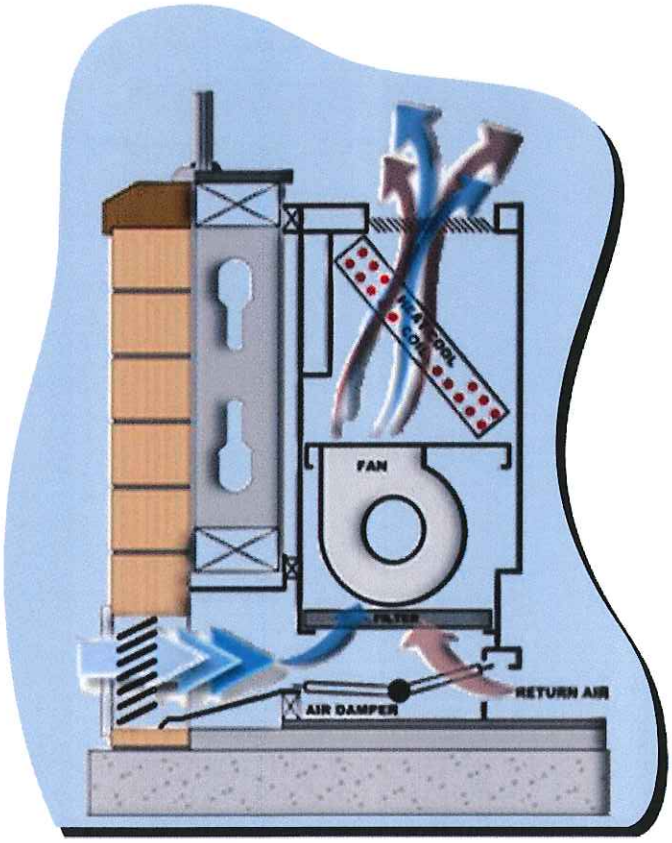


What is a Unit Ventilator?

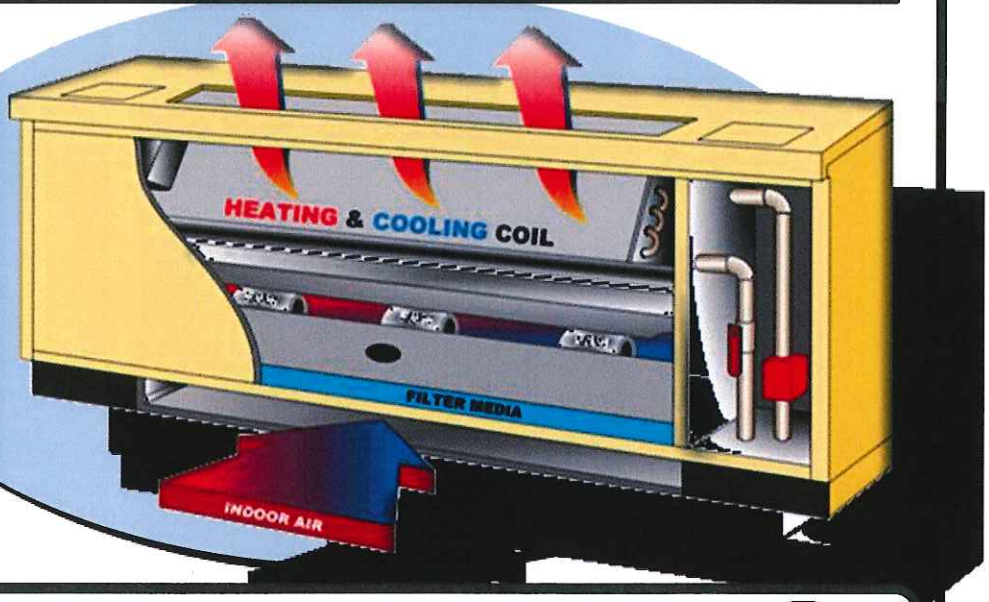
A unit ventilator consists of a heating coil, fan assembly, dampers, filter and controls contained in a metal cabinet. Unit ventilators are usually located on the outside wall of classrooms, although they are sometimes suspended at or above the ceiling level.

Outdoor air is brought directly into the cabinet via a grille located on the outside wall of the classroom. The unit ventilator is designed to mix room air with outside air, heat the air if necessary, and deliver it to the classroom through a grille located in the top of the unit ventilators.

