

SECTION 15845

ENERGY RECOVERY UNITS

PART 1 DESIGN DIRECTIVES

1.1 DESIGN CRITERIA

- A. Dartmouth College has experience with several types of energy recovery systems. Rather than be prescriptive in this ever-changing field, Dartmouth College wishes to relay experiences we have encountered with various systems and encourage the consultant to share their experiences as they apply to the project at hand. DC intends to be open minded to the newer technology & is open for discussion to proposed systems.
- B. The consultant shall consider heat recovery methods throughout the design starting with the initial programming. Dartmouth College wishes to be actively involved with proposed concepts and potential payback. The consultant shall provide DC with payback analysis at each stage of the documents.
- C. With reference to science buildings, the consultant shall pay particular attention to cross contamination of the air streams.
- D. DC has had positive results with ~~desiccant~~ *enthalpy* wheel systems as well as heat pipe systems. *However, due to the higher heat recovery efficiencies of enthalpy wheel, DC prefers the use of enthalpy wheels.*

PART 2 PRODUCTS

2.1 ~~NOT USED~~ *BOX INTEGRITY TESTING REQUIREMENTS*

- A. *Whenever possible air handlers shall be shipped to the site in as few pieces as possible.*
- B. *Air handler leakage rate for all units shall be $\leq 1\%$ of design air flow @ 8" water column.*
- C. *Air handlers shall be factory and field tested as follows:*
 - 1. *All but one of the openings shall be sealed.*
 - 2. *Connect a blower apparatus (as recommended by SMACNA HVAC Duct Leakage Test Manual) to the remaining opening and pressurize the unit.*
 - 3. *Field units shall be tested when in place and prior to any duct connections.*

2.2 *WHEEL LEAKAGE TESTING REQUIREMENTS*

- A. *Whenever possible air handlers shall be shipped to the site in as few pieces as possible.*
- B. *Air handlers shall be factory and field tested as follows:*
 - 1. *Seal the discharge opening to the building (building supply air).*
 - 2. *Connect a blower apparatus (as recommended by SMACNA HVAC Duct Leakage Test Manual) to the outside air opening and pressurize the unit to the sum of calculated operating pressures of the supply and return fan systems. Measurements shall be taken on both sides of the enthalpy wheel on the exhaust side*
 - 3. *Air flow shall be $< 5\%$ of the supply fan design air flow.*

PART 3 EXECUTION

3.1 NOT USED

End of section 15845