

Building Better Affordable Homes

How to increase
style and efficiency
on a modest
budget

BY KEYAN MIZANI

Portland, Ore., is known for dense, vibrant neighborhoods. A key component of the vitality of our community is the preservation and development of affordable housing. Affordable homes give people with lower incomes the opportunity to live in a community with rising property values. Despite having to work with a limited budget, I believe affordable housing must be well designed and well built; it must look good and be built to last. Being cost-conscious is essential. However, that should not mean cutting corners, because short-term savings and gains often can result in greater long-term costs. This holds true whether designing multifamily or single-family homes.

This multifamily row-house project is for first-time homebuyers earning 80% or less of area median income, so it was important to avoid passing on higher future operating and maintenance costs. The non-profit developer, Portland Com-



A ROW HOUSE REDEFINED

The roof plane is extended below the truss line to break up the monotony of rectangular buildings with otherwise simple roof shapes. Lowering the height of the eaves also decreases the perceived size of the houses.

Traditional row houses typically have a production look and are devoid of details that give them the custom feel of single-family homes. These row houses are different. The extended roof-lines were intended to help relate the structure to the older, adjacent 1½-story homes in the neighborhood. At roughly 1600 sq. ft., each unit is not larger than the surrounding houses, but the height and area of the whole building exceeds that of its neighbors. The lowered rooflines and exterior variation, as well as the L-shaped overall plan, soften the building's appearance. The facade proves that the smart design and rich details that add visual appeal and protection are not reserved for big-budget buildings.

Fiber-cement siding over a vented rain screen ensures maximum durability, little maintenance, and greater appeal than vinyl, with minimal cost difference.

Rain chains, intricate porch railings, and trim details suggest an enhanced level of design and custom building.

Recessed porches, complemented with strategically placed bump-outs, create welcoming entryways.

Deep overhangs and wide rake boards protect the facade, create contrasting shadow-lines, and add visual interest to simplified building shapes.

munity Reinvestment Initiatives, was committed to creating attractive, high-quality, efficient, durable homes, and it invested time and money on design and planning to do it well. Working as a team, the developer, our firm, an interior designer, and a general contractor collaborated to select lasting design, material, and building systems that met a modest budget.

Crack apart the row house

Typically long and skinny, traditional row houses are built side-by-side, which can result in some undesirable conditions, such as dark interiors, long shotgun-style floor plans, small yards accessed only from the rear, and less overall privacy. We decided to make the most of the project's corner site by turning one unit 90° to the other so that each home would face a different street.

With this diminished connection, the homes have a greater sense of individuality, and they blend more seamlessly with the adjacent single-family homes. A sticking point for buyers of multifamily homes can be the common wall. People worry about a lack of sound separation. Turning the units perpendicular to each other minimized their attachment, and we increased privacy further by placing only utility and service elements on the shared double wall.

Each home has a surprisingly spacious yard. Parallel to the long axis of each house, the yards are easily accessed and can be viewed from multiple rooms. The building shape also results in greater access to daylight, which we took advantage of by including generous windows for bright, well-ventilated interiors.

Make it look good

Each unit has an efficient, rectangular footprint, capped by roof trusses. However, several strategies were used to avoid the boxy, unvaried appearance of a basic two-story rectangle with a trussed top. Carefully placed bump-outs allow the narrow plans to expand where necessary and to create visual interest outside;

OPEN FLOOR PLANS INCREASE THE IMPACT



1 Cork plank flooring is a renewable resource that's easy to maintain, that helps to ensure good indoor-air quality, and that has an attractive appearance.

Source: Wicanders; www.wicanders.com
Cost: \$6 per sq. ft. installed

2 Natural linoleum is used in bathrooms and the laundry room for its resilience in wet areas. Colorful, playful patterns make the most of the material.

Source: Marmoleum by Forbo; www.forbo-flooring.com
Cost: \$6 per sq. ft. installed

3 Glass- and ceramic-tile backsplashes add a punch of color in kitchens and bathrooms, with minimal cost impact. These materials provide a layer of detail often missing from affordable homes.

