



Playground in High Point (Seattle, WA) / ©Mithun, Juan Hernandez

## High Point

### **Size & Type of Project:**

120-acre residential greyfield redevelopment (previously a 1940s era public housing neighborhood)

### **Location:**

Seattle, Washington

### **Budget:**

\$207,000,000 (\$79,000,000 was for site-related construction costs)

### **Project Phase:**

Phase One completed in 2006/ Phase Two scheduled for completion in 2009

## **Project Overview**

High Point combines ecological and social goals to transform an isolated and distressed site into a vibrant, sustainable neighborhood. The 34-block residential neighborhood with a mix of incomes, ethnicities, and household structures, was redeveloped by the Seattle Housing Authority to financially sustain the neighborhood, improve services, and build community. The redevelopment occupies roughly 8 percent of Seattle's Longfellow Creek watershed, an urban salmon-bearing stream that is one of only four remaining in the city. Seattle Public Utilities realized that the redevelopment of the 1940s era site provided the potential to mitigate a significant source of contaminated urban runoff. Creative site-specific Low Impact Development strategies were utilized for each urban block and a Natural Drainage System employed for the whole neighborhood.

Responding to the community's request to re-knit the neighborhood with the surrounding urban context, High Point maintains the varied economic, ethnic, and social backgrounds of its residents while increasing density, reducing neighborhood energy consumption, and drawing the greater neighborhood to its walkable streets and green spaces. Mature trees were saved throughout the site allowing the new neighborhood to connect to the past. The community includes extensive and accessible parks and civic places of all scales - trails, pocket parks, a regional park, a community center, library, market, garden, and art installations.

## Site Context

High Point is located in the Central Puget Lowland (or Puget trough) ecoregion. Seattle's mild climate is classified as Marine west coast, which is characterized by dry summers and cool wet weather during the rest of the year, with an average annual rainfall of 38 inches.

High Point is in the West Seattle neighborhood-a close-knit community characterized by small lot single-family residences, a number of healthy commercial cores, and major park and shoreline assets with extensive bike and trail systems.

The site topography slopes to the northeast with an elevation change of more than 170 feet in approximately one mile. The west to east slope is over 36 feet. The site developed area drains to a single discharge point that is piped to Longfellow Creek. These gradients provided opportunities for views and variations for massing, yet they added constraints as the design team dealt with trees, accessibility and earthwork.



High Point (Seattle, WA) / ©Mithun, Juan Hernandez

## Sustainable Practices

Site Selection-Greyfield redevelopment and urban infill: High Point replaces a post-World War II public housing project of 716 units with a community of 1,600 new

housing units; 45 percent of these units are affordable and low-income rentals being constructed by the housing authority, Providence Senior Housing and 55 percent are for-sale market-rate units, market-rate seniors rentals and Habitat For Humanity. The focus of this Hope VI project was to decentralize subsidized housing and intermix market-rate housing both to sustain the projects financially and to build healthier communities.

Community involvement: From the beginning, residents and the surrounding community, non-governmental organizations, private developers, builders, and a range of city agencies were extensively involved in the planning and design of the project. Through surveys, charettes, and informational meetings, the community delved into every aspect of the planning process, considering the current and future needs of the area and its multicultural residents.

Because residents would be temporarily relocating and then returning after construction, their desires were especially important. Workshops using translators were conducted in more than a dozen languages and were structured to provide a variety of ways to make the process approachable to the diverse cultures of the residents. In addition, students from Seattle's Chief Sealth High School interviewed residents, neighbors, the housing authority staff, the project's design team and contractors to create a short video describing the site's history and document the community redevelopment.

Among the comments elicited from the community was the desire to have the new development blend in with the surrounding neighborhood, to have several pocket parks rather than one large park and to have something they would recognize when they returned. The project team connected streets, distributed open space and preserved over 107 existing mature trees that serve as landmarks for returning residents. The team continues to meet with the City, residents and association maintenance staff to monitor success and site upgrades.

Stormwater Management and Watershed/ Habitat Protection: Natural riparian corridors are an integral part of Seattle's drainage system, as more than 20 percent of the city's stormwater runoff flows into local creeks. High Point's natural drainage system provides clean water for 8 percent of the salmon-bearing Longfellow Creek Watershed, a mile-long urban creek system running through the heart of West Seattle. The project team focused on restoring and protecting Longfellow Creek's salmon habitat-underscoring choices made for stormwater management that would both preserve and clean the watershed.

