# High Point

High Point is a visionary green redevelopment that is completely transforming an outdated affordable housing project and creating a community that connects with its West Seattle neighbors. It features healthy homes for a range of incomes and ages, salmon-friendly drainage, beautiful open space, and a rich array of community services.



# Green Home Case Study

Healthy homes for a healthy environment

Photo credits (l to r): kid on bike, Seattle Housing Authority; market garden fence, Liz Martini; market garden, Seattle Housing Authority.

## About the project

Name: High Point Redevelopment—Phase 1
Type: Neighborhood redevelopment
Size: 120 acres, with 829 housing units in Phase 1 and 1,600 units overall
Square Feet: 700 to 2,200 per unit
Location: Seattle's West Seattle neighborhood
Completed: Phase 1 in 2006, Phase 2 in 2009

Covering about 120 acres, High Point is a visionary redevelopment project that is completely transforming a West Seattle neighborhood. The plan includes a new street system and space for approximately 4,000 people in 1,600 houses, townhouses, condominiums and apartments, all designed to Built Green™ 3-star standards or better. Among the innovative features are a 34-block natural drainage system that protects Longfellow Creek, Seattle's most productive salmon-spawning stream, and a first-in-the-nation series of houses built expressly for families with children who suffer from asthma.

The integrated design not only provides housing for people with a range of incomes and ages, it also establishes an array of community services. These include a neighborhood commercial center, health and dental clinics, a new library and an expanded community center, as well as small pocket parks, a neighborhood athletic field and a large hillside left with its natural forest cover intact.

The project replaces 716 subsidized housing units in mostly dilapidated buildings that were erected in the rush to provide housing after World War II. Every demolished unit will be replaced with another subsidized housing unit in Seattle, although not necessarily entirely at High Point. The Seattle Housing Authority, which owns the land and commissioned the plan, is building about half of the High Point housing, and private developers are overseeing the rest.

## Goals/Challenges

Instead of viewing the new High Point as an island guarded by a security gate and a fence, the design connects the neighborhood to surrounding parts of West Seattle. Planners met numerous times with community members, including residents of the old housing, who were guaranteed places in the new project.

### Ratings & Awards

Communities Award, 2005 Built Green™ Design Competition

Built Green™ 3-Star Certified Community (512 points)

Built Green™ 3-Star Certified Multifamily Project (452 points)

# Green Home Case Study

High Point

The plan includes innovative features, such as a 34-block natural drainage system to protect a salmon stream and a first-in-the-nation housing cluster built expressly for families with children who suffer from asthma.

Photo credits (l to r): house, Mithun©; site plan, Mithun©; natural drainage, Seattle Parks & Recreation.

They clearly wanted a standard city neighborhood, with streets laid out in a grid and curbs, gutters and sidewalks alongside. However, there was plenty of room for innovation to benefit human health and the environment while sticking to a conventional look and feel.

## The natural drainage system

The natural drainage system was developed in conjunction with Seattle Public Utilities to protect Longfellow Creek, a couple blocks away. High Point accounts for 10 percent of the watershed of this creek, which is one of the three largest natural streams left in Seattle and the one that draws the most returning coho and chum salmon. In the old neighborhood, storm water carried spilled oil and other pollutants into a series of underground pipes that emptied directly into the creek. The new plan calls for streets that are often skinnier than usual, which reduces runoff. Rain that does fall on pavement, and roofs, flows into planted areas and slowly infiltrates into the groundwater. When there is too much rain for the soil to absorb, the excess flows into a pond at the northern end of the neighborhood. The pond's overflow goes into the creek, but by that time the water is far cleaner than it was.

### Swales-in-disguise

Standard residential streets are fairly wide, with a slight crown in the middle so water runs off into gutters along both sides. Natural drainage systems replace the gutters with shallow swales planted with a variety of shrubs, trees and grasses. It's fairly easy to do in a neighborhood with only a few houses per acre. But High Point is considerably more dense, with up to 15 units per acre, and shrub-lined streets didn't fit with the community's desire for a traditional-looking streetscape. So designers came up with a way to create drainage swales that look like the planting strips found between the sidewalk and the street in many historic neighborhoods. Instead of being crowned, streets tilt slightly toward one side, where the wide planting strip is. There, crews enriched the soil with compost to a depth of about 3 feet to mimic the natural duff layer in a forest. The loose soil functions as a sponge and natural filter.

About half of the planting strips are covered with lawn, in keeping with the community's desire for a traditional look, and the other half are planted with shrubs or other larger plants that thrive in natural drainage areas, which in Seattle means having roots soggy in winter and dry in summer.

### Porous concrete

All High Point sidewalks are poured-in-place concrete. But sidewalks next to the drainage strips are made of porous concrete, a mixture of Portland cement, gravel and water. Without the usual sand to plug gaps between gravel particles, this rice cake-like concrete lets water drain through. One High Point street is also paved with porous concrete, the first time that's been done in Washington.

