On the cover...
Mountain Resort in Cle Elum, Washington (page 14)

In this issue...
Commercial Roofing Market
Sustainable Technologies
Employment Disputes
Garden Roofs
Energy Codes
The Lodge at Suncadia is located just 80 miles east of Seattle in Cle Elum, Wash., but it does not take long to realize that this world-class hotel nestled among the dark-green Ponderosa pines in the Cascade Mountain Range is nothing like its westward metropolitan neighbor. At Suncadia, city skylines have been replaced with tall mountain peaks and rolling hills, and the only traffic congestion is caused by the wildlife that roams carelessly through the abundant wilderness.

The 358,000-sq.-ft. Lodge, which opened its doors for business earlier this year, is part of a 6,400-acre, all-inclusive destination resort that also features a spa and a growing number of single-family homes. Designed and constructed to reflect the beauty of its stunning natural surroundings, The Lodge features thick, forest-inspired timbers throughout its interior and large-scale board and batten siding on the exterior. Regional materials such as oak, pine, and fir were used extensively throughout the project to mimic the rugged, local atmosphere. Its grandiose stature is outdone only by its location atop a bluff overlooking the Cle Elum River and Suncadia Conservancy, which offers guests uninterrupted views of the beautiful Cle Elum River Valley and nearby Tumble Creek, Sunca-

Mountain Resort
Roof System Sets the Tone for Comfort at Northwestern Mountain Resort

by Tony Matter; freelance writer
dia's private club community.

In an area where wintertime lows often dip below freezing, and summertime highs rarely exceed 80°F, The Lodge at Suncadia not only has to look rugged and tough, but it actually has to play the part too. Shawn Newman, associate in charge of CCA Services for HKS/Hill Glazier Studios in Palo Alto, Calif., architects for The Lodge, said durability, and more importantly energy efficiency, were major considerations when selecting the materials for the project.

A variety of energy-efficient materials were specified throughout the building to help it stand up to the demanding conditions, including an air barrier across the entire building envelope as well as insulated windows and doors. One of the most energy-efficient components of The Lodge is its 120,000-sq.-ft. roof, which features two layers of polyisocyanurate insulation manufactured by Hunter Panels LLC.

Roofs are the most common area for interior heat loss in a building, so HKS/Hill Glazier Studios knew they would be challenged to create an efficient, yet economical system that kept guests comfortable throughout their stay. They were confident in their decision because polyiso features one of the highest R-values per inch of any roof insulation on the market.

Like many rooftops throughout the northwest, HKS/Hill Glazier Studios designed a coldroof system for The Lodge. Cold roofs allow exterior air to flow freely through the roof assembly, which helps slowdown the melting of dangerous snow and ice that may fall off the roof and endanger those below. To bring their cold roof to life, the team utilized Hunter Panels’ Cool-Vent®, a ventilated insulation board, in conjunction with a layer of Hunter’s standard H-Shield® polyiso. Combined, the two products offered the insulation levels that the building needed, while easily enabling the creation of a high-performance coldroof system.

“Given the various weather and code requirements of the project, the polyiso materials created a higher R-value with minimal thickness,” said Newman. “We needed to achieve an R-38 in the roof, but the installation had to be manageable for the construction crews, and Hunter’s polyiso was the most economical choice.” In fact, to achieve their R-38 require-
Mountain Resort

(Continued from Page 15)

ment, HKS/Hill Glazier Studios only needed a total of 6.6" of Hunter’s insulation. The bottom layer consisted of Hunter’s 3.4"-thick H-Shield polyiso, a standard insulation product manufactured in 4’ by 8’ boards.

The top layer featured Hunter’s 3.2”-thick Cool-Vent polyiso, which simultaneously provides thermal insulating properties to a steep-slope roof while promoting cross directional air circulation within the assembly. Both products deliver first-rate insulating performance, but it is the Cool-Vent that creates a successful cold roof.

Cool-Vent is comprised of a base layer of polyisocyanurate insulation, a middle layer of 1” (standard) wood spacers and top substrate of either OSB or plywood. It provides 92% open air space and allows for 75% lateral air movement within a roof system. The vented, Cool-Vent ties directly into an open soffit, creating a continuous flow of exterior air that carries through the assembly and out the ridge vent.

Other ventilation options were available, however most of them require unsightly vents to be installed across the rooftop, something that would negatively affect the harmonious appeal of The Lodge. These vents also add to the number of penetrations in the rooftop and thereby increasing the likelihood for future leaks.

After the design was finalized and Seattle-based general contractor Lease Crutcher Lewis erected the building’s exterior shell, it was time for the unique roof system to be installed. Jornada Roofing 1, Inc., a local roofing contractor located in nearby Auburn, Wash., was selected to install the cold-roof system, which was primarily distributed through Pioneer Builders Supply in Tacoma, Wash. They had never worked with Hunter Panels’ insulation prior to the Suncadia project, but according to owner Bob Deaton, they were up to the challenge.

Because Jornada had no prior experience with Hunter’s materials, local independent sales rep Stephen Weller of Weller Associates was on hand to assist with the job start up. Weller helped answer any initial questions the roofers had, and he also oversaw the first few days of installation to ensure that the materials were going down correctly and that the crew was comfortable with the products.

Within just a few short days, Deaton’s crew was off and running. They began the installation by placing a ¾”-thick layer of DensDeck* cover board over the building’s steel roof deck. On top of the DensDeck the roofers applied a self-adhesive waterproofing membrane that helps protect it from any condensation that may build up do to the contrasting interior and exterior temperatures.

When the waterproofing membrane was secured, Jornada began to install with the first round of Hunter polyiso, beginning with a 3.4”-thick layer of H-Shield. They loose-laid the insulation across the entire rooftop and then covered it with the Cool-Vent, staggering the joints from the H-Shield to reduce the likelihood of heat loss and thermal bridging while maximizing overall energy efficiency.

They fastened the entire rooftop assembly into place with specialized plates and fasteners provided by