The system begins at the houses, channeling the roof runoff across splashblocks draining to furrows, channels, dispersion trenches, rain gardens and pervious pavements.

Stormwater that does not infiltrate on the multifamily housing site's sheet flows into a natural drainage system (NDS) along the public right-of-way. The 22,000 linear feet of swales, developed with engineered soil (a mixture of gravel and compost), are graded with periodic berms to allow water to pond and slowly filter through the plantings into the soil. The berms also serve as pedestrian crossing points from the parking zones.

Drainage is managed within the blocks and overflow at each block is piped to the stormwater pond for additional treatment. This distributed block-scale drainage system provides much greater opportunity to cleanse, cool and filter stormwater runoff than the traditional piped and centralized management approach. Stormwater from the few

locations that cannot be treated by the swales due to topography constraints is piped to the stormwater pond for sedimentation and flow control prior to discharging into nearby Longfellow Creek.

Multiple natural drainage strategies allow the dense urban housing site to have peak stormwater discharge flow rates that mimic a 2-year storm event in pasture conditions. While the site was already in a developed condition from the 1940s, the pre-developed condition for modeling purposes was assumed as pasture; thus raising the bar for the stormwater requirements at the time the project started in 2001. Without the NDS system, the project would not have been able to meet the pasture conditions for stormwater runoff. In addition, biofiltration acts to remove pollutants through physical (sedimentation), chemical (absorption), and biological (uptake and degradation) processes. The drainage systems are designed to remove 80 percent of total suspended solids. The combination of the natural drainage system, detention capacity and water quality also provides peak flow control for the 25- and 100-year storm events, in accordance with the Seattle code in place at the time of permitting. The natural drainage system approach allowed for a single stormwater pond, which is in contrast to a typical development in the Pacific Northwest that requires up to 20 additional acres to meet similar flow control. The result for High Point was a net gain in the project's development potential.

**[To view how the stormwater management system works, click here.](#)**

Increased social interaction: Small pocket parks throughout High Point are situated so that parents and caregivers inside their homes can easily monitor children playing outside. The shared green spaces are conducive to more social interaction and in turn to more security through the direct and constant supervision of residents. The open plan includes community garden spaces and a large market garden where residents can grow and sell produce. The High Point Neighborhood Association, equally represented by homeowners and renters, is especially active in the areas of block watch, crime, traffic, and block parties. They are funded by a ¼ percent of the sales of homes and make decisions about what to fund to building community.

Reduced paving and pedestrian safety: Considerable effort was made to design narrower streets to reduce impervious surface area, encourage slower driving speeds and contribute to a safer community. After much discussion, the 25-foot-wide streets with parking on both sides were approved by the City Department of Transportation and the Fire Department. Careful attention to the block design allowed pullouts at mid-block fire hydrants and improved circulation with perpendicular alleys and mature trees as traffic-calming bulbouts for emergency vehicle movement.

High Point also includes one of Seattle's first "Complete Streets" - a street designated by the City of Seattle that that serves multiple functions (i.e. bike, cars and ecological systems). Morgan Street/Sylvan Way, which bisects the site, was re-designed to slow traffic moving through the residential neighborhood. Although the street right-of-way stayed the same, changes included a center-planted median, narrower lanes, natural drainage planting strips on both sides, sidewalks, bus stops, bike sharrows, pedestrian crossing and a traffic signal to improve safety.

Connectivity: The reconfigured street system now joins the city's existing grid, inviting physical and social connections between High Point and the surrounding neighborhood, and eliminating the perceived barriers created by the area's previous layout. A library and an expanded community center are all within walking distance of residents, further strengthening connections between the revitalized neighborhood and the existing West Seattle community. High Point also connects with the Longfellow Creek Legacy Trail, a 4.2 mile system, one of four salmon bearing streams remaining in the city of Seattle.

Native and Adapted Vegetation: Native and adapted plants were used to reflect the local ecosystem and to minimize maintenance needs. The landscape emphasizes vegetated plantings with appropriate and limited use of grass. Vegetative diversity was greatly increased on the site. For example, more than 80,000 groundcovers are planted in the streetscape alone, and the addition of more than 3,000 trees effectively tripled the number of trees on the site.

