

# Casa Bella Verde

California, USA (2010)

## BACKGROUND

Casa Belle Verde sits in the foothills of the Sierra Nevada Mountains and was aiming for LEED Platinum status and en route to becoming one of the greenest homes in the world. Started as a labour of love by creator and project director Briana Alhadeff, Casa Bella Verde was in development for three years before construction even started.

When completed, this spectacular three-floor 7,500 square foot eco-home will include: 95 solar panels, a vertical axis wind turbine, an on site water treatment facility, a geo-exchange system for heating and cooling, radiant floor technology, an 80,000 gallon cistern used for rainwater harvesting, solar water heating, a roof top garden, and complete home automation which will control all of the home's systems.

To maximize the longevity of the foundation and the building, it was decided that concrete rather than wood will better stand the test of time. Though the concrete would last a millennium, the builders needed assurance that the waterproofing would, too. With flat roof decks over the living space, any water leaking through the concrete roof system would not only lead to structural damage in the long term, but it would also cause expensive damage to the living space below.

## SOLUTION

To deal with these challenges, Casa Bella Verde's developers decided to waterproof using Kryton International's Krystol Internal Membrane™ (KIM®). They learned about KIM at the World of Concrete Convention, and realized that Kryton's internal waterproofing system seemed like a perfect fit – green, effective and efficient.

Impressed with its ease of use and simple dosing process, the builders were able to mix the KIM on site because the product is supplied in convenient, easy to use, biodegradable bags. The bags are extremely sustainable due to the fact that they disintegrate in the mixer leaving absolutely no waste. Krystol Technology was also applied to the pool as a two part surface-applied solution, called Krystol T1 and Krystol T2.

Krystol Technology uses proven integral crystalline waterproofing technology to transform concrete, which is naturally porous, into a permanent, water-resistant barrier. When added to the concrete mix, KIM's proprietary chemicals react with water in the concrete mix to form millions of needle-like crystals. These crystals grow and fill the capillary pores and micro-cracks in the concrete. As time passes and new cracks are created from stress, any incoming moisture causes the chemicals to reactivate and grow more crystals until they block the incoming water – ensuring continuous waterproofing for years.

"We were incredibly pleased with how well KIM worked," says Alhadeff, who noted that many builders and engineers she worked with weren't aware of just how practical internal waterproofing is. "It's amazing how cost effective, green and efficient Kryton's products are."

### DESIGNER/DEVELOPER:

Briana Alhadeff

### ARCHITECT:

Nicholas Nikiforuk

### ENGINEER:

Dave Gowers

### DISTRIBUTOR:

Hill Brothers

### PRODUCTS:

Learn more at [kryton.com](http://kryton.com)  
 Krystol Internal Membrane™ (KIM®)  
 Krystol T1® and Krystol T2®



***In addition to the many green structural systems of Casa Bella Verde, there are a host of other very important energy-saving features that will be incorporated into the home.***



***The day after the pour it rained and KIM immediately kept the water out.***

#### Kryton International Inc.

1645 East Kent Avenue, Vancouver BC, Canada V5P 2S8 | TEL 1.604.324.8280 | FAX 1.604.324.8899 | TOLL FREE 1.800.267.8280 | WEB [kryton.com](http://kryton.com)

Kryton, Krystol and KIM are trademarks of Kryton International Inc. © 2013