

### AIR REPLACEMENT ENGINEERED SYSTEMS



**Job Name** City of Dallas Fire Department  
Truck Maintenance Facility

**Applications** Fire equipment maintenance facility in Dallas, Texas requires approximately 41,000 CFM of tempered make-up air to replace air removed by carbon monoxide, dust collection and general purpose exhaust equipment.

**Industry** Vehicle maintenance facilities require exhausting of large quantities of air to ventilate storage areas of toxic fumes, meet carbon monoxide safety levels and remove dust.

**Goal** Replace exhausted air using roof top units providing 100% tempered make-up air. In the mild fall and spring they will ventilate only with untempered air. In the winter, the indirect fired sections will heat the air to a comfortable temperature. The summer evaporative cooling will deliver a cool make-up air. A comfortable work environment generates high employee morale with greater productivity and quality of work performed resulting in increased profitability.



**ARES®** A Division of Mars Air Products  
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### Design Specific Application

This facility was required to use power exhaust air to face complex problems such as: loss of temperature control, removal of toxic fumes, negative pressure, excessive drafts, and infusion of dirt and insects.

*Environmental Techniques Corp.* of Garland, Texas responded to specifications developed by *Campos Engineering, Inc.* of Dallas, Texas to provide four (4) ARES model 800 NHSS and one (1) ARES model 225 NHSS indirect fired gas heated with high efficiency evaporative cooling make-up air units. The equipment is set on roof curbs over five (5) vehicle maintenance bays at the expanded facility. *J.D. Higgins Company* of Arlington, TX and ARES manufacture representative worked with the mechanical engineer at job conception to assist in selection of equipment that would allow the most economical system to satisfy the job requirements.

The ARES make-up air unit will replace exhaust air with clean, filtered-comfort tempered air for every minimum energy consumption at maximum efficiencies.

### Benefits

- **Low Equipment Cost**
- **Low Operational Costs**
- **12 Year Warranty on Stainless Steel Sump**
- **Power Vent Guarantees Clean Operation**
- **Large Diameter Blowers Mean Lower Horsepowers, Slower RPMs and Quite Operation**
- **Hot Surface Ignition for Trouble Free Operation**
- **5 Year Heat Stainless Steel Exchanger Warranty**

# Engineering Information



City of Dallas Fire Department Truck Maintenance Facility

## Building Data

300' L x 125' W x 45' H

40,000 CFM exhaust air  
5 dock bays each with  
a make-up air system

Dallas, TX ASHRAE 1 %  
Summer design temperature  
DB 101°F WB 75°F

## Equipment Selected

### (4) 800 NHSS SH 2

BTU/Input 800,000.....Natural Gas  
Temperature Rise.....71°F  
CFM 9,000.....100% Make-up Air  
Direct Evaporative Cooling.....78% Efficiency  
Approx. Discharge Temp .....81°F  
(At Summer Design)

#### Optional Accessories

- Inlet Hood with 2" Prefilters
- Down Turn Discharge Plenum
- SH Series Evaporative Cooler
- Roof Curb
- Fused Disconnect
- Exhaust Fan Interlock

### (1) 225 NHSS SH 1

BTU/Input 225,000.....Natural Gas  
Temperature Rise.....36°F  
CFM 5,000.....100% Make-up Air  
Direct Evaporative Cooling.....86% Efficiency  
Approx. Discharge Temp .....71°F  
(At Summer Design)

#### Optional Accessories

- Inlet Hood with 2" Prefilters
- Down Turn Discharge Plenum
- SH Series Evaporative Cooler
- Roof Curb
- Fused Disconnect
- Exhaust Fan Interlock

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