

# Sarasota Memorial Hospital Sarasota, Florida, USA

## Generator Solution

### SCOPE & SUCCESS

Vibro-Acoustics designed and manufactured noise control products for Standby Generators at the New Central Energy Plant at Sarasota Memorial Hospital at Sarasota, Florida.

#### HIGHLIGHTS

- > Integrated design assistance offered to acoustical consultant
- > System designed with ultra-low pressure drops
- > Complied with Sarasota Noise Ordinances

### OVERVIEW

The Central Energy Plant is designed to provide back up power to Sarasota Memorial Hospital, an 839 bedroom medical facility in Sarasota County, Florida.

The Plant building houses 6 Emergency generators. Each has a capacity of 2000 kW. To keep the generators cool, air is drawn in from the roof of the building through propeller fans and discharged through the side.

### ⚠ CHALLENGES

**FIVE GENERATORS** operating inside the building were going to be very noisy. Sarasota county has very stringent and strictly enforced noise by laws:

- > Day (7 am to 11 pm): 75dBA and 80dBC
- > Night (11pm to 7am): 75 dBA and 75dBC

The challenge was to attenuate noise from three sources; Generator intake, generator discharge and noise that radiated through the building envelope. The resultant noise was to comply with both dBA and dBC ratings. The solution had to be guaranteed for performance since Noise Bylaws are strictly enforced in Sarasota County and there was very little room for error.

 **SOLUTION**

**Vibro-Acoustics partnered with the Mechanical Engineer and Acoustical Consultant and provided design assistance right from the beginning.**

**INTAKE PLENUM WALL** was lined with absorption panels followed by banks of 13' long silencers.

Discharge silencers were custom designed, transitional silencers with High Transmission Loss casings. The internal geometry ensured a smooth, aerodynamic flow of air.

Walls of the building were lined with absorption panels for the ceilings, Vibro-Acoustics used specially designed, High Transmission Loss panels. These panels were tested by an independent laboratory for transmission loss ratings as part of the approval process.

The combined pressure drop including system effects for the system did not to exceed 0.19" WG.

Vibro-Acoustics also provided design services for the support structures for intake silencers and High Transmission Loss panels suspended from the ceiling.