The proportion of outside air is controlled by the position of the fresh air damper. This damper can be adjusted to provide as much or as little fresh air as desired. A typical unit ventilator will circulate a total of 1000 or 1250 cfm (cubic feet per minute) of air, of which a minimum of 400 cfm is outdoor air. With a unit ventilator, 100% of the airflow can be outside air when it is needed for "free cooling" (also called "economizer cooling").

PROPER OPERATIONS REQUIRES THE TOP of the UNIT BE KEPT CLEAR WITH NO OBSTRUCTIONS AT ALL TIMES.

With any system, it is necessary to balance the air flow in the building, i.e., to exhaust an amount of air equal to the fresh air supply. In a unit ventilator system, this is often accomplished by a "gravity" relief damper in the outside wall, which automatically opens to relieve the proper amount of stale air. Sometimes, exhaust is accomplished with a ducted exhaust fan system.



Basic Classroom Unit Ventilator Operation

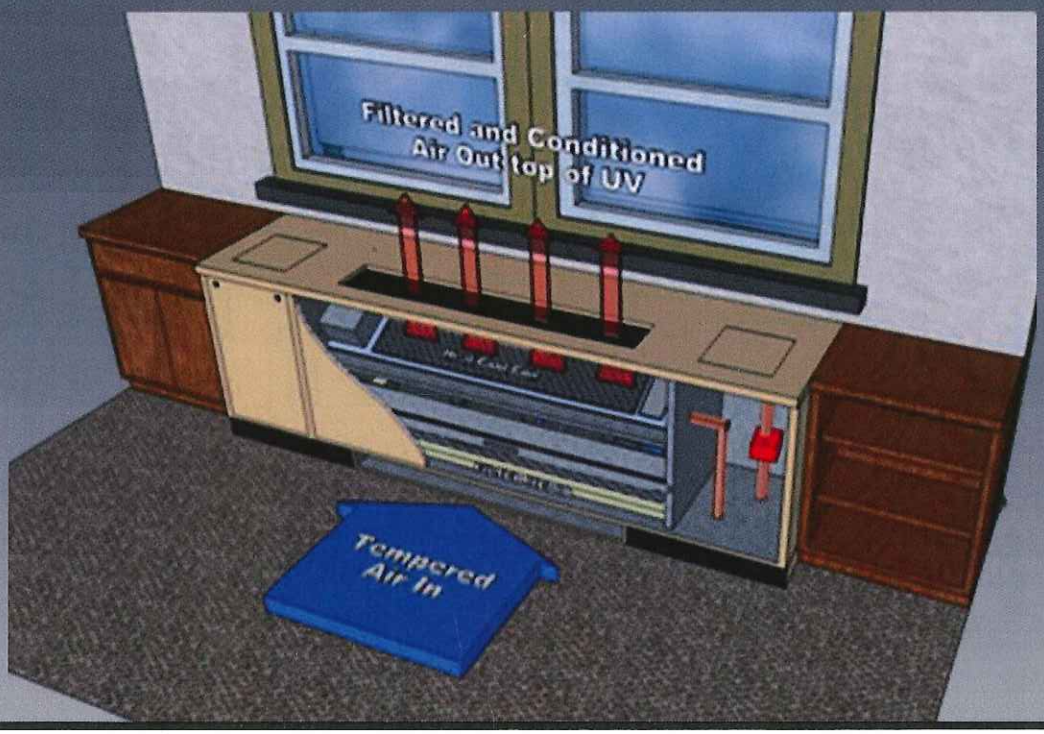
A unit ventilator (1) consists of a heating coil, fan assembly, dampers, filter and controls contained in a metal cabinet. Unit ventilators are usually located on the outside wall of classrooms, although they are sometimes suspended at or above the ceiling level.

Outdoor air is brought directly into the cabinet via a grille located on the outside wall of the classroom. The unit ventilator is designed to mix room air with outside air, heat the air if necessary, and deliver it to the classroom through a grille located in the top of the unit ventilators. ***IT IS VERY IMPORTANT THAT THIS GRILL IS KEPT CLEAR AND NOTHING IS STORED ON TOP OF THE VENTILATOR.*** The proportion of outside air is controlled by the position of the fresh air damper. This damper can be adjusted to provide as much or as little fresh air as desired. A typical unit ventilator will circulate a total of 1000 or 1250 cfm (cubic feet per minute) of air, of which a minimum of 400 cfm is outdoor air. With a unit ventilator, 100% of the airflow can be outside air when it is needed for "free cooling" (also called "economizer cooling").