### Detention ponds

Many new housing developments include storm water detention ponds surrounded with ugly wire fencing. High Point has a detention pond, too, the size of a football field, but it is the star attraction of a park with a quarter-mile walking trail, terraced lawn, an overlook and other features. Rather than having a fountain to circulate the water, the pond has a pump that pushes some of the water uphill, into an artificial stream that flows down about 30 yards back to the pond. With a little bridge and big boulders, the stream has become a great play area for kids.

## Energy-efficient, healthy homes

Although all High Point housing will qualify for at least 3-star Built Green™ certification, many units exceed those standards and place even greater emphasis on protecting indoor air quality and using energy and other resources efficiently.

### Air-sealed and tested

Nearly all of the rental units at High Point will be built to meet the stiffer Energy Star standards. Energy Star requires careful air-sealing of all units, followed by testing to ensure that the sealing was done properly. Because construction crews know their work will be tested, overall quality tends to be high.

Planners met numerous times with community members, including residents of the old housing, who were guaranteed places in the new project and input on neighborhood design. Amenities include an expanded community center, health clinics, a new library, a commercial center, small pocket parks, an athletic field, and a naturally forested hillside.


Photo credits (l to r): community meeting, Seattle Housing Authority; library interior, Miller Hayashi Architects, library exterior, Miller Hayashi Architects.

### Asthma relief

The 35 "Breathe Easy" rental homes were designed to minimize exposure to asthma "triggers," which can range from formaldehyde and other volatile organic compounds (VOCs) to dust and insect remains. (VOCs are substances that easily convert to gas at room temperature, enabling them to be inhaled by occupants.) Crews use zero-VOC paints, adhesives, caulks and other materials whenever possible, and they avoid building materials that contain formaldehyde. Carpeting, which is difficult to clean thoroughly, is limited to stairs; elsewhere, the flooring consists of true linoleum, a natural product that can be swept, vacuumed or mopped. All of the homes have HEPA air filters, the most efficient at removing dust particles and other irritants.

The asthma-prevention measures even extend to rules about how builders and residents behave. Construction crews can't smoke within the buildings during or after construction, and they have to clean up thoroughly as they work. Residents must promise that they won't have furry pets or smoke. Before each family moves in, the housing agency steam-cleans all upholstered furniture and provides the family with a new HEPA vacuum cleaner.

Outside, landscaping consists of drought-tolerant plants that don't produce much allergy-triggering pollen. Many Northwest natives are on the "good" list, including serviceberry (Amelanchier alnifolia). The red maples Autumn Glory and October Glory are also favored because they are female cultivars, so they don't produce pollen. Standard maples with both male and female flowers, however, aren't wanted.

Researchers from the University of Washington School of Public Health and Community Medicine will track the health of the people who live in the houses in an effort to determine how much of a difference the Breathe Easy homes make.

### Keeping within budget

Because much of the housing at High Point is for families of low or modest income, the housing authority is being careful to invest in "green" strategies for its projects only where they make economic sense. The low-allergen, drought-tolerant plants and the zero-VOC paint cost no more than standard options. Reusing old paving as backfill in trenches actually saved money, as did a decision to reduce the amount of grading. With some purchases, such as the heating system and the true linoleum floors, the initial cost was higher but long-term costs are expected to be lower. The heating system, which uses a gas-fired, tankless water heater to supply wall-mounted radiators, allows residents to heat only the rooms they are using. That, plus the fact that the same water heater supplies warm water to taps, makes the system efficient to operate. And linoleum wears so well that it should last for 40 years.

### Deconstruction, not demolition

Before construction could begin, the old buildings on the Phase 1 property needed to go. Rather than raze them with bulldozers, the housing authority arranged to have 22 buildings taken apart by hand so that many of the materials, including beautiful old-growth fir, could be sold for reuse. To gauge how long deconstruction might take and what quantity of materials might be salvageable, the agency arranged to have the first two units dismantled by the RE Store, a non-profit agency that runs used building materials stores in Seattle and Bellingham. The housing authority then knew what to look for in bids by private companies that deal in used building materials.

### Integrated strategies

Many of the construction details at High Point pay off in multiple ways. For example, builders get Built Green* points for using advanced framing techniques, which use less wood. With fewer studs, the buildings automatically become more energy-efficient because a greater percentage of the walls wind up with thick insulation. And because drywall isn't fastened to as many studs, it's less likely to crack. This reduces callbacks, which in the end saves the contractors money.

Builders also get Built Green* points for installing airtight drywall, which saves energy. Airtight walls also let less dust inside and stop air flows that can contribute to mildew problems, which improves indoor air quality.

