THERMOTECH ENTERPRISES INC.
5110 W. Clifton Street Tampa, FL 33634 Tel (813) 865-4701 Fax (813) 865-5205 www.thermotech-usa.com

Case Study: Military Hospital

Facility:	Military Hospital
Location:	Bethesda, MD
Project Type:	New Construction—Facility Replacement
Wheel Type:	Enthalpy High Performance 4Å 50,000 CFM
Scope:	(11) Thermowheel™ Model TF-804 energy recovery wheels

Problem:

Existing hospital mold problem. In 2008 the US Army and US Navy challenged a renowned design/build contractor, to design a new 550,000 CFM facility with 100% outside air and LEEDS Silver certification. The design/build contractor reviewed design concepts and concluded "Other than the enthalpy wheel, we are not aware of an energy recovery device which will meet the requirements of ASHRAE 90.1-2004, 6.5.6.1 for this 100% outside air system approach." They investigated design life of energy recovery wheels in the US market . Another military requirement was all products must be US made. The Life Cycle Analysis stated, "Other than the enthalpy wheel, we are not aware of an energy recovery device which will meet the requirements of 6.5.6.1 for this 100% outside air system approach. There are several other viable systems such as heat pipes, fixed plate heat exchangers, and run-around coils which are effective in transferring sensible energy. However, these devices do not transfer latent energy, and cannot meet the minimum 50% total effectiveness required by ASHRAE 90.1."

Solution:

Thermowheel™ TF-Series. The energy recovery wheel selected was a Thermowheel™ TF-804 energy recovery wheel utilizing high performance 4Å coated media for low face velocity and high efficiency. Thermotech was the only energy recovery wheel manufacturer approved by the US military due to its robust structural design and 25 year design life—with ZERO TF-Series failures since 1985, the company's first year of business. The 15.5-foot diameter wheels were shipped in 2-piece frames directly to the job site and installed by the design-build contractor's skilled mechanical team. The wheel rotor parts also shipped to the job site and were installed turnkey by Thermotech technicians specializing in field built rotor installation.

Results:

LEEDS Silver Certification. Maximum Sustained Energy Savings. The Enthalpy Wheel systems will save $12,968,972 over the 25 year minimum life of the wheels. US service men and women are being treated at a new state-of-the-art medical facility that is healthy, very green and sustainable. This is another US military project Thermotech was proud to participate in.