



Artist Rendering of The Emerald City Project

LEED-H

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HIGH ENERGY SOLAR

THE GREEN SPECTRUM IN HOME CONSTRUCTION



Since man's first efforts to make a home, there has always been a "better" way. Today's homes go well beyond our basic needs for shelter—they are more than a place for warmth and a means to keep ourselves and families from being eaten by wild animals. Home construction introduces waste and potential pollutants into our environment and consumes limited resources; thus the concept of green building demands that we be conscious about how we both construct and live in our homes. This article is for home owners, designers, and builders in the Yampa Valley who enjoy the pleasures of a beautiful, comfortable home, yet want to reduce the impact that those comforts may have on the environment.

Green living and building covers a vast spectrum of products, materials, techniques, practices, rating systems, and even dozens of twelve-step programs. They range from inexpensive to costly and from very effective to misleading marketing scams. Fortunately, the US Green Building Council has a new Leadership in Energy and Environmental Design program specific to residential homes called LEED-H. It was derived from, and espouses objectives similar to, other popular LEED programs for commercial buildings. For instance, LEED-H covers not only energy efficiency, but the full spectrum of green, healthy, and sustainable living. In addition, like other LEED programs, its scope is national. Where LEED-H differs is that reduced reporting and compliance verification requirements keep the costs low.

After meeting a set of mandatory criteria, LEED programs use a rating system in which candidate projects receive certification points across a range of categories and are then qualified at one of several progressively higher levels (Certified, Silver, Gold, and Platinum) depending on the number of points accumulated. LEED recognizes that green practices have to take place throughout the design and build process and also involve the whole project team (designer, builder, green rater, and LEED representative organization), thus the program defines individual and team roles and responsibilities that cover the complete process.

A LEED-H HOME BEING BUILT NEAR STEAMBOAT IS EXPECTED TO BE ONE OF THE COUNTRY'S FIRST TEN PLATINUM HOMES. THE ENERGY EFFICIENCY TECHNOLOGY IN THIS LUXURY HOME (YES, A LUXURY HOME CAN BE TOP RATED GREEN) INCLUDES:

- Extensive passive solar heating requiring high solar gain windows and thermal mass with abundant surface area to store and release the sun's heat
- Predictive-priority based hydronic radiant heating system which heats the house and domestic water at maximum efficiency from solar thermal, low-cost geo-thermal storage, and conventional gas
- EPA Phase II, low emission wood burning masonry heater
- Solar electric interior and exterior LED lighting
- Low air infiltration and exceptional insulation using Insulating Concrete Form (ICF) construction for walls and roofs

OTHER GREEN ASPECTS ON THIS PROJECT INCLUDE:

- Reclamation, reuse, and recycling of materials with almost zero construction waste. Bamboo counter tops, a recycled concrete driveway and other low impact raw materials
- Locally supplied materials, including almost 100 tons of stonework using on-site rock
- Comfort features like garden rooms, a super-insulated solar hot tub, home office, and home theater to entice occupants to stay at home instead of driving somewhere in a car

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- Heat Recovery Ventilators and Appliance Air Exchange systems which exchange stale interior air for filtered, fresh, outside air without discarding the heat energy
- Triple pane Low-e glazing on northern windows. Automatic nighttime shutters with space age aerogel insulation on clear, single pane southern windows
- Energy efficient appliances, insulated hot water circulation system
- Surface and gray water management, natural landscaping, low-flow plumbing fixtures
- Whole house reverse osmosis system which provides pure water at every sink

The voluntary LEED-H program does a good job of bringing together the many aspects of green, healthy, and sustainable building across the nation; it is likely to become an everyday green standard, and it aspires to be a value-added differentiator in the new home market. At the least, the infrastructure and objectives that the program establishes can be very informative for anyone who wants to become more aware about green building and living. For more information, check out www.usgbc.com. Currently the LEED-H program is in its pilot phase, but is expected to be rolled out full-on in the fall of 2007.

LEED-H COVERS NOT ONLY ENERGY EFFICIENCY, BUT THE FULL SPECTRUM OF GREEN, HEALTHY, AND SUSTAINABLE LIVING.



THE EMERALD CITY PROJECT

The LEED-H home being built near Steamboat is expected to be one of the country's first ten Platinum homes. This luxury home was designed and is being built by Mark Mueller, owner of High Energy Solar. For more information or to follow the Emerald City project email Mark at MarkKMuller@yahoo.com.

Design and build of beautiful, mainstream, environmentally aware structures in Steamboat for 7 years

Developer of a Steamboat home that is expected to be one of the country's first ten LEED Platinum certified homes

Registered LEED-H Designer/Builder

HIGH ENERGY SOLAR

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