

The Green Home Consumer

Driving Demand for Green Homes

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Produced in
conjunction with the
U.S. Green Building Council

The Low-Income Green Home

Edes Avenue Project Oakland, California

“[We want] to make homes that have a high level of dignity so that people are going to want to live there.”

As the market expands, green homes are becoming available to home buyers in all demographics. Recognizing the value of sustainable features, Habitat for Humanity has become committed to finding innovative ways to bring green to low-income families.

Working with a two-acre abandoned auto salvage yard and a volunteer workforce, Habitat for Humanity's East Bay Chapter has managed to develop 26 new green homes which will be sold at affordable prices in Oakland, Calif. The two-acre brownfield redevelopment site is adjacent to a residential neighborhood, and was selected by Habitat for Humanity eight years ago.

Architect Gary Struthers, who has been active with Habitat's East Bay chapter for many years, volunteered his design services. He explains, "It was a very long [design] process because we went through feasibility studies and community workshops."

"Habitat is not only the owner and developer, but also the general contractor, and uses volunteers to

do the construction tasks," Struthers says, adding that, "they control a lot of things that developers normally do not get to control, so they have a lot of input on material use, and complete control of the construction site. So they push green from conception through completion."

Struthers proposed building 26 homes in 13 attached dwellings, ranging from two-bedroom homes of 960 square feet to four-bedroom homes of 1,400 square feet. "By development standards, [this was] on the small side. That is another challenge of making a good design—making the most of the square footage that you have. The mandate from Habitat is small and efficient, and the challenge as a designer is still to make a development that has a high level of dignity so that people are going to want to live there."

In addition to affordability, the volunteer construction force also influenced the design choices. As Struthers says, "You have to keep things simple enough so that volunteers can build them. For the sustainable design, we keep the floor plans pretty simple. [The key]



Edes Avenue Development

Courtesy of Gary Struthers

is not what you build; it is what you don't build." Struthers says he takes deliberate steps to enable volunteer teams to build sustainably, such as the use of cement board sidings. "This is a very sustainable material [that is] user friendly and durable for homeowners. We keep things pretty simple and clean, which helps with construction and keeps it environmentally sensitive."

There is also an effort to provide individuality among the homes in Habitat's developments. "Fortunately, the makers [of cement board sidings] now produce a plethora of styles, so you start mixing in sidings and mixing up colors. Because everything is done with roof trusses, you can very easily change roof lines across the development [without] adding material or labor." Individuality can also be achieved through attention to simple items, such as giving each house different detailing on porches. "It helps break up the monotony and repetition," says Struthers, adding, "It keeps the projects volunteer-friendly but also makes it a fairly elegant design, where all 26 houses are not identical."

Habitat applied green design principles throughout the Edes Avenue project, from monitoring fly ash content in concrete to incorporating basic elements of passive solar design. "The concrete absorbs the sunlight and the heat all day long, and at night when the sun goes down, it releases the heat." Also, by building duplexes in this development, the project team was able to achieve a higher density and conserve green space for the residents. "We also saved at least 25% of exterior exposure because [the houses] have a shared property line instead of four outside walls per house. Three outside walls per house saves a lot of material, from the foundation all the way up to the roof."

Finally, the project enjoys the benefits

Home Facts & Features

- Location:** Oakland, California
- Lot Size:** 1.92 acres,
26 single-family homes
- Cost:** \$300,000 (average phase one cost per home). Sale price is well below this level, and set variable by family with the help of local government subsidies
- Start Date:** 2006
- Completion:** December 2008
- Green Building Practices**
- Brownfield redevelopment
 - Efficient framing, reducing lumber use by 30%
 - Fast-growing engineered lumber

- 30% fly-ash concrete to reduce landfill
- Water-efficient landscaping with draught-tolerant plants
- Solar panels
- Cement board siding
- Low-VOC paints and finishes
- High development density
- Fly-ash concrete
- Permeable strips on driveways
- BGE gas and electric appliances
- Energy-efficient fixtures and appliances in each home

of location. The Bay Area climate does not require air conditioning, which automatically provides energy savings. Struthers also credits California's building code with encouraging green

building. Three of the homes in the development are expected to earn certification under LEED for Homes, to demonstrate the sustainable levels achieved throughout the development.



Edes Avenue Development

Courtesy of Gary Struthers