



SolarWall Systems Solar Air Heating in the Military



The SolarWall® technology is ideally suited for military applications. These three helicopter hangars at Fort Drum are one example of the dozens of military buildings that are now able to displace a sizable portion of the conventional energy load by heating their ventilation air using SolarWall® systems.

Ventilation heating is typically one of the largest single energy requirements for military type buildings, such as vehicle maintenance garages, hangars and warehouses. These types of facilities require a large volume of ventilation air, which is expensive to heat using conventional sources. This is why solar air heating—using the SolarWall® technology—can generate such significant overall energy reductions.



In 2006, the United States Corp of Military Engineers identified the SolarWall® air heating system as one of two cost-effective solar technologies available on the market (the other being day lighting). They also cited it as being especially well suited for vehicle maintenance garages, and as a result, the SolarWall technology is routinely specified on new construction. As well, these buildings have large wall surfaces available, which makes it easy to integrate a SolarWall system into the exterior façade.

Eight other U.S. military bases also use the SolarWall® technology, including Fort Carson, Norfolk Naval Base, Edwards Air Force Base, Fort Huachuca, Buckley Air Force Base, Fort Lewis, and Peterson Air Force Base. SolarWall systems have also been installed at the Canadian military bases CFB Suffield and CFB Wainwright in Alberta.

United States Army



One of the 10 large vehicle maintenance garages that have been retrofitted with grey SolarWall systems at Fort Drum.

Fort Drum, NY

The SolarWall® systems at Fort Drum represent the largest collection of solar air heated buildings in the world. The total collector area is around 110,000 ft² (10,200m²), spread over 27 buildings with 99 fans being used to deliver 300,000 cfm of air. New air makeup fans and distribution ducting were also installed to improve the ventilation air in some of the older facilities, which also allows for additional de-stratification savings to be realized. Projected fuels savings are 44,000 million BTU/h (46,000 GJ) per year, with annual CO₂ reductions of 2,000 tons. This highlights the significance of the project, and potential of the technology when it is used on a large scale.



Military hangar with SolarWall system integrated into the façade.



Dark bronze SolarWall system on a vehicle maintenance garage at Fort Drum.



Fort Huachuca, AZ

Black SolarWall cladding was installed on two hangars at this Arizona base. The solar air heating system was part of an overall mandate by the U.S. Army to reduce fuel costs on the base by using renewable energy. The system also provides the required ventilation air for the buildings.



Fort Carson, CO



Officials at Fort Carson had a mandate to conserve energy and save money. This led to the specification of a SolarWall heating and ventilation systems on the base's main helicopter hangar. At the time of the installation, it was projected to save the U.S. Army \$14,000 each year (using 1997 gas prices) in reduced heating costs. In the summer of 2006, three more SolarWall systems were installed on vehicle maintenance buildings at the base, bringing the total collector area to around 17,400 ft² (1,620 m²).

Fort Lewis, WA



A new SolarWall installation was completed in the summer of 2006 at Fort Lewis in Washington state. The SolarWall system, installed on a maintenance building, assists the base in lowering fuel costs.



United States Air Force



Buckley Air Force Base, CO

SolarWall cladding was installed on multiple walls on a large hangar building at this Colorado base to reduce heating costs by providing free solar heat and ventilation air.

Edwards Air Force Base, CA

This California base was outfitted with a SolarWall system as part of an energy efficiency upgrade program. The solar cladding provides heat and ventilation air to the aircraft hangar, and has also helped overcome the problem of negative pressure in the building.



The energy upgrades at Edwards Air Force Base garnered many accolades, and the base was named the recipient of the Presidential Award for Federal Energy Management and was designated as a Federal Energy Saver Showcase Facility by the U.S. Department of Energy. A second hangar building is scheduled to be retrofitted with a SolarWall system in the near future.

United States Navy



Norfolk Naval Base, VA

Norfolk was one of the first bases to participate in a federal program aimed at reducing energy consumption at federal facilities using solar energy. In 1997, two maintenance building at the base were outfitted with SolarWall heaters.

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