

THE BREAKERS AT BAYPORT APARTMENTS

A Good—and Affordable—Fit



In March 2006, Resources for Community

Development (RCD) completed construction on a 62-unit community of affordable-rate homes on Alameda Island.

Because of the scale of the neighboring single-family homes,

the city of Alameda limited the height of the multifamily project to two stories.

This project's green building features needed to "fit in," meaning they had to complement rather than stand out from the neighboring homes.

The development includes an exceptional community center with an after-school program, a computer room, and outdoor play areas.

Today, the only green elements that might be noticeable to passers-by are

the rainwater-catching bioswales and drought-tolerant landscaping. In the

Bay Area, these types of low-water landscaping techniques are common even

among high-end homes, so this feature was acceptable to the community.

The project's other key green attributes include energy efficiency measures

such as hydronic heating, 2x6 stud walls insulated to R-19, low-e windows

in some units, and fluorescent lighting in most rooms.

FAST FACTS

LOCATION

City of Alameda, California

PARCEL SIZE/DENSITY

3 acres; 21 dwelling units per acre

BUILDING TYPE

2-story; 52 rental and 10 for-sale units

TOTAL SQ. FT.

65,300 sq. ft. (net)

TARGET POPULATION

Families with low incomes

NUMBER OF UNITS

62 total

2-bedroom: 34

3-bedroom: 28

COMPLETION DATE

August 2006

OWNER/DEVELOPER

Resources for Community Development, Berkeley, CA

ARCHITECT

JSW/D Architects, Berkeley, CA

GENERAL CONTRACTOR

Segue Construction, Point Richmond, CA

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■ What Makes it Green ■

ENERGY

The building shell is insulated beyond code requirements with R-19 batt insulation in the walls and R-38 loose-fill in the attics. Some of the double-pane, vinyl-frame windows have low-e glazing with a low U-factor of 0.35, which helps keep heat inside the home when it's cool outside. The drywall is 5/8-inch thick, which helps improve the sound separation between units.

An efficient combined hydronic system provides space and water heating. Fluorescent lights were used throughout the homes, except in the dining areas where people generally prefer dimmable lights (dimmable fluorescent fixtures are available but cost considerably more than nondimmable fluorescent fixtures).

MATERIALS

Durability was a major focus of this affordable housing project, so the architect selected roofing with a 30-year warranty and low maintenance fiber-cement siding. The Hardiplank siding is composed of cement and recycled wood fibers and is designed to look like traditional wood siding. Linoleum flooring was too expensive to include in all the units, so a decision was made to install it in all the ground-floor units, where the installation was least expensive. On upper floors, the lightweight gypcrete would have made it necessary to add an additional layer of plywood subfloor on top to guarantee proper adhesion of the linoleum.

Recycled flyash replaced 20% of the cement in the concrete, which reduces CO₂ emissions associated with cement production and helps keep flyash out of landfills. Exterior benches are made from a composite of recycled plastic and wood fiber.

The architect incorporated StopWaste.Org's model specification 01505 for a construction and demolition waste management plan. The architect and developer reviewed the implications of this specification with the contractor. The material recovery facility in nearby San Leandro was achieving close to 70% recycling rates from mixed construction debris boxes, so high jobsite recycling levels were obtained on the project.

HEALTH

Features that help protect indoor air quality include low-VOC paints and glues, fiberglass insulation independently certified by GreenGuard to have very low levels of indoor air pollutants, low-emission carpet and natural linoleum. When installing linoleum, if ambient temperature or moisture conditions are outside the manufacturer's recommended range, it may be necessary to bring in mechanical heat or ventilation. Developers whose schedules require installing linoleum in winter months should consider including the cost of mechanical heat or ventilation in the project budget.

GREEN at a GLANCE

Here are key green aspects of the Breakers at Bayport:

PLANNING & DESIGN

- Detailing for moisture shedding and mold avoidance
- Bioswales
- Decomposed granite walkways
- Drought-tolerant landscaping
- Drip and efficient spray irrigation
- Community center and social gathering spaces

SITEWORK

- Construction and demolition waste management plan (StopWaste.Org's model specification 01505)

STRUCTURE

- 2x6 stud walls
- Wall insulation: R-19 fiberglass
- Attic insulation: R-38 loose-fill fiberglass
- 5/8-inch drywall
- Fiber-cement siding
- 30-year roofing
- Low-e, double-glazed windows with vinyl frames

SYSTEMS

- Combined hydronic system for space and water heating
- Fluorescent lighting throughout (except dining areas)
- ENERGY STAR® dishwashers
- Low-flow showerheads, faucet aerators and toilets

FINISHES & FURNISHINGS

- Low-VOC interior paints and glues
- Low-emission carpet
- Linoleum flooring in ground-floor units
- Recycled plastic benches



