

Studio 24

Starting with a small, skinny lot in central Seattle and piles of building materials that others had discarded, the builder of this house created a bright, modern residence that fits well within this neighborhood of older homes. The house is well placed on the lot, creating an inviting entry and a yard that feels more spacious than its actual size.

Green Home Case Study

Healthy homes for a healthy environment



Photos by Vista Estate Imaging

About the project

Name: Studio 24
Type: New, single family construction
Square Feet: 2,000
Location: Seattle's Judkins Park Neighborhood
Completed: Fall 2006

This project illustrates it's possible to build a spacious, modern house nicely connected to useable outdoor space on a small, skinny, middle-of-the-city lot. Building on "urban infill" lots within the city allows people to live closer to where they work and shop, thereby reducing transportation-related environmental impacts. Adding a few new houses can also help improve older neighborhoods if the new houses respect the existing scale of homes. This house looks just right.

The 40-foot-wide lot was vacant when Jim Barger of Greenleaf Construction bought it and began working on a design with architect Kim Lavacot. A double lot to the rear of the property provides views out the back across the neighbor's yard, instead of into an adjacent house. The architect took advantage of this opening in the urban environment

and oriented the primary spaces, the living room on the first floor and main bedroom on the second, towards the open lot. But views from the rest of the house were not forgotten. No walls separate the living room and its view from the kitchen and dining rooms at the front of the house. Even from the front door, you can glimpse what lies temptingly beyond through the open stair risers. The garage, with an art studio poised above, is attached to the front of the house but set off to the side with a roll-up glass door so it integrates more seamlessly with the house than a typical garage.

Goals/Challenges

Site planning

The architect was able to create an open feeling entry and a useable south-facing private side yard by locating the house as close as possible to the north side setback and the garage at the south side setback. The owners can barbecue and entertain in the side-yard on a patio paved with sections of old concrete sidewalks. Joints between the concrete pavers are filled with crushed gravel, permitting rain to percolate into the soil, reducing the home's burden on the local storm water system.

Ratings & Awards

Built Green™ 3-Star
 Certified Home
 (212 points)

The Team

Builder

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Architect

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Resources/Products

Used Building Materials

The ReStore
(206) 297-9119
www.re-store.org

Second Use Building Materials
(206) 763-6929
www.seconduse.com

Earthwise Building Salvage
(206) 624-4510
www.earthwise-salvage.com

Recycled Metal

Pacific Industrial Supply
(206) 682-2100
www.pacificindustrial.com

For More Info

Built Green™ – a residential green building program/rating system developed by the Master Builders Association of King and Snohomish Counties in partnership with the City of Seattle.
www.builtgreen.net

King County GreenTools – provides technical assistance, grants and hands-on training to help users create green projects efficiently and effectively.
www.greentools.us

Seattle City Green Building – provides guidelines, incentives, and assistance to increase the environmental performance of buildings in Seattle.
www.seattle.gov/dpd/greenbuilding

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Salvaged materials

Greenleaf specializes in using salvaged materials and this house incorporates them inside and out. Several siding materials enliven the front because there wasn't enough of any one material to use throughout including salvaged T&G cedar which is interspersed with new fiber-cement siding. The interior stairs dip slightly because the treads were once church pew seats shaped for comfort. Roughly 60 percent of the framing lumber came from a house being demolished in the Magnolia neighborhood. Purchased leftover limestone, otherwise slated for disposal by the supplier, was used along one of the dining room walls. Panels that create a half-wall along the stairway were once part of Metro bus stops and scrap metal was used for the fireplace surround. And the list goes on.

Double-use materials

To minimize material use, Greenleaf let structural materials double as finish materials whenever possible. The main level's concrete floor was polished and sealed but was otherwise left unadorned. In the living room, dining room and above garage studio, salvaged 8 x 10 beams are exposed underneath resembling rustic beams that a decorator might order at added cost. On the second floor, Baltic birch plywood, a high-grade, hardwood material, doubles as both the subfloor and the finish floor.

Weigh the waste

With its emphasis on salvaging building materials, Greenleaf certainly doesn't want to generate much waste of its own. Recyclable materials were source separated and brought to appropriate recyclers – for example metals to Bloch Steel, wood to Pacific Topsoils, and cardboard to Recycling Depot. A crew member was assigned to calculate the quantities of recycled materials, as well as the non-recyclable waste to ensure the latter was kept to a minimum.

Natural light

One striking feature of this house is its abundant natural light, partially generated by a row of high windows along the stairway. Natural light floods the walkway that connects rooms on the second floor and passes into bedrooms through doors with opaque glass center panels. The textured reed glass obscures views but does not block light. Clerestory windows are placed over the doors, a throwback to a time preceding our dependence on artificial light.

Dare to be different

In a structure primarily composed of right angles, a few tilting surfaces can be a delightful surprise. At one end of the kitchen island a post of salvaged wood spirals to the ceiling at an angle covering a gas line. The angled effect is all about fun and the unexpected. The upstairs art studio has a sloping

ceiling because it's the underside of the roof, so the builders added a slanted wall. These details might seem irrelevant to green building, but durability is an important green issue, and is more than just installing hard-wearing materials. Durability is also about creating enduring design features that owners will maintain over time.

Lessons Learned:

Who does what?

Greenleaf uses a three-stage design process. The architect takes the lead in developing the building design but does not specify materials or trim. Once the plan is established, the builder fills in the details by figuring out how much can be accomplished with previously collected recycled materials. An interior designer is then hired to review choices and identify places where old materials hinder pleasing design. "I want to know of any huge faux pas," Barger says.

Buy when you see it

The main complication with using recycled material is adequate supply. If you run out of siding salvaged from a specific house, for example, you can't just order more. And if you want a specific item, you can't necessarily find it for sale. Greenleaf solves these problems by buying what looks good when it's available and placing it in inventory. "Then I ask, 'How can I use it?'" Barger says. "That's better than, 'I need this—now find it.'" The downside of this approach is that it requires dry, safe space for material storage and not all builders are willing to invest in space for salvaged materials. The company has several storage areas and recently purchased a lot so it can expand its inventory.

Depth vs. breadth

This house qualified as a three-star Built Green™ project, not as high as Barger would have liked, and it didn't earn an Energy Star™ rating. The Built Green points were modest because he focused on depth rather than breadth – maximizing use of salvaged material, for example, rather than using smaller amounts of a broad array of new materials, each adding points. The Energy Star deal-breaker was the decision to use aluminum-framed windows which the architect and the buyer considered crucial to the design. Energy Star windows need to have a maximum U-Value of .35 for a gas heated home, (lower U-Values are more efficient). Even with a thermal break, aluminum-framed windows don't insulate as well as wood or vinyl. The U-Values for the low-e, argon filled windows in this house averaged .38 (.33 for fixed windows and .43 for casement and awning).



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