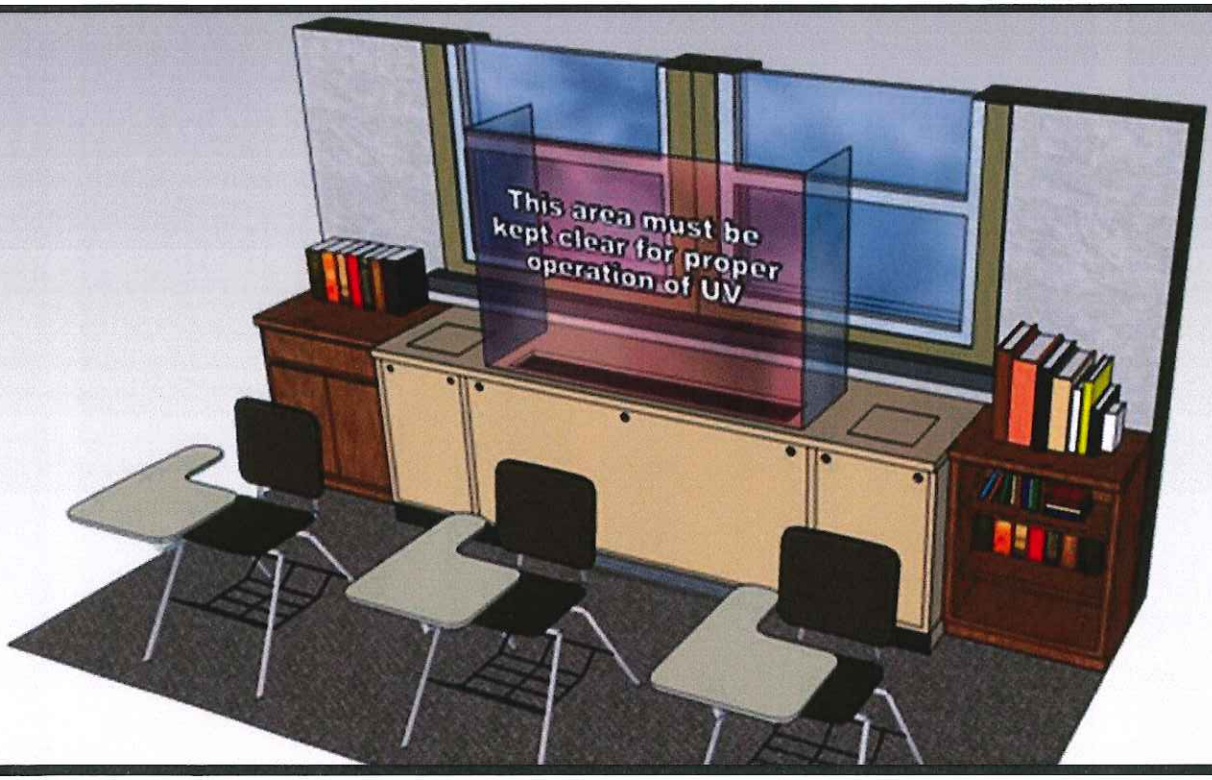
With any system, it is necessary to balance the air flow in the building, i.e., to exhaust an amount of air equal to the fresh air supply. In this instance, exhaust is accomplished with a ducted exhaust fan system. (2)

Hanging objects and papers from the ceiling will interfere with air flows and the room thermostat (3) will not record the room air temperature correctly.