Sources: United Tile; www.unitedtile.com
Daltile; www.daltile.com
Cost: \$40 per sq. ft. installed

4 Plywood cabinets have bamboo facing that will outlast cheaper options and add a rich appearance to the simple cabinetry.

Source: Cutting Edge Custom Cabinets; www.cuttingedgecc.com
Cost: \$180 per lin. ft. installed



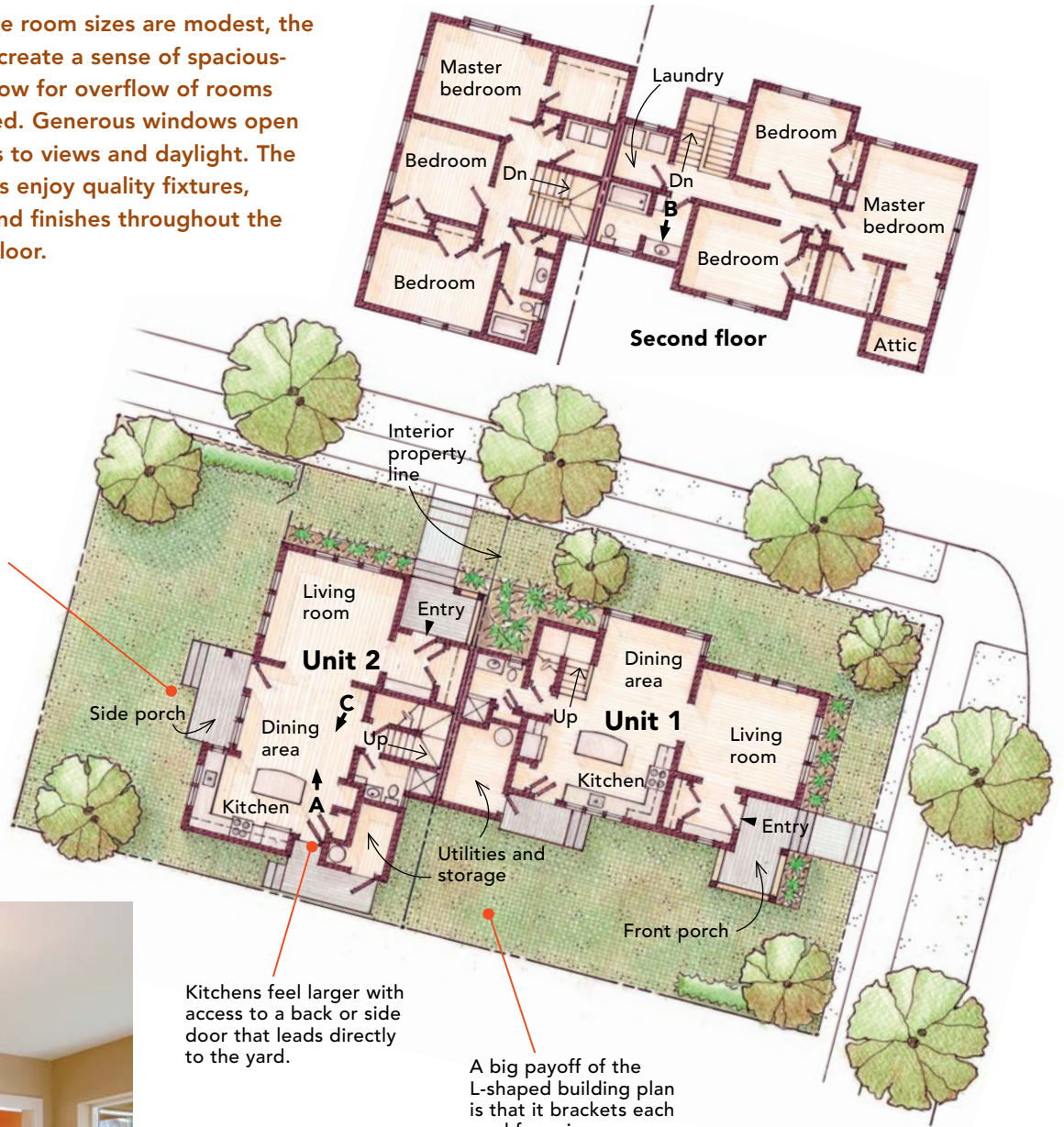
OF A FEW FINE DETAILS



Although the room sizes are modest, the open plans create a sense of spaciousness and allow for overflow of rooms when needed. Generous windows open the interiors to views and daylight. The homeowners enjoy quality fixtures, materials, and finishes throughout the entire first floor.

Valuable outdoor spaces are the result of smaller, more efficient building footprints, without garages.

Photos taken at lettered positions.



Kitchens feel larger with access to a back or side door that leads directly to the yard.

A big payoff of the L-shaped building plan is that it brackets each yard for privacy.

0 2 4 8 ft.

North



SPECS

Bedrooms: 3 per unit

Bathrooms: 2 per unit

Size: Unit 1: 1620 sq. ft.; Unit 2: 1555 sq. ft.

Cost: \$120 per sq. ft.

Completed: 2010

Developer: Portland Community Reinvestment Initiatives (PCRI); www.pcrihome.org

Architect: eM/Zed design architecture + planning; www.emzeddesign.com

General contractor: Terrafirma Building & Development; www.terrafirmabldg.com

Interior designer: Kismet Design; www.kismet-design.com



Time again to cut costs

The economic downturn and the availability of a surprising number of discounted, foreclosed homes in the Portland area have provided more affordable options for first-time homebuyers. Even with the requirement that buyers for our project not earn more than 80% of median family income, the pool of potential buyers has shrunk significantly. To

sell more easily, the homes need to cost even less than we thought when we started. The question is how to do this without compromising quality of design and long-term durability and energy efficiency.

The most likely answer is reducing square footage. Space savings could be gained by tightening the floor plan and combining the laundry and

