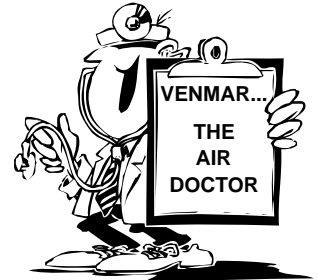


# Venmar...Keeping Your Health in Check



*"I have experienced significantly fewer migraine headaches since the Venmar unit was installed".*

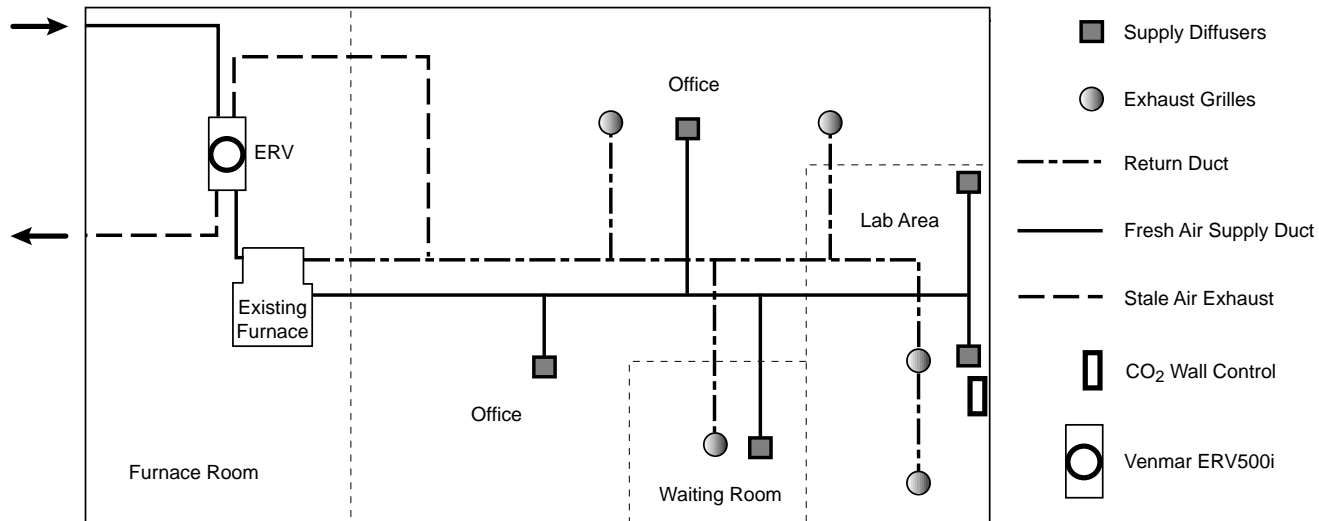
*Joyce Straight, Technician*

## The Problem

Luikart Heating of Newark, OH faced the problem of providing ventilation to a Medical Laboratory located in a basement. CO<sub>2</sub> levels were being recorded in excess of 2,500 ppm. Staff were complaining of headaches and a general feeling of illness. Specific types of medical testing had to be halted since the high CO<sub>2</sub> levels could potentially skew the results.

The lab had no ventilation and no room to run ductwork. The space heating and air conditioning was provided by a 5 ton "residential" type furnace.

CO <sub>2</sub> Levels of Comfort in Parts per Million	
Normal Outside Levels	350 - 450 ppm
Acceptable Levels	less than 600 ppm
Increased Complaints of Stiffness and Odors	600 - 1,000 ppm
ASHRAE and OSHA Standards	1,000 ppm
Increased Complaints of General Drowsiness	1,000 - 2,500 ppm
Adverse Health Effects Expected	2,500 - 5,000 ppm
Maximum Allowable Concentration for an 8 hour Period	5,000 ppm



## The Solution

Venmar representative Peter Walsh of Columbus Temperature Control Company chose a Venmar ERV500i to solve the laboratory's problems. The unit was installed to exhaust stale air from the lab via the existing furnace return air duct. Fresh outdoor air was then introduced downstream of the exhaust and distributed to the lab and offices by the existing furnace supply air duct. This method of diluting the stale air is often referred to as dilution ventilation. The Venmar ERV500i has an installed height of only 23" (584mm) and was a perfect fit for the limited space available. The Venmar ERV500i met the ASHRAE 62-89 ventilation standard for medical laboratories of 20 cfm per person.

## The Results

The ventilation provided by the Venmar ERV500i has achieved carbon dioxide levels below 600 ppm; significantly below ASHRAE and OSHA recommended standards of 1000 ppm. This reduction in CO<sub>2</sub> levels returned the lab to full production with accurate laboratory testing. There are no longer reports of tiredness or headaches. **One technician, Joyce Straight says "I have experienced significantly fewer migraine headaches since the Venmar unit was installed".** The Lab Manager and Building Owner are now considering the installation of Venmar units in the heart rehabilitation exercise area, the examination room and the waiting rooms.

Project Details	
Reference Standard	ASHRAE 62-89
Design Airflow	400 - 600 cfm
Venmar Model	ERV500i
<b>Representative:</b> Peter Walsh of <i>Columbus Temperature Control Co.</i>	Location: Columbus, OH Phone: (614) 294-6216 Fax: (614) 294-2940
<b>Contractor:</b> Tom Bradley of <i>Luikart Heating &amp; Cooling</i>	Location: Newark, OH Phone: (740) 344-5497 Fax: (740) 344-5499



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