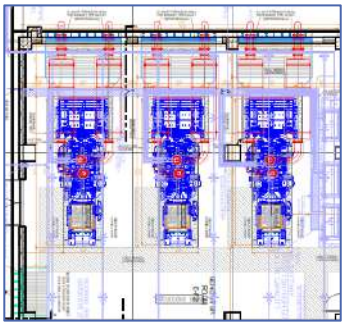

FIGURE 2. GENERATOR

PRODUCT HIGHLIGHT: Kinetics Rectangular Attenuator

At the heart of this project's success were Kinetics Sound Attenuators, professionally engineered to deliver reliable performance in both noise control and aerodynamic efficiency. All our attenuators are AMCA-certified, meaning they are tested and verified for both sound attenuation and airflow performance by the Air Movement and Control Association (AMCA international).

Why kinetics rectangular attenuators were chosen for this project?

For this industrial project, Kinetics rectangular attenuators were the preferred solution based on the following performance and design advantages.

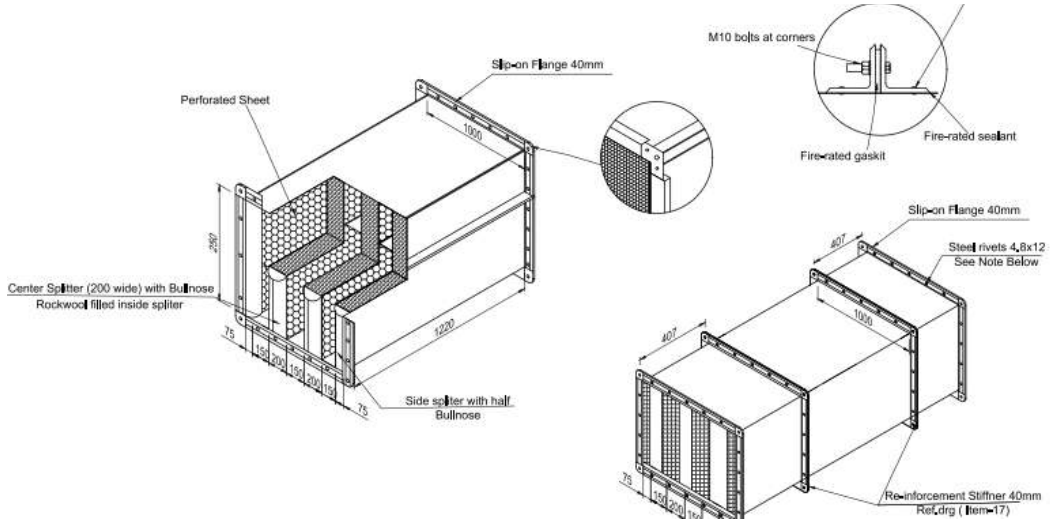

FIGURE 3. RECTANGULAR ATTENUATOR

Superior Manufacturing – Engineered for Efficiency

- **Nose entry design (aerodynamic splitter nose):**
  Each splitter is designed with a smooth, rounded entry profile (nose), minimizing turbulence and pressure loss as air enters the attenuator. Result: lower pressure drop and improved energy efficiency compared to flat-faced designs.
- **Precision-formed splitters:**
  built using CNC-formed galvanized sheet metal for consistent geometry and optimal airflow passage.
- **High integrity construction:**
  fully sealed, corrosion-resistant GI casing ensures structural strength and long-term durability even in harsh mechanical environments.
- **Tailored dimensions:**
  splitter number, thickness, and spacing are customized per unit to balance airflow performance with target insertion loss — no guesswork involved.
- **Optimized airway-to-splitter ratio:**
  ensures maximum sound energy absorption while maintaining high airflow efficiency.

Material specification

- Casing: galvanized iron (GI) with anti-corrosion protection
- Internal absorption: high-density rockwool insulation (48 kg/m³), securely enclosed
- Inner liner: perforated metal skin prevents erosion and maximizes sound wave penetration
- Splitters: filled with rockwool and shaped for aerodynamic entry and exit

Why Rockwool?

- Excellent sound absorption (especially mid-high frequencies)
- Non-combustible and fire rated
- Moisture resistant and durable
- Thermal insulation benefit as a secondary feature

BE CURIOUS: HAVE YOU HEARD ABOUT **PACKLESS SILENCERS** USED FOR SPECIAL APPLICATIONS LIKE IN HOSPITALS, CLINICS AND LABORATORIES? IF NOT, STAY TUNED FOR OUR NEXT EDITION TO LEARN MORE ABOUT THEM.

KINETICS YOUTUBE & TESTIMONIALS

Kinetics Group proudly celebrates **Kinolympics 2025**—our annual office games event where teams compete in fun and friendly challenges designed to foster collaboration, energy, and camaraderie across departments.

Held at the KGC Main Office, Kinolympics brought together colleagues from different divisions to engage in exciting games that tested both skill and teamwork. This video captures the laughter, team spirit, and competitive energy that make working at Kinetics more than just a job.

It's a reflection of our culture—where unity, motivation, and fun go hand in hand. **It's more fun at Kinetics!**

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

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🌍 Website: www.kineticsgroup.ae

YouTube Video Link: https://youtu.be/Gh-ec8TCKD0?si=K050dhdCg5tCNOAG

"What our Customers ARE SAYING"

"We were impressed by Kinetics' commitment to customer satisfaction"
ENGR BINA BABU
MEPAK Electromechanical LLC

"We would gladly work with Kinetics again, thanks to their outstanding site communication and support."
ENGR RAJA FAYAD
Fayad Engineering

"Kinetics team is highly professional, great communication and overall, a smooth experience for me."
SAADAT ALI
Construction and Building Engineering CBE

"We could always count on Kinetics for reliable delivery and services."
SANDEEP N K
Jazal Engineering & Contracting LLC

"Kinetics team was knowledgeable, efficient, and easy to work with."
SARATH S NAIR
Tester Electromechanical LLC

"Outstanding logistics support of Kinetics-truly appreciated."
NEESHMA FIROZ
Emirates Powerlink Electromechanical LLC

"Excellent service of Kinetics-timely deliveries and clear communication."
RAHUL KRISHNAN
Construction and Building Engineering LLC

"The collaboration with Kinetics was seamless and productive."
AJAY
Aswar Engineering Garnal Contracting Company

"We're very satisfied with the quality and professionalism Kinetics delivered."
SABINA LOPES
Adnann Contracting LLC

"Excellent collaboration and clear communication with Kinetics."
MOHAMMED ASLAM
Schroeder Projekt Electromechanic

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