

2010 VISION HOUSE ASPEN



VISION House Aspen employs a multitude of technologies, products and systems appropriate for a Contemporary-Mountain-Mining style, luxury home in a high-end resort setting. A glamorously green showcase, the VISION House Aspen beautifully demonstrates resource efficiency, durability and cost effectiveness through sustainable design and construction practices.

BUILDER

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ARCHITECT

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SIZE

This Contemporary Mountain Mining home has approximately 6,750 SF of heated space, laid out in two levels with an attached three car garage.

LOCATION

Less than three miles from the heart of Aspen with views of four ski areas and the continental divide. The lot has 360-degree panoramic views of Aspen Mountain, Snow Mass Mountain, and the Upper Roaring Fork Valley. The area has a rich history steeped in mining and is now a leading international mountain resort that attracts a wide variety of visitors from around the globe.

VISION House Aspen will address the fundamental aspects of sustainability in the following ways:

> Energy Efficiency

A highly insulated building envelope and high performance fenestration in windows and patio doors, enclosing carefully zoned conditioned living spaces, will help to reduce energy use in the house by an estimated 50%. A solar-thermal system provides renewable energy to assist domestic hot water and augment radiant in-floor space heating. Heat-recovery ventilation, combined with ENERGY STAR appliances and lighting further enhance the energy performance. A 3 KW photovoltaic system, large enough to meet the needs of the critical systems of the dwelling, will make it possible for the house to achieve net zero energy levels when it is not occupied, allowing it to be energy self-sufficient for the majority of the year.

> Water Conservation

Water conserving appliances, low flow plumbing fixtures and toilets, distributed plumbing and a hot water recirculation system have been implemented in order to facilitate water conservation and promote efficient use. Exterior water usage will be reduced by planting climate friendly, indigenous flora. A constructed pond/wetland will provide non-potable water for the majority of irrigation and landscaping needs.

> Resource Management

Materials specified for the project have been carefully selected based on sustainable criteria such as non-toxicity and reclaimed/recycled content. Building products made from rapidly renewable raw materials and those sourced in close proximity to the site have been given priority whenever possible. Some of these materials include a very high percentage of engineered and sustainably harvested lumber products, concrete with a high ratio of fly ash

content, as well as stucco and countertop materials utilizing recycled glass. Reclaimed timber has been utilized for beams, wood flooring and siding.

> Waste Management

The reduction and proper management of construction waste from the project has been a priority of the design/build team from the beginning. Local resources have been used whenever possible in order to reduce embodied energy and pollution. The design team met with the builder and subcontractors during each phase of construction to assure maximum efficiencies. Advanced framing techniques utilizing balloon and in-line framing and maximizing use of site-generated scrap combined with careful monitoring and management helped reduce the amount of construction waste typically produced by approximately 75%.

> Indoor Environment Quality

Indoor environment and air quality are of paramount concern in green building. In order to reduce indoor toxins and allergens and to enhance the general well-being of occupants, materials and finishes with the lowest contents of formaldehyde and volatile organic compounds were selected, along with natural clay plasters, anti-microbial surfaces and water-based finishes. A central vacuum system and HEPA air filtration system were installed to help remove indoor contaminants. Fresh air will be continuously circulated throughout the house by a heat recovery ventilator, and the house also features a radon protection system and carbon monoxide monitors.



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RON JONES



The latest in our series of demonstration projects, the VISION House Aspen, is an exercise in the possibilities. The careful articulation and execution of the intent of the project, when combined with the performance data we will mine from the operation of this exquisite residence, will provide invaluable insight into the challenges and potential solutions for the luxury resort market. It further demonstrates the simple truth that sustainability requires teamwork above all else.

GERRY HAZELBAKER



I saw VISION House Aspen as an opportunity to create a model for sustainable design and construction of luxury homes. While many view large upscale homes as the antithesis of green or sustainable, I believe that regardless of whether a building or development is commercial, industrial or residential, high or low costing, everything we build today should be done with a sustainable approach.

STACE MCGEE



We endeavored in this project to redefine what makes up a luxury home and give the homeowner facts about their contributions towards climate change. This project has all the typical bells and whistles of a luxury home which is 48% more efficient than the 2006 IECC, 35% reduction in domestic water use, no potable water used for landscape irrigation and glamorously green finishes throughout the house. Furthermore the house should save, over the base case index, approximately 26.2 tons/year of Carbon Dioxide (CO₂), 47.2 lb/year of Sulfur Dioxide (SO₂), and 75.9 lb/year of Nitrogen Oxide (NO_x) emissions annually. Bringing the total HERS rating to 44, with a yearly reduction in energy cost of over \$2,000.

WHY WE CHOSE NCFI...

NCFI provided an indispensable part of a strategy to create the most energy efficient building envelope possible. NCFI InsulStar® Insulation is an environmentally friendly, closed cell, spray-in-place insulation product. It is formulated from polyurethane and renewable, sucrose based agricultural resources. InsulStar® insulation helps create a very tight envelope on the house, and provides dramatic savings on energy costs when compared with traditional insulation products. Additionally it acts as a vapor barrier, reduces noise, blocks dust, pollen and other airborne pollutants, helping to create a more comfortable and clean environment. We highly recommend this product.



NCFI

NCFI spray foam insulation is one of the most important, yet least considered, building materials that can dramatically lower energy costs and create the optimal comfort and living environment for you and your family. The type of insulation you choose is just as important, because each kind insulates differently. NCFI spray foam insulation, like the InsulStar® we used in the Vision House, is referred to as high-performance insulation because the closed-cell foam is spray-applied by certified applicators, fills every crack and crevice in the walls, ceilings, basement, crawlspaces, and attic, expands then cures in place to form a solid blanket of comfort. InsulStar®'s high R-value allows designers to reduce the depth of your home's exterior walls and still obtain amazing energy efficiency. This means more living space for you and a reduced amount of lumber—two whole trees less for a 2,500 square-foot home! You'll also have a healthier home because InsulStar® blocks air and moisture eliminating water condensation and the danger from mold and mildew.



A whole new comfort level, for you and for the world.