System: CXFG

Kinetics Noise Control Solutions

Backup Generators – A Community Noise Issue

Client

A data/call center located in a large metropolitan area

Issues

- The client needed to install five 2500 kW emergency power generators in their newly purchased facility.
- The building was originally used for printing presses, offices and distribution. Due to the age and configuration of the building as well as high noise levels of the generators, an exterior installation was needed.
- The only viable option was to locate the generators in an alcove between an office building, parking garage and high rise condominium.

Solutions

- The client contacted their local Kinetics Noise Control, Inc. (KNC) Representative for help.
- KNC's local representative and in-house engineering team worked together to determined the client's need.
- This was done by performing preliminary field, ambient sound measurements, reviewing the local noise ordinance and educating the client of their need for attenuation and working with the generator manufacturer in obtaining reliable generator unit sound power levels. Obtaining reliable source sound power levels is the most important piece of information and typically the hardest to obtain.
- The KNC and representative team proposed a **NOISEBLOCK**™ sound enclosure system that would house the five generators but fit within the allotted space and meet the city noise ordinance.

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Advantages of Proposed Solution

- One modular **NOISEBLOCK**™ enclosure resulted in a smaller footprint than having traditional, individual enclosures around each generator set.

- Access for maintenance was improved because the client could now have more space between each unit for access.

- The generator housing or sound enclosure is technically a temporary or moveable structure. Permits are easier to acquire than those needed for the construction of a fixed building structure.

- Kinetics Noise Control, Inc. (KNC) specializes in the manufacturing of **NOISEBLOCK**™ sound enclosures and acoustical silencers, thus ensuring required noise reductions are met.

Considerations

- Environmental noise issue.
- Five (5) generators installed near condominium
- Constant backup generators for Data/Call Center
- 2500 kW, Dual Exhaust, Diesel Generators
- 106,000 cfm per generator required cooling ventilation.

Project Goals

- Quiet the noise levels of the five operating generators to within acceptable limits
- Be the quietest equipment within the equipment yard
- Improve client/community relations
- Make sure the generators did not overheat during operation

The ambient noise levels at 4:00 am were measured to be 57 dBA. It was not economically feasible for KNC to meet this sound level at every floor of the high rise condominium building so KNC proposed:

Engines Operating	1st Floor	4th Floor
1	57 dBA	60 dBA
2	60 dBA	63 dBA
5	64 dBA	67 dBA

NOISEBLOCK™ Applied Products

KNC model VRS, straight, ventilation silencers were incorporated into the ventilation design. The walls, roof and doors were manufactured of KNC model HTL-4, high transmission loss tongue and groove panels. All products are cost effective and backed by KNC's extensive, independently tested database and history of proven performance.

Resolution

The KNC team coordinated the structural steel fabricator, raw material suppliers and motorized damper supplier. The installed sound enclosure met the sound levels proposed by KNC. The client ordered an additional system for another facility requiring an enclosure for ten generator systems with a bay for switchgears.