Veterinary Medicine Research Facility 3B – Sustainability Features

Veterinary Medicine 3B is a four-story, 76,000 assignable square foot research building dedicated to protecting and improving the health of animals, people and the environment. The project is on target to achieve LEED Gold environmental standards as specified by the U.S. Green Building Council, thanks to innovative and sustainable planning and design elements that reduce energy demands in the following areas:

Lighting - Daylight is filtered through windows, prompting photo sensors to turn off electric lights when enough natural light is available. Strategic building orientation and sunshade design allow low winter light to enter perimeter windows while vertical fins and automatic shades eliminate late afternoon summer sun from entering the labs during work hours. Translucent glazing and light materials help redirect the interior lighting back into the space during late winter afternoons.

Structure - A well-insulated building skin, including R-20 in the walls and R-30 in the roof, reduce energy demands throughout the life of the building. Insulated glass with a "low-e" coating and argon gas between panes also prevent unwanted heat loss or gain.

Heating and Cooling - Operable windows are located in private offices and shared team spaces to allow for natural ventilation and cooling. The central stair tower is designed to draw warm air up from the main lobby and surrounding open office which is exhausted through rooftop ventilators, eliminating the need for air conditioning in the stairwell. Water cooled and heated diffusers or "active chilled beams" and radiant panels reduce the air needed to deliver heating/cooling.

Water Efficiency - Low water use landscaping is designed with native and well-adapted plants resistant to most pests and diseases that will require minimal fertilizers, pesticides, fungicides or herbicides, thereby improving the quality of storm water runoff. Storm water, combined with aquatics lab waste water and the lab water backwash is cycled through the reclaimed water system to serve the demand for toilet flushing seven months out of the year. All interior water fixtures are optimized for low flow; faucets are activated by automatic sensors, powered by batteries recharged by small turbines receiving energy from the flowing water.

Construction Materials - Whenever possible, construction materials were chosen to maximize recycled content. Paving, concrete, steel and insulation were selected for high levels of post-consumer and post-industrial recycled content, resulting in over 31% of the construction material (on a cost basis) being recycled. Additionally, on a cost basis, over 24% of the materials were manufactured and had their raw materials extracted within 500 miles of the building site, reducing transportation energy use. Over 75% of the wood materials were harvested from sustainably managed forests certified by the Forest Stewardship Council.

Recycled Construction Waste - Diverted construction wastes include all concrete and asphalt from the site clearing which was crushed and re-used on site and recyclables were sorted and hauled to a recycling center. This helped divert over 96% of the construction and demolition waste from the landfill.

Future Efficiencies - The project team also considered future energy demands and the need to capture renewable energy. Three roof areas are reserved for future on-site photovoltaic (PV) panels with conduit pathways that connect them to the main electrical room. The campus may also dedicate some of the production capacity from the south entry parking PV array to serve a portion of the building's electrical demands.

Key building achievements include:

33% less ongoing energy consumption*
96% of construction waste diverted from landfill disposal
80% less potable water use*

*when compared to a similar building built to code

Contact: Trina Wood, (530) 752-5257
3/2013