GATEWAY MEDICAL CENTER

Project:
Gateway Medical Center

Building Owner:
Columbia River Corp. Inc.

Location:
Vancouver, WA

Roof Area:
12,000 Square Feet

Completed:
2008

Manufacturer:
IB Roof Systems

System:
Mechanically Attached
80 Mil White

Project Profiles

Green building designs and materials can prove to be good medicine. Selecting green products for new hospital construction can have a positive impact on patient outcomes and the productivity of its medical staff.

Therefore the owners of the 12,000-square-foot LEED-certified hospital within the Gateway Medical Center in Washington State specified the hospital's building envelope with great care, including a durable Energy Star single-ply roofing system from IB Roof Systems.

"The folks at the medical center are concerned about the health of their future patients," said Michael Gage, project manager from Columbia Rim.

Having a quality product on the roof, gives the staff the opportunity to concentrate on what they need to focus on the most: patient care. The roof is low slope with a mechanical attachment system. The CPA (Co-polymer Alloy) membrane makes the IB Roof Systems' product more resistant to contaminants that can collect on low-slope roofs. The membrane has a CPA package of Nitril rubber plus other modifiers, which provide a high level of resistance to the chemicals that can land on an outdoor surface. The CPA formulation also has the highest resistance to UV light available for increased weather resistance.

Other benefits of the specified roof include decking membranes to allow for ease of maintenance while even meeting ADA (Americans with Disabilities Act) approved standards. The roof is a Class-A Fire Rated Product that exceeds hospital construction requirements and does not support combustion. The medical center's building team outfitted the units installed on the roof with a filtering system for improved air quality inside. The HVAC units also help with energy savings.

"They've installed highly efficient, high energy units," said Gage, explaining the IB Roof System came with pre-engineered products for addressing roof penetrations.

In addition to durability, the cool roof portion of a building envelope offers energy efficiency. Cool roofs can also assist project teams by helping to reduce the heat island effect, a desirable design feature in LEED buildings. Heat islands are present in urban areas where "heat sinks" such as ballasted roofs store radiant heat from the sun and magnify local warming by several degrees compared to rural areas. Because a cool roof product is only slightly higher than the ambient temperature during the hottest hours of the day, it protects against the higher temperatures that are typical of urban areas. Thus, allowing a decrease in the need for heavy air conditioning use during periods when utilities often charge a premium for electricity from the grid.

In addition to the membrane, IB Roof Systems components were specified to

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create the roofing system, including vents, drains and PVC-Clad welded metals. The hospital roof has two HVAC units, at least six vent pipes, and the exhaust system has four penetrations. Roof drainage makes up 12 penetrations (6 roof drains and 6 overflows).

The Gateway Medical campus has three buildings, two gained LEED gold certification. These LEED core and shell projects are very energy efficient and have high environmental performance. The campus was Energy Star rated for even more LEED points. "The Roofing membrane was one portion of our LEED building construction which helped achieve over 18 percent energy savings over typical building construction," said Mark Bottemiller, architect from Columbia Rim. "It was simply chosen because the roof creates a more energy efficient building and improved our points for LEED rating."

The reflectivity of an IB Roof membrane can assist a project team in meeting and exceeding the prerequisite, ASHRAE 90.1-2004 energy efficiency benchmark in LEED. The hospital exceeded the LEED prerequisite for energy efficiency and also gained points in the EA Credit for Optimized Energy Performance.

The energy savings can be measured in kilowatts and dollars, but the roofing system can be measured in decades. According to Ed Cook, IB Roof sales representative, "The roof has a 25-year warranty and may even outlast the building itself."

In the LEED Materials and Resources Credit category, the IB Roof System can potentially contribute to the recycled content and regional materials credits. The IB Roof manufacturing facility was within 500 miles of the construction site for assistance with regional materials LEED credits.

In other LEED categories, the roof has a storm run-off system that meets the LEED Sustainable Sites credit requirements. Storm water runoff from the roof enters an intensive storm filtration system on the medical campus for improved water quality leaving the site as runoff. The durability of the roof was also a factor in specifying the IB Roof product. "It's longer than we would have had with a built-up roof," said Michael Gage.

The roofing system provides Gateway Medical Center with the ability to worry less about outside threats. The building received the Gold LEED certification due to its reduced environmental footprint and energy efficient design. The roofing membrane is durable with an improved potential for reuse and recycling. With all these environmental benefits, the medical community can focus on the most important thing- the health of their patients.

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