

APPLICATIONS FOR GENESIS AIR GAP PCO TECHNOLOGIES ANTITERRORISM FORCE PROTECTION

The following excerpt from the Unified Facilities Criteria (UFC) addresses DoD Minimum Antiterrorism Standards for Buildings:

UFC 4-010-01 (8 October 2003 Including change 1, 22 January 2007)

Standard 18. Emergency Air Distribution Shutoff. “For all new and existing inhabited buildings, provide an emergency shutoff switch in the HVAC control system that can immediately shut down the air distribution system throughout the building except where interior pressure and airflow control would more efficiently prevent the spread of airborne contaminants and/or ensure the safety of egress pathways. Locate the switch (or switches) to be easily accessible by building occupants. Providing such a capability will allow the facility manager or building security manager to limit the distribution of airborne contaminants that may be introduced into the building.”

The resultant engineered design typically has the building HVAC control system configured to shut down all air handlers and exhaust fans, leaving the occupants to remain in the building without the benefit of environmental conditioning.

Genesis Air's GAP™ photocatalytic oxidation (PCO) technologies can be deployed in the mixed air accessory section of air handling systems to allow those systems to continue in operation during an emergency override event. With **GAP™** PCO properly placed, exercising the emergency override switch would then immediately carry out the following

Sequence of Operations procedures:

1. Initiate an alarm to signify the emergency override switch has been exercised.
2. Deenergize all exhaust fans to prevent the building from being placed under negative pressure.
3. Verify proper operation of the **GAP™** PCO lamps & ballasts. If the PCO is not fully functional, shut down all air handling equipment. Otherwise, proceed to the next step.
4. Fully close all outside air dampers and fully open all return air dampers to direct the recirculating air through the **GAP™** PCO sections of the air handling systems while preventing the potential introduction of airborne hazards in the outside air.
5. Continue operation in 100% recirculation mode until emergency event is concluded.

Users have been very receptive to this application, as it allows them to continue to function with the use of necessary heat-generating equipment, such as computers, lights, etc., during the emergency event.

GAP™ PCO has been shown to be effective against many airborne biological and chemical agents. It is in use in the manner described above at numerous US Department of Defense, US Department of Homeland Security, and other governmental, institutional and commercial facilities.¹

2-3.5 Limit Airborne Contamination. Effective design of heating, ventilation, and air conditioning (HVAC) systems can significantly reduce the potential for chemical, biological, and radiological agents being distributed throughout buildings.

B-4.2 Standard 17. Mail Room Ventilation. To ensure airborne chemical, biological, and radiological agents introduced into mail rooms do not migrate into other areas of buildings in which the mail rooms are located, provide separate, dedicated air ventilation systems for mail rooms. Refer to the *DoD Security Engineering Facilities Design Manual* for additional guidance.

B-4.1 Standard 16. Air Intakes. Air intakes to heating, ventilation, and air conditioning (HVAC) systems that are designed to move air throughout a building that are at ground level provide an opportunity for aggressors to easily place contaminants where they could be drawn into the building. The following measures will be applied to minimize those opportunities.

B-4.1.1 New Buildings. For all new inhabited buildings covered by this UFC locate all outside air intakes that distribute air throughout the building at least 3 meters (10 feet) above the ground. *This not always possible, Genesis Air has been used to meet this standard.* El Paso VA



El Paso VA Clinic



Federal Law Enforcement Training Facility (FLETC)
Building 28 Command Center



Genesis Air, Inc Providing Environmentally Sound Solutions For Indoor Air Quality

Federal Locations that Genesis Air can be found in:

•**Federal Law Enforcement Training Center (FLETC)**

*Building 28 Training and Command Center
Physical Training Building*

•**Joint Reserve 914 Airlift Wing**

Fire and Crash Rescue Station

•**Goodfellow AFB**

*Student Pipeline Dormitory
School Age Facility*

•**El Paso VA**

Health Care Clinic & Hospital

•**US Postal Service**

Sundown, Texas

•**Laughlin AFB**

*Fuel Systems Building
PT Training Building*

•**Lackland AFB**

Army Veterinary Corps

•**Fort Sam Houston**

Corp of Engineers Regional Office

Future Spec Jobs:

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RTI International

HRA Environmental

G.D. Air Testing

Prism Analytical Technologies

Quality Environmental

Eastmount Environmental Services

Applications

Structures on Flight lines

Fuel Systems Buildings

Barracks & Dormitories

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VA Hospitals & Clinics

Medical Examiners

Veterinary Corps

Physical Training Rooms

Post Offices

Offices & Classrooms

Spot Remediation

(odor & biologic reduction)

Indoor Tobacco Smoke

Engineered Applications



*Corp of Engineer's Regional
Office Fort Sam Houston
GAP™ Catalyst*

GAP™ A "Betterment" Technology

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