second-floor bathroom, and/or by substituting a half-bath for the full downstairs bath. The exterior storage rooms could be eliminated, too.

Although the bump-outs were needed to relieve a tight footprint, there could be fewer of them. Each jog adds complexity and cost to a number of building components: foundation, framing, roofing, siding, and drywall.

recessed porches create welcoming facades. Side porches and stoops offer connections to the yards. All these elements work together to disguise and embellish the homes' basic rectangular building blocks.

We kept exterior materials simple for cost and durability; they include fiber-cement lap siding and factory-primed flat trim. When a restrained palette is used, enrichment relies on careful building proportions, well-placed windows, and special details such as custom porch railings.

Design for efficiency

Our team selected the most affordable and effective energy-saving strategies early in the design process so that they could be woven into the core of the design rather than needing to be added later, which is always more expensive.

We specified 12-in. raised-heel trusses, which have a greater depth at the edge, to allow full perimeter roof insulation. These trusses have only a relatively small cost impact. The roofs were insulated to R-49. The R-26 walls were insulated with 1 in. of closed-cell spray foam, bulk-filled with blown-in fiberglass, and finished with airtight drywall.

A high-efficiency air-source heat pump by Carrier provides heating and cooling and was a logical choice for our climate, where this technology works effectively. Locating all of the ductwork inside conditioned spaces significantly reduced heat loss and enhanced the efficiency of the heat pump. A Marathon electric water heater has an energy factor of 0.94 and is warranted not to leak for as long as the buyer owns the home.

Most light fixtures are fluorescent, but few need to be on during the day thanks to our daylighting strategy. Window head heights are 7 ft. to allow light farther inside. As a result, high windows in areas requiring privacy and/or furnishable wall space still admit plenty of light. □

Keyan Mizani is an architect in Portland, Ore. Photos by David Papazian (www.papazianphoto.com).