

# Building GREEN in Greensburg

# Kiowa County Memorial Hospital



Courtesy of Joah Bussert, Greensburg GreenTown

The original Kiowa County Hospital was destroyed in the May 2007 tornado. The new hospital's design team took one of the most energy-intensive building types and designed a first-of-its kind energy-efficient hospital, while still meeting functional and safety requirements. Completed in March 2010, the hospital is built to achieve the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) Platinum designation. The 50,000-square-foot building includes 15 acute-care beds, rural health and specialty clinics, an emergency department with two trauma rooms, physical/occupational therapy and radiology departments, a laboratory, and other support areas. The new hospital is projected to be 32% more energy efficient than an ASHRAE-compliant building of the same size and shape.

## ENERGY EFFICIENCY FEATURES

- **Daylighting** maximizes the use of natural light to offset electrical lighting loads in 75% of the interior
- **High-performance low-E, double-glazed windows** allow natural light to offset electrical lighting for a significant portion of the facility while also providing insulation
- A **well-insulated building envelope** containing R-25 sprayed polyurethane foam insulation significantly reduces energy costs and allows more efficient heating and cooling technologies to be used throughout the facility
- **Light colors** used on the roof and parking lots reflect heat away from the building
- A **heat recovery system** recycles exhaust air while providing fresh air to reduce energy consumption
- **Energy-efficient lights and lighting controls** reduce energy used for artificial lighting
- An **energy-efficient air conditioner** uses a magnetic bearing chiller that is more cost effective and less noisy
- **Energy-efficient office equipment** reduces energy consumption used for administrative tasks
- The high-efficiency heating, ventilation, and air conditioning and heat recovery system takes advantage of the abundant renewable electricity from the **Greensburg Wind Farm**.

## RENEWABLE ENERGY FEATURES

- On-site, grid-tied, 50 kilowatt (kW) **wind turbine** generates 220,000 kWh annually to partially off-set the hospital's energy use.

## WATER EFFICIENCY

- **Low-flow toilets** conserve water in the restrooms
- A **bioswale filtration system** reduces waste water by 50%
- **Rainwater** is collected and used to flush toilets.

## SUSTAINABLE MATERIALS

- **Recycled** materials were used in 30% of the interior finishes, including tile and recycled rubber floors
- Walking paths incorporated into the **healing garden and patio microclimate** promote the healing strategies of the hospital.

## AIR QUALITY AND INDOOR ENVIRONMENT

- **Demand-control ventilation** ensures continuous fresh air and proper CO<sub>2</sub> levels
- A **rain screen system** on the exterior cladding provides moisture control and is low maintenance
- A **filmless x-ray system** eliminates the need for dangerous chemical usage
- **Seamless countertops and floors** reduce infection rates.

## LEED RATING GOAL

- Platinum



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