WATER

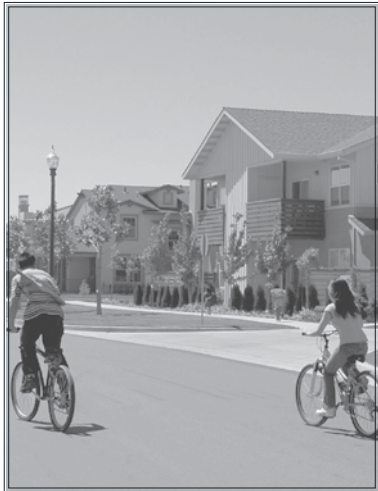
Inside, the homes have ENERGY STAR® dishwashers, low-flush toilets, and low-flow showerheads and faucet aerators. Outside, the low-water landscaping includes drought-tolerant species and makes use of drip and efficient spray irrigation. Rainwater runoff from the roofs and landscaped areas collects in swales between the buildings. The project team initially explored permeable asphalt and loose-laid pavers for stormwater runoff, but the price for these options was high and the dense soil made drainage problematic. Also, new stormwater requirements (NPDES) are steering projects toward swales and away from filters that require regular maintenance. The swales turned out to be the least expensive, and probably the best, option.

COMMUNITY DESIGN

Early plans to only offer centralized laundry facilities were changed because of concern that the homes would be less desirable or marketable if they didn't have their own laundry hook-ups. This made it necessary to devote more floor space and money for individual hook-ups. Individual laundry machines use on average twice the energy and soap and 40% more water than central facilities with commercial equipment. In the end, a central laundry was also included in the community center to give residents the choice of whether to buy their own clothes washers and dryers or use the central facility.

Pedestrian paths through the community lead to an exceptional community center with an after-school program, a computer room, and outdoor play areas. Next to the community center is a pervious hard surface plaza area with rolled decomposed granite, allowing water to drain into the soil, reducing runoff and municipal stormwater system volume.

■ Tips from the Trenches ■



Create a budget allowance for the contractor to pay for green measures with higher capital costs. Green design sometimes requires additional upfront investment. For market-rate housing, it may be possible to recover that investment through higher rent or sale prices. But for affordable housing, it may be necessary to find creative ways to fund these upfront costs. At the Breakers at Bayport Apartments, the developer selected a contractor early in design and then explicitly designated a portion of their base budget to cover green building-related costs. By not making the total fee larger, Segue Construction, the general contractor, had an incentive to guide the green design toward one that could be built as simply as possible using standard construction practices. By starting with an expectation that money will be spent on green building, the process feels fair and doesn't get bogged down in controversies about basic green building concepts.

Make the green features stand out in the specification. A number of factors can contribute to a desired green feature not making it into the finished building, including staff turnover among team members and the sheer length of the specification document. These extremely long documents are typically filled with boilerplate language, and unless team members read the entire document very carefully, they may miss key green requirements. "If there's something you want done that deviates from standard practice, call it out somehow—such as by putting it in bold in the spec—so it doesn't get lost," says former RCD project manager Daniel Adams. "Be mindful that unless you clearly identify it in the spec and make it stand out, it may not happen."

Focus on durability and mold avoidance. JSW/D Architects spent considerable effort detailing the project’s waterproofing elements, including details such as flashing and capillary breaks at the bases of posts. The project’s drawings include a diagram showing proper window flashing details, and specify particular materials to achieve the best results. Roofing elements are also important. Roof overhangs help keep water out of the walls as well as provide important shading. The roof has a 30-year warranty.

Hire an interested general contractor. The best way to keep costs in line is to hire a contractor who is willing to work with their subs to educate and train them if they are not familiar with particular green measures or materials. This helps counter the common practice of charging more for something just because it is unfamiliar.

■ Financing ■

The cost data shown in the table are for the 52 rental units

SITE ACQUISITION COSTS \$1/yr long-term ground lease

DEVELOPMENT COSTS

Constuction \$9.7 million + \$0.5 million contingency
 Total \$13.5 million

FUNDING SOURCES

4% tax credit partner \$5.3 million
 State MHP (Multifamily Housing Program) \$3.1 million
 Permanent debt \$2.1 million
 City of Alameda \$1.8 million
 General partner \$635,000
 Alameda County \$390,000
 AHP through Federal Home Loan Bank \$229,000

AVERAGE COST/SQ. FT. (hard costs) \$180

AVERAGE COST/UNIT (hard costs) \$196,000

AVERAGE COST/UNIT (overall development cost) \$259,000

AFFORDABILITY TARGETS

35% of median income 18 rental units
 50% of median income 14 rental units
 60% of median income 19 rental units
 100% of median income 10 for-sale units
 Onsite property manager 1 unit

The following cost information is for the 10 for-sale units

TOTAL DEVELOPMENT COST \$3.5 million
 Cost/unit \$350,000
 Cost/sq. ft. \$240
 Sale price \$236,000 (100% AMI)

Subsidy supplied through City of Alameda housing in-lieu fees, and housing authority land donation.