

Project:
El Escorial

Building Owner:
El Escorial Home Owners
Association

Location:
Santa Barbara, CA

Roof Area:
60,000 square feet

Completed:
2004

Manufacturer:
IB Roof Systems

System:
Mechanically attached
using 80 Mil white

EL ESCORIAL



Sun and surf in Santa Barbara are two great reasons people migrate to this beautiful coastal city in California. Keeping the heating effects of the sun at the beach and out of people's homes, however, is a challenge at this latitude.

Blocking the sun with a "cool roof" white membrane by IB Roof Systems was the first step to improved energy efficiency at the multi-story El Escorial condominiums. The El Escorial Home Owners Association decided to install IB Roof's 80-mil CPA (Copolymer Alloy) mechanically attached white membrane.

The re-roofing project will serve two purposes: to replace a failing 15-year-old built up roof system and for advanced compliance with a revised state law, addressing a reduction in the heat island effect and improved energy efficiency.

"The energy savings was a good reason for them to consider the white membrane," the contractor said.

The revised law, taking effect in October 2005, will require new roofs on existing buildings to have a 0.70 reflectance and 0.75 emittance.

The IB Roof membrane will bring the housing complex well within the parameters the law prescribes. On a hot

day, the IB white membrane will measure only 91° F compared to a black roof that reaches 172° F.

This is possible because the IB Roof membrane can reflect up to 90 percent of the heat from the sun typically entering the building. Additional savings to the condo owners pocketbooks can be achieved as new air conditioning units are downsized because of a reduction in load on the HVAC system.

In addition, installation of reflective membranes meets the EPA's Energy Star® Roof Products Program has the potential to reduce urban heat gain as well as pollution by lowering air conditioning usage.

"Settings will be tracked and reviewed so they may require shorter run times," the contractor said about the existing air conditioning units at El Escorial.

Other incentives also exist for building owners who want to install a white membrane from IB Roof Systems. Cool roofs can double, and in some cases, triple the life span of the membrane.

Building safety during re-roofing is not an issue as PVC membranes are naturally fire retardant and the IB Roof System comes with a UL "Class A" fire rating. The rating was achieved with two layers of IB Fire Sheet placed below the membrane.

Building maintenance is also much easier because PVC remains hot air weldable throughout its service life, simplifying repairs and maintenance. Property managers also do not have to worry about the IB Roof membrane withstanding ponding water because moisture cannot pass through the IB membrane.

continued →

Project Profiles

Not only can the CPA white membrane perform at or above Title 24 compliance levels, the membrane can qualify for points in the US Green Building Council's LEED rating system for sustainable building.

A white membrane qualifies for one credit for its heat island reduction qualities, but then the membrane can help add 10 potential LEED points for optimizing the energy performance of the building envelope.

Other LEED categories that can translate into points, include: diverting construction waste from landfills, reuse and recycling of used construction materials, purchasing of regional materials, and using low-VOC emitting sealants or adhesives during installation.

The first sustainable measures taken by the workers was to tear off the previous membrane and the polyiso insulation below it. The contractor said that the waste material on the El Escorial re-roofing project was recycled by Marborg Disposal.

The contracted company trained installers then topped the ½ inch plywood substrate with another 1 inch layer of plywood. The building owner decided not to insulate the roofing system because of the high reflectivity of the white membrane and saving the building owner the cost of buying polyiso roof insulation, which has seen a double-digit percentage increase in 2004 and is expected to rise throughout 2005.

The contractor was assisted by IB Roof, which provided design assistance and the membranes were site fabricated to minimize wrinkles caused by compound angles in the roof deck.

A three foot parapet wall with a tile mansard surrounded the built up roof to improve circulation within the building. The existing stucco had two metal flashings attached to it and plywood was installed inside at a thickness of 2 1/2 to 3 inches from the top of the parapet wall.

Then the edges received a bug screen and a 2-inch by 6-inch nailer was installed with the bug screen between the top wood nailer and plywood for a venting system with an inch gap in the wall.

The membrane was fully adhered from the bottom of the gap to the roof decking.

Each IB Roof CPA Single-Ply Roofing System offers a 25 year 100 percent non-prorated warranty. So, as more of IB Roof System's white membranes are installed, the residents of El Escorial will only have to worry about how much sun tan lotion to apply while watching their energy costs go down.