Swale plantings vary to create an interesting year-round experience for residents. Similarly, even the traditional right-of-way plantings were carefully selected to provide year-round interest and wayfinding. Flowering trees are placed strategically throughout the community, with special attention to adding conifers into the tree mix to enhance the classic northwest character. This enhanced landscape gives the neighborhood a feeling of a "residential arboretum" as you walk through it. Notably, it has become a destination for many walking groups.

Tree Preservation: More than 1,000 existing trees were evaluated and rated by an arborist with the design team; the team then optimized street and block layout to retain trees across the 120-acre site. This was challenging due to the need to reconfigure the roads and essentially double the number of units. Approximately 150 mature trees were carefully preserved on-site, thus retaining the character of a mature neighborhood. As an added benefit, the zones of saved trees created pockets of open space that total more than an acre.

The arborist estimated each tree's financial value and posted it near the tree so that construction crews would know exactly how much it would owe Seattle Housing Authority if any trees were damaged. The value of the trees saved by this approach was \$1.5 million. To view High Point's tree valuation report, go to:  
[www.seattlehousing.org/development/highpoint/Images/TreeAppraisal.pdf](http://www.seattlehousing.org/development/highpoint/Images/TreeAppraisal.pdf)

Irrigation efficiency: Native, drought-tolerant, and site-suitable plants were used to minimize the need for irrigation and pesticides. Amended soils improve water retention, while a computerized irrigation management system adjusts water supply based on plant needs, solar orientation, and local weather information.

Protecting air quality: 350,000 gallons of alternative bio ultra-low sulfur diesel fuel are being used for infrastructure construction. Reducing asthma was a key focus in the health aspects of the design. Thirty-five homes were designed to Breathe Easy standards and allergen-free landscape guidelines were developed. Due to a unique opportunity to have a control group of existing residents who returned to High Point, research by the King County Health Department was able to reveal a 67 percent reduction in urgent emergency

room visits after families moved back in. This represents significant cost savings to taxpayers, insurance companies, employers, and a substantial improvement in quality of life for residents.

Material Reuse: Before new development began, 22 existing structures were carefully dismantled so that many of the materials—including old growth fir—could be sold for re-use. Concrete foundations were crushed and used as base material for new sidewalks and foundations. In addition, some of the existing soils excavated on site from the Housing and Public Infrastructure portion of the development were used to create a view mound overlooking Puget Sound and downtown Seattle in the new Commons Park. The trees that were removed were chipped on site and used as mulch during the construction process. Several other removed trees were used in community art elements on the site or were given to artists for special projects.

## **Construction Cost**

Negotiating the selection and allocation of land for public infrastructure allowed the prime land area to be available for housing. This limited right-of-way required collaboration between the public infrastructure and the franchise utilities to determine the use of underground space. By requesting an alternative location for the public conveyance storm pipe, under the swales, the design team was able to avoid multiple utility trenches, optimize space for natural drainage practices and have a more effective construction process. A central stormwater pond for flood control and water quality was strategically designed to minimize pond land area and located in an existing depression to take advantage of topographic conditions and control costs. In addition to providing long-term benefits as a multifunction open space, the single pond reduces the long-term maintenance costs.

The soil mix used for the swales was selected for its permeability, soil amendments, and also for its cost. Working with geotechnical engineers to develop a mix from common materials and using one common soil type kept costs down compared to using patented soils mixes

## **Monitoring Information**

Once major infrastructure development is complete, Seattle Public Utilities (SPU) will be monitoring rate of flows from the 120-acre site. SPU is currently monitoring a section in Phase I, and the results are anticipated in the fall of 2008. The Phase I area did manage two 100-year storm events in the 2006-2007 seasons without flooding.

## **Maintenance**

The High Point neighborhood planned for long-term maintenance through plat restrictions, developer guidelines, drainage maintenance guidelines, and agreements on areas of responsibilities with the City of Seattle (As part of the negotiations made during the decision to go with a Low Impact Development approach in 2001.). These decisions

were formalized in a Memorandum of Agreement between the City of Seattle and the Seattle Housing Authority and are recorded with the Plat.