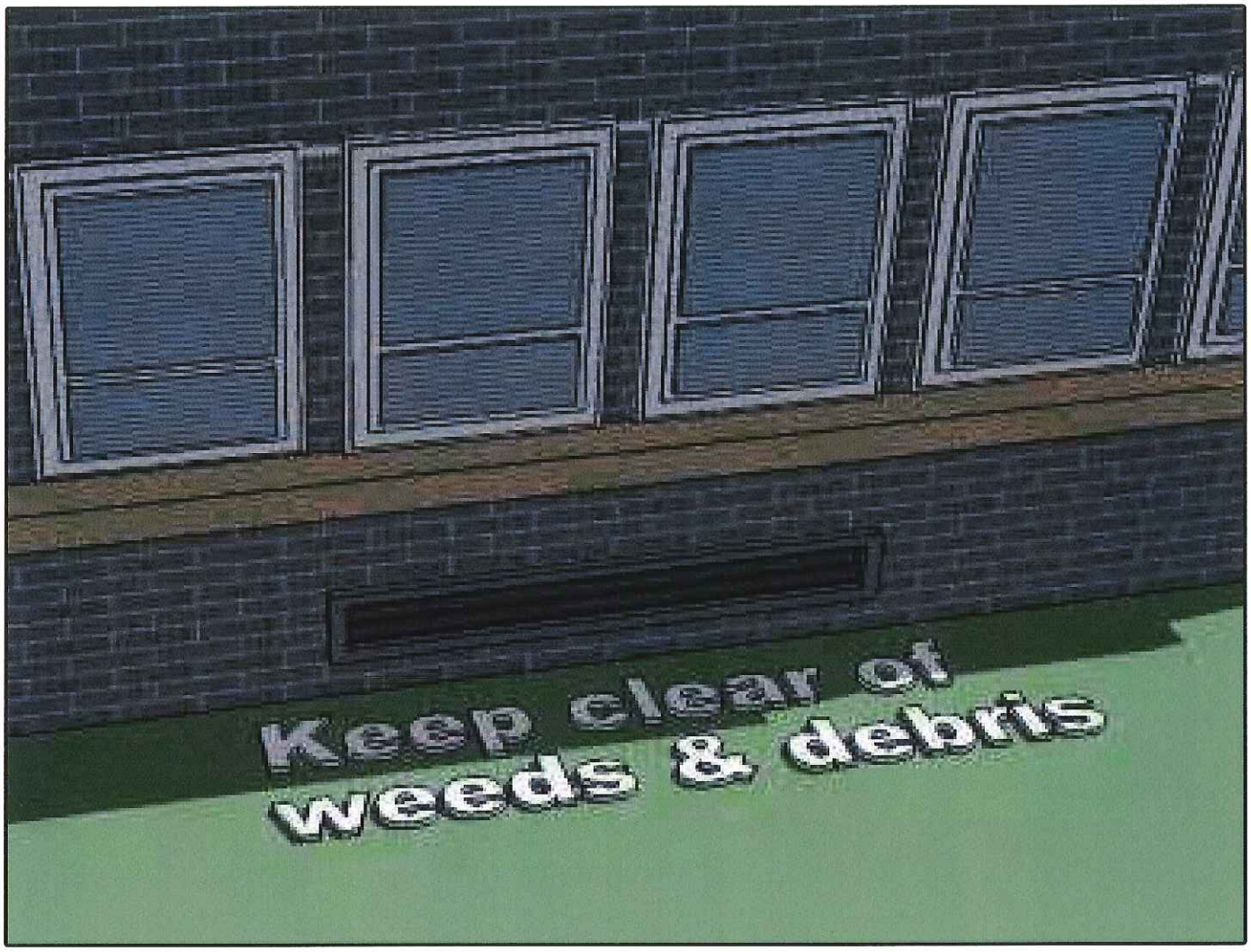
Basic Classroom Unit Ventilator Operation



PROPER OPERATIONS REQUIRES INTERIOR and EXTERIOR AIR INTAKES and the TOP of the UNIT BE KEPT CLEAR WITH NO OBSTRUCTIONS AT ALL TIMES.



Basic Classroom Unit Ventilator Operation



The Exterior Intake is an integral part of a Classroom Unit Ventilator. I must be maintained with as much care as the unit itself.

The entire grill area must be kept clear of weeds, grass and debris. The unit must be clear of any visible water.

Instruct the Grounds Maintenance personnel that they should ALWAYS blow the grass AWAY from the building when mowing within 10 to 15 feet of the exterior walls. This will prevent cut grass from blocking the air intake and any type of debris buildup.

During the winter months, it may be necessary to clear the snow away from the intakes for proper air flows the the classroom unit. Use a snow blower around the exterior to clear the vents.

Basic Classroom Unit Ventilator Operation