



Whitmore Lake Public Schools

COMMITTED TO INNOVATION IN EDUCATION & ENVIRONMENTAL DESIGN

LEED™ Silver Certified

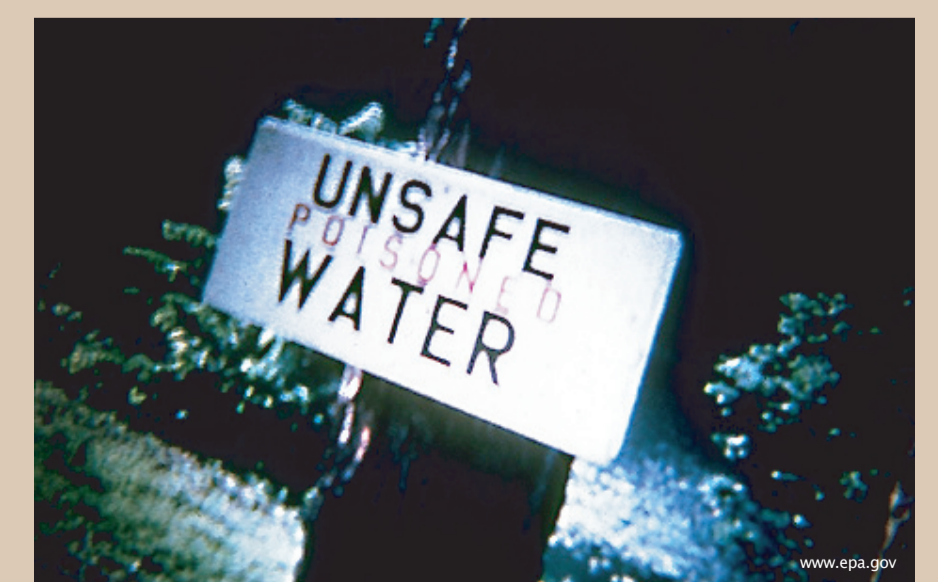
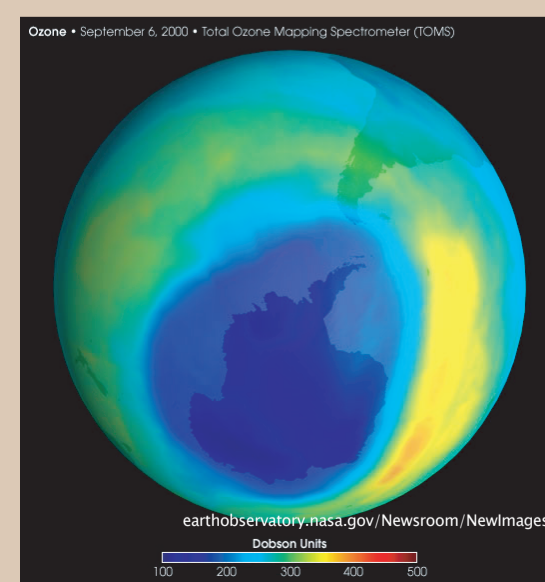
ENVIRONMENTAL STEWARDSHIP

The cooling system for this high school utilizes no HCFC's (hydrochlorofluorocarbons). These refrigerants contribute to ozone depletion. This early compliance with the Montreal Protocol earned this project one LEED™ point.

This building does not have boilers or chillers.

Instead of relying on conventional refrigerants, a network of underground piping uses the earth as a "heat sink" to exchange energy to heat and cool the school. This "geothermal" system utilizes heat pumps and energy recovery units to keep the building comfortable. Energy recovery units use energy from exhaust air to temper incoming fresh air so less energy is required at the heat pumps to bring the air to its design temperature.

Another benefit of this system is that by using less energy, the high school does its part in limiting its use of fossil fuels and consequently contributes less "ground level" ozone than a conventionally heated and cooled high school.



Sustainability Factoid:

"Ozone (O₃) is a gas composed of three oxygen atoms. It is not usually emitted directly into the air, but at ground-level is created by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. Ozone has the same chemical structure whether it occurs miles above the earth or at ground-level and can be "good" or "bad," depending on its location in the atmosphere.

In the earth's lower atmosphere, ground-level ozone is considered "bad." Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents as well as natural sources emit NO_x and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form in harmful concentrations in the air. As a result, it is known as a summertime air pollutant. Many urban areas tend to have high levels of "bad" ozone, but even rural areas are also subject to increased ozone levels because wind carries ozone and pollutants that form it hundreds of miles away from their original sources."

www.epa.gov