- The City of Seattle will maintain the natural drainage system below the mulch. Specifically, the City is will be responsible to replace the engineered soils and subsurface pipes, should plugging occur. The City is also responsible for maintaining the public roads and off-site properties. For the City, costs are offset by the long-term benefits of water quality improvements in the creek and a natural systems approach to stormwater management.
- The High Point Open Space Association will maintain the natural drainage landscape and the pond. Each homeowner contributes to the cost of maintaining the above-ground drainage system that is in the public space. The neighborhood has four levels of maintenance: 1) The natural drainage landscape, open space, parks, and right of way; 2) The Home Owners Association; 3) Rental Housing; and 4) Public. The benefits of having a well-landscaped neighborhood with a variety of open spaces are compensation for the monthly fees

In addition, the "Right-of-way and Open Space Landscape Maintenance Guidelines" and schedules were developed to be an easy reference to be implemented by the homeowner association. The maintenance guide for the natural drainage systems and the pond provides year-round maintenance information and resources for the staff. This guide has been requested by many jurisdictions and private entities across the country as a model for system maintenance. As an example of green labor opportunities, some of the maintenance for these systems is being conducted with local residents.



High Point (Seattle, WA) ©Mithun, Juan Hernandez  
Community garden at High Point (Seattle, WA)/ ©Mithun, Juan Hernandez

## Issues/Constraints of the Site

- Residents did not want the stigma of "public housing" to continue in the new development. Connectivity to surrounding neighborhood was important.
- Street character could not be too unusual-both to ensure seamless connection to surrounding neighborhoods and to ensure builders were attracted to the site.
- Residents were being temporarily displaced, but the majority returned.
- Residents expressed a strong desire to retain mature trees on site as legible landmarks that would be familiar to them.
- News articles have interviewed new and old residents for their perceptions about how the neighborhood is doing with social interaction. The general response is that although there are increased casual interactions between diverse individuals, people still tend to choose social and racial similarities when it comes to forming deeper friendships.

## Lessons Learned

- Working with permitting agencies, interdisciplinary planning, collaboration, contractor education, public communication, and community celebrations was key in the success.
- Protection of natural drainage system during construction needs to be emphasized for the contractor. The natural drainage system and pond operate as a whole system that needs to be functioning successfully for a certain time period prior to issuance of the certificate of occupancy. This has schedule implications for the contractor who must plan ahead. It is a new system that needs to be treated like a traditional system in the critical path management.
- Protection of porous concrete paving during on-going construction is vital. A contractor's prior experience with porous concrete installation is an important criteria in selecting the contractor.
- Within the critical root zone of preserved trees, grade changes impacting a maximum of 30 percent of the root zone area are acceptable in many conditions if well-draining fill is used.
- Stacking functions reduced costs and provided amenities. For example, the central stormwater pond is strategically located in an existing depression, minimizing occupation of additional land area while creating a functional community open space and reducing long-term maintenance costs.
- GreenWorks Realty recently prepared and released a market report comparing environmentally-certified homes (ECert) to non-certified homes. The ECert homes in the report were certified through the Built Green™ of King and Snohomish Counties, Northwest Energy Star®, or LEED for Homes™ programs. The report focused on new, single-family residences and townhomes sold in King County. ECert homes accounted for 16.7 percent of the market, sold in 18 percent less time, for 4 percent more, and were 25 percent smaller than non-certified homes. Priced per square foot, ECert homes were 37 percent more valuable. Data was collected over a nine-month period ending May 31, 2008 from the Northwest Multiple Listing Service. For our full report please visit: [ECert Report](http://greenworksrealty.com/e-cert_report/e-cert_report.php?t=e-cert_report) ([http://greenworksrealty.com/e-cert\\_report/e-cert\\_report.php?t=e-cert\\_report](http://greenworksrealty.com/e-cert_report/e-cert_report.php?t=e-cert_report)). For our press release please visit: [New Green Homes Sell Faster With Higher Value](#).



GreenWorks Realty spearheaded the charge to include the ECert search categories on NWMLS one year ago.

## **More project details**

[www.seattlehousing.org/development/highpoint/highpoint.html](http://www.seattlehousing.org/development/highpoint/highpoint.html)

## **Project Consultants**

**Overall Master Planning, Architecture, Site Design and Landscape Architecture:**  
Pond Park, North Park, Bataan Park

**Design Team (Mithun):** B. Kreager (Project Director), B. Sullivan (Project Manager), M. Sullivan (Project Manager), S. Cox, T. Schacher, A. Hoyer, T. Johanson, T. Jordan-Oliver, B. Cloward, B. Bradford, D. O'Rourke  
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**Principal Civil Engineer and Right of Way Natural Systems and Landscape:**  
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