## The Team

*Owner/developer*
Seattle Housing Authority
(206) 615-3300

*Architect*
Mithun
(206) 623-3344
www.mithun.com

*Civil engineering and right-of-way landscape architect*
SvR Design
(206) 223-0326
www.svrdesign.com

*Landscape architect*
Nakano Associates
(206) 292-9392
www.nakanoassociates.com

*Contractor*
Absher Construction
(253) 845-9544
www.AbsherNW.com

*Infrastructure contractor*
Gary Merlino Construction Co.
(206) 762-9125

## Resources/Products

*Low-allergen landscaping*
"Allergy-Free Gardening," by Thomas L. Ogren
(Ten Speed Press, 2000)
www.tenspeedpress.com

*Porous concrete*
Stoneway Concrete
(425) 226-1000, ext. 3301

*Heating system*
Baxi Luna tankless water heater
BlueRidge Roca flat-panel radiator
Both available from:
BlueRidge Company
(866) 361-4782
www.blueridgecompany.com

*Electrical rebates*
Built Smart program
Seattle City Light
(206) 684-4283
www.seattle.gov/light/
(Search for "built smart")

*Natural drainage systems*
Details on Seattle projects:
Seattle Public Utilities
www.seattle.gov/util/services/
(Click on "About SPU")

*Longfellow Creek stewardship*
Community web site:
www.longfellowcreek.org

## 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 Seattle.
www.builtgreen.net

***Energy Star*** – a government-backed program helping businesses and individuals protect the environment through superior energy efficiency.
www.energystar.gov

***King County Construction Works*** – provides free assistance and recognition to builders who recycle, reduce waste and use recycled-content building materials.
www.metrokc.gov/dnrp/swd/greenbuilding

***SeaGreen*** – a guide to greening affordable housing, published by the Seattle Office of Housing;
www.seattle.gov
(search for "Seagreen")

***Seattle Sustainable Building Program*** – provides guidelines, incentives, and assistance to increase the environmental performance of buildings in Seattle.
www.seattle.gov/dpd/sustainability

BUILT GREEN™

City of Seattle
Department of Planning and Development

*Printed with soy-based ink on totally chlorine-free paper made with 100% post-consumer fiber.*

*January 2006*

# Green Home Case Study

High Point

## Community connections

One of High Point's key goals is to create a vibrant, engaged community where residents feel vested in both their immediate surroundings and the larger West Seattle neighborhood.

### Survey feedback

Before the planners settled on a design, they met with numerous residents and neighbors and surveyed surrounding historic neighborhoods to understand the range of building styles found there. One clear conclusion: The community wanted the new housing to look like traditional single-family houses, not the low barracks and military-type housing once found on the site.

### Neighbor-to-neighbor contact

Planners adopted many of the features suggested by advocates of "New Urbanism." Parking, for example, tends to be clustered a short distance from homes. To get from their cars to their front doors, residents walk by small pocket parks, which are situated so that parents, while indoors, can easily monitor children who are playing outside. This setup should help ensure that neighbors get to know each other.

### Employment and training

Some residents of the old High Point benefited from the redevelopment even before they moved into their new homes. The contractor, Absher Construction, agreed to hire at least 50 residents or other low-income people as laborers or for skilled jobs. Absher also committed to having apprentices do at least 15 percent of the union work on the site. The company actually exceeded both goals.

## Lessons learned

### Synergy saves

The housing authority wants High Point to attract renters and owners from different income groups because mixed neighborhoods tend to be safer and more well-kept than ones occupied solely by people desperate for inexpensive housing. However, people with the freedom to be choosey want amenities, and providing them costs money. At High Point, the housing authority found extra resources by taking a look at its site and figuring out which agencies or other partners might have a reason to shoulder some of the costs.

Seattle City Light, for example, is trying to make its electrical generating capacity go as far as possible by encouraging its customers to reduce the amount of power they waste. So the utility reimbursed the housing authority for the extra money it spent on energy-saving lights, washers, driers, and whole-house fans. (Similar rebates are available to any affordable, multi-family project that participates in City Light's Built Smart incentive program.) The hydronic heating system with zoned thermostats is more efficient than electrical baseboard heaters, the standard option in low-cost housing, but the system cost more. To cover the added expense, the housing authority got a concession on how the residents' federal housing subsidies are calculated.

To pay for the 35 Breathe Easy homes, the housing authority received $195,000 from the federal Department of Housing and Urban Development. The National Institute of Environmental Health Sciences contributed additional money through a local non-profit to support programs that will help residents keep allergens out of their homes. Through Seattle Public Utilities, the city contributed $2.7 million to pay for the difference between the natural drainage system and a conventional system. The city recreation department spent $3.7 million to refurbish the High Point Community Center and add 10,000 square feet for a commercial kitchen, teen room, multipurpose rooms and a computer center. Seattle Public Library spent $3.3 million on the new High Point branch. Next to the library, Puget Sound Neighborhood Health Centers opened the new High Point Medical Clinic and Joe Whiting Dental Clinic.

### Saving trees

Instead of clearing the site to create a blank slate for the new streets and buildings, the design team brought in an arborist to evaluate existing trees. Wherever possible, the planners then designed the streets and buildings around the best specimens. In Phase 1 alone, this approach resulted in saving more than 100 large, healthy trees.

Because construction crews often take a cavalier attitude toward protecting trees, a sign was posted by each tree that was to be saved, stating the value that a consultant had established so that the crews would know their company's liability. Big, healthy trees, everyone saw, are worth a lot of money: up to $70,000 for one spectacular redwood. The result? Most of the prized trees survived unscathed. Additionally, some of the small and diseased trees that had to be cut live on at High Point in the form of benches and other woodwork.